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PRESSURE DISTRIBUTION AT SUBSONIC SPEEDS OVER THE
FOREPART OF TWO BLUNT CIRCULAR CYLINDERS

By

Vernard E. Lockwood

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**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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| 16. Abstract A wind-tunnel investigation was made at subsonic speeds to determine the pressure-distribution over the forward part of a circular cylinder. The cylinder was equipped with interchangeable faces, one having a flat face and one having a dome shaped face. The investigation was made over angle of attack range from -1° to 26° and a Mach number range from 0.30 to 0.89. Pressure coefficients are presented in tabular form and plotted data are presented for some selected angles of attack about the surface of the cylinder. The data were originally published in Langley Working Paper 645. | | | |
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

PRESSURE DISTRIBUTION AT SUBSONIC SPEEDS
OVER THE FOREPART OF TWO BLUNT CIRCULAR CYLINDERS

By Vernard E. Lockwood

SUMMARY

A wind-tunnel investigation has been made at subsonic speeds to determine the pressure distribution over a model of a recovery package from an altitude sounding rocket. The dome-face cylinder which had a cylindrical afterbody was tested over an angle-of-attack range from -1° to 26° and a Mach number range from 0.3 to 0.89. The investigation also included tests of a right circular cylinder to evaluate the effect of nose shape. The data are presented in tabular form. Plotted data, for some selected angles of attack showing pressure coefficient variation about the surface of the cylinder, are also presented.

The results showed that separated flow existed from the faces of the cylinders rearward to about 1.6 diameters and that the region of separated flow increased as the Mach number was increased to 0.89, the highest obtained. The pressures on the cylindrical surface immediately behind the dome-face cylinder were more negative than those obtained on the flat-face cylinder. The data also showed that as the angle of attack increased, the pressure recovery (tendency toward attachment) occurred sooner on the dome-face cylinder than on the flat-face cylinder.

INTRODUCTION

An investigation has been made in the Langley high-speed 7- by 10-foot tunnel to determine pressure distributions on a model of a recovery package from an altitude sounding rocket. This investigation which is in support of NASA activities in altitude research was undertaken to provide pressure information relative to the activation of recovery mechanisms. The model tested was essentially a circular cylinder with a dome-shape nose and having a length to diameter ratio of four to one. To provide an indication of the importance of nose shape, the investigation also included tests of a right circular cylinder (flat face) of similar size.

Pressure data were obtained over the face of each cylinder and about the surface of cylinders at several stations aft of the nose for angles of attack between -1° and 26° . The cylinders were tested over a Mach number range of 0.30 to 0.89, which corresponds to a Reynolds number range between 1.81×10^6 and 3.75×10^6 per foot. The pressure coefficient data obtained are presented in tabular form. Plots showing pressure coefficient as a function of radial distance in the horizontal and vertical planes of the nose and as a function of angular location on surface are also presented.

SYMBOLS

The symbols used in this paper are defined as follows:

| | |
|--------------|--|
| C_p | pressure coefficient, $\frac{p_t - p_{\infty}}{Q}$ |
| | (CP1 to CP5 in tabulated data) |
| p_t | local static pressure |
| p_{∞} | free stream static pressure |

| | |
|----------|---|
| Q | free stream dynamic pressure, lb/sq ft |
| M | Mach number |
| R | Reynolds number per foot |
| α | angle of attack, deg |
| ϕ | radial angle, deg (see fig. 1) |
| X/D | distance along X-axis, diameters (see fig. 1) |
| Y/D | distance along Y-axis, diameters (see fig. 1) |
| Z/D | distance along Z-axis, diameters (see fig. 1) |
| D | diameter of cylinder, 6.00 in. |

TEST CONDITIONS

The average test conditions for the investigation were as follows:

| <u>M</u> | <u>Q, lb/sq ft</u> | <u>R/ft</u> |
|----------|--------------------|--------------------|
| 0.303 | 128 | 1.81×10^6 |
| 0.403 | 217 | 2.31 |
| 0.505 | 320 | 2.80 |
| 0.608 | 430 | 3.13 |
| 0.713 | 542 | 3.50 |
| 0.822 | 648 | 3.75 |
| 0.885 | 703 | 3.75 |

Because of the relative bluntness of the cylinder faces, the tests were made without boundary-layer transition strips.

MODEL AND APPARATUS

The cylinder used in the investigation was basically a right circular cylinder with a diameter of 6 inches and a length of 24 inches. The forward

face of the cylinder was replaceable; one face was flat, the other face was convex which is referred to as the dome face. Details of the cylinder and faces are shown in figure 2. The model was equipped with orifices for measuring static pressure. The arrangement of the orifices can be seen in figures 2 and 3. A 5-unit multiple valve scanning system contained in the cylinder was used for measuring the orifice pressures. A photograph of the system is shown in figure 4.

The model was supported on the sting support of the Langley 7- by 10-foot high-speed tunnel.

RESULTS

Table 1 presents a log of the tests made in the Langley 7- by 10-foot high-speed tunnel. A tabulation of the data is presented in Table II. Blockage corrections calculated by the methods of reference 1 have been applied to the data.

The pressure coefficients, C_p , are shown in figure 5 as a function of the radial angle, ϕ , for several angles of attack, longitudinal locations, X/D , and Mach numbers. Similar data obtained on the face of each cylinder are shown in figure 6 as a function of the vertical distance, Y/D , and the horizontal distance, Z/D , from the axis of the cylinder.

Because of the bluntness of the two cylinders, separated flow can be expected for a considerable distance aft of the face of the cylinders. The extent of the separation at zero angle of attack is best shown in figure 7 where the values of C_p have been averaged for a given value of X/D . At a Mach number of 0.30, flow reattachment appears to have been obtained between 1.13 and 1.63 diameters aft of the cylinder face. (For zero angle of

attack where the flow is parallel to the cylinder surface attached flow is indicated by a value of $C_p = 0$.) As would be expected, increasing Mach numbers tend to delay attachment. For example, at the highest Mach number of the investigation, 0.884, attachment was not obtained at the rearmost station surveyed, $X/D = 2.13$, although the pressures were reducing in magnitude toward the rear. At the higher Mach numbers, evidence of fluctuating airflows are indicated at the rearmost stations. For example, the values of C_p in Table II at stations $X/D = 1.63$ and $X/D = 2.13$ show variations of the order of 0.3. (For the flat cylinder see Run 8, Point 191, and for the dome-face cylinder see Run 24, Point 204.)

The shape of the cylinder face had a pronounced effect on the pressures over the cylindrical portion as is indicated by figures 5 and 7. The dome-face cylinder shows more negative pressure coefficients over the forward stations than does the flat-face cylinders. An inspection of figure 6 which shows the measured pressures over the face of each cylinder also indicates higher negative pressures for the dome-face model.

The moderating influence of angle of attack on the pressure is more readily apparent with the dome-face cylinder than the flat-face cylinder. The tendency toward earlier attachment is indicated by decreasing pressure coefficients on the lower surface ($\phi = 0^\circ$ to 90°) at $\alpha = 8^\circ$ for the rear stations and at $\alpha = 12^\circ$ for the more forward stations. For the higher angles of attack, notably $\alpha = 24^\circ$, the pressure distributions about both cylinders resemble that obtained on the high fineness ratio cylinder of reference 2 where there is attached flow on the bottom surface over the full length of the cylinder.

CONCLUDING REMARKS

The results of a wind-tunnel investigation to determine the pressure distribution about two circular cylinders with blunt ends facing the air stream are summarized as follows:

At low angles of attack and a Mach number of 0.3, separated flow existed to about 1.6 diameters behind the face of the cylinders. The region of separated flow increased as the Mach number was increased to the highest obtained (0.89). The pressures on the cylindrical surface immediately behind the dome-face cylinder were more negative than those of the flat-face cylinder. As the angle of attack increased, the pressure recovery (tendency toward attachment) occurred sooner on the dome-face cylinder than on the flat-face cylinder.

REFERENCES

1. Herriot, John G.: Blockage Corrections For Three-Dimensional Flow Closed-Throat Wind Tunnels With Consideration Of The Effects Of Compressibility. NACA Report 995, 1950. (Supersedes NACA RM A7B28.)
2. Tinling, Bruce E., and Allen, Clyde Q.: An Investigation Of The Normal-Force And Vortex-Wake Characteristics Of An Ogive-Cylinder Body At Subsonic Speeds. NASA TN D-1297, April 1962.

TABLE I - TEST PROGRAM

| <u>Run</u> | <u>Mach Number</u> | <u>Model</u> |
|------------|------------------------------|--------------|
| 3 | 0.303 | Flat Face |
| 4 | 0.404 | Flat Face |
| 2 | 0.506 | Flat Face |
| 5 | 0.607 | Flat Face |
| 6 | 0.711 | Flat Face |
| 7 | 0.822 | Flat Face |
| 8 | 0.882 | Flat Face |
| 18 | 0.302 | Dome Face |
| 19 | 0.403 | Dome Face |
| 20 | 0.505 | Dome Face |
| 21 | 0.608 | Dome Face |
| 22 | 0.713 | Dome Face |
| 23 | 0.822 | Dome Face |
| 24 | 0.885 | Dome Face |
| 25 | Range ($\alpha = 0^\circ$) | Dome Face |

TABLE II - TABULATED DATA

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 87 ALPHA -1 MACH .303 Q 129.389 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5447 | .231 | 100 | -.4791 | .331 | 20 | -.4201 | .731 | 0 | -.5188 | 2.131 | 90 | .0101 | | |
| 2 | .161 | 170 | -.5267 | .231 | 90 | -.4998 | .331 | 10 | -.4076 | .931 | 180 | -.6319 | 2.131 | 0 | .3053 | | |
| 3 | .161 | 160 | -.5249 | .231 | 80 | -.5268 | .331 | 0 | -.5052 | .931 | 90 | -.6069 | 0.000 | | .5738 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5474 | .231 | 70 | -.5178 | .431 | 180 | -.5803 | .931 | 0 | -.5258 | 0.000 | | .7707 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5483 | .231 | 60 | -.4593 | .431 | 170 | -.5593 | 1.131 | 180 | -.4527 | 0.000 | | .9289 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5235 | .231 | 50 | -.4818 | .431 | 160 | -.5409 | 1.131 | 170 | -.5509 | 0.000 | | .9851 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5041 | .231 | 40 | -.4566 | .431 | 150 | -.5303 | 1.131 | 160 | -.5238 | 0.000 | | 1.0210 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5159 | .231 | 30 | -.4729 | .431 | 140 | -.5593 | 1.131 | 150 | -.4747 | 0.000 | | 1.0336 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5066 | .231 | 20 | -.4854 | .431 | 130 | -.5207 | 1.131 | 140 | -.5248 | 0.000 | | 1.0297 | .10 | 0.00 |
| 10 | .161 | 90 | -.4352 | .231 | 10 | -.4598 | .431 | 120 | -.5496 | 1.131 | 130 | -.4727 | 0.000 | | .9977 | .20 | 0.00 |
| 11 | .161 | 80 | -.4906 | .231 | 0 | -.5178 | .431 | 110 | -.4905 | 1.131 | 120 | -.5326 | 0.000 | | .9444 | .30 | 0.00 |
| 12 | .161 | 70 | -.4482 | .331 | 180 | -.5034 | .431 | 100 | -.4831 | 1.131 | 110 | -.5138 | 0.000 | | .8037 | .40 | 0.00 |
| 13 | .161 | 60 | -.4700 | .331 | 170 | -.5304 | .431 | 90 | -.5409 | 1.131 | 100 | -.5519 | 0.000 | | .5864 | .45 | 0.00 |
| 14 | .161 | 50 | -.5059 | .331 | 160 | -.5439 | .431 | 80 | -.5419 | 1.131 | 90 | -.4567 | 0.000 | | 1.0239 | 0.00 | .10 |
| 15 | .161 | 40 | -.4316 | .331 | 150 | -.5037 | .431 | 70 | -.5129 | 1.131 | 80 | -.5268 | 0.000 | | .9890 | 0.00 | .20 |
| 16 | .161 | 30 | -.4807 | .331 | 140 | -.5367 | .431 | 60 | -.5091 | 1.131 | 70 | -.5236 | 0.000 | | .9298 | 0.00 | .30 |
| 17 | .161 | 20 | -.4134 | .331 | 130 | -.5259 | .431 | 50 | -.4907 | 1.131 | 60 | -.5509 | 0.000 | | .7717 | 0.00 | .40 |
| 18 | .161 | 10 | -.4554 | .331 | 120 | -.4598 | .431 | 40 | -.4946 | 1.131 | 50 | -.5449 | 0.000 | | .5816 | 0.00 | .45 |
| 19 | .161 | 0 | -.4852 | .331 | 110 | -.5070 | .431 | 30 | -.5178 | 1.131 | 40 | -.4948 | .161 | 270 | -.5099 | | |
| 20 | .231 | 180 | -.5402 | .331 | 100 | -.5430 | .431 | 20 | -.4878 | 1.131 | 30 | -.5038 | .231 | 270 | -.5128 | | |
| 21 | .231 | 170 | -.5243 | .331 | 90 | -.5349 | .431 | 10 | -.4637 | 1.131 | 20 | -.4777 | .331 | 270 | -.5235 | | |
| 22 | .231 | 160 | -.5066 | .331 | 80 | -.4917 | .431 | 0 | -.4917 | 1.131 | 10 | -.5068 | .431 | 270 | -.5477 | | |
| 23 | .231 | 150 | -.5357 | .331 | 70 | -.5100 | .531 | 180 | -.5602 | 1.131 | 0 | -.4787 | .531 | 270 | -.5584 | | |
| 24 | .231 | 140 | -.4987 | .331 | 60 | -.4800 | .531 | 90 | -.5100 | | | .731 | 270 | -.6089 | | | |
| 25 | .231 | 130 | -.5267 | .331 | 50 | -.4494 | .531 | 0 | -.4936 | 1.631 | 90 | -.1462 | .931 | 270 | -.6050 | | |
| 26 | .231 | 120 | -.4353 | .331 | 40 | -.4899 | .731 | 180 | -.6123 | 1.631 | 0 | -.1502 | 1.131 | 270 | -.5109 | | |
| 27 | .231 | 110 | -.4951 | .331 | 30 | -.4773 | .731 | 90 | -.5400 | 2.131 | 180 | .0752 | 1.631 | 270 | -.0733 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 88 ALPHA 0 MACH .303 Q 129.486 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4068 | .231 | 100 | -.4967 | .331 | 20 | -.4855 | .731 | 0 | -.5614 | 2.131 | 90 | .0838 | | |
| 2 | .161 | 170 | -.5173 | .231 | 90 | -.5012 | .331 | 10 | -.4942 | .931 | 180 | -.5604 | 2.131 | 0 | .0121 | | |
| 3 | .161 | 160 | -.5100 | .231 | 80 | -.4958 | .331 | 0 | -.5010 | .931 | 90 | -.5795 | 0.000 | | .5908 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4735 | .231 | 70 | -.5084 | .431 | 180 | -.4942 | .931 | 0 | -.5875 | 0.000 | | .7847 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5028 | .231 | 60 | -.5309 | .431 | 170 | -.5338 | 1.131 | 180 | -.5064 | 0.000 | | .9340 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4933 | .231 | 50 | -.4887 | .431 | 160 | -.5444 | 1.131 | 170 | -.4874 | 0.000 | | .9941 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5082 | .231 | 40 | -.5111 | .431 | 150 | -.5646 | 1.131 | 160 | -.4854 | 0.000 | | 1.0271 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4956 | .231 | 30 | -.4895 | .431 | 140 | -.5154 | 1.131 | 150 | -.5424 | 0.000 | | 1.0309 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4830 | .231 | 20 | -.4931 | .431 | 130 | -.4952 | 1.131 | 140 | -.4844 | 0.000 | | .9912 | .10 | 0.00 |
| 10 | .161 | 90 | -.4830 | .231 | 10 | -.5156 | .431 | 120 | -.4875 | 1.131 | 130 | -.5124 | 0.000 | | 1.0009 | .20 | 0.00 |
| 11 | .161 | 80 | -.4848 | .231 | 0 | -.4967 | .431 | 110 | -.5106 | 1.131 | 120 | -.5544 | 0.000 | | .9350 | .30 | 0.00 |
| 12 | .161 | 70 | -.4758 | .331 | 180 | -.5012 | .431 | 100 | -.5135 | 1.131 | 110 | -.5424 | 0.000 | | .7915 | .40 | 0.00 |
| 13 | .161 | 60 | -.4651 | .331 | 170 | -.5039 | .431 | 90 | -.5029 | 1.131 | 100 | -.5104 | 0.000 | | .5821 | .45 | 0.00 |
| 14 | .161 | 50 | -.4474 | .331 | 160 | -.4743 | .431 | 80 | -.4884 | 1.131 | 90 | -.6055 | 0.000 | | 1.0319 | 0.00 | .10 |
| 15 | .161 | 40 | -.4321 | .331 | 150 | -.4752 | .431 | 70 | -.5125 | 1.131 | 80 | -.5134 | 0.000 | | .9980 | 0.00 | .20 |
| 16 | .161 | 30 | -.4538 | .331 | 140 | -.5075 | .431 | 60 | -.5096 | 1.131 | 70 | -.4744 | 0.000 | | .9350 | 0.00 | .30 |
| 17 | .161 | 20 | -.4866 | .331 | 130 | -.4922 | .431 | 50 | -.5104 | 1.131 | 60 | -.5194 | 0.000 | | .7847 | 0.00 | .40 |
| 18 | .161 | 10 | -.4722 | .331 | 120 | -.5111 | .431 | 40 | -.5174 | 1.131 | 50 | -.4894 | 0.000 | | .5772 | 0.00 | .45 |
| 19 | .161 | 0 | -.5191 | .331 | 110 | -.4797 | .431 | 30 | -.5482 | 1.131 | 40 | -.5765 | .161 | 270 | -.4940 | | |
| 20 | .231 | 180 | -.5010 | .331 | 100 | -.4770 | .431 | 20 | -.5203 | 1.131 | 30 | -.5364 | .231 | 270 | -.4930 | | |
| 21 | .231 | 170 | -.4886 | .331 | 90 | -.4476 | .431 | 10 | -.4913 | 1.131 | 20 | -.5194 | .331 | 270 | -.4988 | | |
| 22 | .231 | 160 | -.4357 | .331 | 80 | -.5066 | .431 | 0 | -.5241 | 1.131 | 10 | -.5314 | .431 | 270 | -.4979 | | |
| 23 | .231 | 150 | -.4326 | .331 | 70 | -.4842 | .531 | 180 | -.5357 | 1.131 | 0 | -.5434 | .531 | 270 | -.5337 | | |
| 24 | .231 | 140 | -.4875 | .331 | 60 | -.4761 | .531 | 90 | -.5019 | | | .731 | 270 | -.5745 | | | |
| 25 | .231 | 130 | -.4776 | .331 | 50 | -.4869 | .531 | 0 | -.5077 | 1.631 | 90 | -.1451 | .931 | 270 | -.6036 | | |
| 26 | .231 | 120 | -.4794 | .331 | 40 | -.4873 | .731 | 180 | -.5530 | 1.631 | 0 | -.1191 | 1.131 | 270 | -.5027 | | |
| 27 | .231 | 110 | -.4384 | .331 | 30 | -.5039 | .731 | 90 | -.5936 | 2.131 | 180 | .0831 | 1.631 | 270 | -.1518 | | |

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| 7 X 10 HIGH-SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4582 | .231 | 100 | -.4684 | .331 | 20 | -.5315 | .731 | 0 | -.6063 | 2.131 | 90 | .0393 | | |
| 2 | .161 | 170 | -.4682 | .231 | 90 | -.5316 | .331 | 10 | -.5992 | .931 | 180 | -.5321 | 2.131 | 0 | .1336 | | |
| 3 | .161 | 160 | -.4438 | .231 | 80 | -.5172 | .331 | 0 | -.5257 | .931 | 90 | -.5873 | 0.000 | | .6159 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4100 | .231 | 70 | -.5226 | .431 | 180 | -.4658 | .931 | 0 | -.5812 | 0.000 | | .8006 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4001 | .231 | 60 | -.5488 | .431 | 170 | -.4396 | 1.131 | 180 | -.5310 | 0.000 | | .9455 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4836 | .231 | 50 | -.5037 | .431 | 160 | -.5238 | 1.131 | 170 | -.4799 | 0.000 | | 1.0038 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4754 | .231 | 40 | -.5605 | .431 | 150 | -.4793 | 1.131 | 160 | -.4688 | 0.000 | | 1.0272 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4745 | .231 | 30 | -.5560 | .431 | 140 | -.4803 | 1.131 | 150 | -.5039 | 0.000 | | 1.0340 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4803 | .231 | 20 | -.5569 | .431 | 130 | -.5286 | 1.131 | 140 | -.5411 | 0.000 | | 1.0204 | .10 | 0.00 |
| 10 | .161 | 90 | -.5071 | .231 | 10 | -.5362 | .431 | 120 | -.5354 | 1.131 | 130 | -.4748 | 0.000 | | .9766 | .20 | 0.00 |
| 11 | .161 | 80 | -.4953 | .231 | 0 | -.5316 | .431 | 110 | -.5074 | 1.131 | 120 | -.5441 | 0.000 | | .9144 | .30 | 0.00 |
| 12 | .161 | 70 | -.5234 | .331 | 180 | -.4595 | .431 | 100 | -.5180 | 1.131 | 110 | -.4819 | 0.000 | | .7744 | .40 | 0.00 |
| 13 | .161 | 60 | -.5107 | .331 | 170 | -.4884 | .431 | 90 | -.5315 | 1.131 | 100 | -.5210 | 0.000 | | .5644 | .45 | 0.00 |
| 14 | .161 | 50 | -.5397 | .331 | 160 | -.4586 | .431 | 80 | -.5325 | 1.131 | 90 | -.5752 | 0.000 | | 1.0204 | 0.00 | .10 |
| 15 | .161 | 40 | -.5180 | .331 | 150 | -.4550 | .431 | 70 | -.5238 | 1.131 | 80 | -.5220 | 0.000 | | .9961 | 0.00 | .20 |
| 16 | .161 | 30 | -.5490 | .331 | 140 | -.4730 | .431 | 60 | -.5507 | 1.131 | 70 | -.5461 | 0.000 | | .9329 | 0.00 | .30 |
| 17 | .161 | 20 | -.5198 | .331 | 130 | -.4640 | .431 | 50 | -.5315 | 1.131 | 60 | -.5421 | 0.000 | | .7909 | 0.00 | .40 |
| 18 | .161 | 10 | -.5885 | .331 | 120 | -.5091 | .431 | 40 | -.5818 | 1.131 | 50 | -.4276 | 0.000 | | .5712 | 0.00 | .45 |
| 19 | .161 | 0 | -.5460 | .331 | 110 | -.5055 | .431 | 30 | -.5654 | 1.131 | 40 | -.5170 | .161 | 270 | -.5111 | | |
| 20 | .231 | 180 | -.4510 | .331 | 100 | -.5235 | .431 | 20 | -.5470 | 1.131 | 30 | -.5100 | .231 | 270 | -.5296 | | |
| 21 | .231 | 170 | -.4745 | .331 | 90 | -.5280 | .431 | 10 | -.5702 | 1.131 | 20 | -.4337 | .331 | 270 | -.5276 | | |
| 22 | .231 | 160 | -.4393 | .331 | 80 | -.5722 | .431 | 0 | -.5460 | 1.131 | 10 | -.5019 | .431 | 270 | -.5296 | | |
| 23 | .231 | 150 | -.4816 | .331 | 70 | -.5443 | .531 | 180 | -.4948 | 1.131 | 0 | -.4357 | .531 | 270 | -.5500 | | |
| 24 | .231 | 140 | -.4953 | .331 | 60 | -.5398 | .531 | 90 | -.5625 | | | .731 | 270 | -.5918 | | | |
| 25 | .231 | 130 | -.4610 | .331 | 50 | -.5452 | .531 | 0 | -.5818 | 1.631 | 90 | -.1034 | .931 | 270 | -.6268 | | |
| 26 | .231 | 120 | -.4763 | .331 | 40 | -.5280 | .731 | 180 | -.5654 | 1.631 | 0 | .0000 | 1.131 | 270 | -.4945 | | |
| 27 | .231 | 110 | -.4962 | .331 | 30 | -.5695 | .731 | 90 | -.5954 | 2.131 | 180 | -.0231 | 1.631 | 270 | -.0910 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4231 | .231 | 100 | -.5646 | .331 | 20 | -.6394 | .731 | 0 | -.7490 | 2.131 | 90 | .0857 | | |
| 2 | .161 | 170 | -.3952 | .231 | 90 | -.5718 | .331 | 10 | -.6268 | .931 | 180 | -.5450 | 2.131 | 0 | .1051 | | |
| 3 | .161 | 160 | -.4736 | .231 | 80 | -.5889 | .331 | 0 | -.5892 | .931 | 90 | -.6140 | 0.000 | | .6902 | -.45 | 0.00 |
| 4 | .161 | 150 | -.3925 | .231 | 70 | -.5880 | .431 | 180 | -.4437 | .931 | 0 | -.5360 | 0.000 | | .8762 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4628 | .231 | 60 | -.5655 | .431 | 170 | -.4803 | 1.131 | 180 | -.4660 | 0.000 | | 1.0205 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4889 | .231 | 50 | -.5916 | .431 | 160 | -.4697 | 1.131 | 170 | -.5190 | 0.000 | | 1.0728 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5078 | .231 | 40 | -.5862 | .431 | 150 | -.5314 | 1.131 | 160 | -.5130 | 0.000 | | 1.0883 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4988 | .231 | 30 | -.5691 | .431 | 140 | -.4746 | 1.131 | 150 | -.4720 | 0.000 | | 1.0864 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5313 | .231 | 20 | -.5970 | .431 | 130 | -.5411 | 1.131 | 140 | -.5180 | 0.000 | | 1.0796 | .10 | 0.00 |
| 10 | .161 | 90 | -.5466 | .231 | 10 | -.5727 | .431 | 120 | -.5218 | 1.131 | 130 | -.4660 | 0.000 | | 1.0418 | .20 | 0.00 |
| 11 | .161 | 80 | -.5601 | .231 | 0 | -.5952 | .431 | 110 | -.5603 | 1.131 | 120 | -.5890 | 0.000 | | .9662 | .30 | 0.00 |
| 12 | .161 | 70 | -.5836 | .331 | 180 | -.4649 | .431 | 100 | -.5796 | 1.131 | 110 | -.5120 | 0.000 | | .8016 | .40 | 0.00 |
| 13 | .161 | 60 | -.5736 | .331 | 170 | -.4263 | .431 | 90 | -.5719 | 1.131 | 100 | -.5330 | 0.000 | | .6127 | .45 | 0.00 |
| 14 | .161 | 50 | -.5944 | .331 | 160 | -.4604 | .431 | 80 | -.5950 | 1.131 | 90 | -.5180 | 0.000 | | 1.0776 | 0.00 | .10 |
| 15 | .161 | 40 | -.6025 | .331 | 150 | -.4838 | .431 | 70 | -.6230 | 1.131 | 80 | -.4200 | 0.000 | | 1.0466 | 0.00 | .20 |
| 16 | .161 | 30 | -.5637 | .331 | 140 | -.4553 | .431 | 60 | -.5748 | 1.131 | 70 | -.4500 | 0.000 | | .9866 | 0.00 | .30 |
| 17 | .161 | 20 | -.6043 | .331 | 130 | -.4820 | .431 | 50 | -.6143 | 1.131 | 60 | -.3810 | 0.000 | | .8393 | 0.00 | .40 |
| 18 | .161 | 10 | -.6079 | .331 | 120 | -.4904 | .431 | 40 | -.6394 | 1.131 | 50 | -.3630 | 0.000 | | .6321 | 0.00 | .45 |
| 19 | .161 | 0 | -.5863 | .331 | 110 | -.4856 | .431 | 30 | -.5950 | 1.131 | 40 | -.3900 | .161 | 270 | -.5014 | | |
| 20 | .231 | 180 | -.4159 | .331 | 100 | -.5305 | .431 | 20 | -.6124 | 1.131 | 30 | -.3050 | .231 | 270 | -.4975 | | |
| 21 | .231 | 170 | -.4195 | .331 | 90 | -.5602 | .431 | 10 | -.5873 | 1.131 | 20 | -.3460 | .331 | 270 | -.5178 | | |
| 22 | .231 | 160 | -.4529 | .331 | 80 | -.5781 | .431 | 0 | -.6268 | 1.131 | 10 | -.2850 | .431 | 270 | -.5246 | | |
| 23 | .231 | 150 | -.4808 | .331 | 70 | -.5835 | .531 | 180 | -.5324 | 1.131 | 0 | -.2720 | .531 | 270 | -.5333 | | |
| 24 | .231 | 140 | -.4979 | .331 | 60 | -.5871 | .531 | 90 | -.6076 | | | .731 | 270 | -.5740 | | | |
| 25 | .231 | 130 | -.5051 | .331 | 50 | -.5853 | .531 | 0 | -.6625 | 1.631 | 90 | -.0259 | .931 | 270 | -.5750 | | |
| 26 | .231 | 120 | -.5502 | .331 | 40 | -.6221 | .731 | 180 | -.5507 | 1.631 | 0 | .0711 | 1.131 | 270 | -.3861 | | |
| 27 | .231 | 110 | -.5340 | .331 | 30 | -.5943 | .731 | 90 | -.6239 | 2.131 | 180 | -.0639 | 1.631 | 270 | -.0431 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 91 ALPHA 6 MACH .303 Q 129.874 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 160 | -.4264 | .231 | 100 | -.6028 | .331 | 20 | -.6542 | .731 | 0 | -.6565 | 2.131 | 90 | .0189 | | |
| 2 | .161 | 170 | -.4473 | .231 | 90 | -.6010 | .331 | 10 | -.6446 | .931 | 180 | -.5487 | 2.131 | 0 | .0334 | | |
| 3 | .161 | 160 | -.4150 | .231 | 80 | -.6288 | .331 | 0 | -.6735 | .931 | 90 | -.6406 | 0.000 | | .6597 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4186 | .231 | 70 | -.6207 | .431 | 180 | -.4687 | .931 | 0 | -.3701 | 0.000 | | .8443 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4743 | .231 | 60 | -.6422 | .431 | 170 | -.4754 | 1.131 | 180 | -.4530 | 0.000 | | .9757 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5148 | .231 | 50 | -.6324 | .431 | 160 | -.4840 | 1.131 | 170 | -.4764 | 0.000 | | 1.0221 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5561 | .231 | 40 | -.6512 | .431 | 150 | -.5187 | 1.131 | 160 | -.4559 | 0.000 | | 1.0289 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5624 | .231 | 30 | -.6548 | .431 | 140 | -.5167 | 1.131 | 150 | -.4470 | 0.000 | | 1.0269 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5804 | .231 | 20 | -.6306 | .431 | 130 | -.5600 | 1.131 | 140 | -.4440 | 0.000 | | 1.0057 | .10 | 0.00 |
| 10 | .161 | 90 | -.5921 | .231 | 10 | -.6593 | .431 | 120 | -.5754 | 1.131 | 130 | -.5348 | 0.000 | | .9554 | .20 | 0.00 |
| 11 | .161 | 60 | -.6047 | .231 | 0 | -.6207 | .431 | 110 | -.6081 | 1.131 | 120 | -.5228 | 0.000 | | .8868 | .30 | 0.00 |
| 12 | .161 | 70 | -.6218 | .331 | 180 | -.5069 | .431 | 100 | -.6254 | 1.131 | 110 | -.5048 | 0.000 | | .7167 | .40 | 0.00 |
| 13 | .161 | 60 | -.6551 | .331 | 170 | -.5338 | .431 | 90 | -.6408 | 1.131 | 100 | -.4749 | 0.000 | | .5147 | .45 | 0.00 |
| 14 | .161 | 50 | -.6137 | .331 | 160 | -.4764 | .431 | 80 | -.6215 | 1.131 | 90 | -.4669 | 0.000 | | 1.0173 | 0.00 | .10 |
| 15 | .161 | 40 | -.6200 | .331 | 150 | -.4880 | .431 | 70 | -.6504 | 1.131 | 80 | -.3142 | 0.000 | | .9892 | 0.00 | .20 |
| 16 | .161 | 30 | -.6245 | .331 | 140 | -.5544 | .431 | 60 | -.6581 | 1.131 | 70 | -.2973 | 0.000 | | .9206 | 0.00 | .30 |
| 17 | .161 | 20 | -.6425 | .331 | 130 | -.5580 | .431 | 50 | -.6677 | 1.131 | 60 | -.2075 | 0.000 | | .7621 | 0.00 | .40 |
| 18 | .161 | 10 | -.6281 | .331 | 120 | -.5804 | .431 | 40 | -.6562 | 1.131 | 50 | -.1546 | 0.000 | | .5504 | 0.00 | .45 |
| 19 | .161 | 0 | -.6308 | .331 | 110 | -.5831 | .431 | 30 | -.6658 | 1.131 | 40 | -.0817 | .161 | 270 | -.6394 | | |
| 20 | .231 | 180 | -.4222 | .331 | 100 | -.6225 | .431 | 20 | -.6619 | 1.131 | 30 | -.1117 | .231 | 270 | -.6249 | | |
| 21 | .231 | 170 | -.4455 | .331 | 90 | -.6386 | .431 | 10 | -.6840 | 1.131 | 20 | -.0049 | .331 | 270 | -.6094 | | |
| 22 | .231 | 160 | -.4491 | .331 | 80 | -.6512 | .431 | 0 | -.6773 | 1.131 | 10 | -.0149 | .431 | 270 | -.6288 | | |
| 23 | .231 | 150 | -.4159 | .331 | 70 | -.6243 | .531 | 180 | -.5215 | 1.131 | 0 | .0779 | .531 | 270 | -.6645 | | |
| 24 | .231 | 140 | -.5130 | .331 | 60 | -.6413 | .531 | 90 | -.6360 | | | .731 | 270 | -.7593 | | | |
| 25 | .231 | 130 | -.5220 | .331 | 50 | -.6378 | .531 | 0 | -.6696 | 1.631 | 90 | -.0288 | .931 | 270 | -.6065 | | |
| 26 | .231 | 120 | -.5570 | .331 | 40 | -.6467 | .731 | 180 | -.6523 | 1.631 | 0 | .0510 | 1.131 | 270 | -.4007 | | |
| 27 | .231 | 110 | -.5741 | .331 | 30 | -.6611 | .731 | 90 | -.6994 | 2.131 | 180 | .0041 | 1.631 | 270 | -.0014 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 3 POINT 92 ALPHA 8 MACH .303 Q 129.680 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4156 | .231 | 100 | -.6315 | .331 | 20 | -.7198 | .731 | 0 | -.4457 | 2.131 | 90 | -.0779 | | |
| 2 | .161 | 170 | -.4507 | .231 | 90 | -.6800 | .331 | 10 | -.7159 | .931 | 180 | -.5456 | 2.131 | 0 | .0111 | | |
| 3 | .161 | 160 | -.4667 | .231 | 80 | -.6663 | .331 | 0 | -.7072 | .931 | 90 | -.5926 | 0.000 | | .6858 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4732 | .231 | 70 | -.6809 | .431 | 180 | -.4896 | .931 | 0 | -.0669 | 0.000 | | .8668 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4922 | .231 | 60 | -.6598 | .431 | 170 | -.5272 | 1.131 | 180 | -.4746 | 0.000 | | .9859 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5597 | .231 | 50 | -.6782 | .431 | 160 | -.5272 | 1.131 | 170 | -.4497 | 0.000 | | 1.0139 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5813 | .231 | 40 | -.6935 | .431 | 150 | -.5772 | 1.131 | 160 | -.4706 | 0.000 | | 1.0207 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6074 | .231 | 30 | -.6755 | .431 | 140 | -.5609 | 1.131 | 150 | -.5125 | 0.000 | | 1.0120 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6299 | .231 | 20 | -.6657 | .431 | 130 | -.5898 | 1.131 | 140 | -.4686 | 0.000 | | .9859 | .10 | 0.00 |
| 10 | .161 | 90 | -.6326 | .231 | 10 | -.7213 | .431 | 120 | -.5898 | 1.131 | 130 | -.5636 | 0.000 | | .9384 | .20 | 0.00 |
| 11 | .161 | 80 | -.6714 | .231 | 0 | -.7797 | .431 | 110 | -.6408 | 1.131 | 120 | -.4427 | 0.000 | | .8503 | .30 | 0.00 |
| 12 | .161 | 70 | -.6479 | .331 | 180 | -.5175 | .431 | 100 | -.6206 | 1.131 | 110 | -.5516 | 0.000 | | .6722 | .40 | 0.00 |
| 13 | .161 | 60 | -.6493 | .331 | 170 | -.5301 | .431 | 90 | -.6880 | 1.131 | 100 | -.3807 | 0.000 | | .4670 | .45 | 0.00 |
| 14 | .161 | 50 | -.6898 | .331 | 160 | -.5220 | .431 | 80 | -.6861 | 1.131 | 90 | -.3427 | 0.000 | | .9655 | 0.00 | .10 |
| 15 | .161 | 40 | -.6894 | .331 | 150 | -.5597 | .431 | 70 | -.6918 | 1.131 | 80 | -.2967 | 0.000 | | .9675 | 0.00 | .20 |
| 16 | .161 | 30 | -.6975 | .331 | 140 | -.5409 | .431 | 60 | -.7265 | 1.131 | 70 | -.1598 | 0.000 | | .9113 | 0.00 | .30 |
| 17 | .161 | 20 | -.6732 | .331 | 130 | -.5624 | .431 | 50 | -.7063 | 1.131 | 60 | -.0869 | 0.000 | | .7632 | 0.00 | .40 |
| 18 | .161 | 10 | -.6597 | .331 | 120 | -.6226 | .431 | 40 | -.7111 | 1.131 | 50 | -.0863 | 0.000 | | .5406 | 0.00 | .45 |
| 19 | .161 | 0 | -.6898 | .331 | 110 | -.6226 | .431 | 30 | -.7583 | 1.131 | 40 | .0261 | .161 | 270 | -.6878 | | |
| 20 | .231 | 180 | -.4349 | .331 | 100 | -.6100 | .431 | 20 | -.7217 | 1.131 | 30 | .0820 | .231 | 270 | -.6839 | | |
| 21 | .231 | 170 | -.4597 | .331 | 90 | -.6333 | .431 | 10 | -.7178 | 1.131 | 20 | .0720 | .331 | 270 | -.6394 | | |
| 22 | .231 | 160 | -.4363 | .331 | 80 | -.6172 | .431 | 0 | -.7092 | 1.131 | 10 | .0870 | .431 | 270 | -.6617 | | |
| 23 | .231 | 150 | -.5273 | .331 | 70 | -.6468 | .531 | 180 | -.5474 | 1.131 | 0 | .1060 | .531 | 270 | -.6404 | | |
| 24 | .231 | 140 | -.5327 | .331 | 60 | -.6818 | .531 | 90 | -.6716 | | | .731 | 270 | -.7469 | | | |
| 25 | .231 | 130 | -.5534 | .331 | 50 | -.6549 | .531 | 0 | -.7708 | 1.631 | 90 | -.0769 | .931 | 270 | -.5687 | | |
| 26 | .231 | 120 | -.5846 | .331 | 40 | -.6971 | .731 | 180 | -.5866 | 1.631 | 0 | .0261 | 1.131 | 270 | -.3519 | | |
| 27 | .231 | 110 | -.6083 | .331 | 30 | -.7177 | .731 | 90 | -.7149 | 2.131 | 180 | .0231 | 1.631 | 270 | -.0683 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 3 POINT 95 ALPHA 10 FAC1 .303 Q 129.777 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4738 | .231 | 100 | -.6266 | .331 | 20 | -.7163 | .731 | 0 | -.1727 | 2.131 | 90 | -.0411 | | |
| 2 | .161 | 170 | -.4698 | .231 | 90 | -.6616 | .331 | 10 | -.7510 | .931 | 180 | -.5392 | 2.131 | 0 | .0247 | | |
| 3 | .161 | 160 | -.4630 | .231 | 80 | -.6849 | .331 | 0 | -.7629 | .931 | 90 | -.4673 | 0.000 | | .7211 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5350 | .231 | 70 | -.7280 | .431 | 180 | -.5239 | .931 | 0 | .0860 | 0.000 | | .8932 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5422 | .231 | 60 | -.6957 | .431 | 170 | -.5114 | 1.131 | 180 | -.4223 | 0.000 | | 1.0093 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5971 | .231 | 50 | -.6822 | .431 | 160 | -.5287 | 1.131 | 170 | -.4323 | 0.000 | | 1.0364 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6100 | .231 | 40 | -.6795 | .431 | 150 | -.5441 | 1.131 | 160 | -.4423 | 0.000 | | 1.0461 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5971 | .231 | 30 | -.7010 | .431 | 140 | -.5701 | 1.131 | 150 | -.4733 | 0.000 | | 1.0248 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6430 | .231 | 20 | -.7100 | .431 | 130 | -.5903 | 1.131 | 140 | -.5442 | 0.000 | | .9822 | .10 | 0.00 |
| 10 | .161 | 90 | -.6672 | .231 | 10 | -.7037 | .431 | 120 | -.6239 | 1.131 | 130 | -.4553 | 0.000 | | .9339 | .20 | 0.00 |
| 11 | .161 | 80 | -.6610 | .231 | 0 | -.6876 | .431 | 110 | -.6307 | 1.131 | 120 | -.4783 | 0.000 | | .8362 | .30 | 0.00 |
| 12 | .161 | 70 | -.7239 | .331 | 180 | -.5024 | .431 | 100 | -.6971 | 1.131 | 110 | -.4054 | 0.000 | | .6801 | .40 | 0.00 |
| 13 | .161 | 60 | -.6879 | .331 | 170 | -.4821 | .431 | 90 | -.6567 | 1.131 | 100 | -.3694 | 0.000 | | .4561 | .45 | 0.00 |
| 14 | .161 | 50 | -.6787 | .331 | 160 | -.4795 | .431 | 80 | -.6807 | 1.131 | 90 | -.3345 | 0.000 | | 1.0093 | 0.00 | .10 |
| 15 | .161 | 40 | -.6870 | .331 | 150 | -.5369 | .431 | 70 | -.7336 | 1.131 | 80 | -.1907 | 0.000 | | .9773 | 0.00 | .20 |
| 16 | .161 | 30 | -.7338 | .331 | 140 | -.6015 | .431 | 60 | -.7943 | 1.131 | 70 | -.1086 | 0.000 | | .9116 | 0.00 | .30 |
| 17 | .161 | 20 | -.7050 | .331 | 130 | -.6015 | .431 | 50 | -.7481 | 1.131 | 60 | -.0718 | 0.000 | | .7540 | 0.00 | .40 |
| 18 | .161 | 10 | -.7050 | .331 | 120 | -.6364 | .431 | 40 | -.7604 | 1.131 | 50 | -.0259 | 0.000 | | .5373 | 0.00 | .45 |
| 19 | .161 | 0 | -.6699 | .331 | 110 | -.6024 | .431 | 30 | -.7587 | 1.131 | 40 | -.0129 | .161 | 270 | -.6283 | | |
| 20 | .231 | 180 | -.4486 | .331 | 100 | -.6741 | .431 | 20 | -.8222 | 1.131 | 30 | .0410 | .231 | 270 | -.6641 | | |
| 21 | .231 | 170 | -.4720 | .331 | 90 | -.6687 | .431 | 10 | -.8337 | 1.131 | 20 | .0570 | .331 | 270 | -.6834 | | |
| 22 | .231 | 160 | -.4747 | .331 | 80 | -.7190 | .431 | 0 | -.7664 | 1.131 | 10 | .0540 | .431 | 270 | -.6757 | | |
| 23 | .231 | 150 | -.4909 | .331 | 70 | -.6562 | .531 | 180 | -.5104 | 1.131 | 0 | .0750 | .531 | 270 | -.6631 | | |
| 24 | .231 | 140 | -.5506 | .331 | 60 | -.6685 | .531 | 90 | -.6961 | | | .731 | 270 | -.6767 | | | |
| 25 | .231 | 130 | -.5782 | .331 | 50 | -.7208 | .531 | 0 | -.6913 | 1.631 | 90 | -.1118 | .931 | 270 | -.4813 | | |
| 26 | .231 | 120 | -.5998 | .331 | 40 | -.7387 | .731 | 180 | -.5951 | 1.631 | 0 | .0071 | 1.131 | 270 | -.2384 | | |
| 27 | .231 | 110 | -.6556 | .331 | 30 | -.7172 | .731 | 90 | -.7086 | 2.131 | 180 | -.0229 | 1.631 | 270 | -.1320 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 3 POINT 94 ALPHA 12 MACH .304 Q 129.970 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4254 | .231 | 100 | -.6489 | .331 | 20 | -.7402 | .731 | 0 | .0858 | 2.131 | 90 | -.1405 | | |
| 2 | .161 | 170 | -.4497 | .231 | 90 | -.7144 | .331 | 10 | -.7950 | .931 | 180 | -.5553 | 2.131 | 0 | .0314 | | |
| 3 | .161 | 160 | -.4829 | .231 | 80 | -.7376 | .331 | 0 | -.7863 | .931 | 90 | -.4127 | 0.000 | | .7493 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5252 | .231 | 70 | -.7089 | .431 | 180 | -.5192 | .931 | 0 | .0888 | 0.000 | | .9151 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5764 | .231 | 60 | -.7286 | .431 | 170 | -.5423 | 1.131 | 180 | -.4237 | 0.000 | | 1.0049 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6076 | .231 | 50 | -.7531 | .431 | 160 | -.5692 | 1.131 | 170 | -.3868 | 0.000 | | 1.0368 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6357 | .231 | 40 | -.7053 | .431 | 150 | -.5682 | 1.131 | 160 | -.4995 | 0.000 | | 1.0233 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7049 | .231 | 30 | -.7672 | .431 | 140 | -.6624 | 1.131 | 150 | -.3756 | 0.000 | | 1.0001 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6788 | .231 | 20 | -.7546 | .431 | 130 | -.6307 | 1.131 | 140 | -.4486 | 0.000 | | .9566 | .10 | 0.00 |
| 10 | .161 | 90 | -.6653 | .231 | 10 | -.7215 | .431 | 120 | -.6249 | 1.131 | 130 | -.4815 | 0.000 | | .8919 | .20 | 0.00 |
| 11 | .161 | 80 | -.6687 | .231 | 0 | -.6982 | .431 | 110 | -.6220 | 1.131 | 120 | -.4586 | 0.000 | | .8098 | .30 | 0.00 |
| 12 | .161 | 70 | -.6908 | .331 | 180 | -.5029 | .431 | 100 | -.6499 | 1.131 | 110 | -.4506 | 0.000 | | .6234 | .40 | 0.00 |
| 13 | .161 | 60 | -.7094 | .331 | 170 | -.4930 | .431 | 90 | -.6912 | 1.131 | 100 | -.3836 | 0.000 | | .4206 | .45 | 0.00 |
| 14 | .161 | 50 | -.6959 | .331 | 160 | -.5459 | .431 | 80 | -.7133 | 1.131 | 90 | -.2751 | 0.000 | | .9904 | 0.00 | .10 |
| 15 | .161 | 40 | -.7408 | .331 | 150 | -.5671 | .431 | 70 | -.7786 | 1.131 | 80 | -.2292 | 0.000 | | .9634 | 0.00 | .20 |
| 16 | .161 | 30 | -.7148 | .331 | 140 | -.5593 | .431 | 60 | -.7863 | 1.131 | 70 | -.1704 | 0.000 | | .8968 | 0.00 | .30 |
| 17 | .161 | 20 | -.7570 | .331 | 130 | -.6068 | .431 | 50 | -.8622 | 1.131 | 60 | -.1196 | 0.000 | | .7374 | 0.00 | .40 |
| 18 | .161 | 10 | -.6959 | .331 | 120 | -.6229 | .431 | 40 | -.7950 | 1.131 | 50 | -.0866 | 0.000 | | .5211 | 0.00 | .45 |
| 19 | .161 | 0 | -.7219 | .331 | 110 | -.6767 | .431 | 30 | -.7911 | 1.131 | 40 | -.0448 | .161 | 270 | -.7036 | | |
| 20 | .231 | 180 | -.4587 | .331 | 100 | -.7071 | .431 | 20 | -.7498 | 1.131 | 30 | -.0009 | .231 | 270 | -.6553 | | |
| 21 | .231 | 170 | -.5045 | .331 | 90 | -.7134 | .431 | 10 | -.6970 | 1.131 | 20 | .0290 | .331 | 270 | -.7355 | | |
| 22 | .231 | 160 | -.4730 | .331 | 80 | -.6480 | .431 | 0 | -.6922 | 1.131 | 10 | .0510 | .431 | 270 | -.6544 | | |
| 23 | .231 | 150 | -.5261 | .331 | 70 | -.6740 | .531 | 180 | -.5365 | 1.131 | 0 | .0500 | .531 | 270 | -.7316 | | |
| 24 | .231 | 140 | -.5006 | .331 | 60 | -.7501 | .531 | 90 | -.7469 | | | .731 | 270 | -.6959 | | | |
| 25 | .231 | 130 | -.6207 | .331 | 50 | -.7268 | .531 | 0 | -.4760 | 1.631 | 90 | -.2113 | .931 | 270 | -.4766 | | |
| 26 | .231 | 120 | -.6114 | .331 | 40 | -.7358 | .731 | 180 | -.5432 | 1.631 | 0 | .0011 | 1.131 | 270 | -.3289 | | |
| 27 | .231 | 110 | -.6734 | .331 | 30 | -.8057 | .731 | 90 | -.7268 | 2.131 | 180 | -.0468 | 1.631 | 270 | -.1975 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 3 POINT 95 ALPHA 14 MACH .302 Q 129.001 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4713 | .231 | 100 | -.7300 | .331 | 20 | -.8427 | .731 | 0 | .0984 | 2.131 | 90 | -.1874 | | |
| 2 | .161 | 170 | -.4830 | .231 | 90 | -.7432 | .331 | 10 | -.8330 | .931 | 180 | -.5797 | 2.131 | 0 | .0578 | | |
| 3 | .161 | 160 | -.5102 | .231 | 80 | -.7117 | .331 | 0 | -.8069 | .931 | 90 | -.3999 | 0.000 | | .8032 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5211 | .231 | 70 | -.6999 | .431 | 180 | -.5465 | .931 | 0 | .0502 | 0.000 | | .9326 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5654 | .231 | 60 | -.7017 | .431 | 170 | -.5436 | 1.131 | 180 | -.4541 | 0.000 | | 1.0309 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6406 | .231 | 50 | -.7396 | .431 | 160 | -.5997 | 1.131 | 170 | -.5094 | 0.000 | | 1.0357 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6505 | .231 | 40 | -.7414 | .431 | 150 | -.6113 | 1.131 | 160 | -.4792 | 0.000 | | 1.0104 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6708 | .231 | 30 | -.7207 | .431 | 140 | -.6249 | 1.131 | 150 | -.4752 | 0.000 | | .9910 | 0.00 | .00 |
| 9 | .161 | 100 | -.6922 | .231 | 20 | -.7830 | .431 | 130 | -.6762 | 1.131 | 140 | -.5495 | 0.000 | | .9365 | .10 | 0.00 |
| 10 | .161 | 90 | -.7284 | .231 | 10 | -.8497 | .431 | 120 | -.7352 | 1.131 | 130 | -.5134 | 0.000 | | .8713 | .20 | 0.00 |
| 11 | .161 | 80 | -.7012 | .231 | 0 | -.7875 | .431 | 110 | -.6597 | 1.131 | 120 | -.5516 | 0.000 | | .7720 | .30 | 0.00 |
| 12 | .161 | 70 | -.7175 | .331 | 180 | -.5032 | .431 | 100 | -.7285 | 1.131 | 110 | -.4702 | 0.000 | | .5871 | .40 | 0.00 |
| 13 | .161 | 60 | -.7130 | .331 | 170 | -.5284 | .431 | 90 | -.6926 | 1.131 | 100 | -.4149 | 0.000 | | .3702 | .45 | 0.00 |
| 14 | .161 | 50 | -.7260 | .331 | 160 | -.5510 | .431 | 80 | -.7517 | 1.131 | 90 | -.3617 | 0.000 | | .9676 | 0.00 | .10 |
| 15 | .161 | 40 | -.7094 | .331 | 150 | -.5763 | .431 | 70 | -.7846 | 1.131 | 80 | -.3165 | 0.000 | | .9462 | 0.00 | .20 |
| 16 | .161 | 30 | -.7302 | .331 | 140 | -.6340 | .431 | 60 | -.8340 | 1.131 | 70 | -.2542 | 0.000 | | .8966 | 0.00 | .30 |
| 17 | .161 | 20 | -.6704 | .331 | 130 | -.6106 | .431 | 50 | -.7469 | 1.131 | 60 | -.1788 | 0.000 | | .7419 | 0.00 | .40 |
| 18 | .161 | 10 | -.7248 | .331 | 120 | -.6593 | .431 | 40 | -.7875 | 1.131 | 50 | -.1396 | 0.000 | | .5181 | 0.00 | .45 |
| 19 | .161 | 0 | -.8352 | .331 | 110 | -.6765 | .431 | 30 | -.5097 | 1.131 | 40 | -.0975 | .161 | 270 | -.7402 | | |
| 20 | .231 | 180 | -.4749 | .331 | 100 | -.6801 | .431 | 20 | -.5726 | 1.131 | 30 | -.0442 | .231 | 270 | -.6662 | | |
| 21 | .231 | 170 | -.4840 | .331 | 90 | -.7153 | .431 | 10 | -.3258 | 1.131 | 20 | -.0020 | .331 | 270 | -.7450 | | |
| 22 | .231 | 160 | -.4939 | .331 | 80 | -.7288 | .431 | 0 | -.4932 | 1.131 | 10 | .0201 | .431 | 270 | -.7265 | | |
| 23 | .231 | 150 | -.5537 | .331 | 70 | -.7748 | .531 | 180 | -.6191 | 1.131 | 0 | .0121 | .531 | 270 | -.8034 | | |
| 24 | .231 | 140 | -.5935 | .331 | 60 | -.7478 | .531 | 90 | -.7614 | | | | .731 | 270 | -.6419 | | |
| 25 | .231 | 130 | -.5899 | .331 | 50 | -.7649 | .531 | 0 | -.0100 | 1.631 | 90 | -.2863 | .931 | 270 | -.4521 | | |
| 26 | .231 | 120 | -.6496 | .331 | 40 | -.8200 | .731 | 180 | -.5833 | 1.631 | 0 | -.0030 | 1.131 | 270 | -.3509 | | |
| 27 | .231 | 110 | -.6523 | .331 | 30 | -.7974 | .731 | 90 | -.6452 | 2.131 | 180 | .0542 | 1.631 | 270 | -.2964 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 3 POINT 96 ALPHA 16 MACH .302 Q 129.001 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4695 | .231 | 100 | -.6918 | .331 | 20 | -.7043 | .731 | 0 | .0773 | 2.131 | 90 | -.2838 | | |
| 2 | .161 | 170 | -.4735 | .231 | 90 | -.6629 | .331 | 10 | -.6016 | .931 | 180 | -.5455 | 2.131 | 0 | .0578 | | |
| 3 | .161 | 160 | -.5057 | .231 | 80 | -.7243 | .331 | 0 | -.6162 | .931 | 90 | -.4511 | 0.000 | | .8051 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5718 | .231 | 70 | -.7189 | .431 | 180 | -.5794 | .931 | 0 | .0462 | 0.000 | | .9462 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6451 | .231 | 60 | -.6846 | .431 | 170 | -.5726 | 1.131 | 180 | -.4782 | 0.000 | | 1.0231 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5980 | .231 | 50 | -.6747 | .431 | 160 | -.5803 | 1.131 | 170 | -.4732 | 0.000 | | 1.0231 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6469 | .231 | 40 | -.6783 | .431 | 150 | -.5803 | 1.131 | 160 | -.4903 | 0.000 | | 1.0104 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6270 | .231 | 30 | -.7432 | .431 | 140 | -.5978 | 1.131 | 150 | -.4702 | 0.000 | | .9668 | 0.00 | .00 |
| 9 | .161 | 100 | -.7166 | .231 | 20 | -.7676 | .431 | 130 | -.6123 | 1.131 | 140 | -.5516 | 0.000 | | .9199 | .10 | .00 |
| 10 | .161 | 90 | -.6659 | .231 | 10 | -.7649 | .431 | 120 | -.6781 | 1.131 | 130 | -.5234 | 0.000 | | .8489 | .20 | 0.00 |
| 11 | .161 | 80 | -.7284 | .231 | 0 | -.8669 | .431 | 110 | -.6665 | 1.131 | 120 | -.5435 | 0.000 | | .7389 | .30 | 0.00 |
| 12 | .161 | 70 | -.6623 | .331 | 180 | -.4942 | .431 | 100 | -.6597 | 1.131 | 110 | -.5335 | 0.000 | | .5550 | .40 | 0.00 |
| 13 | .161 | 60 | -.6994 | .331 | 170 | -.5339 | .431 | 90 | -.7341 | 1.131 | 100 | -.4461 | 0.000 | | .3147 | .45 | 0.00 |
| 14 | .161 | 50 | -.7329 | .331 | 160 | -.5429 | .431 | 80 | -.7943 | 1.131 | 90 | -.3999 | 0.000 | | .9559 | 0.00 | .10 |
| 15 | .161 | 40 | -.6994 | .331 | 150 | -.5781 | .431 | 70 | -.8040 | 1.131 | 80 | -.3777 | 0.000 | | .9297 | 0.00 | .20 |
| 16 | .161 | 30 | -.6895 | .331 | 140 | -.6611 | .431 | 60 | -.7546 | 1.131 | 70 | -.3004 | 0.000 | | .8674 | 0.00 | .30 |
| 17 | .161 | 20 | -.7103 | .331 | 130 | -.6367 | .431 | 50 | -.7052 | 1.131 | 60 | -.2431 | 0.000 | | .7136 | 0.00 | .40 |
| 18 | .161 | 10 | -.7057 | .331 | 120 | -.6783 | .431 | 40 | -.5639 | 1.131 | 50 | -.1728 | 0.000 | | .4947 | 0.00 | .45 |
| 19 | .161 | 0 | -.7564 | .331 | 110 | -.7044 | .431 | 30 | -.3412 | 1.131 | 40 | -.1216 | .161 | 270 | -.7158 | | |
| 20 | .231 | 180 | -.4495 | .331 | 100 | -.6638 | .431 | 20 | -.2996 | 1.131 | 30 | -.0382 | .231 | 270 | -.6565 | | |
| 21 | .231 | 170 | -.4957 | .331 | 90 | -.7094 | .431 | 10 | -.1505 | 1.131 | 20 | -.0100 | .331 | 270 | -.7149 | | |
| 22 | .231 | 160 | -.5120 | .331 | 80 | -.6873 | .431 | 0 | -.1331 | 1.131 | 10 | .0221 | .431 | 270 | -.7051 | | |
| 23 | .231 | 150 | -.5835 | .331 | 70 | -.6620 | .531 | 180 | -.5697 | 1.131 | 0 | .0281 | .531 | 270 | -.6857 | | |
| 24 | .231 | 140 | -.6009 | .331 | 60 | -.7478 | .531 | 90 | -.7575 | 1.631 | 180 | -.0794 | .731 | 270 | -.6584 | | |
| 25 | .231 | 130 | -.5817 | .331 | 50 | -.7640 | .531 | 0 | .1524 | | | | .931 | 270 | -.4623 | | |
| 26 | .231 | 120 | -.6082 | .331 | 40 | -.8145 | .731 | 180 | -.6020 | 1.631 | 0 | .0030 | 1.131 | 270 | -.4385 | | |
| 27 | .231 | 110 | -.7139 | .331 | 30 | -.7432 | .731 | 90 | -.5997 | 2.131 | 180 | -.0050 | 1.631 | 270 | -.3470 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5591 | .231 | 100 | -.7180 | .331 | 20 | .1738 | .731 | 0 | .1738 | 2.131 | 90 | -.4229 | | |
| 2 | .161 | 170 | -.4403 | .231 | 90 | -.5573 | .331 | 10 | .2037 | .931 | 180 | -.6249 | 2.131 | 0 | .1669 | | |
| 3 | .161 | 160 | -.5233 | .231 | 80 | -.5618 | .331 | 0 | .2424 | .931 | 90 | -.6540 | 0.000 | | .9861 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4085 | .231 | 70 | -.4590 | .431 | 180 | -.4545 | .931 | 0 | .1567 | 0.000 | | 1.0445 | -.40 | 0.00 |
| 5 | .161 | 140 | -.3447 | .231 | 60 | -.7247 | .431 | 170 | -.6772 | 1.131 | 180 | -.4621 | 0.000 | | 1.0571 | -.30 | 0.00 |
| 6 | .161 | 130 | -.3618 | .231 | 50 | -.5908 | .431 | 160 | -.5465 | 1.131 | 170 | -.5475 | 0.000 | | 1.0020 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5700 | .231 | 40 | -.1214 | .431 | 150 | -.6161 | 1.131 | 160 | -.5174 | 0.000 | | .9507 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5709 | .231 | 30 | .0075 | .431 | 140 | -.5474 | 1.131 | 150 | -.6031 | 0.000 | | .8732 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6433 | .231 | 20 | .2504 | .431 | 130 | -.8127 | 1.131 | 140 | -.6249 | 0.000 | | .8071 | .10 | 0.00 |
| 10 | .161 | 90 | -.6179 | .231 | 10 | .3262 | .431 | 120 | -.7149 | 1.131 | 130 | -.6490 | 0.000 | | .7234 | .20 | 0.00 |
| 11 | .161 | 80 | -.6107 | .231 | 0 | .3289 | .431 | 110 | -.6818 | 1.131 | 120 | -.6741 | 0.000 | | .6095 | .30 | 0.00 |
| 12 | .161 | 70 | -.5745 | .331 | 180 | -.5333 | .431 | 100 | -.6752 | 1.131 | 110 | -.7687 | 0.000 | | .4052 | .40 | 0.00 |
| 13 | .161 | 60 | -.5308 | .331 | 170 | -.6070 | .431 | 90 | -.6442 | 1.131 | 100 | -.7686 | 0.000 | | .1765 | .45 | 0.00 |
| 14 | .161 | 50 | -.6467 | .331 | 160 | -.5573 | .431 | 80 | -.6239 | 1.131 | 90 | -.6932 | 0.000 | | .8722 | 0.60 | .10 |
| 15 | .161 | 40 | -.6750 | .331 | 150 | -.5140 | .431 | 70 | -.4884 | 1.131 | 80 | -.6741 | 0.000 | | .8449 | 0.80 | .20 |
| 16 | .161 | 30 | -.4957 | .331 | 140 | -.6277 | .431 | 60 | -.2928 | 1.131 | 70 | -.5375 | 0.000 | | .7954 | 0.00 | .30 |
| 17 | .161 | 20 | -.6965 | .331 | 130 | -.6214 | .431 | 50 | -.1728 | 1.131 | 60 | -.4330 | 0.000 | | .6337 | 0.00 | .40 |
| 18 | .161 | 10 | .1349 | .331 | 120 | -.6223 | .431 | 40 | -.0373 | 1.131 | 50 | -.2552 | 0.000 | | .4937 | 0.00 | .45 |
| 19 | .161 | 0 | .2692 | .331 | 110 | -.6142 | .431 | 30 | .0527 | 1.131 | 40 | -.1417 | .161 | 270 | -.5640 | | |
| 20 | .231 | 130 | -.5018 | .331 | 100 | -.5275 | .431 | 20 | .0121 | 1.131 | 30 | -.0161 | .231 | 270 | -.5452 | | |
| 21 | .231 | 170 | -.5075 | .331 | 90 | -.5997 | .431 | 10 | .1544 | 1.131 | 20 | .0382 | .331 | 270 | -.5699 | | |
| 22 | .231 | 160 | -.5174 | .331 | 80 | -.5627 | .431 | 0 | .1882 | 1.131 | 10 | .1185 | .431 | 270 | -.5403 | | |
| 23 | .231 | 150 | -.5315 | .331 | 70 | -.6142 | .531 | 180 | -.5910 | 1.131 | 0 | .1768 | .531 | 270 | -.5582 | | |
| 24 | .231 | 140 | -.5048 | .331 | 60 | -.4716 | .531 | 90 | -.5600 | | | .731 | 270 | -.5533 | | | |
| 25 | .231 | 130 | -.5292 | .331 | 50 | -.1963 | .531 | 0 | .1631 | 1.631 | 90 | -.6420 | .931 | 270 | -.6425 | | |
| 26 | .231 | 120 | -.5820 | .331 | 40 | -.0032 | .731 | 180 | -.5929 | 1.631 | 0 | .1215 | 1.131 | 270 | -.7178 | | |
| 27 | .231 | 110 | -.5573 | .331 | 30 | .1000 | .731 | 90 | -.6007 | 2.131 | 180 | -.0573 | 1.631 | 270 | -.6935 | | |

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| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 3 POINT 99 ALPHA 22 MACH .303 Q 129.539 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5140 | .231 | 160 | -.5187 | .331 | 20 | -.1964 | .731 | 0 | -.0942 | 2.131 | 90 | -.4915 | | |
| 2 | .161 | 170 | -.4370 | .231 | 90 | -.5754 | .331 | 10 | -.2450 | .931 | 180 | -.6039 | 2.131 | 0 | -.1091 | | |
| 3 | .161 | 160 | -.4626 | .231 | 80 | -.5019 | .331 | 0 | -.2948 | .931 | 90 | -.5709 | 0.000 | | -.9250 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5555 | .231 | 70 | -.5820 | .431 | 180 | -.5458 | .931 | 0 | -.1082 | 0.000 | | 1.0123 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6034 | .231 | 60 | -.6105 | .431 | 170 | -.5718 | 1.131 | 180 | -.4858 | 0.000 | | 1.0278 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5745 | .231 | 50 | -.6037 | .431 | 160 | -.5689 | 1.131 | 170 | -.5328 | 0.000 | | 1.0113 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6197 | .231 | 40 | -.7284 | .431 | 150 | -.6124 | 1.131 | 160 | -.6160 | 0.000 | | .9512 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6431 | .231 | 30 | -.4845 | .431 | 140 | -.6548 | 1.131 | 150 | -.6059 | 0.000 | | .9037 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5097 | .231 | 20 | -.1804 | .431 | 130 | -.6317 | 1.131 | 140 | -.5529 | 0.000 | | .8639 | .10 | 0.00 |
| 10 | .161 | 90 | -.5601 | .231 | 10 | -.1372 | .431 | 120 | -.5670 | 1.131 | 130 | -.6670 | 0.000 | | .7727 | .20 | 0.00 |
| 11 | .161 | 80 | -.5357 | .231 | 0 | -.0733 | .431 | 110 | -.5766 | 1.131 | 120 | -.6550 | 0.000 | | .6727 | .30 | 0.00 |
| 12 | .161 | 70 | -.5529 | .331 | 180 | -.4908 | .431 | 100 | -.5051 | 1.131 | 110 | -.6961 | 0.000 | | .4593 | .40 | 0.00 |
| 13 | .161 | 60 | -.6043 | .331 | 170 | -.5340 | .431 | 90 | -.6365 | 1.131 | 100 | -.6961 | 0.000 | | .2469 | .45 | 0.00 |
| 14 | .161 | 50 | -.5944 | .331 | 160 | -.5439 | .431 | 80 | -.8423 | 1.131 | 90 | -.6360 | 0.000 | | .9056 | 0.00 | .10 |
| 15 | .161 | 40 | -.5790 | .331 | 150 | -.5592 | .431 | 70 | -.5583 | 1.131 | 80 | -.5659 | 0.000 | | .8910 | 0.00 | .20 |
| 16 | .161 | 30 | -.7180 | .331 | 140 | -.6195 | .431 | 60 | -.3971 | 1.131 | 70 | -.4627 | 0.000 | | .8396 | 0.00 | .30 |
| 17 | .161 | 20 | -.7041 | .331 | 130 | -.5997 | .431 | 50 | -.1867 | 1.131 | 60 | -.3625 | 0.000 | | .6902 | 0.00 | .40 |
| 18 | .161 | 10 | -.7030 | .331 | 120 | -.6339 | .431 | 40 | -.0555 | 1.131 | 50 | -.2714 | 0.000 | | .4758 | 0.00 | .45 |
| 19 | .161 | 0 | -.6910 | .331 | 110 | -.6312 | .431 | 30 | .0642 | 1.131 | 40 | -.1492 | .161 | 270 | -.6477 | | |
| 20 | .231 | 180 | -.4634 | .331 | 100 | -.5745 | .431 | 20 | -.0111 | 1.131 | 30 | -.0631 | .231 | 270 | -.5924 | | |
| 21 | .231 | 170 | -.4888 | .331 | 90 | -.5448 | .431 | 10 | -.1896 | 1.131 | 20 | .0501 | .331 | 270 | -.6098 | | |
| 22 | .231 | 160 | -.6106 | .331 | 80 | -.6510 | .431 | 0 | -.1539 | 1.131 | 10 | .0441 | .431 | 270 | -.6205 | | |
| 23 | .231 | 150 | -.5989 | .331 | 70 | -.7005 | .531 | 180 | -.5515 | 1.131 | 0 | .1062 | .531 | 270 | -.5730 | | |
| 24 | .231 | 140 | -.5529 | .331 | 60 | -.6114 | .531 | 90 | -.6345 | | | .731 | .731 | 270 | -.6234 | | |
| 25 | .231 | 130 | -.5626 | .331 | 50 | -.4881 | .531 | 0 | -.1404 | 1.631 | 90 | -.5118 | .931 | 270 | -.6370 | | |
| 26 | .231 | 120 | -.5899 | .331 | 40 | -.2758 | .731 | 180 | -.5737 | 1.631 | 0 | .0872 | 1.131 | 270 | -.6486 | | |
| 27 | .231 | 110 | -.6070 | .331 | 30 | -.0742 | .731 | 90 | -.6124 | 2.131 | 180 | -.1823 | 1.631 | 270 | -.6040 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 3 POINT 100 ALPHA 24 MACH .302 Q 129.098 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4836 | .231 | 100 | -.5756 | .331 | 20 | -.1784 | .731 | 0 | -.1566 | 2.131 | 90 | -.5831 | | |
| 2 | .161 | 170 | -.5071 | .231 | 90 | -.6272 | .331 | 10 | -.1831 | .931 | 180 | -.5792 | 2.131 | 0 | -.1511 | | |
| 3 | .161 | 160 | -.5780 | .231 | 80 | -.6633 | .331 | 0 | -.2065 | .931 | 90 | -.6395 | 0.000 | | .9523 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5912 | .231 | 70 | -.6814 | .431 | 180 | -.5118 | .931 | 0 | -.1516 | 0.000 | | 1.0338 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5751 | .231 | 60 | -.5641 | .431 | 170 | -.5604 | 1.131 | 180 | -.4889 | 0.000 | | 1.0525 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6147 | .231 | 50 | -.6570 | .431 | 160 | -.5751 | 1.131 | 170 | -.5451 | 0.000 | | 1.0009 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5084 | .231 | 40 | -.4784 | .431 | 150 | -.5847 | 1.131 | 160 | -.4748 | 0.000 | | .9679 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6482 | .231 | 30 | -.1709 | .431 | 140 | -.6728 | 1.131 | 150 | -.5722 | 0.000 | | .9183 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5894 | .231 | 20 | -.2818 | .431 | 130 | -.6031 | 1.131 | 140 | -.5331 | 0.000 | | .8395 | .10 | 0.00 |
| 10 | .161 | 90 | -.5116 | .231 | 10 | -.3543 | .431 | 120 | -.5219 | 1.131 | 130 | -.5682 | 0.000 | | .7831 | .20 | 0.00 |
| 11 | .161 | 80 | -.6401 | .231 | 0 | -.3783 | .431 | 110 | -.6863 | 1.131 | 120 | -.6334 | 0.000 | | .6431 | .30 | 0.00 |
| 12 | .161 | 70 | -.5324 | .331 | 180 | -.5497 | .431 | 100 | -.5886 | 1.131 | 110 | -.6677 | 0.000 | | .4166 | .40 | 0.00 |
| 13 | .161 | 60 | -.5005 | .331 | 170 | -.5488 | .431 | 90 | -.5983 | 1.131 | 100 | -.6750 | 0.000 | | .2346 | .45 | 0.00 |
| 14 | .161 | 50 | -.5831 | .331 | 160 | -.5019 | .431 | 80 | -.5393 | 1.131 | 90 | -.6495 | 0.000 | | .9066 | 0.00 | .10 |
| 15 | .161 | 40 | -.6504 | .331 | 150 | -.5587 | .431 | 70 | -.5306 | 1.131 | 80 | -.6294 | 0.000 | | .9299 | 0.00 | .20 |
| 16 | .161 | 30 | -.7070 | .331 | 140 | -.6227 | .431 | 60 | -.5149 | 1.131 | 70 | -.4999 | 0.000 | | .8405 | 0.00 | .30 |
| 17 | .161 | 20 | -.4347 | .331 | 130 | -.5407 | .431 | 50 | -.1349 | 1.131 | 60 | -.3644 | 0.000 | | .6995 | 0.00 | .40 |
| 18 | .161 | 10 | -.1407 | .331 | 120 | -.7237 | .431 | 40 | -.0634 | 1.131 | 50 | -.2630 | 0.000 | | .4700 | 0.00 | .45 |
| 19 | .161 | 0 | -.0801 | .331 | 110 | -.5794 | .431 | 30 | .0498 | 1.131 | 40 | -.1460 | .161 | 270 | -.5607 | | |
| 20 | .231 | 180 | -.5930 | .331 | 100 | -.5573 | .431 | 20 | .0014 | 1.131 | 30 | -.0351 | .231 | 270 | -.5937 | | |
| 21 | .231 | 170 | -.5900 | .331 | 90 | -.6272 | .431 | 10 | .1552 | 1.131 | 20 | .0462 | .331 | 270 | -.6424 | | |
| 22 | .231 | 160 | -.5098 | .331 | 80 | -.5680 | .431 | 0 | -.1620 | 1.131 | 10 | .1034 | .431 | 270 | -.5646 | | |
| 23 | .231 | 150 | -.5500 | .331 | 70 | -.5680 | .531 | 180 | -.5412 | 1.131 | 0 | .1295 | .531 | 270 | -.5743 | | |
| 24 | .231 | 140 | -.5967 | .331 | 60 | -.5749 | .531 | 90 | -.6350 | | | .731 | .731 | 270 | -.5500 | | |
| 25 | .231 | 130 | -.5400 | .331 | 50 | -.2704 | .531 | 0 | -.1502 | 1.631 | 90 | -.6455 | .931 | 270 | -.6511 | | |
| 26 | .231 | 120 | -.6063 | .331 | 40 | -.0149 | .731 | 180 | -.5896 | 1.631 | 0 | .1435 | 1.131 | 270 | -.6540 | | |
| 27 | .231 | 110 | -.5014 | .331 | 30 | -.1501 | .731 | 90 | -.5731 | 2.131 | 180 | -.0432 | 1.631 | 270 | -.5939 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 4 POINT 105 ALPHA 2 MACH .403 J 218.621 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.3804 | .231 | 100 | -.4936 | .331 | 20 | -.5170 | .731 | 0 | -.5650 | 2.131 | 90 | .0452 | | |
| 2 | .161 | 170 | -.4324 | .231 | 90 | -.5055 | .331 | 10 | -.5216 | .931 | 180 | -.5169 | 2.131 | 0 | .1155 | | |
| 3 | .161 | 160 | -.4277 | .231 | 80 | -.5018 | .331 | 0 | -.6015 | .931 | 90 | -.5946 | 0.000 | | .6337 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4131 | .231 | 70 | -.4826 | .431 | 180 | -.4570 | .931 | 0 | -.5899 | 0.000 | | .8261 | -.47 | 0.00 |
| 5 | .161 | 140 | -.4017 | .231 | 60 | -.4880 | .431 | 170 | -.4453 | 1.131 | 180 | -.5003 | 0.000 | | .9685 | -.33 | 0.00 |
| 6 | .161 | 130 | -.4447 | .231 | 50 | -.5130 | .431 | 160 | -.4833 | 1.131 | 170 | -.5365 | 0.000 | | 1.0178 | -.23 | 0.00 |
| 7 | .161 | 120 | -.4633 | .231 | 40 | -.5103 | .431 | 150 | -.4536 | 1.131 | 160 | -.5330 | 0.000 | | 1.0444 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4334 | .231 | 30 | -.5002 | .431 | 140 | -.4662 | 1.131 | 150 | -.5140 | 0.000 | | 1.0529 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4719 | .231 | 20 | -.5002 | .431 | 130 | -.4662 | 1.131 | 140 | -.5312 | 0.000 | | 1.0420 | .10 | 0.00 |
| 10 | .161 | 90 | -.4975 | .231 | 10 | -.5428 | .431 | 120 | -.4442 | 1.131 | 130 | -.5146 | 0.000 | | 1.0110 | .20 | 0.00 |
| 11 | .161 | 80 | -.4783 | .231 | 0 | -.5263 | .431 | 110 | -.4816 | 1.131 | 120 | -.5128 | 0.000 | | .9421 | .30 | 0.00 |
| 12 | .161 | 70 | -.4970 | .331 | 180 | -.4534 | .431 | 100 | -.4947 | 1.131 | 110 | -.5466 | 0.000 | | .7849 | .40 | 0.00 |
| 13 | .161 | 60 | -.4954 | .331 | 170 | -.4177 | .431 | 90 | -.4896 | 1.131 | 100 | -.5555 | 0.000 | | .5976 | .45 | 0.00 |
| 14 | .161 | 50 | -.5093 | .331 | 160 | -.4035 | .431 | 80 | -.5284 | 1.131 | 90 | -.5632 | 0.000 | | 1.0460 | 0.00 | .10 |
| 15 | .161 | 40 | -.5146 | .331 | 150 | -.4321 | .431 | 70 | -.5233 | 1.131 | 80 | -.5359 | 0.000 | | 1.0133 | 0.00 | .20 |
| 16 | .161 | 30 | -.5093 | .331 | 140 | -.4432 | .431 | 60 | -.5581 | 1.131 | 70 | -.5306 | 0.000 | | .9535 | 0.00 | .30 |
| 17 | .161 | 20 | -.5120 | .331 | 130 | -.4613 | .431 | 50 | -.5204 | 1.131 | 60 | -.5241 | 0.000 | | .8002 | 0.00 | .40 |
| 18 | .161 | 10 | -.4649 | .331 | 120 | -.4960 | .431 | 40 | -.4759 | 1.131 | 50 | -.5584 | 0.000 | | .6096 | 0.00 | .45 |
| 19 | .161 | 0 | -.5307 | .331 | 110 | -.4789 | .431 | 30 | -.5496 | 1.131 | 40 | -.5264 | .161 | 270 | -.5342 | | |
| 20 | .231 | 180 | -.4244 | .331 | 100 | -.4885 | .431 | 20 | -.4936 | 1.131 | 30 | -.5444 | .231 | 270 | -.4694 | | |
| 21 | .231 | 170 | -.4310 | .331 | 90 | -.5189 | .431 | 10 | -.5330 | 1.131 | 20 | -.5413 | .331 | 270 | -.5043 | | |
| 22 | .231 | 160 | -.4159 | .331 | 80 | -.4944 | .431 | 0 | -.5621 | 1.131 | 10 | -.5306 | .431 | 270 | -.5060 | | |
| 23 | .231 | 150 | -.4121 | .331 | 70 | -.4731 | .531 | 180 | -.4907 | 1.131 | 0 | -.5596 | .531 | 270 | -.5233 | | |
| 24 | .231 | 140 | -.4265 | .331 | 60 | -.5247 | .531 | 90 | -.5182 | | | | .731 | 270 | -.5772 | | |
| 25 | .231 | 130 | -.4603 | .331 | 50 | -.5103 | .531 | 0 | -.5536 | 1.631 | 90 | -.1885 | .931 | 270 | -.5996 | | |
| 26 | .231 | 120 | -.4653 | .331 | 40 | -.4690 | .731 | 180 | -.4833 | 1.631 | 0 | -.0925 | 1.131 | 270 | -.5393 | | |
| 27 | .231 | 110 | -.4652 | .331 | 30 | -.5189 | .731 | 90 | -.5261 | 2.131 | 180 | .0059 | 1.631 | 270 | -.1368 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 4 POINT 105 ALPHA 4 MACH .404 J 218.995 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4636 | .231 | 100 | -.5126 | .331 | 20 | -.5879 | .731 | 0 | -.6539 | 2.131 | 90 | .0509 | | |
| 2 | .161 | 170 | -.4161 | .231 | 90 | -.5238 | .331 | 10 | -.5743 | .931 | 180 | -.5101 | 2.131 | 0 | .0841 | | |
| 3 | .161 | 160 | -.4369 | .231 | 80 | -.5451 | .331 | 0 | -.5572 | .931 | 90 | -.6048 | 0.000 | | .6556 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4423 | .231 | 70 | -.5754 | .431 | 180 | -.4511 | .931 | 0 | -.5842 | 0.000 | | .8393 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4284 | .231 | 60 | -.6477 | .431 | 170 | -.4545 | 1.131 | 180 | -.4929 | 0.000 | | .9651 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4737 | .231 | 50 | -.5918 | .431 | 160 | -.4602 | 1.131 | 170 | -.4864 | 0.000 | | 1.0273 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4855 | .231 | 40 | -.5817 | .431 | 150 | -.4665 | 1.131 | 160 | -.5184 | 0.000 | | 1.0500 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5276 | .231 | 30 | -.5892 | .431 | 140 | -.5326 | 1.131 | 150 | -.4805 | 0.000 | | 1.0465 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5244 | .231 | 20 | -.5525 | .431 | 130 | -.5047 | 1.131 | 140 | -.5202 | 0.000 | | 1.0305 | .10 | 0.00 |
| 10 | .161 | 90 | -.5399 | .231 | 10 | -.5748 | .431 | 120 | -.5127 | 1.131 | 130 | -.5314 | 0.000 | | .9898 | .20 | 0.00 |
| 11 | .161 | 80 | -.5697 | .231 | 0 | -.5700 | .431 | 110 | -.5634 | 1.131 | 120 | -.5444 | 0.000 | | .9216 | .30 | 0.00 |
| 12 | .161 | 70 | -.5590 | .331 | 180 | -.4207 | .431 | 100 | -.5492 | 1.131 | 110 | -.5740 | 0.000 | | .7777 | .40 | 0.00 |
| 13 | .161 | 60 | -.5473 | .331 | 170 | -.4281 | .431 | 90 | -.5532 | 1.131 | 100 | -.5255 | 0.000 | | .5685 | .45 | 0.00 |
| 14 | .161 | 50 | -.5745 | .331 | 160 | -.4611 | .431 | 80 | -.5606 | 1.131 | 90 | -.5385 | 0.000 | | 1.0379 | 0.00 | .10 |
| 15 | .161 | 40 | -.5633 | .331 | 150 | -.4674 | .431 | 70 | -.5743 | 1.131 | 80 | -.5415 | 0.000 | | 1.0098 | 0.00 | .20 |
| 16 | .161 | 30 | -.5959 | .331 | 140 | -.4701 | .431 | 60 | -.5874 | 1.131 | 70 | -.4728 | 0.000 | | .9496 | 0.00 | .30 |
| 17 | .161 | 20 | -.5686 | .331 | 130 | -.4961 | .431 | 50 | -.5834 | 1.131 | 60 | -.5077 | 0.000 | | .7989 | 0.00 | .40 |
| 18 | .161 | 10 | -.5756 | .331 | 120 | -.4961 | .431 | 40 | -.5936 | 1.131 | 50 | -.4497 | 0.000 | | .5954 | 0.00 | .45 |
| 19 | .161 | 0 | -.5516 | .331 | 110 | -.5110 | .431 | 30 | -.5674 | 1.131 | 40 | -.4876 | .161 | 270 | -.5458 | | |
| 20 | .231 | 180 | -.4119 | .331 | 100 | -.5254 | .431 | 20 | -.5733 | 1.131 | 30 | -.4515 | .231 | 270 | -.5722 | | |
| 21 | .231 | 170 | -.4695 | .331 | 90 | -.5275 | .431 | 10 | -.5891 | 1.131 | 20 | -.4711 | .331 | 270 | -.5458 | | |
| 22 | .231 | 160 | -.4439 | .331 | 80 | -.5791 | .431 | 0 | -.5879 | 1.131 | 10 | -.3775 | .431 | 270 | -.5555 | | |
| 23 | .231 | 150 | -.4647 | .331 | 70 | -.5956 | .531 | 180 | -.4745 | 1.131 | 0 | -.3704 | .531 | 270 | -.5766 | | |
| 24 | .231 | 140 | -.4615 | .331 | 60 | -.5871 | .531 | 90 | -.5720 | | | | .731 | 270 | -.6164 | | |
| 25 | .231 | 130 | -.44812 | .331 | 50 | -.5860 | .531 | 0 | -.5954 | 1.631 | 90 | -.0970 | .931 | 270 | -.5164 | | |
| 26 | .231 | 120 | -.5191 | .331 | 40 | -.5817 | .731 | 180 | -.5549 | 1.631 | 0 | -.0586 | 1.131 | 270 | -.5160 | | |
| 27 | .231 | 110 | -.5343 | .331 | 30 | -.5748 | .731 | 90 | -.5993 | 2.131 | 180 | -.0219 | 1.631 | 270 | -.1136 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 102 ALPHA -1 MACH .403 Q 218.527 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5207 | .231 | 100 | -.4629 | .331 | 20 | -.4727 | .731 | 0 | -.5071 | 2.131 | 90 | .0378 | | |
| 2 | .161 | 170 | -.5047 | .231 | 90 | -.4770 | .331 | 10 | -.4854 | .931 | 180 | -.5765 | 2.131 | 0 | -.0165 | | |
| 3 | .161 | 160 | -.4633 | .231 | 80 | -.4930 | .331 | 0 | -.4864 | .931 | 90 | -.5866 | 0.000 | | .6007 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4903 | .231 | 70 | -.4687 | .431 | 180 | -.5064 | .931 | 0 | -.5276 | 0.000 | | .7343 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4924 | .231 | 60 | -.4653 | .431 | 170 | -.5018 | 1.131 | 180 | -.5415 | 0.000 | | .9496 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4774 | .231 | 50 | -.4573 | .431 | 160 | -.5292 | 1.131 | 170 | -.5249 | 0.000 | | 1.0074 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4639 | .231 | 40 | -.4328 | .431 | 150 | -.5241 | 1.131 | 160 | -.5264 | 0.000 | | 1.0332 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4700 | .231 | 30 | -.4599 | .431 | 140 | -.4612 | 1.131 | 150 | -.5314 | 0.000 | | 1.0441 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4764 | .231 | 20 | -.3981 | .431 | 130 | -.5281 | 1.131 | 140 | -.5430 | 0.000 | | 1.0355 | .10 | 0.00 |
| 10 | .161 | 90 | -.4620 | .231 | 10 | -.4189 | .431 | 120 | -.4698 | 1.131 | 130 | -.5599 | 0.000 | | 1.0168 | .20 | 0.00 |
| 11 | .161 | 80 | -.4796 | .231 | 0 | -.4536 | .431 | 110 | -.4961 | 1.131 | 120 | -.5557 | 0.000 | | .9574 | .30 | 0.00 |
| 12 | .161 | 70 | -.4774 | .331 | 180 | -.5100 | .431 | 100 | -.5030 | 1.131 | 110 | -.5575 | 0.000 | | .8092 | .40 | 0.00 |
| 13 | .161 | 60 | -.4363 | .331 | 170 | -.5415 | .431 | 90 | -.4870 | 1.131 | 100 | -.5557 | 0.000 | | .6076 | .45 | 0.60 |
| 14 | .161 | 50 | -.4406 | .331 | 160 | -.5239 | .431 | 80 | -.5127 | 1.131 | 90 | -.5189 | 0.000 | | 1.0367 | 0.00 | .10 |
| 15 | .161 | 40 | -.4603 | .331 | 150 | -.5132 | .431 | 70 | -.4955 | 1.131 | 80 | -.4988 | 0.000 | | 1.0085 | 0.00 | .20 |
| 16 | .161 | 30 | -.4379 | .331 | 140 | -.5074 | .431 | 60 | -.4612 | 1.131 | 70 | -.5439 | 0.000 | | .9465 | 0.00 | .30 |
| 17 | .161 | 20 | -.4379 | .331 | 130 | -.4850 | .431 | 50 | -.4578 | 1.131 | 60 | -.5195 | 0.000 | | .8075 | 0.00 | .40 |
| 18 | .161 | 10 | -.4141 | .331 | 120 | -.4930 | .431 | 40 | -.4664 | 1.131 | 50 | -.5433 | 0.000 | | .6018 | 0.00 | .45 |
| 19 | .161 | 0 | -.4673 | .331 | 110 | -.4845 | .431 | 30 | -.4984 | 1.131 | 40 | -.5450 | .161 | 270 | -.4897 | | |
| 20 | .231 | 180 | -.5031 | .331 | 100 | -.4962 | .431 | 20 | -.4384 | 1.131 | 30 | -.5255 | .231 | 270 | -.4632 | | |
| 21 | .231 | 170 | -.4978 | .331 | 90 | -.4972 | .431 | 10 | -.4801 | 1.131 | 20 | -.4982 | .331 | 270 | -.4913 | | |
| 22 | .231 | 160 | -.4967 | .331 | 80 | -.4940 | .431 | 0 | -.4612 | 1.131 | 10 | -.5367 | .431 | 270 | -.5028 | | |
| 23 | .231 | 150 | -.4860 | .331 | 70 | -.4722 | .531 | 180 | -.5132 | 1.131 | 0 | -.5273 | .531 | 270 | -.4982 | | |
| 24 | .231 | 140 | -.4801 | .331 | 60 | -.4610 | .531 | 90 | -.4892 | | | | .731 | 270 | -.5419 | | |
| 25 | .231 | 130 | -.4634 | .331 | 50 | -.4546 | .531 | 0 | -.4887 | 1.631 | 90 | -.1892 | .931 | 270 | -.5539 | | |
| 26 | .231 | 120 | -.4839 | .331 | 40 | -.4541 | .731 | 180 | -.5521 | 1.631 | 0 | -.2580 | 1.131 | 270 | -.5304 | | |
| 27 | .231 | 110 | -.4919 | .331 | 30 | -.4541 | .731 | 90 | -.5407 | 2.131 | 180 | .0492 | 1.631 | 270 | -.2219 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 103 ALPHA 0 MACH .403 Q 218.621 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4826 | .231 | 100 | -.4741 | .331 | 20 | -.4645 | .731 | 0 | -.5401 | 2.131 | 90 | .0584 | | |
| 2 | .161 | 170 | -.5157 | .231 | 90 | -.5162 | .331 | 10 | -.4690 | .931 | 180 | -.5756 | 2.131 | 0 | .0286 | | |
| 3 | .161 | 160 | -.4639 | .231 | 80 | -.4624 | .331 | 0 | -.4565 | .931 | 90 | -.5513 | 0.000 | | .6234 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4511 | .231 | 70 | -.4736 | .431 | 180 | -.4725 | .931 | 0 | -.5632 | 0.000 | | .8060 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4601 | .231 | 60 | -.4880 | .431 | 170 | -.4993 | 1.131 | 180 | -.5525 | 0.000 | | .9547 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4820 | .231 | 50 | -.4992 | .431 | 160 | -.4942 | 1.131 | 170 | -.5329 | 0.000 | | 1.0184 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4804 | .231 | 40 | -.4794 | .431 | 150 | -.5164 | 1.131 | 160 | -.5703 | 0.000 | | 1.0431 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4527 | .231 | 30 | -.4427 | .431 | 140 | -.4690 | 1.131 | 150 | -.5484 | 0.000 | | 1.0517 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4591 | .231 | 20 | -.4672 | .431 | 130 | -.4805 | 1.131 | 140 | -.5525 | 0.000 | | 1.0397 | .10 | 0.00 |
| 10 | .161 | 90 | -.4420 | .231 | 10 | -.4459 | .431 | 120 | -.5113 | 1.131 | 130 | -.5341 | 0.000 | | 1.0110 | .20 | 0.00 |
| 11 | .161 | 80 | -.4626 | .231 | 0 | -.5231 | .431 | 110 | -.5016 | 1.131 | 120 | -.5270 | 0.000 | | .9573 | .30 | 0.00 |
| 12 | .161 | 70 | -.4495 | .331 | 180 | -.5141 | .431 | 100 | -.4999 | 1.131 | 110 | -.5976 | 0.000 | | .8054 | .40 | 0.00 |
| 13 | .161 | 60 | -.4205 | .331 | 170 | -.4667 | .431 | 90 | -.4833 | 1.131 | 100 | -.5633 | 0.000 | | .6165 | .45 | 0.00 |
| 14 | .161 | 50 | -.4628 | .331 | 160 | -.4901 | .431 | 80 | -.4770 | 1.131 | 90 | -.5282 | 0.000 | | 1.0414 | 0.00 | .10 |
| 15 | .161 | 40 | -.4313 | .331 | 150 | -.4842 | .431 | 70 | -.4468 | 1.131 | 80 | -.5264 | 0.000 | | 1.0133 | 0.00 | .20 |
| 16 | .161 | 30 | -.4452 | .331 | 140 | -.4704 | .431 | 60 | -.4873 | 1.131 | 70 | -.5442 | 0.000 | | .9495 | 0.00 | .30 |
| 17 | .161 | 20 | -.4300 | .331 | 130 | -.4395 | .431 | 50 | -.4433 | 1.131 | 60 | -.5163 | 0.000 | | .8089 | 0.00 | .40 |
| 18 | .161 | 10 | -.4361 | .331 | 120 | -.4342 | .431 | 40 | -.4473 | 1.131 | 50 | -.5169 | 0.000 | | .6234 | 0.00 | .45 |
| 19 | .161 | 0 | -.4852 | .331 | 110 | -.4635 | .431 | 30 | -.5284 | 1.131 | 40 | -.5282 | .161 | 270 | -.4544 | | |
| 20 | .231 | 180 | -.4623 | .331 | 100 | -.4821 | .431 | 20 | -.5087 | 1.131 | 30 | -.5276 | .231 | 270 | -.4573 | | |
| 21 | .231 | 170 | -.4521 | .331 | 90 | -.5125 | .431 | 10 | -.4793 | 1.131 | 20 | -.5519 | .331 | 270 | -.4911 | | |
| 22 | .231 | 160 | -.4719 | .331 | 80 | -.4842 | .431 | 0 | -.4713 | 1.131 | 10 | -.5383 | .431 | 270 | -.4946 | | |
| 23 | .231 | 150 | -.4623 | .331 | 70 | -.4534 | .531 | 180 | -.4953 | 1.131 | 0 | -.5436 | .531 | 270 | -.4905 | | |
| 24 | .231 | 140 | -.4714 | .331 | 60 | -.4858 | .531 | 90 | -.4993 | | | | .731 | 270 | -.5405 | | |
| 25 | .231 | 130 | -.4703 | .331 | 50 | -.4597 | .531 | 0 | -.4713 | 1.631 | 90 | -.2425 | .931 | 270 | -.5594 | | |
| 26 | .231 | 120 | -.4420 | .331 | 40 | -.5071 | .731 | 180 | -.5164 | 1.631 | 0 | -.2164 | 1.131 | 270 | -.5244 | | |
| 27 | .231 | 110 | -.4730 | .331 | 30 | -.4651 | .731 | 90 | -.5587 | 2.131 | 180 | .0498 | 1.631 | 270 | -.2086 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 4 POINT 106 ALPHA 10 MACH .405 Q 219.744 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 150 | -.4125 | .231 | 100 | -.6502 | .331 | 20 | -.7139 | .731 | 0 | -.2093 | 2.131 | 90 | -.1390 | | |
| 2 | .161 | 170 | -.4501 | .231 | 90 | -.6507 | .331 | 10 | -.7257 | .931 | 180 | -.5437 | 2.131 | 0 | -.0177 | | |
| 3 | .161 | 150 | -.4673 | .231 | 80 | -.6517 | .331 | 0 | -.6882 | .931 | 90 | -.5932 | 0.000 | | .7403 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4450 | .231 | 70 | -.6676 | .431 | 180 | -.5097 | .931 | 0 | -.0585 | 0.000 | | .9151 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5257 | .231 | 60 | -.6692 | .431 | 170 | -.5131 | 1.131 | 180 | -.4564 | 0.000 | | 1.0127 | -.30 | 0.00 |
| 6 | .161 | 140 | -.5405 | .231 | 50 | -.6978 | .441 | 160 | -.5455 | 1.131 | 170 | -.4139 | 0.000 | | 1.0577 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5943 | .231 | 40 | -.6729 | .431 | 150 | -.5438 | 1.131 | 160 | -.5183 | 0.000 | | 1.0561 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6267 | .231 | 30 | -.6931 | .431 | 140 | -.5745 | 1.131 | 150 | -.5272 | 0.000 | | 1.0232 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6432 | .231 | 20 | -.6745 | .431 | 130 | -.6052 | 1.131 | 140 | -.5354 | 0.000 | | .9887 | .10 | 0.00 |
| 10 | .161 | 90 | -.6591 | .231 | 10 | -.6841 | .431 | 120 | -.6041 | 1.131 | 130 | -.5520 | 0.000 | | .9442 | .20 | 0.00 |
| 11 | .161 | 80 | -.6713 | .231 | 0 | -.6719 | .431 | 110 | -.6342 | 1.131 | 120 | -.5472 | 0.000 | | .8522 | .30 | 0.00 |
| 12 | .161 | 70 | -.6921 | .331 | 180 | -.4515 | .431 | 100 | -.5984 | 1.131 | 110 | -.5195 | 0.000 | | .6894 | .40 | 0.00 |
| 13 | .161 | 60 | -.6850 | .331 | 170 | -.4769 | .431 | 90 | -.6421 | 1.131 | 100 | -.4470 | 0.000 | | .4644 | .45 | 0.00 |
| 14 | .161 | 50 | -.6995 | .331 | 160 | -.4970 | .431 | 80 | -.6939 | 1.131 | 90 | -.4296 | 0.000 | | 1.0173 | 0.00 | .10 |
| 15 | .161 | 40 | -.6804 | .331 | 150 | -.5426 | .431 | 70 | -.6916 | 1.131 | 80 | -.2665 | 0.000 | | .9899 | 0.00 | .20 |
| 16 | .161 | 30 | -.7117 | .331 | 140 | -.5785 | .431 | 60 | -.7609 | 1.131 | 70 | -.1497 | 0.000 | | .9179 | 0.00 | .30 |
| 17 | .161 | 20 | -.6740 | .331 | 130 | -.5839 | .431 | 50 | -.7029 | 1.131 | 60 | -.1132 | 0.000 | | .7688 | 0.00 | .40 |
| 18 | .161 | 10 | -.7133 | .331 | 120 | -.6433 | .431 | 40 | -.7700 | 1.131 | 50 | -.0229 | 0.000 | | .5553 | 0.00 | .45 |
| 19 | .161 | 0 | -.7059 | .331 | 110 | -.6125 | .431 | 30 | -.7399 | 1.131 | 40 | -.0158 | .161 | 270 | -.6782 | | |
| 20 | .231 | 180 | -.4434 | .331 | 100 | -.6671 | .431 | 20 | -.7632 | 1.131 | 30 | .0266 | .231 | 270 | -.6545 | | |
| 21 | .231 | 170 | -.4540 | .331 | 90 | -.6608 | .431 | 10 | -.7677 | 1.131 | 20 | .0443 | .331 | 270 | -.6873 | | |
| 22 | .231 | 150 | -.4689 | .331 | 80 | -.6671 | .431 | 0 | -.7484 | 1.131 | 10 | .0773 | .431 | 270 | -.6805 | | |
| 23 | .231 | 150 | -.5124 | .331 | 70 | -.6719 | .531 | 180 | -.5302 | 1.131 | 0 | .0803 | .531 | 270 | -.6708 | | |
| 24 | .231 | 140 | -.5539 | .331 | 60 | -.6819 | .531 | 90 | -.6893 | | | .731 | .731 | 270 | -.7107 | | |
| 25 | .231 | 130 | -.5944 | .331 | 50 | -.7148 | .531 | 0 | -.6990 | 1.631 | 90 | -.1427 | .931 | 270 | -.5799 | | |
| 26 | .231 | 120 | -.6097 | .331 | 40 | -.6936 | .731 | 180 | -.5671 | 1.631 | 0 | .0243 | 1.131 | 270 | -.3460 | | |
| 27 | .231 | 110 | -.6161 | .331 | 30 | -.7016 | .731 | 90 | -.7103 | 2.131 | 180 | -.0141 | 1.631 | 270 | -.1520 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 4 POINT 109 ALPHA 12 MACH .404 Q 219.370 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 150 | -.4155 | .231 | 100 | -.6699 | .331 | 20 | -.7030 | .731 | 0 | -.0407 | 2.131 | 90 | -.1798 | | |
| 2 | .161 | 170 | -.4175 | .231 | 90 | -.6587 | .331 | 10 | -.7161 | .931 | 180 | -.5104 | 2.131 | 0 | .0293 | | |
| 3 | .161 | 150 | -.4729 | .231 | 80 | -.6815 | .331 | 0 | -.7093 | .931 | 90 | -.5122 | 0.000 | | .7707 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5293 | .231 | 70 | -.6837 | .431 | 180 | -.5044 | .931 | 0 | -.0863 | 0.000 | | .9373 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5561 | .231 | 60 | -.6884 | .431 | 170 | -.5266 | 1.131 | 180 | -.4761 | 0.000 | | 1.0310 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6070 | .231 | 50 | -.6869 | .431 | 160 | -.5664 | 1.131 | 170 | -.4944 | 0.000 | | 1.0430 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6241 | .231 | 40 | -.6900 | .431 | 150 | -.5778 | 1.131 | 160 | -.5175 | 0.000 | | 1.0437 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6406 | .231 | 30 | -.6932 | .431 | 140 | -.6000 | 1.131 | 150 | -.5299 | 0.000 | | 1.0161 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6555 | .231 | 20 | -.6667 | .431 | 130 | -.6091 | 1.131 | 140 | -.5080 | 0.000 | | .9715 | .10 | 0.00 |
| 10 | .161 | 90 | -.6725 | .231 | 10 | -.7314 | .431 | 120 | -.6139 | 1.131 | 130 | -.5417 | 0.000 | | .9223 | .20 | 0.00 |
| 11 | .161 | 80 | -.6832 | .231 | 0 | -.7410 | .431 | 110 | -.6689 | 1.131 | 120 | -.5122 | 0.000 | | .8193 | .30 | 0.00 |
| 12 | .161 | 70 | -.7151 | .331 | 180 | -.5069 | .431 | 100 | -.7252 | 1.131 | 110 | -.4631 | 0.000 | | .6459 | .40 | 0.00 |
| 13 | .161 | 60 | -.6837 | .331 | 170 | -.5006 | .431 | 90 | -.6883 | 1.131 | 100 | -.4407 | 0.000 | | .4251 | .45 | 0.00 |
| 14 | .161 | 50 | -.6928 | .331 | 160 | -.5202 | .431 | 80 | -.6848 | 1.131 | 90 | -.3796 | 0.000 | | 1.0047 | 0.00 | .10 |
| 15 | .161 | 40 | -.7066 | .331 | 150 | -.5561 | .431 | 70 | -.6786 | 1.131 | 80 | -.2806 | 0.000 | | .9875 | 0.00 | .20 |
| 16 | .161 | 30 | -.6390 | .331 | 140 | -.6189 | .431 | 60 | -.7252 | 1.131 | 70 | -.2126 | 0.000 | | .9149 | 0.00 | .30 |
| 17 | .161 | 20 | -.7103 | .331 | 130 | -.6338 | .431 | 50 | -.8132 | 1.131 | 60 | -.1169 | 0.000 | | .7569 | 0.00 | .40 |
| 18 | .161 | 10 | -.7061 | .331 | 120 | -.6375 | .431 | 40 | -.7941 | 1.131 | 50 | -.1004 | 0.000 | | .5452 | 0.00 | .45 |
| 19 | .161 | 0 | -.6768 | .331 | 110 | -.6455 | .431 | 30 | -.7639 | 1.131 | 40 | -.0573 | .161 | 270 | -.6656 | | |
| 20 | .231 | 180 | -.4750 | .331 | 100 | -.6874 | .431 | 20 | -.7856 | 1.131 | 30 | -.0159 | .231 | 270 | -.6696 | | |
| 21 | .231 | 170 | -.4569 | .331 | 90 | -.6624 | .431 | 10 | -.7389 | 1.131 | 20 | .0125 | .331 | 270 | -.6570 | | |
| 22 | .231 | 150 | -.4676 | .331 | 80 | -.6461 | .431 | 0 | -.7474 | 1.131 | 10 | .0373 | .431 | 270 | -.6467 | | |
| 23 | .231 | 150 | -.5132 | .331 | 70 | -.6752 | .531 | 180 | -.5510 | 1.131 | 0 | .0414 | .531 | 270 | -.7274 | | |
| 24 | .231 | 140 | -.5569 | .331 | 60 | -.7261 | .531 | 90 | -.7400 | | | .731 | .731 | 270 | -.7300 | | |
| 25 | .231 | 130 | -.5703 | .331 | 50 | -.6975 | .531 | 0 | -.5226 | 1.631 | 90 | -.2422 | .931 | 270 | -.5105 | | |
| 26 | .231 | 120 | -.6037 | .331 | 40 | -.6905 | .731 | 180 | -.5499 | 1.631 | 0 | .0024 | 1.131 | 270 | -.3736 | | |
| 27 | .231 | 110 | -.6113 | .331 | 30 | -.8015 | .731 | 90 | -.6262 | 2.131 | 180 | .0237 | 1.631 | 270 | -.2044 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 106 ALPHA 6 MACH .404 Q 219.370 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D |
| 1 | .161 | 180 | -.3797 | .231 | 100 | -.5972 | .331 | 20 | -.6433 | .731 | 0 | -.6390 | 2.131 | 90 | -.0047 | | |
| 2 | .161 | 170 | -.4218 | .231 | 90 | -.5834 | .331 | 10 | -.6279 | .931 | 180 | -.5287 | 2.131 | 0 | .0400 | | |
| 3 | .161 | 160 | -.4079 | .231 | 80 | -.5770 | .331 | 0 | -.6006 | .931 | 90 | -.6396 | 0.000 | | .6917 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4308 | .231 | 70 | -.6417 | .431 | 180 | -.4554 | .931 | 0 | -.3710 | 0.000 | | .9599 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4809 | .231 | 60 | -.6333 | .431 | 170 | -.4765 | 1.131 | 180 | -.4389 | 0.000 | | .9915 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5149 | .231 | 50 | -.6216 | .431 | 160 | -.4815 | 1.131 | 170 | -.5352 | 0.000 | | 1.0322 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5224 | .231 | 40 | -.6370 | .431 | 150 | -.4924 | 1.131 | 160 | -.4879 | 0.000 | | 1.0430 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5092 | .231 | 30 | -.6529 | .431 | 140 | -.5385 | 1.131 | 150 | -.5157 | 0.000 | | 1.0396 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5772 | .231 | 20 | -.6545 | .431 | 130 | -.5507 | 1.131 | 140 | -.5159 | 0.000 | | 1.0264 | .10 | 0.00 |
| 10 | .161 | 90 | -.5943 | .231 | 10 | -.6317 | .431 | 120 | -.5590 | 1.131 | 130 | -.5104 | 0.000 | | .9793 | .20 | 0.00 |
| 11 | .161 | 80 | -.5943 | .231 | 0 | -.6179 | .431 | 110 | -.5750 | 1.131 | 120 | -.5890 | 0.000 | | .8943 | .30 | 0.00 |
| 12 | .161 | 70 | -.6223 | .331 | 180 | -.4098 | .431 | 100 | -.5886 | 1.131 | 110 | -.5925 | 0.000 | | .7306 | .40 | 0.00 |
| 13 | .161 | 60 | -.5996 | .331 | 170 | -.4528 | .431 | 90 | -.6154 | 1.131 | 100 | -.5582 | 0.000 | | .5366 | .45 | 0.00 |
| 14 | .161 | 50 | -.6235 | .331 | 160 | -.4443 | .431 | 80 | -.6051 | 1.131 | 90 | -.4933 | 0.000 | | 1.0373 | 0.00 | .10 |
| 15 | .161 | 40 | -.6209 | .331 | 150 | -.4714 | .431 | 70 | -.6142 | 1.131 | 80 | -.4732 | 0.000 | | 1.0041 | 0.00 | .20 |
| 16 | .161 | 30 | -.6347 | .331 | 140 | -.4926 | .431 | 60 | -.6304 | 1.131 | 70 | -.3769 | 0.000 | | .9412 | 0.00 | .30 |
| 17 | .161 | 20 | -.6193 | .331 | 130 | -.5510 | .431 | 50 | -.6353 | 1.131 | 60 | -.2371 | 0.000 | | .7844 | 0.00 | .40 |
| 18 | .161 | 10 | -.6214 | .331 | 120 | -.5627 | .431 | 40 | -.6473 | 1.131 | 50 | -.2445 | 0.000 | | .5796 | 0.00 | .45 |
| 19 | .161 | 0 | -.5911 | .331 | 110 | -.5621 | .431 | 30 | -.6233 | 1.131 | 40 | -.2386 | .161 | 270 | -.6044 | | |
| 20 | .231 | 180 | -.4197 | .331 | 100 | -.5881 | .431 | 20 | -.6660 | 1.131 | 30 | -.1654 | .231 | 270 | -.6124 | | |
| 21 | .231 | 170 | -.4045 | .331 | 90 | -.6147 | .431 | 10 | -.6330 | 1.131 | 20 | -.1169 | .331 | 270 | -.6101 | | |
| 22 | .231 | 160 | -.4086 | .331 | 80 | -.5956 | .431 | 0 | -.6421 | 1.131 | 10 | -.1004 | .431 | 270 | -.6176 | | |
| 23 | .231 | 150 | -.4532 | .331 | 70 | -.6152 | .531 | 180 | -.5306 | 1.131 | 0 | -.0980 | .531 | 270 | -.6221 | | |
| 24 | .231 | 140 | -.4697 | .331 | 60 | -.6295 | .531 | 90 | -.6154 | | | | .731 | 270 | -.6765 | | |
| 25 | .231 | 130 | -.5320 | .331 | 50 | -.6226 | .531 | 0 | -.6524 | 1.631 | 90 | -.0070 | .931 | 270 | -.6473 | | |
| 26 | .231 | 120 | -.5007 | .331 | 40 | -.6327 | .731 | 180 | -.5123 | 1.631 | 0 | .0739 | 1.131 | 270 | -.5409 | | |
| 27 | .231 | 110 | -.5804 | .331 | 30 | -.6497 | .731 | 90 | -.6512 | 2.131 | 180 | .0201 | 1.631 | 270 | -.0379 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 4 POINT 107 ALPHA 8 MACH .404 Q 219.650 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D |
| 1 | .161 | 180 | -.3936 | .231 | 100 | -.5508 | .331 | 20 | -.6830 | .731 | 0 | -.5740 | 2.131 | 90 | -.0681 | | |
| 2 | .161 | 170 | -.4946 | .231 | 90 | -.5663 | .331 | 10 | -.7061 | .931 | 180 | -.5492 | 2.131 | 0 | .0217 | | |
| 3 | .161 | 160 | -.4202 | .231 | 80 | -.5858 | .331 | 0 | -.6578 | .931 | 90 | -.6153 | 0.000 | | .7143 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4792 | .231 | 70 | -.6001 | .431 | 180 | -.4974 | .931 | 0 | -.0843 | 0.000 | | .8891 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4808 | .231 | 60 | -.5853 | .431 | 170 | -.4804 | 1.131 | 180 | -.4525 | 0.000 | | 1.0034 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5414 | .231 | 50 | -.5762 | .431 | 160 | -.5162 | 1.131 | 170 | -.4702 | 0.000 | | 1.0434 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5632 | .231 | 40 | -.6054 | .431 | 150 | -.5355 | 1.131 | 160 | -.4796 | 0.000 | | 1.0469 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5968 | .231 | 30 | -.5964 | .431 | 140 | -.5537 | 1.131 | 150 | -.4979 | 0.000 | | 1.0297 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6148 | .231 | 20 | -.6250 | .431 | 130 | -.5685 | 1.131 | 140 | -.5339 | 0.000 | | 1.0006 | .10 | 0.00 |
| 10 | .161 | 90 | -.6302 | .231 | 10 | -.5974 | .431 | 120 | -.5827 | 1.131 | 130 | -.5605 | 0.000 | | .9572 | .20 | 0.00 |
| 11 | .161 | 80 | -.6424 | .231 | 0 | -.6467 | .431 | 110 | -.6208 | 1.131 | 120 | -.5787 | 0.000 | | .6771 | .30 | 0.00 |
| 12 | .161 | 70 | -.6482 | .331 | 180 | -.3870 | .431 | 100 | -.6237 | 1.131 | 110 | -.5457 | 0.000 | | .7068 | .40 | 0.00 |
| 13 | .161 | 60 | -.6746 | .331 | 170 | -.4421 | .431 | 90 | -.6052 | 1.131 | 100 | -.4843 | 0.000 | | .4880 | .45 | 0.00 |
| 14 | .161 | 50 | -.6549 | .331 | 160 | -.3992 | .431 | 80 | -.6401 | 1.131 | 90 | -.4720 | 0.000 | | 1.0217 | 0.00 | .10 |
| 15 | .161 | 40 | -.6552 | .331 | 150 | -.4395 | .431 | 70 | -.6616 | 1.131 | 80 | -.3266 | 0.000 | | .9966 | 0.00 | .20 |
| 16 | .161 | 30 | -.6509 | .331 | 140 | -.4771 | .431 | 60 | -.6737 | 1.131 | 70 | -.2578 | 0.000 | | .9286 | 0.00 | .30 |
| 17 | .161 | 20 | -.6817 | .331 | 130 | -.5121 | .431 | 50 | -.6051 | 1.131 | 60 | -.1463 | 0.000 | | .7806 | 0.00 | .40 |
| 18 | .161 | 10 | -.6736 | .331 | 120 | -.5275 | .431 | 40 | -.7095 | 1.131 | 50 | -.0507 | 0.000 | | .5674 | 0.00 | .45 |
| 19 | .161 | 0 | -.6716 | .331 | 110 | -.5508 | .431 | 30 | -.7169 | 1.131 | 40 | -.0365 | .161 | 270 | -.6602 | | |
| 20 | .231 | 180 | -.4297 | .331 | 100 | -.5998 | .431 | 20 | -.6879 | 1.131 | 30 | -.0082 | .231 | 270 | -.6642 | | |
| 21 | .231 | 170 | -.4446 | .331 | 90 | -.5704 | .431 | 10 | -.6976 | 1.131 | 20 | .0402 | .331 | 270 | -.6432 | | |
| 22 | .231 | 160 | -.4303 | .331 | 80 | -.5773 | .431 | 0 | -.7140 | 1.131 | 10 | .0779 | .431 | 270 | -.6362 | | |
| 23 | .231 | 150 | -.4909 | .331 | 70 | -.5969 | .531 | 180 | -.5344 | 1.131 | 0 | .0974 | .531 | 270 | -.6785 | | |
| 24 | .231 | 140 | -.5233 | .331 | 60 | -.5868 | .531 | 90 | -.6339 | | | | .731 | 270 | -.6713 | | |
| 25 | .231 | 130 | -.5329 | .331 | 50 | -.5959 | .531 | 0 | -.7436 | 1.631 | 90 | -.0806 | .931 | 270 | -.6299 | | |
| 26 | .231 | 120 | -.5626 | .331 | 40 | -.5805 | .731 | 180 | -.5452 | 1.631 | 0 | .0331 | 1.131 | 270 | -.3773 | | |
| 27 | .231 | 110 | -.5951 | .331 | 30 | -.5932 | .731 | 90 | -.6822 | 2.131 | 180 | -.0311 | 1.631 | 270 | -.1069 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4591 | .231 | 100 | -.6155 | .331 | 20 | -.5452 | .731 | 0 | .0858 | 2.131 | 90 | -.3635 | | |
| 2 | .161 | 170 | -.4911 | .231 | 90 | -.6527 | .331 | 10 | -.3101 | .931 | 180 | -.5726 | 2.131 | 0 | .0715 | | |
| 3 | .161 | 160 | -.4597 | .231 | 80 | -.5900 | .331 | 0 | -.4639 | .931 | 90 | -.5294 | 0.000 | | .4627 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5095 | .231 | 70 | -.6405 | .431 | 180 | -.5290 | .931 | 0 | .0432 | 0.000 | | .9859 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5471 | .231 | 60 | -.7055 | .431 | 170 | -.5210 | 1.131 | 180 | -.5340 | 0.000 | | 1.0466 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5988 | .231 | 50 | -.7835 | .431 | 160 | -.5083 | 1.131 | 170 | -.4965 | 0.000 | | 1.0326 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6302 | .231 | 40 | -.8219 | .431 | 150 | -.5219 | 1.131 | 160 | -.5253 | 0.000 | | 1.0038 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6430 | .231 | 30 | -.8624 | .431 | 140 | -.6327 | 1.131 | 150 | -.5534 | 0.000 | | .9722 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6222 | .231 | 20 | -.7218 | .431 | 130 | -.6401 | 1.131 | 140 | -.5951 | 0.000 | | .9391 | .10 | 0.00 |
| 10 | .161 | 90 | -.6249 | .231 | 10 | -.7361 | .431 | 120 | -.6496 | 1.131 | 130 | -.6880 | 0.000 | | .8959 | .20 | 0.00 |
| 11 | .161 | 80 | -.5945 | .231 | 0 | -.7074 | .431 | 110 | -.5270 | 1.131 | 120 | -.6045 | 0.000 | | .7361 | .30 | 0.00 |
| 12 | .161 | 70 | -.5425 | .331 | 180 | -.5145 | .431 | 100 | -.6685 | 1.131 | 110 | -.5779 | 0.000 | | .5276 | .40 | 0.00 |
| 13 | .161 | 60 | -.6137 | .331 | 170 | -.5124 | .431 | 90 | -.6532 | 1.131 | 100 | -.5389 | 0.000 | | .3156 | .45 | 0.00 |
| 14 | .161 | 50 | -.5345 | .331 | 160 | -.5342 | .431 | 80 | -.6595 | 1.131 | 90 | -.4844 | 0.000 | | .9664 | 0.00 | .10 |
| 15 | .161 | 40 | -.6158 | .331 | 150 | -.5767 | .431 | 70 | -.6668 | 1.131 | 80 | -.4419 | 0.000 | | .9492 | 0.00 | .20 |
| 16 | .161 | 30 | -.6350 | .331 | 140 | -.5964 | .431 | 60 | -.6578 | 1.131 | 70 | -.3892 | 0.000 | | .8759 | 0.00 | .30 |
| 17 | .161 | 20 | -.6745 | .331 | 130 | -.6426 | .431 | 50 | -.5791 | 1.131 | 60 | -.2463 | 0.000 | | .7206 | 0.00 | .40 |
| 18 | .161 | 10 | -.6793 | .331 | 120 | -.6383 | .431 | 40 | -.3842 | 1.131 | 50 | -.2023 | 0.000 | | .5367 | 0.00 | .45 |
| 19 | .161 | 0 | -.7559 | .331 | 110 | -.6777 | .431 | 30 | -.1072 | 1.131 | 40 | -.1325 | .161 | 270 | -.6923 | | |
| 20 | .231 | 180 | -.4736 | .331 | 100 | -.6176 | .431 | 20 | -.1157 | 1.131 | 30 | -.0639 | .231 | 270 | -.6258 | | |
| 21 | .231 | 170 | -.5140 | .331 | 90 | -.6968 | .431 | 10 | -.1464 | 1.131 | 20 | -.0112 | .331 | 270 | -.6556 | | |
| 22 | .231 | 160 | -.4932 | .331 | 80 | -.6282 | .431 | 0 | .1459 | 1.131 | 10 | .0219 | .431 | 270 | -.6963 | | |
| 23 | .231 | 150 | -.5348 | .331 | 70 | -.6314 | .531 | 180 | -.5769 | 1.131 | 0 | .0284 | .531 | 270 | -.5635 | | |
| 24 | .231 | 140 | -.5901 | .331 | 60 | -.6134 | .531 | 90 | -.6378 | | | .731 | 270 | -.6493 | | | |
| 25 | .231 | 130 | -.6174 | .331 | 50 | -.6644 | .531 | 0 | .1795 | 1.631 | 90 | -.4194 | .931 | 270 | -.5399 | | |
| 26 | .231 | 120 | -.6450 | .331 | 40 | -.7260 | .731 | 180 | -.6014 | 1.631 | 0 | .0544 | 1.131 | 270 | -.5032 | | |
| 27 | .231 | 110 | -.6281 | .331 | 30 | -.6102 | .731 | 90 | -.6327 | 2.131 | 180 | -.0970 | 1.631 | 270 | -.4768 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4720 | .231 | 100 | -.5844 | .331 | 20 | -.1766 | .731 | 0 | .0716 | 2.131 | 90 | -.4050 | | |
| 2 | .161 | 170 | -.4856 | .231 | 90 | -.6030 | .331 | 10 | .0837 | .931 | 180 | -.5960 | 2.131 | 0 | .1059 | | |
| 3 | .161 | 160 | -.5074 | .231 | 80 | -.5520 | .331 | 0 | .0940 | .931 | 90 | -.5522 | 0.000 | | .9105 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5410 | .231 | 70 | -.5807 | .431 | 180 | -.5436 | .931 | 0 | .0793 | 0.000 | | 1.0210 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5815 | .231 | 60 | -.5897 | .431 | 170 | -.5470 | 1.131 | 180 | -.5374 | 0.000 | | 1.0531 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5921 | .231 | 50 | -.6173 | .431 | 160 | -.5344 | 1.131 | 170 | -.5268 | 0.000 | | 1.0325 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5990 | .231 | 40 | -.6802 | .431 | 150 | -.5612 | 1.131 | 160 | -.5416 | 0.000 | | 1.0038 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6060 | .231 | 30 | -.6742 | .431 | 140 | -.6233 | 1.131 | 150 | -.5215 | 0.000 | | .9488 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6113 | .231 | 20 | -.6386 | .431 | 130 | -.6484 | 1.131 | 140 | -.5942 | 0.000 | | .9037 | .10 | 0.00 |
| 10 | .161 | 90 | -.6012 | .231 | 10 | -.6381 | .431 | 120 | -.6632 | 1.131 | 130 | -.5915 | 0.000 | | .8097 | .20 | 0.00 |
| 11 | .161 | 80 | -.5484 | .231 | 0 | -.6073 | .431 | 110 | -.5470 | 1.131 | 120 | -.5646 | 0.000 | | .7140 | .30 | 0.00 |
| 12 | .161 | 70 | -.5959 | .331 | 180 | -.5148 | .431 | 100 | -.6108 | 1.131 | 110 | -.6238 | 0.000 | | .5067 | .40 | 0.00 |
| 13 | .161 | 60 | -.6049 | .331 | 170 | -.5122 | .431 | 90 | -.5880 | 1.131 | 100 | -.6137 | 0.000 | | .2845 | .45 | 0.00 |
| 14 | .161 | 50 | -.5777 | .331 | 160 | -.5451 | .431 | 80 | -.5766 | 1.131 | 90 | -.5871 | 0.000 | | .9488 | 0.00 | .10 |
| 15 | .161 | 40 | -.6800 | .331 | 150 | -.6126 | .431 | 70 | -.6592 | 1.131 | 80 | -.5215 | 0.000 | | .9208 | 0.00 | .20 |
| 16 | .161 | 30 | -.6363 | .331 | 140 | -.6131 | .431 | 60 | -.6215 | 1.131 | 70 | -.4369 | 0.000 | | .8641 | 0.00 | .30 |
| 17 | .161 | 20 | -.7418 | .331 | 130 | -.6184 | .431 | 50 | -.3601 | 1.131 | 60 | -.3311 | 0.000 | | .7112 | 0.00 | .40 |
| 18 | .161 | 10 | -.7350 | .331 | 120 | -.6675 | .431 | 40 | -.1191 | 1.131 | 50 | -.2329 | 0.000 | | .5211 | 0.00 | .45 |
| 19 | .161 | 0 | -.7314 | .331 | 110 | -.6189 | .431 | 30 | .0895 | 1.131 | 40 | -.1377 | .161 | 270 | -.6341 | | |
| 20 | .231 | 180 | -.4939 | .331 | 100 | -.6482 | .431 | 20 | .0866 | 1.131 | 30 | -.0675 | .231 | 270 | -.6130 | | |
| 21 | .231 | 170 | -.4706 | .331 | 90 | -.5695 | .431 | 10 | .1783 | 1.131 | 20 | -.0100 | .331 | 270 | -.5935 | | |
| 22 | .231 | 160 | -.5420 | .331 | 80 | -.5998 | .431 | 0 | .1841 | 1.131 | 10 | .0456 | .431 | 270 | -.5067 | | |
| 23 | .231 | 150 | -.5218 | .331 | 70 | -.5972 | .531 | 180 | -.5413 | 1.131 | 0 | .0651 | .531 | 270 | -.5940 | | |
| 24 | .231 | 140 | -.5639 | .331 | 60 | -.5945 | .531 | 90 | -.6171 | | | .731 | 270 | -.6296 | | | |
| 25 | .231 | 130 | -.6220 | .331 | 50 | -.7135 | .531 | 0 | .1455 | 1.631 | 90 | -.5292 | .931 | 270 | -.5482 | | |
| 26 | .231 | 120 | -.6134 | .331 | 40 | -.7424 | .731 | 180 | -.6216 | 1.631 | 0 | .0580 | 1.131 | 270 | -.5797 | | |
| 27 | .231 | 110 | -.6459 | .331 | 30 | -.6270 | .731 | 90 | -.6131 | 2.131 | 180 | -.1046 | 1.631 | 270 | -.5253 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 130 | -.4557 | .231 | 100 | -.6553 | .331 | 20 | -.7708 | .731 | 0 | .1135 | 2.131 | 90 | -.2455 | | |
| 2 | .161 | 170 | -.4612 | .231 | 90 | -.6964 | .331 | 10 | -.7873 | .931 | 180 | -.5252 | 2.131 | 0 | .0338 | | |
| 3 | .161 | 150 | -.5091 | .231 | 80 | -.7155 | .331 | 0 | -.7617 | .931 | 90 | -.3905 | 0.000 | | .8124 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5159 | .231 | 70 | -.6673 | .431 | 180 | -.5180 | .931 | 0 | .0527 | 0.000 | | .9639 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5655 | .231 | 60 | -.6938 | .431 | 170 | -.5419 | 1.131 | 130 | -.4744 | 0.000 | | 1.0339 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6022 | .231 | 50 | -.7044 | .431 | 160 | -.5630 | 1.131 | 170 | -.4696 | 0.000 | | 1.0916 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6193 | .231 | 40 | -.6598 | .431 | 150 | -.5893 | 1.131 | 160 | -.5293 | 0.000 | | 1.0322 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6470 | .231 | 30 | -.7250 | .431 | 140 | -.6028 | 1.131 | 150 | -.5193 | 0.000 | | 1.0087 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6512 | .231 | 20 | -.6696 | .431 | 130 | -.5806 | 1.131 | 140 | -.5328 | 0.000 | | .9593 | .10 | 0.00 |
| 10 | .161 | 90 | -.6708 | .231 | 10 | -.7076 | .431 | 120 | -.5365 | 1.131 | 130 | -.5454 | 0.000 | | .8897 | .20 | 0.00 |
| 11 | .161 | 80 | -.6555 | .231 | 0 | -.7038 | .431 | 110 | -.6677 | 1.131 | 120 | -.5476 | 0.000 | | .7997 | .30 | 0.00 |
| 12 | .161 | 70 | -.6551 | .331 | 180 | -.4831 | .431 | 100 | -.6626 | 1.131 | 110 | -.5033 | 0.000 | | .6036 | .40 | 0.00 |
| 13 | .161 | 60 | -.6629 | .331 | 170 | -.5043 | .431 | 90 | -.6672 | 1.131 | 100 | -.4495 | 0.000 | | .3899 | .45 | 0.00 |
| 14 | .161 | 50 | -.6619 | .331 | 160 | -.5064 | .431 | 80 | -.7030 | 1.131 | 90 | -.5586 | 0.000 | | 1.0001 | 0.50 | .10 |
| 15 | .161 | 40 | -.6970 | .331 | 150 | -.5616 | .431 | 70 | -.7474 | 1.131 | 80 | -.2771 | 0.000 | | .9732 | 0.60 | .23 |
| 16 | .161 | 30 | -.6901 | .331 | 140 | -.5908 | .431 | 60 | -.7850 | 1.131 | 70 | -.2539 | 0.000 | | .9003 | 0.70 | .30 |
| 17 | .161 | 20 | -.7023 | .331 | 130 | -.6375 | .431 | 50 | -.8334 | 1.131 | 60 | -.1768 | 0.000 | | .7461 | 0.80 | .49 |
| 18 | .161 | 10 | -.6757 | .331 | 120 | -.6529 | .431 | 40 | -.7776 | 1.131 | 50 | -.1417 | 0.000 | | .5338 | 0.90 | .45 |
| 19 | .161 | 0 | -.7124 | .331 | 110 | -.6513 | .431 | 30 | -.7076 | 1.131 | 40 | -.0850 | .161 | 270 | -.7240 | | |
| 20 | .231 | 180 | -.4782 | .331 | 100 | -.6593 | .431 | 20 | -.6655 | 1.131 | 30 | -.0425 | .231 | 270 | -.6794 | | |
| 21 | .231 | 170 | -.4550 | .331 | 90 | -.6709 | .431 | 10 | -.6142 | 1.131 | 20 | -.0135 | .331 | 270 | -.6914 | | |
| 22 | .231 | 150 | -.5107 | .331 | 80 | -.7044 | .431 | 0 | -.5505 | 1.131 | 10 | .0201 | .431 | 270 | -.6862 | | |
| 23 | .231 | 130 | -.5452 | .331 | 70 | -.6699 | .531 | 180 | -.5368 | 1.131 | 0 | .0314 | .531 | 270 | -.6702 | | |
| 24 | .231 | 110 | -.5639 | .331 | 60 | -.6746 | .531 | 90 | -.6911 | | | | .731 | 270 | -.6702 | | |
| 25 | .231 | 90 | -.6108 | .331 | 50 | -.6959 | .531 | 0 | -.2846 | 1.631 | 90 | -.2953 | .931 | 270 | -.5151 | | |
| 26 | .231 | 70 | -.6443 | .331 | 40 | -.7134 | .731 | 180 | -.5856 | 1.631 | 0 | .0066 | 1.131 | 270 | -.3895 | | |
| 27 | .231 | 50 | -.6289 | .331 | 30 | -.7368 | .731 | 90 | -.6478 | 2.131 | 180 | -.0041 | 1.631 | 270 | -.3154 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4668 | .231 | 100 | -.6479 | .331 | 20 | -.7199 | .731 | 0 | .1005 | 2.131 | 90 | -.2904 | | |
| 2 | .161 | 170 | -.4779 | .231 | 90 | -.6935 | .331 | 10 | -.6982 | .931 | 180 | -.5443 | 2.131 | 0 | .0520 | | |
| 3 | .161 | 150 | -.5013 | .231 | 80 | -.6734 | .331 | 0 | -.6510 | .931 | 90 | -.4598 | 0.000 | | .8328 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5610 | .231 | 70 | -.6670 | .431 | 180 | -.5405 | .931 | 0 | .0467 | 0.000 | | .9748 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5759 | .231 | 60 | -.6834 | .431 | 170 | -.5650 | 1.131 | 180 | -.4876 | 0.000 | | 1.0458 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5817 | .231 | 50 | -.6383 | .431 | 160 | -.5553 | 1.131 | 170 | -.4610 | 0.000 | | 1.0578 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6451 | .231 | 40 | -.6707 | .431 | 150 | -.5883 | 1.131 | 160 | -.5329 | 0.000 | | 1.0383 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6534 | .231 | 30 | -.6723 | .431 | 140 | -.6054 | 1.131 | 150 | -.5118 | 0.000 | | .9960 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6694 | .231 | 20 | -.6665 | .431 | 130 | -.6458 | 1.131 | 140 | -.5077 | 0.000 | | .9410 | .10 | 0.00 |
| 10 | .161 | 90 | -.6355 | .231 | 10 | -.6277 | .431 | 120 | -.6162 | 1.131 | 130 | -.5437 | 0.000 | | .8736 | .20 | 0.00 |
| 11 | .161 | 80 | -.6851 | .231 | 0 | -.7164 | .431 | 110 | -.6672 | 1.131 | 120 | -.5632 | 0.000 | | .7756 | .30 | 0.00 |
| 12 | .161 | 70 | -.6670 | .331 | 180 | -.4987 | .431 | 100 | -.6948 | 1.131 | 110 | -.5325 | 0.000 | | .5815 | .40 | 0.00 |
| 13 | .161 | 60 | -.6476 | .331 | 170 | -.4912 | .431 | 90 | -.6487 | 1.131 | 100 | -.4994 | 0.000 | | .3581 | .45 | 0.00 |
| 14 | .161 | 50 | -.6526 | .331 | 160 | -.5220 | .431 | 80 | -.6806 | 1.131 | 90 | -.4206 | 0.000 | | .9897 | 0.60 | .10 |
| 15 | .161 | 40 | -.6593 | .331 | 150 | -.5778 | .431 | 70 | -.5982 | 1.131 | 80 | -.3812 | 0.000 | | .9605 | 0.70 | .23 |
| 16 | .161 | 30 | -.6536 | .331 | 140 | -.5613 | .431 | 60 | -.7193 | 1.131 | 70 | -.3244 | 0.000 | | .9057 | 0.80 | .33 |
| 17 | .161 | 20 | -.7090 | .331 | 130 | -.6022 | .431 | 50 | -.7090 | 1.131 | 60 | -.2470 | 0.000 | | .7452 | 0.90 | .40 |
| 18 | .161 | 10 | -.6600 | .331 | 120 | -.6256 | .431 | 40 | -.6515 | 1.131 | 50 | -.1761 | 0.000 | | .5403 | 0.00 | .45 |
| 19 | .161 | 0 | -.6651 | .331 | 110 | -.6909 | .431 | 30 | -.4256 | 1.131 | 40 | -.1022 | .161 | 270 | -.6837 | | |
| 20 | .231 | 180 | -.4694 | .331 | 100 | -.6702 | .431 | 20 | -.5298 | 1.131 | 30 | -.0402 | .231 | 270 | -.6777 | | |
| 21 | .231 | 170 | -.4766 | .331 | 90 | -.6697 | .431 | 10 | -.3195 | 1.131 | 20 | -.0124 | .331 | 270 | -.6688 | | |
| 22 | .231 | 150 | -.5372 | .331 | 80 | -.6574 | .431 | 0 | -.1395 | 1.131 | 10 | .0337 | .431 | 270 | -.6447 | | |
| 23 | .231 | 130 | -.5936 | .331 | 70 | -.6574 | .531 | 180 | -.5970 | 1.131 | 0 | .0266 | .531 | 270 | -.6739 | | |
| 24 | .231 | 110 | -.5579 | .331 | 60 | -.6558 | .531 | 90 | -.6589 | | | | .731 | 270 | -.6613 | | |
| 25 | .231 | 90 | -.5817 | .331 | 50 | -.6161 | .531 | 0 | -.3103 | 1.631 | 90 | -.3753 | .931 | 270 | -.4850 | | |
| 26 | .231 | 70 | -.6022 | .331 | 40 | -.7679 | .731 | 180 | -.5038 | 1.631 | 0 | .0249 | 1.131 | 270 | -.4094 | | |
| 27 | .231 | 50 | -.6075 | .331 | 30 | -.7403 | .731 | 90 | -.6656 | 2.131 | 180 | -.0614 | 1.631 | 270 | -.3636 | | |

| 7 X 10 HIGH SPEED TUNNEL TLST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4400 | .231 | 100 | -.5595 | .331 | 20 | -.1623 | .731 | 0 | -.1288 | 2.131 | 90 | -.6280 | | |
| 2 | .161 | 170 | -.4896 | .231 | 90 | -.5361 | .331 | 10 | -.2052 | .931 | 180 | -.5889 | 2.131 | 0 | -.1666 | | |
| 3 | .161 | 160 | -.5469 | .231 | 80 | -.5782 | .331 | 0 | -.2241 | .931 | 90 | -.6791 | 0.000 | | | -.45 | 0.00 |
| 4 | .161 | 150 | -.5528 | .231 | 70 | -.5595 | .431 | 180 | -.5463 | .931 | 0 | -.1175 | 0.000 | | 1.0272 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5078 | .231 | 60 | -.5425 | .431 | 170 | -.5589 | 1.131 | 180 | -.5859 | 0.000 | | 1.0398 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5000 | .231 | 50 | -.5835 | .431 | 160 | -.5795 | 1.131 | 170 | -.6304 | 0.000 | | 1.0117 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5747 | .231 | 40 | -.3932 | .431 | 150 | -.5349 | 1.131 | 160 | -.5764 | 0.000 | | .9576 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5554 | .231 | 30 | -.0963 | .431 | 140 | -.5537 | 1.131 | 150 | -.6292 | 0.000 | | .8915 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5586 | .231 | 20 | .2957 | .431 | 130 | -.6349 | 1.131 | 140 | -.6381 | 0.000 | | .8280 | .10 | 0.00 |
| 10 | .161 | 90 | -.5633 | .231 | 10 | .3544 | .431 | 120 | -.5446 | 1.131 | 130 | -.5906 | 0.000 | | .7616 | .20 | 0.00 |
| 11 | .161 | 80 | -.5592 | .231 | 0 | .3730 | .431 | 110 | -.6275 | 1.131 | 120 | -.6660 | 0.000 | | .6173 | .30 | 0.00 |
| 12 | .161 | 70 | -.5426 | .331 | 180 | -.5137 | .431 | 100 | -.5915 | 1.131 | 110 | -.7651 | 0.000 | | .4201 | .40 | 0.00 |
| 13 | .161 | 60 | -.5517 | .331 | 170 | -.4822 | .431 | 90 | -.5234 | 1.131 | 100 | -.6951 | 0.000 | | .2039 | .45 | 0.00 |
| 14 | .161 | 50 | -.5164 | .331 | 160 | -.4913 | .431 | 80 | -.5532 | 1.131 | 90 | -.6927 | 0.000 | | .9013 | 0.00 | .10 |
| 15 | .161 | 40 | -.7089 | .331 | 150 | -.5883 | .431 | 70 | -.5148 | 1.131 | 80 | -.6957 | 0.000 | | .8507 | 0.00 | .20 |
| 16 | .161 | 30 | -.6004 | .331 | 140 | -.5654 | .431 | 60 | -.3004 | 1.131 | 70 | -.5521 | 0.000 | | .8398 | 0.00 | .30 |
| 17 | .161 | 20 | -.2201 | .331 | 130 | -.6129 | .431 | 50 | -.1471 | 1.131 | 60 | -.4048 | 0.000 | | .6857 | 0.00 | .40 |
| 18 | .161 | 10 | -.6050 | .331 | 120 | -.6374 | .431 | 40 | -.0579 | 1.131 | 50 | -.2927 | 0.000 | | .4971 | 0.00 | .45 |
| 19 | .161 | 0 | -.0784 | .331 | 110 | -.5467 | .431 | 30 | .0239 | 1.131 | 40 | -.1805 | .161 | 270 | -.5602 | | |
| 20 | .231 | 180 | -.5035 | .331 | 100 | -.5521 | .431 | 20 | -.0207 | 1.131 | 30 | -.0535 | .231 | 270 | -.5746 | | |
| 21 | .231 | 170 | -.5768 | .331 | 90 | -.6331 | .431 | 10 | .1680 | 1.131 | 20 | .0546 | .331 | 270 | -.6355 | | |
| 22 | .231 | 160 | -.4978 | .331 | 80 | -.5238 | .431 | 0 | .1840 | 1.131 | 10 | -.1076 | .431 | 270 | -.5481 | | |
| 23 | .231 | 150 | -.5169 | .331 | 70 | -.5873 | .531 | 180 | -.5314 | 1.131 | 0 | -.1222 | .531 | 270 | -.5843 | | |
| 24 | .231 | 140 | -.6159 | .331 | 60 | -.4449 | .531 | 90 | -.6510 | | | .731 | 270 | -.6436 | | | |
| 25 | .231 | 130 | -.6319 | .331 | 50 | -.1548 | .531 | 0 | .1532 | 1.631 | 90 | -.6678 | .931 | 270 | -.6345 | | |
| 26 | .231 | 120 | -.5554 | .331 | 40 | .0169 | .731 | 180 | -.6023 | 1.631 | 0 | .1234 | 1.131 | 270 | -.7528 | | |
| 27 | .231 | 110 | -.5426 | .331 | 30 | .1134 | .731 | 90 | -.5863 | 2.131 | 180 | -.2096 | 1.631 | 270 | -.1398 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4462 | .231 | 100 | -.4662 | .331 | 20 | -.4508 | .731 | 0 | -.5325 | 2.131 | 90 | .0545 | | |
| 2 | .161 | 170 | -.4838 | .231 | 90 | -.4716 | .331 | 10 | -.4731 | .931 | 180 | -.5592 | 2.131 | 0 | .0338 | | |
| 3 | .161 | 160 | -.4420 | .231 | 80 | -.4982 | .331 | 0 | -.5251 | .931 | 90 | -.5853 | 0.000 | | .8066 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4703 | .231 | 70 | -.4412 | .431 | 180 | -.5125 | .931 | 0 | -.5289 | 0.000 | | .7983 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4757 | .231 | 60 | -.4502 | .431 | 170 | -.4977 | 1.131 | 180 | -.5574 | 0.000 | | .9519 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4645 | .231 | 50 | -.4305 | .431 | 160 | -.4971 | 1.131 | 170 | -.5526 | 0.000 | | 1.0076 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4677 | .231 | 40 | -.4870 | .431 | 150 | -.4880 | 1.131 | 160 | -.5301 | 0.000 | | 1.0347 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4485 | .231 | 30 | -.4476 | .431 | 140 | -.4668 | 1.131 | 150 | -.5259 | 0.000 | | 1.0502 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4613 | .231 | 20 | -.4849 | .431 | 130 | -.4622 | 1.131 | 140 | -.5319 | 0.000 | | 1.0398 | .10 | 0.00 |
| 10 | .161 | 90 | -.4688 | .231 | 10 | -.4876 | .431 | 120 | -.4857 | 1.131 | 130 | -.5479 | 0.000 | | 1.0059 | .20 | 0.00 |
| 11 | .161 | 80 | -.4816 | .231 | 0 | -.4396 | .431 | 110 | -.5291 | 1.131 | 120 | -.5556 | 0.000 | | .9467 | .30 | 0.00 |
| 12 | .161 | 70 | -.4426 | .331 | 180 | -.4897 | .431 | 100 | -.4702 | 1.131 | 110 | -.5503 | 0.000 | | .8018 | .40 | 0.00 |
| 13 | .161 | 60 | -.4570 | .331 | 170 | -.4769 | .431 | 90 | -.4839 | 1.131 | 100 | -.5497 | 0.000 | | .6052 | .45 | 0.00 |
| 14 | .161 | 50 | -.4383 | .331 | 160 | -.5014 | .431 | 80 | -.4708 | 1.131 | 90 | -.5443 | 0.000 | | 1.0387 | 0.00 | .10 |
| 15 | .161 | 40 | -.4586 | .331 | 150 | -.5270 | .431 | 70 | -.4765 | 1.131 | 80 | -.5455 | 0.000 | | 1.0122 | 0.00 | .20 |
| 16 | .161 | 30 | -.4838 | .331 | 140 | -.4844 | .431 | 60 | -.4862 | 1.131 | 70 | -.5420 | 0.000 | | .9501 | 0.00 | .30 |
| 17 | .161 | 20 | -.4586 | .331 | 130 | -.4646 | .431 | 50 | -.4759 | 1.131 | 60 | -.5337 | 0.000 | | .8050 | 0.00 | .40 |
| 18 | .161 | 10 | -.4549 | .331 | 120 | -.4684 | .431 | 40 | -.4931 | 1.131 | 50 | -.5208 | 0.000 | | .6087 | 0.00 | .45 |
| 19 | .161 | 0 | -.4731 | .331 | 110 | -.4854 | .431 | 30 | -.4960 | 1.131 | 40 | -.5295 | .161 | 270 | -.4728 | | |
| 20 | .231 | 180 | -.5073 | .331 | 100 | -.4982 | .431 | 20 | -.4931 | 1.131 | 30 | -.5376 | .231 | 270 | -.4992 | | |
| 21 | .231 | 170 | -.4822 | .331 | 90 | -.4561 | .431 | 10 | -.5028 | 1.131 | 20 | -.5616 | .331 | 270 | -.4981 | | |
| 22 | .231 | 160 | -.5105 | .331 | 80 | -.4828 | .431 | 0 | -.4502 | 1.131 | 10 | -.5443 | .431 | 270 | -.4785 | | |
| 23 | .231 | 150 | -.4907 | .331 | 70 | -.4742 | .531 | 180 | -.5606 | 1.131 | 0 | -.5301 | .531 | 270 | -.5171 | | |
| 24 | .231 | 140 | -.4608 | .331 | 60 | -.4625 | .531 | 90 | -.4811 | | | .731 | 270 | -.5188 | | | |
| 25 | .231 | 130 | -.4602 | .331 | 50 | -.5110 | .531 | 0 | -.5177 | 1.631 | 90 | -.2428 | .931 | 270 | -.5452 | | |
| 26 | .231 | 120 | -.4709 | .331 | 40 | -.4764 | .731 | 180 | -.5251 | 1.631 | 0 | -.1811 | 1.131 | 270 | -.5418 | | |
| 27 | .231 | 110 | -.4912 | .331 | 30 | -.4881 | .731 | 90 | -.5257 | 2.131 | 180 | .0338 | 1.631 | 270 | -.1451 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 4 POINT 114 ALPHA 22 MACH .404 Q 218.809 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4645 | .231 | 100 | -.5264 | .331 | 20 | .1865 | .731 | 0 | .1036 | 2.131 | 90 | -.5762 | | |
| 2 | .161 | 170 | -.4501 | .231 | 90 | -.5088 | .331 | 10 | .2596 | .931 | 180 | -.5763 | 2.131 | 0 | .1312 | | |
| 3 | .161 | 160 | -.4845 | .231 | 80 | -.5237 | .331 | 0 | .2989 | .931 | 90 | -.5658 | 0.000 | | .9378 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5072 | .231 | 70 | -.5285 | .431 | 180 | -.5257 | .931 | 0 | .1107 | 0.000 | | 1.0497 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5286 | .231 | 60 | -.6195 | .431 | 170 | -.5451 | 1.131 | 180 | -.5319 | 0.000 | | 1.0554 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5601 | .231 | 50 | -.5423 | .431 | 160 | -.5554 | 1.131 | 170 | -.5295 | 0.000 | | 1.0244 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5820 | .231 | 40 | -.6748 | .431 | 150 | -.5616 | 1.131 | 150 | -.5882 | 0.000 | | .9654 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6006 | .231 | 30 | -.5604 | .431 | 140 | -.5976 | 1.131 | 150 | -.5710 | 0.000 | | .9487 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5878 | .231 | 20 | -.5827 | .431 | 130 | -.6261 | 1.131 | 140 | -.6124 | 0.000 | | .8701 | .10 | 0.00 |
| 10 | .161 | 90 | -.5574 | .231 | 10 | -.2550 | .431 | 120 | -.5890 | 1.131 | 130 | -.6669 | 0.000 | | .7832 | .20 | 0.00 |
| 11 | .161 | 80 | -.5509 | .231 | 0 | -.2188 | .431 | 110 | -.5976 | 1.131 | 120 | -.6320 | 0.000 | | .6837 | .30 | 0.00 |
| 12 | .161 | 70 | -.5361 | .331 | 180 | -.5317 | .431 | 100 | -.5736 | 1.131 | 110 | -.6936 | 0.000 | | .4525 | .40 | 0.00 |
| 13 | .161 | 60 | -.5841 | .331 | 170 | -.5014 | .431 | 90 | -.6193 | 1.131 | 100 | -.6598 | 0.000 | | .2638 | .45 | 0.00 |
| 14 | .161 | 50 | -.5553 | .331 | 160 | -.5498 | .431 | 80 | -.6073 | 1.131 | 90 | -.6689 | 0.000 | | .9321 | .50 | .10 |
| 15 | .161 | 40 | -.5462 | .331 | 150 | -.5211 | .431 | 70 | -.5765 | 1.131 | 80 | -.5941 | 0.000 | | .8954 | .50 | .20 |
| 16 | .161 | 30 | -.6113 | .331 | 140 | -.5817 | .431 | 60 | -.4395 | 1.131 | 70 | -.4898 | 0.000 | | .8553 | .50 | .30 |
| 17 | .161 | 20 | -.6730 | .331 | 130 | -.5903 | .431 | 50 | -.2169 | 1.131 | 60 | -.3625 | 0.000 | | .7221 | .50 | .40 |
| 18 | .161 | 10 | -.6855 | .331 | 120 | -.5535 | .431 | 40 | -.0240 | 1.131 | 50 | -.2452 | 0.000 | | .5242 | 0.00 | .45 |
| 19 | .161 | 0 | -.7207 | .331 | 110 | -.5689 | .431 | 30 | .0901 | 1.131 | 40 | -.1238 | .161 | 270 | -.5647 | | |
| 20 | .231 | 180 | -.4800 | .331 | 100 | -.5961 | .431 | 20 | .0091 | 1.131 | 30 | -.0468 | .231 | 270 | -.5385 | | |
| 21 | .231 | 170 | -.5046 | .331 | 90 | -.5759 | .431 | 10 | .1557 | 1.131 | 20 | .0190 | .331 | 270 | -.5624 | | |
| 22 | .231 | 160 | -.4880 | .331 | 80 | -.4929 | .431 | 0 | .1888 | 1.131 | 10 | .0699 | .431 | 270 | -.5525 | | |
| 23 | .231 | 150 | -.4992 | .331 | 70 | -.4913 | .531 | 180 | -.5223 | 1.131 | 0 | .0977 | .531 | 270 | -.5400 | | |
| 24 | .231 | 140 | -.5553 | .331 | 60 | -.6227 | .531 | 90 | -.6107 | | | .731 | 270 | -.6192 | | | |
| 25 | .231 | 130 | -.6028 | .331 | 50 | -.5205 | .531 | 0 | .1335 | 1.631 | 90 | -.5449 | .931 | 270 | -.6146 | | |
| 26 | .231 | 120 | -.6140 | .331 | 40 | -.1832 | .731 | 180 | -.5999 | 1.631 | 0 | .0936 | 1.131 | 270 | -.6393 | | |
| 27 | .231 | 110 | -.6494 | .331 | 30 | -.0241 | .731 | 90 | -.5782 | 2.131 | 180 | -.0965 | 1.631 | 270 | -.6244 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 4 POINT 115 ALPHA 24 MACH .403 Q 218.341 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5533 | .231 | 100 | -.5857 | .331 | 20 | .1709 | .731 | 0 | .1956 | 2.131 | 90 | -.5510 | | |
| 2 | .161 | 170 | -.5495 | .231 | 90 | -.5851 | .331 | 10 | .1755 | .931 | 180 | -.6470 | 2.131 | 0 | .1027 | | |
| 3 | .161 | 160 | -.5790 | .231 | 80 | -.6198 | .331 | 0 | .2063 | .931 | 90 | -.6565 | 0.000 | | .9455 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5346 | .231 | 70 | -.5206 | .431 | 180 | -.5297 | .931 | 0 | .0967 | 0.000 | | 1.0365 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5581 | .231 | 60 | -.5691 | .431 | 170 | -.5549 | 1.131 | 180 | -.6007 | 0.000 | | 1.0237 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5854 | .231 | 50 | -.5857 | .431 | 160 | -.6184 | 1.131 | 170 | -.5841 | 0.000 | | .9990 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5800 | .231 | 40 | -.5425 | .431 | 150 | -.5389 | 1.131 | 160 | -.5889 | 0.000 | | .9535 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5544 | .231 | 30 | -.2012 | .431 | 140 | -.5863 | 1.131 | 150 | -.6120 | 0.000 | | .8840 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5961 | .231 | 20 | .2552 | .431 | 130 | -.7041 | 1.131 | 140 | -.6138 | 0.000 | | .8122 | .10 | 0.00 |
| 10 | .161 | 90 | -.5859 | .231 | 10 | .2333 | .431 | 120 | -.6143 | 1.131 | 130 | -.7004 | 0.000 | | .7202 | .20 | 0.00 |
| 11 | .161 | 80 | -.5142 | .231 | 0 | .3538 | .431 | 110 | -.5532 | 1.131 | 120 | -.6904 | 0.000 | | .6193 | .30 | 0.00 |
| 12 | .161 | 70 | -.4704 | .331 | 180 | -.5345 | .431 | 100 | -.6206 | 1.131 | 110 | -.7723 | 0.000 | | .4161 | .40 | 0.00 |
| 13 | .161 | 60 | -.5535 | .331 | 170 | -.4966 | .431 | 90 | -.5446 | 1.131 | 100 | -.7343 | 0.000 | | .2269 | .45 | 0.00 |
| 14 | .161 | 50 | -.5734 | .331 | 160 | -.5617 | .431 | 80 | -.6075 | 1.131 | 90 | -.7117 | 0.000 | | .8725 | .50 | .10 |
| 15 | .161 | 40 | -.5795 | .331 | 150 | -.5265 | .431 | 70 | -.5034 | 1.131 | 80 | -.6251 | 0.000 | | .8794 | .50 | .20 |
| 16 | .161 | 30 | -.7250 | .331 | 140 | -.5505 | .431 | 60 | -.3324 | 1.131 | 70 | -.5420 | 0.000 | | .8122 | .50 | .30 |
| 17 | .161 | 20 | -.5191 | .331 | 130 | -.6065 | .431 | 50 | -.1557 | 1.131 | 60 | -.4339 | 0.000 | | .6827 | .50 | .40 |
| 18 | .161 | 10 | -.4121 | .331 | 120 | -.6214 | .431 | 40 | -.0950 | 1.131 | 50 | -.2938 | 0.000 | | .4855 | 0.00 | .45 |
| 19 | .161 | 0 | -.2035 | .331 | 110 | -.6704 | .431 | 30 | -.0018 | 1.131 | 40 | -.2060 | .161 | 270 | -.6138 | | |
| 20 | .231 | 180 | -.5025 | .331 | 100 | -.5393 | .431 | 20 | -.0258 | 1.131 | 30 | -.0600 | .231 | 270 | -.5372 | | |
| 21 | .231 | 170 | -.5003 | .331 | 90 | -.5665 | .431 | 10 | .1526 | 1.131 | 20 | .0296 | .331 | 270 | -.5757 | | |
| 22 | .231 | 160 | -.5622 | .331 | 80 | -.6427 | .431 | 0 | .1492 | 1.131 | 10 | .0670 | .431 | 270 | -.6390 | | |
| 23 | .231 | 150 | -.5544 | .331 | 70 | -.6427 | .531 | 180 | -.5674 | 1.131 | 0 | .0807 | .531 | 270 | -.6223 | | |
| 24 | .231 | 140 | -.6049 | .331 | 60 | -.5643 | .531 | 90 | -.6956 | | | .731 | 270 | -.6345 | | | |
| 25 | .231 | 130 | -.5629 | .331 | 50 | -.3793 | .531 | 0 | .1251 | 1.631 | 90 | -.6975 | .931 | 270 | -.6449 | | |
| 26 | .231 | 120 | -.5306 | .331 | 40 | -.0540 | .731 | 180 | -.6109 | 1.631 | 0 | .0884 | 1.131 | 270 | -.7275 | | |
| 27 | .231 | 110 | -.5602 | .331 | 30 | .1176 | .731 | 90 | -.6006 | 2.131 | 180 | -.1710 | 1.631 | 270 | -.6937 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 74 ALPHA 2 MACH .507 Q 323.754 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4237 | .231 | 100 | -.4755 | .331 | 20 | -.5205 | .731 | 0 | -.5572 | 2.131 | 90 | .0075 | | |
| 2 | .161 | 170 | -.4136 | .231 | 90 | -.4841 | .331 | 10 | -.5047 | .931 | 180 | -.5195 | 2.131 | 0 | .0901 | | |
| 3 | .161 | 150 | -.4374 | .231 | 80 | -.5021 | .331 | 0 | -.5398 | .931 | 90 | -.5604 | 0.000 | | .6728 | -.45 | 0.00 |
| 4 | .161 | 130 | -.4348 | .231 | 70 | -.5115 | .431 | 180 | -.4554 | .931 | 0 | -.5608 | 0.000 | | .8780 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4360 | .231 | 60 | -.5007 | .431 | 170 | -.4645 | 1.131 | 180 | -.5255 | 0.000 | | .9997 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4204 | .231 | 50 | -.4877 | .431 | 160 | -.4518 | 1.131 | 170 | -.5215 | 0.000 | | 1.0485 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4518 | .231 | 40 | -.5021 | .431 | 150 | -.4564 | 1.131 | 160 | -.5051 | 0.000 | | 1.0745 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4622 | .231 | 30 | -.5259 | .431 | 140 | -.4773 | 1.131 | 150 | -.5255 | 0.000 | | 1.0710 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4770 | .231 | 20 | -.5158 | .431 | 130 | -.4834 | 1.131 | 140 | -.5524 | 0.000 | | 1.0563 | .10 | 0.00 |
| 10 | .161 | 90 | -.4547 | .231 | 10 | -.4899 | .431 | 120 | -.4680 | 1.131 | 130 | -.5464 | 0.000 | | 1.0292 | .20 | 0.00 |
| 11 | .161 | 80 | -.4929 | .231 | 0 | -.4705 | .431 | 110 | -.4923 | 1.131 | 120 | -.5624 | 0.000 | | .9633 | .30 | 0.00 |
| 12 | .161 | 70 | -.4713 | .331 | 180 | -.4489 | .431 | 100 | -.4773 | 1.131 | 110 | -.5131 | 0.000 | | .8210 | .40 | 0.00 |
| 13 | .161 | 60 | -.5150 | .331 | 170 | -.4338 | .431 | 90 | -.5074 | 1.131 | 100 | -.5452 | 0.000 | | .6166 | .45 | 0.00 |
| 14 | .161 | 50 | -.4904 | .331 | 160 | -.4532 | .431 | 80 | -.4912 | 1.131 | 90 | -.5452 | 0.000 | | 1.0613 | 0.00 | .10 |
| 15 | .161 | 40 | -.5131 | .331 | 150 | -.4446 | .431 | 70 | -.5124 | 1.131 | 80 | -.5316 | 0.000 | | 1.0334 | 0.00 | .20 |
| 16 | .161 | 30 | -.4738 | .331 | 140 | -.4410 | .431 | 60 | -.4985 | 1.131 | 70 | -.5512 | 0.000 | | .9547 | 0.00 | .30 |
| 17 | .161 | 20 | -.5012 | .331 | 130 | -.4482 | .431 | 50 | -.5104 | 1.131 | 60 | -.5428 | 0.000 | | .8365 | 0.00 | .40 |
| 18 | .161 | 10 | -.5037 | .331 | 120 | -.4683 | .431 | 40 | -.5139 | 1.131 | 50 | -.5780 | 0.000 | | .6364 | 0.00 | .45 |
| 19 | .161 | 0 | -.5060 | .331 | 110 | -.4676 | .431 | 30 | -.5124 | 1.131 | 40 | -.5279 | .161 | 270 | -.4818 | | |
| 20 | .231 | 180 | -.4988 | .331 | 100 | -.4935 | .431 | 20 | -.5309 | 1.131 | 30 | -.5564 | .231 | 270 | -.4834 | | |
| 21 | .231 | 170 | -.4402 | .331 | 90 | -.4913 | .431 | 10 | -.5344 | 1.131 | 20 | -.5620 | .331 | 270 | -.5043 | | |
| 22 | .231 | 160 | -.4420 | .331 | 80 | -.4888 | .431 | 0 | -.5394 | 1.131 | 10 | -.5700 | .431 | 270 | -.5043 | | |
| 23 | .231 | 150 | -.4258 | .331 | 70 | -.5050 | .531 | 180 | -.4595 | 1.131 | 0 | -.5291 | .531 | 270 | -.5144 | | |
| 24 | .231 | 140 | -.4125 | .331 | 60 | -.4975 | .531 | 90 | -.4958 | | | .731 | 270 | -.5315 | | | |
| 25 | .231 | 130 | -.4496 | .331 | 50 | -.4870 | .531 | 0 | -.5590 | 1.631 | 90 | -.2601 | .931 | 270 | -.5481 | | |
| 26 | .231 | 120 | -.4457 | .331 | 40 | -.4978 | .731 | 180 | -.4958 | 1.631 | 0 | -.2189 | 1.131 | 270 | -.5439 | | |
| 27 | .231 | 110 | -.4792 | .331 | 30 | -.5072 | .731 | 90 | -.5332 | 2.131 | 180 | -.0384 | 1.631 | 270 | -.2980 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 75 ALPHA 4 MACH .506 Q 322.864 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4140 | .231 | 100 | -.5274 | .331 | 20 | -.5634 | .731 | 0 | -.6218 | 2.131 | 90 | .0398 | | |
| 2 | .161 | 170 | -.3941 | .231 | 90 | -.5277 | .331 | 10 | -.5595 | .931 | 180 | -.5206 | 2.131 | 0 | .0884 | | |
| 3 | .161 | 160 | -.3978 | .231 | 80 | -.5454 | .331 | 0 | -.5618 | .931 | 90 | -.6057 | 0.000 | | .6929 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4419 | .231 | 70 | -.5681 | .431 | 180 | -.4481 | .931 | 0 | -.6061 | 0.000 | | .8741 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4542 | .231 | 60 | -.5432 | .431 | 170 | -.4570 | 1.131 | 180 | -.4974 | 0.000 | | 1.0032 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4840 | .231 | 50 | -.5497 | .431 | 160 | -.5092 | 1.131 | 170 | -.5403 | 0.000 | | 1.0498 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4972 | .231 | 40 | -.5768 | .431 | 150 | -.4875 | 1.131 | 160 | -.5295 | 0.000 | | 1.0669 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5207 | .231 | 30 | -.5743 | .431 | 140 | -.5108 | 1.131 | 150 | -.5122 | 0.000 | | 1.0634 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5099 | .231 | 20 | -.5515 | .431 | 130 | -.4918 | 1.131 | 140 | -.5206 | 0.000 | | 1.0490 | .10 | 0.00 |
| 10 | .161 | 90 | -.5236 | .231 | 10 | -.5613 | .431 | 120 | -.5069 | 1.131 | 130 | -.5467 | 0.000 | | 1.0133 | .20 | 0.00 |
| 11 | .161 | 80 | -.5551 | .231 | 0 | -.5382 | .431 | 110 | -.5328 | 1.131 | 120 | -.5568 | 0.000 | | .9491 | .30 | 0.00 |
| 12 | .161 | 70 | -.5616 | .331 | 180 | -.4307 | .431 | 100 | -.5444 | 1.131 | 110 | -.5335 | 0.000 | | .7897 | .40 | 0.00 |
| 13 | .161 | 60 | -.5002 | .331 | 170 | -.4196 | .431 | 90 | -.5444 | 1.131 | 100 | -.5708 | 0.000 | | .5973 | .45 | 0.00 |
| 14 | .161 | 50 | -.5497 | .331 | 160 | -.4765 | .431 | 80 | -.5390 | 1.131 | 90 | -.5311 | 0.000 | | 1.0615 | 0.00 | .10 |
| 15 | .161 | 40 | -.5580 | .331 | 150 | -.4398 | .431 | 70 | -.5537 | 1.131 | 80 | -.5764 | 0.000 | | 1.0358 | 0.00 | .20 |
| 16 | .161 | 30 | -.5721 | .331 | 140 | -.4852 | .431 | 60 | -.5672 | 1.131 | 70 | -.5544 | 0.000 | | .9763 | 0.00 | .30 |
| 17 | .161 | 20 | -.5518 | .331 | 130 | -.4783 | .431 | 50 | -.5521 | 1.131 | 60 | -.5335 | 0.000 | | .8267 | 0.00 | .40 |
| 18 | .161 | 10 | -.5627 | .331 | 120 | -.4953 | .431 | 40 | -.5835 | 1.131 | 50 | -.4813 | 0.000 | | .6206 | 0.00 | .45 |
| 19 | .161 | 0 | -.5359 | .331 | 110 | -.5108 | .431 | 30 | -.5537 | 1.131 | 40 | -.4962 | .161 | 270 | -.5115 | | |
| 20 | .231 | 180 | -.4274 | .331 | 100 | -.5093 | .431 | 20 | -.5518 | 1.131 | 30 | -.5210 | .231 | 270 | -.5303 | | |
| 21 | .231 | 170 | -.4574 | .331 | 90 | -.5321 | .431 | 10 | -.5614 | 1.131 | 20 | -.4584 | .331 | 270 | -.5338 | | |
| 22 | .231 | 160 | -.4115 | .331 | 80 | -.5519 | .431 | 0 | -.5757 | 1.131 | 10 | -.4781 | .431 | 270 | -.5361 | | |
| 23 | .231 | 150 | -.4289 | .331 | 70 | -.5505 | .531 | 180 | -.4643 | 1.131 | 0 | -.4853 | .531 | 270 | -.5446 | | |
| 24 | .231 | 140 | -.4021 | .331 | 60 | -.5533 | .531 | 90 | -.5502 | | | .731 | 270 | -.5901 | | | |
| 25 | .231 | 130 | -.4643 | .331 | 50 | -.5706 | .531 | 0 | -.5533 | 1.631 | 90 | -.2208 | .931 | 270 | -.5836 | | |
| 26 | .231 | 120 | -.4806 | .331 | 40 | -.5461 | .731 | 180 | -.4860 | 1.631 | 0 | -.0381 | 1.131 | 270 | -.5653 | | |
| 27 | .231 | 110 | -.4983 | .331 | 30 | -.5717 | .731 | 90 | -.5835 | 2.131 | 180 | -.0325 | 1.631 | 270 | -.2134 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 72 ALPHA -1 MACH .506 Q 323.218 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PGRT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4779 | .231 | 100 | -.4641 | .331 | 20 | -.4228 | .731 | 0 | -.4900 | 2.131 | 90 | -.0247 | | |
| 2 | .161 | 170 | -.4743 | .231 | 90 | -.4551 | .331 | 10 | -.4410 | .931 | 180 | -.5609 | 2.131 | 0 | -.0577 | | |
| 3 | .161 | 160 | -.4800 | .231 | 80 | -.4479 | .331 | 0 | -.4715 | .931 | 90 | -.5545 | 0.000 | | .6332 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4771 | .231 | 70 | -.4515 | .431 | 180 | -.5013 | .931 | 0 | -.5144 | 0.000 | | .8161 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4746 | .231 | 60 | -.4392 | .431 | 170 | -.4963 | 1.131 | 180 | -.5670 | 3.000 | | .9613 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4779 | .231 | 50 | -.4378 | .431 | 160 | -.4851 | 1.131 | 170 | -.5517 | 0.000 | | 1.0219 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4758 | .231 | 40 | -.4284 | .431 | 150 | -.5152 | 1.131 | 160 | -.5449 | 0.000 | | 1.0592 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4573 | .231 | 30 | -.4270 | .431 | 140 | -.4777 | 1.131 | 150 | -.5457 | 0.000 | | 1.0697 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4692 | .231 | 20 | -.4385 | .431 | 130 | -.4982 | 1.131 | 140 | -.5593 | 0.000 | | 1.0642 | .10 | 0.00 |
| 10 | .161 | 90 | -.4313 | .231 | 10 | -.4623 | .431 | 120 | -.4773 | 1.131 | 130 | -.5245 | 0.000 | | 1.0382 | .20 | 0.00 |
| 11 | .161 | 80 | -.4515 | .231 | 0 | -.4198 | .431 | 110 | -.4820 | 1.131 | 120 | -.5389 | 0.000 | | .9784 | .30 | 0.00 |
| 12 | .161 | 70 | -.4414 | .331 | 180 | -.4810 | .431 | 100 | -.4684 | 1.131 | 110 | -.5393 | 0.000 | | .8433 | .40 | 0.00 |
| 13 | .161 | 60 | -.4724 | .331 | 170 | -.4980 | .431 | 90 | -.4947 | 1.131 | 100 | -.5369 | 0.000 | | .6448 | .45 | 0.00 |
| 14 | .161 | 50 | -.4500 | .331 | 160 | -.4839 | .431 | 80 | -.4715 | 1.131 | 90 | -.5417 | 0.000 | | 1.0677 | 0.00 | .10 |
| 15 | .161 | 40 | -.4237 | .331 | 150 | -.5008 | .431 | 70 | -.4746 | 1.131 | 80 | -.5533 | 0.000 | | 1.0335 | 0.00 | .20 |
| 16 | .161 | 30 | -.4334 | .331 | 140 | -.4850 | .431 | 60 | -.4727 | 1.131 | 70 | -.5441 | 0.000 | | .9710 | 0.00 | .30 |
| 17 | .161 | 20 | -.4636 | .331 | 130 | -.4890 | .431 | 50 | -.4692 | 1.131 | 60 | -.5208 | 0.600 | | .8335 | 0.00 | .40 |
| 18 | .161 | 10 | -.4511 | .331 | 120 | -.4774 | .431 | 40 | -.4727 | 1.131 | 50 | -.5309 | 0.000 | | .6365 | 0.00 | .45 |
| 19 | .161 | 0 | -.4002 | .331 | 110 | -.4767 | .431 | 30 | -.4464 | 1.131 | 40 | -.5393 | .161 | 270 | -.4846 | | |
| 20 | .231 | 180 | -.4838 | .331 | 100 | -.4817 | .431 | 20 | -.4735 | 1.131 | 30 | -.5160 | .231 | 270 | -.4904 | | |
| 21 | .231 | 170 | -.4948 | .331 | 90 | -.4781 | .431 | 10 | -.4549 | 1.131 | 20 | -.5393 | .331 | 270 | -.4687 | | |
| 22 | .231 | 160 | -.4927 | .331 | 80 | -.4663 | .431 | 0 | -.4715 | 1.131 | 10 | -.5240 | .431 | 270 | -.4749 | | |
| 23 | .231 | 150 | -.4809 | .331 | 70 | -.4868 | .531 | 180 | -.5272 | 1.131 | 0 | -.5417 | .531 | 270 | -.4815 | | |
| 24 | .231 | 140 | -.4941 | .331 | 60 | -.4839 | .531 | 90 | -.5179 | | | | .731 | 270 | -.5102 | | |
| 25 | .231 | 130 | -.4905 | .331 | 50 | -.4724 | .531 | 0 | -.4623 | 1.631 | 90 | -.2574 | .931 | 270 | -.5669 | | |
| 26 | .231 | 120 | -.4743 | .331 | 40 | -.4681 | .731 | 180 | -.5163 | 1.631 | 0 | -.3095 | 1.131 | 270 | -.5553 | | |
| 27 | .231 | 110 | -.4685 | .331 | 30 | -.4537 | .731 | 90 | -.4955 | 2.131 | 180 | .0221 | 1.631 | 270 | -.3417 | | |

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| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 2 POINT 73 ALPHA 0 MACH .506 Q 323.219 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PGRT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4555 | .231 | 100 | -.4518 | .331 | 20 | -.4561 | .731 | 0 | -.4868 | 2.131 | 90 | -.0131 | | |
| 2 | .161 | 170 | -.4480 | .231 | 90 | -.4472 | .331 | 10 | -.4503 | .931 | 180 | -.5273 | 2.131 | 0 | -.0041 | | |
| 3 | .161 | 160 | -.4345 | .231 | 80 | -.4479 | .331 | 0 | -.5009 | .931 | 90 | -.5261 | 0.000 | | .6487 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4641 | .231 | 70 | -.4518 | .431 | 180 | -.4777 | .931 | 0 | -.4992 | 0.000 | | .8312 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4690 | .231 | 60 | -.4699 | .431 | 170 | -.4851 | 1.131 | 180 | -.5245 | 0.000 | | .9757 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4341 | .231 | 50 | -.4670 | .431 | 160 | -.4723 | 1.131 | 170 | -.5357 | 0.000 | | 1.0401 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4450 | .231 | 40 | -.4500 | .431 | 150 | -.4522 | 1.131 | 160 | -.5200 | 0.000 | | 1.0681 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4414 | .231 | 30 | -.4515 | .431 | 140 | -.4777 | 1.131 | 150 | -.5485 | 0.000 | | 1.0697 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4446 | .231 | 20 | -.4374 | .431 | 130 | -.4854 | 1.131 | 140 | -.5329 | 0.000 | | 1.0584 | .10 | 0.00 |
| 10 | .161 | 90 | -.4334 | .231 | 10 | -.4220 | .431 | 120 | -.4665 | 1.131 | 130 | -.5309 | 0.000 | | 1.0324 | .20 | 0.00 |
| 11 | .161 | 80 | -.4504 | .231 | 0 | -.4180 | .431 | 110 | -.4708 | 1.131 | 120 | -.5429 | 0.000 | | .9722 | .30 | 0.00 |
| 12 | .161 | 70 | -.4444 | .331 | 180 | -.4767 | .431 | 100 | -.4966 | 1.131 | 110 | -.5228 | 0.000 | | .8304 | .40 | 0.00 |
| 13 | .161 | 60 | -.4417 | .331 | 170 | -.4558 | .431 | 90 | -.4723 | 1.131 | 100 | -.5485 | 0.000 | | .6331 | .45 | 0.00 |
| 14 | .161 | 50 | -.4439 | .331 | 160 | -.4515 | .431 | 80 | -.4588 | 1.131 | 90 | -.5413 | 0.000 | | 1.0607 | .50 | .10 |
| 15 | .161 | 40 | -.4209 | .331 | 150 | -.4598 | .431 | 70 | -.4750 | 1.131 | 80 | -.5317 | 0.000 | | 1.0269 | .60 | .20 |
| 16 | .161 | 30 | -.4706 | .331 | 140 | -.4378 | .431 | 60 | -.4750 | 1.131 | 70 | -.5277 | 0.000 | | .9733 | 0.00 | .30 |
| 17 | .161 | 20 | -.4341 | .331 | 130 | -.4537 | .431 | 50 | -.4719 | 1.131 | 60 | -.5224 | 0.000 | | .8328 | 0.00 | .40 |
| 18 | .161 | 10 | -.4519 | .331 | 120 | -.4404 | .431 | 40 | -.4599 | 1.131 | 50 | -.5289 | 0.000 | | .6425 | 0.00 | .45 |
| 19 | .161 | 0 | -.4500 | .331 | 110 | -.4580 | .431 | 30 | -.4827 | 1.131 | 40 | -.5469 | .161 | 270 | -.4702 | | |
| 20 | .231 | 180 | -.4559 | .331 | 100 | -.4760 | .431 | 20 | -.4641 | 1.131 | 30 | -.5373 | .231 | 270 | -.4675 | | |
| 21 | .231 | 170 | -.4570 | .331 | 90 | -.4558 | .431 | 10 | -.4541 | 1.131 | 20 | -.5345 | .331 | 270 | -.4679 | | |
| 22 | .231 | 160 | -.4408 | .331 | 80 | -.4724 | .431 | 0 | -.4681 | 1.131 | 10 | -.5429 | .431 | 270 | -.4935 | | |
| 23 | .231 | 150 | -.4873 | .331 | 70 | -.4828 | .531 | 180 | -.5090 | 1.131 | 0 | -.5686 | .531 | 270 | -.5130 | | |
| 24 | .231 | 140 | -.4714 | .331 | 60 | -.4805 | .531 | 90 | -.4766 | | | | .731 | 270 | -.5192 | | |
| 25 | .231 | 130 | -.4500 | .331 | 50 | -.4500 | .531 | 0 | -.4820 | 1.631 | 90 | -.3673 | .931 | 270 | -.5238 | | |
| 26 | .231 | 120 | -.4440 | .331 | 40 | -.4648 | .731 | 180 | -.4955 | 1.631 | 0 | -.3188 | 1.131 | 270 | -.5168 | | |
| 27 | .231 | 110 | -.4307 | .331 | 30 | -.4641 | .731 | 90 | -.5036 | 2.131 | 180 | .0497 | 1.631 | 270 | -.2834 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 2 POINT 78 ALPHA 10 MACH .507 Q 323.345 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4394 | .231 | 100 | -.6185 | .331 | 20 | -.6669 | .731 | 0 | -.3745 | 2.131 | 90 | -.1351 | | |
| 2 | .161 | 170 | -.4163 | .231 | 90 | -.6310 | .331 | 10 | -.6503 | .931 | 180 | -.5422 | 2.131 | 0 | .0289 | | |
| 3 | .161 | 160 | -.4021 | .231 | 80 | -.6053 | .331 | 0 | -.6792 | .931 | 90 | -.6310 | 0.000 | | .7700 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4982 | .231 | 70 | -.6415 | .431 | 180 | -.4804 | .931 | 0 | -.0504 | 0.000 | | .9405 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5320 | .231 | 60 | -.6922 | .431 | 170 | -.5226 | 1.131 | 180 | -.4754 | 0.000 | | 1.0525 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5519 | .231 | 50 | -.6584 | .431 | 160 | -.5180 | 1.131 | 170 | -.4366 | 0.000 | | 1.0773 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5905 | .231 | 40 | -.6656 | .431 | 150 | -.5535 | 1.131 | 160 | -.4962 | 0.000 | | 1.0659 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6590 | .231 | 30 | -.6976 | .431 | 140 | -.5932 | 1.131 | 150 | -.5234 | 0.000 | | 1.0459 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6320 | .231 | 20 | -.6825 | .431 | 130 | -.5986 | 1.131 | 140 | -.5282 | 0.000 | | 1.0133 | .10 | 0.00 |
| 10 | .161 | 90 | -.5532 | .231 | 10 | -.6724 | .431 | 120 | -.6163 | 1.131 | 130 | -.5766 | 0.000 | | .9649 | .20 | 0.00 |
| 11 | .161 | 80 | -.6507 | .231 | 0 | -.6562 | .431 | 110 | -.6337 | 1.131 | 120 | -.5830 | 0.000 | | .8657 | .30 | 0.00 |
| 12 | .161 | 70 | -.6701 | .331 | 180 | -.4991 | .431 | 100 | -.6426 | 1.131 | 110 | -.5522 | 0.000 | | .6948 | .40 | 0.00 |
| 13 | .161 | 60 | -.6055 | .331 | 170 | -.4844 | .431 | 90 | -.6404 | 1.131 | 100 | -.4826 | 0.000 | | .4909 | .45 | 0.00 |
| 14 | .161 | 50 | -.6514 | .331 | 160 | -.5088 | .431 | 80 | -.6491 | 1.131 | 90 | -.4494 | 0.000 | | 1.0440 | 0.00 | .10 |
| 15 | .161 | 40 | -.6724 | .331 | 150 | -.5228 | .431 | 70 | -.6665 | 1.131 | 80 | -.3373 | 0.000 | | 1.0134 | 0.00 | .20 |
| 16 | .161 | 30 | -.6602 | .331 | 140 | -.5443 | .431 | 60 | -.6742 | 1.131 | 70 | -.2437 | 0.000 | | .9521 | 0.00 | .30 |
| 17 | .161 | 20 | -.6559 | .331 | 130 | -.5624 | .431 | 50 | -.6541 | 1.131 | 60 | -.1812 | 0.000 | | .7971 | 0.00 | .40 |
| 18 | .161 | 10 | -.6493 | .331 | 120 | -.5883 | .431 | 40 | -.6707 | 1.131 | 50 | -.0980 | 0.000 | | .5998 | 0.00 | .45 |
| 19 | .161 | 0 | -.6734 | .331 | 110 | -.6192 | .431 | 30 | -.7243 | 1.131 | 40 | -.0372 | .161 | 270 | -.6612 | | |
| 20 | .231 | 180 | -.4639 | .331 | 100 | -.6458 | .431 | 20 | -.7224 | 1.131 | 30 | .0009 | .231 | 270 | -.6612 | | |
| 21 | .231 | 170 | -.4477 | .331 | 90 | -.6454 | .431 | 10 | -.6931 | 1.131 | 20 | .0369 | .331 | 270 | -.6449 | | |
| 22 | .231 | 160 | -.4791 | .331 | 80 | -.6594 | .431 | 0 | -.6830 | 1.131 | 10 | .0569 | .431 | 270 | -.6515 | | |
| 23 | .231 | 150 | -.5195 | .331 | 70 | -.6767 | .531 | 180 | -.5419 | 1.131 | 0 | .0649 | .531 | 270 | -.6747 | | |
| 24 | .231 | 140 | -.5314 | .331 | 60 | -.6781 | .531 | 90 | -.6584 | | | .731 | 270 | -.7108 | | | |
| 25 | .231 | 130 | -.5634 | .331 | 50 | -.6947 | .531 | 0 | -.7050 | 1.631 | 90 | -.1424 | .931 | 270 | -.6139 | | |
| 26 | .231 | 120 | -.5966 | .331 | 40 | -.6832 | .731 | 180 | -.5612 | 1.631 | 0 | -.0212 | 1.131 | 270 | -.3879 | | |
| 27 | .231 | 110 | -.6493 | .331 | 30 | -.6961 | .731 | 90 | -.7282 | 2.131 | 180 | .0237 | 1.631 | 270 | -.1592 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 2 POINT 79 ALPHA 12 MACH .507 Q 323.755 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4619 | .231 | 100 | -.6593 | .331 | 20 | -.7037 | .731 | 0 | -.1180 | 2.131 | 90 | -.1891 | | |
| 2 | .161 | 170 | -.4255 | .231 | 90 | -.6427 | .331 | 10 | -.6447 | .931 | 180 | -.5191 | 2.131 | 0 | .0289 | | |
| 3 | .161 | 160 | -.4576 | .231 | 80 | -.6456 | .331 | 0 | -.6651 | .931 | 90 | -.5360 | 0.000 | | .8190 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5005 | .231 | 70 | -.6769 | .431 | 180 | -.5108 | .931 | 0 | .0989 | 0.000 | | .9683 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5499 | .231 | 60 | -.6859 | .431 | 170 | -.5274 | 1.131 | 180 | -.4919 | 0.000 | | 1.0547 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5683 | .231 | 50 | -.6654 | .431 | 160 | -.5263 | 1.131 | 170 | -.4863 | 0.000 | | 1.0799 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5890 | .231 | 40 | -.6560 | .431 | 150 | -.5367 | 1.131 | 160 | -.5019 | 0.000 | | 1.0679 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6404 | .231 | 30 | -.6970 | .431 | 140 | -.6173 | 1.131 | 150 | -.5704 | 0.000 | | 1.0423 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6325 | .231 | 20 | -.6888 | .431 | 130 | -.6011 | 1.131 | 140 | -.5444 | 0.000 | | 1.0043 | .10 | 0.00 |
| 10 | .161 | 90 | -.6560 | .231 | 10 | -.6823 | .431 | 120 | -.6273 | 1.131 | 130 | -.5644 | 0.000 | | .9462 | .20 | 0.00 |
| 11 | .161 | 80 | -.6505 | .231 | 0 | -.6672 | .431 | 110 | -.6127 | 1.131 | 120 | -.5668 | 0.000 | | .8458 | .30 | 0.00 |
| 12 | .161 | 70 | -.6592 | .331 | 180 | -.4917 | .431 | 100 | -.6470 | 1.131 | 110 | -.5360 | 0.000 | | .6701 | .40 | 0.00 |
| 13 | .161 | 60 | -.6682 | .331 | 170 | -.4638 | .431 | 90 | -.6597 | 1.131 | 100 | -.5051 | 0.000 | | .4685 | .45 | 0.00 |
| 14 | .161 | 50 | -.6560 | .331 | 160 | -.5147 | .431 | 80 | -.6597 | 1.131 | 90 | -.3825 | 0.000 | | 1.0330 | 0.00 | .10 |
| 15 | .161 | 40 | -.6541 | .331 | 150 | -.5374 | .431 | 70 | -.6547 | 1.131 | 80 | -.3378 | 0.000 | | 1.0051 | 0.00 | .20 |
| 16 | .161 | 30 | -.6700 | .331 | 140 | -.5694 | .431 | 60 | -.7072 | 1.131 | 70 | -.2220 | 0.000 | | .9427 | 0.00 | .30 |
| 17 | .161 | 20 | -.6343 | .331 | 130 | -.5658 | .431 | 50 | -.6597 | 1.131 | 60 | -.1729 | 0.000 | | .7923 | 0.00 | .40 |
| 18 | .161 | 10 | -.6722 | .331 | 120 | -.6212 | .431 | 40 | -.7135 | 1.131 | 50 | -.1016 | 0.000 | | .5903 | 0.00 | .45 |
| 19 | .161 | 0 | -.6704 | .331 | 110 | -.6355 | .431 | 30 | -.7334 | 1.131 | 40 | -.0328 | .161 | 270 | -.6571 | | |
| 20 | .231 | 180 | -.4348 | .331 | 100 | -.6053 | .431 | 20 | -.6917 | 1.131 | 30 | .0149 | .231 | 270 | -.6245 | | |
| 21 | .231 | 170 | -.4612 | .331 | 90 | -.6690 | .431 | 10 | -.7461 | 1.131 | 20 | .0333 | .331 | 270 | -.6582 | | |
| 22 | .231 | 160 | -.4648 | .331 | 80 | -.6384 | .431 | 0 | -.6435 | 1.131 | 10 | .0489 | .431 | 270 | -.6354 | | |
| 23 | .231 | 150 | -.4832 | .331 | 70 | -.6409 | .531 | 180 | -.5236 | 1.131 | 0 | .0553 | .531 | 270 | -.6536 | | |
| 24 | .231 | 140 | -.5492 | .331 | 60 | -.6452 | .531 | 90 | -.6381 | | | .731 | 270 | -.6714 | | | |
| 25 | .231 | 130 | -.5611 | .331 | 50 | -.6654 | .531 | 0 | -.5857 | 1.631 | 90 | -.2313 | .931 | 270 | -.5675 | | |
| 26 | .231 | 120 | -.5917 | .331 | 40 | -.6820 | .731 | 180 | -.5463 | 1.631 | 0 | -.0352 | 1.131 | 270 | -.3996 | | |
| 27 | .231 | 110 | -.6249 | .331 | 30 | -.6884 | .731 | 90 | -.7006 | 2.131 | 180 | -.0272 | 1.631 | 270 | -.2499 | | |

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| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 2 POINT 76 ALPHA 6 MACH .506 Q 323.398 | | | | MODEL FLAT FACE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|-----------------|--|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | |
| 1 | .161 | 180 | -.3895 | .231 | 100 | -.5790 | .331 | 20 | -.6215 | .731 | 0 | -.6632 | 2.131 | 90 | -.0002 | | | | | | |
| 2 | .161 | 170 | -.4043 | .231 | 90 | -.5837 | .331 | 10 | -.6392 | .931 | 180 | -.5498 | 2.131 | 0 | .0417 | | | | | | |
| 3 | .161 | 160 | -.4187 | .231 | 80 | -.5891 | .331 | 0 | -.6153 | .931 | 90 | -.6231 | 0.000 | | .7244 | -.45 | 0.00 | | | | |
| 4 | .161 | 150 | -.4400 | .231 | 70 | -.6057 | .431 | 180 | -.4670 | .931 | 0 | -.5145 | 0.000 | | .8944 | -.40 | 0.00 | | | | |
| 5 | .161 | 140 | -.4722 | .231 | 60 | -.5898 | .431 | 170 | -.4658 | 1.131 | 150 | -.5149 | 0.000 | | 1.0198 | -.30 | 0.00 | | | | |
| 6 | .161 | 130 | -.4484 | .231 | 50 | -.5938 | .431 | 160 | -.4543 | 1.131 | 170 | -.4833 | 0.000 | | 1.0594 | -.20 | 0.00 | | | | |
| 7 | .161 | 120 | -.5216 | .231 | 40 | -.6150 | .431 | 150 | -.4971 | 1.131 | 160 | -.5089 | 0.000 | | 1.0768 | -.10 | 0.00 | | | | |
| 8 | .161 | 110 | -.5409 | .231 | 30 | -.6406 | .431 | 140 | -.5002 | 1.131 | 150 | -.5065 | 0.000 | | 1.0648 | 0.00 | 0.00 | | | | |
| 9 | .161 | 100 | -.5032 | .231 | 20 | -.6136 | .431 | 130 | -.5239 | 1.131 | 140 | -.5073 | 0.000 | | 1.0501 | .10 | 0.00 | | | | |
| 10 | .161 | 90 | -.5744 | .231 | 10 | -.6031 | .431 | 120 | -.5435 | 1.131 | 130 | -.5322 | 0.000 | | 1.0034 | .20 | 0.00 | | | | |
| 11 | .161 | 80 | -.6043 | .231 | 0 | -.6305 | .431 | 110 | -.5852 | 1.131 | 120 | -.6063 | 0.000 | | .9313 | .30 | 0.00 | | | | |
| 12 | .161 | 70 | -.6141 | .331 | 180 | -.4257 | .431 | 100 | -.5759 | 1.131 | 110 | -.6099 | 0.000 | | .7632 | .40 | 0.00 | | | | |
| 13 | .161 | 60 | -.6015 | .331 | 170 | -.4321 | .431 | 90 | -.5856 | 1.131 | 100 | -.5843 | 0.000 | | .5641 | .45 | 0.00 | | | | |
| 14 | .161 | 50 | -.6195 | .331 | 160 | -.4325 | .431 | 80 | -.5925 | 1.131 | 90 | -.5466 | 0.000 | | 1.0602 | 0.00 | .10 | | | | |
| 15 | .161 | 40 | -.6199 | .331 | 150 | -.4721 | .431 | 70 | -.6083 | 1.131 | 80 | -.4813 | 0.000 | | 1.0287 | 0.00 | .20 | | | | |
| 16 | .161 | 30 | -.6350 | .331 | 140 | -.4869 | .431 | 60 | -.6242 | 1.131 | 70 | -.4861 | 0.000 | | .9654 | 0.00 | .30 | | | | |
| 17 | .161 | 20 | -.5791 | .331 | 130 | -.5176 | .431 | 50 | -.6006 | 1.131 | 60 | -.4127 | 0.000 | | .8277 | 0.00 | .40 | | | | |
| 18 | .161 | 10 | -.5083 | .331 | 120 | -.5257 | .431 | 40 | -.6215 | 1.131 | 50 | -.3651 | 0.000 | | .6145 | 0.00 | .45 | | | | |
| 19 | .161 | 0 | -.5993 | .331 | 110 | -.5560 | .431 | 30 | -.6238 | 1.131 | 40 | -.3438 | .161 | 270 | -.6078 | | | | | | |
| 20 | .231 | 180 | -.4072 | .331 | 100 | -.5663 | .431 | 20 | -.6315 | 1.131 | 30 | -.2661 | .231 | 270 | -.5658 | | | | | | |
| 21 | .231 | 170 | -.4343 | .331 | 90 | -.5669 | .431 | 10 | -.6342 | 1.131 | 20 | -.2168 | .331 | 270 | -.5829 | | | | | | |
| 22 | .231 | 160 | -.4393 | .331 | 80 | -.5887 | .431 | 0 | -.6110 | 1.131 | 10 | -.2320 | .431 | 270 | -.5802 | | | | | | |
| 23 | .231 | 150 | -.4610 | .331 | 70 | -.5891 | .531 | 180 | -.4786 | 1.131 | 0 | -.2436 | .531 | 270 | -.5977 | | | | | | |
| 24 | .231 | 140 | -.4751 | .331 | 60 | -.6157 | .531 | 90 | -.5948 | | | .731 | 270 | -.6190 | | | | | | | |
| 25 | .231 | 130 | -.4855 | .331 | 50 | -.6186 | .531 | 0 | -.6439 | 1.631 | 90 | -.0781 | .931 | 270 | -.6571 | | | | | | |
| 26 | .231 | 120 | -.5393 | .331 | 40 | -.6345 | .731 | 180 | -.5222 | 1.631 | 0 | -.0241 | 1.131 | 270 | -.5379 | | | | | | |
| 27 | .231 | 110 | -.5346 | .331 | 30 | -.6075 | .731 | 90 | -.6006 | 2.131 | 180 | -.6545 | 1.631 | 270 | -.0946 | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 2 POINT 77 ALPHA 8 MACH .507 Q 323.754 | | | | MODEL FLAT FACE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|-----------------|--|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | |
| 1 | .161 | 180 | -.4136 | .231 | 100 | -.6097 | .331 | 20 | -.6643 | .731 | 0 | -.5732 | 2.131 | 90 | -.0281 | | | | | | |
| 2 | .161 | 170 | -.4305 | .231 | 90 | -.6327 | .331 | 10 | -.6636 | .931 | 180 | -.5440 | 2.131 | 0 | .0312 | | | | | | |
| 3 | .161 | 160 | -.4505 | .231 | 80 | -.6237 | .331 | 0 | -.6285 | .931 | 90 | -.6316 | 0.000 | | .7519 | -.45 | 0.00 | | | | |
| 4 | .161 | 150 | -.4731 | .231 | 70 | -.6456 | .431 | 180 | -.4630 | .931 | 0 | -.2942 | 0.000 | | .9167 | -.40 | 0.00 | | | | |
| 5 | .161 | 140 | -.4962 | .231 | 60 | -.6560 | .431 | 170 | -.4854 | 1.131 | 180 | -.4983 | 0.000 | | 1.0311 | -.30 | 0.00 | | | | |
| 6 | .161 | 130 | -.5084 | .231 | 50 | -.6420 | .431 | 160 | -.4831 | 1.131 | 170 | -.4979 | 0.000 | | 1.0706 | -.20 | 0.00 | | | | |
| 7 | .161 | 120 | -.5488 | .231 | 40 | -.6593 | .431 | 150 | -.4996 | 1.131 | 160 | -.5011 | 0.000 | | 1.0788 | -.10 | 0.00 | | | | |
| 8 | .161 | 110 | -.5611 | .231 | 30 | -.6377 | .431 | 140 | -.5278 | 1.131 | 150 | -.5320 | 0.000 | | 1.0687 | 0.00 | 0.00 | | | | |
| 9 | .161 | 100 | -.5979 | .231 | 20 | -.6359 | .431 | 130 | -.5571 | 1.131 | 140 | -.5488 | 0.000 | | 1.0406 | .10 | 0.00 | | | | |
| 10 | .161 | 90 | -.6156 | .231 | 10 | -.6542 | .431 | 120 | -.5656 | 1.131 | 130 | -.5520 | 0.000 | | .9832 | .20 | 0.00 | | | | |
| 11 | .161 | 80 | -.6091 | .231 | 0 | -.6212 | .431 | 110 | -.5891 | 1.131 | 120 | -.5664 | 0.000 | | .9117 | .30 | 0.00 | | | | |
| 12 | .161 | 70 | -.6466 | .331 | 180 | -.4593 | .431 | 100 | -.6215 | 1.131 | 110 | -.5704 | 0.000 | | .7384 | .40 | 0.00 | | | | |
| 13 | .161 | 60 | -.6419 | .331 | 170 | -.4442 | .431 | 90 | -.6076 | 1.131 | 100 | -.5428 | 0.000 | | .5414 | .45 | 0.00 | | | | |
| 14 | .161 | 50 | -.6254 | .331 | 160 | -.4601 | .431 | 80 | -.6215 | 1.131 | 90 | -.4787 | 0.000 | | 1.0672 | 0.00 | .10 | | | | |
| 15 | .161 | 40 | -.6379 | .331 | 150 | -.4670 | .431 | 70 | -.6238 | 1.131 | 80 | -.4563 | 0.000 | | 1.0299 | 0.00 | .20 | | | | |
| 16 | .161 | 30 | -.6606 | .331 | 140 | -.5295 | .431 | 60 | -.6566 | 1.131 | 70 | -.2930 | 0.000 | | .9710 | 0.00 | .30 | | | | |
| 17 | .161 | 20 | -.6087 | .331 | 130 | -.5190 | .431 | 50 | -.6161 | 1.131 | 60 | -.2794 | 0.000 | | .8266 | 0.00 | .40 | | | | |
| 18 | .161 | 10 | -.6006 | .331 | 120 | -.5661 | .431 | 40 | -.6867 | 1.131 | 50 | -.1184 | 0.000 | | .6135 | 0.00 | .45 | | | | |
| 19 | .161 | 0 | -.6697 | .331 | 110 | -.5960 | .431 | 30 | -.6736 | 1.131 | 40 | -.0984 | .161 | 270 | -.6377 | | | | | | |
| 20 | .231 | 180 | -.4339 | .331 | 100 | -.6068 | .431 | 20 | -.6643 | 1.131 | 30 | -.0544 | .231 | 270 | -.6214 | | | | | | |
| 21 | .231 | 170 | -.4410 | .331 | 90 | -.6226 | .431 | 10 | -.6659 | 1.131 | 20 | -.0048 | .331 | 270 | -.6361 | | | | | | |
| 22 | .231 | 160 | -.4363 | .331 | 80 | -.6345 | .431 | 0 | -.6852 | 1.131 | 10 | -.0128 | .431 | 270 | -.6276 | | | | | | |
| 23 | .231 | 150 | -.4749 | .331 | 70 | -.6255 | .531 | 180 | -.4927 | 1.131 | 0 | -.0132 | .531 | 270 | -.6144 | | | | | | |
| 24 | .231 | 140 | -.5214 | .331 | 60 | -.6564 | .531 | 90 | -.6323 | | | .731 | 270 | -.6667 | | | | | | | |
| 25 | .231 | 130 | -.5416 | .331 | 50 | -.6564 | .531 | 0 | -.7180 | 1.631 | 90 | -.1036 | .931 | 270 | -.6416 | | | | | | |
| 26 | .231 | 120 | -.5712 | .331 | 40 | -.6546 | .731 | 180 | -.5517 | 1.631 | 0 | -.0133 | 1.131 | 270 | -.4671 | | | | | | |
| 27 | .231 | 110 | -.5328 | .331 | 30 | -.6402 | .731 | 90 | -.6394 | 2.131 | 180 | -.0104 | 1.631 | 270 | -.0793 | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4457 | .231 | 100 | -.6224 | .331 | 20 | -.5846 | .731 | 0 | .0796 | 2.131 | 90 | -.4160 | | |
| 2 | .161 | 170 | -.4805 | .231 | 90 | -.6007 | .331 | 10 | -.5459 | .931 | 180 | -.5655 | 2.131 | 0 | .0635 | | |
| 3 | .161 | 160 | -.4453 | .231 | 80 | -.6043 | .331 | 0 | -.4901 | .931 | 90 | -.5458 | 0.000 | | .9026 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5171 | .231 | 70 | -.5823 | .431 | 180 | -.4907 | .931 | 0 | .0510 | 0.000 | | 1.0230 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5243 | .231 | 60 | -.5740 | .431 | 170 | -.5145 | 1.131 | 180 | -.5474 | 0.000 | | 1.0635 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5588 | .231 | 50 | -.5870 | .431 | 160 | -.5587 | 1.131 | 170 | -.5052 | 0.000 | | 1.0736 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6041 | .231 | 40 | -.5837 | .431 | 150 | -.5683 | 1.131 | 160 | -.5217 | 0.000 | | 1.0335 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5968 | .231 | 30 | -.5960 | .431 | 140 | -.5765 | 1.131 | 150 | -.5740 | 0.000 | | .9955 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6030 | .231 | 20 | -.6441 | .431 | 130 | -.6284 | 1.131 | 140 | -.5486 | 0.000 | | .9455 | .10 | 0.00 |
| 10 | .161 | 90 | -.5935 | .231 | 10 | -.6329 | .431 | 120 | -.5897 | 1.131 | 130 | -.5957 | 0.000 | | .8605 | .20 | 0.00 |
| 11 | .161 | 80 | -.5769 | .231 | 0 | -.6520 | .431 | 110 | -.6141 | 1.131 | 120 | -.6275 | 0.000 | | .7624 | .30 | 0.00 |
| 12 | .161 | 70 | -.5801 | .331 | 180 | -.5039 | .431 | 100 | -.5994 | 1.131 | 110 | -.6154 | 0.000 | | .5645 | .40 | 0.00 |
| 13 | .161 | 60 | -.5959 | .331 | 170 | -.5144 | .431 | 90 | -.6230 | 1.131 | 100 | -.5422 | 0.000 | | .3401 | .45 | 0.00 |
| 14 | .161 | 50 | -.6070 | .331 | 160 | -.5346 | .431 | 80 | -.5858 | 1.131 | 90 | -.5434 | 0.000 | | .9790 | 0.00 | .10 |
| 15 | .161 | 40 | -.5660 | .331 | 150 | -.5125 | .431 | 70 | -.5676 | 1.131 | 80 | -.4670 | 0.000 | | .9696 | 0.00 | .20 |
| 16 | .161 | 30 | -.5935 | .331 | 140 | -.6061 | .431 | 60 | -.6389 | 1.131 | 70 | -.3970 | 0.000 | | .9065 | 0.00 | .30 |
| 17 | .161 | 20 | -.6244 | .331 | 130 | -.5848 | .431 | 50 | -.6013 | 1.131 | 60 | -.3049 | 0.000 | | .7600 | 0.00 | .40 |
| 18 | .161 | 10 | -.5874 | .331 | 120 | -.5942 | .431 | 40 | -.5242 | 1.131 | 50 | -.2249 | 0.000 | | .5750 | 0.00 | .45 |
| 19 | .161 | 0 | -.5910 | .331 | 110 | -.5989 | .431 | 30 | -.3959 | 1.131 | 40 | -.1557 | .161 | 270 | -.5913 | | |
| 20 | .231 | 180 | -.4863 | .331 | 100 | -.5960 | .431 | 20 | -.2727 | 1.131 | 30 | -.0676 | .231 | 270 | -.5535 | | |
| 21 | .231 | 170 | -.4874 | .331 | 90 | -.5935 | .431 | 10 | -.0557 | 1.131 | 20 | -.0113 | .331 | 270 | -.6018 | | |
| 22 | .231 | 160 | -.5247 | .331 | 80 | -.5866 | .431 | 0 | -.0840 | 1.131 | 10 | .0132 | .431 | 270 | -.6038 | | |
| 23 | .231 | 150 | -.5135 | .331 | 70 | -.5671 | .531 | 180 | -.5331 | 1.131 | 0 | .0329 | .531 | 270 | -.5867 | | |
| 24 | .231 | 140 | -.5667 | .331 | 60 | -.6032 | .531 | 90 | -.6404 | | | | .731 | 270 | -.6692 | | |
| 25 | .231 | 130 | -.6142 | .331 | 50 | -.6018 | .531 | 0 | -.1481 | 1.631 | 90 | -.4811 | .931 | 270 | -.5586 | | |
| 26 | .231 | 120 | -.6276 | .331 | 40 | -.6816 | .731 | 180 | -.5994 | 1.631 | 0 | -.0712 | 1.131 | 270 | -.5298 | | |
| 27 | .231 | 110 | -.5859 | .331 | 30 | -.6451 | .731 | 90 | -.6381 | 2.131 | 180 | -.0841 | 1.631 | 270 | -.4998 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4494 | .231 | 100 | -.6027 | .331 | 20 | -.2402 | .731 | 0 | .0764 | 2.131 | 90 | -.4988 | | |
| 2 | .161 | 170 | -.4897 | .231 | 90 | -.5792 | .331 | 10 | -.0789 | .931 | 180 | -.5935 | 2.131 | 0 | .0955 | | |
| 3 | .161 | 160 | -.5277 | .231 | 80 | -.5763 | .331 | 0 | -.0092 | .931 | 90 | -.5609 | 0.000 | | .9469 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5071 | .231 | 70 | -.5344 | .431 | 180 | -.4840 | .931 | 0 | .0740 | 0.000 | | 1.0595 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5154 | .231 | 60 | -.5210 | .431 | 170 | -.4984 | 1.131 | 180 | -.5408 | 0.000 | | 1.0809 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5564 | .231 | 50 | -.5492 | .431 | 160 | -.5278 | 1.131 | 170 | -.5770 | 0.000 | | 1.0657 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5607 | .231 | 40 | -.5568 | .431 | 150 | -.5619 | 1.131 | 160 | -.5009 | 0.000 | | 1.0420 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5618 | .231 | 30 | -.6424 | .431 | 140 | -.6170 | 1.131 | 150 | -.5331 | 0.000 | | .9855 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5636 | .231 | 20 | -.6630 | .431 | 130 | -.6042 | 1.131 | 140 | -.5987 | 0.000 | | .9251 | .10 | 0.00 |
| 10 | .161 | 90 | -.5499 | .231 | 10 | -.6099 | .431 | 120 | -.5581 | 1.131 | 130 | -.5930 | 0.000 | | .8549 | .20 | 0.00 |
| 11 | .161 | 80 | -.5383 | .231 | 0 | -.6088 | .431 | 110 | -.5650 | 1.131 | 120 | -.6353 | 0.000 | | .7334 | .30 | 0.00 |
| 12 | .161 | 70 | -.5292 | .331 | 180 | -.4982 | .431 | 100 | -.5410 | 1.131 | 110 | -.6220 | 0.000 | | .5350 | .40 | 0.00 |
| 13 | .161 | 60 | -.5426 | .331 | 170 | -.4921 | .431 | 90 | -.5344 | 1.131 | 100 | -.6204 | 0.000 | | .3059 | .45 | 0.00 |
| 14 | .161 | 50 | -.5335 | .331 | 160 | -.4874 | .431 | 80 | -.5406 | 1.131 | 90 | -.6039 | 0.000 | | .9691 | 0.00 | .10 |
| 15 | .161 | 40 | -.5995 | .331 | 150 | -.5669 | .431 | 70 | -.6375 | 1.131 | 80 | -.5267 | 0.000 | | .9492 | 0.00 | .20 |
| 16 | .161 | 30 | -.5883 | .331 | 140 | -.5658 | .431 | 60 | -.5953 | 1.131 | 70 | -.4418 | 0.000 | | .8803 | 0.00 | .30 |
| 17 | .161 | 20 | -.5923 | .331 | 130 | -.5861 | .431 | 50 | -.4929 | 1.131 | 60 | -.3384 | 0.000 | | .7525 | 0.00 | .40 |
| 18 | .161 | 10 | -.5959 | .331 | 120 | -.5593 | .431 | 40 | -.2751 | 1.131 | 50 | -.2463 | 0.000 | | .5561 | 0.00 | .45 |
| 19 | .161 | 0 | -.6021 | .331 | 110 | -.5741 | .431 | 30 | -.0588 | 1.131 | 40 | -.1461 | .161 | 270 | -.5701 | | |
| 20 | .231 | 180 | -.4748 | .331 | 100 | -.5138 | .431 | 20 | .0480 | 1.131 | 30 | -.0709 | .231 | 270 | -.5521 | | |
| 21 | .231 | 170 | -.4966 | .331 | 90 | -.5644 | .431 | 10 | .1951 | 1.131 | 20 | .0016 | .331 | 270 | -.5747 | | |
| 22 | .231 | 160 | -.5035 | .331 | 80 | -.5517 | .431 | 0 | .2172 | 1.131 | 10 | .0374 | .431 | 270 | -.6032 | | |
| 23 | .231 | 150 | -.5333 | .331 | 70 | -.5788 | .531 | 180 | -.5561 | 1.131 | 0 | .0518 | .531 | 270 | -.6090 | | |
| 24 | .231 | 140 | -.5451 | .331 | 60 | -.5770 | .531 | 90 | -.5790 | | | | .731 | 270 | -.6274 | | |
| 25 | .231 | 130 | -.5915 | .331 | 50 | -.6283 | .531 | 0 | -.1521 | 1.631 | 90 | -.5424 | .931 | 270 | -.5705 | | |
| 26 | .231 | 120 | -.5304 | .331 | 40 | -.5756 | .731 | 180 | -.5304 | 1.631 | 0 | -.0620 | 1.131 | 270 | -.5607 | | |
| 27 | .231 | 110 | -.5500 | .331 | 30 | -.4686 | .731 | 90 | -.6182 | 2.131 | 180 | -.1578 | 1.631 | 270 | -.5860 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 2 POINT 80 ALPHA 14 MACH .507 Q 323.577 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 160 | -.4647 | .231 | 100 | -.6258 | .331 | 20 | -.6724 | .731 | 0 | .0581 | 2.131 | 90 | -.2741 | | |
| 2 | .161 | 170 | -.4685 | .231 | 90 | -.6737 | .331 | 10 | -.7141 | .931 | 180 | -.5791 | 2.131 | 0 | .0273 | | |
| 3 | .161 | 160 | -.5022 | .231 | 80 | -.6571 | .331 | 0 | -.6578 | .931 | 90 | -.5276 | 0.000 | | .8458 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5416 | .231 | 70 | -.6722 | .431 | 180 | -.5359 | .931 | 0 | .0673 | 0.000 | | .9874 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5571 | .231 | 60 | -.6337 | .431 | 170 | -.5142 | 1.131 | 180 | -.4970 | 0.000 | | 1.0576 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6047 | .231 | 50 | -.6672 | .431 | 160 | -.5497 | 1.131 | 170 | -.5126 | 0.000 | | 1.0683 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6101 | .231 | 40 | -.6403 | .431 | 150 | -.5404 | 1.131 | 160 | -.5066 | 0.000 | | 1.0557 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6730 | .231 | 30 | -.6949 | .431 | 140 | -.6196 | 1.131 | 150 | -.5415 | 0.000 | | 1.0196 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6224 | .231 | 20 | -.6580 | .431 | 130 | -.6227 | 1.131 | 140 | -.6064 | 0.000 | | .9843 | .10 | 0.00 |
| 10 | .161 | 90 | -.6744 | .231 | 10 | -.6809 | .431 | 120 | -.6501 | 1.131 | 130 | -.5855 | 0.000 | | .9040 | .20 | 0.00 |
| 11 | .161 | 80 | -.6506 | .231 | 0 | -.6636 | .431 | 110 | -.6230 | 1.131 | 120 | -.5395 | 0.000 | | .8105 | .30 | 0.00 |
| 12 | .161 | 70 | -.6688 | .331 | 180 | -.4844 | .431 | 100 | -.6470 | 1.131 | 110 | -.5783 | 0.000 | | .6270 | .40 | 0.00 |
| 13 | .161 | 60 | -.6386 | .331 | 170 | -.4963 | .431 | 90 | -.5362 | 1.131 | 100 | -.5096 | 0.000 | | .4117 | .45 | 0.00 |
| 14 | .161 | 50 | -.6441 | .331 | 160 | -.5420 | .431 | 80 | -.6759 | 1.131 | 90 | -.4093 | 0.000 | | 1.0095 | 0.00 | .10 |
| 15 | .161 | 40 | -.6333 | .331 | 150 | -.5355 | .431 | 70 | -.6389 | 1.131 | 80 | -.3592 | 0.000 | | .9932 | 0.00 | .20 |
| 16 | .161 | 30 | -.6473 | .331 | 140 | -.5773 | .431 | 60 | -.6802 | 1.131 | 70 | -.2759 | 0.000 | | .9288 | 0.00 | .30 |
| 17 | .161 | 20 | -.6365 | .331 | 130 | -.5970 | .431 | 50 | -.6697 | 1.131 | 60 | -.2134 | 0.000 | | .7779 | 0.00 | .40 |
| 18 | .161 | 10 | -.6715 | .331 | 120 | -.6262 | .431 | 40 | -.7350 | 1.131 | 50 | -.1470 | 0.000 | | .5774 | 0.00 | .45 |
| 19 | .161 | 0 | -.6152 | .331 | 110 | -.6319 | .431 | 30 | -.6836 | 1.131 | 40 | -.0821 | .161 | 270 | -.6454 | | |
| 20 | .231 | 180 | -.4658 | .331 | 100 | -.6183 | .431 | 20 | -.6300 | 1.131 | 30 | -.0492 | .231 | 270 | -.6416 | | |
| 21 | .231 | 170 | -.4990 | .331 | 90 | -.6625 | .431 | 10 | -.6570 | 1.131 | 20 | -.0076 | .331 | 270 | -.6466 | | |
| 22 | .231 | 160 | -.5311 | .331 | 80 | -.6665 | .431 | 0 | -.6076 | 1.131 | 10 | .0165 | .431 | 270 | -.6823 | | |
| 23 | .231 | 150 | -.5390 | .331 | 70 | -.6586 | .531 | 180 | -.5459 | 1.131 | 0 | .0243 | .531 | 270 | -.6842 | | |
| 24 | .231 | 140 | -.5715 | .331 | 60 | -.6730 | .531 | 90 | -.6836 | | | .731 | 270 | -.7149 | | | |
| 25 | .231 | 130 | -.5842 | .331 | 50 | -.6532 | .531 | 0 | -.3320 | 1.631 | 90 | -.3216 | .931 | 270 | -.5562 | | |
| 26 | .231 | 120 | -.6105 | .331 | 40 | -.6537 | .731 | 180 | -.5509 | 1.631 | 0 | -.0568 | 1.131 | 270 | -.4348 | | |
| 27 | .231 | 110 | -.6206 | .331 | 30 | -.6690 | .731 | 90 | -.6663 | 2.131 | 180 | -.0312 | 1.631 | 270 | -.3153 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 2 POINT 81 ALPHA 16 MACH .506 Q 323.131 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4553 | .231 | 100 | -.6455 | .331 | 20 | -.6769 | .731 | 0 | .0913 | 2.131 | 90 | -.3581 | | |
| 2 | .161 | 170 | -.4874 | .231 | 90 | -.6505 | .331 | 10 | -.6904 | .931 | 180 | -.5579 | 2.131 | 0 | .0370 | | |
| 3 | .161 | 160 | -.4921 | .231 | 80 | -.6192 | .331 | 0 | -.6506 | .931 | 90 | -.5182 | 0.000 | | .8773 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5181 | .231 | 70 | -.6051 | .431 | 180 | -.5323 | .931 | 0 | .0441 | 0.000 | | .9961 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5987 | .231 | 60 | -.6328 | .431 | 170 | -.5586 | 1.131 | 180 | -.4949 | 0.000 | | 1.0699 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5803 | .231 | 50 | -.5968 | .431 | 160 | -.5408 | 1.131 | 170 | -.5314 | 0.000 | | 1.0583 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6244 | .231 | 40 | -.6530 | .431 | 150 | -.5922 | 1.131 | 160 | -.5274 | 0.000 | | 1.0486 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6218 | .231 | 30 | -.6346 | .431 | 140 | -.5953 | 1.131 | 150 | -.5699 | 0.000 | | 1.0128 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6396 | .231 | 20 | -.6451 | .431 | 130 | -.6131 | 1.131 | 140 | -.5487 | 0.000 | | .9557 | .10 | 0.00 |
| 10 | .161 | 90 | -.6367 | .231 | 10 | -.6635 | .431 | 120 | -.6591 | 1.131 | 130 | -.6092 | 0.000 | | .8792 | .20 | 0.00 |
| 11 | .161 | 80 | -.6427 | .231 | 0 | -.6501 | .431 | 110 | -.6514 | 1.131 | 120 | -.5976 | 0.000 | | .7825 | .30 | 0.00 |
| 12 | .161 | 70 | -.6955 | .331 | 180 | -.4920 | .431 | 100 | -.6096 | 1.131 | 110 | -.5767 | 0.000 | | .5902 | .40 | 0.00 |
| 13 | .161 | 60 | -.6237 | .331 | 170 | -.4884 | .431 | 90 | -.6564 | 1.131 | 100 | -.5142 | 0.000 | | .3688 | .45 | 0.00 |
| 14 | .161 | 50 | -.6365 | .331 | 160 | -.5500 | .431 | 80 | -.6977 | 1.131 | 90 | -.4247 | 0.000 | | .9942 | 0.00 | .10 |
| 15 | .161 | 40 | -.6273 | .331 | 150 | -.5471 | .431 | 70 | -.6403 | 1.131 | 80 | -.4107 | 0.000 | | .9676 | 0.00 | .20 |
| 16 | .161 | 30 | -.6038 | .331 | 140 | -.5493 | .431 | 60 | -.6290 | 1.131 | 70 | -.3369 | 0.000 | | .9054 | 0.00 | .30 |
| 17 | .161 | 20 | -.6096 | .331 | 130 | -.5990 | .431 | 50 | -.6603 | 1.131 | 60 | -.2707 | 0.000 | | .7533 | 0.00 | .40 |
| 18 | .161 | 10 | -.6334 | .331 | 120 | -.6262 | .431 | 40 | -.6603 | 1.131 | 50 | -.1949 | 0.000 | | .5564 | 0.00 | .45 |
| 19 | .161 | 0 | -.6359 | .331 | 110 | -.6238 | .431 | 30 | -.6166 | 1.131 | 40 | -.1327 | .161 | 270 | -.6417 | | |
| 20 | .231 | 180 | -.4816 | .331 | 100 | -.6426 | .431 | 20 | -.5621 | 1.131 | 30 | -.0726 | .231 | 270 | -.6467 | | |
| 21 | .231 | 170 | -.5138 | .331 | 90 | -.6451 | .431 | 10 | -.4338 | 1.131 | 20 | -.0255 | .331 | 270 | -.6421 | | |
| 22 | .231 | 160 | -.5116 | .331 | 80 | -.6339 | .431 | 0 | -.3741 | 1.131 | 10 | .0132 | .431 | 270 | -.6347 | | |
| 23 | .231 | 150 | -.5676 | .331 | 70 | -.6397 | .531 | 180 | -.6613 | 1.131 | 0 | .0152 | .531 | 270 | -.6829 | | |
| 24 | .231 | 140 | -.5442 | .331 | 60 | -.6011 | .531 | 90 | -.6089 | | | .731 | 270 | -.6716 | | | |
| 25 | .231 | 130 | -.5633 | .331 | 50 | -.6195 | .531 | 0 | -.1250 | 1.631 | 90 | -.4113 | .931 | 270 | -.5951 | | |
| 26 | .231 | 120 | -.6099 | .331 | 40 | -.6444 | .731 | 180 | -.5791 | 1.631 | 0 | -.0577 | 1.131 | 270 | -.4564 | | |
| 27 | .231 | 110 | -.6302 | .331 | 30 | -.6736 | .731 | 90 | -.6904 | 2.131 | 180 | -.1103 | 1.631 | 270 | -.3903 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 2 POINT 80 ALPHA 25 MACH .505 J 322.414 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5034 | .231 | 100 | -.5848 | .331 | 20 | .1647 | .731 | 0 | .1233 | 2.131 | 90 | -.6077 | | |
| 2 | .161 | 170 | -.4976 | .231 | 90 | -.5541 | .331 | 10 | .2002 | .931 | 180 | -.6243 | 2.131 | 0 | .1363 | | |
| 3 | .161 | 150 | -.4929 | .231 | 80 | -.5340 | .331 | 0 | .2217 | .931 | 90 | -.6492 | 0.000 | | .9327 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4778 | .231 | 70 | -.5086 | .431 | 180 | -.4967 | .931 | 0 | .1254 | 0.000 | | 1.0625 | -.49 | 0.00 |
| 5 | .161 | 140 | -.5243 | .231 | 60 | -.5397 | .431 | 170 | -.5223 | 1.131 | 180 | -.5600 | 0.000 | | 1.0649 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5343 | .231 | 50 | -.5986 | .431 | 160 | -.5196 | 1.131 | 170 | -.5946 | 0.000 | | 1.0224 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5560 | .231 | 40 | -.3953 | .431 | 150 | -.5669 | 1.131 | 160 | -.5994 | 0.000 | | .9675 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5273 | .231 | 30 | .1099 | .431 | 140 | -.6106 | 1.131 | 150 | -.5447 | 0.000 | | .9200 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5230 | .231 | 20 | .3096 | .431 | 130 | -.5359 | 1.131 | 140 | -.6323 | 0.000 | | .8443 | .10 | 0.00 |
| 10 | .161 | 90 | -.5142 | .231 | 10 | .3525 | .431 | 120 | -.5386 | 1.131 | 130 | -.6717 | 0.000 | | .7445 | .20 | 0.00 |
| 11 | .161 | 80 | -.4718 | .231 | 0 | .3923 | .431 | 110 | -.5347 | 1.131 | 120 | -.6930 | 0.000 | | .6405 | .30 | 0.00 |
| 12 | .161 | 70 | -.5114 | .331 | 180 | -.4946 | .431 | 100 | -.5587 | 1.131 | 110 | -.7457 | 0.000 | | .4193 | .40 | 0.00 |
| 13 | .161 | 60 | -.4998 | .331 | 170 | -.4870 | .431 | 90 | -.5371 | 1.131 | 100 | -.7385 | 0.000 | | .2335 | .45 | 0.00 |
| 14 | .161 | 50 | -.5059 | .331 | 160 | -.4805 | .431 | 80 | -.5216 | 1.131 | 90 | -.6979 | 0.000 | | .9064 | 0.00 | .10 |
| 15 | .161 | 40 | -.6849 | .331 | 150 | -.5621 | .431 | 70 | -.4933 | 1.131 | 80 | -.6637 | 0.000 | | .8831 | 0.00 | .20 |
| 16 | .161 | 30 | -.6566 | .331 | 140 | -.5278 | .431 | 60 | -.2996 | 1.131 | 70 | -.5616 | 0.000 | | .8177 | 0.00 | .30 |
| 17 | .161 | 20 | -.2165 | .331 | 130 | -.6408 | .431 | 50 | -.1625 | 1.131 | 60 | -.4338 | 0.000 | | .7067 | 0.00 | .40 |
| 18 | .161 | 10 | -.1263 | .331 | 120 | -.5704 | .431 | 40 | -.0572 | 1.131 | 50 | -.3184 | 0.000 | | .5066 | 0.00 | .45 |
| 19 | .161 | 0 | -.1912 | .331 | 110 | -.5661 | .431 | 30 | .0319 | 1.131 | 40 | -.1922 | .161 | 270 | -.5832 | | |
| 20 | .231 | 180 | -.5059 | .331 | 100 | -.5679 | .431 | 20 | -.0169 | 1.131 | 30 | -.0615 | .231 | 270 | -.5540 | | |
| 21 | .231 | 170 | -.4849 | .331 | 90 | -.5177 | .431 | 10 | .1628 | 1.131 | 20 | .0249 | .331 | 270 | -.5575 | | |
| 22 | .231 | 160 | -.4704 | .331 | 80 | -.5249 | .431 | 0 | .1713 | 1.131 | 10 | .0795 | .431 | 270 | -.5478 | | |
| 23 | .231 | 150 | -.5077 | .331 | 70 | -.5986 | .531 | 180 | -.5305 | 1.131 | 0 | .1024 | .531 | 270 | -.6116 | | |
| 24 | .231 | 140 | -.5240 | .331 | 60 | -.4849 | .531 | 90 | -.5940 | | | .731 | .731 | 270 | -.5972 | | |
| 25 | .231 | 130 | -.5208 | .331 | 50 | -.1851 | .531 | 0 | .1612 | 1.631 | 90 | -.7212 | .931 | 270 | -.6829 | | |
| 26 | .231 | 120 | -.5440 | .331 | 40 | .0135 | .731 | 180 | -.5533 | 1.631 | 0 | -.0422 | 1.131 | 270 | -.7179 | | |
| 27 | .231 | 110 | -.5392 | .331 | 30 | .1171 | .731 | 90 | -.5893 | 2.131 | 180 | -.2235 | 1.631 | 270 | -.7518 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 2 POINT 84 ALPHA 22 MACH .505 Q 322.415 | | | | MODEL FLAT FACE | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|---|--------|------|------|-----------------|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | |
| 1 | .161 | 180 | -.4686 | .231 | 100 | -.3426 | .331 | 20 | -.1369 | .731 | 0 | .0856 | 2.131 | 90 | -.5552 | | | | |
| 2 | .161 | 170 | -.5081 | .231 | 90 | -.5711 | .331 | 10 | .2584 | .931 | 180 | -.6110 | 2.131 | 0 | .0962 | | | | |
| 3 | .161 | 160 | -.4813 | .231 | 80 | -.5011 | .331 | 0 | .2430 | .931 | 90 | -.5620 | 0.000 | | .9539 | -.45 | 0.00 | | |
| 4 | .161 | 150 | -.4922 | .231 | 70 | -.5429 | .431 | 180 | -.5061 | .931 | 0 | .0671 | 0.000 | | 1.0263 | -.40 | 0.00 | | |
| 5 | .161 | 140 | -.5537 | .231 | 60 | -.5671 | .431 | 170 | -.5584 | 1.131 | 180 | -.5761 | 0.000 | | 1.0485 | -.30 | 0.00 | | |
| 6 | .161 | 130 | -.5408 | .231 | 50 | -.6397 | .431 | 160 | -.5893 | 1.131 | 170 | -.5499 | 0.000 | | 1.0392 | -.20 | 0.00 | | |
| 7 | .161 | 120 | -.5599 | .231 | 40 | -.6303 | .431 | 150 | -.5649 | 1.131 | 160 | -.5348 | 0.000 | | 1.0080 | -.10 | 0.00 | | |
| 8 | .161 | 110 | -.5599 | .231 | 30 | -.6029 | .431 | 140 | -.5494 | 1.131 | 150 | -.5974 | 0.000 | | .9416 | 0.00 | 0.00 | | |
| 9 | .161 | 100 | -.5405 | .231 | 20 | -.4566 | .431 | 130 | -.5742 | 1.131 | 140 | -.6243 | 0.000 | | .8862 | .10 | 0.00 | | |
| 10 | .161 | 90 | -.5501 | .231 | 10 | -.3310 | .431 | 120 | -.5878 | 1.131 | 130 | -.6392 | 0.000 | | .8036 | .20 | 0.00 | | |
| 11 | .161 | 80 | -.5382 | .231 | 0 | -.3173 | .431 | 110 | -.5700 | 1.131 | 120 | -.6556 | 0.000 | | .6857 | .30 | 0.00 | | |
| 12 | .161 | 70 | -.5577 | .331 | 180 | -.5383 | .431 | 100 | -.6033 | 1.131 | 110 | -.6854 | 0.000 | | .4752 | .40 | 0.00 | | |
| 13 | .161 | 60 | -.5320 | .331 | 170 | -.5191 | .431 | 90 | -.5599 | 1.131 | 100 | -.6902 | 0.000 | | .2742 | .45 | 0.00 | | |
| 14 | .161 | 50 | -.5367 | .331 | 160 | -.5076 | .431 | 80 | -.5525 | 1.131 | 90 | -.6327 | 0.000 | | .9348 | 0.00 | .10 | | |
| 15 | .161 | 40 | -.6099 | .331 | 150 | -.5697 | .431 | 70 | -.6385 | 1.131 | 80 | -.6114 | 0.000 | | .9124 | 0.00 | .20 | | |
| 16 | .161 | 30 | -.5928 | .331 | 140 | -.5484 | .431 | 60 | -.5138 | 1.131 | 70 | -.4945 | 0.000 | | .8615 | 0.00 | .30 | | |
| 17 | .161 | 20 | -.6417 | .331 | 130 | -.5902 | .431 | 50 | -.2676 | 1.131 | 60 | -.3984 | 0.000 | | .7219 | 0.00 | .40 | | |
| 18 | .161 | 10 | -.6805 | .331 | 120 | -.5689 | .431 | 40 | -.0696 | 1.131 | 50 | -.2658 | 0.000 | | .5342 | 0.00 | .45 | | |
| 19 | .161 | 0 | -.6718 | .331 | 110 | -.5415 | .431 | 30 | -.0730 | 1.131 | 40 | -.1761 | .161 | 270 | -.5548 | | | | |
| 20 | .231 | 180 | -.4730 | .331 | 100 | -.5195 | .431 | 20 | .0400 | 1.131 | 30 | -.0740 | .231 | 270 | -.5485 | | | | |
| 21 | .231 | 170 | -.4953 | .331 | 90 | -.5675 | .431 | 10 | -.1702 | 1.131 | 20 | -.0020 | .331 | 270 | -.5408 | | | | |
| 22 | .231 | 160 | -.4667 | .331 | 80 | -.5191 | .431 | 0 | .1833 | 1.131 | 10 | .0546 | .431 | 270 | -.5672 | | | | |
| 23 | .231 | 150 | -.4762 | .331 | 70 | -.5126 | .531 | 180 | -.5088 | 1.131 | 0 | .0691 | .531 | 270 | -.5657 | | | | |
| 24 | .231 | 140 | -.5656 | .331 | 60 | -.6123 | .531 | 90 | -.6374 | | | | .731 | 270 | -.6093 | | | | |
| 25 | .231 | 130 | -.5711 | .331 | 50 | -.5646 | .531 | 0 | .1210 | 1.631 | 90 | -.6368 | .931 | 270 | -.6443 | | | | |
| 26 | .231 | 120 | -.5349 | .331 | 40 | -.2616 | .731 | 180 | -.5917 | 1.631 | 0 | -.0692 | 1.131 | 270 | -.6661 | | | | |
| 27 | .231 | 110 | -.5501 | .331 | 30 | -.0327 | .731 | 90 | -.5870 | 2.131 | 180 | -.1037 | 1.631 | 270 | -.6443 | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 2 POINT 85 ALPHA 24 MACH .506 Q 323.218 | | | | MODEL FLAT FACE | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|---|--------|------|------|-----------------|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | |
| 1 | .161 | 180 | -.4721 | .231 | 100 | -.5116 | .331 | 20 | .2088 | .731 | 0 | .1171 | 2.131 | 90 | -.6260 | | | | |
| 2 | .161 | 170 | -.4558 | .231 | 90 | -.5080 | .331 | 10 | .2308 | .931 | 180 | -.5986 | 2.131 | 0 | .1104 | | | | |
| 3 | .161 | 160 | -.4894 | .231 | 80 | -.5246 | .331 | 0 | .2324 | .931 | 90 | -.5976 | 0.000 | | .9679 | -.45 | 0.00 | | |
| 4 | .161 | 150 | -.4869 | .231 | 70 | -.4785 | .431 | 180 | -.4827 | .931 | 0 | .1171 | 0.000 | | 1.0576 | -.40 | 0.00 | | |
| 5 | .161 | 140 | -.5286 | .231 | 60 | -.5541 | .431 | 170 | -.5407 | 1.131 | 180 | -.5447 | 0.000 | | 1.0633 | -.30 | 0.00 | | |
| 6 | .161 | 130 | -.5451 | .231 | 50 | -.5902 | .431 | 160 | -.5218 | 1.131 | 170 | -.5670 | 0.000 | | 1.0417 | -.20 | 0.00 | | |
| 7 | .161 | 120 | -.5436 | .231 | 40 | -.5617 | .431 | 150 | -.5449 | 1.131 | 160 | -.5529 | 0.000 | | .9765 | -.10 | 0.00 | | |
| 8 | .161 | 110 | -.5454 | .231 | 30 | -.2916 | .431 | 140 | -.5619 | 1.131 | 150 | -.5814 | 0.000 | | .9244 | 0.00 | 0.00 | | |
| 9 | .161 | 100 | -.5256 | .231 | 20 | .2084 | .431 | 130 | -.6574 | 1.131 | 140 | -.6215 | 0.000 | | .8673 | .10 | 0.00 | | |
| 10 | .161 | 90 | -.5303 | .231 | 10 | .3171 | .431 | 120 | -.5743 | 1.131 | 130 | -.6496 | 0.000 | | .7737 | .20 | 0.00 | | |
| 11 | .161 | 80 | -.5003 | .231 | 0 | .1976 | .431 | 110 | -.5384 | 1.131 | 120 | -.6997 | 0.000 | | .6798 | .30 | 0.00 | | |
| 12 | .161 | 70 | -.4330 | .331 | 180 | -.4526 | .431 | 100 | -.4901 | 1.131 | 110 | -.6973 | 0.000 | | .4864 | .40 | 0.00 | | |
| 13 | .161 | 60 | -.5230 | .331 | 170 | -.5059 | .431 | 90 | -.5461 | 1.131 | 100 | -.7334 | 0.000 | | .2373 | .45 | 0.00 | | |
| 14 | .161 | 50 | -.5321 | .331 | 160 | -.5243 | .431 | 80 | -.5662 | 1.131 | 90 | -.7009 | 0.000 | | .9225 | 0.00 | .10 | | |
| 15 | .161 | 40 | -.6246 | .331 | 150 | -.5268 | .431 | 70 | -.5299 | 1.131 | 80 | -.6211 | 0.000 | | .9073 | 0.00 | .20 | | |
| 16 | .161 | 30 | -.6578 | .331 | 140 | -.5369 | .431 | 60 | -.3514 | 1.131 | 70 | -.5241 | 0.000 | | .8409 | 0.00 | .30 | | |
| 17 | .161 | 20 | -.6032 | .331 | 130 | -.5423 | .431 | 50 | -.1420 | 1.131 | 60 | -.4074 | 0.000 | | .7058 | 0.00 | .40 | | |
| 18 | .161 | 10 | -.4468 | .331 | 120 | -.5743 | .431 | 40 | -.0191 | 1.131 | 50 | -.2698 | 0.000 | | .5415 | 0.00 | .45 | | |
| 19 | .161 | 0 | -.4323 | .331 | 110 | -.5876 | .431 | 30 | .0504 | 1.131 | 40 | -.1740 | .161 | 270 | -.5669 | | | | |
| 20 | .231 | 180 | -.5089 | .331 | 100 | -.5833 | .431 | 20 | -.0056 | 1.131 | 30 | -.0341 | .231 | 270 | -.5572 | | | | |
| 21 | .231 | 170 | -.5191 | .331 | 90 | -.5693 | .431 | 10 | .1497 | 1.131 | 20 | .0072 | .331 | 270 | -.6097 | | | | |
| 22 | .231 | 160 | -.5219 | .331 | 80 | -.5837 | .431 | 0 | .1756 | 1.131 | 10 | .0834 | .431 | 270 | -.5860 | | | | |
| 23 | .231 | 150 | -.5154 | .331 | 70 | -.5880 | .531 | 180 | -.5415 | 1.131 | 0 | .1131 | .531 | 270 | -.5963 | | | | |
| 24 | .231 | 140 | -.6079 | .331 | 60 | -.5830 | .531 | 90 | -.6411 | | | | .731 | 270 | -.6322 | | | | |
| 25 | .231 | 130 | -.5366 | .331 | 50 | -.3478 | .531 | 0 | .1563 | 1.631 | 90 | -.7053 | .931 | 270 | -.6120 | | | | |
| 26 | .231 | 120 | -.5400 | .331 | 40 | -.0571 | .731 | 180 | -.5507 | 1.631 | 0 | .0084 | 1.131 | 270 | -.7044 | | | | |
| 27 | .231 | 110 | -.5375 | .331 | 30 | .1461 | .731 | 90 | -.5774 | 2.131 | 180 | -.2486 | 1.631 | 270 | -.7141 | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|--|-----|--|--|-----|-----|
| PORT | X/D | | | PHI | | | CP1 | | | CP2 | | | CP3 | | | CP4 | | | CP5 | | | Y/D | Z/D |
| | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | | | |
| 1 | .161 | 180 | -.4211 | .231 | 100 | -.4773 | .331 | 20 | -.4994 | .731 | 0 | -.5322 | 2.131 | 90 | -.9699 | | | | | | | | |
| 2 | .161 | 170 | -.4100 | .231 | 90 | -.4840 | .331 | 10 | -.5226 | .931 | 180 | -.5073 | 2.131 | 0 | -.9759 | | | | | | | | |
| 3 | .161 | 160 | -.4001 | .231 | 80 | -.4807 | .331 | 0 | -.5067 | .931 | 90 | -.5362 | 2.131 | 0 | -.9759 | | | | | | | | |
| 4 | .161 | 150 | -.4232 | .231 | 70 | -.4835 | .431 | 180 | -.4444 | .931 | 0 | -.5401 | 0.000 | | .8927 | -.45 | 0.00 | | | | | | |
| 5 | .161 | 140 | -.4115 | .231 | 60 | -.4880 | .431 | 170 | -.4308 | 1.131 | 180 | -.5022 | 0.000 | | 1.0253 | -.30 | 0.00 | | | | | | |
| 6 | .161 | 130 | -.4320 | .231 | 50 | -.4900 | .431 | 160 | -.4771 | 1.131 | 170 | -.5301 | 0.000 | | 1.0896 | -.20 | 0.00 | | | | | | |
| 7 | .161 | 120 | -.4301 | .231 | 40 | -.4970 | .431 | 150 | -.4383 | 1.131 | 160 | -.5127 | 0.000 | | 1.1131 | -.10 | 0.00 | | | | | | |
| 8 | .161 | 110 | -.4574 | .231 | 30 | -.5032 | .431 | 140 | -.4509 | 1.131 | 150 | -.5250 | 0.000 | | 1.1131 | 0.00 | 0.00 | | | | | | |
| 9 | .161 | 100 | -.4508 | .231 | 20 | -.4808 | .431 | 130 | -.4262 | 1.131 | 140 | -.5052 | 0.000 | | 1.1300 | .10 | 0.00 | | | | | | |
| 10 | .161 | 90 | -.4047 | .231 | 10 | -.4819 | .431 | 120 | -.4533 | 1.131 | 130 | -.5127 | 0.000 | | 1.0700 | .20 | 0.00 | | | | | | |
| 11 | .161 | 80 | -.4715 | .231 | 0 | -.5073 | .431 | 110 | -.4832 | 1.131 | 120 | -.5310 | 0.000 | | 1.0013 | .30 | 0.00 | | | | | | |
| 12 | .161 | 70 | -.4710 | .331 | 180 | -.4198 | .431 | 100 | -.4012 | 1.131 | 110 | -.5184 | 0.000 | | .8599 | .40 | 0.00 | | | | | | |
| 13 | .161 | 60 | -.4710 | .331 | 170 | -.4246 | .431 | 90 | -.4739 | 1.131 | 100 | -.5172 | 0.000 | | .6549 | .45 | 0.00 | | | | | | |
| 14 | .161 | 50 | -.4093 | .331 | 160 | -.4240 | .431 | 80 | -.4815 | 1.131 | 90 | -.5374 | 0.000 | | 1.0994 | .50 | .10 | | | | | | |
| 15 | .161 | 40 | -.4709 | .331 | 150 | -.4292 | .431 | 70 | -.4765 | 1.131 | 80 | -.5355 | 0.000 | | 1.0635 | .50 | .20 | | | | | | |
| 16 | .161 | 30 | -.4734 | .331 | 140 | -.4411 | .431 | 60 | -.4913 | 1.131 | 70 | -.5425 | 0.000 | | 1.0068 | .50 | .30 | | | | | | |
| 17 | .161 | 20 | -.4780 | .331 | 130 | -.4452 | .431 | 50 | -.5003 | 1.131 | 60 | -.5614 | 0.000 | | .8642 | .50 | .40 | | | | | | |
| 18 | .161 | 10 | -.4820 | .331 | 120 | -.4535 | .431 | 40 | -.4873 | 1.131 | 50 | -.5374 | 0.000 | | .6753 | .50 | .45 | | | | | | |
| 19 | .161 | 0 | -.5007 | .331 | 110 | -.4835 | .431 | 30 | -.5327 | 1.131 | 40 | -.5743 | .161 | 270 | -.4824 | | | | | | | | |
| 20 | .231 | 180 | -.4150 | .331 | 100 | -.4746 | .431 | 20 | -.5026 | 1.131 | 30 | -.5671 | .231 | 270 | -.4797 | | | | | | | | |
| 21 | .231 | 170 | -.4195 | .331 | 90 | -.4840 | .431 | 10 | -.5075 | 1.131 | 20 | -.5524 | .331 | 270 | -.4535 | | | | | | | | |
| 22 | .231 | 160 | -.4309 | .331 | 80 | -.4805 | .431 | 0 | -.5084 | 1.131 | 10 | -.5770 | .431 | 270 | -.4803 | | | | | | | | |
| 23 | .231 | 150 | -.4035 | .331 | 70 | -.4765 | .531 | 180 | -.4351 | 1.131 | 0 | -.5449 | .531 | 270 | -.4920 | | | | | | | | |
| 24 | .231 | 140 | -.4420 | .331 | 60 | -.4830 | .531 | 90 | -.4826 | | | | .731 | 270 | -.5065 | | | | | | | | |
| 25 | .231 | 130 | -.4208 | .331 | 50 | -.4781 | .531 | 0 | -.5135 | 1.631 | 90 | -.3769 | .931 | 270 | -.5310 | | | | | | | | |
| 26 | .231 | 120 | -.4555 | .331 | 40 | -.4816 | .731 | 180 | -.4864 | 1.631 | 0 | -.3366 | 1.131 | 270 | -.5519 | | | | | | | | |
| 27 | .231 | 110 | -.4493 | .331 | 30 | -.4994 | .731 | 90 | -.4922 | 2.131 | 180 | -.1599 | 1.631 | 270 | -.3536 | | | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|--|-----|--|--|-----|-----|
| PORT | X/D | | | PHI | | | CP1 | | | CP2 | | | CP3 | | | CP4 | | | CP5 | | | Y/D | Z/D |
| | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | | | |
| 1 | .161 | 180 | -.3896 | .231 | 100 | -.5177 | .331 | 20 | -.5477 | .731 | 0 | -.5721 | 2.131 | 90 | .0359 | | | | | | | | |
| 2 | .161 | 170 | -.3953 | .231 | 90 | -.5330 | .331 | 10 | -.5734 | .931 | 180 | -.5190 | 2.131 | 0 | .0741 | | | | | | | | |
| 3 | .161 | 160 | -.4040 | .231 | 80 | -.5440 | .331 | 0 | -.5474 | .931 | 90 | -.5811 | 0.000 | | .7309 | -.45 | 0.00 | | | | | | |
| 4 | .161 | 150 | -.4109 | .231 | 70 | -.5522 | .431 | 180 | -.4523 | .931 | 0 | -.6024 | 0.000 | | .8996 | -.40 | 0.00 | | | | | | |
| 5 | .161 | 140 | -.4423 | .231 | 60 | -.5468 | .431 | 170 | -.4350 | 1.131 | 180 | -.5271 | 0.000 | | 1.0271 | -.30 | 0.00 | | | | | | |
| 6 | .161 | 130 | -.4018 | .231 | 50 | -.5465 | .431 | 160 | -.4359 | 1.131 | 170 | -.5016 | 0.000 | | 1.0762 | -.20 | 0.00 | | | | | | |
| 7 | .161 | 120 | -.4526 | .231 | 40 | -.5462 | .431 | 150 | -.4315 | 1.131 | 160 | -.5028 | 0.000 | | 1.1006 | -.10 | 0.00 | | | | | | |
| 8 | .161 | 110 | -.4958 | .231 | 30 | -.5780 | .431 | 140 | -.4911 | 1.131 | 150 | -.5220 | 0.000 | | 1.0957 | 0.00 | 0.00 | | | | | | |
| 9 | .161 | 100 | -.5177 | .231 | 20 | -.5621 | .431 | 130 | -.5009 | 1.131 | 140 | -.5416 | 0.000 | | 1.0832 | .10 | 0.00 | | | | | | |
| 10 | .161 | 90 | -.5293 | .231 | 10 | -.5511 | .431 | 120 | -.4928 | 1.131 | 130 | -.5421 | 0.000 | | 1.0469 | .20 | 0.00 | | | | | | |
| 11 | .161 | 80 | -.5283 | .231 | 0 | -.5403 | .431 | 110 | -.5240 | 1.131 | 120 | -.5586 | 0.000 | | .9719 | .30 | 0.00 | | | | | | |
| 12 | .161 | 70 | -.5453 | .331 | 180 | -.4304 | .431 | 100 | -.5263 | 1.131 | 110 | -.5091 | 0.000 | | .8224 | .40 | 0.00 | | | | | | |
| 13 | .161 | 60 | -.5447 | .331 | 170 | -.4487 | .431 | 90 | -.5275 | 1.131 | 100 | -.5649 | 0.000 | | .6272 | .45 | 0.00 | | | | | | |
| 14 | .161 | 50 | -.5804 | .331 | 160 | -.4301 | .431 | 80 | -.5853 | 1.131 | 90 | -.5734 | 0.000 | | 1.0913 | .50 | .10 | | | | | | |
| 15 | .161 | 40 | -.5538 | .331 | 150 | -.4471 | .431 | 70 | -.5488 | 1.131 | 80 | -.5317 | 0.000 | | 1.0710 | .50 | .20 | | | | | | |
| 16 | .161 | 30 | -.5472 | .331 | 140 | -.4657 | .431 | 60 | -.5558 | 1.131 | 70 | -.5646 | 0.000 | | 1.0068 | .50 | .30 | | | | | | |
| 17 | .161 | 20 | -.5545 | .331 | 130 | -.4625 | .431 | 50 | -.5501 | 1.131 | 60 | -.5838 | 0.000 | | .8001 | .50 | .40 | | | | | | |
| 18 | .161 | 10 | -.5504 | .331 | 120 | -.4921 | .431 | 40 | -.5433 | 1.131 | 50 | -.5553 | 0.000 | | .6570 | .50 | .45 | | | | | | |
| 19 | .161 | 0 | -.5337 | .331 | 110 | -.5021 | .431 | 30 | -.5679 | 1.131 | 40 | -.5415 | .161 | 270 | -.5481 | | | | | | | | |
| 20 | .231 | 180 | -.4275 | .331 | 100 | -.5101 | .431 | 20 | -.5468 | 1.131 | 30 | -.5559 | .231 | 270 | -.5253 | | | | | | | | |
| 21 | .231 | 170 | -.4150 | .331 | 90 | -.5395 | .431 | 10 | -.5644 | 1.131 | 20 | -.5394 | .331 | 270 | -.5304 | | | | | | | | |
| 22 | .231 | 160 | -.4358 | .331 | 80 | -.5099 | .431 | 0 | -.5725 | 1.131 | 10 | -.5211 | .431 | 270 | -.5502 | | | | | | | | |
| 23 | .231 | 150 | -.4312 | .331 | 70 | -.5363 | .531 | 180 | -.4593 | 1.131 | 0 | -.5536 | .531 | 270 | -.5461 | | | | | | | | |
| 24 | .231 | 140 | -.4372 | .331 | 60 | -.5497 | .531 | 90 | -.5390 | | | | .731 | 270 | -.5619 | | | | | | | | |
| 25 | .231 | 130 | -.4717 | .331 | 50 | -.5627 | .531 | 0 | -.5639 | 1.631 | 90 | -.2812 | .931 | 270 | -.5832 | | | | | | | | |
| 26 | .231 | 120 | -.4820 | .331 | 40 | -.5460 | .731 | 180 | -.5188 | 1.631 | 0 | -.0806 | 1.131 | 270 | -.5079 | | | | | | | | |
| 27 | .231 | 110 | -.5139 | .331 | 30 | -.5511 | .731 | 90 | -.5705 | 2.131 | 180 | -.1121 | 1.631 | 270 | -.3034 | | | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 125 ALPHA -1 MACH .607 Q 430.980 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4715 | .231 | 100 | -.4590 | .331 | 20 | -.4577 | .731 | 0 | -.4396 | 2.131 | 90 | -.1343 | | |
| 2 | .161 | 170 | -.4670 | .231 | 90 | -.4770 | .331 | 10 | -.4302 | .931 | 180 | -.5290 | 2.131 | 0 | -.2112 | | |
| 3 | .161 | 150 | -.4661 | .231 | 80 | -.4417 | .331 | 0 | -.4360 | .931 | 90 | -.5082 | 0.000 | | .6850 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4574 | .231 | 70 | -.4506 | .431 | 180 | -.4855 | .931 | 0 | -.4980 | 0.000 | | .8574 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4656 | .231 | 60 | -.4398 | .431 | 170 | -.4728 | 1.131 | 180 | -.5396 | 0.000 | | .9993 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4512 | .231 | 50 | -.4387 | .431 | 160 | -.4913 | 1.131 | 170 | -.5485 | 0.000 | | 1.0578 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4577 | .231 | 40 | -.4263 | .431 | 150 | -.4899 | 1.131 | 160 | -.5127 | 0.000 | | 1.0957 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4455 | .231 | 30 | -.4209 | .431 | 140 | -.4653 | 1.131 | 150 | -.5193 | 0.000 | | 1.1044 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4473 | .231 | 20 | -.4117 | .431 | 130 | -.4710 | 1.131 | 140 | -.5415 | 0.000 | | 1.0915 | .10 | 0.00 |
| 10 | .161 | 90 | -.4358 | .231 | 10 | -.4371 | .431 | 120 | -.4728 | 1.131 | 130 | -.5338 | 0.000 | | 1.0656 | .20 | 0.00 |
| 11 | .161 | 80 | -.4515 | .231 | 0 | -.4190 | .431 | 110 | -.4705 | 1.131 | 120 | -.5260 | 0.000 | | 1.0133 | .30 | 0.00 |
| 12 | .161 | 70 | -.4338 | .331 | 180 | -.4522 | .431 | 100 | -.4682 | 1.131 | 110 | -.5263 | 0.000 | | .3711 | .40 | 0.00 |
| 13 | .161 | 50 | -.4347 | .331 | 170 | -.4746 | .431 | 90 | -.4435 | 1.131 | 100 | -.5296 | 0.000 | | .6923 | .45 | 0.00 |
| 14 | .161 | 50 | -.4210 | .331 | 160 | -.4714 | .431 | 80 | -.4509 | 1.131 | 90 | -.5365 | 0.000 | | 1.0881 | 0.00 | .10 |
| 15 | .161 | 40 | -.4377 | .331 | 150 | -.4792 | .431 | 70 | -.4632 | 1.131 | 80 | -.5206 | 0.000 | | 1.0654 | 0.00 | .20 |
| 16 | .161 | 30 | -.4201 | .331 | 140 | -.4806 | .431 | 60 | -.4490 | 1.131 | 70 | -.5227 | 0.000 | | 1.0013 | 0.00 | .30 |
| 17 | .161 | 20 | -.4225 | .331 | 130 | -.4795 | .431 | 50 | -.4583 | 1.131 | 60 | -.5160 | 0.000 | | .8674 | 0.00 | .40 |
| 18 | .161 | 10 | -.4253 | .331 | 120 | -.4571 | .431 | 40 | -.4516 | 1.131 | 50 | -.5230 | 0.000 | | .6844 | 0.00 | .45 |
| 19 | .161 | 0 | -.4014 | .331 | 110 | -.4581 | .431 | 30 | -.4300 | 1.131 | 40 | -.5257 | .161 | 270 | -.4567 | | |
| 20 | .231 | 180 | -.4067 | .331 | 100 | -.4584 | .431 | 20 | -.4371 | 1.131 | 30 | -.5139 | .231 | 270 | -.4652 | | |
| 21 | .231 | 170 | -.4707 | .331 | 90 | -.4822 | .431 | 10 | -.4592 | 1.131 | 20 | -.5245 | .331 | 270 | -.4760 | | |
| 22 | .231 | 160 | -.4737 | .331 | 80 | -.4479 | .431 | 0 | -.4238 | 1.131 | 10 | -.5175 | .431 | 270 | -.4703 | | |
| 23 | .231 | 150 | -.4632 | .331 | 70 | -.4433 | .531 | 180 | -.4821 | 1.131 | 0 | -.4968 | .531 | 270 | -.4731 | | |
| 24 | .231 | 140 | -.4432 | .331 | 60 | -.4864 | .531 | 90 | -.5197 | | | | .731 | 270 | -.5016 | | |
| 25 | .231 | 130 | -.4404 | .331 | 50 | -.4470 | .531 | 0 | -.4444 | 1.631 | 90 | -.4039 | .931 | 270 | -.5176 | | |
| 26 | .231 | 120 | -.4640 | .331 | 40 | -.4407 | .731 | 180 | -.5047 | 1.631 | 0 | -.4159 | 1.131 | 270 | -.5488 | | |
| 27 | .231 | 110 | -.4721 | .331 | 30 | -.4506 | .731 | 90 | -.5021 | 2.131 | 180 | -.0250 | 1.631 | 270 | -.3790 | | |

ORIGINAL PAGE IS
 OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 120 ALPHA 0 MACH .608 Q 432.073 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4392 | .231 | 100 | -.4518 | .331 | 20 | -.4524 | .731 | 0 | -.4910 | 2.131 | 90 | -.1336 | | |
| 2 | .161 | 170 | -.4278 | .231 | 90 | -.4248 | .331 | 10 | -.4432 | .931 | 180 | -.5060 | 2.131 | 0 | -.1124 | | |
| 3 | .161 | 150 | -.4451 | .231 | 80 | -.4405 | .331 | 0 | -.4452 | .931 | 90 | -.4904 | 0.000 | | .6854 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4405 | .231 | 70 | -.4310 | .431 | 180 | -.4484 | .931 | 0 | -.5009 | 0.000 | | .8649 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4338 | .231 | 60 | -.4488 | .431 | 170 | -.4727 | 1.131 | 180 | -.5224 | 0.000 | | .9992 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4451 | .231 | 50 | -.4388 | .431 | 160 | -.4553 | 1.131 | 170 | -.5206 | 0.000 | | 1.0593 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4300 | .231 | 40 | -.4510 | .431 | 150 | -.4663 | 1.131 | 160 | -.5281 | 0.000 | | 1.0936 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4373 | .231 | 30 | -.4418 | .431 | 140 | -.4689 | 1.131 | 150 | -.5122 | 0.000 | | 1.1011 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4354 | .231 | 20 | -.4353 | .431 | 130 | -.4490 | 1.131 | 140 | -.5099 | 0.000 | | 1.0991 | .10 | 0.00 |
| 10 | .161 | 90 | -.4413 | .231 | 10 | -.4529 | .431 | 120 | -.4547 | 1.131 | 130 | -.5173 | 0.000 | | 1.0663 | .20 | 0.00 |
| 11 | .161 | 80 | -.4277 | .231 | 0 | -.4329 | .431 | 110 | -.4516 | 1.131 | 120 | -.5284 | 0.000 | | 1.0087 | .30 | 0.00 |
| 12 | .161 | 70 | -.4484 | .331 | 180 | -.4510 | .431 | 100 | -.4680 | 1.131 | 110 | -.5242 | 0.000 | | .8705 | .40 | 0.00 |
| 13 | .161 | 60 | -.4213 | .331 | 170 | -.4615 | .431 | 90 | -.4559 | 1.131 | 100 | -.5239 | 0.000 | | .7043 | .45 | 0.00 |
| 14 | .161 | 50 | -.4430 | .331 | 160 | -.4634 | .431 | 80 | -.4738 | 1.131 | 90 | -.5314 | 0.000 | | 1.0997 | .50 | .10 |
| 15 | .161 | 40 | -.4509 | .331 | 150 | -.4593 | .431 | 70 | -.4831 | 1.131 | 80 | -.5341 | 0.000 | | 1.0718 | .60 | .20 |
| 16 | .161 | 30 | -.4200 | .331 | 140 | -.4329 | .431 | 60 | -.4412 | 1.131 | 70 | -.5134 | 0.000 | | 1.0064 | .70 | .30 |
| 17 | .161 | 20 | -.4311 | .331 | 130 | -.4275 | .431 | 50 | -.4504 | 1.131 | 60 | -.5149 | 0.000 | | .4687 | .80 | .40 |
| 18 | .161 | 10 | -.4400 | .331 | 120 | -.4550 | .431 | 40 | -.4634 | 1.131 | 50 | -.5164 | 0.000 | | .6781 | .90 | .45 |
| 19 | .161 | 0 | -.4433 | .331 | 110 | -.4318 | .431 | 30 | -.4443 | 1.131 | 40 | -.5081 | .161 | 270 | -.4413 | | |
| 20 | .231 | 180 | -.4705 | .331 | 100 | -.4523 | .431 | 20 | -.4550 | 1.131 | 30 | -.5226 | .231 | 270 | -.4642 | | |
| 21 | .231 | 170 | -.4503 | .331 | 90 | -.4588 | .431 | 10 | -.4461 | 1.131 | 20 | -.5191 | .331 | 270 | -.4663 | | |
| 22 | .231 | 160 | -.4264 | .331 | 80 | -.4310 | .431 | 0 | -.4475 | 1.131 | 10 | -.5137 | .431 | 270 | -.4421 | | |
| 23 | .231 | 150 | -.4503 | .331 | 70 | -.4518 | .531 | 180 | -.4782 | 1.131 | 0 | -.5401 | .531 | 270 | -.4754 | | |
| 24 | .231 | 140 | -.4522 | .331 | 60 | -.4534 | .531 | 90 | -.4724 | | | | .731 | 270 | -.4965 | | |
| 25 | .231 | 130 | -.4532 | .331 | 50 | -.4523 | .531 | 0 | -.4599 | 1.631 | 90 | -.3890 | .931 | 270 | -.5127 | | |
| 26 | .231 | 120 | -.4511 | .331 | 40 | -.4700 | .731 | 180 | -.5062 | 1.631 | 0 | -.4001 | 1.131 | 270 | -.5348 | | |
| 27 | .231 | 110 | -.4434 | .331 | 30 | -.4580 | .731 | 90 | -.4782 | 2.131 | 180 | -.1043 | 1.631 | 270 | -.4012 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PURT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 100 | -.4211 | .231 | 100 | -.6065 | .331 | 20 | -.6524 | .731 | 0 | -.5145 | 2.131 | 90 | -.1417 | | |
| 2 | .161 | 170 | -.4444 | .231 | 90 | -.6373 | .331 | 10 | -.6479 | .931 | 180 | -.5553 | 2.131 | 0 | .0230 | | |
| 3 | .161 | 100 | -.4503 | .231 | 80 | -.6521 | .331 | 0 | -.6490 | .931 | 90 | -.6203 | 0.000 | | .8265 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4751 | .231 | 70 | -.6324 | .431 | 180 | -.4896 | .731 | 0 | -.2000 | 0.000 | | .9773 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5142 | .231 | 60 | -.6410 | .431 | 170 | -.4820 | 1.131 | 180 | -.5157 | 0.000 | | 1.0764 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5478 | .231 | 50 | -.6548 | .431 | 160 | -.5173 | 1.131 | 170 | -.5346 | 0.000 | | 1.1026 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5613 | .231 | 40 | -.6462 | .431 | 150 | -.5240 | 1.131 | 160 | -.5190 | 0.000 | | 1.1008 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6044 | .231 | 30 | -.6402 | .431 | 140 | -.5622 | 1.131 | 150 | -.5532 | 0.000 | | 1.0900 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6222 | .231 | 20 | -.6594 | .431 | 130 | -.5790 | 1.131 | 140 | -.5716 | 0.000 | | 1.0499 | .10 | 0.00 |
| 10 | .161 | 90 | -.6341 | .231 | 10 | -.6453 | .431 | 120 | -.5926 | 1.131 | 130 | -.5863 | 0.000 | | .9967 | .20 | 0.00 |
| 11 | .161 | 80 | -.6198 | .231 | 0 | -.6119 | .431 | 110 | -.5963 | 1.131 | 120 | -.5809 | 0.000 | | .9175 | .30 | 0.00 |
| 12 | .161 | 70 | -.6317 | .331 | 180 | -.4597 | .431 | 100 | -.6027 | 1.131 | 110 | -.6016 | 0.000 | | .7375 | .40 | 0.00 |
| 13 | .161 | 60 | -.6344 | .331 | 170 | -.4484 | .431 | 90 | -.6238 | 1.131 | 100 | -.5490 | 0.000 | | .5414 | .45 | 0.00 |
| 14 | .161 | 50 | -.6439 | .331 | 160 | -.4797 | .431 | 80 | -.6253 | 1.131 | 90 | -.5208 | 0.000 | | 1.0772 | 0.00 | .10 |
| 15 | .161 | 40 | -.6642 | .331 | 150 | -.5183 | .431 | 70 | -.6525 | 1.131 | 80 | -.3913 | 0.000 | | 1.0473 | 0.00 | .20 |
| 16 | .161 | 30 | -.6498 | .331 | 140 | -.5342 | .431 | 60 | -.6499 | 1.131 | 70 | -.3124 | 0.000 | | .9964 | 0.00 | .30 |
| 17 | .161 | 20 | -.6420 | .331 | 130 | -.5444 | .431 | 50 | -.6574 | 1.131 | 60 | -.2625 | 0.000 | | .8492 | 0.00 | .40 |
| 18 | .161 | 10 | -.6320 | .331 | 120 | -.5860 | .431 | 40 | -.6548 | 1.131 | 50 | -.1751 | 0.000 | | .6429 | 0.00 | .45 |
| 19 | .161 | 0 | -.6350 | .331 | 110 | -.5930 | .431 | 30 | -.6612 | 1.131 | 40 | -.0952 | .161 | 270 | -.6447 | | |
| 20 | .231 | 180 | -.4431 | .331 | 100 | -.6651 | .431 | 20 | -.6499 | 1.131 | 30 | -.0589 | .231 | 270 | -.6176 | | |
| 21 | .231 | 170 | -.4379 | .331 | 90 | -.6400 | .431 | 10 | -.6652 | 1.131 | 20 | -.0339 | .331 | 270 | -.6377 | | |
| 22 | .231 | 150 | -.4537 | .331 | 80 | -.6467 | .431 | 0 | -.6409 | 1.131 | 10 | .0006 | .431 | 270 | -.6203 | | |
| 23 | .231 | 130 | -.4526 | .331 | 70 | -.6467 | .531 | 180 | -.5315 | 1.131 | 0 | .0225 | .531 | 270 | -.6389 | | |
| 24 | .231 | 140 | -.5302 | .331 | 60 | -.6462 | .531 | 90 | -.6311 | | | | .731 | 270 | -.6455 | | |
| 25 | .231 | 130 | -.5432 | .331 | 50 | -.6456 | .531 | 0 | -.6606 | 1.631 | 90 | -.2138 | .931 | 270 | -.6334 | | |
| 26 | .231 | 120 | -.5711 | .331 | 40 | -.6310 | .731 | 180 | -.5304 | 1.631 | 0 | .0268 | 1.131 | 270 | -.5391 | | |
| 27 | .231 | 110 | -.6098 | .331 | 30 | -.6524 | .731 | 90 | -.6490 | 2.131 | 180 | -.0531 | 1.631 | 270 | -.1978 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PURT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 100 | -.4307 | .231 | 100 | -.6210 | .331 | 20 | -.6305 | .731 | 0 | -.3606 | 2.131 | 90 | -.2311 | | |
| 2 | .161 | 170 | -.4430 | .231 | 90 | -.6421 | .331 | 10 | -.6438 | .931 | 180 | -.5553 | 2.131 | 0 | .0181 | | |
| 3 | .161 | 100 | -.4425 | .231 | 80 | -.6472 | .331 | 0 | -.6614 | .931 | 90 | -.6247 | 0.000 | | .8521 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5017 | .231 | 70 | -.6316 | .431 | 180 | -.5010 | .931 | 0 | -.0340 | 0.000 | | .9973 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5575 | .231 | 60 | -.6324 | .431 | 170 | -.5054 | 1.131 | 180 | -.5141 | 0.000 | | 1.0843 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5618 | .231 | 50 | -.6383 | .431 | 160 | -.5071 | 1.131 | 170 | -.5105 | 0.000 | | 1.1143 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5589 | .231 | 40 | -.6553 | .431 | 150 | -.5456 | 1.131 | 160 | -.5429 | 0.000 | | 1.0913 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6160 | .231 | 30 | -.6435 | .431 | 140 | -.5749 | 1.131 | 150 | -.5535 | 0.000 | | 1.0739 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6168 | .231 | 20 | -.6308 | .431 | 130 | -.5804 | 1.131 | 140 | -.5571 | 0.000 | | 1.0270 | .10 | 0.00 |
| 10 | .161 | 90 | -.6333 | .231 | 10 | -.6516 | .431 | 120 | -.6137 | 1.131 | 130 | -.5814 | 0.000 | | .9717 | .20 | 0.00 |
| 11 | .161 | 80 | -.6553 | .231 | 0 | -.6507 | .431 | 110 | -.6252 | 1.131 | 120 | -.6009 | 0.000 | | .8798 | .30 | 0.00 |
| 12 | .161 | 70 | -.6585 | .331 | 180 | -.4672 | .431 | 100 | -.6562 | 1.131 | 110 | -.5486 | 0.000 | | .7034 | .40 | 0.00 |
| 13 | .161 | 60 | -.6312 | .331 | 170 | -.4855 | .431 | 90 | -.6226 | 1.131 | 100 | -.5622 | 0.000 | | .4947 | .45 | 0.00 |
| 14 | .161 | 50 | -.6206 | .331 | 160 | -.4872 | .431 | 80 | -.6293 | 1.131 | 90 | -.4699 | 0.000 | | 1.0683 | 0.00 | .10 |
| 15 | .161 | 40 | -.6130 | .331 | 150 | -.5104 | .431 | 70 | -.6218 | 1.131 | 80 | -.4098 | 0.000 | | 1.0363 | 0.00 | .20 |
| 16 | .161 | 30 | -.6249 | .331 | 140 | -.5428 | .431 | 60 | -.6363 | 1.131 | 70 | -.2812 | 0.000 | | .9799 | 0.00 | .30 |
| 17 | .161 | 20 | -.6125 | .331 | 130 | -.5636 | .431 | 50 | -.6336 | 1.131 | 60 | -.2190 | 0.000 | | .8326 | 0.00 | .40 |
| 18 | .161 | 10 | -.6303 | .331 | 120 | -.6089 | .431 | 40 | -.6556 | 1.131 | 50 | -.1442 | 0.000 | | .6344 | 0.00 | .45 |
| 19 | .161 | 0 | -.6358 | .331 | 110 | -.6229 | .431 | 30 | -.6525 | 1.131 | 40 | -.0637 | .161 | 270 | -.6412 | | |
| 20 | .231 | 180 | -.4503 | .331 | 100 | -.6121 | .431 | 20 | -.6629 | 1.131 | 30 | -.0273 | .231 | 270 | -.6432 | | |
| 21 | .231 | 170 | -.4481 | .331 | 90 | -.6302 | .431 | 10 | -.6632 | 1.131 | 20 | .0255 | .331 | 270 | -.6441 | | |
| 22 | .231 | 150 | -.4749 | .331 | 80 | -.6413 | .431 | 0 | -.6142 | 1.131 | 10 | .0204 | .431 | 270 | -.6458 | | |
| 23 | .231 | 130 | -.5223 | .331 | 70 | -.6715 | .531 | 180 | -.5338 | 1.131 | 0 | .0358 | .531 | 270 | -.6677 | | |
| 24 | .231 | 140 | -.5331 | .331 | 60 | -.6405 | .531 | 90 | -.6339 | | | | .731 | 270 | -.6453 | | |
| 25 | .231 | 130 | -.5597 | .331 | 50 | -.6426 | .531 | 0 | -.6533 | 1.631 | 90 | -.2689 | .931 | 270 | -.6220 | | |
| 26 | .231 | 120 | -.6025 | .331 | 40 | -.6526 | .731 | 180 | -.5665 | 1.631 | 0 | .0084 | 1.131 | 270 | -.4869 | | |
| 27 | .231 | 110 | -.6241 | .331 | 30 | -.6516 | .731 | 90 | -.6710 | 2.131 | 180 | -.0640 | 1.631 | 270 | -.2686 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 5 POINT 129 | | ALPHA | 6 | MACH | .607 | Q 431.156 | MODEL FLAT FACE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----------------|--------|-------|------|------|------|-----------|-----------------|--|--|--|
| PORT. | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | | | | |
| 1 | .161 | 180 | -.4470 | .231 | 100 | -.5735 | .331 | 20 | -.6122 | .731 | 0 | -.6222 | 2.131 | 90 | -.0023 | | | | | | | | | |
| 2 | .161 | 170 | -.4391 | .231 | 90 | -.5932 | .331 | 10 | -.6183 | .931 | 180 | -.5477 | 2.131 | 0 | .0594 | | | | | | | | | |
| 3 | .161 | 160 | -.4348 | .231 | 80 | -.5900 | .331 | 0 | -.6177 | .931 | 90 | -.6123 | 0.000 | | .7610 | -.45 | 0.00 | | | | | | | |
| 4 | .161 | 150 | -.4573 | .231 | 70 | -.5911 | .431 | 180 | -.4433 | .931 | 0 | -.5510 | 0.000 | | .9421 | -.40 | 0.00 | | | | | | | |
| 5 | .161 | 140 | -.4973 | .231 | 60 | -.6022 | .431 | 170 | -.4905 | 1.131 | 180 | -.5170 | 0.000 | | 1.0533 | -.30 | 0.00 | | | | | | | |
| 6 | .161 | 130 | -.4957 | .231 | 50 | -.6327 | .431 | 160 | -.4766 | 1.131 | 170 | -.5432 | 0.000 | | 1.0953 | -.20 | 0.00 | | | | | | | |
| 7 | .161 | 120 | -.5019 | .231 | 40 | -.5073 | .431 | 150 | -.4763 | 1.131 | 160 | -.5185 | 0.000 | | 1.1115 | -.10 | 0.00 | | | | | | | |
| 8 | .161 | 110 | -.5355 | .231 | 30 | -.6145 | .431 | 140 | -.5120 | 1.131 | 150 | -.5273 | 0.000 | | 1.0967 | 0.00 | 0.00 | | | | | | | |
| 9 | .161 | 100 | -.5045 | .231 | 20 | -.6089 | .431 | 130 | -.5267 | 1.131 | 140 | -.5406 | 0.000 | | 1.0794 | .10 | 0.00 | | | | | | | |
| 10 | .161 | 90 | -.5318 | .231 | 10 | -.5975 | .431 | 120 | -.5499 | 1.131 | 130 | -.5549 | 0.000 | | 1.0294 | .20 | 0.00 | | | | | | | |
| 11 | .161 | 80 | -.6024 | .231 | 0 | -.6076 | .431 | 110 | -.5757 | 1.131 | 120 | -.5813 | 0.000 | | .9628 | .30 | 0.00 | | | | | | | |
| 12 | .161 | 70 | -.6070 | .331 | 180 | -.4199 | .431 | 100 | -.5910 | 1.131 | 110 | -.5831 | 0.000 | | .8018 | .40 | 0.00 | | | | | | | |
| 13 | .161 | 60 | -.5394 | .331 | 170 | -.4218 | .431 | 90 | -.5789 | 1.131 | 100 | -.5711 | 0.000 | | .6382 | .45 | 0.00 | | | | | | | |
| 14 | .161 | 50 | -.5497 | .331 | 160 | -.4588 | .431 | 80 | -.5792 | 1.131 | 90 | -.5765 | 0.000 | | 1.0891 | 0.00 | .10 | | | | | | | |
| 15 | .161 | 40 | -.6033 | .331 | 150 | -.4628 | .431 | 70 | -.6035 | 1.131 | 80 | -.5645 | 0.000 | | 1.0632 | 0.00 | .20 | | | | | | | |
| 16 | .161 | 30 | -.5713 | .331 | 140 | -.4828 | .431 | 60 | -.5867 | 1.131 | 70 | -.5320 | 0.000 | | 1.0015 | 0.00 | .30 | | | | | | | |
| 17 | .161 | 20 | -.6110 | .331 | 130 | -.5103 | .431 | 50 | -.6128 | 1.131 | 60 | -.5089 | 0.000 | | .8501 | 0.00 | .40 | | | | | | | |
| 18 | .161 | 10 | -.5957 | .331 | 120 | -.5349 | .431 | 40 | -.5123 | 1.131 | 50 | -.4530 | 0.000 | | .6527 | 0.00 | .45 | | | | | | | |
| 19 | .161 | 0 | -.5459 | .331 | 110 | -.5414 | .431 | 30 | -.5969 | 1.131 | 40 | -.4389 | .161 | 270 | -.5759 | | | | | | | | | |
| 20 | .231 | 180 | -.4334 | .331 | 100 | -.5770 | .431 | 20 | -.6125 | 1.131 | 30 | -.4004 | .231 | 270 | -.5847 | | | | | | | | | |
| 21 | .231 | 170 | -.3944 | .331 | 90 | -.5951 | .431 | 10 | -.6244 | 1.131 | 20 | -.3427 | .331 | 270 | -.5853 | | | | | | | | | |
| 22 | .231 | 160 | -.4231 | .331 | 80 | -.5813 | .431 | 0 | -.6191 | 1.131 | 10 | -.3487 | .431 | 270 | -.5733 | | | | | | | | | |
| 23 | .231 | 150 | -.4491 | .331 | 70 | -.6024 | .531 | 180 | -.4798 | 1.131 | 0 | -.3364 | .531 | 270 | -.5984 | | | | | | | | | |
| 24 | .231 | 140 | -.4758 | .331 | 60 | -.5951 | .531 | 90 | -.5815 | | | | .731 | 270 | -.6050 | | | | | | | | | |
| 25 | .231 | 130 | -.5138 | .331 | 50 | -.6062 | .531 | 0 | -.6122 | 1.631 | 90 | -.2291 | .931 | 270 | -.6254 | | | | | | | | | |
| 26 | .231 | 120 | -.5239 | .331 | 40 | -.6164 | .731 | 180 | -.5273 | 1.631 | 0 | .0255 | 1.131 | 270 | -.5774 | | | | | | | | | |
| 27 | .231 | 110 | -.5244 | .331 | 30 | -.5024 | .731 | 90 | -.5855 | 2.131 | 180 | -.0661 | 1.631 | 270 | -.1873 | | | | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 5 POINT 131 | | ALPHA | 8 | MACH | .607 | Q 431.073 | MODEL FLAT FACE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----------------|--------|-------|------|------|------|-----------|-----------------|--|--|--|
| PORT. | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | | | | |
| 1 | .161 | 180 | -.3942 | .231 | 100 | -.5936 | .331 | 20 | -.6500 | .731 | 0 | -.6112 | 2.131 | 90 | -.0690 | | | | | | | | | |
| 2 | .161 | 170 | -.4397 | .231 | 90 | -.6306 | .331 | 10 | -.6569 | .931 | 180 | -.5037 | 2.131 | 0 | .0250 | | | | | | | | | |
| 3 | .161 | 160 | -.4011 | .231 | 80 | -.6465 | .331 | 0 | -.6505 | .931 | 90 | -.6698 | 0.000 | | .7950 | -.45 | 0.00 | | | | | | | |
| 4 | .161 | 150 | -.4435 | .231 | 70 | -.6220 | .431 | 180 | -.4808 | .931 | 0 | -.4074 | 0.000 | | .9452 | -.40 | 0.00 | | | | | | | |
| 5 | .161 | 140 | -.4909 | .231 | 60 | -.6260 | .431 | 170 | -.4680 | 1.131 | 180 | -.5075 | 0.000 | | 1.0605 | -.30 | 0.00 | | | | | | | |
| 6 | .161 | 130 | -.5263 | .231 | 50 | -.6336 | .431 | 160 | -.5080 | 1.131 | 170 | -.5328 | 0.000 | | 1.0379 | -.20 | 0.00 | | | | | | | |
| 7 | .161 | 120 | -.5324 | .231 | 40 | -.6501 | .431 | 150 | -.5150 | 1.131 | 160 | -.5219 | 0.000 | | 1.1033 | -.10 | 0.00 | | | | | | | |
| 8 | .161 | 110 | -.5928 | .231 | 30 | -.6711 | .431 | 140 | -.5573 | 1.131 | 150 | -.5589 | 0.000 | | 1.0864 | 0.00 | 0.00 | | | | | | | |
| 9 | .161 | 100 | -.6061 | .231 | 20 | -.6357 | .431 | 130 | -.5616 | 1.131 | 140 | -.5727 | 0.000 | | 1.0587 | .10 | 0.00 | | | | | | | |
| 10 | .161 | 90 | -.6161 | .231 | 10 | -.6514 | .431 | 120 | -.6016 | 1.131 | 130 | -.6064 | 0.000 | | 1.0127 | .20 | 0.00 | | | | | | | |
| 11 | .161 | 80 | -.6183 | .231 | 0 | -.6403 | .431 | 110 | -.5926 | 1.131 | 120 | -.5724 | 0.000 | | .9277 | .30 | 0.00 | | | | | | | |
| 12 | .161 | 70 | -.6250 | .331 | 180 | -.4432 | .431 | 100 | -.5909 | 1.131 | 110 | -.5835 | 0.000 | | .7601 | .40 | 0.00 | | | | | | | |
| 13 | .161 | 60 | -.6218 | .331 | 170 | -.4567 | .431 | 90 | -.6135 | 1.131 | 100 | -.5360 | 0.000 | | .5617 | .45 | 0.00 | | | | | | | |
| 14 | .161 | 50 | -.6429 | .331 | 160 | -.4723 | .431 | 80 | -.6390 | 1.131 | 90 | -.5535 | 0.000 | | 1.0333 | 0.00 | .10 | | | | | | | |
| 15 | .161 | 40 | -.6421 | .331 | 150 | -.5131 | .431 | 70 | -.6421 | 1.131 | 80 | -.5189 | 0.000 | | 1.0532 | 0.00 | .20 | | | | | | | |
| 16 | .161 | 30 | -.6459 | .331 | 140 | -.5350 | .431 | 60 | -.6424 | 1.131 | 70 | -.4525 | 0.000 | | .9348 | 0.00 | .30 | | | | | | | |
| 17 | .161 | 20 | -.6391 | .331 | 130 | -.5701 | .431 | 50 | -.6630 | 1.131 | 60 | -.3364 | 0.000 | | .8401 | 0.00 | .40 | | | | | | | |
| 18 | .161 | 10 | -.6068 | .331 | 120 | -.5439 | .431 | 40 | -.6291 | 1.131 | 50 | -.3575 | 0.000 | | .6429 | 0.00 | .45 | | | | | | | |
| 19 | .161 | 0 | -.6031 | .331 | 110 | -.5763 | .431 | 30 | -.6500 | 1.131 | 40 | -.2411 | .161 | 270 | -.6223 | | | | | | | | | |
| 20 | .231 | 180 | -.4172 | .331 | 100 | -.6214 | .431 | 20 | -.6621 | 1.131 | 30 | -.2051 | .231 | 270 | -.6151 | | | | | | | | | |
| 21 | .231 | 170 | -.4370 | .331 | 90 | -.6252 | .431 | 10 | -.6500 | 1.131 | 20 | -.1347 | .331 | 270 | -.6355 | | | | | | | | | |
| 22 | .231 | 160 | -.4399 | .331 | 80 | -.6241 | .431 | 0 | -.6485 | 1.131 | 10 | -.1479 | .431 | 270 | -.6104 | | | | | | | | | |
| 23 | .231 | 150 | -.4809 | .331 | 70 | -.6301 | .531 | 180 | -.4999 | 1.131 | 0 | -.1470 | .531 | 270 | -.6124 | | | | | | | | | |
| 24 | .231 | 140 | -.5066 | .331 | 60 | -.6339 | .531 | 90 | -.5251 | | | | .731 | 270 | -.6483 | | | | | | | | | |
| 25 | .231 | 130 | -.5497 | .331 | 50 | -.6517 | .531 | 0 | -.6616 | 1.631 | 90 | -.1500 | .931 | 270 | -.6419 | | | | | | | | | |
| 26 | .231 | 120 | -.5049 | .331 | 40 | -.6409 | .731 | 180 | -.5184 | 1.631 | 0 | .0490 | 1.131 | 270 | -.5597 | | | | | | | | | |
| 27 | .231 | 110 | -.5294 | .331 | 30 | -.6579 | .731 | 90 | -.6453 | 2.131 | 180 | -.0930 | 1.631 | 270 | -.1594 | | | | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4676 | .231 | 100 | -.5674 | .331 | 20 | -.5978 | .731 | 0 | .0905 | 2.131 | 90 | -.4543 | | |
| 2 | .161 | 170 | -.4750 | .231 | 90 | -.5534 | .331 | 10 | -.5718 | .931 | 180 | -.5697 | 2.131 | 0 | .0448 | | |
| 3 | .161 | 160 | -.4734 | .231 | 80 | -.5742 | .331 | 0 | -.5535 | .931 | 90 | -.5406 | 0.000 | | .9571 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4882 | .231 | 70 | -.5372 | .431 | 180 | -.4935 | .931 | 0 | .0523 | 0.000 | | 1.0707 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5121 | .231 | 60 | -.5366 | .431 | 170 | -.5054 | 1.131 | 180 | -.5255 | 0.000 | | 1.1214 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5302 | .231 | 50 | -.5350 | .431 | 160 | -.5135 | 1.131 | 170 | -.5373 | 0.000 | | 1.1036 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5690 | .231 | 40 | -.5536 | .431 | 150 | -.5361 | 1.131 | 160 | -.5706 | 0.000 | | 1.0748 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5549 | .231 | 30 | -.5582 | .431 | 140 | -.5370 | 1.131 | 150 | -.5688 | 0.000 | | 1.0232 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5570 | .231 | 20 | -.5439 | .431 | 130 | -.5570 | 1.131 | 140 | -.5306 | 0.000 | | .9912 | .10 | 0.00 |
| 10 | .161 | 90 | -.5570 | .231 | 10 | -.5680 | .431 | 120 | -.5344 | 1.131 | 130 | -.5803 | 0.000 | | .8948 | .20 | 0.00 |
| 11 | .161 | 80 | -.5421 | .231 | 0 | -.5491 | .431 | 110 | -.5523 | 1.131 | 120 | -.5791 | 0.000 | | .7999 | .30 | 0.00 |
| 12 | .161 | 70 | -.5405 | .331 | 180 | -.4724 | .431 | 100 | -.5602 | 1.131 | 110 | -.5821 | 0.000 | | .6030 | .40 | 0.00 |
| 13 | .161 | 60 | -.5663 | .331 | 170 | -.5196 | .431 | 90 | -.5941 | 1.131 | 100 | -.5459 | 0.000 | | .3686 | .45 | 0.00 |
| 14 | .161 | 50 | -.5600 | .331 | 160 | -.5148 | .431 | 80 | -.5671 | 1.131 | 90 | -.5397 | 0.000 | | 1.0282 | 0.00 | .10 |
| 15 | .161 | 40 | -.5573 | .331 | 150 | -.5342 | .431 | 70 | -.5602 | 1.131 | 80 | -.4943 | 0.000 | | 1.0020 | 0.00 | .20 |
| 16 | .161 | 30 | -.5771 | .331 | 140 | -.5658 | .431 | 60 | -.6028 | 1.131 | 70 | -.4071 | 0.000 | | .9289 | 0.00 | .30 |
| 17 | .161 | 20 | -.5733 | .331 | 130 | -.5507 | .431 | 50 | -.6101 | 1.131 | 60 | -.3157 | 0.000 | | .7973 | 0.00 | .40 |
| 18 | .161 | 10 | -.5457 | .331 | 120 | -.5601 | .431 | 40 | -.5729 | 1.131 | 50 | -.2312 | 0.000 | | .6153 | 0.00 | .45 |
| 19 | .161 | 0 | -.5703 | .331 | 110 | -.5798 | .431 | 30 | -.4037 | 1.131 | 40 | -.1419 | .161 | 270 | -.5705 | | |
| 20 | .231 | 180 | -.4295 | .331 | 100 | -.5388 | .431 | 20 | -.3507 | 1.131 | 30 | -.0779 | .231 | 270 | -.5408 | | |
| 21 | .231 | 170 | -.4676 | .331 | 90 | -.5372 | .431 | 10 | -.3322 | 1.131 | 20 | -.0253 | .331 | 270 | -.5536 | | |
| 22 | .231 | 160 | -.5042 | .331 | 80 | -.5509 | .431 | 0 | -.2189 | 1.131 | 10 | .0069 | .431 | 270 | -.5918 | | |
| 23 | .231 | 150 | -.5180 | .331 | 70 | -.5753 | .531 | 180 | -.5411 | 1.131 | 0 | .0126 | .531 | 270 | -.5568 | | |
| 24 | .231 | 140 | -.5180 | .331 | 60 | -.5347 | .531 | 90 | -.5468 | | | .731 | 270 | -.5473 | | | |
| 25 | .231 | 130 | -.5901 | .331 | 50 | -.6025 | .531 | 0 | -.1409 | 1.631 | 90 | -.4481 | .931 | 270 | -.5825 | | |
| 26 | .231 | 120 | -.5644 | .331 | 40 | -.5850 | .731 | 180 | -.5802 | 1.631 | 0 | .0403 | 1.131 | 270 | -.5449 | | |
| 27 | .231 | 110 | -.5625 | .331 | 30 | -.5877 | .731 | 90 | -.6114 | 2.131 | 180 | -.1191 | 1.631 | 270 | -.5216 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4558 | .231 | 100 | -.5269 | .331 | 20 | -.4217 | .731 | 0 | .0664 | 2.131 | 90 | -.5411 | | |
| 2 | .161 | 170 | -.4779 | .231 | 90 | -.5530 | .331 | 10 | -.2648 | .931 | 180 | -.5943 | 2.131 | 0 | .0751 | | |
| 3 | .161 | 160 | -.4966 | .231 | 80 | -.5544 | .331 | 0 | -.1908 | .931 | 90 | -.5799 | 0.000 | | .9682 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4747 | .231 | 70 | -.5128 | .431 | 180 | -.4886 | .931 | 0 | .0484 | 0.000 | | 1.0561 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5088 | .231 | 60 | -.5125 | .431 | 170 | -.4953 | 1.131 | 180 | -.5607 | 0.000 | | 1.0922 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5326 | .231 | 50 | -.5395 | .431 | 160 | -.5575 | 1.131 | 170 | -.5850 | 0.000 | | 1.0774 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5599 | .231 | 40 | -.5063 | .431 | 150 | -.5028 | 1.131 | 160 | -.5730 | 0.000 | | 1.0521 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5402 | .231 | 30 | -.5304 | .431 | 140 | -.5219 | 1.131 | 150 | -.5847 | 0.000 | | .9997 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5402 | .231 | 20 | -.5816 | .431 | 130 | -.5549 | 1.131 | 140 | -.5790 | 0.000 | | .9540 | .10 | 0.00 |
| 10 | .161 | 90 | -.5348 | .231 | 10 | -.5706 | .431 | 120 | -.5184 | 1.131 | 130 | -.5922 | 0.000 | | .8687 | .20 | 0.00 |
| 11 | .161 | 80 | -.5391 | .231 | 0 | -.5808 | .431 | 110 | -.5384 | 1.131 | 120 | -.6000 | 0.000 | | .7567 | .30 | 0.00 |
| 12 | .161 | 70 | -.5315 | .331 | 180 | -.4818 | .431 | 100 | -.5650 | 1.131 | 110 | -.6625 | 0.000 | | .5538 | .40 | 0.00 |
| 13 | .161 | 60 | -.5488 | .331 | 170 | -.4953 | .431 | 90 | -.5607 | 1.131 | 100 | -.6409 | 0.000 | | .3492 | .45 | 0.00 |
| 14 | .161 | 50 | -.5310 | .331 | 160 | -.4780 | .431 | 80 | -.5118 | 1.131 | 90 | -.5922 | 0.000 | | 1.0026 | 0.00 | .10 |
| 15 | .161 | 40 | -.5364 | .331 | 150 | -.5279 | .431 | 70 | -.5390 | 1.131 | 80 | -.5484 | 0.000 | | .9656 | 0.00 | .20 |
| 16 | .161 | 30 | -.5559 | .331 | 140 | -.5555 | .431 | 60 | -.6096 | 1.131 | 70 | -.4612 | 0.000 | | .9103 | 0.00 | .30 |
| 17 | .161 | 20 | -.5621 | .331 | 130 | -.5422 | .431 | 50 | -.5303 | 1.131 | 60 | -.3624 | 0.000 | | .7703 | 0.00 | .40 |
| 18 | .161 | 10 | -.5827 | .331 | 120 | -.5544 | .431 | 40 | -.4000 | 1.131 | 50 | -.2656 | 0.000 | | .5858 | 0.00 | .45 |
| 19 | .161 | 0 | -.5648 | .331 | 110 | -.5385 | .431 | 30 | -.1597 | 1.131 | 40 | -.1725 | .161 | 270 | -.5251 | | |
| 20 | .231 | 180 | -.4660 | .331 | 100 | -.5449 | .431 | 20 | -.0080 | 1.131 | 30 | -.0844 | .231 | 270 | -.5594 | | |
| 21 | .231 | 170 | -.4890 | .331 | 90 | -.5363 | .431 | 10 | .0904 | 1.131 | 20 | -.0394 | .331 | 270 | -.5629 | | |
| 22 | .231 | 160 | -.4858 | .331 | 80 | -.5358 | .431 | 0 | -.1474 | 1.131 | 10 | .0063 | .431 | 270 | -.5355 | | |
| 23 | .231 | 150 | -.5359 | .331 | 70 | -.5484 | .531 | 180 | -.5291 | 1.131 | 0 | .0303 | .531 | 270 | -.5565 | | |
| 24 | .231 | 140 | -.5223 | .331 | 60 | -.5236 | .531 | 90 | -.5636 | | | .731 | 270 | -.6290 | | | |
| 25 | .231 | 130 | -.5044 | .331 | 50 | -.5250 | .531 | 0 | .1532 | 1.631 | 90 | -.6166 | .931 | 270 | -.5900 | | |
| 26 | .231 | 120 | -.5361 | .331 | 40 | -.5719 | .731 | 180 | -.5598 | 1.631 | 0 | .0427 | 1.131 | 270 | -.6057 | | |
| 27 | .231 | 110 | -.5440 | .331 | 30 | -.5412 | .731 | 90 | -.6102 | 2.131 | 180 | -.1965 | 1.631 | 270 | -.6345 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 134 ALPHA 14 MACH .607 Q 431.326 | | | | | | | | | | | | | | | MODEL FLAT FACE | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|-----------------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4497 | .231 | 100 | -.6116 | .331 | 20 | -.6140 | .731 | 0 | -.1337 | 2.131 | 90 | -.3178 | | |
| 2 | .161 | 170 | -.4755 | .231 | 90 | -.6300 | .331 | 10 | -.6099 | .931 | 180 | -.5550 | 2.131 | 0 | .0344 | | |
| 3 | .161 | 160 | -.4477 | .231 | 80 | -.6370 | .331 | 0 | -.6490 | .931 | 90 | -.5754 | 0.000 | | .8850 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5174 | .231 | 70 | -.6186 | .431 | 180 | -.5048 | .931 | 0 | .0649 | 0.000 | | 1.0282 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5564 | .231 | 60 | -.6208 | .431 | 170 | -.5147 | 1.131 | 180 | -.5186 | 0.000 | | 1.1035 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5032 | .231 | 50 | -.6175 | .431 | 160 | -.5320 | 1.131 | 170 | -.5496 | 0.000 | | 1.1085 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5594 | .231 | 40 | -.6289 | .431 | 150 | -.5419 | 1.131 | 160 | -.5384 | 0.000 | | 1.0878 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6043 | .231 | 30 | -.6181 | .431 | 140 | -.5700 | 1.131 | 150 | -.5333 | 0.000 | | 1.0657 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6203 | .231 | 20 | -.6265 | .431 | 130 | -.5853 | 1.131 | 140 | -.5709 | 0.000 | | 1.0192 | .10 | 0.00 |
| 10 | .161 | 90 | -.6233 | .231 | 10 | -.6200 | .431 | 120 | -.6102 | 1.131 | 130 | -.5844 | 0.000 | | .9566 | .20 | 0.00 |
| 11 | .161 | 80 | -.6339 | .231 | 0 | -.6186 | .431 | 110 | -.6198 | 1.131 | 120 | -.5844 | 0.000 | | .8568 | .30 | 0.00 |
| 12 | .161 | 70 | -.6160 | .331 | 180 | -.4874 | .431 | 100 | -.6169 | 1.131 | 110 | -.5790 | 0.000 | | .6594 | .40 | 0.00 |
| 13 | .161 | 60 | -.6190 | .331 | 170 | -.4945 | .431 | 90 | -.6441 | 1.131 | 100 | -.5048 | 0.000 | | .4534 | .45 | 0.00 |
| 14 | .161 | 50 | -.6190 | .331 | 160 | -.5179 | .431 | 80 | -.6339 | 1.131 | 90 | -.4630 | 0.000 | | 1.0532 | 0.00 | .10 |
| 15 | .161 | 40 | -.6312 | .331 | 150 | -.5506 | .431 | 70 | -.6467 | 1.131 | 80 | -.4391 | 0.000 | | 1.0232 | 0.00 | .20 |
| 16 | .161 | 30 | -.6312 | .331 | 140 | -.5865 | .431 | 60 | -.6470 | 1.131 | 70 | -.2951 | 0.000 | | .9633 | 0.00 | .30 |
| 17 | .161 | 20 | -.5905 | .331 | 130 | -.5703 | .431 | 50 | -.6001 | 1.131 | 60 | -.2335 | 0.000 | | .8163 | 0.00 | .40 |
| 18 | .161 | 10 | -.5903 | .331 | 120 | -.5730 | .431 | 40 | -.6177 | 1.131 | 50 | -.1547 | 0.000 | | .6283 | 0.00 | .45 |
| 19 | .161 | 0 | -.6163 | .331 | 110 | -.5857 | .431 | 30 | -.6623 | 1.131 | 40 | -.0919 | .161 | 270 | -.6220 | | |
| 20 | .231 | 180 | -.4427 | .331 | 100 | -.5965 | .431 | 20 | -.6079 | 1.131 | 30 | -.0505 | .231 | 270 | -.5958 | | |
| 21 | .231 | 170 | -.4774 | .331 | 90 | -.6364 | .431 | 10 | -.6226 | 1.131 | 20 | -.0075 | .331 | 270 | -.6176 | | |
| 22 | .231 | 160 | -.5104 | .331 | 80 | -.6513 | .431 | 0 | -.6504 | 1.131 | 10 | .0162 | .431 | 270 | -.6348 | | |
| 23 | .231 | 150 | -.5264 | .331 | 70 | -.6024 | .531 | 180 | -.5210 | 1.131 | 0 | .0294 | .531 | 270 | -.6103 | | |
| 24 | .231 | 140 | -.5483 | .331 | 60 | -.6202 | .531 | 90 | -.6412 | | | | .731 | 270 | -.6362 | | |
| 25 | .231 | 130 | -.5886 | .331 | 50 | -.6078 | .531 | 0 | -.4761 | 1.631 | 90 | -.3464 | .931 | 270 | -.6246 | | |
| 26 | .231 | 120 | -.5930 | .331 | 40 | -.6265 | .731 | 180 | -.5673 | 1.631 | 0 | .0162 | 1.131 | 270 | -.4660 | | |
| 27 | .231 | 110 | -.5392 | .331 | 30 | -.5827 | .731 | 90 | -.6134 | 2.131 | 180 | -.0955 | 1.631 | 270 | -.3897 | | |

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OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 5 POINT 135 ALPHA 16 MACH .607 Q 431.323 | | | | | | | | | | | | | | | MODEL FLAT FACE | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|-----------------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4543 | .231 | 100 | -.5684 | .331 | 20 | -.5972 | .731 | 0 | .0658 | 2.131 | 90 | -.3868 | | |
| 2 | .161 | 170 | -.4636 | .231 | 90 | -.5619 | .331 | 10 | -.5775 | .931 | 180 | -.5450 | 2.131 | 0 | .0495 | | |
| 3 | .161 | 160 | -.4836 | .231 | 80 | -.5949 | .331 | 0 | -.6105 | .931 | 90 | -.5640 | 0.000 | | .9252 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5228 | .231 | 70 | -.6000 | .431 | 180 | -.5149 | .931 | 0 | .0487 | 0.000 | | 1.0456 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5236 | .231 | 60 | -.5830 | .431 | 170 | -.5065 | 1.131 | 180 | -.5234 | 0.000 | | 1.1120 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5545 | .231 | 50 | -.5857 | .431 | 160 | -.5323 | 1.131 | 170 | -.5420 | 0.000 | | 1.1120 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5691 | .231 | 40 | -.5776 | .431 | 150 | -.5433 | 1.131 | 160 | -.5369 | 0.000 | | 1.0884 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5930 | .231 | 30 | -.5606 | .431 | 140 | -.5540 | 1.131 | 150 | -.5345 | 0.000 | | 1.0471 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5924 | .231 | 20 | -.5673 | .431 | 130 | -.5798 | 1.131 | 140 | -.5859 | 0.000 | | .9970 | .10 | 0.00 |
| 10 | .161 | 90 | -.5884 | .231 | 10 | -.5641 | .431 | 120 | -.5688 | 1.131 | 130 | -.5517 | 0.000 | | .9321 | .20 | 0.00 |
| 11 | .161 | 80 | -.5919 | .231 | 0 | -.5784 | .431 | 110 | -.5894 | 1.131 | 120 | -.5898 | 0.000 | | .8282 | .30 | 0.00 |
| 12 | .161 | 70 | -.5840 | .331 | 180 | -.4890 | .431 | 100 | -.5954 | 1.131 | 110 | -.6099 | 0.000 | | .6370 | .40 | 0.00 |
| 13 | .161 | 60 | -.5607 | .331 | 170 | -.4909 | .431 | 90 | -.5772 | 1.131 | 100 | -.5604 | 0.000 | | .4188 | .45 | 0.00 |
| 14 | .161 | 50 | -.5694 | .331 | 160 | -.5007 | .431 | 80 | -.5624 | 1.131 | 90 | -.5165 | 0.000 | | 1.0395 | 0.00 | .10 |
| 15 | .161 | 40 | -.5859 | .331 | 150 | -.5336 | .431 | 70 | -.6041 | 1.131 | 80 | -.4186 | 0.000 | | 1.0145 | 0.00 | .20 |
| 16 | .161 | 30 | -.5729 | .331 | 140 | -.5503 | .431 | 60 | -.5656 | 1.131 | 70 | -.3461 | 0.000 | | .9609 | 0.00 | .30 |
| 17 | .161 | 20 | -.5756 | .331 | 130 | -.5757 | .431 | 50 | -.5917 | 1.131 | 60 | -.2707 | 0.000 | | .8166 | 0.00 | .40 |
| 18 | .161 | 10 | -.5778 | .331 | 120 | -.5830 | .431 | 40 | -.6041 | 1.131 | 50 | -.2010 | 0.000 | | .6245 | 0.00 | .45 |
| 19 | .161 | 0 | -.5719 | .331 | 110 | -.5897 | .431 | 30 | -.5933 | 1.131 | 40 | -.1343 | .161 | 270 | -.5961 | | |
| 20 | .231 | 180 | -.4641 | .331 | 100 | -.5943 | .431 | 20 | -.5656 | 1.131 | 30 | -.0622 | .231 | 270 | -.5594 | | |
| 21 | .231 | 170 | -.4652 | .331 | 90 | -.5646 | .431 | 10 | -.5178 | 1.131 | 20 | -.0177 | .331 | 270 | -.5777 | | |
| 22 | .231 | 160 | -.4739 | .331 | 80 | -.5865 | .431 | 0 | -.4753 | 1.131 | 10 | .0204 | .431 | 270 | -.5917 | | |
| 23 | .231 | 150 | -.5074 | .331 | 70 | -.5560 | .531 | 180 | -.5054 | 1.131 | 0 | .0093 | .531 | 270 | -.5617 | | |
| 24 | .231 | 140 | -.5708 | .331 | 60 | -.6054 | .531 | 90 | -.6229 | | | | .731 | 270 | -.6714 | | |
| 25 | .231 | 130 | -.5448 | .331 | 50 | -.5495 | .531 | 0 | -.4013 | 1.631 | 90 | -.4453 | .931 | 270 | -.6004 | | |
| 26 | .231 | 120 | -.5905 | .331 | 40 | -.5905 | .731 | 180 | -.5491 | 1.631 | 0 | .0189 | 1.131 | 270 | -.5900 | | |
| 27 | .231 | 110 | -.5805 | .331 | 30 | -.5765 | .731 | 90 | -.6235 | 2.131 | 180 | -.1106 | 1.631 | 270 | -.4529 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 5 POINT 140 ALPHA 25 MACH .607 Q 431.070 | | | | MODEL FLAT FACE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.4541 | .231 | 100 | -.5015 | .331 | 20 | .2107 | .731 | 0 | .1431 | 2.131 | 90 | -.7467 | | | | | |
| 2 | .161 | 170 | -.4649 | .231 | 90 | -.5007 | .331 | 10 | .2474 | .931 | 180 | -.5301 | 2.131 | 0 | .1427 | | | | | |
| 3 | .161 | 160 | -.5029 | .231 | 80 | -.5304 | .331 | 0 | .2576 | .931 | 90 | -.6160 | 0.000 | | 1.0331 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.4731 | .231 | 70 | -.4888 | .431 | 180 | -.4877 | .931 | 0 | .1488 | 0.000 | | 1.1179 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.5029 | .231 | 60 | -.5123 | .431 | 170 | -.4912 | 1.131 | 180 | -.5430 | 0.000 | | 1.1109 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.5186 | .231 | 50 | -.5863 | .431 | 160 | -.5089 | 1.131 | 170 | -.5571 | 0.000 | | 1.0706 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.4955 | .231 | 40 | -.4626 | .431 | 150 | -.4970 | 1.131 | 160 | -.5520 | 0.000 | | 1.0395 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.5186 | .231 | 30 | -.1380 | .431 | 140 | -.5399 | 1.131 | 150 | -.6431 | 0.000 | | .9534 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.5126 | .231 | 20 | .3027 | .431 | 130 | -.5480 | 1.131 | 140 | -.5842 | 0.000 | | .9082 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.5088 | .231 | 10 | .3821 | .431 | 120 | -.5700 | 1.131 | 130 | -.6482 | 0.000 | | .8165 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.5010 | .231 | 0 | .4005 | .431 | 110 | -.5208 | 1.131 | 120 | -.6503 | 0.000 | | .6951 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.5048 | .331 | 180 | -.4718 | .431 | 100 | -.5072 | 1.131 | 110 | -.7144 | 0.000 | | .4854 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.4926 | .331 | 170 | -.4853 | .431 | 90 | -.5234 | 1.131 | 100 | -.7330 | 0.000 | | .2854 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.4901 | .331 | 160 | -.4715 | .431 | 80 | -.5228 | 1.131 | 90 | -.6735 | 0.000 | | .9595 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.6372 | .331 | 150 | -.5337 | .431 | 70 | -.4608 | 1.131 | 80 | -.6590 | 0.000 | | .9175 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.5333 | .331 | 140 | -.5110 | .431 | 60 | -.2601 | 1.131 | 70 | -.5198 | 0.000 | | .8875 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.4736 | .331 | 130 | -.5148 | .431 | 50 | -.1027 | 1.131 | 60 | -.4077 | 0.000 | | .7507 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.3628 | .331 | 120 | -.5248 | .431 | 40 | -.0208 | 1.131 | 50 | -.2916 | 0.000 | | .5780 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.2357 | .331 | 110 | -.5231 | .431 | 30 | .0760 | 1.131 | 40 | -.1552 | .161 | 270 | -.5056 | | | | | |
| 20 | .231 | 180 | -.4741 | .331 | 100 | -.5302 | .431 | 20 | -.0060 | 1.131 | 30 | -.0538 | .231 | 270 | -.5225 | | | | | |
| 21 | .231 | 170 | -.4363 | .331 | 90 | -.5291 | .431 | 10 | .1791 | 1.131 | 20 | .0391 | .331 | 270 | -.5257 | | | | | |
| 22 | .231 | 160 | -.4964 | .331 | 80 | -.5320 | .431 | 0 | .2014 | 1.131 | 10 | .1040 | .431 | 270 | -.5236 | | | | | |
| 23 | .231 | 150 | -.4928 | .331 | 70 | -.5536 | .531 | 180 | -.5179 | 1.131 | 0 | .1211 | .531 | 270 | -.5624 | | | | | |
| 24 | .231 | 140 | -.5430 | .331 | 60 | -.5385 | .531 | 90 | -.5973 | | | | .731 | 270 | -.5976 | | | | | |
| 25 | .231 | 130 | -.5216 | .331 | 50 | -.2115 | .531 | 0 | .1771 | 1.631 | 90 | -.7504 | .931 | 270 | -.6171 | | | | | |
| 26 | .231 | 120 | -.5332 | .331 | 40 | .0584 | .731 | 180 | -.5445 | 1.631 | 0 | .1262 | 1.131 | 270 | -.7150 | | | | | |
| 27 | .231 | 110 | -.5272 | .331 | 30 | .1483 | .731 | 90 | -.5744 | 2.131 | 180 | -.2883 | 1.631 | 270 | -.7799 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 5 POINT 141 ALPHA 0 MACH .606 Q 430.312 | | | | MODEL FLAT FACE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|---|--------|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.4281 | .231 | 100 | -.4324 | .331 | 20 | -.4510 | .731 | 0 | -.4723 | 2.131 | 90 | -.0909 | | | | | |
| 2 | .161 | 170 | -.4392 | .231 | 90 | -.4367 | .331 | 10 | -.4568 | .931 | 180 | -.4994 | 2.131 | 0 | -.1303 | | | | | |
| 3 | .161 | 160 | -.4235 | .231 | 80 | -.4213 | .331 | 0 | -.4388 | .931 | 90 | -.4780 | 0.000 | | .6995 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.4460 | .231 | 70 | -.4362 | .431 | 180 | -.4846 | .931 | 0 | -.4913 | 0.000 | | .8738 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.4419 | .231 | 60 | -.4146 | .431 | 170 | -.4498 | 1.131 | 180 | -.5331 | 0.000 | | 1.0115 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.4373 | .231 | 50 | -.4364 | .431 | 160 | -.4611 | 1.131 | 170 | -.5214 | 0.000 | | 1.0719 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.4490 | .231 | 40 | -.4354 | .431 | 150 | -.4602 | 1.131 | 160 | -.5274 | 0.000 | | 1.0946 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.4349 | .231 | 30 | -.4483 | .431 | 140 | -.4657 | 1.131 | 150 | -.5286 | 0.000 | | 1.1016 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.4368 | .231 | 20 | -.4427 | .431 | 130 | -.4686 | 1.131 | 140 | -.5274 | 0.000 | | 1.1040 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.4400 | .231 | 10 | -.4418 | .431 | 120 | -.4582 | 1.131 | 130 | -.5253 | 0.000 | | 1.0728 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.4221 | .231 | 0 | -.4421 | .431 | 110 | -.4385 | 1.131 | 120 | -.5193 | 0.000 | | 1.0142 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.4303 | .331 | 180 | -.4591 | .431 | 100 | -.4550 | 1.131 | 110 | -.5322 | 0.000 | | .8691 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.4202 | .331 | 170 | -.4448 | .431 | 90 | -.4475 | 1.131 | 100 | -.5093 | 0.000 | | .6774 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.4259 | .331 | 160 | -.4473 | .431 | 80 | -.4492 | 1.131 | 90 | -.5129 | 0.000 | | 1.0935 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.4305 | .331 | 150 | -.4702 | .431 | 70 | -.4811 | 1.131 | 80 | -.5328 | 0.000 | | 1.0658 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.4210 | .331 | 140 | -.4564 | .431 | 60 | -.4527 | 1.131 | 70 | -.5135 | 0.000 | | 1.0143 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.4244 | .331 | 130 | -.4486 | .431 | 50 | -.4341 | 1.131 | 60 | -.5211 | 0.000 | | .8671 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.4425 | .331 | 120 | -.4578 | .431 | 40 | -.4553 | 1.131 | 50 | -.5184 | 0.000 | | .6763 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.4452 | .331 | 110 | -.4486 | .431 | 30 | -.4663 | 1.131 | 40 | -.5205 | .161 | 270 | -.4450 | | | | | |
| 20 | .231 | 180 | -.4628 | .331 | 100 | -.4910 | .431 | 20 | -.4570 | 1.131 | 30 | -.5490 | .231 | 270 | -.4505 | | | | | |
| 21 | .231 | 170 | -.4509 | .331 | 90 | -.4729 | .431 | 10 | -.4553 | 1.131 | 20 | -.5316 | .331 | 270 | -.4622 | | | | | |
| 22 | .231 | 160 | -.4349 | .331 | 80 | -.4378 | .431 | 0 | -.4669 | 1.131 | 10 | -.5403 | .431 | 270 | -.4826 | | | | | |
| 23 | .231 | 150 | -.4601 | .331 | 70 | -.4451 | .531 | 180 | -.4776 | 1.131 | 0 | -.5048 | .531 | 270 | -.4680 | | | | | |
| 24 | .231 | 140 | -.4332 | .331 | 60 | -.4270 | .531 | 90 | -.4394 | | | | .731 | 270 | -.4715 | | | | | |
| 25 | .231 | 130 | -.4419 | .331 | 50 | -.4451 | .531 | 0 | -.4573 | 1.631 | 90 | -.4037 | .931 | 270 | -.5094 | | | | | |
| 26 | .231 | 120 | -.4614 | .331 | 40 | -.4454 | .731 | 180 | -.5054 | 1.631 | 0 | -.4028 | 1.131 | 270 | -.5490 | | | | | |
| 27 | .231 | 110 | -.4300 | .331 | 30 | -.4437 | .731 | 90 | -.4680 | 2.131 | 180 | -.1119 | 1.631 | 270 | -.4112 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 760 | | | | | | | | | | | | | | RUN 5 POINT 138 ALPHA 22 MACH .607 Q 430.984 | | | | MODEL FLAT FACE | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|-----------------|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | |
| 1 | .161 | 180 | -.4975 | .231 | 100 | -.5392 | .331 | 20 | .0635 | .731 | 0 | .0773 | 2.131 | 90 | -.5755 | | | | |
| 2 | .161 | 170 | -.4344 | .231 | 90 | -.4943 | .331 | 10 | .1487 | .931 | 180 | -.5521 | 2.131 | 0 | .0944 | | | | |
| 3 | .161 | 160 | -.4658 | .231 | 80 | -.4968 | .331 | 0 | .2156 | .931 | 90 | -.5546 | 0.000 | | .9964 | -.45 | 0.00 | | |
| 4 | .161 | 150 | -.5263 | .231 | 70 | -.5143 | .431 | 180 | -.5270 | .931 | 0 | .0664 | 0.000 | | 1.0721 | -.40 | 0.00 | | |
| 5 | .161 | 140 | -.5027 | .231 | 60 | -.5097 | .431 | 170 | -.5110 | 1.131 | 180 | -.5942 | 0.000 | | 1.0957 | -.30 | 0.00 | | |
| 6 | .161 | 130 | -.5187 | .231 | 50 | -.5243 | .431 | 160 | -.5044 | 1.131 | 170 | -.5684 | 0.000 | | 1.0729 | -.20 | 0.00 | | |
| 7 | .161 | 120 | -.4997 | .231 | 40 | -.5981 | .431 | 150 | -.5594 | 1.131 | 160 | -.6141 | 0.000 | | 1.0293 | -.10 | 0.00 | | |
| 8 | .161 | 110 | -.5450 | .231 | 30 | -.5997 | .431 | 140 | -.5493 | 1.131 | 150 | -.6096 | 0.000 | | .9853 | 0.00 | 0.00 | | |
| 9 | .161 | 100 | -.5279 | .231 | 20 | -.5392 | .431 | 130 | -.5536 | 1.131 | 140 | -.5909 | 0.000 | | .9346 | .10 | 0.00 | | |
| 10 | .161 | 90 | -.5217 | .231 | 10 | -.4733 | .431 | 120 | -.5252 | 1.131 | 130 | -.6075 | 0.000 | | .8408 | .20 | 0.00 | | |
| 11 | .161 | 80 | -.5176 | .231 | 0 | -.3782 | .431 | 110 | -.5368 | 1.131 | 120 | -.6580 | 0.000 | | .7380 | .30 | 0.00 | | |
| 12 | .161 | 70 | -.5181 | .331 | 180 | -.4887 | .431 | 100 | -.5328 | 1.131 | 110 | -.6748 | 0.000 | | .5219 | .40 | 0.00 | | |
| 13 | .161 | 60 | -.5200 | .331 | 170 | -.5041 | .431 | 90 | -.5473 | 1.131 | 100 | -.6781 | 0.000 | | .2924 | .45 | 0.00 | | |
| 14 | .161 | 50 | -.5412 | .331 | 160 | -.5176 | .431 | 80 | -.5435 | 1.131 | 90 | -.6544 | 0.000 | | .9672 | 0.00 | .10 | | |
| 15 | .161 | 40 | -.5414 | .331 | 150 | -.5151 | .431 | 70 | -.5530 | 1.131 | 80 | -.6114 | 0.000 | | .9439 | 0.00 | .20 | | |
| 16 | .161 | 30 | -.5794 | .331 | 140 | -.5186 | .431 | 60 | -.4681 | 1.131 | 70 | -.4821 | 0.000 | | .9040 | 0.00 | .30 | | |
| 17 | .161 | 20 | -.5769 | .331 | 130 | -.5195 | .431 | 50 | -.3227 | 1.131 | 60 | -.3708 | 0.000 | | .7610 | 0.00 | .40 | | |
| 18 | .161 | 10 | -.6230 | .331 | 120 | -.5273 | .431 | 40 | -.0851 | 1.131 | 50 | -.2845 | 0.000 | | .5683 | 0.00 | .45 | | |
| 19 | .161 | 0 | -.6710 | .331 | 110 | -.5457 | .431 | 30 | .1015 | 1.131 | 40 | -.1708 | .161 | 270 | -.5273 | | | | |
| 20 | .231 | 180 | -.4699 | .331 | 100 | -.5092 | .431 | 20 | .0876 | 1.131 | 30 | -.0728 | .231 | 270 | -.5220 | | | | |
| 21 | .231 | 170 | -.5027 | .331 | 90 | -.5473 | .431 | 10 | .1809 | 1.131 | 20 | -.0137 | .331 | 270 | -.5406 | | | | |
| 22 | .231 | 160 | -.4713 | .331 | 80 | -.4906 | .431 | 0 | .2127 | 1.131 | 10 | .0306 | .431 | 270 | -.5249 | | | | |
| 23 | .231 | 150 | -.5095 | .331 | 70 | -.5257 | .531 | 180 | -.5455 | 1.131 | 0 | .0592 | .531 | 270 | -.5849 | | | | |
| 24 | .231 | 140 | -.5385 | .331 | 60 | -.5494 | .531 | 90 | -.5649 | | | .731 | .731 | 270 | -.5902 | | | | |
| 25 | .231 | 130 | -.5360 | .331 | 50 | -.5800 | .531 | 0 | -.1415 | 1.631 | 90 | -.6802 | .931 | 270 | -.5797 | | | | |
| 26 | .231 | 120 | -.5236 | .331 | 40 | -.3798 | .731 | 180 | -.5270 | 1.631 | 0 | .0670 | 1.131 | 270 | -.6283 | | | | |
| 27 | .231 | 110 | -.5214 | .331 | 30 | -.1286 | .731 | 90 | -.3768 | 2.131 | 180 | -.2322 | 1.631 | 270 | -.6735 | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 5 POINT 139 ALPHA 24 MACH .607 Q 430.936 | | | | MODEL FLAT FACE | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|-----------------|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | |
| 1 | .161 | 180 | -.4734 | .231 | 100 | -.5222 | .331 | 20 | .2127 | .731 | 0 | .1190 | 2.131 | 90 | -.7090 | | | | |
| 2 | .161 | 170 | -.4732 | .231 | 90 | -.5105 | .331 | 10 | .2515 | .931 | 180 | -.5473 | 2.131 | 0 | .1319 | | | | |
| 3 | .161 | 160 | -.4751 | .231 | 80 | -.4995 | .331 | 0 | .2927 | .931 | 90 | -.5705 | 0.000 | | 1.0392 | -.45 | 0.00 | | |
| 4 | .161 | 150 | -.5314 | .231 | 70 | -.5602 | .431 | 180 | -.5258 | .931 | 0 | .1221 | 0.000 | | 1.1082 | -.40 | 0.00 | | |
| 5 | .161 | 140 | -.5038 | .231 | 60 | -.4873 | .431 | 170 | -.4951 | 1.131 | 180 | -.5545 | 0.000 | | 1.1131 | -.30 | 0.00 | | |
| 6 | .161 | 130 | -.5171 | .231 | 50 | -.5759 | .431 | 160 | -.5162 | 1.131 | 170 | -.5825 | 0.000 | | 1.0761 | -.20 | 0.00 | | |
| 7 | .161 | 120 | -.5292 | .231 | 40 | -.5803 | .431 | 150 | -.5493 | 1.131 | 160 | -.5888 | 0.000 | | 1.0244 | -.10 | 0.00 | | |
| 8 | .161 | 110 | -.5398 | .231 | 30 | -.2798 | .431 | 140 | -.5559 | 1.131 | 150 | -.5708 | 0.000 | | .9315 | 0.00 | 0.00 | | |
| 9 | .161 | 100 | -.5401 | .231 | 20 | -.0070 | .431 | 130 | -.5513 | 1.131 | 140 | -.5999 | 0.000 | | .9063 | .10 | 0.00 | | |
| 10 | .161 | 90 | -.5320 | .231 | 10 | -.2585 | .431 | 120 | -.5811 | 1.131 | 130 | -.6535 | 0.000 | | .8143 | .20 | 0.00 | | |
| 11 | .161 | 80 | -.5436 | .231 | 0 | .3544 | .431 | 110 | -.5583 | 1.131 | 120 | -.6998 | 0.000 | | .7051 | .30 | 0.00 | | |
| 12 | .161 | 70 | -.5266 | .331 | 180 | -.5076 | .431 | 100 | -.5455 | 1.131 | 110 | -.7145 | 0.000 | | .4904 | .40 | 0.00 | | |
| 13 | .161 | 60 | -.5344 | .331 | 170 | -.5070 | .431 | 90 | -.5484 | 1.131 | 100 | -.7262 | 0.000 | | .2755 | .45 | 0.00 | | |
| 14 | .161 | 50 | -.5206 | .331 | 160 | -.5103 | .431 | 80 | -.5704 | 1.131 | 90 | -.6706 | 0.000 | | .9704 | 0.00 | .10 | | |
| 15 | .161 | 40 | -.6078 | .331 | 150 | -.5716 | .431 | 70 | -.5328 | 1.131 | 80 | -.6450 | 0.000 | | .9372 | 0.00 | .20 | | |
| 16 | .161 | 30 | -.6490 | .331 | 140 | -.5365 | .431 | 60 | -.3731 | 1.131 | 70 | -.5410 | 0.000 | | .8831 | 0.00 | .30 | | |
| 17 | .161 | 20 | -.6319 | .331 | 130 | -.5400 | .431 | 50 | -.1616 | 1.131 | 60 | -.4195 | 0.000 | | .7415 | 0.00 | .40 | | |
| 18 | .161 | 10 | -.5271 | .331 | 120 | -.5446 | .431 | 40 | -.0150 | 1.131 | 50 | -.2890 | 0.000 | | .5726 | 0.00 | .45 | | |
| 19 | .161 | 0 | -.5401 | .331 | 110 | -.5057 | .431 | 30 | .0838 | 1.131 | 40 | -.1615 | .161 | 270 | -.4812 | | | | |
| 20 | .231 | 180 | -.4807 | .331 | 100 | -.5249 | .431 | 20 | -.0083 | 1.131 | 30 | -.0587 | .231 | 270 | -.5022 | | | | |
| 21 | .231 | 170 | -.4984 | .331 | 90 | -.5465 | .431 | 10 | .1574 | 1.131 | 20 | .0138 | .331 | 270 | -.5025 | | | | |
| 22 | .231 | 160 | -.5035 | .331 | 80 | -.5157 | .431 | 0 | .1785 | 1.131 | 10 | .0700 | .431 | 270 | -.5349 | | | | |
| 23 | .231 | 150 | -.4891 | .331 | 70 | -.4922 | .531 | 180 | -.5067 | 1.131 | 0 | .0821 | .531 | 270 | -.5514 | | | | |
| 24 | .231 | 140 | -.5135 | .331 | 60 | -.5789 | .531 | 90 | -.5475 | | | .731 | .731 | 270 | -.5636 | | | | |
| 25 | .231 | 130 | -.5274 | .331 | 50 | -.3779 | .531 | 0 | .1571 | 1.631 | 90 | -.7286 | .931 | 270 | -.6012 | | | | |
| 26 | .231 | 120 | -.5428 | .331 | 40 | -.0675 | .731 | 180 | -.5704 | 1.631 | 0 | .0971 | 1.131 | 270 | -.7233 | | | | |
| 27 | .231 | 110 | -.5335 | .331 | 30 | .1410 | .731 | 90 | -.5646 | 2.131 | 180 | -.2911 | 1.631 | 270 | -.7346 | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 6 POINT 144 ALPHA 2 MACH .711 Q 542.045 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 160 | -.3840 | .231 | 160 | -.4443 | .331 | 20 | -.4890 | .731 | 0 | -.4980 | 2.131 | 90 | -.1450 | | |
| 2 | .161 | 170 | -.3801 | .231 | 90 | -.4476 | .331 | 10 | -.4744 | .931 | 130 | -.4674 | 2.131 | 0 | -.1553 | | |
| 3 | .161 | 160 | -.4094 | .231 | 80 | -.4705 | .331 | 0 | -.4839 | .931 | 90 | -.4987 | 0.000 | | .7656 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4098 | .231 | 70 | -.4628 | .431 | 180 | -.4288 | .931 | 0 | -.5023 | 0.000 | | .9344 | -.40 | 0.00 |
| 5 | .161 | 140 | -.3909 | .231 | 60 | -.4637 | .431 | 170 | -.4079 | 1.131 | 180 | -.4803 | 0.000 | | 1.0632 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4187 | .231 | 50 | -.4652 | .431 | 160 | -.4104 | 1.131 | 170 | -.4879 | 0.000 | | 1.1204 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4210 | .231 | 40 | -.4733 | .431 | 150 | -.4482 | 1.131 | 160 | -.4970 | 0.000 | | 1.1373 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4311 | .231 | 30 | -.4635 | .431 | 140 | -.4385 | 1.131 | 150 | -.4946 | 0.000 | | 1.1443 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4417 | .231 | 20 | -.4690 | .431 | 130 | -.4556 | 1.131 | 140 | -.5056 | 0.000 | | 1.1299 | .10 | 0.00 |
| 10 | .161 | 90 | -.4572 | .231 | 10 | -.4875 | .431 | 120 | -.4516 | 1.131 | 130 | -.5099 | 0.000 | | 1.0907 | .20 | 0.00 |
| 11 | .161 | 80 | -.4615 | .231 | 0 | -.4781 | .431 | 110 | -.4579 | 1.131 | 120 | -.4982 | 0.000 | | 1.0372 | .30 | 0.00 |
| 12 | .161 | 70 | -.4503 | .331 | 180 | -.3971 | .431 | 100 | -.4420 | 1.131 | 110 | -.4920 | 0.000 | | .9052 | .40 | 0.00 |
| 13 | .161 | 60 | -.4908 | .331 | 170 | -.4022 | .431 | 90 | -.4903 | 1.131 | 100 | -.5302 | 0.000 | | .7091 | .45 | 0.00 |
| 14 | .161 | 50 | -.4725 | .331 | 160 | -.4035 | .431 | 80 | -.4740 | 1.131 | 90 | -.5133 | 0.000 | | 1.1359 | 0.00 | .10 |
| 15 | .161 | 40 | -.4852 | .331 | 150 | -.4153 | .431 | 70 | -.4825 | 1.131 | 80 | -.5137 | 0.000 | | 1.1028 | 0.00 | .20 |
| 16 | .161 | 30 | -.4671 | .331 | 140 | -.4186 | .431 | 60 | -.4655 | 1.131 | 70 | -.5111 | 0.000 | | 1.0523 | 0.00 | .30 |
| 17 | .161 | 20 | -.4732 | .331 | 130 | -.4261 | .431 | 50 | -.4906 | 1.131 | 60 | -.5233 | 0.000 | | .9103 | 0.00 | .40 |
| 18 | .161 | 10 | -.4587 | .331 | 120 | -.4394 | .431 | 40 | -.4602 | 1.131 | 50 | -.5111 | 0.000 | | .7329 | 0.00 | .45 |
| 19 | .161 | 0 | -.4861 | .331 | 110 | -.4639 | .431 | 30 | -.4991 | 1.131 | 40 | -.5472 | .161 | 270 | -.4699 | | |
| 20 | .231 | 180 | -.3766 | .331 | 100 | -.4585 | .431 | 20 | -.4841 | 1.131 | 30 | -.5247 | .231 | 270 | -.4574 | | |
| 21 | .231 | 170 | -.3952 | .331 | 90 | -.4572 | .431 | 10 | -.4901 | 1.131 | 20 | -.5360 | .331 | 270 | -.4697 | | |
| 22 | .231 | 160 | -.3904 | .331 | 80 | -.4607 | .431 | 0 | -.4869 | 1.131 | 10 | -.5257 | .431 | 270 | -.4757 | | |
| 23 | .231 | 150 | -.4077 | .331 | 70 | -.4699 | .531 | 180 | -.4231 | 1.131 | 0 | -.5243 | .531 | 270 | -.4646 | | |
| 24 | .231 | 140 | -.4202 | .331 | 60 | -.4793 | .531 | 90 | -.4754 | | | .731 | 270 | -.4998 | | | |
| 25 | .231 | 130 | -.4359 | .331 | 50 | -.4796 | .531 | 0 | -.4883 | 1.031 | 90 | -.4336 | .931 | 270 | -.5121 | | |
| 26 | .231 | 120 | -.4193 | .331 | 40 | -.4675 | .731 | 180 | -.4551 | 1.631 | 0 | -.4124 | 1.131 | 270 | -.5209 | | |
| 27 | .231 | 110 | -.4497 | .331 | 30 | -.4862 | .731 | 90 | -.4820 | 2.131 | 180 | -.4226 | 1.631 | 270 | -.4403 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 6 POINT 145 ALPHA 4 MACH .711 Q 541.647 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4007 | .231 | 100 | -.5056 | .331 | 20 | -.5604 | .731 | 0 | -.5357 | 2.131 | 90 | -.0684 | | |
| 2 | .161 | 170 | -.3938 | .231 | 90 | -.5107 | .331 | 10 | -.5493 | .931 | 180 | -.5008 | 2.131 | 0 | .0349 | | |
| 3 | .161 | 160 | -.3852 | .231 | 80 | -.5316 | .331 | 0 | -.5424 | .931 | 90 | -.5628 | 0.000 | | .7865 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4126 | .231 | 70 | -.5372 | .431 | 180 | -.4297 | .931 | 0 | -.5704 | 0.000 | | .9550 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4389 | .231 | 60 | -.5453 | .431 | 170 | -.4207 | 1.131 | 180 | -.5068 | 0.000 | | 1.0769 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4466 | .231 | 50 | -.5531 | .431 | 160 | -.4479 | 1.131 | 170 | -.5111 | 0.000 | | 1.1292 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4233 | .231 | 40 | -.5468 | .431 | 150 | -.4525 | 1.131 | 160 | -.5060 | 0.000 | | 1.1371 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4682 | .231 | 30 | -.5415 | .431 | 140 | -.4684 | 1.131 | 150 | -.5156 | 0.000 | | 1.1401 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5074 | .231 | 20 | -.5700 | .431 | 130 | -.5034 | 1.131 | 140 | -.5434 | 0.000 | | 1.1244 | .10 | 0.00 |
| 10 | .161 | 90 | -.5197 | .231 | 10 | -.5440 | .431 | 120 | -.4960 | 1.131 | 130 | -.5362 | 0.000 | | 1.0873 | .20 | 0.00 |
| 11 | .161 | 80 | -.5273 | .231 | 0 | -.5281 | .431 | 110 | -.5099 | 1.131 | 120 | -.5412 | 0.000 | | 1.0203 | .30 | 0.00 |
| 12 | .161 | 70 | -.5445 | .331 | 180 | -.4254 | .431 | 100 | -.5325 | 1.131 | 110 | -.5544 | 0.000 | | .8653 | .40 | 0.00 |
| 13 | .161 | 60 | -.5268 | .331 | 170 | -.4312 | .431 | 90 | -.5124 | 1.131 | 100 | -.5482 | 0.000 | | .6773 | .45 | 0.00 |
| 14 | .161 | 50 | -.5385 | .331 | 160 | -.4284 | .431 | 80 | -.5380 | 1.131 | 90 | -.5592 | 0.000 | | 1.1334 | 0.00 | .10 |
| 15 | .161 | 40 | -.5367 | .331 | 150 | -.4176 | .431 | 70 | -.5376 | 1.131 | 80 | -.5606 | 0.000 | | 1.1070 | 0.00 | .20 |
| 16 | .161 | 30 | -.5469 | .331 | 140 | -.4471 | .431 | 60 | -.5438 | 1.131 | 70 | -.5702 | 0.000 | | 1.0430 | 0.00 | .30 |
| 17 | .161 | 20 | -.5452 | .331 | 130 | -.4851 | .431 | 50 | -.5696 | 1.131 | 60 | -.5651 | 0.000 | | .9010 | 0.00 | .40 |
| 18 | .161 | 10 | -.5053 | .331 | 120 | -.4800 | .431 | 40 | -.5422 | 1.131 | 50 | -.5572 | 0.000 | | .7186 | 0.00 | .45 |
| 19 | .161 | 0 | -.5286 | .331 | 110 | -.4927 | .431 | 30 | -.5701 | 1.131 | 40 | -.5575 | .161 | 270 | -.5213 | | |
| 20 | .231 | 180 | -.3765 | .331 | 100 | -.5150 | .431 | 20 | -.5562 | 1.131 | 30 | -.5628 | .231 | 270 | -.5116 | | |
| 21 | .231 | 170 | -.3667 | .331 | 90 | -.5240 | .431 | 10 | -.5512 | 1.131 | 20 | -.5623 | .331 | 270 | -.5359 | | |
| 22 | .231 | 160 | -.3914 | .331 | 80 | -.5208 | .431 | 0 | -.5479 | 1.131 | 10 | -.5539 | .431 | 270 | -.5350 | | |
| 23 | .231 | 150 | -.4089 | .331 | 70 | -.5462 | .531 | 180 | -.4440 | 1.131 | 0 | -.5577 | .531 | 270 | -.5473 | | |
| 24 | .231 | 140 | -.4445 | .331 | 60 | -.5602 | .531 | 90 | -.5387 | | | .731 | 270 | -.5487 | | | |
| 25 | .231 | 130 | -.4738 | .331 | 50 | -.5442 | .531 | 0 | -.5811 | 1.031 | 90 | -.3833 | .931 | 270 | -.5614 | | |
| 26 | .231 | 120 | -.4777 | .331 | 40 | -.5432 | .731 | 180 | -.5057 | 1.631 | 0 | -.2244 | 1.131 | 270 | -.5718 | | |
| 27 | .231 | 110 | -.4984 | .331 | 30 | -.5565 | .731 | 90 | -.5385 | 2.131 | 180 | -.1866 | 1.631 | 270 | -.4003 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 142 ALPHA -1 MACH .711 Q 541.807 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4717 | .231 | 100 | -.4510 | .331 | 20 | -.4150 | .731 | 0 | -.4501 | 2.131 | 90 | -.2389 | | |
| 2 | .161 | 170 | -.4450 | .231 | 90 | -.4212 | .331 | 10 | -.4009 | .931 | 180 | -.4939 | 2.131 | 0 | -.2709 | | |
| 3 | .161 | 160 | -.4359 | .231 | 80 | -.4246 | .331 | 0 | -.4000 | .931 | 90 | -.4686 | 0.000 | | .7328 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4430 | .231 | 70 | -.4250 | .431 | 180 | -.4473 | .931 | 0 | -.4695 | 0.000 | | .9010 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4596 | .231 | 60 | -.4138 | .431 | 170 | -.4749 | 1.131 | 180 | -.5059 | 0.000 | | 1.0395 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4439 | .231 | 50 | -.4128 | .431 | 160 | -.4703 | 1.131 | 170 | -.5214 | 0.000 | | 1.0779 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4538 | .231 | 40 | -.4177 | .431 | 150 | -.4770 | 1.131 | 160 | -.5252 | 0.000 | | 1.1301 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4450 | .231 | 30 | -.4091 | .431 | 140 | -.4572 | 1.131 | 150 | -.5092 | 0.000 | | 1.1410 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4333 | .231 | 20 | -.4276 | .431 | 130 | -.4549 | 1.131 | 140 | -.5115 | 0.000 | | 1.1271 | .10 | 0.00 |
| 10 | .161 | 90 | -.4494 | .231 | 10 | -.3898 | .431 | 120 | -.4450 | 1.131 | 130 | -.4870 | 0.000 | | 1.1122 | .20 | 0.00 |
| 11 | .161 | 80 | -.4381 | .231 | 0 | -.4229 | .431 | 110 | -.4602 | 1.131 | 120 | -.5190 | 0.000 | | 1.0545 | .30 | 0.00 |
| 12 | .161 | 70 | -.4335 | .331 | 180 | -.4666 | .431 | 100 | -.4671 | 1.131 | 110 | -.5102 | 0.000 | | .9155 | .40 | 0.00 |
| 13 | .161 | 60 | -.4200 | .331 | 170 | -.4585 | .431 | 90 | -.4486 | 1.131 | 100 | -.5016 | 0.000 | | .7316 | .45 | 0.00 |
| 14 | .161 | 50 | -.3932 | .331 | 160 | -.4565 | .431 | 80 | -.4496 | 1.131 | 90 | -.5028 | 0.000 | | 1.1268 | 0.00 | .10 |
| 15 | .161 | 40 | -.4006 | .331 | 150 | -.4454 | .431 | 70 | -.4397 | 1.131 | 80 | -.5006 | 0.000 | | 1.1020 | 0.00 | .20 |
| 16 | .161 | 30 | -.3365 | .331 | 140 | -.4637 | .431 | 60 | -.4244 | 1.131 | 70 | -.4973 | 0.000 | | 1.0435 | 0.00 | .30 |
| 17 | .161 | 20 | -.3941 | .331 | 130 | -.4474 | .431 | 50 | -.4341 | 1.131 | 60 | -.4877 | 0.000 | | .9093 | 0.00 | .40 |
| 18 | .161 | 10 | -.3971 | .331 | 120 | -.4553 | .431 | 40 | -.4212 | 1.131 | 50 | -.4855 | 0.000 | | .7332 | 0.00 | .45 |
| 19 | .161 | 0 | -.4010 | .331 | 110 | -.4542 | .431 | 30 | -.4150 | 1.131 | 40 | -.4882 | .161 | 270 | -.4403 | | |
| 20 | .231 | 180 | -.4512 | .331 | 100 | -.4459 | .431 | 20 | -.4413 | 1.131 | 30 | -.5061 | .231 | 270 | -.4319 | | |
| 21 | .231 | 170 | -.4480 | .331 | 90 | -.4508 | .431 | 10 | -.4486 | 1.131 | 20 | -.5052 | .331 | 270 | -.4537 | | |
| 22 | .231 | 160 | -.4794 | .331 | 80 | -.4474 | .431 | 0 | -.4344 | 1.131 | 10 | -.4949 | .431 | 270 | -.4484 | | |
| 23 | .231 | 150 | -.4590 | .331 | 70 | -.4465 | .531 | 180 | -.4784 | 1.131 | 0 | -.5159 | .531 | 270 | -.4674 | | |
| 24 | .231 | 140 | -.4437 | .331 | 60 | -.4282 | .531 | 90 | -.4535 | | | .731 | 270 | -.4859 | | | |
| 25 | .231 | 130 | -.4618 | .331 | 50 | -.4259 | .531 | 0 | -.4235 | 1.631 | 90 | -.4501 | .931 | 270 | -.4908 | | |
| 26 | .231 | 120 | -.4521 | .331 | 40 | -.4153 | .731 | 180 | -.4733 | 1.631 | 0 | -.4489 | 1.131 | 270 | -.5007 | | |
| 27 | .231 | 110 | -.4473 | .331 | 30 | -.4364 | .731 | 90 | -.4786 | 2.131 | 180 | -.1963 | 1.631 | 270 | -.4437 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 143 ALPHA 0 MACH .712 Q 542.685 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4202 | .231 | 100 | -.4173 | .331 | 20 | -.4338 | .731 | 0 | -.4543 | 2.131 | 90 | -.2581 | | |
| 2 | .161 | 170 | -.4355 | .231 | 90 | -.4311 | .331 | 10 | -.4453 | .931 | 180 | -.4822 | 2.131 | 0 | -.2213 | | |
| 3 | .161 | 160 | -.4407 | .231 | 80 | -.4422 | .331 | 0 | -.4690 | .931 | 90 | -.4913 | 0.000 | | .7317 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4166 | .231 | 70 | -.4334 | .431 | 180 | -.4413 | .931 | 0 | -.4760 | 0.000 | | .9077 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4269 | .231 | 60 | -.4437 | .431 | 170 | -.4517 | 1.131 | 180 | -.5061 | 0.000 | | 1.0463 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4277 | .231 | 50 | -.4536 | .431 | 160 | -.4469 | 1.131 | 170 | -.5030 | 0.000 | | 1.1064 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4335 | .231 | 40 | -.4238 | .431 | 150 | -.4522 | 1.131 | 160 | -.5059 | 0.000 | | 1.1300 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4225 | .231 | 30 | -.4351 | .431 | 140 | -.4413 | 1.131 | 150 | -.4822 | 0.000 | | 1.1430 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4207 | .231 | 20 | -.4358 | .431 | 130 | -.4418 | 1.131 | 140 | -.5016 | 0.000 | | 1.1342 | .10 | 0.00 |
| 10 | .161 | 90 | -.4165 | .231 | 10 | -.4457 | .431 | 120 | -.4517 | 1.131 | 130 | -.5047 | 0.000 | | 1.1188 | .20 | 0.00 |
| 11 | .161 | 80 | -.4071 | .231 | 0 | -.4225 | .431 | 110 | -.4045 | 1.131 | 120 | -.4710 | 0.000 | | 1.0558 | .30 | 0.00 |
| 12 | .161 | 70 | -.4123 | .331 | 180 | -.4283 | .431 | 100 | -.4308 | 1.131 | 110 | -.4920 | 0.000 | | .9216 | .40 | 0.00 |
| 13 | .161 | 60 | -.4178 | .331 | 170 | -.4427 | .431 | 90 | -.4538 | 1.131 | 100 | -.5087 | 0.000 | | .7319 | .45 | 0.00 |
| 14 | .161 | 50 | -.4284 | .331 | 160 | -.4231 | .431 | 80 | -.4430 | 1.131 | 90 | -.4968 | 0.000 | | 1.1342 | 0.00 | .10 |
| 15 | .161 | 40 | -.4344 | .331 | 150 | -.4422 | .431 | 70 | -.4526 | 1.131 | 80 | -.4822 | 0.000 | | 1.1074 | 0.00 | .20 |
| 16 | .161 | 30 | -.4143 | .331 | 140 | -.4354 | .431 | 60 | -.4230 | 1.131 | 70 | -.4846 | 0.000 | | 1.0530 | 0.00 | .30 |
| 17 | .161 | 20 | -.4142 | .331 | 130 | -.4308 | .431 | 50 | -.4367 | 1.131 | 60 | -.4968 | 0.000 | | .9174 | 0.00 | .40 |
| 18 | .161 | 10 | -.4247 | .331 | 120 | -.4388 | .431 | 40 | -.4459 | 1.131 | 50 | -.5059 | 0.000 | | .7347 | 0.00 | .45 |
| 19 | .161 | 0 | -.4090 | .331 | 110 | -.4366 | .431 | 30 | -.4434 | 1.131 | 40 | -.5056 | .161 | 270 | -.4286 | | |
| 20 | .231 | 180 | -.4194 | .331 | 100 | -.4171 | .431 | 20 | -.4112 | 1.131 | 30 | -.4712 | .231 | 270 | -.4228 | | |
| 21 | .231 | 170 | -.4174 | .331 | 90 | -.4223 | .431 | 10 | -.4374 | 1.131 | 20 | -.4920 | .331 | 270 | -.4426 | | |
| 22 | .231 | 160 | -.4299 | .331 | 80 | -.4225 | .431 | 0 | -.4354 | 1.131 | 10 | -.4963 | .431 | 270 | -.4554 | | |
| 23 | .231 | 150 | -.4219 | .331 | 70 | -.4328 | .531 | 180 | -.4501 | 1.131 | 0 | -.4989 | .531 | 270 | -.4457 | | |
| 24 | .231 | 140 | -.4297 | .331 | 60 | -.4214 | .531 | 90 | -.4400 | | | .731 | 270 | -.4656 | | | |
| 25 | .231 | 130 | -.4077 | .331 | 50 | -.4233 | .531 | 0 | -.4275 | 1.631 | 90 | -.4423 | .931 | 270 | -.4649 | | |
| 26 | .231 | 120 | -.4172 | .331 | 40 | -.4210 | .731 | 180 | -.4420 | 1.631 | 0 | -.4464 | 1.131 | 270 | -.4931 | | |
| 27 | .231 | 110 | -.4234 | .331 | 30 | -.4405 | .731 | 90 | -.4650 | 2.131 | 180 | -.2174 | 1.631 | 270 | -.4563 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 6 POINT 149 ALPHA 10 MACH .712 Q 542.369 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4354 | .231 | 100 | -.6003 | .331 | 20 | -.6224 | .731 | 0 | -.5628 | 2.131 | 90 | -.1627 | | |
| 2 | .161 | 170 | -.4272 | .231 | 90 | -.6074 | .331 | 10 | -.6235 | .931 | 180 | -.5542 | 2.131 | 0 | .0315 | | |
| 3 | .161 | 160 | -.4638 | .231 | 80 | -.6209 | .331 | 0 | -.6201 | .931 | 90 | -.6269 | 0.000 | | .8733 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4651 | .231 | 70 | -.6102 | .431 | 180 | -.4750 | .931 | 0 | -.3533 | 0.000 | | 1.0200 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5105 | .231 | 60 | -.6190 | .431 | 170 | -.4829 | 1.131 | 180 | -.5261 | 0.000 | | 1.1155 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5282 | .231 | 50 | -.6273 | .431 | 160 | -.4916 | 1.131 | 170 | -.5237 | 0.000 | | 1.1394 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5467 | .231 | 40 | -.6304 | .431 | 150 | -.5133 | 1.131 | 150 | -.5459 | 0.000 | | 1.1378 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5873 | .231 | 30 | -.6295 | .431 | 140 | -.5466 | 1.131 | 130 | -.5557 | 0.000 | | 1.1239 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5949 | .231 | 20 | -.6231 | .431 | 130 | -.5809 | 1.131 | 140 | -.5931 | 0.000 | | 1.0850 | .10 | 0.00 |
| 10 | .161 | 90 | -.6087 | .231 | 10 | -.5984 | .431 | 120 | -.5842 | 1.131 | 130 | -.5784 | 0.000 | | 1.0272 | .20 | 0.00 |
| 11 | .161 | 80 | -.6143 | .231 | 0 | -.5982 | .431 | 110 | -.5959 | 1.131 | 120 | -.5829 | 0.000 | | .9473 | .30 | 0.00 |
| 12 | .161 | 70 | -.6227 | .331 | 180 | -.4646 | .431 | 100 | -.6086 | 1.131 | 110 | -.6075 | 0.000 | | .7788 | .40 | 0.00 |
| 13 | .161 | 60 | -.6419 | .331 | 170 | -.4719 | .431 | 90 | -.6394 | 1.131 | 100 | -.5810 | 0.000 | | .5793 | .45 | 0.00 |
| 14 | .161 | 50 | -.6386 | .331 | 160 | -.4855 | .431 | 80 | -.6385 | 1.131 | 90 | -.5442 | 0.000 | | 1.1145 | 0.00 | .10 |
| 15 | .161 | 40 | -.6053 | .331 | 150 | -.4870 | .431 | 70 | -.6074 | 1.131 | 80 | -.5433 | 0.000 | | 1.0853 | 0.00 | .20 |
| 16 | .161 | 30 | -.6216 | .331 | 140 | -.5250 | .431 | 60 | -.6222 | 1.131 | 70 | -.4654 | 0.000 | | 1.0214 | 0.00 | .30 |
| 17 | .161 | 20 | -.6020 | .331 | 130 | -.5539 | .431 | 50 | -.6275 | 1.131 | 60 | -.3554 | 0.000 | | .8855 | 0.00 | .40 |
| 18 | .161 | 10 | -.6190 | .431 | 120 | -.5833 | .431 | 40 | -.6500 | 1.131 | 50 | -.2527 | 0.000 | | .6937 | 0.00 | .45 |
| 19 | .161 | 0 | -.5882 | .331 | 110 | -.5692 | .431 | 30 | -.6226 | 1.131 | 40 | -.2431 | .161 | 270 | -.6265 | | |
| 20 | .231 | 180 | -.4270 | .331 | 100 | -.5859 | .431 | 20 | -.6263 | 1.131 | 30 | -.1645 | .231 | 270 | -.6191 | | |
| 21 | .231 | 170 | -.4285 | .331 | 90 | -.5900 | .431 | 10 | -.6148 | 1.131 | 20 | -.1389 | .331 | 270 | -.6131 | | |
| 22 | .231 | 160 | -.4634 | .331 | 80 | -.6224 | .431 | 0 | -.6111 | 1.131 | 10 | -.1313 | .431 | 270 | -.6400 | | |
| 23 | .231 | 150 | -.4946 | .331 | 70 | -.6209 | .531 | 180 | -.5070 | 1.131 | 0 | -.1421 | .531 | 270 | -.6360 | | |
| 24 | .231 | 140 | -.5079 | .331 | 60 | -.6190 | .531 | 90 | -.6111 | | | | .731 | 270 | -.6263 | | |
| 25 | .231 | 130 | -.5331 | .331 | 50 | -.6190 | .531 | 0 | -.5814 | 1.631 | 90 | -.2775 | .931 | 270 | -.6332 | | |
| 26 | .231 | 120 | -.5637 | .331 | 40 | -.6198 | .731 | 180 | -.5259 | 1.631 | 0 | .0247 | 1.131 | 270 | -.5770 | | |
| 27 | .231 | 110 | -.5943 | .331 | 30 | -.6231 | .731 | 90 | -.6196 | 2.131 | 180 | -.1337 | 1.631 | 270 | -.2779 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 6 POINT 150 ALPHA 12 MACH .711 Q 542.215 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4618 | .231 | 100 | -.6138 | .331 | 20 | -.6155 | .731 | 0 | -.4453 | 2.131 | 90 | -.2452 | | |
| 2 | .161 | 170 | -.4368 | .231 | 90 | -.6119 | .331 | 10 | -.6231 | .931 | 180 | -.5547 | 2.131 | 0 | .0197 | | |
| 3 | .161 | 160 | -.4706 | .231 | 80 | -.6112 | .331 | 0 | -.5908 | .931 | 90 | -.6051 | 0.000 | | .9080 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4844 | .231 | 70 | -.6069 | .431 | 180 | -.4849 | .931 | 0 | -.1935 | 0.000 | | 1.0466 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5189 | .231 | 60 | -.6188 | .431 | 170 | -.5072 | 1.131 | 180 | -.5454 | 0.000 | | 1.1237 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5286 | .231 | 50 | -.6188 | .431 | 160 | -.5272 | 1.131 | 170 | -.5396 | 0.000 | | 1.1450 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5374 | .231 | 40 | -.5938 | .431 | 150 | -.5238 | 1.131 | 160 | -.5494 | 0.000 | | 1.1330 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5955 | .231 | 30 | -.5724 | .431 | 140 | -.5316 | 1.131 | 150 | -.5439 | 0.000 | | 1.1047 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6014 | .231 | 20 | -.5732 | .431 | 130 | -.5496 | 1.131 | 140 | -.5485 | 0.000 | | 1.0714 | .10 | 0.00 |
| 10 | .161 | 90 | -.6115 | .231 | 10 | -.5749 | .431 | 120 | -.5676 | 1.131 | 130 | -.5544 | 0.000 | | 1.0013 | .20 | 0.00 |
| 11 | .161 | 80 | -.6177 | .231 | 0 | -.5887 | .431 | 110 | -.5874 | 1.131 | 120 | -.5869 | 0.000 | | .9191 | .30 | 0.00 |
| 12 | .161 | 70 | -.5962 | .331 | 180 | -.4667 | .431 | 100 | -.5722 | 1.131 | 110 | -.5802 | 0.000 | | .7452 | .40 | 0.00 |
| 13 | .161 | 60 | -.5938 | .331 | 170 | -.4727 | .431 | 90 | -.6035 | 1.131 | 100 | -.5587 | 0.000 | | .5422 | .45 | 0.00 |
| 14 | .161 | 50 | -.6018 | .331 | 160 | -.4837 | .431 | 80 | -.6030 | 1.131 | 90 | -.5604 | 0.000 | | 1.1038 | 0.00 | .10 |
| 15 | .161 | 40 | -.6050 | .331 | 150 | -.5125 | .431 | 70 | -.6076 | 1.131 | 80 | -.5014 | 0.000 | | 1.0709 | 0.00 | .20 |
| 16 | .161 | 30 | -.5854 | .331 | 140 | -.5309 | .431 | 60 | -.5920 | 1.131 | 70 | -.4170 | 0.000 | | 1.0121 | 0.00 | .30 |
| 17 | .161 | 20 | -.5852 | .331 | 130 | -.5466 | .431 | 50 | -.5915 | 1.131 | 60 | -.2963 | 0.000 | | .8737 | 0.00 | .40 |
| 18 | .161 | 10 | -.5678 | .331 | 120 | -.5573 | .431 | 40 | -.5961 | 1.131 | 50 | -.1914 | 0.000 | | .6908 | 0.00 | .45 |
| 19 | .161 | 0 | -.5859 | .331 | 110 | -.5887 | .431 | 30 | -.6039 | 1.131 | 40 | -.1400 | .161 | 270 | -.6080 | | |
| 20 | .231 | 180 | -.4502 | .331 | 100 | -.5767 | .431 | 20 | -.5846 | 1.131 | 30 | -.0934 | .231 | 270 | -.5925 | | |
| 21 | .231 | 170 | -.4495 | .331 | 90 | -.5999 | .431 | 10 | -.5862 | 1.131 | 20 | -.0501 | .331 | 270 | -.6017 | | |
| 22 | .231 | 160 | -.4700 | .331 | 80 | -.6044 | .431 | 0 | -.5862 | 1.131 | 10 | -.0059 | .431 | 270 | -.6059 | | |
| 23 | .231 | 150 | -.5159 | .331 | 70 | -.6170 | .531 | 180 | -.5173 | 1.131 | 0 | -.0025 | .531 | 270 | -.5698 | | |
| 24 | .231 | 140 | -.5409 | .331 | 60 | -.6041 | .531 | 90 | -.6115 | | | | .731 | 270 | -.6131 | | |
| 25 | .231 | 130 | -.5609 | .331 | 50 | -.6063 | .531 | 0 | -.5795 | 1.631 | 90 | -.3183 | .931 | 270 | -.6346 | | |
| 26 | .231 | 120 | -.5710 | .331 | 40 | -.6185 | .731 | 180 | -.5480 | 1.631 | 0 | .0092 | 1.131 | 270 | -.5360 | | |
| 27 | .231 | 110 | -.5871 | .331 | 30 | -.6082 | .731 | 90 | -.6203 | 2.131 | 180 | -.1433 | 1.631 | 270 | -.3105 | | |

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OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 5 POINT 146 ALPHA 6 MACH .711 Q 542.209 | | | | MODEL FLAT FACE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|---|--------|------|------|-----------------|--|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | |
| 1 | .161 | 180 | -.3726 | .231 | 100 | -.5511 | .331 | 20 | -.6026 | .731 | 0 | -.5963 | 2.131 | 90 | -.0153 | | | | | | |
| 2 | .161 | 170 | -.5673 | .231 | 90 | -.5606 | .331 | 10 | -.5678 | .931 | 180 | -.5016 | 2.131 | 0 | .0706 | | | | | | |
| 3 | .161 | 160 | -.4295 | .231 | 80 | -.5788 | .331 | 0 | -.5894 | .931 | 90 | -.5879 | 0.000 | | .8094 | -.45 | 0.00 | | | | |
| 4 | .161 | 150 | -.4293 | .231 | 70 | -.5629 | .431 | 180 | -.4386 | .931 | 0 | -.5771 | 0.000 | | .9693 | -.40 | 0.00 | | | | |
| 5 | .161 | 140 | -.4981 | .231 | 60 | -.5620 | .431 | 170 | -.4579 | 1.131 | 180 | -.5200 | 0.000 | | 1.0883 | -.30 | 0.00 | | | | |
| 6 | .161 | 130 | -.4844 | .231 | 50 | -.5949 | .431 | 160 | -.4517 | 1.131 | 170 | -.5253 | 0.000 | | 1.1293 | -.20 | 0.00 | | | | |
| 7 | .161 | 120 | -.4627 | .231 | 40 | -.5949 | .431 | 150 | -.4899 | 1.131 | 160 | -.5389 | 0.000 | | 1.1427 | -.10 | 0.00 | | | | |
| 8 | .161 | 110 | -.5307 | .231 | 30 | -.6001 | .431 | 140 | -.4920 | 1.131 | 150 | -.5150 | 0.000 | | 1.1372 | 0.00 | 0.00 | | | | |
| 9 | .161 | 100 | -.5432 | .231 | 20 | -.5960 | .431 | 130 | -.5125 | 1.131 | 140 | -.5430 | 0.000 | | 1.1145 | .10 | 0.00 | | | | |
| 10 | .161 | 90 | -.5653 | .231 | 10 | -.5893 | .431 | 120 | -.5365 | 1.131 | 130 | -.5580 | 0.000 | | 1.0700 | .20 | 0.00 | | | | |
| 11 | .161 | 80 | -.5749 | .231 | 0 | -.5758 | .431 | 110 | -.5590 | 1.131 | 120 | -.5731 | 0.000 | | .9967 | .30 | 0.00 | | | | |
| 12 | .161 | 70 | -.5790 | .331 | 180 | -.4264 | .431 | 100 | -.5543 | 1.131 | 110 | -.5714 | 0.000 | | .8485 | .40 | 0.00 | | | | |
| 13 | .161 | 60 | -.5644 | .331 | 170 | -.4339 | .431 | 90 | -.5837 | 1.131 | 100 | -.5834 | 0.000 | | .6496 | .45 | 0.00 | | | | |
| 14 | .161 | 50 | -.6001 | .331 | 160 | -.4498 | .431 | 80 | -.5851 | 1.131 | 90 | -.5898 | 0.000 | | 1.1235 | 0.00 | .10 | | | | |
| 15 | .161 | 40 | -.5902 | .331 | 150 | -.4493 | .431 | 70 | -.5786 | 1.131 | 80 | -.5716 | 0.000 | | 1.0976 | 0.00 | .20 | | | | |
| 16 | .161 | 30 | -.5775 | .331 | 140 | -.4863 | .431 | 60 | -.5908 | 1.131 | 70 | -.5817 | 0.000 | | 1.0348 | 0.00 | .30 | | | | |
| 17 | .161 | 20 | -.5943 | .331 | 130 | -.5069 | .431 | 50 | -.6143 | 1.131 | 60 | -.5482 | 0.000 | | .8964 | 0.00 | .40 | | | | |
| 18 | .161 | 10 | -.5798 | .331 | 120 | -.5363 | .431 | 40 | -.6194 | 1.131 | 50 | -.5427 | 0.000 | | .7038 | 0.00 | .45 | | | | |
| 19 | .161 | 0 | -.5618 | .331 | 110 | -.5515 | .431 | 30 | -.6217 | 1.131 | 40 | -.5069 | .161 | 270 | -.5890 | | | | | | |
| 20 | .231 | 180 | -.4069 | .331 | 100 | -.5823 | .431 | 20 | -.6256 | 1.131 | 30 | -.4918 | .231 | 270 | -.5906 | | | | | | |
| 21 | .231 | 170 | -.4123 | .331 | 90 | -.5535 | .431 | 10 | -.5906 | 1.131 | 20 | -.4830 | .331 | 270 | -.5726 | | | | | | |
| 22 | .231 | 160 | -.4282 | .331 | 80 | -.5805 | .431 | 0 | -.6127 | 1.131 | 10 | -.4543 | .431 | 270 | -.5790 | | | | | | |
| 23 | .231 | 150 | -.4461 | .331 | 70 | -.5923 | .531 | 180 | -.4738 | 1.131 | 0 | -.4603 | .531 | 270 | -.5802 | | | | | | |
| 24 | .231 | 140 | -.4739 | .331 | 60 | -.6009 | .531 | 90 | -.5913 | | | | .731 | 270 | -.6001 | | | | | | |
| 25 | .231 | 130 | -.4842 | .331 | 50 | -.5865 | .531 | 0 | -.5807 | 1.631 | 90 | -.3293 | .931 | 270 | -.5935 | | | | | | |
| 26 | .231 | 120 | -.5036 | .331 | 40 | -.5842 | .731 | 180 | -.5100 | 1.631 | 0 | -.0632 | 1.131 | 270 | -.5897 | | | | | | |
| 27 | .231 | 110 | -.5492 | .331 | 30 | -.6151 | .731 | 90 | -.5927 | 2.131 | 180 | -.1581 | 1.631 | 270 | -.3121 | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 6 POINT 147 ALPHA 6 MACH .711 Q 542.045 | | | | MODEL FLAT FACE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|---|--------|------|------|-----------------|--|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | |
| 1 | .161 | 180 | -.3990 | .231 | 100 | -.5962 | .331 | 20 | -.6270 | .731 | 0 | -.6137 | 2.131 | 90 | -.1021 | | | | | | |
| 2 | .161 | 170 | -.4212 | .231 | 90 | -.5928 | .331 | 10 | -.6099 | .931 | 180 | -.5341 | 2.131 | 0 | .0507 | | | | | | |
| 3 | .161 | 160 | -.4178 | .231 | 80 | -.5855 | .331 | 0 | -.5777 | .931 | 90 | -.5902 | 0.000 | | .8487 | -.45 | 0.00 | | | | |
| 4 | .161 | 150 | -.4717 | .231 | 70 | -.5917 | .431 | 180 | -.4710 | .931 | 0 | -.4886 | 0.000 | | .9981 | -.40 | 0.00 | | | | |
| 5 | .161 | 140 | -.4837 | .231 | 60 | -.6121 | .431 | 170 | -.4625 | 1.131 | 180 | -.5295 | 0.000 | | 1.0988 | -.30 | 0.00 | | | | |
| 6 | .161 | 130 | -.5139 | .231 | 50 | -.6510 | .431 | 160 | -.5032 | 1.131 | 170 | -.5467 | 0.000 | | 1.1336 | -.20 | 0.00 | | | | |
| 7 | .161 | 120 | -.5242 | .231 | 40 | -.6291 | .431 | 150 | -.5154 | 1.131 | 160 | -.5494 | 0.000 | | 1.1424 | -.10 | 0.00 | | | | |
| 8 | .161 | 110 | -.5673 | .231 | 30 | -.6202 | .431 | 140 | -.5203 | 1.131 | 150 | -.5489 | 0.000 | | 1.1289 | 0.00 | 0.00 | | | | |
| 9 | .161 | 100 | -.5755 | .231 | 20 | -.6151 | .431 | 130 | -.5348 | 1.131 | 140 | -.5475 | 0.000 | | 1.1065 | .10 | 0.00 | | | | |
| 10 | .161 | 90 | -.5843 | .231 | 10 | -.6177 | .431 | 120 | -.5747 | 1.131 | 130 | -.5706 | 0.000 | | 1.0532 | .20 | 0.00 | | | | |
| 11 | .161 | 80 | -.6214 | .231 | 0 | -.6250 | .431 | 110 | -.5816 | 1.131 | 120 | -.5809 | 0.000 | | .9708 | .30 | 0.00 | | | | |
| 12 | .161 | 70 | -.6138 | .331 | 180 | -.4244 | .431 | 100 | -.5823 | 1.131 | 110 | -.5893 | 0.000 | | .8147 | .40 | 0.00 | | | | |
| 13 | .161 | 60 | -.6134 | .331 | 170 | -.4467 | .431 | 90 | -.5963 | 1.131 | 100 | -.5862 | 0.000 | | .6220 | .45 | 0.00 | | | | |
| 14 | .161 | 50 | -.6121 | .331 | 160 | -.4544 | .431 | 80 | -.5991 | 1.131 | 90 | -.5814 | 0.000 | | 1.1197 | 0.00 | .10 | | | | |
| 15 | .161 | 40 | -.6001 | .331 | 150 | -.4847 | .431 | 70 | -.6065 | 1.131 | 80 | -.5676 | 0.000 | | 1.0940 | 0.00 | .20 | | | | |
| 16 | .161 | 30 | -.6302 | .331 | 140 | -.5212 | .431 | 60 | -.6378 | 1.131 | 70 | -.5078 | 0.000 | | 1.0303 | 0.00 | .30 | | | | |
| 17 | .161 | 20 | -.6098 | .331 | 130 | -.5470 | .431 | 50 | -.6251 | 1.131 | 60 | -.4401 | 0.000 | | .8955 | 0.00 | .40 | | | | |
| 18 | .161 | 10 | -.6022 | .331 | 120 | -.5470 | .431 | 40 | -.6263 | 1.131 | 50 | -.4284 | 0.000 | | .7012 | 0.00 | .45 | | | | |
| 19 | .161 | 0 | -.5798 | .331 | 110 | -.5771 | .431 | 30 | -.6348 | 1.131 | 40 | -.3524 | .161 | 270 | -.6061 | | | | | | |
| 20 | .231 | 180 | -.4113 | .331 | 100 | -.5977 | .431 | 20 | -.6290 | 1.131 | 30 | -.3131 | .231 | 270 | -.6091 | | | | | | |
| 21 | .231 | 170 | -.4288 | .331 | 90 | -.6074 | .431 | 10 | -.6164 | 1.131 | 20 | -.2529 | .331 | 270 | -.6022 | | | | | | |
| 22 | .231 | 160 | -.4955 | .331 | 80 | -.6301 | .431 | 0 | -.6212 | 1.131 | 10 | -.2634 | .431 | 270 | -.6191 | | | | | | |
| 23 | .231 | 150 | -.4463 | .331 | 70 | -.6308 | .531 | 180 | -.5014 | 1.131 | 0 | -.2706 | .531 | 270 | -.6228 | | | | | | |
| 24 | .231 | 140 | -.4956 | .331 | 60 | -.6288 | .531 | 90 | -.6210 | | | | .731 | 270 | -.6362 | | | | | | |
| 25 | .231 | 130 | -.5134 | .331 | 50 | -.6022 | .531 | 0 | -.5797 | 1.631 | 90 | -.2687 | .931 | 270 | -.6186 | | | | | | |
| 26 | .231 | 120 | -.5530 | .331 | 40 | -.6312 | .731 | 180 | -.5207 | 1.631 | 0 | -.0278 | 1.131 | 270 | -.5975 | | | | | | |
| 27 | .231 | 110 | -.5742 | .331 | 30 | -.6295 | .731 | 90 | -.6106 | 2.131 | 180 | -.1123 | 1.631 | 270 | -.2311 | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 6 POINT 153 ALPHA 18 MACH .712 Q 543.099 | | | | | | | | | | | | | | | | | |
| POINT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4515 | .231 | 100 | -.5271 | .331 | 20 | -.5534 | .731 | 0 | -.0895 | 2.131 | 90 | -.5324 | | |
| 2 | .161 | 170 | -.4521 | .231 | 90 | -.5269 | .331 | 10 | -.5493 | .931 | 180 | -.5335 | 2.131 | 0 | .0316 | | |
| 3 | .161 | 160 | -.4624 | .231 | 80 | -.5160 | .331 | 0 | -.5401 | .931 | 90 | -.5582 | 0.000 | | .9912 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4765 | .231 | 70 | -.5164 | .431 | 180 | -.4810 | .931 | 0 | -.0293 | 0.000 | | 1.1003 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4837 | .231 | 60 | -.5064 | .431 | 170 | -.4874 | 1.131 | 180 | -.5326 | 0.000 | | 1.1447 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4938 | .231 | 50 | -.5160 | .431 | 160 | -.4920 | 1.131 | 170 | -.5703 | 0.000 | | 1.1331 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4940 | .231 | 40 | -.5089 | .431 | 150 | -.5109 | 1.131 | 160 | -.5472 | 0.000 | | 1.1119 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5060 | .231 | 30 | -.5411 | .431 | 140 | -.5292 | 1.131 | 150 | -.5629 | 0.000 | | 1.0677 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5200 | .231 | 20 | -.5675 | .431 | 130 | -.5490 | 1.131 | 140 | -.5947 | 0.000 | | 1.0146 | .10 | 0.00 |
| 10 | .161 | 90 | -.5265 | .231 | 10 | -.5169 | .431 | 120 | -.5145 | 1.131 | 130 | -.5565 | 0.000 | | .9420 | .20 | 0.00 |
| 11 | .161 | 80 | -.5091 | .231 | 0 | -.5235 | .431 | 110 | -.5228 | 1.131 | 120 | -.5677 | 0.000 | | .8387 | .30 | 0.00 |
| 12 | .161 | 70 | -.5040 | .331 | 180 | -.5040 | .431 | 100 | -.5665 | 1.131 | 110 | -.6336 | 0.000 | | .6413 | .40 | 0.00 |
| 13 | .161 | 60 | -.5248 | .331 | 170 | -.4858 | .431 | 90 | -.5292 | 1.131 | 100 | -.5813 | 0.000 | | .4333 | .45 | 0.00 |
| 14 | .161 | 50 | -.5087 | .331 | 160 | -.4736 | .431 | 80 | -.5072 | 1.131 | 90 | -.5374 | 0.000 | | 1.0666 | 0.00 | .10 |
| 15 | .161 | 40 | -.5259 | .331 | 150 | -.5001 | .431 | 70 | -.5251 | 1.131 | 80 | -.5033 | 0.000 | | 1.0314 | 0.00 | .20 |
| 16 | .161 | 30 | -.5310 | .331 | 140 | -.5357 | .431 | 60 | -.5315 | 1.131 | 70 | -.4195 | 0.000 | | .9735 | 0.00 | .30 |
| 17 | .161 | 20 | -.5306 | .331 | 130 | -.5149 | .431 | 50 | -.5373 | 1.131 | 60 | -.3179 | 0.000 | | .8398 | 0.00 | .40 |
| 18 | .161 | 10 | -.5205 | .331 | 120 | -.5160 | .431 | 40 | -.5513 | 1.131 | 50 | -.2305 | 0.000 | | .6734 | 0.00 | .45 |
| 19 | .161 | 0 | -.5117 | .331 | 110 | -.5334 | .431 | 30 | -.5090 | 1.131 | 40 | -.1554 | .161 | 270 | -.5199 | | |
| 20 | .231 | 180 | -.4628 | .331 | 100 | -.5317 | .431 | 20 | -.4141 | 1.131 | 30 | -.0871 | .231 | 270 | -.5354 | | |
| 21 | .231 | 170 | -.4530 | .331 | 90 | -.5181 | .431 | 10 | -.5398 | 1.131 | 20 | -.0361 | .331 | 270 | -.5086 | | |
| 22 | .231 | 160 | -.4456 | .331 | 80 | -.4954 | .431 | 0 | -.3839 | 1.131 | 10 | -.0110 | .431 | 270 | -.5061 | | |
| 23 | .231 | 150 | -.4889 | .331 | 70 | -.5111 | .531 | 180 | -.4828 | 1.131 | 0 | .0102 | .531 | 270 | -.5149 | | |
| 24 | .231 | 140 | -.4966 | .331 | 60 | -.5164 | .531 | 90 | -.5141 | | | | .731 | 270 | -.5539 | | |
| 25 | .231 | 130 | -.5336 | .331 | 50 | -.5402 | .531 | 0 | -.0659 | 1.631 | 90 | -.5565 | .931 | 270 | -.6006 | | |
| 26 | .231 | 120 | -.5207 | .331 | 40 | -.5342 | .731 | 180 | -.5265 | 1.631 | 0 | .0076 | 1.131 | 270 | -.5606 | | |
| 27 | .231 | 110 | -.5130 | .331 | 30 | -.5340 | .731 | 90 | -.5389 | 2.131 | 180 | -.2141 | 1.631 | 270 | -.5527 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 6 POINT 154 ALPHA 20 MACH .712 Q 543.096 | | | | | | | | | | | | | | | | | |
| POINT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4398 | .231 | 100 | -.5038 | .331 | 20 | -.4593 | .731 | 0 | -.0716 | 2.131 | 90 | -.6441 | | |
| 2 | .161 | 170 | -.4609 | .231 | 90 | -.5111 | .331 | 10 | -.3218 | .931 | 180 | -.5482 | 2.131 | 0 | .0468 | | |
| 3 | .161 | 160 | -.4355 | .231 | 80 | -.4860 | .331 | 0 | -.3400 | .931 | 90 | -.5279 | 0.000 | | 1.0155 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4880 | .231 | 70 | -.5372 | .431 | 180 | -.5256 | .931 | 0 | -.0281 | 0.000 | | 1.0885 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4839 | .231 | 60 | -.5205 | .431 | 170 | -.5113 | 1.131 | 180 | -.5682 | 0.000 | | 1.1345 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4923 | .231 | 50 | -.5226 | .431 | 160 | -.4998 | 1.131 | 170 | -.5596 | 0.000 | | 1.1137 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4983 | .231 | 40 | -.5239 | .431 | 150 | -.5171 | 1.131 | 160 | -.5620 | 0.000 | | 1.0797 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5067 | .231 | 30 | -.5235 | .431 | 140 | -.5136 | 1.131 | 150 | -.5818 | 0.000 | | 1.0405 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5164 | .231 | 20 | -.5664 | .431 | 130 | -.5318 | 1.131 | 140 | -.5959 | 0.000 | | .9792 | .10 | 0.00 |
| 10 | .161 | 90 | -.5097 | .231 | 10 | -.5670 | .431 | 120 | -.5242 | 1.131 | 130 | -.5832 | 0.000 | | .8902 | .20 | 0.00 |
| 11 | .161 | 80 | -.4968 | .231 | 0 | -.5539 | .431 | 110 | -.5111 | 1.131 | 120 | -.5847 | 0.000 | | .7908 | .30 | 0.00 |
| 12 | .161 | 70 | -.5089 | .331 | 180 | -.4768 | .431 | 100 | -.5240 | 1.131 | 110 | -.6379 | 0.000 | | .5851 | .40 | 0.00 |
| 13 | .161 | 60 | -.5037 | .331 | 170 | -.4830 | .431 | 90 | -.5145 | 1.131 | 100 | -.6125 | 0.000 | | .3912 | .45 | 0.00 |
| 14 | .161 | 50 | -.5035 | .331 | 160 | -.4774 | .431 | 80 | -.4994 | 1.131 | 90 | -.5720 | 0.000 | | 1.0344 | 0.00 | .10 |
| 15 | .161 | 40 | -.5035 | .331 | 150 | -.4793 | .431 | 70 | -.4897 | 1.131 | 80 | -.5260 | 0.000 | | 1.0053 | 0.00 | .20 |
| 16 | .161 | 30 | -.5237 | .331 | 140 | -.5059 | .431 | 60 | -.5628 | 1.131 | 70 | -.4510 | 0.000 | | .9390 | 0.00 | .30 |
| 17 | .161 | 20 | -.5334 | .331 | 130 | -.5102 | .431 | 50 | -.5690 | 1.131 | 60 | -.3589 | 0.000 | | .8017 | 0.00 | .40 |
| 18 | .161 | 10 | -.5641 | .331 | 120 | -.5422 | .431 | 40 | -.4170 | 1.131 | 50 | -.2795 | 0.000 | | .6524 | 0.00 | .45 |
| 19 | .161 | 0 | -.5470 | .331 | 110 | -.5201 | .431 | 30 | -.2329 | 1.131 | 40 | -.1943 | .161 | 270 | -.5343 | | |
| 20 | .231 | 180 | -.4545 | .331 | 100 | -.5177 | .431 | 20 | -.1501 | 1.131 | 30 | -.1100 | .231 | 270 | -.5306 | | |
| 21 | .231 | 170 | -.4719 | .331 | 90 | -.5051 | .431 | 10 | .0421 | 1.131 | 20 | -.0337 | .331 | 270 | -.5366 | | |
| 22 | .231 | 160 | -.4831 | .331 | 80 | -.5177 | .431 | 0 | .1019 | 1.131 | 10 | .0112 | .431 | 270 | -.5102 | | |
| 23 | .231 | 150 | -.4745 | .331 | 70 | -.5115 | .531 | 180 | -.5122 | 1.131 | 0 | .0153 | .531 | 270 | -.5384 | | |
| 24 | .231 | 140 | -.4863 | .331 | 60 | -.4948 | .531 | 90 | -.5040 | | | | .731 | 270 | -.5763 | | |
| 25 | .231 | 130 | -.4650 | .331 | 50 | -.4847 | .531 | 0 | .1529 | 1.631 | 90 | -.6379 | .931 | 270 | -.5634 | | |
| 26 | .231 | 120 | -.5016 | .331 | 40 | -.5537 | .731 | 180 | -.5226 | 1.631 | 0 | -.0177 | 1.131 | 270 | -.5902 | | |
| 27 | .231 | 110 | -.5052 | .331 | 30 | -.5551 | .731 | 90 | -.5453 | 2.131 | 180 | -.2804 | 1.631 | 270 | -.6327 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 760 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 6 POINT 151 ALPHA 14 MACH .710 Q 541.260 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4524 | .231 | 100 | -.5763 | .331 | 20 | -.5772 | .731 | 0 | -.2443 | 2.131 | 90 | -.3520 | | |
| 2 | .161 | 170 | -.4623 | .231 | 90 | -.5817 | .331 | 10 | -.5648 | .931 | 180 | -.5378 | 2.131 | 0 | .0187 | | |
| 3 | .161 | 160 | -.4371 | .231 | 80 | -.5890 | .331 | 0 | -.5809 | .931 | 90 | -.6300 | 0.000 | | .9414 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4921 | .231 | 70 | -.5828 | .431 | 180 | -.4974 | .931 | 0 | -.0391 | 0.000 | | 1.0664 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5115 | .231 | 60 | -.5669 | .431 | 170 | -.4877 | 1.131 | 180 | -.5256 | 0.000 | | 1.1399 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5381 | .231 | 50 | -.5662 | .431 | 160 | -.4990 | 1.131 | 170 | -.5366 | 0.000 | | 1.1474 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5454 | .231 | 40 | -.5643 | .431 | 150 | -.5233 | 1.131 | 160 | -.5388 | 0.000 | | 1.1286 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5516 | .231 | 30 | -.5716 | .431 | 140 | -.5509 | 1.131 | 150 | -.5548 | 0.000 | | 1.0975 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5713 | .231 | 20 | -.5632 | .431 | 130 | -.5555 | 1.131 | 140 | -.5735 | 0.000 | | 1.0527 | .10 | 0.00 |
| 10 | .161 | 90 | -.5769 | .231 | 10 | -.5832 | .431 | 120 | -.6026 | 1.131 | 130 | -.5783 | 0.000 | | .9943 | .20 | 0.00 |
| 11 | .161 | 80 | -.5706 | .231 | 0 | -.5535 | .431 | 110 | -.5652 | 1.131 | 120 | -.5630 | 0.000 | | .9013 | .30 | 0.00 |
| 12 | .161 | 70 | -.5929 | .331 | 180 | -.4759 | .431 | 100 | -.5971 | 1.131 | 110 | -.5955 | 0.000 | | .7186 | .40 | 0.00 |
| 13 | .161 | 60 | -.5883 | .331 | 170 | -.4656 | .431 | 90 | -.5966 | 1.131 | 100 | -.5788 | 0.000 | | .4994 | .45 | 0.00 |
| 14 | .161 | 50 | -.5683 | .331 | 160 | -.4978 | .431 | 80 | -.5823 | 1.131 | 90 | -.5297 | 0.000 | | 1.1003 | 0.00 | .10 |
| 15 | .161 | 40 | -.5488 | .331 | 150 | -.4892 | .431 | 70 | -.5523 | 1.131 | 80 | -.4756 | 0.000 | | 1.0643 | 0.00 | .20 |
| 16 | .161 | 30 | -.5836 | .331 | 140 | -.5589 | .431 | 60 | -.5879 | 1.131 | 70 | -.3623 | 0.000 | | 1.0013 | 0.00 | .30 |
| 17 | .161 | 20 | -.4884 | .331 | 130 | -.5400 | .431 | 50 | -.5592 | 1.131 | 60 | -.2771 | 0.000 | | .8558 | 0.00 | .40 |
| 18 | .161 | 10 | -.5460 | .331 | 120 | -.5557 | .431 | 40 | -.5604 | 1.131 | 50 | -.1907 | 0.000 | | .6875 | 0.00 | .45 |
| 19 | .161 | 0 | -.5550 | .331 | 110 | -.5686 | .431 | 30 | -.5742 | 1.131 | 40 | -.1143 | .161 | 270 | -.5730 | | |
| 20 | .231 | 180 | -.4507 | .331 | 100 | -.5574 | .431 | 20 | -.5489 | 1.131 | 30 | -.0715 | .231 | 270 | -.5519 | | |
| 21 | .231 | 170 | -.4634 | .331 | 90 | -.5856 | .431 | 13 | -.5687 | 1.131 | 20 | -.0156 | .331 | 270 | -.5616 | | |
| 22 | .231 | 160 | -.4697 | .331 | 80 | -.5692 | .431 | 0 | -.5369 | 1.131 | 10 | .0126 | .431 | 270 | -.5681 | | |
| 23 | .231 | 150 | -.4932 | .331 | 70 | -.5666 | .531 | 180 | -.5103 | 1.131 | 0 | .0124 | .531 | 270 | -.5858 | | |
| 24 | .231 | 140 | -.5253 | .331 | 60 | -.5697 | .531 | 93 | -.5915 | | | .731 | 270 | -.6113 | | | |
| 25 | .231 | 130 | -.5488 | .331 | 50 | -.5649 | .531 | 0 | -.5219 | 1.631 | 90 | -.4172 | .931 | 270 | -.6196 | | |
| 26 | .231 | 120 | -.5601 | .331 | 40 | -.5694 | .731 | 180 | -.5286 | 1.631 | 0 | -.0036 | 1.131 | 270 | -.5329 | | |
| 27 | .231 | 110 | -.5797 | .331 | 30 | -.5811 | .731 | 90 | -.6010 | 2.131 | 180 | -.2050 | 1.631 | 270 | -.4097 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 760 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 5 POINT 152 ALPHA 16 MACH .712 Q 542.620 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4507 | .231 | 100 | -.5309 | .331 | 20 | -.5328 | .731 | 0 | -.0474 | 2.131 | 90 | -.4441 | | |
| 2 | .161 | 170 | -.4474 | .231 | 90 | -.5388 | .331 | 10 | -.5268 | .931 | 180 | -.5236 | 2.131 | 0 | .0237 | | |
| 3 | .161 | 160 | -.4489 | .231 | 80 | -.5236 | .331 | 0 | -.5309 | .931 | 90 | -.5700 | 0.000 | | .9582 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4719 | .231 | 70 | -.5193 | .431 | 180 | -.4693 | .931 | 0 | .0247 | 0.000 | | 1.0741 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5208 | .231 | 60 | -.5029 | .431 | 170 | -.5194 | 1.131 | 180 | -.5506 | 0.000 | | 1.1344 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5238 | .231 | 50 | -.5281 | .431 | 160 | -.4964 | 1.131 | 170 | -.5375 | 0.000 | | 1.1347 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5223 | .231 | 40 | -.5547 | .431 | 150 | -.5282 | 1.131 | 160 | -.5540 | 0.000 | | 1.1105 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5372 | .231 | 30 | -.5549 | .431 | 140 | -.5542 | 1.131 | 150 | -.5757 | 0.000 | | 1.0732 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5305 | .231 | 20 | -.5571 | .431 | 130 | -.5622 | 1.131 | 140 | -.5855 | 0.000 | | 1.0272 | .10 | 0.00 |
| 10 | .161 | 90 | -.5503 | .231 | 10 | -.5406 | .431 | 120 | -.5526 | 1.131 | 130 | -.5697 | 0.000 | | .9580 | .20 | 0.00 |
| 11 | .161 | 80 | -.5367 | .231 | 0 | -.5277 | .431 | 110 | -.5503 | 1.131 | 120 | -.5629 | 0.000 | | .8618 | .30 | 0.00 |
| 12 | .161 | 70 | -.5501 | .331 | 180 | -.4762 | .431 | 100 | -.5645 | 1.131 | 110 | -.5958 | 0.000 | | .8728 | .40 | 0.00 |
| 13 | .161 | 60 | -.5524 | .331 | 170 | -.4946 | .431 | 90 | -.5694 | 1.131 | 100 | -.5881 | 0.000 | | .4671 | .45 | 0.00 |
| 14 | .161 | 50 | -.5200 | .331 | 160 | -.4777 | .431 | 80 | -.5273 | 1.131 | 90 | -.5442 | 0.000 | | 1.0965 | 0.00 | .10 |
| 15 | .161 | 40 | -.5307 | .331 | 150 | -.5024 | .431 | 70 | -.5362 | 1.131 | 80 | -.4837 | 0.000 | | 1.0406 | 0.00 | .20 |
| 16 | .161 | 30 | -.5333 | .331 | 140 | -.5200 | .431 | 60 | -.5302 | 1.131 | 70 | -.3717 | 0.000 | | .9962 | 0.00 | .30 |
| 17 | .161 | 20 | -.5084 | .331 | 130 | -.5620 | .431 | 50 | -.5719 | 1.131 | 60 | -.2920 | 0.000 | | .8534 | 0.00 | .40 |
| 18 | .161 | 10 | -.5752 | .331 | 120 | -.5863 | .431 | 40 | -.5958 | 1.131 | 50 | -.2294 | 0.000 | | .6647 | 0.00 | .45 |
| 19 | .161 | 0 | -.5305 | .331 | 110 | -.5556 | .431 | 30 | -.5668 | 1.131 | 40 | -.1302 | .161 | 270 | -.5549 | | |
| 20 | .231 | 180 | -.4907 | .331 | 100 | -.5768 | .431 | 20 | -.5793 | 1.131 | 30 | -.0837 | .231 | 270 | -.5832 | | |
| 21 | .231 | 170 | -.4750 | .331 | 90 | -.5639 | .431 | 10 | -.5480 | 1.131 | 20 | -.0376 | .331 | 270 | -.5714 | | |
| 22 | .231 | 160 | -.4502 | .331 | 80 | -.5228 | .431 | 0 | -.5052 | 1.131 | 10 | .0056 | .431 | 270 | -.5406 | | |
| 23 | .231 | 150 | -.4814 | .331 | 70 | -.5300 | .531 | 180 | -.4992 | 1.131 | 0 | -.0065 | .531 | 270 | -.5397 | | |
| 24 | .231 | 140 | -.4928 | .331 | 60 | -.5182 | .531 | 90 | -.5342 | | | .731 | 270 | -.5626 | | | |
| 25 | .231 | 130 | -.5180 | .331 | 50 | -.5296 | .531 | 0 | -.3784 | 1.631 | 90 | -.4878 | .931 | 270 | -.6028 | | |
| 26 | .231 | 120 | -.5502 | .331 | 40 | -.5521 | .731 | 180 | -.5365 | 1.631 | 0 | -.0034 | 1.131 | 270 | -.5531 | | |
| 27 | .231 | 110 | -.5471 | .331 | 30 | -.5530 | .731 | 93 | -.5655 | 2.131 | 180 | -.2167 | 1.631 | 270 | -.4869 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 157 ALPHA 25 MACH .711 Q 541.896 | | | | | | | | | | | | | | | | | MODEL FLAT FACE | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|-----------------|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | |
| 1 | .161 | 160 | -.4574 | .231 | 100 | -.5008 | .331 | 20 | .2321 | .731 | 0 | .1378 | 2.131 | 90 | -.8014 | | | |
| 2 | .161 | 170 | -.4414 | .231 | 90 | -.4791 | .331 | 10 | .2602 | .931 | 180 | -.5287 | 2.131 | 0 | .1362 | | | |
| 3 | .161 | 160 | -.4524 | .231 | 80 | -.4703 | .331 | 0 | .2826 | .931 | 90 | -.5875 | 0.000 | | 1.0875 | -.45 | 0.00 | |
| 4 | .161 | 150 | -.4774 | .231 | 70 | -.4888 | .431 | 180 | -.5013 | .931 | 0 | -.1153 | 0.000 | | 1.1341 | -.40 | 0.00 | |
| 5 | .161 | 140 | -.4753 | .231 | 60 | -.5025 | .431 | 170 | -.4917 | 1.131 | 180 | -.5546 | 0.000 | | 1.1436 | -.30 | 0.00 | |
| 6 | .161 | 130 | -.5095 | .231 | 50 | -.5542 | .431 | 160 | -.4905 | 1.131 | 170 | -.5527 | 0.000 | | 1.1088 | -.20 | 0.00 | |
| 7 | .161 | 120 | -.4979 | .231 | 40 | -.4561 | .431 | 150 | -.5152 | 1.131 | 160 | -.5732 | 0.000 | | 1.0595 | -.10 | 0.00 | |
| 8 | .161 | 110 | -.5020 | .231 | 30 | .0058 | .431 | 140 | -.5617 | 1.131 | 150 | -.5718 | 0.000 | | 1.0013 | 0.00 | 0.00 | |
| 9 | .161 | 100 | -.4957 | .231 | 20 | .2118 | .431 | 130 | -.5292 | 1.131 | 140 | -.6307 | 0.000 | | .9309 | .10 | 0.00 | |
| 10 | .161 | 90 | -.5009 | .231 | 10 | .3266 | .431 | 120 | -.5255 | 1.131 | 130 | -.6316 | 0.000 | | .8438 | .20 | 0.00 | |
| 11 | .161 | 80 | -.4626 | .231 | 0 | .4215 | .431 | 110 | -.4972 | 1.131 | 120 | -.6483 | 0.000 | | .7269 | .30 | 0.00 | |
| 12 | .161 | 70 | -.4632 | .331 | 180 | -.4561 | .431 | 100 | -.4900 | 1.131 | 110 | -.6921 | 0.000 | | .5360 | .40 | 0.00 | |
| 13 | .161 | 60 | -.4839 | .331 | 170 | -.4900 | .431 | 90 | -.5212 | 1.131 | 100 | -.7414 | 0.000 | | .3182 | .45 | 0.00 | |
| 14 | .161 | 50 | -.5171 | .331 | 160 | -.4978 | .431 | 80 | -.5596 | 1.131 | 90 | -.7702 | 0.000 | | .9884 | 0.00 | .10 | |
| 15 | .161 | 40 | -.5927 | .331 | 150 | -.5047 | .431 | 70 | -.4979 | 1.131 | 80 | -.6488 | 0.000 | | .9580 | 0.00 | .20 | |
| 16 | .161 | 30 | -.5526 | .331 | 140 | -.5034 | .431 | 60 | -.2430 | 1.131 | 70 | -.5223 | 0.000 | | .9187 | 0.00 | .30 | |
| 17 | .161 | 20 | -.4776 | .331 | 130 | -.4967 | .431 | 50 | -.0849 | 1.131 | 60 | -.4063 | 0.000 | | .7859 | 0.00 | .40 | |
| 18 | .161 | 10 | -.3078 | .331 | 120 | -.5072 | .431 | 40 | .0013 | 1.131 | 50 | -.2798 | 0.000 | | .6171 | 0.00 | .45 | |
| 19 | .161 | 0 | -.3384 | .331 | 110 | -.4956 | .431 | 30 | .0904 | 1.131 | 40 | -.1578 | .161 | 270 | -.4993 | | | |
| 20 | .231 | 180 | -.4326 | .331 | 100 | -.4673 | .431 | 20 | .0105 | 1.131 | 30 | -.0542 | .231 | 270 | -.4777 | | | |
| 21 | .231 | 170 | -.4559 | .331 | 90 | -.4956 | .431 | 10 | .1851 | 1.131 | 20 | .0225 | .331 | 270 | -.4895 | | | |
| 22 | .231 | 160 | -.4574 | .331 | 80 | -.4946 | .431 | 0 | .2091 | 1.131 | 10 | .0794 | .431 | 270 | -.5129 | | | |
| 23 | .231 | 150 | -.5065 | .331 | 70 | -.5489 | .531 | 180 | -.5274 | 1.131 | 0 | .1012 | .531 | 270 | -.5817 | | | |
| 24 | .231 | 140 | -.5041 | .331 | 60 | -.5339 | .531 | 90 | -.5583 | | | | .731 | 270 | -.5766 | | | |
| 25 | .231 | 130 | -.4977 | .331 | 50 | -.2284 | .531 | 0 | .1778 | 1.631 | 90 | -.7923 | .931 | 270 | -.6082 | | | |
| 26 | .231 | 120 | -.5041 | .331 | 40 | .0675 | .731 | 180 | -.5214 | 1.631 | 0 | .0952 | 1.131 | 270 | -.6946 | | | |
| 27 | .231 | 110 | -.5194 | .331 | 30 | .1886 | .731 | 90 | -.5606 | 2.131 | 180 | -.3164 | 1.631 | 270 | -.7898 | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 6 POINT 158 ALPHA 0 MACH .711 Q 541.478 | | | | | | | | | | | | | | | | | MODEL FLAT FACE | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|-----------------|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | |
| 1 | .161 | 180 | -.3965 | .231 | 100 | -.4167 | .331 | 20 | -.4164 | .731 | 0 | -.4368 | 2.131 | 90 | -.2539 | | | |
| 2 | .161 | 170 | -.4280 | .231 | 90 | -.4524 | .331 | 10 | -.4531 | .931 | 180 | -.4785 | 2.131 | 0 | -.2157 | | | |
| 3 | .161 | 160 | -.4080 | .231 | 80 | -.4202 | .331 | 0 | -.4077 | .931 | 90 | -.4607 | 0.000 | | .7505 | -.45 | 0.00 | |
| 4 | .161 | 150 | -.4369 | .231 | 70 | -.4118 | .431 | 180 | -.4510 | .931 | 0 | -.4715 | 0.000 | | .9142 | -.40 | 0.00 | |
| 5 | .161 | 140 | -.4343 | .231 | 60 | -.4313 | .431 | 170 | -.4515 | 1.131 | 180 | -.5060 | 0.000 | | 1.0575 | -.30 | 0.00 | |
| 6 | .161 | 130 | -.4213 | .231 | 50 | -.4363 | .431 | 160 | -.4467 | 1.131 | 170 | -.4926 | 0.000 | | 1.1078 | -.20 | 0.00 | |
| 7 | .161 | 120 | -.4164 | .231 | 40 | -.4238 | .431 | 150 | -.4494 | 1.131 | 160 | -.4962 | 0.000 | | 1.1363 | -.10 | 0.00 | |
| 8 | .161 | 110 | -.4291 | .231 | 30 | -.4309 | .431 | 140 | -.4603 | 1.131 | 150 | -.5017 | 0.000 | | 1.1412 | 0.00 | 0.00 | |
| 9 | .161 | 100 | -.4261 | .231 | 20 | -.4391 | .431 | 130 | -.4303 | 1.131 | 140 | -.4877 | 0.000 | | 1.1351 | .10 | 0.00 | |
| 10 | .161 | 90 | -.4194 | .231 | 10 | -.4356 | .431 | 120 | -.4517 | 1.131 | 130 | -.4969 | 0.000 | | 1.1106 | .20 | 0.00 | |
| 11 | .161 | 80 | -.4183 | .231 | 0 | -.4141 | .431 | 110 | -.4344 | 1.131 | 120 | -.4995 | 0.000 | | 1.0554 | .30 | 0.00 | |
| 12 | .161 | 70 | -.4323 | .331 | 180 | -.4455 | .431 | 100 | -.4464 | 1.131 | 110 | -.5029 | 0.000 | | .9149 | .40 | 0.00 | |
| 13 | .161 | 60 | -.4237 | .331 | 170 | -.4460 | .431 | 90 | -.4464 | 1.131 | 100 | -.4928 | 0.000 | | .7281 | .45 | 0.00 | |
| 14 | .161 | 50 | -.4023 | .331 | 160 | -.4451 | .431 | 80 | -.4379 | 1.131 | 90 | -.4825 | 0.000 | | 1.1307 | 0.00 | .10 | |
| 15 | .161 | 40 | -.4213 | .331 | 150 | -.4202 | .431 | 70 | -.4257 | 1.131 | 80 | -.4844 | 0.000 | | 1.1071 | 0.00 | .20 | |
| 16 | .161 | 30 | -.4183 | .331 | 140 | -.4270 | .431 | 60 | -.4367 | 1.131 | 70 | -.4964 | 0.000 | | 1.0524 | 0.00 | .30 | |
| 17 | .161 | 20 | -.4239 | .331 | 130 | -.4432 | .431 | 50 | -.4425 | 1.131 | 60 | -.5029 | 0.000 | | .9117 | 0.00 | .40 | |
| 18 | .161 | 10 | -.4181 | .331 | 120 | -.4182 | .431 | 40 | -.4324 | 1.131 | 50 | -.4935 | 0.000 | | .7322 | 0.00 | .45 | |
| 19 | .161 | 0 | -.4336 | .331 | 110 | -.4339 | .431 | 30 | -.4386 | 1.131 | 40 | -.4469 | .161 | 270 | -.4427 | | | |
| 20 | .231 | 180 | -.4338 | .331 | 100 | -.4320 | .431 | 20 | -.4471 | 1.131 | 30 | -.4966 | .231 | 270 | -.4422 | | | |
| 21 | .231 | 170 | -.4278 | .331 | 90 | -.4325 | .431 | 10 | -.4367 | 1.131 | 20 | -.4978 | .331 | 270 | -.4385 | | | |
| 22 | .231 | 160 | -.4138 | .331 | 80 | -.4262 | .431 | 0 | -.4623 | 1.131 | 10 | -.4940 | .431 | 270 | -.4399 | | | |
| 23 | .231 | 150 | -.4425 | .331 | 70 | -.4556 | .531 | 180 | -.4575 | 1.131 | 0 | -.5203 | .531 | 270 | -.4563 | | | |
| 24 | .231 | 140 | -.4151 | .331 | 60 | -.4232 | .531 | 90 | -.4349 | | | | .731 | 270 | -.4519 | | | |
| 25 | .231 | 130 | -.4401 | .331 | 50 | -.4346 | .531 | 0 | -.4513 | 1.631 | 90 | -.4648 | .931 | 270 | -.4874 | | | |
| 26 | .231 | 120 | -.4373 | .331 | 40 | -.4096 | .731 | 180 | -.4501 | 1.631 | 0 | -.4493 | 1.131 | 270 | -.4867 | | | |
| 27 | .231 | 110 | -.4235 | .331 | 30 | -.4492 | .731 | 90 | -.4674 | 2.131 | 180 | -.2544 | 1.631 | 270 | -.4781 | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 5 POINT 155 ALPHA 22 MACH .711 U 542.213 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4280 | .231 | 100 | -.4970 | .331 | 20 | -.6590 | .731 | 0 | -.0313 | 2.131 | 90 | -.7082 | | |
| 2 | .161 | 170 | -.4635 | .231 | 90 | -.5172 | .331 | 10 | -.1303 | .931 | 180 | -.5446 | 2.131 | 0 | -.0760 | | |
| 3 | .161 | 160 | -.4784 | .231 | 80 | -.5180 | .331 | 0 | -.1625 | .931 | 90 | -.5516 | 0.000 | | 1.0246 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4842 | .231 | 70 | -.5148 | .431 | 180 | -.5178 | .931 | 0 | -.6601 | 0.000 | | 1.1068 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4759 | .231 | 60 | -.4901 | .431 | 170 | -.4920 | 1.131 | 180 | -.5670 | 0.000 | | 1.1260 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4976 | .231 | 50 | -.5346 | .431 | 160 | -.5236 | 1.131 | 170 | -.5469 | 0.000 | | 1.0975 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4858 | .231 | 40 | -.5305 | .431 | 150 | -.4842 | 1.131 | 160 | -.5468 | 0.000 | | 1.0677 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5111 | .231 | 30 | -.5607 | .431 | 140 | -.5279 | 1.131 | 150 | -.5957 | 0.000 | | .9975 | 0.10 | 0.00 |
| 9 | .161 | 100 | -.5105 | .231 | 20 | -.5187 | .431 | 130 | -.5374 | 1.131 | 140 | -.5934 | 0.000 | | .9457 | .10 | 0.00 |
| 10 | .161 | 90 | -.5001 | .231 | 10 | -.4656 | .431 | 120 | -.5160 | 1.131 | 130 | -.5829 | 0.000 | | .8774 | .25 | 0.00 |
| 11 | .161 | 80 | -.4872 | .231 | 0 | -.4835 | .431 | 110 | -.5093 | 1.131 | 120 | -.5034 | 0.000 | | .7522 | .30 | 0.00 |
| 12 | .161 | 70 | -.5111 | .331 | 180 | -.5066 | .431 | 100 | -.5406 | 1.131 | 110 | -.6799 | 0.000 | | .5501 | .40 | 0.00 |
| 13 | .161 | 60 | -.5249 | .331 | 170 | -.5069 | .431 | 90 | -.5305 | 1.131 | 100 | -.6663 | 0.000 | | .3480 | .45 | 0.00 |
| 14 | .161 | 50 | -.4700 | .331 | 160 | -.4611 | .431 | 80 | -.4831 | 1.131 | 90 | -.6049 | 0.000 | | 1.0059 | 0.00 | .13 |
| 15 | .161 | 40 | -.5231 | .331 | 150 | -.5009 | .431 | 70 | -.5553 | 1.131 | 80 | -.5460 | 0.000 | | .9772 | 0.00 | .20 |
| 16 | .161 | 30 | -.5742 | .331 | 140 | -.5066 | .431 | 60 | -.5594 | 1.131 | 70 | -.5035 | 0.000 | | .9266 | 0.00 | .30 |
| 17 | .161 | 20 | -.5532 | .331 | 130 | -.5172 | .431 | 50 | -.4698 | 1.131 | 60 | -.3943 | 0.000 | | .7365 | 0.10 | .40 |
| 18 | .161 | 10 | -.5099 | .331 | 120 | -.5067 | .431 | 40 | -.4221 | 1.131 | 50 | -.2776 | 0.000 | | .6267 | 0.00 | .45 |
| 19 | .161 | 0 | -.6167 | .331 | 110 | -.5372 | .431 | 30 | .0805 | 1.131 | 40 | -.1990 | .161 | 270 | -.5445 | | |
| 20 | .231 | 180 | -.4795 | .331 | 100 | -.5344 | .431 | 20 | .0817 | 1.131 | 30 | -.0955 | .231 | 270 | -.5320 | | |
| 21 | .231 | 170 | -.4929 | .331 | 90 | -.5264 | .431 | 10 | .1931 | 1.131 | 20 | -.0376 | .331 | 270 | -.5339 | | |
| 22 | .231 | 160 | -.4967 | .331 | 80 | -.5301 | .431 | 0 | .1973 | 1.131 | 10 | .0006 | .431 | 270 | -.5554 | | |
| 23 | .231 | 150 | -.4971 | .331 | 70 | -.5690 | .531 | 180 | -.5162 | 1.131 | 0 | .0324 | .531 | 270 | -.5316 | | |
| 24 | .231 | 140 | -.4812 | .331 | 60 | -.4914 | .531 | 90 | -.5017 | | | -.731 | .531 | 270 | -.5631 | | |
| 25 | .231 | 130 | -.5133 | .331 | 50 | -.5732 | .531 | 0 | -.1385 | 1.631 | 90 | -.7134 | .931 | 270 | -.5761 | | |
| 26 | .231 | 120 | -.4975 | .331 | 40 | -.4654 | .731 | 180 | -.5259 | 1.631 | 0 | -.0431 | 1.131 | 270 | -.6283 | | |
| 27 | .231 | 110 | -.4991 | .331 | 30 | -.6211 | .731 | 90 | -.5548 | 2.131 | 180 | -.2712 | 1.631 | 270 | -.6991 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 5 POINT 155 ALPHA 24 MACH .711 U 542.373 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4343 | .231 | 100 | -.4680 | .331 | 20 | .2727 | .731 | 0 | -.1356 | 2.131 | 90 | -.7553 | | |
| 2 | .161 | 170 | -.4392 | .231 | 90 | -.4726 | .331 | 10 | .2955 | .931 | 180 | -.5172 | 2.131 | 0 | -.1176 | | |
| 3 | .161 | 160 | -.4905 | .231 | 80 | -.5053 | .331 | 0 | .2928 | .931 | 90 | -.5863 | 0.000 | | 1.0776 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4597 | .231 | 70 | -.4764 | .431 | 180 | -.4852 | .931 | 0 | -.1076 | 0.000 | | 1.1465 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4814 | .231 | 60 | -.4857 | .431 | 170 | -.4909 | 1.131 | 180 | -.5578 | 0.000 | | 1.1510 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5049 | .231 | 50 | -.5868 | .431 | 160 | -.5107 | 1.131 | 170 | -.5594 | 0.000 | | 1.1172 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4396 | .231 | 40 | -.5544 | .431 | 150 | -.5114 | 1.131 | 160 | -.5628 | 0.000 | | 1.0598 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4950 | .231 | 30 | -.3266 | .431 | 140 | -.5112 | 1.131 | 150 | -.5705 | 0.000 | | 1.0102 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4959 | .231 | 20 | -.0766 | .431 | 130 | -.5308 | 1.131 | 140 | -.5958 | 0.000 | | .9369 | .10 | 0.00 |
| 10 | .161 | 90 | -.4879 | .231 | 10 | .1665 | .431 | 120 | -.5137 | 1.131 | 130 | -.6025 | 0.000 | | .8524 | .20 | 0.00 |
| 11 | .161 | 80 | -.4896 | .231 | 0 | .2776 | .431 | 110 | -.5204 | 1.131 | 120 | -.6493 | 0.000 | | .7427 | .30 | 0.00 |
| 12 | .161 | 70 | -.5170 | .331 | 180 | -.4876 | .431 | 100 | -.5275 | 1.131 | 110 | -.7217 | 0.000 | | .5475 | .40 | 0.00 |
| 13 | .161 | 60 | -.4985 | .331 | 170 | -.4614 | .431 | 90 | -.4672 | 1.131 | 100 | -.6520 | 0.000 | | .3433 | .45 | 0.00 |
| 14 | .161 | 50 | -.5135 | .331 | 160 | -.4663 | .431 | 80 | -.5273 | 1.131 | 90 | -.6639 | 0.000 | | 1.0034 | 0.00 | .11 |
| 15 | .161 | 40 | -.5495 | .331 | 150 | -.4782 | .431 | 70 | -.5466 | 1.131 | 80 | -.6319 | 0.000 | | .9762 | 0.00 | .20 |
| 16 | .161 | 30 | -.6152 | .331 | 140 | -.5114 | .431 | 60 | -.3341 | 1.131 | 70 | -.5972 | 0.000 | | .9420 | 0.00 | .30 |
| 17 | .161 | 20 | -.6020 | .331 | 130 | -.5275 | .431 | 50 | -.1147 | 1.131 | 60 | -.4035 | 0.000 | | .7957 | 0.00 | .40 |
| 18 | .161 | 10 | -.4916 | .331 | 120 | -.4827 | .431 | 40 | .0326 | 1.131 | 50 | -.2553 | 0.000 | | .6514 | 0.00 | .45 |
| 19 | .161 | 0 | -.5236 | .331 | 110 | -.5093 | .431 | 30 | .0911 | 1.131 | 40 | -.1645 | .161 | 270 | -.5183 | | |
| 20 | .231 | 180 | -.4390 | .331 | 100 | -.4771 | .431 | 20 | .0350 | 1.131 | 30 | -.0388 | .231 | 270 | -.4515 | | |
| 21 | .231 | 170 | -.5008 | .331 | 90 | -.5166 | .431 | 10 | .1777 | 1.131 | 20 | .0207 | .331 | 270 | -.5167 | | |
| 22 | .231 | 160 | -.5129 | .331 | 80 | -.5228 | .431 | 0 | .1975 | 1.131 | 10 | .0625 | .431 | 270 | -.5325 | | |
| 23 | .231 | 150 | -.4920 | .331 | 70 | -.4850 | .531 | 180 | -.4939 | 1.131 | 0 | .0847 | .531 | 270 | -.5270 | | |
| 24 | .231 | 140 | -.4907 | .331 | 60 | -.5501 | .531 | 90 | -.5105 | | | -.731 | .531 | 270 | -.5663 | | |
| 25 | .231 | 130 | -.5109 | .331 | 50 | -.3940 | .531 | 0 | -.1703 | 1.631 | 90 | -.7452 | .931 | 270 | -.5465 | | |
| 26 | .231 | 120 | -.5150 | .331 | 40 | .0241 | .731 | 180 | -.5321 | 1.631 | 0 | -.0978 | 1.131 | 270 | -.6569 | | |
| 27 | .231 | 110 | -.4997 | .331 | 30 | .1583 | .731 | 90 | -.5575 | 2.131 | 180 | -.3029 | 1.631 | 270 | -.7596 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 7 POINT 168 ALPHA 2 MACH .619 Q 647.923 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.3699 | .231 | 100 | -.4512 | .331 | 20 | -.4894 | .731 | 0 | -.4987 | 2.131 | 90 | -.3070 | | |
| 2 | .161 | 170 | -.3660 | .231 | 90 | -.4650 | .331 | 10 | -.4841 | .931 | 180 | -.4733 | 2.131 | 0 | -.2297 | | |
| 3 | .161 | 160 | -.3680 | .231 | 80 | -.4659 | .331 | 0 | -.4858 | .931 | 90 | -.4843 | 0.000 | | .6269 | -.45 | 0.00 |
| 4 | .161 | 150 | -.3716 | .231 | 70 | -.4774 | .431 | 180 | -.4139 | .931 | 0 | -.4949 | 0.000 | | .9847 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4000 | .231 | 60 | -.4742 | .431 | 170 | -.4177 | 1.131 | 180 | -.4799 | 0.000 | | 1.1175 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4107 | .231 | 50 | -.4747 | .431 | 160 | -.4100 | 1.131 | 170 | -.4675 | 0.000 | | 1.1665 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4210 | .231 | 40 | -.4512 | .431 | 150 | -.4160 | 1.131 | 160 | -.4755 | 0.000 | | 1.1906 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4200 | .231 | 30 | -.5058 | .431 | 140 | -.4373 | 1.131 | 150 | -.4947 | 0.000 | | 1.1855 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4505 | .231 | 20 | -.4896 | .431 | 130 | -.4361 | 1.131 | 140 | -.4989 | 0.000 | | 1.1751 | .10 | 0.00 |
| 10 | .161 | 90 | -.4401 | .231 | 10 | -.4679 | .431 | 120 | -.4467 | 1.131 | 130 | -.4689 | 0.000 | | 1.1477 | .20 | 0.00 |
| 11 | .161 | 80 | -.4377 | .231 | 0 | -.4767 | .431 | 110 | -.4397 | 1.131 | 120 | -.4681 | 0.000 | | 1.0918 | .30 | 0.00 |
| 12 | .161 | 70 | -.4757 | .331 | 180 | -.4141 | .431 | 100 | -.4682 | 1.131 | 110 | -.5085 | 0.000 | | .9473 | .40 | 0.00 |
| 13 | .161 | 60 | -.4490 | .331 | 170 | -.3850 | .431 | 90 | -.4467 | 1.131 | 100 | -.4871 | 0.000 | | .7779 | .45 | 0.00 |
| 14 | .161 | 50 | -.4797 | .331 | 160 | -.3903 | .431 | 80 | -.4858 | 1.131 | 90 | -.4977 | 0.000 | | 1.1805 | 0.00 | .10 |
| 15 | .161 | 40 | -.4555 | .331 | 150 | -.4014 | .431 | 70 | -.4682 | 1.131 | 80 | -.4997 | 0.000 | | 1.1541 | 0.00 | .20 |
| 16 | .161 | 30 | -.4682 | .331 | 140 | -.4159 | .431 | 60 | -.4888 | 1.131 | 70 | -.5237 | 0.000 | | 1.0993 | 0.00 | .30 |
| 17 | .161 | 20 | -.4550 | .331 | 130 | -.4222 | .431 | 50 | -.4655 | 1.131 | 60 | -.4973 | 0.000 | | .9658 | 0.00 | .40 |
| 18 | .161 | 10 | -.4485 | .331 | 120 | -.4317 | .431 | 40 | -.4654 | 1.131 | 50 | -.4953 | 0.000 | | .7903 | 0.00 | .45 |
| 19 | .161 | 0 | -.4527 | .331 | 110 | -.4429 | .431 | 30 | -.4983 | 1.131 | 40 | -.5113 | .161 | 270 | -.4644 | | |
| 20 | .231 | 180 | -.4006 | .331 | 100 | -.4364 | .431 | 20 | -.4698 | 1.131 | 30 | -.4935 | .231 | 270 | -.4551 | | |
| 21 | .231 | 170 | -.3660 | .331 | 90 | -.4652 | .431 | 10 | -.5058 | 1.131 | 20 | -.5175 | .331 | 270 | -.4684 | | |
| 22 | .231 | 160 | -.4008 | .331 | 80 | -.4892 | .431 | 0 | -.5191 | 1.131 | 10 | -.5209 | .431 | 270 | -.4841 | | |
| 23 | .231 | 150 | -.3981 | .331 | 70 | -.4610 | .531 | 180 | -.4239 | 1.131 | 0 | -.5029 | .531 | 270 | -.4767 | | |
| 24 | .231 | 140 | -.4199 | .331 | 60 | -.4724 | .531 | 90 | -.4679 | | | .731 | .270 | -.4795 | | | |
| 25 | .231 | 130 | -.4145 | .331 | 50 | -.4751 | .531 | 0 | -.4941 | 1.631 | 90 | -.4629 | .931 | 270 | -.5031 | | |
| 26 | .231 | 120 | -.4152 | .331 | 40 | -.4657 | .731 | 180 | -.4540 | 1.631 | 0 | -.4573 | 1.131 | 270 | -.5043 | | |
| 27 | .231 | 110 | -.4301 | .331 | 30 | -.4691 | .731 | 90 | -.4652 | 2.131 | 180 | -.3287 | 1.631 | 270 | -.4760 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 7 POINT 169 ALPHA 4 MACH .820 Q 648.594 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.3924 | .231 | 100 | -.5128 | .331 | 20 | -.5554 | .731 | 0 | -.5522 | 2.131 | 90 | -.2117 | | |
| 2 | .161 | 170 | -.3843 | .231 | 90 | -.5324 | .331 | 10 | -.5458 | .931 | 180 | -.4914 | 2.131 | 0 | -.0632 | | |
| 3 | .161 | 160 | -.3845 | .231 | 80 | -.5422 | .331 | 0 | -.5429 | .931 | 90 | -.5506 | 0.000 | | .8462 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4335 | .231 | 70 | -.5600 | .431 | 180 | -.4408 | .931 | 0 | -.5534 | 0.000 | | 1.0014 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4437 | .231 | 60 | -.5480 | .431 | 170 | -.4360 | 1.131 | 180 | -.5202 | 0.000 | | 1.1131 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4690 | .231 | 50 | -.5855 | .431 | 160 | -.4745 | 1.131 | 170 | -.5474 | 0.000 | | 1.1653 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4843 | .231 | 40 | -.5627 | .431 | 150 | -.4682 | 1.131 | 160 | -.5234 | 0.000 | | 1.1860 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5098 | .231 | 30 | -.5767 | .431 | 140 | -.4853 | 1.131 | 150 | -.5370 | 0.000 | | 1.1862 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5277 | .231 | 20 | -.5521 | .431 | 130 | -.4913 | 1.131 | 140 | -.5400 | 0.000 | | 1.1671 | .10 | 0.00 |
| 10 | .161 | 90 | -.5485 | .231 | 10 | -.5519 | .431 | 120 | -.5088 | 1.131 | 130 | -.5450 | 0.000 | | 1.1301 | .20 | 0.00 |
| 11 | .161 | 80 | -.5631 | .231 | 0 | -.5555 | .431 | 110 | -.5273 | 1.131 | 120 | -.5484 | 0.000 | | 1.0682 | .30 | 0.00 |
| 12 | .161 | 70 | -.5615 | .331 | 180 | -.4532 | .431 | 100 | -.5413 | 1.131 | 110 | -.5662 | 0.000 | | .9159 | .40 | 0.00 |
| 13 | .161 | 60 | -.5687 | .331 | 170 | -.4428 | .431 | 90 | -.5473 | 1.131 | 100 | -.5682 | 0.000 | | .7335 | .45 | 0.00 |
| 14 | .161 | 50 | -.5439 | .331 | 160 | -.4123 | .431 | 80 | -.5344 | 1.131 | 90 | -.5514 | 0.000 | | 1.1749 | 0.00 | .10 |
| 15 | .161 | 40 | -.5579 | .331 | 150 | -.4554 | .431 | 70 | -.5583 | 1.131 | 80 | -.5714 | 0.000 | | 1.1489 | 0.00 | .20 |
| 16 | .161 | 30 | -.5540 | .331 | 140 | -.4724 | .431 | 60 | -.5762 | 1.131 | 70 | -.5712 | 0.000 | | 1.0958 | 0.00 | .30 |
| 17 | .161 | 20 | -.5399 | .331 | 130 | -.4731 | .431 | 50 | -.5627 | 1.131 | 60 | -.5750 | 0.000 | | .9600 | 0.00 | .40 |
| 18 | .161 | 10 | -.5116 | .331 | 120 | -.4900 | .431 | 40 | -.5536 | 1.131 | 50 | -.5710 | 0.000 | | .7835 | 0.00 | .45 |
| 19 | .161 | 0 | -.5075 | .331 | 110 | -.4868 | .431 | 30 | -.5519 | 1.131 | 40 | -.5584 | .161 | 270 | -.5280 | | |
| 20 | .231 | 180 | -.3814 | .331 | 100 | -.5042 | .431 | 20 | -.5538 | 1.131 | 30 | -.5534 | .231 | 270 | -.5530 | | |
| 21 | .231 | 170 | -.3831 | .331 | 90 | -.5239 | .431 | 10 | -.5604 | 1.131 | 20 | -.5494 | .331 | 270 | -.5297 | | |
| 22 | .231 | 160 | -.3930 | .331 | 80 | -.5243 | .431 | 0 | -.5459 | 1.131 | 10 | -.5480 | .431 | 270 | -.5359 | | |
| 23 | .231 | 150 | -.4090 | .331 | 70 | -.5376 | .531 | 180 | -.4314 | 1.131 | 0 | -.5404 | .531 | 270 | -.5367 | | |
| 24 | .231 | 140 | -.4428 | .331 | 60 | -.5437 | .531 | 90 | -.5300 | | | .731 | .270 | -.5463 | | | |
| 25 | .231 | 130 | -.4434 | .331 | 50 | -.5370 | .531 | 0 | -.5627 | 1.631 | 90 | -.4649 | .931 | 270 | -.5477 | | |
| 26 | .231 | 120 | -.4519 | .331 | 40 | -.5175 | .731 | 180 | -.4651 | 1.631 | 0 | -.3076 | 1.131 | 270 | -.5413 | | |
| 27 | .231 | 110 | -.4397 | .331 | 30 | -.5519 | .731 | 90 | -.5377 | 2.131 | 180 | -.2473 | 1.631 | 270 | -.4200 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 100 ALPHA -1 MAG4 .319 J 048.219 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4585 | .231 | 100 | -.4395 | .331 | 20 | -.4429 | .731 | 0 | -.4672 | 2.131 | 90 | -.3310 | | |
| 2 | .161 | 170 | -.4483 | .231 | 90 | -.4515 | .331 | 10 | -.3992 | .931 | 180 | -.4552 | 2.131 | 0 | -.3291 | | |
| 3 | .161 | 160 | -.4576 | .231 | 80 | -.4419 | .331 | 0 | -.4263 | .931 | 90 | -.4688 | 0.000 | | .7918 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4431 | .231 | 70 | -.4211 | .431 | 180 | -.4529 | .931 | 0 | -.4680 | 0.000 | | .9626 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4594 | .231 | 60 | -.4182 | .431 | 170 | -.4695 | 1.131 | 180 | -.4972 | 0.000 | | 1.0955 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4434 | .231 | 50 | -.4158 | .431 | 160 | -.4550 | 1.131 | 170 | -.4900 | 0.000 | | 1.1516 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4434 | .231 | 40 | -.4250 | .431 | 150 | -.4606 | 1.131 | 160 | -.4950 | 0.000 | | 1.1796 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4363 | .231 | 30 | -.3995 | .431 | 140 | -.4481 | 1.131 | 150 | -.4796 | 0.000 | | 1.1924 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4356 | .231 | 20 | -.4087 | .431 | 130 | -.4549 | 1.131 | 140 | -.4824 | 0.000 | | 1.1899 | .10 | 0.00 |
| 10 | .161 | 90 | -.4403 | .231 | 10 | -.4087 | .431 | 120 | -.4682 | 1.131 | 130 | -.4964 | 0.000 | | 1.1693 | .20 | 0.00 |
| 11 | .161 | 80 | -.4450 | .231 | 0 | -.4157 | .431 | 110 | -.4770 | 1.131 | 120 | -.5056 | 0.000 | | 1.1030 | .30 | 0.00 |
| 12 | .161 | 70 | -.4333 | .331 | 180 | -.4349 | .431 | 100 | -.4240 | 1.131 | 110 | -.4710 | 0.000 | | .9856 | .40 | 0.00 |
| 13 | .161 | 60 | -.4525 | .331 | 170 | -.4509 | .431 | 90 | -.4339 | 1.131 | 100 | -.4754 | 0.000 | | .8032 | .45 | 0.00 |
| 14 | .161 | 50 | -.4319 | .331 | 160 | -.4503 | .431 | 80 | -.4238 | 1.131 | 90 | -.4772 | 0.000 | | 1.1731 | 0.00 | .10 |
| 15 | .161 | 40 | -.4800 | .331 | 150 | -.4455 | .431 | 70 | -.4321 | 1.131 | 80 | -.4802 | 0.000 | | 1.1533 | 0.00 | .20 |
| 16 | .161 | 30 | -.4855 | .331 | 140 | -.4361 | .431 | 60 | -.4273 | 1.131 | 70 | -.4696 | 0.000 | | 1.1057 | 0.00 | .30 |
| 17 | .161 | 20 | -.4890 | .331 | 130 | -.4324 | .431 | 50 | -.4163 | 1.131 | 60 | -.4734 | 0.000 | | .9709 | 0.00 | .40 |
| 18 | .161 | 10 | -.4573 | .331 | 120 | -.4527 | .431 | 40 | -.4164 | 1.131 | 50 | -.4692 | 0.000 | | .7939 | 0.00 | .45 |
| 19 | .161 | 0 | -.4529 | .331 | 110 | -.4250 | .431 | 30 | -.3901 | 1.131 | 40 | -.4472 | .161 | 270 | -.4253 | | |
| 20 | .231 | 180 | -.4522 | .331 | 100 | -.4370 | .431 | 20 | -.4084 | 1.131 | 30 | -.4652 | .231 | 270 | -.4309 | | |
| 21 | .231 | 170 | -.4326 | .331 | 90 | -.4315 | .431 | 10 | -.4051 | 1.131 | 20 | -.4635 | .331 | 270 | -.4306 | | |
| 22 | .231 | 160 | -.4443 | .331 | 80 | -.4309 | .431 | 0 | -.4204 | 1.131 | 10 | -.4736 | .431 | 270 | -.4313 | | |
| 23 | .231 | 150 | -.4431 | .331 | 70 | -.4119 | .531 | 180 | -.4529 | 1.131 | 0 | -.4720 | .531 | 270 | -.4493 | | |
| 24 | .231 | 140 | -.4432 | .331 | 60 | -.4304 | .531 | 90 | -.4493 | | | | .731 | 270 | -.4631 | | |
| 25 | .231 | 130 | -.4337 | .331 | 50 | -.4182 | .531 | 0 | -.4279 | 1.631 | 90 | -.4620 | .931 | 270 | -.4672 | | |
| 26 | .231 | 120 | -.4592 | .331 | 40 | -.3997 | .731 | 180 | -.4753 | 1.531 | 0 | -.4536 | 1.131 | 270 | -.4968 | | |
| 27 | .231 | 110 | -.4318 | .331 | 30 | -.4655 | .731 | 90 | -.4479 | 2.131 | 180 | -.5069 | 1.531 | 270 | -.4736 | | |

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 OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 7 POINT 107 ALPHA 0 MAG4 .320 J 049.124 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4103 | .231 | 100 | -.4256 | .331 | 20 | -.4388 | .731 | 0 | -.4470 | 2.131 | 90 | -.3576 | | |
| 2 | .161 | 170 | -.4262 | .231 | 90 | -.4224 | .331 | 10 | -.4386 | .931 | 180 | -.4632 | 2.131 | 0 | -.3824 | | |
| 3 | .161 | 160 | -.4186 | .231 | 80 | -.4317 | .331 | 0 | -.4355 | .931 | 90 | -.4620 | 0.000 | | .8035 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4236 | .231 | 70 | -.4192 | .431 | 180 | -.4388 | .931 | 0 | -.4552 | 0.000 | | .9622 | -.40 | 0.00 |
| 5 | .161 | 140 | -.3909 | .231 | 60 | -.3987 | .431 | 170 | -.4190 | 1.131 | 180 | -.4612 | 0.000 | | 1.1001 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4139 | .231 | 50 | -.4267 | .431 | 160 | -.4311 | 1.131 | 170 | -.4761 | 0.000 | | 1.1513 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4159 | .231 | 40 | -.4245 | .431 | 150 | -.4338 | 1.131 | 160 | -.4741 | 0.000 | | 1.1759 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4105 | .231 | 30 | -.4233 | .431 | 140 | -.4292 | 1.131 | 150 | -.4640 | 0.000 | | 1.1854 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4044 | .231 | 20 | -.4118 | .431 | 130 | -.4157 | 1.131 | 140 | -.4629 | 0.000 | | 1.1819 | .10 | 0.00 |
| 10 | .161 | 90 | -.4101 | .231 | 10 | -.4190 | .431 | 120 | -.4259 | 1.131 | 130 | -.4656 | 0.000 | | 1.1541 | .20 | 0.00 |
| 11 | .161 | 80 | -.4249 | .231 | 0 | -.4387 | .431 | 110 | -.4396 | 1.131 | 120 | -.4769 | 0.000 | | 1.0974 | .30 | 0.00 |
| 12 | .161 | 70 | -.4254 | .331 | 180 | -.4369 | .431 | 100 | -.4424 | 1.131 | 110 | -.4833 | 0.000 | | .9676 | .40 | 0.00 |
| 13 | .161 | 60 | -.4355 | .331 | 170 | -.4559 | .431 | 90 | -.4478 | 1.131 | 100 | -.4847 | 0.000 | | .7822 | .45 | 0.00 |
| 14 | .161 | 50 | -.4271 | .331 | 160 | -.4335 | .431 | 80 | -.4490 | 1.131 | 90 | -.4789 | 0.000 | | 1.1805 | 0.00 | .10 |
| 15 | .161 | 40 | -.4209 | .331 | 150 | -.4432 | .431 | 70 | -.4330 | 1.131 | 80 | -.4631 | 0.000 | | 1.1486 | 0.00 | .20 |
| 16 | .161 | 30 | -.4285 | .331 | 140 | -.4314 | .431 | 60 | -.4374 | 1.131 | 70 | -.4765 | 0.000 | | 1.1019 | 0.00 | .30 |
| 17 | .161 | 20 | -.4296 | .331 | 130 | -.4305 | .431 | 50 | -.4376 | 1.131 | 60 | -.4777 | 0.000 | | .9653 | 0.00 | .40 |
| 18 | .161 | 10 | -.4154 | .331 | 120 | -.4323 | .431 | 40 | -.4274 | 1.131 | 50 | -.4699 | 0.000 | | .7957 | 0.00 | .45 |
| 19 | .161 | 0 | -.4323 | .331 | 110 | -.4423 | .431 | 30 | -.4435 | 1.131 | 40 | -.4911 | .131 | 270 | -.4388 | | |
| 20 | .231 | 180 | -.4168 | .331 | 100 | -.4254 | .431 | 20 | -.4348 | 1.131 | 30 | -.4761 | .231 | 270 | -.4293 | | |
| 21 | .231 | 170 | -.4118 | .331 | 90 | -.4082 | .431 | 10 | -.4261 | 1.131 | 20 | -.4613 | .331 | 270 | -.4251 | | |
| 22 | .231 | 160 | -.4206 | .331 | 80 | -.4269 | .431 | 0 | -.4253 | 1.131 | 10 | -.4697 | .431 | 270 | -.4255 | | |
| 23 | .231 | 150 | -.4321 | .331 | 70 | -.4305 | .531 | 180 | -.4453 | 1.131 | 0 | -.4743 | .531 | 270 | -.4461 | | |
| 24 | .231 | 140 | -.4085 | .331 | 60 | -.4156 | .531 | 90 | -.4236 | | | | .731 | 270 | -.4357 | | |
| 25 | .231 | 130 | -.4235 | .331 | 50 | -.4256 | .531 | 0 | -.4376 | 1.631 | 90 | -.4769 | .931 | 270 | -.4618 | | |
| 26 | .231 | 120 | -.4136 | .331 | 40 | -.4154 | .731 | 180 | -.4503 | 1.631 | 0 | -.4676 | 1.131 | 270 | -.4669 | | |
| 27 | .231 | 110 | -.4161 | .331 | 30 | -.4227 | .731 | 90 | -.4424 | 2.131 | 180 | -.5140 | 1.631 | 270 | -.4622 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 7 POINT 172 ALPHA 10 MACH .821 Q 649.358 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4335 | .231 | 100 | -.5965 | .331 | 20 | -.6167 | .731 | 0 | -.5641 | 2.131 | 90 | -.2267 | | |
| 2 | .161 | 170 | -.4355 | .231 | 90 | -.5855 | .331 | 10 | -.5640 | .931 | 180 | -.5286 | 2.131 | 0 | .0066 | | |
| 3 | .161 | 160 | -.4612 | .231 | 80 | -.5801 | .331 | 0 | -.5607 | .931 | 90 | -.5871 | 0.000 | | .9472 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4625 | .231 | 70 | -.5939 | .431 | 180 | -.4655 | .931 | 0 | -.4801 | 0.000 | | 1.0760 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4975 | .231 | 60 | -.5839 | .431 | 170 | -.4780 | 1.131 | 180 | -.5326 | 0.000 | | 1.1643 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5140 | .231 | 50 | -.5823 | .431 | 160 | -.4907 | 1.131 | 170 | -.5344 | 0.000 | | 1.1792 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5267 | .231 | 40 | -.5950 | .431 | 150 | -.5119 | 1.131 | 160 | -.5507 | 0.000 | | 1.1838 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5632 | .231 | 30 | -.5853 | .431 | 140 | -.5438 | 1.131 | 150 | -.5641 | 0.000 | | 1.1670 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5799 | .231 | 20 | -.5640 | .431 | 130 | -.5324 | 1.131 | 140 | -.5641 | 0.000 | | 1.1342 | .10 | 0.00 |
| 10 | .161 | 90 | -.5907 | .231 | 10 | -.5816 | .431 | 120 | -.5686 | 1.131 | 130 | -.5943 | 0.000 | | 1.0785 | .20 | 0.00 |
| 11 | .161 | 80 | -.6024 | .231 | 0 | -.5785 | .431 | 110 | -.5917 | 1.131 | 120 | -.5909 | 0.000 | | .9931 | .30 | 0.00 |
| 12 | .161 | 70 | -.6107 | .331 | 180 | -.4613 | .431 | 100 | -.5944 | 1.131 | 110 | -.5493 | 0.000 | | .8882 | .40 | 0.00 |
| 13 | .161 | 60 | -.5903 | .331 | 170 | -.4546 | .431 | 90 | -.5915 | 1.131 | 100 | -.5965 | 0.000 | | .6474 | .45 | 0.00 |
| 14 | .161 | 50 | -.6058 | .331 | 160 | -.4749 | .431 | 80 | -.6011 | 1.131 | 90 | -.5951 | 0.000 | | 1.1554 | .50 | .10 |
| 15 | .161 | 40 | -.5934 | .331 | 150 | -.4977 | .431 | 70 | -.6076 | 1.131 | 80 | -.5819 | 0.000 | | 1.1289 | .50 | .20 |
| 16 | .161 | 30 | -.5671 | .331 | 140 | -.5154 | .431 | 60 | -.5905 | 1.131 | 70 | -.5398 | 0.000 | | 1.0742 | .50 | .30 |
| 17 | .161 | 20 | -.5655 | .331 | 130 | -.5455 | .431 | 50 | -.6047 | 1.131 | 60 | -.4572 | 0.000 | | .9436 | .50 | .40 |
| 18 | .161 | 10 | -.5375 | .331 | 120 | -.5421 | .431 | 40 | -.5905 | 1.131 | 50 | -.4428 | 0.000 | | .7673 | .50 | .45 |
| 19 | .161 | 0 | -.5343 | .331 | 110 | -.5619 | .431 | 30 | -.5980 | 1.131 | 40 | -.3983 | .161 | 270 | -.5937 | | |
| 20 | .231 | 180 | -.4582 | .331 | 100 | -.6194 | .431 | 20 | -.6303 | 1.131 | 30 | -.3370 | .231 | 270 | -.6209 | | |
| 21 | .231 | 170 | -.4222 | .331 | 90 | -.6036 | .431 | 10 | -.6047 | 1.131 | 20 | -.3157 | .331 | 270 | -.5995 | | |
| 22 | .231 | 160 | -.4632 | .331 | 80 | -.5884 | .431 | 0 | -.5732 | 1.131 | 10 | -.3444 | .431 | 270 | -.5900 | | |
| 23 | .231 | 150 | -.5010 | .331 | 70 | -.6078 | .531 | 180 | -.5036 | 1.131 | 0 | -.3015 | .531 | 270 | -.6024 | | |
| 24 | .231 | 140 | -.5071 | .331 | 60 | -.5879 | .531 | 90 | -.5901 | .731 | 270 | -.5452 | | | | | |
| 25 | .231 | 130 | -.5224 | .331 | 50 | -.5839 | .531 | 0 | -.5655 | 1.631 | 90 | -.3729 | .931 | 270 | -.5846 | | |
| 26 | .231 | 120 | -.5461 | .331 | 40 | -.5843 | .731 | 180 | -.5307 | 1.631 | 0 | -.0364 | 1.131 | 270 | -.6049 | | |
| 27 | .231 | 110 | -.5540 | .331 | 30 | -.5855 | .731 | 90 | -.5995 | 2.131 | 180 | -.2165 | 1.631 | 270 | -.3706 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 7 POINT 173 ALPHA 12 MACH .819 Q 648.166 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4467 | .231 | 100 | -.5720 | .331 | 20 | -.5621 | .731 | 0 | -.4903 | 2.131 | 90 | -.2798 | | |
| 2 | .161 | 170 | -.4492 | .231 | 90 | -.5799 | .331 | 10 | -.5578 | .931 | 180 | -.5323 | 2.131 | 0 | -.0100 | | |
| 3 | .161 | 160 | -.4507 | .231 | 80 | -.5569 | .331 | 0 | -.5482 | .931 | 90 | -.5567 | 0.000 | | .9700 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4802 | .231 | 70 | -.5663 | .431 | 180 | -.4713 | .931 | 0 | -.3699 | 0.000 | | 1.0951 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4966 | .231 | 60 | -.5531 | .431 | 170 | -.4782 | 1.131 | 180 | -.5381 | 0.000 | | 1.1745 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5168 | .231 | 50 | -.5650 | .431 | 160 | -.4888 | 1.131 | 170 | -.5399 | 0.000 | | 1.1859 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5344 | .231 | 40 | -.5492 | .431 | 150 | -.4987 | 1.131 | 160 | -.5383 | 0.000 | | 1.1743 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5451 | .231 | 30 | -.5341 | .431 | 140 | -.5069 | 1.131 | 150 | -.5295 | 0.000 | | 1.1547 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5507 | .231 | 20 | -.5242 | .431 | 130 | -.5245 | 1.131 | 140 | -.5393 | 0.000 | | 1.1150 | .10 | 0.00 |
| 10 | .161 | 90 | -.5564 | .231 | 10 | -.5240 | .431 | 120 | -.5262 | 1.131 | 130 | -.5437 | 0.000 | | 1.0662 | .20 | 0.00 |
| 11 | .161 | 80 | -.5552 | .231 | 0 | -.5251 | .431 | 110 | -.5478 | 1.131 | 120 | -.5497 | 0.000 | | .9663 | .30 | 0.00 |
| 12 | .161 | 70 | -.5799 | .331 | 180 | -.4752 | .431 | 100 | -.5888 | 1.131 | 110 | -.5919 | 0.000 | | .8036 | .40 | 0.00 |
| 13 | .161 | 60 | -.5525 | .331 | 170 | -.4682 | .431 | 90 | -.5688 | 1.131 | 100 | -.5685 | 0.000 | | .6003 | .45 | 0.00 |
| 14 | .161 | 50 | -.5654 | .331 | 160 | -.4747 | .431 | 80 | -.5746 | 1.131 | 90 | -.5877 | 0.000 | | 1.1464 | .50 | .10 |
| 15 | .161 | 40 | -.5310 | .331 | 150 | -.4867 | .431 | 70 | -.5470 | 1.131 | 80 | -.5725 | 0.000 | | 1.1200 | .50 | .20 |
| 16 | .161 | 30 | -.5586 | .331 | 140 | -.5138 | .431 | 60 | -.5725 | 1.131 | 70 | -.4851 | 0.000 | | 1.0660 | .50 | .30 |
| 17 | .161 | 20 | -.5478 | .331 | 130 | -.5438 | .431 | 50 | -.5805 | 1.131 | 60 | -.4385 | 0.000 | | .9274 | .50 | .40 |
| 18 | .161 | 10 | -.5227 | .331 | 120 | -.5551 | .431 | 40 | -.5638 | 1.131 | 50 | -.3619 | 0.000 | | .7525 | .50 | .45 |
| 19 | .161 | 0 | -.5366 | .331 | 110 | -.5591 | .431 | 30 | -.5694 | 1.131 | 40 | -.2794 | .161 | 270 | -.5835 | | |
| 20 | .231 | 180 | -.4470 | .331 | 100 | -.5733 | .431 | 20 | -.5644 | 1.131 | 30 | -.2150 | .231 | 270 | -.5651 | | |
| 21 | .231 | 170 | -.4445 | .331 | 90 | -.5517 | .431 | 10 | -.5349 | 1.131 | 20 | -.2164 | .331 | 270 | -.5488 | | |
| 22 | .231 | 160 | -.4607 | .331 | 80 | -.5713 | .431 | 0 | -.5428 | 1.131 | 10 | -.1578 | .431 | 270 | -.5774 | | |
| 23 | .231 | 150 | -.4768 | .331 | 70 | -.5666 | .531 | 180 | -.4896 | 1.131 | 0 | -.1716 | .531 | 270 | -.5751 | | |
| 24 | .231 | 140 | -.5164 | .331 | 60 | -.5808 | .531 | 90 | -.5919 | .731 | 270 | -.5869 | | | | | |
| 25 | .231 | 130 | -.5261 | .331 | 50 | -.5724 | .531 | 0 | -.5437 | 1.631 | 90 | -.4167 | .931 | 270 | -.5949 | | |
| 26 | .231 | 120 | -.5204 | .331 | 40 | -.5521 | .731 | 180 | -.5108 | 1.631 | 0 | -.0198 | 1.131 | 270 | -.5744 | | |
| 27 | .231 | 110 | -.5292 | .331 | 30 | -.5575 | .731 | 90 | -.5532 | 2.131 | 180 | -.2620 | 1.631 | 270 | -.4144 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 7 POINT 170 ALPHA 6 MACH .821 Q 649.720 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CPI | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5922 | .231 | 100 | -.5168 | .331 | 20 | -.5910 | .731 | 0 | -.5721 | 2.131 | 90 | -.1324 | | |
| 2 | .161 | 170 | -.5398 | .231 | 90 | -.5313 | .331 | 10 | -.5881 | .931 | 180 | -.5264 | 2.131 | 0 | .0218 | | |
| 3 | .161 | 160 | -.4017 | .231 | 80 | -.5342 | .331 | 0 | -.5803 | .931 | 90 | -.5721 | 0.000 | | .8730 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4258 | .231 | 70 | -.5467 | .431 | 180 | -.4555 | .931 | 0 | -.5679 | 0.000 | | 1.0374 | -.40 | 1.00 |
| 5 | .161 | 140 | -.4400 | .231 | 60 | -.5673 | .431 | 170 | -.4594 | 1.131 | 180 | -.5454 | 0.000 | | 1.1396 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4444 | .231 | 50 | -.5582 | .431 | 160 | -.4594 | 1.131 | 170 | -.5412 | 0.000 | | 1.1920 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5072 | .231 | 40 | -.5621 | .431 | 150 | -.4680 | 1.131 | 160 | -.5380 | 0.000 | | 1.1872 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5335 | .231 | 30 | -.5265 | .431 | 140 | -.5001 | 1.131 | 150 | -.5396 | 0.000 | | 1.1833 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5531 | .231 | 20 | -.5663 | .431 | 130 | -.5322 | 1.131 | 140 | -.5671 | 0.000 | | 1.1555 | .10 | 0.00 |
| 10 | .161 | 90 | -.5534 | .231 | 10 | -.5412 | .431 | 120 | -.5413 | 1.131 | 130 | -.5629 | 0.000 | | 1.1124 | .20 | 0.00 |
| 11 | .161 | 80 | -.5877 | .231 | 0 | -.5150 | .431 | 110 | -.5603 | 1.131 | 120 | -.5647 | 0.000 | | 1.0469 | .30 | 0.00 |
| 12 | .161 | 70 | -.5788 | .331 | 180 | -.5373 | .431 | 100 | -.5595 | 1.131 | 110 | -.5655 | 0.000 | | .8966 | .40 | 0.00 |
| 13 | .161 | 60 | -.5940 | .331 | 170 | -.5957 | .431 | 90 | -.5843 | 1.131 | 100 | -.5914 | 0.000 | | .7073 | .45 | 0.00 |
| 14 | .161 | 50 | -.5766 | .331 | 160 | -.4011 | .431 | 80 | -.5737 | 1.131 | 90 | -.5771 | 0.000 | | 1.1131 | 0.00 | .10 |
| 15 | .161 | 40 | -.5533 | .331 | 150 | -.5933 | .431 | 70 | -.5847 | 1.131 | 80 | -.5791 | 0.000 | | 1.1447 | 0.00 | .20 |
| 16 | .161 | 30 | -.5681 | .331 | 140 | -.4473 | .431 | 60 | -.5322 | 1.131 | 70 | -.5815 | 0.000 | | 1.0382 | 0.00 | .30 |
| 17 | .161 | 20 | -.5645 | .331 | 130 | -.4751 | .431 | 50 | -.6131 | 1.131 | 60 | -.5872 | 0.000 | | .9567 | 0.00 | .40 |
| 18 | .161 | 10 | -.5590 | .331 | 120 | -.4731 | .431 | 40 | -.6029 | 1.131 | 50 | -.5581 | 0.000 | | .7795 | 0.00 | .45 |
| 19 | .161 | 0 | -.5120 | .331 | 110 | -.4990 | .431 | 30 | -.5989 | 1.131 | 40 | -.5414 | .161 | 270 | -.5855 | | |
| 20 | .231 | 180 | -.4013 | .331 | 100 | -.5240 | .431 | 20 | -.6218 | 1.131 | 30 | -.5312 | .231 | 270 | -.5805 | | |
| 21 | .231 | 170 | -.4013 | .331 | 90 | -.5179 | .431 | 10 | -.6001 | 1.131 | 20 | -.5055 | .331 | 270 | -.5942 | | |
| 22 | .231 | 160 | -.4197 | .331 | 80 | -.5460 | .431 | 0 | -.5999 | 1.131 | 10 | -.5049 | .431 | 270 | -.5838 | | |
| 23 | .231 | 150 | -.4335 | .331 | 70 | -.5510 | .531 | 180 | -.4832 | 1.131 | 0 | -.5192 | .531 | 270 | -.6008 | | |
| 24 | .231 | 140 | -.4481 | .331 | 60 | -.5700 | .531 | 90 | -.5947 | | | | .731 | 270 | -.5981 | | |
| 25 | .231 | 130 | -.4619 | .331 | 50 | -.5834 | .531 | 0 | -.6083 | 1.631 | 90 | -.4233 | .931 | 270 | -.5825 | | |
| 26 | .231 | 120 | -.4814 | .331 | 40 | -.5639 | .731 | 180 | -.5017 | 1.631 | 0 | -.1737 | 1.131 | 270 | -.5318 | | |
| 27 | .231 | 110 | -.5191 | .331 | 30 | -.5003 | .731 | 90 | -.5870 | 2.131 | 180 | -.2216 | 1.631 | 270 | -.5725 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 7 POINT 171 ALPHA 8 MACH .820 Q 648.749 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CPI | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4257 | .231 | 100 | -.5648 | .331 | 20 | -.6041 | .731 | 0 | -.5740 | 2.131 | 90 | -.1625 | | |
| 2 | .161 | 170 | -.4155 | .231 | 90 | -.5427 | .331 | 10 | -.5929 | .931 | 180 | -.5452 | 2.131 | 0 | .0345 | | |
| 3 | .161 | 160 | -.4233 | .231 | 80 | -.6020 | .331 | 0 | -.5920 | .931 | 90 | -.5998 | 0.000 | | .0095 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4521 | .231 | 70 | -.5909 | .431 | 180 | -.4588 | .931 | 0 | -.5354 | 0.000 | | 1.0538 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4938 | .231 | 60 | -.6192 | .431 | 170 | -.4742 | 1.131 | 180 | -.5462 | 0.000 | | 1.1475 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5091 | .231 | 50 | -.6073 | .431 | 160 | -.4778 | 1.131 | 170 | -.5366 | 0.000 | | 1.1342 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5223 | .231 | 40 | -.6169 | .431 | 150 | -.5029 | 1.131 | 160 | -.5526 | 0.000 | | 1.1398 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5527 | .231 | 30 | -.5814 | .431 | 140 | -.5053 | 1.131 | 150 | -.5390 | 0.000 | | 1.1761 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5734 | .231 | 20 | -.6024 | .431 | 130 | -.5415 | 1.131 | 140 | -.5722 | 0.000 | | 1.1405 | .10 | 0.00 |
| 10 | .161 | 90 | -.5850 | .231 | 10 | -.5744 | .431 | 120 | -.5600 | 1.131 | 130 | -.5712 | 0.000 | | 1.1020 | .20 | 0.00 |
| 11 | .161 | 80 | -.6007 | .231 | 0 | -.5523 | .431 | 110 | -.5650 | 1.131 | 120 | -.5750 | 0.000 | | 1.0244 | .30 | 0.00 |
| 12 | .161 | 70 | -.6054 | .331 | 180 | -.4498 | .431 | 100 | -.5904 | 1.131 | 110 | -.5450 | 0.000 | | .8677 | .40 | 0.00 |
| 13 | .161 | 60 | -.6315 | .331 | 170 | -.4757 | .431 | 90 | -.6222 | 1.131 | 100 | -.6138 | 0.000 | | .6686 | .45 | 0.00 |
| 14 | .161 | 50 | -.6047 | .331 | 160 | -.4477 | .431 | 80 | -.6020 | 1.131 | 90 | -.5808 | 0.000 | | 1.1738 | 0.00 | .10 |
| 15 | .161 | 40 | -.6210 | .331 | 150 | -.5022 | .431 | 70 | -.6235 | 1.131 | 80 | -.6320 | 0.000 | | 1.1382 | 0.00 | .20 |
| 16 | .161 | 30 | -.6323 | .331 | 140 | -.4992 | .431 | 60 | -.6078 | 1.131 | 70 | -.5710 | 0.000 | | 1.0836 | 0.00 | .30 |
| 17 | .161 | 20 | -.6313 | .331 | 130 | -.5241 | .431 | 50 | -.6204 | 1.131 | 60 | -.5129 | 0.000 | | .9507 | 0.00 | .40 |
| 18 | .161 | 10 | -.5617 | .331 | 120 | -.5514 | .431 | 40 | -.6133 | 1.131 | 50 | -.5115 | 0.000 | | .7723 | 0.00 | .45 |
| 19 | .161 | 0 | -.5434 | .331 | 110 | -.5303 | .431 | 30 | -.5983 | 1.131 | 40 | -.4493 | .161 | 270 | -.5837 | | |
| 20 | .231 | 180 | -.4374 | .331 | 100 | -.5778 | .431 | 20 | -.6291 | 1.131 | 30 | -.4142 | .231 | 270 | -.6153 | | |
| 21 | .231 | 170 | -.4420 | .331 | 90 | -.6033 | .431 | 10 | -.6245 | 1.131 | 20 | -.4215 | .331 | 270 | -.6230 | | |
| 22 | .231 | 160 | -.4459 | .331 | 80 | -.6101 | .431 | 0 | -.6033 | 1.131 | 10 | -.3538 | .431 | 270 | -.6162 | | |
| 23 | .231 | 150 | -.4843 | .331 | 70 | -.6225 | .531 | 180 | -.5090 | 1.131 | 0 | -.4302 | .531 | 270 | -.6315 | | |
| 24 | .231 | 140 | -.4677 | .331 | 60 | -.6135 | .531 | 90 | -.6018 | | | | .731 | 270 | -.6091 | | |
| 25 | .231 | 130 | -.5414 | .331 | 50 | -.6345 | .531 | 0 | -.6322 | 1.631 | 90 | -.3414 | .931 | 270 | -.6235 | | |
| 26 | .231 | 120 | -.5291 | .331 | 40 | -.6058 | .731 | 180 | -.5200 | 1.631 | 0 | -.0758 | 1.131 | 270 | -.5930 | | |
| 27 | .231 | 110 | -.5530 | .331 | 30 | -.6009 | .731 | 90 | -.5953 | 2.131 | 180 | -.2194 | 1.631 | 270 | -.5373 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 7 POINT 176 ALPHA 13 MACH .819 Q 648.560 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4530 | .231 | 100 | -.5050 | .331 | 20 | -.5304 | .731 | 0 | .0542 | 2.131 | 90 | -.0183 | | |
| 2 | .161 | 170 | -.4514 | .231 | 90 | -.4823 | .331 | 10 | -.5116 | .931 | 180 | -.4937 | 2.131 | 0 | .0110 | | |
| 3 | .161 | 160 | -.4348 | .231 | 80 | -.4829 | .331 | 0 | -.4867 | .931 | 90 | -.5339 | 0.000 | | 1.0614 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4710 | .231 | 70 | -.5046 | .431 | 180 | -.4719 | .931 | 0 | -.5333 | 0.000 | | 1.1520 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4708 | .231 | 60 | -.4964 | .431 | 170 | -.4779 | 1.131 | 180 | -.5205 | 0.000 | | 1.1873 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4820 | .231 | 50 | -.4772 | .431 | 160 | -.4648 | 1.131 | 170 | -.5025 | 0.000 | | 1.1874 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4849 | .231 | 40 | -.5053 | .431 | 150 | -.4985 | 1.131 | 160 | -.5415 | 0.000 | | 1.1524 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4850 | .231 | 30 | -.4885 | .431 | 140 | -.4754 | 1.131 | 150 | -.5213 | 0.000 | | 1.1274 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4906 | .231 | 20 | -.5184 | .431 | 130 | -.5054 | 1.131 | 140 | -.5371 | 0.000 | | 1.0598 | .10 | 0.00 |
| 10 | .161 | 90 | -.4943 | .231 | 10 | -.5095 | .431 | 120 | -.5129 | 1.131 | 130 | -.5485 | 0.000 | | .9996 | .20 | 0.00 |
| 11 | .161 | 80 | -.4937 | .231 | 0 | -.5089 | .431 | 110 | -.5012 | 1.131 | 120 | -.5359 | 0.000 | | .8930 | .30 | 0.00 |
| 12 | .161 | 70 | -.4978 | .331 | 180 | -.4517 | .431 | 100 | -.4900 | 1.131 | 110 | -.5459 | 0.000 | | .7165 | .40 | 0.00 |
| 13 | .161 | 60 | -.4818 | .331 | 170 | -.4427 | .431 | 90 | -.4740 | 1.131 | 100 | -.5481 | 0.000 | | .5181 | .45 | 0.00 |
| 14 | .161 | 50 | -.5177 | .331 | 160 | -.4843 | .431 | 80 | -.5106 | 1.131 | 90 | -.5477 | 0.000 | | 1.1119 | 0.00 | .10 |
| 15 | .161 | 40 | -.5002 | .331 | 150 | -.4825 | .431 | 70 | -.4944 | 1.131 | 80 | -.4813 | 0.000 | | 1.0813 | 0.00 | .20 |
| 16 | .161 | 30 | -.5205 | .331 | 140 | -.5097 | .431 | 60 | -.5158 | 1.131 | 70 | -.4070 | 0.000 | | 1.0300 | 0.00 | .30 |
| 17 | .161 | 20 | -.4766 | .331 | 130 | -.4682 | .431 | 50 | -.4769 | 1.131 | 60 | -.3005 | 0.000 | | .9071 | 0.00 | .40 |
| 18 | .161 | 10 | -.4737 | .331 | 120 | -.4567 | .431 | 40 | -.4806 | 1.131 | 50 | -.2164 | 0.000 | | .7440 | 0.00 | .45 |
| 19 | .161 | 0 | -.4982 | .331 | 110 | -.4822 | .431 | 30 | -.4738 | 1.131 | 40 | -.1584 | .161 | 270 | -.4847 | | |
| 20 | .231 | 180 | -.4608 | .331 | 100 | -.5025 | .431 | 20 | -.4434 | 1.131 | 30 | -.0905 | .231 | 270 | -.5029 | | |
| 21 | .231 | 170 | -.4581 | .331 | 90 | -.5016 | .431 | 10 | -.3708 | 1.131 | 20 | -.0445 | .331 | 270 | -.4930 | | |
| 22 | .231 | 160 | -.4584 | .331 | 80 | -.4901 | .431 | 0 | -.3389 | 1.131 | 10 | -.0205 | .431 | 270 | -.4942 | | |
| 23 | .231 | 150 | -.4708 | .331 | 70 | -.4910 | .531 | 180 | -.4740 | 1.131 | 0 | -.0215 | .531 | 270 | -.4913 | | |
| 24 | .231 | 140 | -.4687 | .331 | 60 | -.4854 | .531 | 90 | -.4829 | | | | .731 | 270 | -.5010 | | |
| 25 | .231 | 130 | -.4741 | .331 | 50 | -.4842 | .531 | 0 | -.1465 | 1.631 | 90 | -.5583 | .931 | 270 | -.5358 | | |
| 26 | .231 | 120 | -.4970 | .331 | 40 | -.4978 | .731 | 180 | -.4934 | 1.631 | 0 | -.0107 | 1.131 | 270 | -.5313 | | |
| 27 | .231 | 110 | -.5094 | .331 | 30 | -.5276 | .731 | 90 | -.5266 | 2.131 | 180 | -.3305 | 1.631 | 270 | -.5853 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 7 POINT 177 ALPHA 20 MACH .821 Q 649.910 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4427 | .231 | 100 | -.4880 | .331 | 20 | -.4241 | .731 | 0 | .0865 | 2.131 | 90 | -.6692 | | |
| 2 | .161 | 170 | -.4505 | .231 | 90 | -.4860 | .331 | 10 | -.3703 | .931 | 180 | -.5193 | 2.131 | 0 | .0351 | | |
| 3 | .161 | 160 | -.4551 | .231 | 80 | -.4905 | .331 | 0 | -.3249 | .931 | 90 | -.5251 | 0.000 | | 1.0717 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4648 | .231 | 70 | -.4764 | .431 | 180 | -.4594 | .931 | 0 | .0096 | 0.000 | | 1.1658 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4781 | .231 | 60 | -.4846 | .431 | 170 | -.4859 | 1.131 | 180 | -.5035 | 0.000 | | 1.1938 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4853 | .231 | 50 | -.5136 | .431 | 160 | -.5042 | 1.131 | 170 | -.5480 | 0.000 | | 1.1727 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4837 | .231 | 40 | -.5237 | .431 | 150 | -.5048 | 1.131 | 160 | -.5464 | 0.000 | | 1.1468 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4923 | .231 | 30 | -.5254 | .431 | 140 | -.4979 | 1.131 | 150 | -.5392 | 0.000 | | 1.0982 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4843 | .231 | 20 | -.5050 | .431 | 130 | -.4744 | 1.131 | 140 | -.5075 | 0.000 | | 1.0441 | .10 | 0.00 |
| 10 | .161 | 90 | -.4848 | .231 | 10 | -.5351 | .431 | 120 | -.4892 | 1.131 | 130 | -.5223 | 0.000 | | .9684 | .20 | 0.00 |
| 11 | .161 | 80 | -.4992 | .231 | 0 | -.5459 | .431 | 110 | -.5090 | 1.131 | 120 | -.5653 | 0.000 | | .8571 | .30 | 0.00 |
| 12 | .161 | 70 | -.4687 | .331 | 180 | -.4706 | .431 | 100 | -.4883 | 1.131 | 110 | -.5847 | 0.000 | | .6779 | .40 | 0.00 |
| 13 | .161 | 60 | -.4783 | .331 | 170 | -.4404 | .431 | 90 | -.4675 | 1.131 | 100 | -.5761 | 0.000 | | .4890 | .45 | 0.00 |
| 14 | .161 | 50 | -.5148 | .331 | 160 | -.5022 | .431 | 80 | -.5134 | 1.131 | 90 | -.5673 | 0.000 | | 1.0883 | 0.00 | .10 |
| 15 | .161 | 40 | -.5103 | .331 | 150 | -.5016 | .431 | 70 | -.5015 | 1.131 | 80 | -.5195 | 0.000 | | 1.0665 | 0.00 | .20 |
| 16 | .161 | 30 | -.5087 | .331 | 140 | -.4792 | .431 | 60 | -.5044 | 1.131 | 70 | -.4232 | 0.000 | | 1.0161 | 0.00 | .30 |
| 17 | .161 | 20 | -.5073 | .331 | 130 | -.4785 | .431 | 50 | -.5244 | 1.131 | 60 | -.3350 | 0.000 | | .8888 | 0.00 | .40 |
| 18 | .161 | 10 | -.5090 | .331 | 120 | -.4826 | .431 | 40 | -.4529 | 1.131 | 50 | -.2576 | 0.000 | | .7211 | 0.00 | .45 |
| 19 | .161 | 0 | -.5144 | .331 | 110 | -.4799 | .431 | 30 | -.1889 | 1.131 | 40 | -.1551 | .161 | 270 | -.4843 | | |
| 20 | .231 | 180 | -.4740 | .331 | 100 | -.5093 | .431 | 20 | -.1326 | 1.131 | 30 | -.0953 | .231 | 270 | -.5063 | | |
| 21 | .231 | 170 | -.4566 | .331 | 90 | -.4939 | .431 | 10 | .0181 | 1.131 | 20 | -.0391 | .331 | 270 | -.4831 | | |
| 22 | .231 | 160 | -.4621 | .331 | 80 | -.4844 | .431 | 0 | .0036 | 1.131 | 10 | -.0048 | .431 | 270 | -.4945 | | |
| 23 | .231 | 150 | -.4920 | .331 | 70 | -.5036 | .531 | 180 | -.5006 | 1.131 | 0 | .0038 | .531 | 270 | -.5148 | | |
| 24 | .231 | 140 | -.4804 | .331 | 60 | -.4880 | .531 | 90 | -.4956 | | | | .731 | 270 | -.5326 | | |
| 25 | .231 | 130 | -.4972 | .331 | 50 | -.4971 | .531 | 0 | .1556 | 1.631 | 90 | -.6393 | .931 | 270 | -.5457 | | |
| 26 | .231 | 120 | -.4956 | .331 | 40 | -.5400 | .731 | 180 | -.5144 | 1.631 | 0 | .0090 | 1.131 | 270 | -.5749 | | |
| 27 | .231 | 110 | -.5179 | .331 | 30 | -.5396 | .731 | 90 | -.5511 | 2.131 | 180 | -.3322 | 1.631 | 270 | -.6543 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN | | 7 POINT 174 | | ALPHA 14 | | MACH .822 | | Q 650.735 | | MODEL FLAT FACE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|-------------|------|----------|--|-----------|--|-----------|--|-----------------|--|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | | | | | | | |
| 1 | .161 | 180 | -.5143 | .231 | 100 | -.6081 | .331 | 20 | -.5955 | .731 | 0 | -.4154 | 2.131 | 50 | -.4910 | | | | | | | | | | | | |
| 2 | .161 | 170 | -.5243 | .231 | 90 | -.6181 | .331 | 10 | -.6029 | .931 | 180 | -.6102 | 2.131 | 0 | -.9666 | | | | | | | | | | | | |
| 3 | .161 | 160 | -.5149 | .231 | 80 | -.6001 | .331 | 0 | -.5914 | .931 | 90 | -.6261 | 0.000 | | -.9911 | -.45 | 0.00 | | | | | | | | | | |
| 4 | .161 | 150 | -.4899 | .231 | 70 | -.5466 | .431 | 180 | -.4987 | .931 | 0 | -.2527 | 0.000 | | 1.1195 | -.40 | 0.00 | | | | | | | | | | |
| 5 | .161 | 140 | -.5050 | .231 | 60 | -.5459 | .431 | 170 | -.4961 | 1.131 | 180 | -.5414 | 0.000 | | 1.1846 | -.30 | 0.00 | | | | | | | | | | |
| 6 | .161 | 130 | -.5111 | .231 | 50 | -.5541 | .431 | 160 | -.5237 | 1.131 | 170 | -.5664 | 0.000 | | 1.1984 | -.20 | 0.00 | | | | | | | | | | |
| 7 | .161 | 120 | -.5035 | .231 | 40 | -.5362 | .431 | 150 | -.5133 | 1.131 | 160 | -.5546 | 0.000 | | 1.1766 | -.10 | 0.00 | | | | | | | | | | |
| 8 | .161 | 110 | -.5267 | .231 | 30 | -.5190 | .431 | 140 | -.5129 | 1.131 | 150 | -.5433 | 0.000 | | 1.1454 | 0.00 | 0.00 | | | | | | | | | | |
| 9 | .161 | 100 | -.5179 | .231 | 20 | -.5249 | .431 | 130 | -.5316 | 1.131 | 140 | -.5686 | 0.000 | | 1.1018 | .10 | 0.00 | | | | | | | | | | |
| 10 | .161 | 90 | -.5132 | .231 | 10 | -.5058 | .431 | 120 | -.5239 | 1.131 | 130 | -.5371 | 0.000 | | 1.3405 | .20 | 0.00 | | | | | | | | | | |
| 11 | .161 | 80 | -.5172 | .231 | 0 | -.4702 | .431 | 110 | -.4993 | 1.131 | 120 | -.5260 | 0.000 | | .9508 | .30 | 0.00 | | | | | | | | | | |
| 12 | .161 | 70 | -.5242 | .331 | 180 | -.4442 | .431 | 100 | -.5294 | 1.131 | 110 | -.5578 | 0.000 | | .7779 | .40 | 0.00 | | | | | | | | | | |
| 13 | .161 | 60 | -.5152 | .331 | 170 | -.4407 | .431 | 90 | -.5158 | 1.131 | 100 | -.5437 | 0.000 | | .7779 | .45 | 0.00 | | | | | | | | | | |
| 14 | .161 | 50 | -.4874 | .331 | 160 | -.4365 | .431 | 80 | -.4466 | 1.131 | 90 | -.5304 | 0.000 | | 1.1373 | 0.00 | .10 | | | | | | | | | | |
| 15 | .161 | 40 | -.5048 | .331 | 150 | -.4687 | .431 | 70 | -.5095 | 1.131 | 80 | -.5178 | 0.000 | | 1.1084 | 0.00 | .20 | | | | | | | | | | |
| 16 | .161 | 30 | -.4761 | .331 | 140 | -.4637 | .431 | 60 | -.4855 | 1.131 | 70 | -.4473 | 0.000 | | 1.0632 | 0.00 | .30 | | | | | | | | | | |
| 17 | .161 | 20 | -.4951 | .331 | 130 | -.4875 | .431 | 50 | -.5103 | 1.131 | 60 | -.3467 | 0.000 | | .9270 | 0.00 | .40 | | | | | | | | | | |
| 18 | .161 | 10 | -.5360 | .331 | 120 | -.5373 | .431 | 40 | -.5578 | 1.131 | 50 | -.2495 | 0.000 | | .7509 | 0.00 | .45 | | | | | | | | | | |
| 19 | .161 | 0 | -.5206 | .331 | 110 | -.5392 | .431 | 30 | -.5398 | 1.131 | 40 | -.1912 | .161 | 270 | -.5487 | | | | | | | | | | | | |
| 20 | .231 | 180 | -.4836 | .331 | 100 | -.5664 | .431 | 20 | -.5596 | 1.131 | 30 | -.1292 | .231 | 270 | -.5655 | | | | | | | | | | | | |
| 21 | .231 | 170 | -.4861 | .331 | 90 | -.5471 | .431 | 10 | -.5427 | 1.131 | 20 | -.0946 | .331 | 270 | -.5487 | | | | | | | | | | | | |
| 22 | .231 | 160 | -.4856 | .331 | 80 | -.5518 | .431 | 0 | -.5377 | 1.131 | 10 | -.0462 | .431 | 270 | -.5574 | | | | | | | | | | | | |
| 23 | .231 | 150 | -.4795 | .331 | 70 | -.5264 | .531 | 180 | -.4842 | 1.131 | 0 | -.0219 | .531 | 270 | -.5311 | | | | | | | | | | | | |
| 24 | .231 | 140 | -.4858 | .331 | 60 | -.5190 | .531 | 90 | -.5279 | | | .731 | .270 | -.5452 | | | | | | | | | | | | | |
| 25 | .231 | 130 | -.4960 | .331 | 50 | -.5092 | .531 | 0 | -.4811 | 1.631 | 90 | -.4513 | .931 | 270 | -.5500 | | | | | | | | | | | | |
| 26 | .231 | 120 | -.5309 | .331 | 40 | -.5323 | .731 | 180 | -.5152 | 1.631 | 0 | -.0313 | 1.131 | 270 | -.5610 | | | | | | | | | | | | |
| 27 | .231 | 110 | -.5484 | .331 | 30 | -.5462 | .731 | 90 | -.5625 | 2.131 | 180 | -.2794 | 1.631 | 270 | -.4734 | | | | | | | | | | | | |

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| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN | | 7 POINT 175 | | ALPHA 16 | | MACH .820 | | Q 649.305 | | MODEL FLAT FACE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|-------------|------|----------|--|-----------|--|-----------|--|-----------------|--|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | | | | | | | |
| 1 | .161 | 180 | -.4514 | .231 | 100 | -.5165 | .331 | 20 | -.5217 | .731 | 0 | -.1261 | 2.131 | 90 | -.5361 | | | | | | | | | | | | |
| 2 | .161 | 170 | -.4597 | .231 | 90 | -.5297 | .331 | 10 | -.5306 | .931 | 180 | -.5405 | 2.131 | 0 | -.6091 | | | | | | | | | | | | |
| 3 | .161 | 160 | -.4642 | .231 | 80 | -.5146 | .331 | 0 | -.5171 | .931 | 90 | -.5530 | 0.000 | | 1.0144 | -.45 | 0.00 | | | | | | | | | | |
| 4 | .161 | 150 | -.4525 | .231 | 70 | -.4965 | .431 | 180 | -.4585 | .931 | 0 | -.0511 | 0.000 | | 1.1288 | -.40 | 0.00 | | | | | | | | | | |
| 5 | .161 | 140 | -.4746 | .231 | 60 | -.4938 | .431 | 170 | -.4629 | 1.131 | 180 | -.5109 | 0.000 | | 1.1779 | -.30 | 0.00 | | | | | | | | | | |
| 6 | .161 | 130 | -.4910 | .231 | 50 | -.5107 | .431 | 160 | -.4825 | 1.131 | 170 | -.5321 | 0.000 | | 1.1773 | -.20 | 0.00 | | | | | | | | | | |
| 7 | .161 | 120 | -.4883 | .231 | 40 | -.5166 | .431 | 150 | -.4992 | 1.131 | 160 | -.5387 | 0.000 | | 1.1592 | -.10 | 0.00 | | | | | | | | | | |
| 8 | .161 | 110 | -.5120 | .231 | 30 | -.5177 | .431 | 140 | -.5166 | 1.131 | 150 | -.5439 | 0.000 | | 1.1261 | 0.00 | 0.00 | | | | | | | | | | |
| 9 | .161 | 100 | -.5111 | .231 | 20 | -.4917 | .431 | 130 | -.4948 | 1.131 | 140 | -.5227 | 0.000 | | 1.0818 | .10 | 0.00 | | | | | | | | | | |
| 10 | .161 | 90 | -.4856 | .231 | 10 | -.5126 | .431 | 120 | -.5127 | 1.131 | 130 | -.5459 | 0.000 | | 1.0055 | .20 | 0.00 | | | | | | | | | | |
| 11 | .161 | 80 | -.5194 | .231 | 0 | -.5340 | .431 | 110 | -.5333 | 1.131 | 120 | -.5640 | 0.000 | | .9115 | .30 | 0.00 | | | | | | | | | | |
| 12 | .161 | 70 | -.5210 | .331 | 180 | -.4730 | .431 | 100 | -.5192 | 1.131 | 110 | -.5485 | 0.000 | | .7331 | .40 | 0.00 | | | | | | | | | | |
| 13 | .161 | 60 | -.4995 | .331 | 170 | -.4653 | .431 | 90 | -.5031 | 1.131 | 100 | -.5500 | 0.000 | | .5357 | .45 | 0.00 | | | | | | | | | | |
| 14 | .161 | 50 | -.5210 | .331 | 160 | -.4867 | .431 | 80 | -.5204 | 1.131 | 90 | -.5612 | 0.000 | | 1.1108 | 0.00 | .10 | | | | | | | | | | |
| 15 | .161 | 40 | -.4787 | .331 | 150 | -.4549 | .431 | 70 | -.4775 | 1.131 | 80 | -.4850 | 0.000 | | 1.0959 | 0.00 | .20 | | | | | | | | | | |
| 16 | .161 | 30 | -.4923 | .331 | 140 | -.4775 | .431 | 60 | -.4914 | 1.131 | 70 | -.3892 | 0.000 | | 1.0435 | 0.00 | .30 | | | | | | | | | | |
| 17 | .161 | 20 | -.5169 | .331 | 130 | -.5078 | .431 | 50 | -.5189 | 1.131 | 60 | -.3173 | 0.000 | | .9065 | 0.00 | .40 | | | | | | | | | | |
| 18 | .161 | 10 | -.5205 | .331 | 120 | -.5216 | .431 | 40 | -.5275 | 1.131 | 50 | -.2363 | 0.000 | | .7381 | 0.00 | .45 | | | | | | | | | | |
| 19 | .161 | 0 | -.5278 | .331 | 110 | -.5202 | .431 | 30 | -.5398 | 1.131 | 40 | -.1560 | .161 | 270 | -.5305 | | | | | | | | | | | | |
| 20 | .231 | 180 | -.4595 | .331 | 100 | -.5128 | .431 | 20 | -.5208 | 1.131 | 30 | -.0990 | .231 | 270 | -.5176 | | | | | | | | | | | | |
| 21 | .231 | 170 | -.4942 | .331 | 90 | -.4981 | .431 | 10 | -.4983 | 1.131 | 20 | -.0556 | .331 | 270 | -.5066 | | | | | | | | | | | | |
| 22 | .231 | 160 | -.4831 | .331 | 80 | -.5198 | .431 | 0 | -.5239 | 1.131 | 10 | -.0461 | .431 | 270 | -.5153 | | | | | | | | | | | | |
| 23 | .231 | 150 | -.4670 | .331 | 70 | -.5001 | .531 | 180 | -.4796 | 1.131 | 0 | -.0291 | .531 | 270 | -.5124 | | | | | | | | | | | | |
| 24 | .231 | 140 | -.5113 | .331 | 60 | -.5304 | .531 | 90 | -.5396 | | | .731 | .270 | -.5472 | | | | | | | | | | | | | |
| 25 | .231 | 130 | -.5140 | .331 | 50 | -.5218 | .531 | 0 | -.4121 | 1.631 | 90 | -.5201 | .931 | 270 | -.5611 | | | | | | | | | | | | |
| 26 | .231 | 120 | -.5034 | .331 | 40 | -.5055 | .731 | 180 | -.4907 | 1.631 | 0 | -.0289 | 1.131 | 270 | -.5512 | | | | | | | | | | | | |
| 27 | .231 | 110 | -.5379 | .331 | 30 | -.5078 | .731 | 90 | -.5144 | 2.131 | 180 | -.3357 | 1.631 | 270 | -.5163 | | | | | | | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 7 POINT 181 ALPHA 25 MACH .819 Q 647.468 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4776 | .231 | 100 | -.5169 | .331 | 20 | -.2545 | .731 | 0 | -.1503 | 2.131 | 90 | -.6531 | | |
| 2 | .161 | 170 | -.4672 | .231 | 90 | -.4978 | .331 | 10 | -.2844 | .931 | 180 | -.5484 | 2.131 | 0 | -.0969 | | |
| 3 | .161 | 160 | -.4699 | .231 | 80 | -.4825 | .331 | 0 | -.3068 | .931 | 90 | -.6609 | 0.000 | | 1.1312 | -.45 | 0.30 |
| 4 | .161 | 150 | -.4901 | .231 | 70 | -.4888 | .431 | 180 | -.4941 | .931 | 0 | -.0651 | 0.000 | | 1.1824 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5233 | .231 | 60 | -.5005 | .431 | 170 | -.4995 | 1.131 | 180 | -.5434 | 0.000 | | 1.1864 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4928 | .231 | 50 | -.6017 | .431 | 160 | -.5132 | 1.131 | 170 | -.5520 | 0.000 | | 1.1372 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5085 | .231 | 40 | -.4313 | .431 | 150 | -.5169 | 1.131 | 160 | -.5636 | 0.000 | | 1.0955 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5051 | .231 | 30 | -.0758 | .431 | 140 | -.5346 | 1.131 | 150 | -.5929 | 0.000 | | 1.0397 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4848 | .231 | 20 | .2409 | .431 | 130 | -.5327 | 1.131 | 140 | -.6047 | 0.000 | | -.9769 | .10 | 0.00 |
| 10 | .161 | 90 | -.4708 | .231 | 10 | .3640 | .431 | 120 | -.5163 | 1.131 | 130 | -.6111 | 0.000 | | -.8935 | .20 | 0.00 |
| 11 | .161 | 80 | -.4870 | .231 | 0 | .4171 | .431 | 110 | -.4980 | 1.131 | 120 | -.6593 | 0.000 | | -.7853 | .30 | 0.00 |
| 12 | .161 | 70 | -.4747 | .331 | 180 | -.4732 | .431 | 100 | -.5048 | 1.131 | 110 | -.7166 | 0.000 | | -.5939 | .40 | 0.00 |
| 13 | .161 | 60 | -.4711 | .331 | 170 | -.4814 | .431 | 90 | -.5076 | 1.131 | 100 | -.7250 | 0.000 | | -.3927 | .45 | 0.00 |
| 14 | .161 | 50 | -.5002 | .331 | 160 | -.4811 | .431 | 80 | -.5252 | 1.131 | 90 | -.6731 | 0.000 | | 1.0494 | 0.00 | .10 |
| 15 | .161 | 40 | -.5080 | .331 | 150 | -.4739 | .431 | 70 | -.4674 | 1.131 | 80 | -.6247 | 0.000 | | 1.0228 | 0.00 | .20 |
| 16 | .161 | 30 | -.5828 | .331 | 140 | -.5375 | .431 | 60 | -.1985 | 1.131 | 70 | -.5468 | 0.000 | | -.9656 | 0.00 | .30 |
| 17 | .161 | 20 | -.4178 | .331 | 130 | -.5309 | .431 | 50 | -.0683 | 1.131 | 60 | -.4319 | 0.000 | | -.8289 | 0.00 | .40 |
| 18 | .161 | 10 | -.4176 | .331 | 120 | -.5244 | .431 | 40 | -.0195 | 1.131 | 50 | -.3026 | 0.000 | | -.6772 | 0.00 | .45 |
| 19 | .161 | 0 | -.2841 | .331 | 110 | -.5390 | .431 | 30 | -.0796 | 1.131 | 40 | -.1949 | .161 | 270 | -.5220 | | |
| 20 | .231 | 180 | -.4848 | .331 | 100 | -.5116 | .431 | 20 | -.0218 | 1.131 | 30 | -.0873 | .231 | 270 | -.5098 | | |
| 21 | .231 | 170 | -.4803 | .331 | 90 | -.5016 | .431 | 10 | -.2121 | 1.131 | 20 | -.0164 | .331 | 270 | -.4939 | | |
| 22 | .231 | 160 | -.5101 | .331 | 80 | -.5231 | .431 | 0 | -.2052 | 1.131 | 10 | -.0382 | .431 | 270 | -.5301 | | |
| 23 | .231 | 150 | -.4692 | .331 | 70 | -.5643 | .531 | 180 | -.5165 | 1.131 | 0 | -.0861 | .531 | 270 | -.5660 | | |
| 24 | .231 | 140 | -.5092 | .331 | 60 | -.4995 | .531 | 90 | -.5713 | | | -.731 | 270 | -.5984 | | | |
| 25 | .231 | 130 | -.5193 | .331 | 50 | -.1592 | .531 | 0 | -.1805 | 1.631 | 90 | -.8545 | .931 | 270 | -.6360 | | |
| 26 | .231 | 120 | -.5237 | .331 | 40 | -.0985 | .731 | 180 | -.5483 | 1.631 | 0 | -.0987 | 1.131 | 270 | -.7097 | | |
| 27 | .231 | 110 | -.5314 | .331 | 30 | -.1905 | .731 | 90 | -.5780 | 2.131 | 180 | -.3657 | 1.631 | 270 | -.8435 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 7 POINT 182 ALPHA 0 MACH .819 Q 647.914 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4395 | .231 | 100 | -.4503 | .331 | 20 | -.4600 | .731 | 0 | -.4697 | 2.131 | 90 | -.0472 | | |
| 2 | .161 | 170 | -.4357 | .231 | 90 | -.4348 | .331 | 10 | -.4478 | .931 | 180 | -.4627 | 2.131 | 0 | -.3452 | | |
| 3 | .161 | 160 | -.4631 | .231 | 80 | -.4479 | .331 | 0 | -.4725 | .931 | 90 | -.4909 | 0.000 | | -.8002 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4500 | .231 | 70 | -.4402 | .431 | 180 | -.4619 | .931 | 0 | -.4803 | 0.000 | | -.9682 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4404 | .231 | 60 | -.4361 | .431 | 170 | -.4563 | 1.131 | 180 | -.5009 | 0.000 | | 1.1036 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4379 | .231 | 50 | -.4528 | .431 | 160 | -.4619 | 1.131 | 170 | -.4951 | 0.000 | | 1.1590 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4301 | .231 | 40 | -.4375 | .431 | 150 | -.4468 | 1.131 | 160 | -.4829 | 0.000 | | 1.1794 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4260 | .231 | 30 | -.4131 | .431 | 140 | -.4150 | 1.131 | 150 | -.4633 | 0.000 | | 1.1904 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4103 | .231 | 20 | -.4096 | .431 | 130 | -.4235 | 1.131 | 140 | -.4647 | 0.000 | | 1.1369 | .10 | 0.00 |
| 10 | .161 | 90 | -.4107 | .231 | 10 | -.4283 | .431 | 120 | -.4282 | 1.131 | 130 | -.4657 | 0.000 | | 1.1575 | .20 | 0.00 |
| 11 | .161 | 80 | -.4069 | .231 | 0 | -.3969 | .431 | 110 | -.4152 | 1.131 | 120 | -.4657 | 0.000 | | 1.1075 | .30 | 0.00 |
| 12 | .161 | 70 | -.3968 | .331 | 180 | -.4048 | .431 | 100 | -.4070 | 1.131 | 110 | -.4489 | 0.000 | | -.9765 | .40 | 0.00 |
| 13 | .161 | 60 | -.4024 | .331 | 170 | -.4242 | .431 | 90 | -.4262 | 1.131 | 100 | -.4557 | 0.000 | | -.7917 | .45 | 0.00 |
| 14 | .161 | 50 | -.4134 | .331 | 160 | -.4192 | .431 | 80 | -.4264 | 1.131 | 90 | -.4707 | 0.000 | | 1.1809 | 0.00 | .10 |
| 15 | .161 | 40 | -.4190 | .331 | 150 | -.4258 | .431 | 70 | -.4397 | 1.131 | 80 | -.4747 | 0.000 | | 1.1571 | 0.00 | .20 |
| 16 | .161 | 30 | -.4303 | .331 | 140 | -.4427 | .431 | 60 | -.4484 | 1.131 | 70 | -.4867 | 0.000 | | 1.0993 | 0.00 | .30 |
| 17 | .161 | 20 | -.4249 | .331 | 130 | -.4244 | .431 | 50 | -.4336 | 1.131 | 60 | -.4747 | 0.000 | | -.9666 | 0.00 | .40 |
| 18 | .161 | 10 | -.4235 | .331 | 120 | -.4231 | .431 | 40 | -.4391 | 1.131 | 50 | -.4781 | 0.000 | | -.7899 | 0.00 | .45 |
| 19 | .161 | 0 | -.4128 | .331 | 110 | -.4193 | .431 | 30 | -.4216 | 1.131 | 40 | -.4785 | .161 | 270 | -.4221 | | |
| 20 | .231 | 180 | -.4213 | .331 | 100 | -.4355 | .431 | 20 | -.4426 | 1.131 | 30 | -.4781 | .231 | 270 | -.4299 | | |
| 21 | .231 | 170 | -.4384 | .331 | 90 | -.4283 | .431 | 10 | -.4526 | 1.131 | 20 | -.4803 | .331 | 270 | -.4392 | | |
| 22 | .231 | 160 | -.4292 | .331 | 80 | -.4461 | .431 | 0 | -.4347 | 1.131 | 10 | -.4793 | .431 | 270 | -.4409 | | |
| 23 | .231 | 150 | -.4204 | .331 | 70 | -.4310 | .531 | 180 | -.4362 | 1.131 | 0 | -.4705 | .531 | 270 | -.4376 | | |
| 24 | .231 | 140 | -.4301 | .331 | 60 | -.4386 | .531 | 90 | -.4536 | | | -.731 | 270 | -.4626 | | | |
| 25 | .231 | 130 | -.4181 | .331 | 50 | -.4294 | .531 | 0 | -.4586 | 1.631 | 90 | -.4729 | .931 | 270 | -.4698 | | |
| 26 | .231 | 120 | -.4330 | .331 | 40 | -.4307 | .731 | 180 | -.4548 | 1.631 | 0 | -.2015 | 1.131 | 270 | -.4812 | | |
| 27 | .231 | 110 | -.4134 | .331 | 30 | -.4312 | .731 | 90 | -.4486 | 2.131 | 180 | -.3317 | 1.631 | 270 | -.4713 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4251 | .231 | 100 | -.4767 | .331 | 20 | -.0437 | .731 | 0 | .0985 | 2.131 | 90 | -.7491 | | |
| 2 | .161 | 170 | -.4544 | .231 | 90 | -.4859 | .331 | 10 | .0910 | .931 | 180 | -.5245 | 2.131 | 0 | .0561 | | |
| 3 | .161 | 160 | -.4657 | .231 | 80 | -.4948 | .331 | 0 | .0881 | .931 | 90 | -.5332 | 0.000 | 0 | 1.0943 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4789 | .231 | 70 | -.4959 | .431 | 180 | -.4996 | .931 | 0 | .0230 | 0.000 | 0 | 1.1639 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4659 | .231 | 60 | -.4812 | .431 | 170 | -.4750 | 1.131 | 180 | -.5259 | 0.000 | 0 | 1.1874 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4828 | .231 | 50 | -.4809 | .431 | 160 | -.4788 | 1.131 | 170 | -.5213 | 0.000 | 0 | 1.1585 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4821 | .231 | 40 | -.5402 | .431 | 150 | -.5125 | 1.131 | 160 | -.5446 | 0.000 | 0 | 1.1242 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5035 | .231 | 30 | -.5705 | .431 | 140 | -.5273 | 1.131 | 150 | -.5686 | 0.000 | 0 | 1.0707 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4994 | .231 | 20 | -.5031 | .431 | 130 | -.5073 | 1.131 | 140 | -.5368 | 0.000 | 0 | 1.0135 | .10 | 0.00 |
| 10 | .161 | 90 | -.4942 | .231 | 10 | -.4655 | .431 | 120 | -.5092 | 1.131 | 130 | -.5625 | 0.000 | 0 | .9348 | .20 | 0.00 |
| 11 | .161 | 80 | -.4677 | .231 | 0 | -.4210 | .431 | 110 | -.5031 | 1.131 | 120 | -.5841 | 0.000 | 0 | .8347 | .30 | 0.00 |
| 12 | .161 | 70 | -.4999 | .331 | 180 | -.4832 | .431 | 100 | -.5117 | 1.131 | 110 | -.6432 | 0.000 | 0 | .6443 | .40 | 0.00 |
| 13 | .161 | 60 | -.4801 | .331 | 170 | -.4749 | .431 | 90 | -.4931 | 1.131 | 100 | -.6220 | 0.000 | 0 | .4486 | .45 | 0.00 |
| 14 | .161 | 50 | -.5055 | .331 | 160 | -.4918 | .431 | 80 | -.5086 | 1.131 | 90 | -.6142 | 0.000 | 0 | 1.0765 | 0.00 | .10 |
| 15 | .161 | 40 | -.5089 | .331 | 150 | -.4771 | .431 | 70 | -.5238 | 1.131 | 80 | -.5666 | 0.000 | 0 | 1.0455 | 0.00 | .20 |
| 16 | .161 | 30 | -.5250 | .331 | 140 | -.4900 | .431 | 60 | -.5223 | 1.131 | 70 | -.4632 | 0.000 | 0 | .9986 | 0.00 | .30 |
| 17 | .161 | 20 | -.5662 | .331 | 130 | -.5305 | .431 | 50 | -.3310 | 1.131 | 60 | -.3886 | 0.000 | 0 | .8575 | 0.00 | .40 |
| 18 | .161 | 10 | -.5578 | .331 | 120 | -.4941 | .431 | 40 | -.0784 | 1.131 | 50 | -.2579 | 0.000 | 0 | .7161 | 0.00 | .45 |
| 19 | .161 | 0 | -.5028 | .331 | 110 | -.4918 | .431 | 30 | .0962 | 1.131 | 40 | -.1731 | .161 | 270 | -.4764 | | |
| 20 | .231 | 180 | -.4305 | .331 | 100 | -.4690 | .431 | 20 | .1223 | 1.131 | 30 | -.0727 | .231 | 270 | -.4657 | | |
| 21 | .231 | 170 | -.4724 | .331 | 90 | -.4916 | .431 | 10 | .2379 | 1.131 | 20 | -.0025 | .331 | 270 | -.4924 | | |
| 22 | .231 | 160 | -.4771 | .331 | 80 | -.4677 | .431 | 0 | .2463 | 1.131 | 10 | .0268 | .431 | 270 | -.4976 | | |
| 23 | .231 | 150 | -.4791 | .331 | 70 | -.5043 | .531 | 180 | -.5200 | 1.131 | 0 | .0282 | .531 | 270 | -.5210 | | |
| 24 | .231 | 140 | -.4952 | .331 | 60 | -.5083 | .531 | 90 | -.5175 | | | .731 | 270 | -.5641 | | | |
| 25 | .231 | 130 | -.4901 | .331 | 50 | -.5475 | .531 | 0 | .1675 | 1.631 | 90 | -.7090 | .931 | 270 | -.5539 | | |
| 26 | .231 | 120 | -.4970 | .331 | 40 | -.4201 | .731 | 180 | -.5173 | 1.631 | 0 | .6272 | 1.131 | 270 | -.6076 | | |
| 27 | .231 | 110 | -.4601 | .331 | 30 | -.1595 | .731 | 90 | -.5469 | 2.131 | 180 | -.3201 | 1.631 | 270 | -.6880 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4601 | .231 | 100 | -.5042 | .331 | 20 | .2910 | .731 | 0 | .1286 | 2.131 | 90 | -.8382 | | |
| 2 | .161 | 170 | -.4740 | .231 | 90 | -.5092 | .331 | 10 | .2972 | .931 | 180 | -.5384 | 2.131 | 0 | .0860 | | |
| 3 | .161 | 160 | -.4895 | .231 | 80 | -.4986 | .331 | 0 | .3216 | .931 | 90 | -.5670 | 0.000 | 0 | 1.1223 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5044 | .231 | 70 | -.4977 | .431 | 180 | -.5021 | .931 | 0 | .0635 | 0.000 | 0 | 1.1883 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4934 | .231 | 60 | -.4789 | .431 | 170 | -.4373 | 1.131 | 180 | -.5272 | 0.000 | 0 | 1.1964 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5114 | .231 | 50 | -.6048 | .431 | 160 | -.5334 | 1.131 | 170 | -.5642 | 0.000 | 0 | 1.1517 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5075 | .231 | 40 | -.5650 | .431 | 150 | -.5132 | 1.131 | 160 | -.5492 | 0.000 | 0 | 1.1065 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5021 | .231 | 30 | -.3782 | .431 | 140 | -.5292 | 1.131 | 150 | -.5606 | 0.000 | 0 | 1.0608 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5121 | .231 | 20 | -.1185 | .431 | 130 | -.5390 | 1.131 | 140 | -.5835 | 0.000 | 0 | .9893 | .10 | 0.00 |
| 10 | .161 | 90 | -.4951 | .231 | 10 | .0995 | .431 | 120 | -.5030 | 1.131 | 130 | -.5721 | 0.000 | 0 | .9263 | .20 | 0.00 |
| 11 | .161 | 80 | -.4949 | .231 | 0 | .0771 | .431 | 110 | -.5072 | 1.131 | 120 | -.5249 | 0.000 | 0 | .8025 | .30 | 0.00 |
| 12 | .161 | 70 | -.4895 | .331 | 180 | -.4824 | .431 | 100 | -.5017 | 1.131 | 110 | -.6762 | 0.000 | 0 | .6160 | .40 | 0.00 |
| 13 | .161 | 60 | -.4833 | .331 | 170 | -.4631 | .431 | 90 | -.4803 | 1.131 | 100 | -.6860 | 0.000 | 0 | .4251 | .45 | 0.00 |
| 14 | .161 | 50 | -.5093 | .331 | 160 | -.5056 | .431 | 80 | -.5323 | 1.131 | 90 | -.6644 | 0.000 | 0 | 1.0479 | 0.00 | .10 |
| 15 | .161 | 40 | -.5345 | .331 | 150 | -.5332 | .431 | 70 | -.5554 | 1.131 | 80 | -.6165 | 0.000 | 0 | 1.0212 | 0.00 | .20 |
| 16 | .161 | 30 | -.6037 | .331 | 140 | -.5201 | .431 | 60 | -.3039 | 1.131 | 70 | -.5110 | 0.000 | 0 | .9796 | 0.00 | .30 |
| 17 | .161 | 20 | -.5734 | .331 | 130 | -.5273 | .431 | 50 | -.3839 | 1.131 | 60 | -.3928 | 0.000 | 0 | .8649 | 0.00 | .40 |
| 18 | .161 | 10 | -.4803 | .331 | 120 | -.4832 | .431 | 40 | .0562 | 1.131 | 50 | -.2598 | 0.000 | 0 | .6997 | 0.00 | .45 |
| 19 | .161 | 0 | -.5009 | .331 | 110 | -.5235 | .431 | 30 | .1112 | 1.131 | 40 | -.1608 | .161 | 270 | -.5014 | | |
| 20 | .231 | 180 | -.4591 | .331 | 100 | -.4860 | .431 | 20 | .0313 | 1.131 | 30 | -.0597 | .231 | 270 | -.4749 | | |
| 21 | .231 | 170 | -.4999 | .331 | 90 | -.5165 | .431 | 10 | .2047 | 1.131 | 20 | .0237 | .331 | 270 | -.5020 | | |
| 22 | .231 | 160 | -.5008 | .331 | 80 | -.5108 | .431 | 0 | .2029 | 1.131 | 10 | .0425 | .431 | 270 | -.5193 | | |
| 23 | .231 | 150 | -.4672 | .331 | 70 | -.4778 | .531 | 180 | -.4632 | 1.131 | 0 | .0864 | .531 | 270 | -.5018 | | |
| 24 | .231 | 140 | -.5057 | .331 | 60 | -.5800 | .531 | 90 | -.5444 | | | .731 | 270 | -.5575 | | | |
| 25 | .231 | 130 | -.5175 | .331 | 50 | -.3443 | .531 | 0 | .1743 | 1.631 | 90 | -.7690 | .931 | 270 | -.5860 | | |
| 26 | .231 | 120 | -.5350 | .331 | 40 | -.0110 | .731 | 180 | -.5467 | 1.631 | 0 | .0777 | 1.131 | 270 | -.6743 | | |
| 27 | .231 | 110 | -.4970 | .331 | 30 | -.2118 | .731 | 90 | -.5577 | 2.131 | 180 | -.3275 | 1.631 | 270 | -.7761 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 8 POINT 190 ALPHA -1 MACH .882 Q 703.907 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4528 | .231 | 100 | -.4675 | .331 | 20 | -.4234 | .731 | 0 | -.4487 | 2.131 | 90 | .0064 | | |
| 2 | .161 | 170 | -.4520 | .231 | 90 | -.4312 | .331 | 10 | -.4079 | .931 | 180 | -.4776 | 2.131 | 0 | -.3540 | | |
| 3 | .161 | 160 | -.4588 | .231 | 80 | -.4425 | .331 | 0 | -.4240 | .931 | 90 | -.4770 | 0.000 | | .8285 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4296 | .231 | 70 | -.4064 | .431 | 180 | -.4414 | .931 | 0 | -.4697 | 0.000 | | .9965 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4432 | .231 | 60 | -.4228 | .431 | 170 | -.4662 | 1.131 | 180 | -.4870 | 0.000 | | 1.1245 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4397 | .231 | 50 | -.4192 | .431 | 160 | -.4504 | 1.131 | 170 | -.4761 | 0.000 | | 1.1843 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4480 | .231 | 40 | -.4283 | .431 | 150 | -.4650 | 1.131 | 160 | -.4899 | 0.000 | | 1.2059 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4485 | .231 | 30 | -.4126 | .431 | 140 | -.4522 | 1.131 | 150 | -.4897 | 0.000 | | 1.2155 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4470 | .231 | 20 | -.4006 | .431 | 130 | -.4558 | 1.131 | 140 | -.4831 | 0.600 | | 1.2126 | -.10 | 0.00 |
| 10 | .161 | 90 | -.4404 | .231 | 10 | -.3968 | .431 | 120 | -.4416 | 1.131 | 130 | -.4791 | 0.000 | | 1.1932 | -.20 | 0.00 |
| 11 | .161 | 80 | -.4407 | .231 | 0 | -.4256 | .431 | 110 | -.4790 | 1.131 | 120 | -.5021 | 0.000 | | 1.1363 | -.30 | 0.00 |
| 12 | .161 | 70 | -.4288 | .331 | 180 | -.4556 | .431 | 100 | -.4496 | 1.131 | 110 | -.4820 | 0.000 | | 1.0129 | -.40 | 0.00 |
| 13 | .161 | 60 | -.4240 | .331 | 170 | -.4589 | .431 | 90 | -.4556 | 1.131 | 100 | -.4845 | 0.000 | | .8417 | -.45 | 0.00 |
| 14 | .161 | 50 | -.4168 | .331 | 160 | -.4460 | .431 | 80 | -.4449 | 1.131 | 90 | -.4774 | 0.600 | | 1.2057 | 0.00 | -.10 |
| 15 | .161 | 40 | -.3973 | .331 | 150 | -.4567 | .431 | 70 | -.4419 | 1.131 | 80 | -.4886 | 0.000 | | 1.1823 | 0.00 | -.20 |
| 16 | .161 | 30 | -.4122 | .331 | 140 | -.4608 | .431 | 60 | -.4362 | 1.131 | 70 | -.4899 | 0.000 | | 1.1288 | 0.00 | -.30 |
| 17 | .161 | 20 | -.4223 | .331 | 130 | -.4706 | .431 | 50 | -.4496 | 1.131 | 60 | -.5010 | 0.000 | | .9981 | 0.00 | -.40 |
| 18 | .161 | 10 | -.4231 | .331 | 120 | -.4751 | .431 | 40 | -.4492 | 1.131 | 50 | -.5069 | 0.000 | | .8264 | 0.00 | -.45 |
| 19 | .161 | 0 | -.3868 | .331 | 110 | -.4440 | .431 | 30 | -.4180 | 1.131 | 40 | -.4746 | .161 | 270 | -.4384 | | |
| 20 | .231 | 180 | -.4510 | .331 | 100 | -.4473 | .431 | 20 | -.4389 | 1.131 | 30 | -.4903 | .231 | 270 | -.4503 | | |
| 21 | .231 | 170 | -.4413 | .331 | 90 | -.4522 | .431 | 10 | -.4322 | 1.131 | 20 | -.4888 | .331 | 270 | -.4671 | | |
| 22 | .231 | 160 | -.4824 | .331 | 80 | -.4678 | .431 | 0 | -.4446 | 1.131 | 10 | -.5039 | .431 | 270 | -.4822 | | |
| 23 | .231 | 150 | -.4553 | .331 | 70 | -.4390 | .531 | 180 | -.4637 | 1.131 | 0 | -.4857 | .531 | 270 | -.4601 | | |
| 24 | .231 | 140 | -.4731 | .331 | 60 | -.4448 | .531 | 90 | -.4673 | | | | .731 | 270 | -.4835 | | |
| 25 | .231 | 130 | -.4731 | .331 | 50 | -.4389 | .531 | 0 | -.4375 | 1.631 | 90 | -.4820 | .931 | 270 | -.4869 | | |
| 26 | .231 | 120 | -.4577 | .331 | 40 | -.4217 | .731 | 180 | -.4705 | 1.631 | 0 | -.0922 | 1.131 | 270 | -.4897 | | |
| 27 | .231 | 110 | -.4671 | .331 | 30 | -.4183 | .731 | 90 | -.4712 | 2.131 | 180 | -.3349 | 1.631 | 270 | -.4767 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 8 POINT 191 ALPHA 0 MACH .882 Q 703.639 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4396 | .231 | 100 | -.4372 | .331 | 20 | -.4606 | .731 | 0 | -.4640 | 2.131 | 90 | -.0109 | | |
| 2 | .161 | 170 | -.4194 | .231 | 90 | -.4137 | .331 | 10 | -.4169 | .931 | 180 | -.4483 | 2.131 | 0 | -.3673 | | |
| 3 | .161 | 160 | -.4213 | .231 | 80 | -.4281 | .331 | 0 | -.4318 | .931 | 90 | -.4551 | 0.000 | | .8488 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4361 | .231 | 70 | -.4321 | .431 | 180 | -.4373 | .931 | 0 | -.4555 | 0.000 | | 1.0042 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4429 | .231 | 60 | -.4367 | .431 | 170 | -.4554 | 1.131 | 180 | -.4873 | 0.000 | | 1.1326 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4150 | .231 | 50 | -.4040 | .431 | 160 | -.4197 | 1.131 | 170 | -.4544 | 0.000 | | 1.1911 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4189 | .231 | 40 | -.4362 | .431 | 150 | -.4398 | 1.131 | 160 | -.4733 | 0.000 | | 1.2109 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4096 | .231 | 30 | -.3997 | .431 | 140 | -.4199 | 1.131 | 150 | -.4483 | 0.000 | | 1.2220 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4132 | .231 | 20 | -.4306 | .431 | 130 | -.4419 | 1.131 | 140 | -.4767 | 0.000 | | 1.2152 | -.10 | 0.00 |
| 10 | .161 | 90 | -.4276 | .231 | 10 | -.4106 | .431 | 120 | -.4210 | 1.131 | 130 | -.4584 | 0.000 | | 1.1924 | -.20 | 0.00 |
| 11 | .161 | 80 | -.4456 | .231 | 0 | -.4400 | .431 | 110 | -.4565 | 1.131 | 120 | -.4925 | 0.000 | | 1.1324 | -.30 | 0.00 |
| 12 | .161 | 70 | -.4116 | .331 | 180 | -.4338 | .431 | 100 | -.4244 | 1.131 | 110 | -.4606 | 0.000 | | 1.0083 | -.40 | 0.00 |
| 13 | .161 | 60 | -.4429 | .331 | 170 | -.4445 | .431 | 90 | -.4473 | 1.131 | 100 | -.4886 | 0.000 | | .8338 | -.45 | 0.00 |
| 14 | .161 | 50 | -.4403 | .331 | 160 | -.4561 | .431 | 80 | -.4519 | 1.131 | 90 | -.4831 | 0.000 | | 1.2095 | 0.00 | -.10 |
| 15 | .161 | 40 | -.4233 | .331 | 150 | -.4286 | .431 | 70 | -.4331 | 1.131 | 80 | -.4757 | 0.000 | | 1.1911 | 0.00 | -.20 |
| 16 | .161 | 30 | -.4177 | .331 | 140 | -.4280 | .431 | 60 | -.4276 | 1.131 | 70 | -.4706 | 0.000 | | 1.1324 | 0.00 | -.30 |
| 17 | .161 | 20 | -.4220 | .331 | 130 | -.4356 | .431 | 50 | -.4343 | 1.131 | 60 | -.4704 | 0.000 | | 1.0036 | 0.00 | -.40 |
| 18 | .161 | 10 | -.4323 | .331 | 120 | -.4361 | .431 | 40 | -.4418 | 1.131 | 50 | -.4772 | 0.000 | | .8367 | 0.00 | -.45 |
| 19 | .161 | 0 | -.4288 | .331 | 110 | -.4265 | .431 | 30 | -.4407 | 1.131 | 40 | -.4752 | .161 | 270 | -.4373 | | |
| 20 | .231 | 180 | -.4273 | .331 | 100 | -.4227 | .431 | 20 | -.4373 | 1.131 | 30 | -.4724 | .231 | 270 | -.4373 | | |
| 21 | .231 | 170 | -.4364 | .331 | 90 | -.4420 | .431 | 10 | -.4343 | 1.131 | 20 | -.4732 | .331 | 270 | -.4444 | | |
| 22 | .231 | 160 | -.4421 | .331 | 80 | -.4377 | .431 | 0 | -.4551 | 1.131 | 10 | -.4791 | .431 | 270 | -.4416 | | |
| 23 | .231 | 150 | -.4557 | .331 | 70 | -.4577 | .531 | 180 | -.4732 | 1.131 | 0 | -.5091 | .531 | 270 | -.4748 | | |
| 24 | .231 | 140 | -.4293 | .331 | 60 | -.4347 | .531 | 90 | -.4355 | | | | .731 | 270 | -.4601 | | |
| 25 | .231 | 130 | -.4260 | .331 | 50 | -.4318 | .531 | 0 | -.4393 | 1.631 | 90 | -.4676 | .931 | 270 | -.4589 | | |
| 26 | .231 | 120 | -.4517 | .331 | 40 | -.4521 | .731 | 180 | -.4723 | 1.631 | 0 | -.1904 | 1.131 | 270 | -.4987 | | |
| 27 | .231 | 110 | -.4338 | .331 | 30 | -.4384 | .731 | 90 | -.4528 | 2.131 | 180 | -.3936 | 1.631 | 270 | -.4839 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 86 ALPHA 2 MACH .608 Q 429.461 MODEL DUME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4316 | .231 | 100 | -.5146 | .331 | 20 | -.5694 | .731 | 0 | -.6226 | 2.131 | 90 | -.1441 | | |
| 2 | .161 | 170 | -.4219 | .231 | 90 | -.5195 | .331 | 10 | -.5504 | .931 | 180 | -.1312 | 2.131 | 0 | .0805 | | |
| 3 | .161 | 160 | -.4371 | .231 | 80 | -.5406 | .331 | 0 | -.5824 | .931 | 90 | -.5774 | 0.000 | | .5891 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4314 | .231 | 70 | -.5496 | .431 | 180 | -.4638 | .931 | 0 | -.3842 | 0.000 | | .6469 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4450 | .231 | 60 | -.5490 | .431 | 170 | -.4806 | 1.131 | 180 | -.5052 | 0.000 | | .9145 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4925 | .231 | 50 | -.5624 | .431 | 160 | -.4768 | 1.131 | 170 | -.4994 | 0.000 | | 1.0407 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4773 | .231 | 40 | -.5570 | .431 | 150 | -.4602 | 1.131 | 160 | -.5000 | 0.000 | | 1.0918 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5091 | .231 | 30 | -.5313 | .431 | 140 | -.4933 | 1.131 | 150 | -.5140 | 0.000 | | 1.1013 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5118 | .231 | 20 | -.5785 | .431 | 130 | -.4969 | 1.131 | 140 | -.5243 | 0.000 | | 1.0723 | .10 | 0.00 |
| 10 | .161 | 90 | -.4865 | .231 | 10 | -.5485 | .431 | 120 | -.4911 | 1.131 | 130 | -.5134 | 0.000 | | 1.0105 | .20 | 0.00 |
| 11 | .161 | 80 | -.5289 | .231 | 0 | -.5594 | .431 | 110 | -.5225 | 1.131 | 120 | -.5213 | 0.000 | | .8643 | .30 | 0.00 |
| 12 | .161 | 70 | -.5159 | .331 | 180 | -.4592 | .431 | 100 | -.5123 | 1.131 | 110 | -.5058 | 0.000 | | .6199 | .40 | 0.00 |
| 13 | .161 | 60 | -.5325 | .331 | 170 | -.4641 | .431 | 90 | -.5372 | 1.131 | 100 | -.5228 | 0.000 | | .5598 | .45 | 0.00 |
| 14 | .161 | 50 | -.5444 | .331 | 160 | -.4829 | .431 | 80 | -.5488 | 1.131 | 90 | -.5055 | 0.000 | | 1.0835 | 0.00 | .10 |
| 15 | .161 | 40 | -.5376 | .331 | 150 | -.4696 | .431 | 70 | -.5336 | 1.131 | 80 | -.5234 | 0.000 | | 1.0167 | 0.00 | .20 |
| 16 | .161 | 30 | -.5553 | .331 | 140 | -.4920 | .431 | 60 | -.5576 | 1.131 | 70 | -.5194 | 0.000 | | .8809 | 0.00 | .30 |
| 17 | .161 | 20 | -.5428 | .331 | 130 | -.4944 | .431 | 50 | -.5523 | 1.131 | 60 | -.5037 | 0.000 | | .6263 | 0.00 | .40 |
| 18 | .161 | 10 | -.5523 | .331 | 120 | -.4832 | .431 | 40 | -.5628 | 1.131 | 50 | -.4824 | 0.000 | | .5995 | 0.00 | .45 |
| 19 | .161 | 0 | -.5420 | .331 | 110 | -.4928 | .431 | 30 | -.5548 | 1.131 | 40 | -.4925 | .161 | 270 | -.5296 | | |
| 20 | .231 | 180 | -.4433 | .331 | 100 | -.5103 | .431 | 20 | -.5645 | 1.131 | 30 | -.4864 | .231 | 270 | -.5238 | | |
| 21 | .231 | 170 | -.4531 | .331 | 90 | -.5124 | .431 | 10 | -.5617 | 1.131 | 20 | -.4752 | .331 | 270 | -.5358 | | |
| 22 | .231 | 160 | -.4178 | .331 | 80 | -.5294 | .431 | 0 | -.5758 | 1.131 | 10 | -.4612 | .431 | 270 | -.5404 | | |
| 23 | .231 | 150 | -.4664 | .331 | 70 | -.5548 | .531 | 180 | -.5063 | 1.131 | 0 | -.4788 | .531 | 270 | -.5509 | | |
| 24 | .231 | 140 | -.4781 | .331 | 60 | -.5578 | .531 | 90 | -.5518 | | | -.731 | .731 | 270 | -.5727 | | |
| 25 | .231 | 130 | -.4561 | .331 | 50 | -.5406 | .531 | 0 | -.5667 | 1.631 | 90 | -.1685 | .931 | 270 | -.5730 | | |
| 26 | .231 | 120 | -.4912 | .331 | 40 | -.5651 | .731 | 180 | -.5151 | 1.631 | 0 | -.1391 | 1.131 | 270 | -.5183 | | |
| 27 | .231 | 110 | -.5053 | .331 | 30 | -.5627 | .731 | 90 | -.5813 | 2.131 | 180 | -.0496 | 1.631 | 270 | -.1604 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 87 ALPHA 4 MACH .609 Q 430.639 MODEL DUME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4258 | .231 | 100 | -.5624 | .331 | 20 | -.6234 | .731 | 0 | -.6607 | 2.131 | 90 | -.1433 | | |
| 2 | .161 | 170 | -.4437 | .231 | 90 | -.5793 | .331 | 10 | -.6492 | .931 | 180 | -.1431 | 2.131 | 0 | .0402 | | |
| 3 | .161 | 160 | -.4182 | .231 | 80 | -.5943 | .331 | 0 | -.6536 | .931 | 90 | -.6038 | 0.000 | | .6063 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4667 | .231 | 70 | -.6155 | .431 | 180 | -.4927 | .931 | 0 | -.4369 | 0.000 | | .6658 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4824 | .231 | 60 | -.6169 | .431 | 170 | -.4825 | 1.131 | 180 | -.4965 | 0.000 | | .9317 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4895 | .231 | 50 | -.6158 | .431 | 160 | -.4649 | 1.131 | 170 | -.4671 | 0.000 | | 1.0616 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5369 | .231 | 40 | -.6253 | .431 | 150 | -.4990 | 1.131 | 160 | -.4841 | 0.000 | | 1.1009 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5578 | .231 | 30 | -.6340 | .431 | 140 | -.5199 | 1.131 | 150 | -.5155 | 0.000 | | 1.1070 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5678 | .231 | 20 | -.6357 | .431 | 130 | -.5249 | 1.131 | 140 | -.4595 | 0.000 | | 1.0671 | .10 | 0.00 |
| 10 | .161 | 90 | -.5846 | .231 | 10 | -.6376 | .431 | 120 | -.5485 | 1.131 | 130 | -.5173 | 0.000 | | .9928 | .20 | 0.00 |
| 11 | .161 | 80 | -.6005 | .231 | 0 | -.6395 | .431 | 110 | -.5716 | 1.131 | 120 | -.5173 | 0.000 | | .8399 | .30 | 0.00 |
| 12 | .161 | 70 | -.6220 | .331 | 180 | -.4344 | .431 | 100 | -.5862 | 1.131 | 110 | -.5309 | 0.000 | | .5919 | .40 | 0.00 |
| 13 | .161 | 60 | -.6155 | .331 | 170 | -.4611 | .431 | 90 | -.5961 | 1.131 | 100 | -.4895 | 0.000 | | .5348 | .45 | 0.00 |
| 14 | .161 | 50 | -.6071 | .331 | 160 | -.4589 | .431 | 80 | -.5802 | 1.131 | 90 | -.4662 | 0.000 | | 1.0870 | 0.00 | .10 |
| 15 | .161 | 40 | -.6280 | .331 | 150 | -.4864 | .431 | 70 | -.6154 | 1.131 | 80 | -.4583 | 0.000 | | 1.0161 | 0.00 | .20 |
| 16 | .161 | 30 | -.6388 | .331 | 140 | -.5050 | .431 | 60 | -.6272 | 1.131 | 70 | -.4196 | 0.000 | | .8813 | 0.00 | .30 |
| 17 | .161 | 20 | -.6217 | .331 | 130 | -.4963 | .431 | 50 | -.6201 | 1.131 | 60 | -.3764 | 0.000 | | .6226 | 0.00 | .40 |
| 18 | .161 | 10 | -.6469 | .331 | 120 | -.5472 | .431 | 40 | -.6586 | 1.131 | 50 | -.3255 | 0.000 | | .5888 | 0.00 | .45 |
| 19 | .161 | 0 | -.6288 | .331 | 110 | -.5788 | .431 | 30 | -.6539 | 1.131 | 40 | -.3068 | .161 | 270 | -.5845 | | |
| 20 | .231 | 180 | -.4602 | .331 | 100 | -.5733 | .431 | 20 | -.6492 | 1.131 | 30 | -.2974 | .231 | 270 | -.5793 | | |
| 21 | .231 | 170 | -.4437 | .331 | 90 | -.5929 | .431 | 10 | -.6624 | 1.131 | 20 | -.2672 | .331 | 270 | -.5944 | | |
| 22 | .231 | 160 | -.4575 | .331 | 80 | -.6139 | .431 | 0 | -.6580 | 1.131 | 10 | -.2430 | .431 | 270 | -.5965 | | |
| 23 | .231 | 150 | -.4540 | .331 | 70 | -.5891 | .531 | 180 | -.4888 | 1.131 | 0 | -.3189 | .531 | 270 | -.6036 | | |
| 24 | .231 | 140 | -.4748 | .331 | 60 | -.6215 | .531 | 90 | -.6080 | | | .731 | .731 | 270 | -.6257 | | |
| 25 | .231 | 130 | -.5242 | .331 | 50 | -.6174 | .531 | 0 | -.6820 | 1.631 | 90 | -.0808 | .931 | 270 | -.6027 | | |
| 26 | .231 | 120 | -.5396 | .331 | 40 | -.6323 | .731 | 180 | -.5122 | 1.631 | 0 | -.1522 | 1.131 | 270 | -.4566 | | |
| 27 | .231 | 110 | -.5569 | .331 | 30 | -.6370 | .731 | 90 | -.6456 | 2.131 | 180 | -.0164 | 1.631 | 270 | -.0777 | | |

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| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 20 POINT 73 ALPHA 22 MACH .504 Q 319.163 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4748 | .231 | 100 | -.7248 | .331 | 20 | .0253 | .731 | 0 | .0968 | 2.131 | 90 | -.2891 | | |
| 2 | .161 | 170 | -.4791 | .231 | 90 | -.6902 | .331 | 10 | .0661 | .931 | 180 | -.3158 | 2.131 | 0 | .1365 | | |
| 3 | .161 | 160 | -.4919 | .231 | 80 | -.6520 | .331 | 0 | .0917 | .931 | 90 | -.5481 | 0.000 | | .8014 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5954 | .231 | 70 | -.7240 | .431 | 180 | -.6139 | .931 | 0 | -.4770 | 0.000 | | .9869 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6847 | .231 | 60 | -.5344 | .431 | 170 | -.5035 | 1.131 | 180 | -.4281 | 0.000 | | 1.0822 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6415 | .231 | 50 | -.3621 | .431 | 160 | -.6150 | 1.131 | 170 | -.5040 | 0.000 | | 1.0466 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7070 | .231 | 40 | -.2577 | .431 | 150 | -.6648 | 1.131 | 160 | -.4828 | 0.000 | | 1.0023 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7066 | .231 | 30 | -.1409 | .431 | 140 | -.6722 | 1.131 | 150 | -.4811 | 0.000 | | .9153 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7487 | .231 | 20 | -.0747 | .431 | 130 | -.6944 | 1.131 | 140 | -.5558 | 0.000 | | .7985 | .10 | 0.00 |
| 10 | .161 | 90 | -.7607 | .231 | 10 | -.0270 | .431 | 120 | -.7022 | 1.131 | 130 | -.5489 | 0.000 | | .6378 | .20 | 0.00 |
| 11 | .161 | 80 | -.7900 | .231 | 0 | -.0112 | .431 | 110 | -.6725 | 1.131 | 120 | -.5877 | 0.000 | | .4410 | .30 | 0.00 |
| 12 | .161 | 70 | -.8288 | .331 | 180 | -.5484 | .431 | 100 | -.6325 | 1.131 | 110 | -.6542 | 0.000 | | .2488 | .40 | 0.00 |
| 13 | .161 | 60 | -.8990 | .331 | 170 | -.5755 | .431 | 90 | -.6139 | 1.131 | 100 | -.6179 | 0.000 | | .0852 | .45 | 0.00 |
| 14 | .161 | 50 | -.7084 | .331 | 160 | -.5976 | .431 | 80 | -.5226 | 1.131 | 90 | -.6072 | 0.000 | | .8838 | 0.00 | .10 |
| 15 | .161 | 40 | -.6230 | .331 | 150 | -.5785 | .431 | 70 | -.4049 | 1.131 | 80 | -.5399 | 0.000 | | .8304 | 0.00 | .20 |
| 16 | .161 | 30 | -.5055 | .331 | 140 | -.6461 | .431 | 60 | -.3032 | 1.131 | 70 | -.4487 | 0.000 | | .7111 | 0.00 | .30 |
| 17 | .161 | 20 | -.4628 | .331 | 130 | -.6825 | .431 | 50 | -.2227 | 1.131 | 60 | -.3677 | 0.000 | | .4327 | 0.00 | .40 |
| 18 | .161 | 10 | -.4126 | .331 | 120 | -.6902 | .431 | 40 | -.1195 | 1.131 | 50 | -.2428 | 0.000 | | .3838 | 0.00 | .45 |
| 19 | .161 | 0 | -.4173 | .331 | 110 | -.6645 | .431 | 30 | -.0374 | 1.131 | 40 | -.1481 | .161 | 270 | -.7309 | | |
| 20 | .231 | 180 | -.5252 | .331 | 100 | -.6700 | .431 | 20 | .0309 | 1.131 | 30 | -.0415 | .231 | 270 | -.7437 | | |
| 21 | .231 | 170 | -.5501 | .331 | 90 | -.7284 | .431 | 10 | .0706 | 1.131 | 20 | .0164 | .331 | 270 | -.6866 | | |
| 22 | .231 | 160 | -.5446 | .331 | 80 | -.6094 | .431 | 0 | .0925 | 1.131 | 10 | .0813 | .431 | 270 | -.5930 | | |
| 23 | .231 | 150 | -.6335 | .331 | 70 | -.4767 | .531 | 180 | -.6480 | 1.131 | 0 | .0993 | .531 | 270 | -.5835 | | |
| 24 | .231 | 140 | -.6316 | .331 | 60 | -.3602 | .531 | 90 | -.5809 | | | .731 | 270 | -.5748 | | | |
| 25 | .231 | 130 | -.6145 | .331 | 50 | -.2158 | .531 | 0 | .1077 | 1.631 | 90 | -.5297 | .931 | 270 | -.5773 | | |
| 26 | .231 | 120 | -.6576 | .331 | 40 | -.1390 | .731 | 180 | -.6384 | 1.631 | 0 | -.2938 | 1.131 | 270 | -.6087 | | |
| 27 | .231 | 110 | -.7629 | .331 | 30 | -.0479 | .731 | 90 | -.6050 | 2.131 | 180 | -.1868 | 1.631 | 270 | -.5392 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 20 POINT 74 ALPHA 24 MACH .506 Q 320.768 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5396 | .231 | 100 | -.6786 | .331 | 20 | .0581 | .731 | 0 | .1403 | 2.131 | 90 | -.3419 | | |
| 2 | .161 | 170 | -.5290 | .231 | 90 | -.6812 | .331 | 10 | .1121 | .931 | 180 | -.3023 | 2.131 | 0 | .1624 | | |
| 3 | .161 | 160 | -.5032 | .231 | 80 | -.6384 | .331 | 0 | .1191 | .931 | 90 | -.6045 | 0.000 | | .8337 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6309 | .231 | 70 | -.6775 | .431 | 180 | -.6277 | .931 | 0 | -.5026 | 0.000 | | 1.0485 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5920 | .231 | 60 | -.4589 | .431 | 170 | -.6007 | 1.131 | 180 | -.5675 | 0.000 | | 1.0852 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6535 | .231 | 50 | -.2933 | .431 | 160 | -.6196 | 1.131 | 170 | -.5338 | 0.000 | | 1.0794 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6906 | .231 | 40 | -.1913 | .431 | 150 | -.6879 | 1.131 | 160 | -.5407 | 0.000 | | .9821 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7008 | .231 | 30 | -.0933 | .431 | 140 | -.7134 | 1.131 | 150 | -.5013 | 0.000 | | .8741 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6804 | .231 | 20 | -.0008 | .431 | 130 | -.6558 | 1.131 | 140 | -.6057 | 0.000 | | .7497 | .10 | 0.00 |
| 10 | .161 | 90 | -.7153 | .231 | 10 | .0427 | .431 | 120 | -.6687 | 1.131 | 130 | -.5639 | 0.000 | | .6025 | .20 | 0.00 |
| 11 | .161 | 80 | -.7230 | .231 | 0 | .0811 | .431 | 110 | -.6392 | 1.131 | 120 | -.6370 | 0.000 | | .4337 | .30 | 0.00 |
| 12 | .161 | 70 | -.6540 | .331 | 180 | -.5857 | .431 | 100 | -.6742 | 1.131 | 110 | -.7223 | 0.000 | | .1922 | .40 | 0.00 |
| 13 | .161 | 60 | -.7350 | .331 | 170 | -.5576 | .431 | 90 | -.5627 | 1.131 | 100 | -.6938 | 0.000 | | .0366 | .45 | 0.00 |
| 14 | .161 | 50 | -.6127 | .331 | 160 | -.5569 | .431 | 80 | -.4741 | 1.131 | 90 | -.6402 | 0.000 | | .8873 | 0.00 | .10 |
| 15 | .161 | 40 | -.5091 | .331 | 150 | -.5960 | .431 | 70 | -.4161 | 1.131 | 80 | -.5952 | 0.000 | | .8111 | 0.00 | .20 |
| 16 | .161 | 30 | -.4963 | .331 | 140 | -.6790 | .431 | 60 | -.3274 | 1.131 | 70 | -.5078 | 0.000 | | .6784 | 0.00 | .30 |
| 17 | .161 | 20 | -.3715 | .331 | 130 | -.6263 | .431 | 50 | -.2019 | 1.131 | 60 | -.3746 | 0.000 | | .4447 | 0.00 | .40 |
| 18 | .161 | 10 | -.3609 | .331 | 120 | -.6786 | .431 | 40 | -.1018 | 1.131 | 50 | -.2431 | 0.000 | | .3725 | 0.00 | .45 |
| 19 | .161 | 0 | -.3600 | .331 | 110 | -.6135 | .431 | 30 | -.0113 | 1.131 | 40 | -.1354 | .161 | 270 | -.6657 | | |
| 20 | .231 | 180 | -.5385 | .331 | 100 | -.6552 | .431 | 20 | .0744 | 1.131 | 30 | -.0014 | .231 | 270 | -.6740 | | |
| 21 | .231 | 170 | -.5066 | .331 | 90 | -.6007 | .431 | 10 | .1117 | 1.131 | 20 | .0526 | .331 | 270 | -.6422 | | |
| 22 | .231 | 160 | -.5989 | .331 | 80 | -.5642 | .431 | 0 | .1294 | 1.131 | 10 | .1204 | .431 | 270 | -.5858 | | |
| 23 | .231 | 150 | -.6306 | .331 | 70 | -.4362 | .531 | 180 | -.6414 | 1.131 | 0 | .1435 | .531 | 270 | -.5294 | | |
| 24 | .231 | 140 | -.6749 | .331 | 60 | -.3382 | .531 | 90 | -.5053 | | | .731 | 270 | -.5648 | | | |
| 25 | .231 | 130 | -.7026 | .331 | 50 | -.2201 | .531 | 0 | .1232 | 1.631 | 90 | -.5870 | .931 | 270 | -.6242 | | |
| 26 | .231 | 120 | -.6058 | .331 | 40 | -.1119 | .731 | 180 | -.6211 | 1.631 | 0 | -.3255 | 1.131 | 270 | -.6427 | | |
| 27 | .231 | 110 | -.6659 | .331 | 30 | -.0103 | .731 | 90 | -.6159 | 2.131 | 180 | -.1277 | 1.631 | 270 | -.5858 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 75 ALPHA 26 MACH .505 Q 320.233 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5380 | .231 | 100 | -.6662 | .331 | 20 | .1015 | .731 | 0 | .1576 | 2.131 | 90 | -.3500 | | |
| 2 | .161 | 170 | -.5289 | .231 | 90 | -.6948 | .331 | 10 | .1570 | .931 | 180 | -.3326 | 2.131 | 0 | .1750 | | |
| 3 | .161 | 160 | -.5843 | .231 | 80 | -.7102 | .331 | 0 | .1666 | .931 | 90 | -.6568 | 0.000 | | .8628 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5529 | .231 | 70 | -.6150 | .431 | 180 | -.5888 | .931 | 0 | -.5514 | 0.000 | | 1.0432 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5937 | .231 | 60 | -.3978 | .431 | 170 | -.6243 | 1.131 | 180 | -.6019 | 0.000 | | 1.0688 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6018 | .231 | 50 | -.2553 | .431 | 160 | -.5981 | 1.131 | 170 | -.5783 | 0.000 | | 1.0002 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6578 | .231 | 40 | -.1367 | .431 | 150 | -.7165 | 1.131 | 160 | -.5864 | 0.000 | | .9345 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6014 | .231 | 30 | -.0034 | .431 | 140 | -.6036 | 1.131 | 150 | -.5848 | 0.000 | | .8318 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6626 | .231 | 20 | .0015 | .431 | 130 | -.6532 | 1.131 | 140 | -.5921 | 0.000 | | .6960 | .10 | 0.00 |
| 10 | .161 | 90 | -.6612 | .231 | 10 | .1014 | .431 | 120 | -.6684 | 1.131 | 130 | -.6222 | 0.000 | | .5094 | .20 | 0.00 |
| 11 | .161 | 80 | -.7676 | .231 | 0 | .1388 | .431 | 110 | -.6639 | 1.131 | 120 | -.6723 | 0.000 | | .3116 | .30 | 0.00 |
| 12 | .161 | 70 | -.8201 | .331 | 180 | -.5901 | .431 | 100 | -.6558 | 1.131 | 110 | -.7475 | 0.000 | | .1391 | .40 | 0.00 |
| 13 | .161 | 60 | -.6324 | .331 | 170 | -.5648 | .431 | 90 | -.5899 | 1.131 | 100 | -.7357 | 0.000 | | -.0120 | .45 | 0.00 |
| 14 | .161 | 50 | -.6021 | .331 | 160 | -.5897 | .431 | 80 | -.5197 | 1.131 | 90 | -.7386 | 0.000 | | .7963 | 0.00 | .10 |
| 15 | .161 | 40 | -.4815 | .331 | 150 | -.6010 | .431 | 70 | -.4305 | 1.131 | 80 | -.6613 | 0.000 | | .7538 | 0.00 | .20 |
| 16 | .161 | 30 | -.3951 | .331 | 140 | -.6340 | .431 | 60 | -.3332 | 1.131 | 70 | -.5726 | 0.000 | | .6097 | 0.00 | .30 |
| 17 | .161 | 20 | -.2397 | .331 | 130 | -.6567 | .431 | 50 | -.1885 | 1.131 | 60 | -.4176 | 0.000 | | .4185 | 0.00 | .40 |
| 18 | .161 | 10 | -.1673 | .331 | 120 | -.6226 | .431 | 40 | -.0916 | 1.131 | 50 | -.3098 | 0.000 | | .3573 | 0.00 | .45 |
| 19 | .161 | 0 | -.1833 | .331 | 110 | -.6673 | .431 | 30 | .0020 | 1.131 | 40 | -.1605 | .161 | 270 | -.7589 | | |
| 20 | .231 | 180 | -.5168 | .331 | 100 | -.6336 | .431 | 20 | .0837 | 1.131 | 30 | -.0450 | .231 | 270 | -.7110 | | |
| 21 | .231 | 170 | -.5857 | .331 | 90 | -.5959 | .431 | 10 | .1614 | 1.131 | 20 | -.0823 | .331 | 270 | -.6165 | | |
| 22 | .231 | 160 | -.5690 | .331 | 80 | -.5648 | .431 | 0 | .1781 | 1.131 | 10 | .1348 | .431 | 270 | -.5839 | | |
| 23 | .231 | 150 | -.5577 | .331 | 70 | -.4461 | .531 | 180 | -.5911 | 1.131 | 0 | .1409 | .531 | 270 | -.5460 | | |
| 24 | .231 | 140 | -.6218 | .331 | 60 | -.3293 | .531 | 90 | -.5922 | | | .731 | 270 | -.6722 | | | |
| 25 | .231 | 130 | -.6838 | .331 | 50 | -.2048 | .531 | 0 | .1596 | 1.631 | 90 | -.6910 | .931 | 270 | -.7065 | | |
| 26 | .231 | 120 | -.6459 | .331 | 40 | -.0924 | .731 | 180 | -.6880 | 1.631 | 0 | -.3663 | 1.131 | 270 | -.7482 | | |
| 27 | .231 | 110 | -.7191 | .331 | 30 | .0219 | .731 | 90 | -.6521 | 2.131 | 180 | -.1609 | 1.631 | 270 | -.7172 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 76 ALPHA 0 MACH .506 Q 321.123 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5433 | .231 | 100 | -.5051 | .331 | 20 | -.5226 | .731 | 0 | -.5701 | 2.131 | 90 | -.1428 | | |
| 2 | .161 | 170 | -.5073 | .231 | 90 | -.5131 | .331 | 10 | -.5381 | .931 | 180 | -.1470 | 2.131 | 0 | -.0658 | | |
| 3 | .161 | 160 | -.5193 | .231 | 80 | -.5299 | .331 | 0 | -.5333 | .931 | 90 | -.5730 | 0.000 | | .5492 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5073 | .231 | 70 | -.4814 | .431 | 180 | -.5303 | .931 | 0 | -.5308 | 0.000 | | .6007 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5008 | .231 | 60 | -.5226 | .431 | 170 | -.5414 | 1.131 | 180 | -.4931 | 0.000 | | .8543 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5226 | .231 | 50 | -.5328 | .431 | 160 | -.5469 | 1.131 | 170 | -.4444 | 0.000 | | .9996 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5088 | .231 | 40 | -.5058 | .431 | 150 | -.5558 | 1.131 | 160 | -.4732 | 0.000 | | 1.0589 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5193 | .231 | 30 | -.4952 | .431 | 140 | -.5613 | 1.131 | 150 | -.4659 | 0.000 | | 1.0852 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5063 | .231 | 20 | -.4978 | .431 | 130 | -.5314 | 1.131 | 140 | -.4918 | 0.000 | | 1.0618 | .10 | 0.00 |
| 10 | .161 | 90 | -.5230 | .231 | 10 | -.5197 | .431 | 120 | -.5477 | 1.131 | 130 | -.4399 | 0.000 | | .9988 | .20 | 0.00 |
| 11 | .161 | 80 | -.5139 | .231 | 0 | -.5263 | .431 | 110 | -.5373 | 1.131 | 120 | -.4862 | 0.000 | | .8481 | .30 | 0.00 |
| 12 | .161 | 70 | -.5063 | .331 | 180 | -.5442 | .431 | 100 | -.5432 | 1.131 | 110 | -.4651 | 0.000 | | .5891 | .40 | 0.00 |
| 13 | .161 | 60 | -.5052 | .331 | 170 | -.5241 | .431 | 90 | -.5381 | 1.131 | 100 | -.4886 | 0.000 | | .5171 | .45 | 0.00 |
| 14 | .161 | 50 | -.5252 | .331 | 160 | -.5409 | .431 | 80 | -.5561 | 1.131 | 90 | -.4732 | 0.000 | | 1.0572 | 0.00 | .10 |
| 15 | .161 | 40 | -.4900 | .331 | 150 | -.5292 | .431 | 70 | -.5207 | 1.131 | 80 | -.5000 | 0.000 | | .9930 | 0.00 | .20 |
| 16 | .161 | 30 | -.5052 | .331 | 140 | -.5387 | .431 | 60 | -.5491 | 1.131 | 70 | -.4687 | 0.000 | | .8530 | 0.00 | .30 |
| 17 | .161 | 20 | -.5157 | .331 | 130 | -.5613 | .431 | 50 | -.5333 | 1.131 | 60 | -.4703 | 0.000 | | .5961 | 0.00 | .40 |
| 18 | .161 | 10 | -.5059 | .331 | 120 | -.5387 | .431 | 40 | -.5307 | 1.131 | 50 | -.4586 | 0.000 | | .5558 | 0.00 | .45 |
| 19 | .161 | 0 | -.5208 | .331 | 110 | -.5000 | .431 | 30 | -.5373 | 1.131 | 40 | -.4716 | .161 | 270 | -.5172 | | |
| 20 | .231 | 180 | -.5422 | .331 | 100 | -.5559 | .431 | 20 | -.5477 | 1.131 | 30 | -.4632 | .231 | 270 | -.5214 | | |
| 21 | .231 | 170 | -.5252 | .331 | 90 | -.5197 | .431 | 10 | -.5307 | 1.131 | 20 | -.5336 | .331 | 270 | -.5485 | | |
| 22 | .231 | 160 | -.5266 | .331 | 80 | -.5307 | .431 | 0 | -.5329 | 1.131 | 10 | -.4878 | .431 | 270 | -.5658 | | |
| 23 | .231 | 150 | -.5201 | .331 | 70 | -.5190 | .531 | 180 | -.5466 | 1.131 | 0 | -.4931 | .531 | 270 | -.5465 | | |
| 24 | .231 | 140 | -.5244 | .331 | 60 | -.5270 | .531 | 90 | -.5466 | | | .731 | 270 | -.5843 | | | |
| 25 | .231 | 130 | -.4997 | .331 | 50 | -.5339 | .531 | 0 | -.5764 | 1.631 | 90 | -.1048 | .931 | 270 | -.5518 | | |
| 26 | .231 | 120 | -.5324 | .331 | 40 | -.5201 | .731 | 180 | -.5897 | 1.631 | 0 | -.1401 | 1.131 | 270 | -.4691 | | |
| 27 | .231 | 110 | -.5162 | .331 | 30 | -.5171 | .731 | 90 | -.5853 | 2.131 | 180 | .0420 | 1.631 | 270 | -.0769 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 69 ALPHA 14 MACH .506 Q 320.857 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/J |
| 1 | .161 | 180 | -.4951 | .231 | 100 | -.8802 | .331 | 20 | -.1830 | .731 | 0 | -.0400 | 2.131 | 90 | -.2549 | | |
| 2 | .161 | 170 | -.4692 | .231 | 90 | -.8126 | .331 | 10 | -.1638 | .931 | 180 | -.2259 | 2.131 | 0 | .0305 | | |
| 3 | .161 | 160 | -.5362 | .231 | 80 | -.9218 | .331 | 0 | -.1538 | .931 | 90 | -.3632 | 0.000 | | .5303 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5922 | .231 | 70 | -.9401 | .431 | 180 | -.5840 | .931 | 0 | -.3514 | 0.000 | | .7614 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6675 | .231 | 60 | -.9354 | .431 | 170 | -.6072 | 1.131 | 180 | -.3510 | 0.000 | | 1.0066 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7046 | .231 | 50 | -.8305 | .431 | 160 | -.6172 | 1.131 | 170 | -.3766 | 0.000 | | 1.0812 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7566 | .231 | 40 | -.6868 | .431 | 150 | -.6441 | 1.131 | 160 | -.3997 | 0.000 | | 1.0725 | -.10 | 0.00 |
| 8 | .161 | 110 | -.8334 | .231 | 30 | -.5077 | .431 | 140 | -.7184 | 1.131 | 150 | -.3433 | 0.000 | | 1.0070 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8632 | .231 | 20 | -.3973 | .431 | 130 | -.7508 | 1.131 | 140 | -.3380 | 0.000 | | .9221 | .10 | 0.00 |
| 10 | .161 | 90 | -.8890 | .231 | 10 | -.3323 | .431 | 120 | -.7516 | 1.131 | 130 | -.3790 | 0.000 | | .7993 | .20 | 0.00 |
| 11 | .161 | 80 | -1.0003 | .231 | 0 | -.3067 | .431 | 110 | -.8214 | 1.131 | 120 | -.3278 | 0.000 | | .6040 | .30 | 0.00 |
| 12 | .161 | 70 | -1.0742 | .331 | 180 | -.5545 | .431 | 100 | -.8099 | 1.131 | 110 | -.3052 | 0.000 | | .3823 | .40 | 0.00 |
| 13 | .161 | 60 | -1.0702 | .331 | 170 | -.5355 | .431 | 90 | -.7132 | 1.131 | 100 | -.3506 | 0.000 | | .2608 | .45 | 0.00 |
| 14 | .161 | 50 | -1.1658 | .331 | 160 | -.6097 | .431 | 80 | -.5924 | 1.131 | 90 | -.3201 | 0.000 | | .9897 | 0.00 | .10 |
| 15 | .161 | 40 | -1.0774 | .331 | 150 | -.6287 | .431 | 70 | -.4961 | 1.131 | 80 | -.3144 | 0.000 | | .9159 | 0.00 | .20 |
| 16 | .161 | 30 | -1.0149 | .331 | 140 | -.7131 | .431 | 60 | -.3543 | 1.131 | 70 | -.2604 | 0.000 | | .7692 | 0.00 | .30 |
| 17 | .161 | 20 | -.8446 | .331 | 130 | -.7369 | .431 | 50 | -.2539 | 1.131 | 60 | -.2125 | 0.000 | | .4734 | 0.00 | .40 |
| 18 | .161 | 10 | -.7613 | .331 | 120 | -.7585 | .431 | 40 | -.2033 | 1.131 | 50 | -.1715 | 0.000 | | .4260 | 0.00 | .45 |
| 19 | .161 | 0 | -.7119 | .331 | 110 | -.8122 | .431 | 30 | -.1446 | 1.131 | 40 | -.1037 | .161 | 270 | -.9303 | | |
| 20 | .231 | 180 | -.5027 | .331 | 100 | -.8177 | .431 | 20 | -.1283 | 1.131 | 30 | -.0704 | .231 | 270 | -.8892 | | |
| 21 | .231 | 170 | -.4816 | .331 | 90 | -.8308 | .431 | 10 | -.0877 | 1.131 | 20 | -.0233 | .331 | 270 | -.8550 | | |
| 22 | .231 | 160 | -.5529 | .331 | 80 | -.8020 | .431 | 0 | -.0877 | 1.131 | 10 | -.0136 | .431 | 270 | -.7166 | | |
| 23 | .231 | 150 | -.6355 | .331 | 70 | -.7098 | .531 | 180 | -.6434 | 1.131 | 0 | .0006 | .531 | 270 | -.5720 | | |
| 24 | .231 | 140 | -.6540 | .331 | 60 | -.5618 | .531 | 90 | -.5836 | | | | .731 | 270 | -.4271 | | |
| 25 | .231 | 130 | -.6940 | .331 | 50 | -.4079 | .531 | 0 | -.0593 | 1.631 | 90 | -.2604 | .931 | 270 | -.3814 | | |
| 26 | .231 | 120 | -.7810 | .331 | 40 | -.2694 | .731 | 180 | -.6116 | 1.631 | 0 | -.2405 | 1.131 | 270 | -.3422 | | |
| 27 | .231 | 110 | -.7955 | .331 | 30 | -.2237 | .731 | 90 | -.4473 | 2.131 | 180 | -.0091 | 1.631 | 270 | -.2640 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 70 ALPHA 16 MACH .505 Q 320.411 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/J |
| 1 | .161 | 180 | -.5093 | .231 | 100 | -.8639 | .331 | 20 | -.1352 | .731 | 0 | -.0201 | 2.131 | 90 | -.2644 | | |
| 2 | .161 | 170 | -.4961 | .231 | 90 | -.8679 | .331 | 10 | -.0930 | .931 | 180 | -.2340 | 2.131 | 0 | .0610 | | |
| 3 | .161 | 160 | -.5475 | .231 | 80 | -.8507 | .331 | 0 | -.0975 | .931 | 90 | -.4377 | 0.000 | | .5367 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6775 | .231 | 70 | -.9242 | .431 | 180 | -.6166 | .931 | 0 | -.3682 | 0.000 | | .8202 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6655 | .231 | 60 | -.8521 | .431 | 170 | -.6037 | 1.131 | 180 | -.3804 | 0.000 | | 1.0381 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7143 | .231 | 50 | -.7423 | .431 | 160 | -.6262 | 1.131 | 170 | -.3706 | 0.000 | | 1.0735 | -.20 | 0.00 |
| 7 | .161 | 120 | -.8091 | .231 | 40 | -.4773 | .431 | 150 | -.6880 | 1.131 | 160 | -.3881 | 0.000 | | 1.0768 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7817 | .231 | 30 | -.3800 | .431 | 140 | -.6883 | 1.131 | 150 | -.4434 | 0.000 | | .9976 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8593 | .231 | 20 | -.3068 | .431 | 130 | -.7430 | 1.131 | 140 | -.4092 | 0.000 | | .8949 | .10 | 0.00 |
| 10 | .161 | 90 | -.8207 | .231 | 10 | -.2548 | .431 | 120 | -.7719 | 1.131 | 130 | -.4003 | 0.000 | | .7711 | .20 | 0.00 |
| 11 | .161 | 80 | -.9905 | .231 | 0 | -.2548 | .431 | 110 | -.7819 | 1.131 | 120 | -.3905 | 0.000 | | .5693 | .30 | 0.00 |
| 12 | .161 | 70 | -1.0050 | .331 | 180 | -.5597 | .431 | 100 | -.7693 | 1.131 | 110 | -.4198 | 0.000 | | .3507 | .40 | 0.00 |
| 13 | .161 | 60 | -1.0713 | .331 | 170 | -.5436 | .431 | 90 | -.6953 | 1.131 | 100 | -.4259 | 0.000 | | .2141 | .45 | 0.00 |
| 14 | .161 | 50 | -1.1220 | .331 | 160 | -.6076 | .431 | 80 | -.5833 | 1.131 | 90 | -.4008 | 0.000 | | .9786 | 0.00 | .10 |
| 15 | .161 | 40 | -1.0149 | .331 | 150 | -.6684 | .431 | 70 | -.4532 | 1.131 | 80 | -.3661 | 0.000 | | .9044 | 0.00 | .20 |
| 16 | .161 | 30 | -.8142 | .331 | 140 | -.6962 | .431 | 60 | -.3278 | 1.131 | 70 | -.3092 | 0.000 | | .7587 | 0.00 | .30 |
| 17 | .161 | 20 | -.7165 | .331 | 130 | -.7522 | .431 | 50 | -.2387 | 1.131 | 60 | -.2470 | 0.000 | | .4530 | 0.00 | .40 |
| 18 | .161 | 10 | -.6925 | .331 | 120 | -.7943 | .431 | 40 | -.1866 | 1.131 | 50 | -.1852 | 0.000 | | .3981 | 0.00 | .45 |
| 19 | .161 | 0 | -.6717 | .331 | 110 | -.8170 | .431 | 30 | -.1322 | 1.131 | 40 | -.1267 | .161 | 270 | -.9333 | | |
| 20 | .231 | 180 | -.5042 | .331 | 100 | -.8269 | .431 | 20 | -.0856 | 1.131 | 30 | -.0655 | .231 | 270 | -.8388 | | |
| 21 | .231 | 170 | -.5449 | .331 | 90 | -.8273 | .431 | 10 | -.0598 | 1.131 | 20 | -.0299 | .331 | 270 | -.8512 | | |
| 22 | .231 | 160 | -.5726 | .331 | 80 | -.7489 | .431 | 0 | -.0546 | 1.131 | 10 | -.0128 | .431 | 270 | -.7106 | | |
| 23 | .231 | 150 | -.5843 | .331 | 70 | -.6098 | .531 | 180 | -.6284 | 1.131 | 0 | .0108 | .531 | 270 | -.5720 | | |
| 24 | .231 | 140 | -.6604 | .331 | 60 | -.5000 | .531 | 90 | -.6006 | | | | .731 | 270 | -.4595 | | |
| 25 | .231 | 130 | -.7065 | .331 | 50 | -.3291 | .531 | 0 | -.0361 | 1.631 | 90 | -.3373 | .931 | 270 | -.4318 | | |
| 26 | .231 | 120 | -.7959 | .331 | 40 | -.2376 | .731 | 180 | -.6192 | 1.631 | 0 | -.2661 | 1.131 | 270 | -.3869 | | |
| 27 | .231 | 110 | -.8258 | .331 | 30 | -.1845 | .731 | 90 | -.4587 | 2.131 | 180 | -.0055 | 1.631 | 270 | -.3246 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 65 ALPHA 6 MACH .506 Q 321.390 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4622 | .231 | 100 | -.6550 | .431 | 20 | -.8104 | .731 | 0 | -.3897 | 2.131 | 90 | -.1583 | | |
| 2 | .161 | 170 | -.4822 | .231 | 90 | -.6824 | .431 | 10 | -.8155 | .931 | 180 | -.1724 | 2.131 | 0 | .0041 | | |
| 3 | .161 | 160 | -.4619 | .231 | 80 | -.6842 | .431 | 0 | -.7997 | .931 | 90 | -.4723 | 0.000 | | .5471 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4993 | .231 | 70 | -.7046 | .431 | 180 | -.5070 | .931 | 0 | -.3945 | 0.000 | | .6433 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5287 | .231 | 60 | -.7094 | .431 | 170 | -.5243 | 1.131 | 180 | -.4505 | 0.000 | | .9144 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5770 | .231 | 50 | -.7331 | .431 | 160 | -.5468 | 1.131 | 170 | -.4237 | 0.000 | | 1.0383 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5868 | .231 | 40 | -.7287 | .431 | 150 | -.5358 | 1.131 | 160 | -.4282 | 0.000 | | 1.0761 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6162 | .231 | 30 | -.7630 | .431 | 140 | -.5737 | 1.131 | 150 | -.4383 | 0.000 | | 1.0617 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6529 | .231 | 20 | -.7652 | .431 | 130 | -.6036 | 1.131 | 140 | -.4553 | 0.000 | | 1.0259 | .10 | 0.00 |
| 10 | .161 | 90 | -.6812 | .231 | 10 | -.7849 | .431 | 120 | -.6261 | 1.131 | 130 | -.3856 | 0.000 | | .9219 | .20 | 0.00 |
| 11 | .161 | 80 | -.7077 | .231 | 0 | -.7834 | .431 | 110 | -.6637 | 1.131 | 120 | -.4189 | 0.000 | | .7766 | .30 | 0.00 |
| 12 | .161 | 70 | -.7066 | .331 | 180 | -.4744 | .431 | 100 | -.6718 | 1.131 | 110 | -.3543 | 0.000 | | .5208 | .40 | 0.00 |
| 13 | .161 | 60 | -.7310 | .331 | 170 | -.5101 | .431 | 90 | -.6869 | 1.131 | 100 | -.2924 | 0.000 | | .4714 | .45 | 0.00 |
| 14 | .161 | 50 | -.7295 | .331 | 160 | -.5393 | .431 | 80 | -.7263 | 1.131 | 90 | -.2442 | 0.000 | | 1.0366 | 0.00 | .10 |
| 15 | .161 | 40 | -.7190 | .331 | 150 | -.4999 | .431 | 70 | -.7171 | 1.131 | 80 | -.2142 | 0.000 | | .9807 | 0.00 | .20 |
| 16 | .161 | 30 | -.7379 | .331 | 140 | -.5400 | .431 | 60 | -.7448 | 1.131 | 70 | -.1323 | 0.000 | | .8363 | 0.00 | .30 |
| 17 | .161 | 20 | -.7651 | .331 | 130 | -.5780 | .431 | 50 | -.7735 | 1.131 | 60 | -.0800 | 0.000 | | .5599 | 0.00 | .40 |
| 18 | .161 | 10 | -.7524 | .331 | 120 | -.5944 | .431 | 40 | -.7735 | 1.131 | 50 | -.0581 | 0.000 | | .5179 | 0.00 | .45 |
| 19 | .161 | 0 | -.7597 | .331 | 110 | -.6101 | .431 | 30 | -.7879 | 1.131 | 40 | -.0066 | .161 | 270 | -.6632 | | |
| 20 | .231 | 180 | -.4394 | .331 | 100 | -.6506 | .431 | 20 | -.8148 | 1.131 | 30 | .0185 | .231 | 270 | -.6681 | | |
| 21 | .231 | 170 | -.4604 | .331 | 90 | -.6645 | .431 | 10 | -.8288 | 1.131 | 20 | .0359 | .331 | 270 | -.6734 | | |
| 22 | .231 | 160 | -.4335 | .331 | 80 | -.6714 | .431 | 0 | -.8100 | 1.131 | 10 | .0363 | .431 | 270 | -.6747 | | |
| 23 | .231 | 150 | -.4840 | .331 | 70 | -.6955 | .531 | 180 | -.5343 | 1.131 | 0 | .0319 | .531 | 270 | -.6948 | | |
| 24 | .231 | 140 | -.5047 | .331 | 60 | -.7115 | .531 | 90 | -.6821 | | | | .731 | 270 | -.6479 | | |
| 25 | .231 | 130 | -.5676 | .331 | 50 | -.7218 | .531 | 0 | -.7381 | 1.631 | 90 | -.0326 | .931 | 270 | -.4407 | | |
| 26 | .231 | 120 | -.5810 | .331 | 40 | -.7601 | .731 | 180 | -.5852 | 1.631 | 0 | -.1684 | 1.131 | 270 | -.2389 | | |
| 27 | .231 | 110 | -.6169 | .331 | 30 | -.7608 | .731 | 90 | -.6581 | 2.131 | 180 | -.0281 | 1.631 | 270 | -.0209 | | |

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OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 66 ALPHA 8 MACH .506 Q 321.390 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4677 | .231 | 100 | -.6966 | .431 | 20 | -.9121 | .731 | 0 | -.0164 | 2.131 | 90 | -.1784 | | |
| 2 | .161 | 170 | -.4633 | .231 | 90 | -.7167 | .431 | 10 | -.9243 | .931 | 180 | -.1708 | 2.131 | 0 | .0058 | | |
| 3 | .161 | 160 | -.4808 | .231 | 80 | -.7437 | .431 | 0 | -.9328 | .931 | 90 | -.3406 | 0.000 | | .5549 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5185 | .231 | 70 | -.7670 | .431 | 180 | -.5210 | .931 | 0 | -.3856 | 0.000 | | .6779 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5759 | .231 | 60 | -.7867 | .431 | 170 | -.5383 | 1.131 | 180 | -.3872 | 0.000 | | .9432 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6195 | .231 | 50 | -.8137 | .431 | 160 | -.5479 | 1.131 | 170 | -.4128 | 0.000 | | 1.0485 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6725 | .231 | 40 | -.8404 | .431 | 150 | -.5940 | 1.131 | 160 | -.4375 | 0.000 | | 1.0847 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6896 | .231 | 30 | -.8571 | .431 | 140 | -.6121 | 1.131 | 150 | -.4225 | 0.000 | | 1.0654 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7005 | .231 | 20 | -.8801 | .431 | 130 | -.6423 | 1.131 | 140 | -.4266 | 0.000 | | 1.0086 | .10 | 0.00 |
| 10 | .161 | 90 | -.7332 | .231 | 10 | -.9009 | .431 | 120 | -.6784 | 1.131 | 130 | -.3958 | 0.000 | | .9042 | .20 | 0.00 |
| 11 | .161 | 80 | -.7782 | .231 | 0 | -.9152 | .431 | 110 | -.7013 | 1.131 | 120 | -.3317 | 0.000 | | .7355 | .30 | 0.00 |
| 12 | .161 | 70 | -.7528 | .331 | 180 | -.4488 | .431 | 100 | -.6954 | 1.131 | 110 | -.3086 | 0.000 | | .5117 | .40 | 0.00 |
| 13 | .161 | 60 | -.8003 | .331 | 170 | -.4911 | .431 | 90 | -.7411 | 1.131 | 100 | -.2348 | 0.000 | | .4541 | .45 | 0.00 |
| 14 | .161 | 50 | -.7967 | .331 | 160 | -.4933 | .431 | 80 | -.7595 | 1.131 | 90 | -.2263 | 0.000 | | 1.0424 | 0.00 | .10 |
| 15 | .161 | 40 | -.8439 | .331 | 150 | -.5473 | .431 | 70 | -.8170 | 1.131 | 80 | -.1554 | 0.000 | | .9749 | 0.00 | .20 |
| 16 | .161 | 30 | -.8298 | .331 | 140 | -.5809 | .431 | 60 | -.8100 | 1.131 | 70 | -.1104 | 0.000 | | .8194 | 0.00 | .30 |
| 17 | .161 | 20 | -.8650 | .331 | 130 | -.6200 | .431 | 50 | -.8233 | 1.131 | 60 | -.0881 | 0.000 | | .5241 | 0.00 | .40 |
| 18 | .161 | 10 | -.8821 | .331 | 120 | -.6415 | .431 | 40 | -.8447 | 1.131 | 50 | -.0618 | 0.000 | | .5060 | 0.00 | .45 |
| 19 | .161 | 0 | -.9024 | .331 | 110 | -.6772 | .431 | 30 | -.8399 | 1.131 | 40 | -.0326 | .161 | 270 | -.7289 | | |
| 20 | .231 | 180 | -.4575 | .331 | 100 | -.7039 | .431 | 20 | -.8137 | 1.131 | 30 | -.0095 | .231 | 270 | -.7314 | | |
| 21 | .231 | 170 | -.4976 | .331 | 90 | -.7218 | .431 | 10 | -.8089 | 1.131 | 20 | -.0091 | .331 | 270 | -.7339 | | |
| 22 | .231 | 160 | -.4840 | .331 | 80 | -.7323 | .431 | 0 | -.7920 | 1.131 | 10 | .0112 | .431 | 270 | -.7425 | | |
| 23 | .231 | 150 | -.5171 | .331 | 70 | -.7787 | .531 | 180 | -.5446 | 1.131 | 0 | .0136 | .531 | 270 | -.7302 | | |
| 24 | .231 | 140 | -.5541 | .331 | 60 | -.7995 | .531 | 90 | -.7532 | | | | .731 | 270 | -.5912 | | |
| 25 | .231 | 130 | -.6231 | .331 | 50 | -.8422 | .531 | 0 | -.4860 | 1.631 | 90 | -.0704 | .931 | 270 | -.3400 | | |
| 26 | .231 | 120 | -.6364 | .331 | 40 | -.8655 | .731 | 180 | -.5756 | 1.631 | 0 | -.1801 | 1.131 | 270 | -.1936 | | |
| 27 | .231 | 110 | -.7008 | .331 | 30 | -.9057 | .731 | 90 | -.5999 | 2.131 | 180 | -.0237 | 1.631 | 270 | -.0826 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|--|-------|-----|------|
| PORT | X/D | | | PHI | | | CP1 | | | CP2 | | | CP3 | | | CP4 | | | MODEL | JMC | FACE |
| | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | |
| 1 | .161 | 180 | -.4807 | .231 | 100 | -.7491 | .331 | 20 | -.0844 | .731 | 0 | .0274 | 2.131 | 90 | -.2652 | | | | | | |
| 2 | .161 | 170 | -.5055 | .231 | 90 | -.7875 | .331 | 10 | -.0504 | .931 | 130 | -.3010 | 2.131 | 0 | .0807 | | | | | | |
| 3 | .161 | 160 | -.5444 | .231 | 80 | -.8039 | .331 | 0 | -.0342 | .931 | 90 | -.4560 | 0.000 | | .6508 | -.45 | 0.00 | | | | |
| 4 | .161 | 150 | -.6058 | .231 | 70 | -.8445 | .431 | 180 | -.6148 | .931 | 0 | -.3939 | 0.000 | | .8814 | -.40 | 0.00 | | | | |
| 5 | .161 | 140 | -.6655 | .231 | 60 | -.7418 | .431 | 170 | -.6133 | 1.131 | 180 | -.3907 | 0.000 | | 1.0425 | -.30 | 0.00 | | | | |
| 6 | .161 | 130 | -.6818 | .231 | 50 | -.5744 | .431 | 160 | -.6070 | 1.131 | 170 | -.4126 | 0.000 | | 1.0660 | -.20 | 0.00 | | | | |
| 7 | .161 | 120 | -.7700 | .231 | 40 | -.3585 | .431 | 150 | -.6807 | 1.131 | 160 | -.4016 | 0.000 | | 1.0409 | -.10 | 0.00 | | | | |
| 8 | .161 | 110 | -.7844 | .231 | 30 | -.2905 | .431 | 140 | -.7089 | 1.131 | 150 | -.4686 | 0.000 | | .9701 | 0.00 | 0.00 | | | | |
| 9 | .161 | 100 | -.7026 | .231 | 20 | -.2218 | .431 | 130 | -.7174 | 1.131 | 140 | -.4143 | 0.000 | | .8576 | .10 | 0.00 | | | | |
| 10 | .161 | 90 | -.8157 | .231 | 10 | -.1959 | .431 | 120 | -.7499 | 1.131 | 130 | -.4523 | 0.000 | | .7139 | .20 | 0.00 | | | | |
| 11 | .161 | 80 | -.8800 | .231 | 0 | -.1900 | .431 | 110 | -.7266 | 1.131 | 120 | -.4389 | 0.000 | | .5252 | .30 | 0.00 | | | | |
| 12 | .161 | 70 | -.9626 | .331 | 180 | -.5540 | .431 | 100 | -.7499 | 1.131 | 110 | -.4946 | 0.000 | | .2986 | .40 | 0.00 | | | | |
| 13 | .161 | 60 | -1.0095 | .331 | 170 | -.5467 | .431 | 90 | -.6750 | 1.131 | 100 | -.4958 | 0.000 | | .1573 | .45 | 0.00 | | | | |
| 14 | .161 | 50 | -.9979 | .331 | 160 | -.5638 | .431 | 80 | -.5472 | 1.131 | 90 | -.4653 | 0.000 | | .9425 | 0.00 | .10 | | | | |
| 15 | .161 | 40 | -.8211 | .331 | 150 | -.6541 | .431 | 70 | -.4555 | 1.131 | 80 | -.4373 | 0.000 | | .8823 | 0.00 | .20 | | | | |
| 16 | .161 | 30 | -.7153 | .331 | 140 | -.6574 | .431 | 60 | -.3228 | 1.131 | 70 | -.3594 | 0.000 | | .7386 | 0.00 | .30 | | | | |
| 17 | .161 | 20 | -.6644 | .331 | 130 | -.7180 | .431 | 50 | -.2305 | 1.131 | 60 | -.2673 | 0.000 | | .4506 | 0.00 | .40 | | | | |
| 18 | .161 | 10 | -.6255 | .331 | 120 | -.7056 | .431 | 40 | -.1715 | 1.131 | 50 | -.1979 | 0.000 | | .3975 | 0.00 | .45 | | | | |
| 19 | .161 | 0 | -.6124 | .331 | 110 | -.7612 | .431 | 30 | -.0906 | 1.131 | 40 | -.1118 | .161 | 270 | -.8244 | | | | | | |
| 20 | .231 | 180 | -.5095 | .331 | 100 | -.8050 | .431 | 20 | -.0522 | 1.131 | 30 | -.0562 | .231 | 270 | -.8271 | | | | | | |
| 21 | .231 | 170 | -.5476 | .331 | 90 | -.7940 | .431 | 10 | -.0035 | 1.131 | 20 | -.0063 | .331 | 270 | -.7477 | | | | | | |
| 22 | .231 | 160 | -.5458 | .331 | 80 | -.6673 | .431 | 0 | -.0043 | 1.131 | 10 | .0278 | .431 | 270 | -.6745 | | | | | | |
| 23 | .231 | 150 | -.6156 | .331 | 70 | -.5814 | .531 | 180 | -.6262 | 1.131 | 0 | .0481 | .531 | 270 | -.5900 | | | | | | |
| 24 | .231 | 140 | -.6833 | .331 | 60 | -.3735 | .531 | 90 | -.5819 | | | | .731 | 270 | -.5063 | | | | | | |
| 25 | .231 | 130 | -.7207 | .331 | 50 | -.2733 | .531 | 0 | .0157 | 1.631 | 90 | -.3617 | .931 | 270 | -.4772 | | | | | | |
| 26 | .231 | 120 | -.7753 | .331 | 40 | -.2050 | .731 | 180 | -.6259 | 1.631 | 0 | -.2677 | 1.131 | 270 | -.4648 | | | | | | |
| 27 | .231 | 110 | -.8015 | .331 | 30 | -.1294 | .731 | 90 | -.4878 | 2.131 | 180 | -.0075 | 1.631 | 270 | -.3734 | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|--|-------|-----|------|
| PORT | X/D | | | PHI | | | CP1 | | | CP2 | | | CP3 | | | CP4 | | | MODEL | JMC | FACE |
| | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | |
| 1 | .161 | 180 | -.5224 | .231 | 100 | -.7683 | .331 | 20 | -.0295 | .731 | 0 | .0661 | 2.131 | 90 | -.3102 | | | | | | |
| 2 | .161 | 170 | -.5158 | .231 | 90 | -.7625 | .331 | 10 | -.3088 | .931 | 130 | -.3056 | 2.131 | 0 | .0883 | | | | | | |
| 3 | .161 | 160 | -.5935 | .231 | 80 | -.8207 | .331 | 0 | .0182 | .931 | 90 | -.5299 | 0.000 | | .7197 | -.45 | 0.00 | | | | |
| 4 | .161 | 150 | -.6650 | .231 | 70 | -.8039 | .431 | 180 | -.5930 | .931 | 0 | -.4424 | 0.000 | | .9362 | -.40 | 0.00 | | | | |
| 5 | .161 | 140 | -.6760 | .231 | 60 | -.6639 | .431 | 170 | -.6138 | 1.131 | 180 | -.3870 | 0.000 | | 1.0601 | -.30 | 0.00 | | | | |
| 6 | .161 | 130 | -.6858 | .231 | 50 | -.4322 | .431 | 160 | -.6149 | 1.131 | 170 | -.4697 | 0.000 | | 1.0717 | -.20 | 0.00 | | | | |
| 7 | .161 | 120 | -.6986 | .231 | 40 | -.3193 | .431 | 150 | -.6538 | 1.131 | 160 | -.4461 | 0.000 | | 1.0275 | -.10 | 0.00 | | | | |
| 8 | .161 | 110 | -.7504 | .231 | 30 | -.2387 | .431 | 140 | -.7119 | 1.131 | 150 | -.4514 | 0.000 | | .9370 | 0.00 | 0.00 | | | | |
| 9 | .161 | 100 | -.8113 | .231 | 20 | -.1742 | .431 | 130 | -.7704 | 1.131 | 140 | -.4725 | 0.000 | | .8193 | .10 | 0.00 | | | | |
| 10 | .161 | 90 | -.9025 | .231 | 10 | -.1251 | .431 | 120 | -.8015 | 1.131 | 130 | -.4664 | 0.000 | | .6891 | .20 | 0.00 | | | | |
| 11 | .161 | 80 | -.8649 | .231 | 0 | -.0925 | .431 | 110 | -.7604 | 1.131 | 120 | -.5104 | 0.000 | | .4759 | .30 | 0.00 | | | | |
| 12 | .161 | 70 | -.9029 | .331 | 180 | -.5810 | .431 | 100 | -.7167 | 1.131 | 110 | -.5540 | 0.000 | | .2763 | .40 | 0.00 | | | | |
| 13 | .161 | 60 | -.9911 | .331 | 170 | -.5645 | .431 | 90 | -.6260 | 1.131 | 100 | -.5796 | 0.000 | | .1140 | .45 | 0.00 | | | | |
| 14 | .161 | 50 | -.8274 | .331 | 160 | -.5774 | .431 | 80 | -.5479 | 1.131 | 90 | -.5389 | 0.000 | | .9176 | 0.00 | .10 | | | | |
| 15 | .161 | 40 | -.6814 | .331 | 150 | -.5983 | .431 | 70 | -.4375 | 1.131 | 80 | -.5027 | 0.000 | | .6515 | 0.00 | .20 | | | | |
| 16 | .161 | 30 | -.6581 | .331 | 140 | -.6738 | .431 | 60 | -.3183 | 1.131 | 70 | -.4005 | 0.000 | | .7238 | 0.00 | .30 | | | | |
| 17 | .161 | 20 | -.5957 | .331 | 130 | -.7394 | .431 | 50 | -.2335 | 1.131 | 60 | -.3276 | 0.000 | | .4114 | 0.00 | .40 | | | | |
| 18 | .161 | 10 | -.5403 | .331 | 120 | -.6749 | .431 | 40 | -.1561 | 1.131 | 50 | -.2291 | 0.000 | | .3949 | 0.00 | .45 | | | | |
| 19 | .161 | 0 | -.5290 | .331 | 110 | -.7320 | .431 | 30 | -.0702 | 1.131 | 40 | -.1322 | .151 | 270 | -.8318 | | | | | | |
| 20 | .231 | 180 | -.5111 | .331 | 100 | -.7936 | .431 | 20 | -.0214 | 1.131 | 30 | -.0552 | .231 | 270 | -.8405 | | | | | | |
| 21 | .231 | 170 | -.4987 | .331 | 90 | -.7189 | .431 | 10 | .0345 | 1.131 | 20 | .0075 | .331 | 270 | -.7166 | | | | | | |
| 22 | .231 | 160 | -.5603 | .331 | 80 | -.6593 | .431 | 0 | .0438 | 1.131 | 10 | .0470 | .431 | 270 | -.6460 | | | | | | |
| 23 | .231 | 150 | -.6399 | .331 | 70 | -.5303 | .531 | 180 | -.6775 | 1.131 | 0 | .0702 | .531 | 270 | -.5923 | | | | | | |
| 24 | .231 | 140 | -.6059 | .331 | 60 | -.3784 | .531 | 90 | -.5964 | | | | .731 | 270 | -.5497 | | | | | | |
| 25 | .231 | 130 | -.7053 | .331 | 50 | -.2878 | .531 | 0 | .0475 | 1.631 | 90 | -.4742 | .931 | 270 | -.5497 | | | | | | |
| 26 | .231 | 120 | -.7373 | .331 | 40 | -.1947 | .731 | 180 | -.6534 | 1.631 | 0 | -.3166 | 1.131 | 270 | -.5555 | | | | | | |
| 27 | .231 | 110 | -.7340 | .331 | 30 | -.1042 | .731 | 90 | -.5557 | 2.131 | 180 | -.0454 | 1.631 | 270 | -.4787 | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 67 ALPHA 10 MACH .506 Q 320.677 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|---------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4478 | .231 | 100 | -.7560 | .331 | 20 | -.8773 | .731 | 0 | -.0071 | 2.131 | 90 | -.1925 | | |
| 2 | .161 | 170 | -.4240 | .231 | 90 | -.7914 | .331 | 10 | -.8610 | .931 | 180 | -.2127 | 2.131 | 0 | .0107 | | |
| 3 | .161 | 160 | -.4062 | .231 | 80 | -.8064 | .331 | 0 | -.8303 | .931 | 90 | -.2793 | 0.000 | | .5540 | -.45 | 0.00 |
| 4 | .161 | 150 | -.3485 | .231 | 70 | -.8503 | .431 | 180 | -.5525 | .931 | 0 | -.3548 | 0.000 | | .6834 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5823 | .231 | 60 | -.8529 | .431 | 170 | -.5448 | 1.131 | 180 | -.3804 | 0.000 | | .9663 | -.30 | 0.00 |
| 6 | .161 | 130 | -.0675 | .231 | 50 | -.9289 | .431 | 160 | -.7971 | 1.131 | 170 | -.3747 | 0.000 | | 1.0533 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7130 | .231 | 40 | -.9683 | .431 | 150 | -.5935 | 1.131 | 160 | -.4227 | 0.000 | | 1.0755 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7276 | .231 | 30 | -1.0006 | .431 | 140 | -.6356 | 1.131 | 150 | -.3711 | 0.000 | | 1.0434 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7403 | .231 | 20 | -1.0284 | .431 | 130 | -.6500 | 1.131 | 140 | -.4007 | 0.000 | | .9857 | .10 | 0.00 |
| 10 | .161 | 90 | -.7760 | .231 | 10 | -1.0474 | .431 | 120 | -.7044 | 1.131 | 130 | -.3573 | 0.000 | | .8703 | .20 | 0.00 |
| 11 | .161 | 80 | -.8371 | .231 | 0 | -1.0805 | .431 | 110 | -.7321 | 1.131 | 120 | -.3427 | 0.000 | | .6996 | .30 | 0.00 |
| 12 | .161 | 70 | -.8226 | .331 | 180 | -.5047 | .431 | 100 | -.7369 | 1.131 | 110 | -.2943 | 0.000 | | .4576 | .40 | 0.00 |
| 13 | .161 | 60 | -.8477 | .331 | 170 | -.5051 | .431 | 90 | -.7635 | 1.131 | 100 | -.2590 | 0.000 | | .3863 | .45 | 0.00 |
| 14 | .161 | 50 | -.8721 | .331 | 160 | -.5274 | .431 | 80 | -.7823 | 1.131 | 90 | -.2192 | 0.000 | | 1.0339 | 0.00 | .10 |
| 15 | .161 | 40 | -.9379 | .331 | 150 | -.5969 | .431 | 70 | -.8237 | 1.131 | 80 | -.1903 | 0.000 | | .9609 | 0.00 | .20 |
| 16 | .161 | 30 | -.9532 | .331 | 140 | -.6283 | .431 | 60 | -.7845 | 1.131 | 70 | -.1619 | 0.000 | | .8014 | 0.00 | .30 |
| 17 | .161 | 20 | -1.0104 | .331 | 130 | -.6678 | .431 | 50 | -.7221 | 1.131 | 60 | -.1213 | 0.000 | | .5362 | 0.00 | .40 |
| 18 | .161 | 10 | -1.0165 | .331 | 120 | -.7029 | .431 | 40 | -.7221 | 1.131 | 50 | -.1070 | 0.000 | | .4645 | 0.00 | .45 |
| 19 | .161 | 0 | -1.0129 | .331 | 110 | -.7260 | .431 | 30 | -.5839 | 1.131 | 40 | -.0823 | .161 | 270 | -.7928 | | |
| 20 | .231 | 180 | -.4495 | .331 | 100 | -.7391 | .431 | 20 | -.5171 | 1.131 | 30 | -.0445 | .231 | 270 | -.7743 | | |
| 21 | .231 | 170 | -.4815 | .331 | 90 | -.7969 | .431 | 10 | -.3937 | 1.131 | 20 | -.0380 | .331 | 270 | -.7586 | | |
| 22 | .231 | 160 | -.5114 | .331 | 80 | -.8116 | .431 | 0 | -.4173 | 1.131 | 10 | -.0148 | .431 | 270 | -.7916 | | |
| 23 | .231 | 150 | -.5394 | .331 | 70 | -.8350 | .531 | 180 | -.5705 | 1.131 | 0 | -.0132 | .531 | 270 | -.7562 | | |
| 24 | .231 | 140 | -.6104 | .331 | 60 | -.9044 | .531 | 90 | -.7450 | | | | .731 | 270 | -.4854 | | |
| 25 | .231 | 130 | -.6675 | .331 | 50 | -.9044 | .531 | 0 | -.0911 | 1.631 | 90 | -.1460 | .931 | 270 | -.2922 | | |
| 26 | .231 | 120 | -.6959 | .331 | 40 | -.9293 | .731 | 180 | -.5828 | 1.631 | 0 | -.1875 | 1.131 | 270 | -.2234 | | |
| 27 | .231 | 110 | -.7137 | .331 | 30 | -.9004 | .731 | 90 | -.4790 | 2.131 | 180 | -.0095 | 1.631 | 270 | -.1447 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 68 ALPHA 12 MACH .506 Q 321.124 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|---------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4561 | .231 | 100 | -.8086 | .331 | 20 | -.3754 | .731 | 0 | -.0387 | 2.131 | 90 | -.1880 | | |
| 2 | .161 | 170 | -.4863 | .231 | 90 | -.8345 | .331 | 10 | -.3459 | .931 | 180 | -.2249 | 2.131 | 0 | .0132 | | |
| 3 | .161 | 160 | -.5637 | .231 | 80 | -.9243 | .331 | 0 | -.2263 | .931 | 90 | -.3020 | 0.000 | | .5393 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6004 | .231 | 70 | -.9042 | .431 | 180 | -.5451 | .931 | 0 | -.3535 | 0.000 | | .7291 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6193 | .231 | 60 | -.9554 | .431 | 170 | -.5768 | 1.131 | 180 | -.3693 | 0.000 | | .9835 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7251 | .231 | 50 | -.9959 | .431 | 160 | -.6207 | 1.131 | 170 | -.3628 | 0.000 | | 1.0639 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7722 | .231 | 40 | -1.0481 | .431 | 150 | -.6772 | 1.131 | 160 | -.3438 | 0.000 | | 1.0803 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7539 | .231 | 30 | -1.0160 | .431 | 140 | -.6513 | 1.131 | 150 | -.4034 | 0.000 | | 1.0309 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8217 | .231 | 20 | -.9857 | .431 | 130 | -.7011 | 1.131 | 140 | -.3957 | 0.000 | | .9588 | .10 | 0.00 |
| 10 | .161 | 90 | -.8523 | .231 | 10 | -.9101 | .431 | 120 | -.7295 | 1.131 | 130 | -.3405 | 0.000 | | .8382 | .20 | 0.00 |
| 11 | .161 | 80 | -.8999 | .231 | 0 | -.9075 | .431 | 110 | -.7609 | 1.131 | 120 | -.3097 | 0.000 | | .6501 | .30 | 0.00 |
| 12 | .161 | 70 | -.9231 | .331 | 180 | -.5171 | .431 | 100 | -.7993 | 1.131 | 110 | -.2967 | 0.000 | | .4253 | .40 | 0.00 |
| 13 | .161 | 60 | -.9740 | .331 | 170 | -.5361 | .431 | 90 | -.7886 | 1.131 | 100 | -.3237 | 0.000 | | .3166 | .45 | 0.00 |
| 14 | .161 | 50 | -1.0304 | .331 | 160 | -.5507 | .431 | 80 | -.7694 | 1.131 | 90 | -.2804 | 0.000 | | 1.0111 | 0.00 | .10 |
| 15 | .161 | 40 | -1.1390 | .331 | 150 | -.6099 | .431 | 70 | -.6897 | 1.131 | 80 | -.2424 | 0.000 | | .9399 | 0.00 | .20 |
| 16 | .161 | 30 | -1.1252 | .331 | 140 | -.6282 | .431 | 60 | -.5665 | 1.131 | 70 | -.2164 | 0.000 | | .7999 | 0.00 | .30 |
| 17 | .161 | 20 | -1.1623 | .331 | 130 | -.7151 | .431 | 50 | -.3798 | 1.131 | 60 | -.1693 | 0.000 | | .4738 | 0.00 | .40 |
| 18 | .161 | 10 | -1.1372 | .331 | 120 | -.7103 | .431 | 40 | -.2676 | 1.131 | 50 | -.1296 | 0.000 | | .4743 | 0.00 | .45 |
| 19 | .161 | 0 | -1.1416 | .331 | 110 | -.7618 | .431 | 30 | -.1651 | 1.131 | 40 | -.0971 | .161 | 270 | -.8625 | | |
| 20 | .231 | 180 | -.4852 | .331 | 100 | -.7655 | .431 | 20 | -.1230 | 1.131 | 30 | -.0639 | .231 | 270 | -.8349 | | |
| 21 | .231 | 170 | -.5146 | .331 | 90 | -.8586 | .431 | 10 | -.0747 | 1.131 | 20 | -.0468 | .331 | 270 | -.8230 | | |
| 22 | .231 | 160 | -.5651 | .331 | 80 | -.8948 | .431 | 0 | -.0802 | 1.131 | 10 | -.0286 | .431 | 270 | -.7637 | | |
| 23 | .231 | 150 | -.6029 | .331 | 70 | -.8743 | .531 | 180 | -.5893 | 1.131 | 0 | -.0115 | .531 | 270 | -.6822 | | |
| 24 | .231 | 140 | -.6436 | .331 | 60 | -.8590 | .531 | 90 | -.0974 | | | | .731 | 270 | -.4345 | | |
| 25 | .231 | 130 | -.7094 | .331 | 50 | -.7724 | .531 | 0 | -.0356 | 1.631 | 90 | -.1929 | .931 | 270 | -.3094 | | |
| 26 | .231 | 120 | -.7672 | .331 | 40 | -.5993 | .731 | 180 | -.5831 | 1.631 | 0 | -.1994 | 1.131 | 270 | -.2564 | | |
| 27 | .231 | 110 | -.7454 | .331 | 30 | -.6004 | .731 | 90 | -.4451 | 2.131 | 180 | -.0185 | 1.631 | 270 | -.2033 | | |

COPIES OF
 TUNNEL FACE IS
 BEING KEPT

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 61 ALPHA -1 MACH .506 U 321.033 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5777 | .231 | 100 | -.5520 | .331 | 20 | -.4652 | .731 | 0 | -.5581 | 2.131 | 90 | -.1445 | | |
| 2 | .161 | 170 | -.5653 | .231 | 90 | -.5498 | .331 | 10 | -.4903 | .931 | 180 | -.1702 | 2.131 | 0 | .0424 | | |
| 3 | .161 | 160 | -.5555 | .231 | 80 | -.4933 | .331 | 0 | -.5364 | .931 | 90 | -.5569 | 0.000 | | .5382 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5400 | .231 | 70 | -.5158 | .431 | 180 | -.5858 | .931 | 0 | -.1576 | 0.000 | | .5732 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5391 | .231 | 60 | -.5239 | .431 | 170 | -.5748 | 1.131 | 180 | -.3893 | 0.000 | | .8384 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5315 | .231 | 50 | -.5250 | .431 | 160 | -.5585 | 1.131 | 170 | -.4522 | 0.000 | | .9916 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5402 | .231 | 40 | -.4804 | .431 | 150 | -.5737 | 1.131 | 160 | -.4433 | 0.000 | | 1.0575 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5453 | .231 | 30 | -.5038 | .431 | 140 | -.5867 | 1.131 | 150 | -.4271 | 0.000 | | 1.0723 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5228 | .231 | 20 | -.4983 | .431 | 130 | -.5493 | 1.131 | 140 | -.4758 | 0.000 | | 1.0505 | .10 | 0.00 |
| 10 | .161 | 90 | -.5126 | .231 | 10 | -.5082 | .431 | 120 | -.5033 | 1.131 | 130 | -.3930 | 0.000 | | .9999 | .20 | 0.00 |
| 11 | .161 | 80 | -.4940 | .231 | 0 | -.4833 | .431 | 110 | -.5275 | 1.131 | 120 | -.4879 | 0.000 | | .8722 | .30 | 0.00 |
| 12 | .161 | 70 | -.5144 | .331 | 180 | -.5725 | .431 | 100 | -.5434 | 1.131 | 110 | -.4806 | 0.000 | | .6070 | .40 | 0.00 |
| 13 | .161 | 60 | -.5031 | .331 | 170 | -.5746 | .431 | 90 | -.5419 | 1.131 | 100 | -.4831 | 0.000 | | .5234 | .45 | 0.00 |
| 14 | .161 | 50 | -.5140 | .331 | 160 | -.5597 | .431 | 80 | -.5331 | 1.131 | 90 | -.4591 | 0.000 | | 1.0522 | 0.00 | .10 |
| 15 | .161 | 40 | -.5180 | .331 | 150 | -.5589 | .431 | 70 | -.5419 | 1.131 | 80 | -.4664 | 0.000 | | .9966 | 0.00 | .20 |
| 16 | .161 | 30 | -.4911 | .331 | 140 | -.5885 | .431 | 60 | -.5430 | 1.131 | 70 | -.4871 | 0.000 | | .8450 | 0.00 | .30 |
| 17 | .161 | 20 | -.4679 | .331 | 130 | -.5681 | .431 | 50 | -.4991 | 1.131 | 60 | -.4826 | 0.000 | | .5983 | 0.00 | .40 |
| 18 | .161 | 10 | -.5089 | .331 | 120 | -.5458 | .431 | 40 | -.5240 | 1.131 | 50 | -.4904 | 0.000 | | .5625 | 0.00 | .45 |
| 19 | .161 | 0 | -.4602 | .331 | 110 | -.5535 | .431 | 30 | -.5080 | 1.131 | 40 | -.4920 | .161 | 270 | -.5466 | | |
| 20 | .231 | 180 | -.5391 | .331 | 100 | -.5462 | .431 | 20 | -.5331 | 1.131 | 30 | -.4636 | .231 | 270 | -.5259 | | |
| 21 | .231 | 170 | -.5377 | .331 | 90 | -.5191 | .431 | 10 | -.4917 | 1.131 | 20 | -.4741 | .331 | 270 | -.5236 | | |
| 22 | .231 | 160 | -.5620 | .331 | 80 | -.5272 | .431 | 0 | -.5139 | 1.131 | 10 | -.4798 | .431 | 270 | -.5598 | | |
| 23 | .231 | 150 | -.5608 | .331 | 70 | -.5301 | .531 | 180 | -.6098 | 1.131 | 0 | -.5123 | .531 | 270 | -.5663 | | |
| 24 | .231 | 140 | -.5089 | .331 | 60 | -.5217 | .531 | 90 | -.5489 | | | | .731 | 270 | -.6330 | | |
| 25 | .231 | 130 | -.5591 | .331 | 50 | -.5162 | .531 | 0 | -.5305 | 1.631 | 90 | -.0724 | .931 | 270 | -.5655 | | |
| 26 | .231 | 120 | -.5424 | .331 | 40 | -.4873 | .731 | 180 | -.6323 | 1.631 | 0 | -.1682 | 1.131 | 270 | -.4577 | | |
| 27 | .231 | 110 | -.5311 | .331 | 30 | -.5056 | .731 | 90 | -.5689 | 2.131 | 180 | .0404 | 1.631 | 270 | -.0202 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 62 ALPHA 0 MACH .505 U 320.142 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5276 | .231 | 100 | -.5496 | .331 | 20 | -.5653 | .731 | 0 | -.6183 | 2.131 | 90 | -.1404 | | |
| 2 | .161 | 170 | -.5421 | .231 | 90 | -.5166 | .331 | 10 | -.5209 | .931 | 180 | -.1561 | 2.131 | 0 | .0396 | | |
| 3 | .161 | 160 | -.5101 | .231 | 80 | -.5030 | .331 | 0 | -.5083 | .931 | 90 | -.5687 | 0.000 | | .5553 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5246 | .231 | 70 | -.5422 | .431 | 180 | -.5294 | .931 | 0 | -.2639 | 0.000 | | .5938 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5177 | .231 | 60 | -.5038 | .431 | 170 | -.5516 | 1.131 | 180 | -.4979 | 0.000 | | .8565 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5356 | .231 | 50 | -.5155 | .431 | 160 | -.5546 | 1.131 | 170 | -.4421 | 0.000 | | 1.0005 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5035 | .231 | 40 | -.5210 | .431 | 150 | -.5239 | 1.131 | 160 | -.4653 | 0.000 | | 1.0608 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5093 | .231 | 30 | -.5239 | .431 | 140 | -.5346 | 1.131 | 150 | -.4535 | 0.000 | | 1.0736 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5035 | .231 | 20 | -.4939 | .431 | 130 | -.5446 | 1.131 | 140 | -.4731 | 0.000 | | 1.0625 | .10 | 0.00 |
| 10 | .161 | 90 | -.5035 | .231 | 10 | -.5111 | .431 | 120 | -.5420 | 1.131 | 130 | -.4751 | 0.000 | | .9989 | .20 | 0.00 |
| 11 | .161 | 80 | -.4902 | .231 | 0 | -.4957 | .431 | 110 | -.5161 | 1.131 | 120 | -.4670 | 0.000 | | .8634 | .30 | 0.00 |
| 12 | .161 | 70 | -.5236 | .331 | 180 | -.5404 | .431 | 100 | -.5394 | 1.131 | 110 | -.4682 | 0.000 | | .5938 | .40 | 0.00 |
| 13 | .161 | 60 | -.4997 | .331 | 170 | -.5118 | .431 | 90 | -.5205 | 1.131 | 100 | -.4694 | 0.000 | | .5153 | .45 | 0.00 |
| 14 | .161 | 50 | -.5042 | .331 | 160 | -.5591 | .431 | 80 | -.5339 | 1.131 | 90 | -.4609 | 0.000 | | 1.0567 | 0.00 | .10 |
| 15 | .161 | 40 | -.4984 | .331 | 150 | -.5250 | .431 | 70 | -.5379 | 1.131 | 80 | -.4592 | 0.000 | | .9997 | 0.00 | .20 |
| 16 | .161 | 30 | -.5232 | .331 | 140 | -.5129 | .431 | 60 | -.5316 | 1.131 | 70 | -.4828 | 0.000 | | .8622 | 0.00 | .30 |
| 17 | .161 | 20 | -.5079 | .331 | 130 | -.5386 | .431 | 50 | -.5428 | 1.131 | 60 | -.4460 | 0.000 | | .6016 | 0.00 | .40 |
| 18 | .161 | 10 | -.5150 | .331 | 120 | -.5334 | .431 | 40 | -.5494 | 1.131 | 50 | -.4629 | 0.000 | | .5516 | 0.00 | .45 |
| 19 | .161 | 0 | -.5000 | .331 | 110 | -.5470 | .431 | 30 | -.5487 | 1.131 | 40 | -.4389 | .161 | 270 | -.5007 | | |
| 20 | .231 | 180 | -.5214 | .331 | 100 | -.5129 | .431 | 20 | -.5468 | 1.131 | 30 | -.4674 | .231 | 270 | -.5164 | | |
| 21 | .231 | 170 | -.5195 | .331 | 90 | -.5463 | .431 | 10 | -.5675 | 1.131 | 20 | -.4303 | .331 | 270 | -.5449 | | |
| 22 | .231 | 160 | -.5112 | .331 | 80 | -.5170 | .431 | 0 | -.5005 | 1.131 | 10 | -.5106 | .431 | 270 | -.5445 | | |
| 23 | .231 | 150 | -.5436 | .331 | 70 | -.5712 | .531 | 180 | -.5749 | 1.131 | 0 | -.5113 | .531 | 270 | -.5647 | | |
| 24 | .231 | 140 | -.5205 | .331 | 60 | -.5411 | .531 | 90 | -.5635 | | | | .731 | 270 | -.5928 | | |
| 25 | .231 | 130 | -.4896 | .331 | 50 | -.5360 | .531 | 0 | -.5849 | 1.631 | 90 | -.0804 | .931 | 270 | -.5544 | | |
| 26 | .231 | 120 | -.5126 | .331 | 40 | -.5060 | .731 | 180 | -.5894 | 1.631 | 0 | -.1362 | 1.131 | 270 | -.4665 | | |
| 27 | .231 | 110 | -.5039 | .331 | 30 | -.5165 | .731 | 90 | -.5705 | 2.131 | 180 | .0380 | 1.631 | 270 | -.0669 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 03 ALPHA 2 MACH .504 Q 319.161 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4832 | .231 | 100 | -.5462 | .331 | 20 | -.6065 | .731 | 0 | -.6603 | 2.131 | 90 | -.1347 | | |
| 2 | .161 | 170 | -.4718 | .231 | 90 | -.5212 | .331 | 10 | -.6124 | .931 | 180 | -.1383 | 2.131 | 0 | .0537 | | |
| 3 | .161 | 160 | -.4733 | .231 | 80 | -.5469 | .431 | 0 | -.5999 | .931 | 90 | -.5860 | 0.000 | | .5591 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4903 | .231 | 70 | -.5060 | .431 | 180 | -.5196 | .931 | 0 | -.3464 | 0.000 | | .6057 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4718 | .231 | 60 | -.5631 | .431 | 170 | -.5044 | 1.131 | 180 | -.5481 | 0.000 | | .8689 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5000 | .231 | 50 | -.5631 | .431 | 160 | -.5103 | 1.131 | 170 | -.4448 | 0.000 | | 1.0043 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4978 | .231 | 40 | -.5804 | .431 | 150 | -.5055 | 1.131 | 160 | -.5056 | 0.000 | | 1.0565 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4978 | .231 | 30 | -.5774 | .431 | 140 | -.5074 | 1.131 | 150 | -.4517 | 0.000 | | 1.0735 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5102 | .231 | 20 | -.5914 | .431 | 130 | -.5025 | 1.131 | 140 | -.4934 | 0.000 | | 1.0503 | .10 | 0.00 |
| 10 | .161 | 90 | -.5453 | .231 | 10 | -.5921 | .431 | 120 | -.5467 | 1.131 | 130 | -.4550 | 0.000 | | .9715 | .20 | 0.00 |
| 11 | .161 | 80 | -.5505 | .231 | 0 | -.5936 | .431 | 110 | -.5345 | 1.131 | 120 | -.4852 | 0.000 | | .8300 | .30 | 0.00 |
| 12 | .161 | 70 | -.5731 | .331 | 180 | -.4833 | .431 | 100 | -.5634 | 1.131 | 110 | -.4660 | 0.000 | | .5769 | .40 | 0.00 |
| 13 | .161 | 60 | -.5739 | .331 | 170 | -.5164 | .431 | 90 | -.5582 | 1.131 | 100 | -.4664 | 0.000 | | .5114 | .45 | 0.00 |
| 14 | .161 | 50 | -.5527 | .331 | 160 | -.5043 | .431 | 80 | -.5630 | 1.131 | 90 | -.4472 | 0.000 | | 1.0495 | 0.00 | .10 |
| 15 | .161 | 40 | -.5903 | .331 | 150 | -.4951 | .431 | 70 | -.5905 | 1.131 | 80 | -.4448 | 0.000 | | .9985 | 0.00 | .20 |
| 16 | .161 | 30 | -.5794 | .331 | 140 | -.5484 | .431 | 60 | -.5879 | 1.131 | 70 | -.4011 | 0.000 | | .8490 | 0.00 | .30 |
| 17 | .161 | 20 | -.5819 | .331 | 130 | -.4914 | .431 | 50 | -.5872 | 1.131 | 60 | -.4350 | 0.000 | | .5976 | 0.00 | .40 |
| 18 | .161 | 10 | -.5837 | .331 | 120 | -.5241 | .431 | 40 | -.5939 | 1.131 | 50 | -.4281 | 0.000 | | .5566 | 0.00 | .45 |
| 19 | .161 | 0 | -.5914 | .331 | 110 | -.5535 | .431 | 30 | -.6239 | 1.131 | 40 | -.3844 | .161 | 270 | -.5450 | | |
| 20 | .231 | 180 | -.4729 | .331 | 100 | -.5363 | .431 | 20 | -.5872 | 1.131 | 30 | -.4048 | .231 | 270 | -.5301 | | |
| 21 | .231 | 170 | -.4843 | .331 | 90 | -.5620 | .431 | 10 | -.5983 | 1.131 | 20 | -.3836 | .331 | 270 | -.5346 | | |
| 22 | .231 | 160 | -.5029 | .331 | 80 | -.5657 | .431 | 0 | -.6176 | 1.131 | 10 | -.3640 | .431 | 270 | -.5669 | | |
| 23 | .231 | 150 | -.4927 | .331 | 70 | -.5690 | .531 | 180 | -.5239 | 1.131 | 0 | -.3477 | .531 | 270 | -.5930 | | |
| 24 | .231 | 140 | -.4967 | .331 | 60 | -.5719 | .531 | 90 | -.5690 | 1.631 | 180 | -.1754 | .731 | 270 | -.6025 | | |
| 25 | .231 | 130 | -.5146 | .331 | 50 | -.5939 | .531 | 0 | -.6503 | 1.631 | 90 | -.0607 | .931 | 270 | -.5711 | | |
| 26 | .231 | 120 | -.5183 | .331 | 40 | -.5866 | .731 | 180 | -.5590 | 1.631 | 0 | -.1460 | 1.131 | 270 | -.4568 | | |
| 27 | .231 | 110 | -.5322 | .331 | 30 | -.6057 | .731 | 90 | -.6299 | 2.131 | 180 | .0185 | 1.631 | 270 | -.0610 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 20 POINT 04 ALPHA 4 MACH .506 Q 321.213 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4025 | .231 | 100 | -.5918 | .331 | 20 | -.6932 | .731 | 0 | -.6215 | 2.131 | 90 | -.1538 | | |
| 2 | .161 | 170 | -.4200 | .231 | 90 | -.6097 | .331 | 10 | -.7013 | .931 | 180 | -.1458 | 2.131 | 0 | .0140 | | |
| 3 | .161 | 160 | -.4825 | .231 | 80 | -.6389 | .431 | 0 | -.6987 | .931 | 90 | -.5902 | 0.000 | | .5449 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4345 | .231 | 70 | -.6123 | .431 | 180 | -.5036 | .931 | 0 | -.3854 | 0.000 | | .6133 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4974 | .231 | 60 | -.6298 | .431 | 170 | -.5066 | 1.131 | 180 | -.4394 | 0.000 | | .8878 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5108 | .231 | 50 | -.6601 | .431 | 160 | -.5162 | 1.131 | 170 | -.4499 | 0.000 | | 1.0042 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5417 | .231 | 40 | -.6404 | .431 | 150 | -.5246 | 1.131 | 160 | -.4426 | 0.000 | | 1.0631 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5731 | .231 | 30 | -.6813 | .431 | 140 | -.5552 | 1.131 | 150 | -.4706 | 0.000 | | 1.0639 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6042 | .231 | 20 | -.6875 | .431 | 130 | -.5755 | 1.131 | 140 | -.4467 | 0.000 | | 1.0294 | .10 | 0.00 |
| 10 | .161 | 90 | -.5955 | .231 | 10 | -.6645 | .431 | 120 | -.5715 | 1.131 | 130 | -.4730 | 0.000 | | .9557 | .20 | 0.00 |
| 11 | .161 | 80 | -.6151 | .231 | 0 | -.6670 | .431 | 110 | -.5796 | 1.131 | 120 | -.4674 | 0.000 | | .7919 | .30 | 0.00 |
| 12 | .161 | 70 | -.6340 | .331 | 180 | -.4998 | .431 | 100 | -.6213 | 1.131 | 110 | -.4325 | 0.000 | | .5441 | .40 | 0.00 |
| 13 | .161 | 60 | -.6340 | .331 | 170 | -.4750 | .431 | 90 | -.6172 | 1.131 | 100 | -.3836 | 0.000 | | .4307 | .45 | 0.00 |
| 14 | .161 | 50 | -.6551 | .331 | 160 | -.4600 | .431 | 80 | -.6390 | 1.131 | 90 | -.3388 | 0.000 | | 1.0450 | 0.00 | .10 |
| 15 | .161 | 40 | -.6627 | .331 | 150 | -.5309 | .431 | 70 | -.6519 | 1.131 | 80 | -.3449 | 0.000 | | .9746 | 0.00 | .20 |
| 16 | .161 | 30 | -.6700 | .331 | 140 | -.5279 | .431 | 60 | -.6593 | 1.131 | 70 | -.2946 | 0.000 | | .8434 | 0.00 | .30 |
| 17 | .161 | 20 | -.6729 | .331 | 130 | -.5301 | .431 | 50 | -.6751 | 1.131 | 60 | -.2208 | 0.000 | | .5639 | 0.00 | .40 |
| 18 | .161 | 10 | -.6918 | .331 | 120 | -.5652 | .431 | 40 | -.7098 | 1.131 | 50 | -.1668 | 0.000 | | .5116 | 0.00 | .45 |
| 19 | .161 | 0 | -.6449 | .331 | 110 | -.5648 | .431 | 30 | -.6825 | 1.131 | 40 | -.1648 | .161 | 270 | -.6162 | | |
| 20 | .231 | 180 | -.4719 | .331 | 100 | -.6116 | .431 | 20 | -.7146 | 1.131 | 30 | -.1230 | .231 | 270 | -.6212 | | |
| 21 | .231 | 170 | -.4974 | .331 | 90 | -.6116 | .431 | 10 | -.6940 | 1.131 | 20 | -.1113 | .331 | 270 | -.6109 | | |
| 22 | .231 | 160 | -.4640 | .331 | 80 | -.6269 | .431 | 0 | -.7094 | 1.131 | 10 | -.1149 | .431 | 270 | -.6315 | | |
| 23 | .231 | 150 | -.4876 | .331 | 70 | -.6550 | .531 | 180 | -.5202 | 1.131 | 0 | -.0614 | .531 | 270 | -.6463 | | |
| 24 | .231 | 140 | -.5076 | .331 | 60 | -.6539 | .531 | 90 | -.6467 | | | | .731 | 270 | -.6483 | | |
| 25 | .231 | 130 | -.5265 | .331 | 50 | -.6521 | .531 | 0 | -.7094 | 1.631 | 90 | -.0107 | .931 | 270 | -.5585 | | |
| 26 | .231 | 120 | -.5530 | .331 | 40 | -.6700 | .731 | 180 | -.5637 | 1.631 | 0 | -.1259 | 1.131 | 270 | -.3998 | | |
| 27 | .231 | 110 | -.5711 | .331 | 30 | -.6875 | .731 | 90 | -.6781 | 2.131 | 180 | .0161 | 1.631 | 270 | -.0149 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 19 POINT 55 ALPHA 18 MACH .404 Q 217.445 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4710 | .231 | 100 | -.8155 | .331 | 20 | -.0648 | .731 | 0 | -.0244 | 2.131 | 90 | -.2544 | | |
| 2 | .161 | 170 | -.5231 | .231 | 90 | -.9102 | .331 | 10 | -.0370 | .931 | 180 | -.3045 | 2.131 | 0 | -.0817 | | |
| 3 | .161 | 160 | -.5086 | .231 | 80 | -.7479 | .331 | 0 | -.0299 | .931 | 90 | -.4710 | 0.000 | | .6052 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5837 | .231 | 70 | -.8034 | .431 | 180 | -.0036 | .931 | 0 | -.3446 | 0.000 | | .8624 | -.40 | 0.00 |
| 5 | .161 | 140 | -.7496 | .231 | 60 | -.8653 | .431 | 170 | -.6499 | 1.131 | 180 | -.3105 | 0.000 | | 1.0186 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7658 | .231 | 50 | -.4620 | .431 | 160 | -.6396 | 1.131 | 170 | -.3600 | 0.000 | | 1.0593 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7818 | .231 | 40 | -.3504 | .431 | 150 | -.6990 | 1.131 | 160 | -.3770 | 0.000 | | 1.0180 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7850 | .231 | 30 | -.2754 | .431 | 140 | -.7068 | 1.131 | 150 | -.3297 | 0.000 | | .9377 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8484 | .231 | 20 | -.2085 | .431 | 130 | -.7218 | 1.131 | 140 | -.3956 | 0.000 | | .8320 | .10 | 0.00 |
| 10 | .161 | 90 | -.9101 | .231 | 10 | -.1692 | .431 | 120 | -.7654 | 1.131 | 130 | -.4099 | 0.000 | | .7128 | .20 | 0.00 |
| 11 | .161 | 80 | -.9670 | .231 | 0 | -.1708 | .431 | 110 | -.7551 | 1.131 | 120 | -.4195 | 0.000 | | .5006 | .30 | 0.00 |
| 12 | .161 | 70 | -1.0985 | .331 | 180 | -.5877 | .431 | 100 | -.7202 | 1.131 | 110 | -.4285 | 0.000 | | .2635 | .40 | 0.00 |
| 13 | .161 | 60 | -1.1318 | .331 | 170 | -.5785 | .431 | 90 | -.6260 | 1.131 | 100 | -.4651 | 0.000 | | .1486 | .45 | 0.00 |
| 14 | .161 | 50 | -.8870 | .331 | 160 | -.6314 | .431 | 80 | -.5350 | 1.131 | 90 | -.4381 | 0.000 | | .9098 | 0.00 | .10 |
| 15 | .161 | 40 | -.7571 | .331 | 150 | -.6610 | .431 | 70 | -.4020 | 1.131 | 80 | -.4051 | 0.000 | | .8472 | 0.00 | .20 |
| 16 | .161 | 30 | -.7045 | .331 | 140 | -.6799 | .431 | 60 | -.3094 | 1.131 | 70 | -.3368 | 0.000 | | .7170 | 0.00 | .30 |
| 17 | .161 | 20 | -.6659 | .331 | 130 | -.8018 | .431 | 50 | -.2211 | 1.131 | 60 | -.3279 | 0.000 | | .4015 | 0.00 | .40 |
| 18 | .161 | 10 | -.5746 | .331 | 120 | -.8045 | .431 | 40 | -.1552 | 1.131 | 50 | -.2003 | 0.000 | | .3358 | 0.00 | .45 |
| 19 | .161 | 0 | -.5880 | .331 | 110 | -.8476 | .431 | 30 | -.0871 | 1.131 | 40 | -.1248 | .161 | 270 | -.9155 | | |
| 20 | .231 | 180 | -.5129 | .331 | 100 | -.7808 | .431 | 20 | -.0326 | 1.131 | 30 | -.0397 | .231 | 270 | -.9168 | | |
| 21 | .231 | 170 | -.5360 | .331 | 90 | -.7689 | .431 | 10 | -.0021 | 1.131 | 20 | -.0187 | .331 | 270 | -.7624 | | |
| 22 | .231 | 160 | -.5886 | .331 | 80 | -.6589 | .431 | 0 | -.0077 | 1.131 | 10 | -.0310 | .431 | 270 | -.6476 | | |
| 23 | .231 | 150 | -.6847 | .331 | 70 | -.4874 | .531 | 180 | -.6875 | 1.131 | 0 | .0526 | .531 | 270 | -.5558 | | |
| 24 | .231 | 140 | -.7228 | .331 | 60 | -.3757 | .531 | 90 | -.5475 | | | | .731 | 270 | -.4763 | | |
| 25 | .231 | 130 | -.7079 | .331 | 50 | -.2803 | .531 | 0 | -.0344 | 1.631 | 90 | -.3746 | .931 | 270 | -.4440 | | |
| 26 | .231 | 120 | -.8053 | .331 | 40 | -.2031 | .731 | 180 | -.6151 | 1.631 | 0 | -.3117 | 1.131 | 270 | -.4239 | | |
| 27 | .231 | 110 | -.8038 | .331 | 30 | -.1228 | .731 | 90 | -.4761 | 2.131 | 180 | -.0295 | 1.631 | 270 | -.3595 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 19 POINT 56 ALPHA 20 MACH .403 Q 217.258 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4811 | .231 | 100 | -.7356 | .331 | 20 | -.0305 | .731 | 0 | -.0670 | 2.131 | 90 | -.2856 | | |
| 2 | .161 | 170 | -.4784 | .231 | 90 | -.7971 | .331 | 10 | -.0000 | .931 | 180 | -.2730 | 2.131 | 0 | -.1037 | | |
| 3 | .161 | 160 | -.5294 | .231 | 80 | -.8424 | .331 | 0 | -.0077 | .931 | 90 | -.5194 | 0.000 | | .6744 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6342 | .231 | 70 | -.7696 | .431 | 180 | -.5851 | .931 | 0 | -.3929 | 0.000 | | .9172 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6423 | .231 | 60 | -.6017 | .431 | 170 | -.6555 | 1.131 | 180 | -.3911 | 0.000 | | 1.0316 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7744 | .231 | 50 | -.3982 | .431 | 160 | -.6903 | 1.131 | 170 | -.3725 | 0.000 | | 1.0566 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7712 | .231 | 40 | -.2843 | .431 | 150 | -.6958 | 1.131 | 160 | -.3947 | 0.000 | | 1.0000 | -.10 | 0.00 |
| 8 | .161 | 110 | -.8631 | .231 | 30 | -.2022 | .431 | 140 | -.7770 | 1.131 | 150 | -.3923 | 0.000 | | .9148 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8695 | .231 | 20 | -.1299 | .431 | 130 | -.7443 | 1.131 | 140 | -.3959 | 0.000 | | .8241 | .10 | 0.00 |
| 10 | .161 | 90 | -.9528 | .231 | 10 | -.1013 | .431 | 120 | -.7966 | 1.131 | 130 | -.4313 | 0.000 | | .6598 | .20 | 0.00 |
| 11 | .161 | 80 | -.9759 | .231 | 0 | -.0921 | .431 | 110 | -.7770 | 1.131 | 120 | -.4685 | 0.000 | | .4505 | .30 | 0.00 |
| 12 | .161 | 70 | -1.0850 | .331 | 180 | -.5418 | .431 | 100 | -.7198 | 1.131 | 110 | -.5104 | 0.000 | | .2558 | .40 | 0.00 |
| 13 | .161 | 60 | -.9764 | .331 | 170 | -.5763 | .431 | 90 | -.6347 | 1.131 | 100 | -.5290 | 0.000 | | .1390 | .45 | 0.00 |
| 14 | .161 | 50 | -.7825 | .331 | 160 | -.6082 | .431 | 80 | -.5224 | 1.131 | 90 | -.5014 | 0.000 | | .8959 | 0.00 | .10 |
| 15 | .161 | 40 | -.7003 | .331 | 150 | -.6233 | .431 | 70 | -.4149 | 1.131 | 80 | -.4535 | 0.000 | | .8497 | 0.00 | .20 |
| 16 | .161 | 30 | -.6482 | .331 | 140 | -.7221 | .431 | 60 | -.3184 | 1.131 | 70 | -.3875 | 0.000 | | .6970 | 0.00 | .30 |
| 17 | .161 | 20 | -.6660 | .331 | 130 | -.7491 | .431 | 50 | -.2317 | 1.131 | 60 | -.3090 | 0.000 | | .3884 | 0.00 | .40 |
| 18 | .161 | 10 | -.4968 | .331 | 120 | -.7760 | .431 | 40 | -.1521 | 1.131 | 50 | -.2304 | 0.000 | | .3452 | 0.00 | .45 |
| 19 | .161 | 0 | -.4902 | .331 | 110 | -.8462 | .431 | 30 | -.0578 | 1.131 | 40 | -.1243 | .161 | 270 | -.9188 | | |
| 20 | .231 | 180 | -.5284 | .331 | 100 | -.7615 | .431 | 20 | -.0147 | 1.131 | 30 | -.0493 | .231 | 270 | -.8873 | | |
| 21 | .231 | 170 | -.5805 | .331 | 90 | -.7404 | .431 | 10 | -.0268 | 1.131 | 20 | -.0052 | .331 | 270 | -.7333 | | |
| 22 | .231 | 160 | -.6826 | .331 | 80 | -.6287 | .431 | 0 | -.0404 | 1.131 | 10 | .0616 | .431 | 270 | -.6408 | | |
| 23 | .231 | 150 | -.8054 | .331 | 70 | -.4851 | .531 | 180 | -.7170 | 1.131 | 0 | -.0738 | .531 | 270 | -.5770 | | |
| 24 | .231 | 140 | -.8830 | .331 | 60 | -.3755 | .531 | 90 | -.5523 | | | | .731 | 270 | -.5374 | | |
| 25 | .231 | 130 | -.7830 | .331 | 50 | -.2692 | .531 | 0 | -.0502 | 1.631 | 90 | -.4535 | .931 | 270 | -.5283 | | |
| 26 | .231 | 120 | -.7842 | .331 | 40 | -.1623 | .731 | 180 | -.6538 | 1.631 | 0 | -.2784 | 1.131 | 270 | -.5137 | | |
| 27 | .231 | 110 | -.8728 | .331 | 30 | -.1055 | .731 | 90 | -.5365 | 2.131 | 180 | -.0505 | 1.631 | 270 | -.4535 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 59 ALPHA 26 MACH .403 Q 217.071 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5794 | .231 | 100 | -.7124 | .331 | 20 | .1037 | .731 | 0 | .1636 | 2.131 | 90 | -.3523 | | |
| 2 | .161 | 170 | -.5418 | .231 | 90 | -.7119 | .331 | 10 | .1376 | .931 | 180 | -.3555 | 2.131 | 0 | .1579 | | |
| 3 | .161 | 160 | -.5050 | .231 | 80 | -.7108 | .331 | 0 | .1665 | .931 | 90 | -.6657 | 0.000 | | .8382 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4660 | .231 | 70 | -.6109 | .431 | 180 | -.6396 | .931 | 0 | -.5181 | 0.000 | | 1.0240 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4364 | .231 | 60 | -.3618 | .431 | 170 | -.5943 | 1.131 | 180 | -.5061 | 0.000 | | 1.0465 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6606 | .231 | 50 | -.2575 | .431 | 160 | -.6145 | 1.131 | 170 | -.5385 | 0.000 | | .9990 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6149 | .231 | 40 | -.1452 | .431 | 150 | -.5834 | 1.131 | 160 | -.5517 | 0.000 | | .9253 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6257 | .231 | 30 | -.0263 | .431 | 140 | -.6101 | 1.131 | 150 | -.5301 | 0.000 | | .7980 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7031 | .231 | 20 | .0499 | .431 | 130 | -.7046 | 1.131 | 140 | -.5079 | 0.000 | | .6768 | .10 | 0.00 |
| 10 | .161 | 90 | -.7111 | .231 | 10 | .1142 | .431 | 120 | -.6784 | 1.131 | 130 | -.5679 | 0.000 | | .5185 | .20 | 0.00 |
| 11 | .161 | 80 | -.8171 | .231 | 0 | .1304 | .431 | 110 | -.7117 | 1.131 | 120 | -.6543 | 0.000 | | .3017 | .30 | 0.00 |
| 12 | .161 | 70 | -.7332 | .331 | 180 | -.5288 | .431 | 100 | -.5889 | 1.131 | 110 | -.6651 | 0.000 | | .1476 | .40 | 0.00 |
| 13 | .161 | 60 | -.6848 | .331 | 170 | -.6363 | .431 | 90 | -.6014 | 1.131 | 100 | -.6867 | 0.000 | | -.0424 | .45 | 0.00 |
| 14 | .161 | 50 | -.6316 | .331 | 160 | -.6222 | .431 | 80 | -.5283 | 1.131 | 90 | -.7101 | 0.000 | | .7859 | 0.00 | .10 |
| 15 | .161 | 40 | -.4756 | .331 | 150 | -.6049 | .431 | 70 | -.4142 | 1.131 | 80 | -.6177 | 0.000 | | .7719 | 0.00 | .20 |
| 16 | .161 | 30 | -.3611 | .331 | 140 | -.6617 | .431 | 60 | -.3132 | 1.131 | 70 | -.5457 | 0.000 | | .6190 | 0.00 | .30 |
| 17 | .161 | 20 | -.2288 | .331 | 130 | -.6201 | .431 | 50 | -.1888 | 1.131 | 60 | -.4041 | 0.000 | | .3845 | 0.00 | .40 |
| 18 | .161 | 10 | -.1536 | .331 | 120 | -.5990 | .431 | 40 | -.0933 | 1.131 | 50 | -.2918 | 0.000 | | .3073 | 0.00 | .45 |
| 19 | .161 | 0 | -.1557 | .331 | 110 | -.6735 | .431 | 30 | .0109 | 1.131 | 40 | -.1418 | .161 | 270 | -.6761 | | |
| 20 | .231 | 180 | -.5364 | .331 | 100 | -.6957 | .431 | 20 | .0770 | 1.131 | 30 | -.0422 | .231 | 270 | -.7315 | | |
| 21 | .231 | 170 | -.5299 | .331 | 90 | -.6033 | .431 | 10 | .1403 | 1.131 | 20 | .0418 | .331 | 270 | -.6743 | | |
| 22 | .231 | 160 | -.5461 | .331 | 80 | -.5568 | .431 | 0 | .1687 | 1.131 | 10 | .1438 | .431 | 270 | -.5817 | | |
| 23 | .231 | 150 | -.6127 | .331 | 70 | -.4785 | .531 | 180 | -.6838 | 1.131 | 0 | .1396 | .531 | 270 | -.6438 | | |
| 24 | .231 | 140 | -.6515 | .331 | 60 | -.3348 | .531 | 90 | -.6052 | | | .731 | .731 | 270 | -.6743 | | |
| 25 | .231 | 130 | -.7074 | .331 | 50 | -.1992 | .531 | 0 | .1867 | 1.631 | 90 | -.6171 | .931 | 270 | -.6895 | | |
| 26 | .231 | 120 | -.6875 | .331 | 40 | -.0884 | .731 | 180 | -.6582 | 1.631 | 0 | -.3417 | 1.131 | 270 | -.7065 | | |
| 27 | .231 | 110 | -.6170 | .331 | 30 | .0007 | .731 | 90 | -.6107 | 2.131 | 180 | -.1658 | 1.631 | 270 | -.7108 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 60 ALPHA 0 MACH .404 Q 217.725 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5792 | .231 | 100 | -.5104 | .331 | 20 | -.5794 | .731 | 0 | -.6038 | 2.131 | 90 | -.1460 | | |
| 2 | .161 | 170 | -.5406 | .231 | 90 | -.5341 | .331 | 10 | -.5794 | .931 | 180 | -.1473 | 2.131 | 0 | .0652 | | |
| 3 | .161 | 160 | -.5294 | .231 | 80 | -.5271 | .331 | 0 | -.6006 | .931 | 90 | -.5614 | 0.000 | | .5036 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5615 | .231 | 70 | -.5939 | .431 | 180 | -.5881 | .931 | 0 | -.5129 | 0.000 | | .5589 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5680 | .231 | 60 | -.5309 | .431 | 170 | -.6148 | 1.131 | 180 | -.3472 | 0.000 | | .8321 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5412 | .231 | 50 | -.5390 | .431 | 160 | -.5887 | 1.131 | 170 | -.4052 | 0.000 | | .9681 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5487 | .231 | 40 | -.5271 | .431 | 150 | -.6175 | 1.131 | 160 | -.3603 | 0.000 | | 1.0240 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5353 | .231 | 30 | -.5530 | .431 | 140 | -.5832 | 1.131 | 150 | -.4088 | 0.000 | | 1.0616 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5615 | .231 | 20 | -.5470 | .431 | 130 | -.6066 | 1.131 | 140 | -.3717 | 0.000 | | 1.0270 | .10 | 0.00 |
| 10 | .161 | 90 | -.5492 | .231 | 10 | -.5352 | .431 | 120 | -.5745 | 1.131 | 130 | -.3585 | 0.000 | | .9730 | .20 | 0.00 |
| 11 | .161 | 80 | -.5540 | .231 | 0 | -.5583 | .431 | 110 | -.6017 | 1.131 | 120 | -.3484 | 0.000 | | .8303 | .30 | 0.00 |
| 12 | .161 | 70 | -.5792 | .331 | 180 | -.6311 | .431 | 100 | -.6311 | 1.131 | 110 | -.3053 | 0.000 | | .5595 | .40 | 0.00 |
| 13 | .161 | 60 | -.5428 | .331 | 170 | -.5637 | .431 | 90 | -.5919 | 1.131 | 100 | -.3890 | 0.000 | | .4672 | .45 | 0.00 |
| 14 | .161 | 50 | -.5144 | .331 | 160 | -.5858 | .431 | 80 | -.5636 | 1.131 | 90 | -.4052 | 0.000 | | 1.0331 | 0.00 | .10 |
| 15 | .161 | 40 | -.5508 | .331 | 150 | -.5891 | .431 | 70 | -.6181 | 1.131 | 80 | -.3226 | 0.000 | | .9870 | 0.00 | .20 |
| 16 | .161 | 30 | -.5615 | .331 | 140 | -.5750 | .431 | 60 | -.6714 | 1.131 | 70 | -.3789 | 0.000 | | .8230 | 0.00 | .30 |
| 17 | .161 | 20 | -.5245 | .331 | 130 | -.5697 | .431 | 50 | -.5789 | 1.131 | 60 | -.4028 | 0.000 | | .5722 | 0.00 | .40 |
| 18 | .161 | 10 | -.5701 | .331 | 120 | -.5707 | .431 | 40 | -.5908 | 1.131 | 50 | -.3729 | 0.000 | | .5109 | 0.00 | .45 |
| 19 | .161 | 0 | -.5229 | .331 | 110 | -.5600 | .431 | 30 | -.5685 | 1.131 | 40 | -.4291 | .161 | 270 | -.5526 | | |
| 20 | .231 | 180 | -.5492 | .331 | 100 | -.5546 | .431 | 20 | -.6175 | 1.131 | 30 | -.3741 | .231 | 270 | -.5363 | | |
| 21 | .231 | 170 | -.5712 | .331 | 90 | -.5406 | .431 | 10 | -.5860 | 1.131 | 20 | -.3729 | .331 | 270 | -.5696 | | |
| 22 | .231 | 160 | -.5476 | .331 | 80 | -.5616 | .431 | 0 | -.5794 | 1.131 | 10 | -.4064 | .431 | 270 | -.5629 | | |
| 23 | .231 | 150 | -.5508 | .331 | 70 | -.5772 | .531 | 180 | -.6066 | 1.131 | 0 | -.4363 | .531 | 270 | -.5896 | | |
| 24 | .231 | 140 | -.5267 | .331 | 60 | -.5675 | .531 | 90 | -.6012 | | | .731 | .731 | 270 | -.6145 | | |
| 25 | .231 | 130 | -.5358 | .331 | 50 | -.5777 | .531 | 0 | -.6491 | 1.631 | 90 | -.0420 | .931 | 270 | -.5405 | | |
| 26 | .231 | 120 | -.5374 | .331 | 40 | -.5605 | .731 | 180 | -.6828 | 1.631 | 0 | -.1575 | 1.131 | 270 | -.3766 | | |
| 27 | .231 | 110 | -.5471 | .331 | 30 | -.5395 | .731 | 90 | -.6491 | 2.131 | 180 | .0370 | 1.631 | 270 | .0233 | | |

ORIGINAL PAGE IS
OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 53 ALPHA 14 MACH .403 Q 217.352 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|---------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4933 | .231 | 100 | -.9192 | .331 | 20 | -.1684 | .731 | 0 | -.0235 | 2.131 | 90 | -.2247 | | |
| 2 | .161 | 170 | -.4814 | .231 | 90 | -.9580 | .331 | 10 | -.1406 | .931 | 180 | -.2015 | 2.131 | 0 | .0410 | | |
| 3 | .161 | 160 | -.5582 | .231 | 80 | -.9570 | .331 | 0 | -.1406 | .931 | 90 | -.3352 | 0.000 | | .4771 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6366 | .231 | 70 | -.9419 | .431 | 180 | -.6344 | .931 | 0 | -.2693 | 0.000 | | .7295 | -.40 | 0.00 |
| 5 | .161 | 140 | -.7322 | .231 | 60 | -.9225 | .431 | 170 | -.6333 | 1.131 | 180 | -.2645 | 0.000 | | .9740 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7918 | .231 | 50 | -.7228 | .431 | 160 | -.6584 | 1.131 | 170 | -.2645 | 0.000 | | 1.0622 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7891 | .231 | 40 | -.5011 | .431 | 150 | -.6927 | 1.131 | 160 | -.3226 | 0.000 | | 1.0373 | -.10 | 0.00 |
| 8 | .161 | 110 | -.8525 | .231 | 30 | -.4110 | .431 | 140 | -.7262 | 1.131 | 150 | -.2627 | 0.000 | | .9941 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8912 | .231 | 20 | -.3511 | .431 | 130 | -.7489 | 1.131 | 140 | -.2944 | 0.000 | | .9071 | .10 | 0.00 |
| 10 | .161 | 90 | -.9481 | .231 | 10 | -.3252 | .431 | 120 | -.7674 | 1.131 | 130 | -.3412 | 0.000 | | .7733 | .20 | 0.00 |
| 11 | .161 | 80 | -1.0883 | .231 | 0 | -.3171 | .431 | 110 | -.8671 | 1.131 | 120 | -.3046 | 0.000 | | .5781 | .30 | 0.00 |
| 12 | .161 | 70 | -1.1452 | .331 | 180 | -.5361 | .431 | 100 | -.7701 | 1.131 | 110 | -.3172 | 0.000 | | .3494 | .40 | 0.00 |
| 13 | .161 | 60 | -1.1371 | .331 | 170 | -.5437 | .431 | 90 | -.7053 | 1.131 | 100 | -.3202 | 0.000 | | .2764 | .45 | 0.00 |
| 14 | .161 | 50 | -1.1402 | .331 | 160 | -.5815 | .431 | 80 | -.5630 | 1.131 | 90 | -.3050 | 0.000 | | .9813 | 0.00 | .10 |
| 15 | .161 | 40 | -1.0383 | .331 | 150 | -.6748 | .431 | 70 | -.4229 | 1.131 | 80 | -.2807 | 0.000 | | .8700 | 0.00 | .20 |
| 16 | .161 | 30 | -.8611 | .331 | 140 | -.7271 | .431 | 60 | -.2976 | 1.131 | 70 | -.2367 | 0.000 | | .7441 | 0.00 | .30 |
| 17 | .161 | 20 | -.7789 | .331 | 130 | -.7277 | .431 | 50 | -.2354 | 1.131 | 60 | -.1782 | 0.000 | | .4260 | 0.00 | .40 |
| 18 | .161 | 10 | -.7542 | .331 | 120 | -.7633 | .431 | 40 | -.1973 | 1.131 | 50 | -.1404 | 0.000 | | .3792 | 0.00 | .45 |
| 19 | .161 | 0 | -.7397 | .331 | 110 | -.7919 | .431 | 30 | -.1439 | 1.131 | 40 | -.0925 | .161 | 270 | -1.0248 | | |
| 20 | .231 | 180 | -.5341 | .331 | 100 | -.8572 | .431 | 20 | -.1237 | 1.131 | 30 | -.0595 | .231 | 270 | -.9530 | | |
| 21 | .231 | 170 | -.5904 | .331 | 90 | -.8636 | .431 | 10 | -.0855 | 1.131 | 20 | -.0307 | .331 | 270 | -.8691 | | |
| 22 | .231 | 160 | -.5674 | .331 | 80 | -.7498 | .431 | 0 | -.0752 | 1.131 | 10 | .0118 | .431 | 270 | -.6819 | | |
| 23 | .231 | 150 | -.6538 | .331 | 70 | -.6300 | .531 | 180 | -.6355 | 1.131 | 0 | .0166 | .531 | 270 | -.5329 | | |
| 24 | .231 | 140 | -.7311 | .331 | 60 | -.4503 | .531 | 90 | -.5379 | | | .731 | 270 | -.4010 | | | |
| 25 | .231 | 130 | -.7671 | .331 | 50 | -.3155 | .531 | 0 | -.0528 | 1.631 | 90 | -.2363 | .931 | 270 | -.3329 | | |
| 26 | .231 | 120 | -.8348 | .331 | 40 | -.2572 | .731 | 180 | -.6033 | 1.631 | 0 | -.2345 | 1.131 | 270 | -.2995 | | |
| 27 | .231 | 110 | -.8815 | .331 | 30 | -.2070 | .731 | 90 | -.3880 | 2.131 | 180 | -.0014 | 1.631 | 270 | -.2344 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 54 ALPHA 16 MACH .404 Q 217.819 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|---------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4866 | .231 | 100 | -.8564 | .331 | 20 | -.1223 | .731 | 0 | .0088 | 2.131 | 90 | -.2430 | | |
| 2 | .161 | 170 | -.4697 | .231 | 90 | -.9124 | .331 | 10 | -.0951 | .931 | 180 | -.2717 | 2.131 | 0 | .0567 | | |
| 3 | .161 | 160 | -.5597 | .231 | 80 | -.9221 | .331 | 0 | -.0859 | .931 | 90 | -.3727 | 0.000 | | .5453 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6133 | .231 | 70 | -.8758 | .431 | 180 | -.6254 | .931 | 0 | -.3033 | 0.000 | | .7935 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6974 | .231 | 60 | -.7692 | .431 | 170 | -.6107 | 1.131 | 180 | -.3249 | 0.000 | | 1.0217 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7949 | .231 | 50 | -.5468 | .431 | 160 | -.6999 | 1.131 | 170 | -.3093 | 0.000 | | 1.0606 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7799 | .231 | 40 | -.4122 | .431 | 150 | -.6879 | 1.131 | 160 | -.3655 | 0.000 | | 1.0393 | -.10 | 0.00 |
| 8 | .161 | 110 | -.8753 | .231 | 30 | -.3352 | .431 | 140 | -.7614 | 1.131 | 150 | -.3177 | 0.000 | | .9908 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.9203 | .231 | 20 | -.2921 | .431 | 130 | -.7826 | 1.131 | 140 | -.3380 | 0.000 | | .8755 | .10 | 0.00 |
| 10 | .161 | 90 | -.9669 | .231 | 10 | -.2555 | .431 | 120 | -.7880 | 1.131 | 130 | -.3578 | 0.000 | | .7444 | .20 | 0.00 |
| 11 | .161 | 80 | -.9696 | .231 | 0 | -.2426 | .431 | 110 | -.7652 | 1.131 | 120 | -.3715 | 0.000 | | .5611 | .30 | 0.00 |
| 12 | .161 | 70 | -1.0521 | .331 | 180 | -.5834 | .431 | 100 | -.7630 | 1.131 | 110 | -.3864 | 0.000 | | .3068 | .40 | 0.00 |
| 13 | .161 | 60 | -1.1677 | .331 | 170 | -.5570 | .431 | 90 | -.6336 | 1.131 | 100 | -.3745 | 0.000 | | .1963 | .45 | 0.00 |
| 14 | .161 | 50 | -1.0275 | .331 | 160 | -.6302 | .431 | 80 | -.5003 | 1.131 | 90 | -.3620 | 0.000 | | .9550 | 0.00 | .10 |
| 15 | .161 | 40 | -.8549 | .331 | 150 | -.6583 | .431 | 70 | -.3910 | 1.131 | 80 | -.3321 | 0.000 | | .8892 | 0.00 | .20 |
| 16 | .161 | 30 | -.7724 | .331 | 140 | -.7153 | .431 | 60 | -.3094 | 1.131 | 70 | -.2842 | 0.000 | | .7322 | 0.00 | .30 |
| 17 | .161 | 20 | -.7231 | .331 | 130 | -.7595 | .431 | 50 | -.2458 | 1.131 | 60 | -.2101 | 0.000 | | .3990 | 0.00 | .40 |
| 18 | .161 | 10 | -.6802 | .331 | 120 | -.8074 | .431 | 40 | -.1838 | 1.131 | 50 | -.1670 | 0.000 | | .3511 | 0.00 | .45 |
| 19 | .161 | 0 | -.6749 | .331 | 110 | -.8908 | .431 | 30 | -.1212 | 1.131 | 40 | -.0970 | .161 | 270 | -1.0298 | | |
| 20 | .231 | 180 | -.5106 | .331 | 100 | -.8801 | .431 | 20 | -.0875 | 1.131 | 30 | -.0402 | .231 | 270 | -.8988 | | |
| 21 | .231 | 170 | -.5447 | .331 | 90 | -.7950 | .431 | 10 | -.0434 | 1.131 | 20 | -.0031 | .331 | 270 | -.8114 | | |
| 22 | .231 | 160 | -.5656 | .331 | 80 | -.7056 | .431 | 0 | -.0396 | 1.131 | 10 | .0148 | .431 | 270 | -.6616 | | |
| 23 | .231 | 150 | -.6041 | .331 | 70 | -.5726 | .531 | 180 | -.6542 | 1.131 | 0 | .0202 | .531 | 270 | -.5336 | | |
| 24 | .231 | 140 | -.7305 | .331 | 60 | -.3955 | .531 | 90 | -.5373 | | | .731 | 270 | -.4480 | | | |
| 25 | .231 | 130 | -.7637 | .331 | 50 | -.3049 | .531 | 0 | -.0233 | 1.631 | 90 | -.2878 | .931 | 270 | -.4019 | | |
| 26 | .231 | 120 | -.7553 | .331 | 40 | -.2410 | .731 | 180 | -.6292 | 1.631 | 0 | -.2400 | 1.131 | 270 | -.3686 | | |
| 27 | .231 | 110 | -.8244 | .331 | 30 | -.1661 | .731 | 90 | -.4263 | 2.131 | 180 | -.0013 | 1.631 | 270 | -.3019 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 19 POINT 57 ALPHA 22 MACH .403 Q 216.6031 | | | | | | | | | | | | | | | | | |
| MUDEL OUME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4648 | .231 | 100 | -.7774 | .331 | 20 | .0987 | .731 | 0 | .1115 | 2.131 | 90 | -.3079 | | |
| 2 | .161 | 170 | -.5284 | .231 | 90 | -.7622 | .331 | 10 | .0974 | .931 | 180 | -.2552 | 2.131 | 0 | .1473 | | |
| 3 | .161 | 160 | -.5279 | .231 | 80 | -.7270 | .331 | 0 | .0744 | .931 | 90 | -.5433 | 0.000 | | .7594 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6093 | .231 | 70 | -.6945 | .431 | 180 | -.5738 | .931 | 0 | -.3978 | 0.000 | | .9993 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6168 | .231 | 60 | -.5272 | .431 | 170 | -.6099 | 1.131 | 180 | -.4778 | 0.000 | | 1.0634 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7084 | .231 | 50 | -.3193 | .431 | 160 | -.5542 | 1.131 | 170 | -.3875 | 0.000 | | 1.0786 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6932 | .231 | 40 | -.2164 | .431 | 150 | -.6449 | 1.131 | 160 | -.4940 | 0.000 | | .9932 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7688 | .231 | 30 | -.1439 | .431 | 140 | -.7450 | 1.131 | 150 | -.4399 | 0.000 | | .8864 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8736 | .231 | 20 | -.0524 | .431 | 130 | -.7898 | 1.131 | 140 | -.3887 | 0.000 | | .7912 | .10 | 0.00 |
| 10 | .161 | 90 | -.8423 | .231 | 10 | -.0118 | .431 | 120 | -.7723 | 1.131 | 130 | -.4687 | 0.000 | | .6234 | .20 | 0.00 |
| 11 | .161 | 80 | -.8949 | .231 | 0 | -.0074 | .431 | 110 | -.7406 | 1.131 | 120 | -.5180 | 0.000 | | .4152 | .30 | 0.00 |
| 12 | .161 | 70 | -.9487 | .331 | 180 | -.5537 | .431 | 100 | -.6941 | 1.131 | 110 | -.5932 | 0.000 | | .2351 | .40 | 0.00 |
| 13 | .161 | 60 | -.8431 | .331 | 170 | -.5759 | .431 | 90 | -.6356 | 1.131 | 100 | -.6047 | 0.000 | | .0453 | .45 | 0.00 |
| 14 | .161 | 50 | -.6949 | .331 | 160 | -.5954 | .431 | 80 | -.4912 | 1.131 | 90 | -.5403 | 0.000 | | .8827 | 0.30 | .10 |
| 15 | .161 | 40 | -.6454 | .331 | 150 | -.7449 | .431 | 70 | -.4474 | 1.131 | 80 | -.5241 | 0.000 | | .7954 | J.00 | .20 |
| 16 | .161 | 30 | -.5613 | .331 | 140 | -.7514 | .431 | 60 | -.3260 | 1.131 | 70 | -.4369 | 0.000 | | .6581 | 0.00 | .30 |
| 17 | .161 | 20 | -.4508 | .331 | 130 | -.7108 | .431 | 50 | -.2155 | 1.131 | 60 | -.3076 | 0.000 | | .3847 | 0.00 | .40 |
| 18 | .161 | 10 | -.3905 | .331 | 120 | -.7162 | .431 | 40 | -.1362 | 1.131 | 50 | -.2276 | 0.000 | | .3401 | 0.00 | .45 |
| 19 | .161 | 0 | -.3819 | .331 | 110 | -.7081 | .431 | 30 | -.0487 | 1.131 | 40 | -.1313 | .161 | 270 | -.7660 | | |
| 20 | .231 | 180 | -.5527 | .331 | 100 | -.7075 | .431 | 20 | .0394 | 1.131 | 30 | -.0141 | .231 | 270 | -.8332 | | |
| 21 | .231 | 170 | -.6297 | .331 | 90 | -.7221 | .431 | 10 | .0705 | 1.131 | 20 | .0383 | .331 | 270 | -.7215 | | |
| 22 | .231 | 160 | -.6049 | .331 | 80 | -.6268 | .431 | 0 | .0776 | 1.131 | 10 | .0918 | .431 | 270 | -.6032 | | |
| 23 | .231 | 150 | -.6055 | .331 | 70 | -.4585 | .531 | 180 | -.6465 | 1.131 | 0 | .1092 | .531 | 270 | -.5702 | | |
| 24 | .231 | 140 | -.6766 | .331 | 60 | -.3426 | .531 | 90 | -.5617 | | | .731 | 270 | -.5562 | | | |
| 25 | .231 | 130 | -.7440 | .331 | 50 | -.2316 | .531 | 0 | .0859 | 1.631 | 90 | -.4940 | .931 | 270 | -.5673 | | |
| 26 | .231 | 120 | -.6696 | .331 | 40 | -.1358 | .731 | 180 | -.6531 | 1.631 | 0 | -.3430 | 1.131 | 270 | -.5446 | | |
| 27 | .231 | 110 | -.7370 | .331 | 30 | -.0551 | .731 | 90 | -.5967 | 2.131 | 180 | -.0514 | 1.631 | 270 | -.4726 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 19 POINT 58 ALPHA 24 MACH .403 Q 217.351 | | | | | | | | | | | | | | | | | |
| MUDEL OUME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5029 | .231 | 100 | -.6295 | .331 | 20 | .0889 | .731 | 0 | .1353 | 2.131 | 90 | -.3135 | | |
| 2 | .161 | 170 | -.5115 | .231 | 90 | -.6683 | .331 | 10 | .1145 | .931 | 180 | -.3112 | 2.131 | 0 | .1717 | | |
| 3 | .161 | 160 | -.5625 | .231 | 80 | -.7244 | .331 | 0 | .1243 | .931 | 90 | -.6067 | 0.000 | | .8110 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6764 | .231 | 70 | -.6592 | .431 | 180 | -.6786 | .931 | 0 | -.4689 | 0.000 | | 1.0361 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6549 | .231 | 60 | -.4115 | .431 | 170 | -.5859 | 1.131 | 180 | -.5492 | 0.000 | | 1.0762 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6613 | .231 | 50 | -.3030 | .431 | 160 | -.6497 | 1.131 | 170 | -.5078 | 0.000 | | 1.0294 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7043 | .231 | 40 | -.1822 | .431 | 150 | -.6780 | 1.131 | 160 | -.4653 | 0.000 | | .9789 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6537 | .231 | 30 | -.0575 | .431 | 140 | -.6551 | 1.131 | 150 | -.6229 | 0.000 | | .8706 | 0.00 | J.00 |
| 9 | .161 | 100 | -.6801 | .231 | 20 | -.0214 | .431 | 130 | -.6720 | 1.131 | 140 | -.5006 | 0.000 | | .7073 | .10 | 0.00 |
| 10 | .161 | 90 | -.6608 | .231 | 10 | .0466 | .431 | 120 | -.6862 | 1.131 | 130 | -.5318 | 0.000 | | .5689 | .20 | 0.00 |
| 11 | .161 | 80 | -.7714 | .231 | 0 | .0844 | .431 | 110 | -.6202 | 1.131 | 120 | -.6181 | 0.000 | | .3658 | .30 | 0.00 |
| 12 | .161 | 70 | -.8412 | .331 | 180 | -.5566 | .431 | 100 | -.6241 | 1.131 | 110 | -.6313 | 0.000 | | .1760 | .40 | 0.00 |
| 13 | .161 | 60 | -.7043 | .331 | 170 | -.5890 | .431 | 90 | -.5576 | 1.131 | 100 | -.6391 | 0.000 | | .0610 | .45 | J.00 |
| 14 | .161 | 50 | -.6343 | .331 | 160 | -.5896 | .431 | 80 | -.5009 | 1.131 | 90 | -.6169 | 0.000 | | .8451 | 0.30 | .10 |
| 15 | .161 | 40 | -.5384 | .331 | 150 | -.5669 | .431 | 70 | -.3902 | 1.131 | 80 | -.5935 | 0.000 | | .7873 | 0.00 | .20 |
| 16 | .161 | 30 | -.4481 | .331 | 140 | -.6802 | .431 | 60 | -.3134 | 1.131 | 70 | -.4964 | 0.000 | | .6456 | 0.30 | .30 |
| 17 | .161 | 20 | -.3214 | .331 | 130 | -.7142 | .431 | 50 | -.1880 | 1.131 | 60 | -.3556 | 0.000 | | .3377 | 0.00 | .40 |
| 18 | .161 | 10 | -.2564 | .331 | 120 | -.6473 | .431 | 40 | -.0899 | 1.131 | 50 | -.2489 | 0.000 | | .3390 | 0.00 | .45 |
| 19 | .161 | 0 | -.2709 | .331 | 110 | -.6905 | .431 | 30 | -.0141 | 1.131 | 40 | -.1476 | .161 | 270 | -.7463 | | |
| 20 | .231 | 180 | -.4847 | .331 | 100 | -.6252 | .431 | 20 | .0943 | 1.131 | 30 | .0100 | .231 | 270 | -.6788 | | |
| 21 | .231 | 170 | -.5410 | .331 | 90 | -.6602 | .431 | 10 | .1292 | 1.131 | 20 | .0586 | .331 | 270 | -.6971 | | |
| 22 | .231 | 160 | -.5459 | .331 | 80 | -.5723 | .431 | 0 | .1352 | 1.131 | 10 | .1077 | .431 | 270 | -.5864 | | |
| 23 | .231 | 150 | -.5834 | .331 | 70 | -.4865 | .531 | 180 | -.6317 | 1.131 | 0 | .1113 | .531 | 270 | -.5913 | | |
| 24 | .231 | 140 | -.5615 | .331 | 60 | -.3257 | .531 | 90 | -.5298 | | | .731 | 270 | -.5816 | | | |
| 25 | .231 | 130 | -.6893 | .331 | 50 | -.2286 | .531 | 0 | .1210 | 1.631 | 90 | -.5642 | .931 | 270 | -.6387 | | |
| 26 | .231 | 120 | -.6366 | .331 | 40 | -.1277 | .731 | 180 | -.6388 | 1.631 | 0 | -.3430 | 1.131 | 270 | -.6624 | | |
| 27 | .231 | 110 | -.6490 | .331 | 30 | -.0209 | .731 | 90 | -.5908 | 2.131 | 180 | -.0721 | 1.631 | 270 | -.6260 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 49 ALPHA 6 MACH .404 Q 218.006 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4285 | .231 | 100 | -.6690 | .331 | 20 | -.8721 | .731 | 0 | -.1507 | 2.131 | 90 | -.1555 | | |
| 2 | .161 | 170 | -.4216 | .231 | 90 | -.6614 | .331 | 10 | -.8553 | .931 | 180 | -.1274 | 2.131 | 0 | .0027 | | |
| 3 | .161 | 160 | -.4425 | .231 | 80 | -.6948 | .331 | 0 | -.8444 | .931 | 90 | -.3951 | 0.000 | | .5042 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4906 | .231 | 70 | -.7351 | .431 | 180 | -.5243 | .931 | 0 | -.2696 | 0.000 | | .6049 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5137 | .231 | 60 | -.7630 | .431 | 170 | -.5243 | 1.131 | 180 | -.3425 | 0.000 | | .8838 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6095 | .231 | 50 | -.7678 | .431 | 160 | -.5564 | 1.131 | 170 | -.3945 | 0.000 | | .9978 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5876 | .231 | 40 | -.8056 | .431 | 150 | -.5374 | 1.131 | 160 | -.3706 | 0.000 | | 1.0451 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6309 | .231 | 30 | -.8309 | .431 | 140 | -.5944 | 1.131 | 150 | -.3843 | 0.000 | | 1.0367 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6658 | .231 | 20 | -.8433 | .431 | 130 | -.6194 | 1.131 | 140 | -.4142 | 0.000 | | .9997 | .10 | 0.00 |
| 10 | .161 | 90 | -.6732 | .231 | 10 | -.8459 | .431 | 120 | -.6140 | 1.131 | 130 | -.3999 | 0.000 | | .9069 | .20 | 0.00 |
| 11 | .161 | 80 | -.7112 | .231 | 0 | -.8357 | .431 | 110 | -.6558 | 1.131 | 120 | -.3270 | 0.000 | | .7431 | .30 | 0.00 |
| 12 | .161 | 70 | -.7060 | .331 | 180 | -.4914 | .431 | 100 | -.6710 | 1.131 | 110 | -.2554 | 0.000 | | .4830 | .40 | 0.00 |
| 13 | .161 | 60 | -.7305 | .331 | 170 | -.5033 | .431 | 90 | -.7096 | 1.131 | 100 | -.2146 | 0.000 | | .4193 | .45 | 0.00 |
| 14 | .161 | 50 | -.7412 | .331 | 160 | -.4785 | .431 | 80 | -.7172 | 1.131 | 90 | -.1806 | 0.000 | | 1.0173 | 0.00 | .10 |
| 15 | .161 | 40 | -.7728 | .331 | 150 | -.5226 | .431 | 70 | -.7460 | 1.131 | 80 | -.1537 | 0.000 | | .9499 | 0.00 | .20 |
| 16 | .161 | 30 | -.7894 | .331 | 140 | -.5711 | .431 | 60 | -.7857 | 1.131 | 70 | -.0808 | 0.000 | | .7953 | 0.00 | .30 |
| 17 | .161 | 20 | -.8033 | .331 | 130 | -.6033 | .431 | 50 | -.8053 | 1.131 | 60 | -.0425 | 0.000 | | .5048 | 0.00 | .40 |
| 18 | .161 | 10 | -.8060 | .331 | 120 | -.6415 | .431 | 40 | -.8460 | 1.131 | 50 | -.0043 | 0.000 | | .4618 | 0.00 | .45 |
| 19 | .161 | 0 | -.8253 | .331 | 110 | -.6448 | .431 | 30 | -.8341 | 1.131 | 40 | -.0085 | .161 | 270 | -.7155 | | |
| 20 | .231 | 180 | -.4623 | .331 | 100 | -.6921 | .431 | 20 | -.8476 | 1.131 | 30 | -.0178 | .231 | 270 | -.6858 | | |
| 21 | .231 | 170 | -.4612 | .331 | 90 | -.6743 | .431 | 10 | -.8444 | 1.131 | 20 | -.0519 | .331 | 270 | -.7058 | | |
| 22 | .231 | 160 | -.4842 | .331 | 80 | -.7163 | .431 | 0 | -.8574 | 1.131 | 10 | -.0274 | .431 | 270 | -.7131 | | |
| 23 | .231 | 150 | -.4992 | .331 | 70 | -.7453 | .531 | 180 | -.5526 | 1.131 | 0 | -.0381 | .531 | 270 | -.7452 | | |
| 24 | .231 | 140 | -.5137 | .331 | 60 | -.7459 | .531 | 90 | -.7286 | | | | .731 | 270 | -.6368 | | |
| 25 | .231 | 130 | -.5859 | .331 | 50 | -.8034 | .531 | 0 | -.6830 | 1.631 | 90 | -.0067 | .931 | 270 | -.3834 | | |
| 26 | .231 | 120 | -.6020 | .331 | 40 | -.7975 | .731 | 180 | -.5569 | 1.631 | 0 | -.1059 | 1.131 | 270 | -.1622 | | |
| 27 | .231 | 110 | -.6261 | .331 | 30 | -.8320 | .731 | 90 | -.6439 | 2.131 | 180 | .0202 | 1.631 | 270 | -.0343 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 50 ALPHA 8 MACH .404 Q 217.445 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|---------|------|-----|---------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4356 | .231 | 100 | -.7214 | .331 | 20 | -.9474 | .731 | 0 | -.0304 | 2.131 | 90 | -.1565 | | |
| 2 | .161 | 170 | -.3970 | .231 | 90 | -.7381 | .331 | 10 | -.9376 | .931 | 180 | -.1709 | 2.131 | 0 | .0051 | | |
| 3 | .161 | 160 | -.5005 | .231 | 80 | -.8110 | .331 | 0 | -.9572 | .931 | 90 | -.2476 | 0.000 | | .5049 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5285 | .231 | 70 | -.8217 | .431 | 180 | -.5382 | .931 | 0 | -.2602 | 0.000 | | .6271 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5510 | .231 | 60 | -.8595 | .431 | 170 | -.5491 | 1.131 | 180 | -.3872 | 0.000 | | .9031 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6213 | .231 | 50 | -.8983 | .431 | 160 | -.5704 | 1.131 | 170 | -.3548 | 0.000 | | 1.0265 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6761 | .231 | 40 | -.9302 | .431 | 150 | -.5982 | 1.131 | 160 | -.3656 | 0.000 | | 1.0587 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7115 | .231 | 30 | -.9469 | .431 | 140 | -.6336 | 1.131 | 150 | -.4243 | 0.000 | | 1.0375 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7196 | .231 | 20 | -.9668 | .431 | 130 | -.6467 | 1.131 | 140 | -.3686 | 0.000 | | .9779 | .10 | 0.00 |
| 10 | .161 | 90 | -.7523 | .231 | 10 | -.9728 | .431 | 120 | -.6543 | 1.131 | 130 | -.3620 | 0.000 | | .8782 | .20 | 0.00 |
| 11 | .161 | 80 | -.7893 | .231 | 0 | -.10121 | .431 | 110 | -.7224 | 1.131 | 120 | -.2398 | 0.000 | | .6946 | .30 | 0.00 |
| 12 | .161 | 70 | -.7705 | .331 | 180 | -.4793 | .431 | 100 | -.7180 | 1.131 | 110 | -.2434 | 0.000 | | .4593 | .40 | 0.00 |
| 13 | .161 | 60 | -.8226 | .331 | 170 | -.5116 | .431 | 90 | -.7578 | 1.131 | 100 | -.1919 | 0.000 | | .4033 | .45 | 0.00 |
| 14 | .161 | 50 | -.8532 | .331 | 160 | -.5499 | .431 | 80 | -.7976 | 1.131 | 90 | -.1751 | 0.000 | | 1.0168 | 0.00 | .10 |
| 15 | .161 | 40 | -.8929 | .331 | 150 | -.5893 | .431 | 70 | -.8357 | 1.131 | 80 | -.1308 | 0.000 | | .9426 | 0.00 | .20 |
| 16 | .161 | 30 | -.9128 | .331 | 140 | -.6082 | .431 | 60 | -.8368 | 1.131 | 70 | -.1020 | 0.000 | | .7943 | 0.00 | .30 |
| 17 | .161 | 20 | -.9477 | .331 | 130 | -.6497 | .431 | 50 | -.8357 | 1.131 | 60 | -.0625 | 0.000 | | .4872 | 0.00 | .40 |
| 18 | .161 | 10 | -.9251 | .331 | 120 | -.6670 | .431 | 40 | -.8117 | 1.131 | 50 | -.0517 | 0.000 | | .4447 | 0.00 | .45 |
| 19 | .161 | 0 | -.10523 | .331 | 110 | -.7160 | .431 | 30 | -.6548 | 1.131 | 40 | -.0433 | .161 | 270 | -.7575 | | |
| 20 | .231 | 180 | -.4555 | .331 | 100 | -.7015 | .431 | 20 | -.7583 | 1.131 | 30 | -.0157 | .231 | 270 | -.7679 | | |
| 21 | .231 | 170 | -.4298 | .331 | 90 | -.7603 | .431 | 10 | -.7338 | 1.131 | 20 | -.0205 | .331 | 270 | -.7393 | | |
| 22 | .231 | 160 | -.4914 | .331 | 80 | -.7910 | .431 | 0 | -.6527 | 1.131 | 10 | -.0109 | .431 | 270 | -.7831 | | |
| 23 | .231 | 150 | -.4920 | .331 | 70 | -.8045 | .531 | 180 | -.5529 | 1.131 | 0 | -.0022 | .531 | 270 | -.7782 | | |
| 24 | .231 | 140 | -.5854 | .331 | 60 | -.8692 | .531 | 90 | -.7638 | | | | .731 | 270 | -.5291 | | |
| 25 | .231 | 130 | -.6310 | .331 | 50 | -.8994 | .531 | 0 | -.2800 | 1.631 | 90 | -.0804 | .931 | 270 | -.2690 | | |
| 26 | .231 | 120 | -.6567 | .331 | 40 | -.9312 | .731 | 180 | -.5976 | 1.631 | 0 | -.1691 | 1.131 | 270 | -.1827 | | |
| 27 | .231 | 110 | -.7351 | .331 | 30 | -.9043 | .731 | 90 | -.4707 | 2.131 | 180 | .0058 | 1.631 | 270 | -.0346 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 51 ALPHA 10 MACH .404 Q 217.820 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|---------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4391 | .231 | 100 | -.7858 | .331 | 20 | -.6635 | .731 | 0 | -.0145 | 2.131 | 90 | -.1829 | | |
| 2 | .161 | 170 | -.4697 | .231 | 90 | -.8187 | .331 | 10 | -.6428 | .931 | 180 | -.1784 | 2.131 | 0 | -.0034 | | |
| 3 | .161 | 160 | -.4911 | .231 | 80 | -.8284 | .331 | 0 | -.6069 | .931 | 90 | -.2699 | 0.000 | | .4646 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5307 | .231 | 70 | -.8558 | .431 | 180 | -.5514 | .931 | 0 | -.2597 | 0.000 | | .6582 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6079 | .231 | 60 | -.9565 | .431 | 170 | -.5873 | 1.131 | 180 | -.2932 | 0.000 | | .9222 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6963 | .231 | 50 | -1.0157 | .431 | 160 | -.5890 | 1.131 | 170 | -.3440 | 0.000 | | 1.0284 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7435 | .231 | 40 | -1.0583 | .431 | 150 | -.6194 | 1.131 | 150 | -.3374 | 0.000 | | 1.0478 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7912 | .231 | 30 | -1.1073 | .431 | 140 | -.6939 | 1.131 | 150 | -.4242 | 0.000 | | 1.0249 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8094 | .231 | 20 | -1.1089 | .431 | 130 | -.7015 | 1.131 | 140 | -.3566 | 0.000 | | .9513 | .10 | 0.00 |
| 10 | .161 | 90 | -.8710 | .231 | 10 | -1.1116 | .431 | 120 | -.7331 | 1.131 | 130 | -.3171 | 0.000 | | .8366 | .20 | 0.00 |
| 11 | .161 | 80 | -.8753 | .231 | 0 | -1.0825 | .431 | 110 | -.7837 | 1.131 | 120 | -.2687 | 0.000 | | .6570 | .30 | 0.00 |
| 12 | .161 | 70 | -.9128 | .331 | 180 | -.5683 | .431 | 100 | -.8179 | 1.131 | 110 | -.2465 | 0.000 | | .4166 | .40 | 0.00 |
| 13 | .161 | 60 | -.9364 | .331 | 170 | -.5269 | .431 | 90 | -.8283 | 1.131 | 100 | -.2089 | 0.000 | | .3784 | .45 | 0.00 |
| 14 | .161 | 50 | -.9878 | .331 | 160 | -.5640 | .431 | 80 | -.8239 | 1.131 | 90 | -.1987 | 0.000 | | .9914 | 0.00 | .10 |
| 15 | .161 | 40 | -1.0484 | .331 | 150 | -.5990 | .431 | 70 | -.7679 | 1.131 | 80 | -.1813 | 0.000 | | .9343 | 0.00 | .20 |
| 16 | .161 | 30 | -1.0752 | .331 | 140 | -.6297 | .431 | 60 | -.7266 | 1.131 | 70 | -.1520 | 0.000 | | .7773 | 0.00 | .30 |
| 17 | .161 | 20 | -1.1566 | .331 | 130 | -.7002 | .431 | 50 | -.5710 | 1.131 | 60 | -.1120 | 0.000 | | .4438 | 0.00 | .40 |
| 18 | .161 | 10 | -1.1400 | .331 | 120 | -.7320 | .431 | 40 | -.4024 | 1.131 | 50 | -.1006 | 0.000 | | .4148 | 0.00 | .45 |
| 19 | .161 | 0 | -1.1818 | .331 | 110 | -.7632 | .431 | 30 | -.2806 | 1.131 | 40 | -.0785 | .161 | 270 | -.8612 | | |
| 20 | .231 | 180 | -.4825 | .331 | 100 | -.8133 | .431 | 20 | -.2044 | 1.131 | 30 | -.0563 | .231 | 270 | -.8211 | | |
| 21 | .231 | 170 | -.5039 | .331 | 90 | -.8515 | .431 | 10 | -.1299 | 1.131 | 20 | -.0438 | .331 | 270 | -.8339 | | |
| 22 | .231 | 160 | -.4997 | .331 | 80 | -.8790 | .431 | 0 | -.1141 | 1.131 | 10 | -.0240 | .431 | 270 | -.8211 | | |
| 23 | .231 | 150 | -.5538 | .331 | 70 | -.9005 | .531 | 180 | -.5890 | 1.131 | 0 | -.0252 | .531 | 270 | -.7295 | | |
| 24 | .231 | 140 | -.6299 | .331 | 60 | -.9113 | .531 | 90 | -.7233 | .731 | 270 | | .731 | 270 | -.4402 | | |
| 25 | .231 | 130 | -.6754 | .331 | 50 | -.9129 | .531 | 0 | -.0287 | 1.631 | 90 | -.1449 | .931 | 270 | -.2576 | | |
| 26 | .231 | 120 | -.7295 | .331 | 40 | -.8429 | .731 | 180 | -.5803 | 1.631 | 0 | -.1790 | 1.131 | 270 | -.2090 | | |
| 27 | .231 | 110 | -.7606 | .331 | 30 | -.7250 | .731 | 90 | -.3980 | 2.131 | 180 | .0047 | 1.631 | 270 | -.1343 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 52 ALPHA 12 MACH .403 Q 217.352 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|---------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4986 | .231 | 100 | -.9149 | .331 | 20 | -.2016 | .731 | 0 | -.0535 | 2.131 | 90 | -.1986 | | |
| 2 | .161 | 170 | -.4809 | .231 | 90 | -.8863 | .331 | 10 | -.2005 | .931 | 180 | -.2255 | 2.131 | 0 | .0227 | | |
| 3 | .161 | 160 | -.5260 | .231 | 80 | -1.0088 | .331 | 0 | -.1880 | .931 | 90 | -.2729 | 0.000 | | .4011 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6039 | .231 | 70 | -1.0023 | .431 | 180 | -.5695 | .931 | 0 | -.2729 | 0.000 | | .6498 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6490 | .231 | 60 | -.9877 | .431 | 170 | -.5968 | 1.131 | 180 | -.3136 | 0.000 | | .9576 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7311 | .231 | 50 | -.8388 | .431 | 160 | -.6202 | 1.131 | 170 | -.3214 | 0.000 | | 1.0482 | -.20 | 0.00 |
| 7 | .161 | 120 | -.8224 | .231 | 40 | -.7196 | .431 | 150 | -.6715 | 1.131 | 160 | -.3424 | 0.000 | | 1.0592 | -.10 | 0.00 |
| 8 | .161 | 110 | -.8273 | .231 | 30 | -.5723 | .431 | 140 | -.7042 | 1.131 | 150 | -.2855 | 0.000 | | 1.0068 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8928 | .231 | 20 | -.4563 | .431 | 130 | -.7527 | 1.131 | 140 | -.2729 | 0.000 | | .9345 | .10 | 0.00 |
| 10 | .161 | 90 | -.9529 | .231 | 10 | -.4039 | .431 | 120 | -.7652 | 1.131 | 130 | -.2902 | 0.000 | | .8147 | .20 | 0.00 |
| 11 | .161 | 80 | -1.0125 | .231 | 0 | -.3651 | .431 | 110 | -.8295 | 1.131 | 120 | -.2615 | 0.000 | | .6340 | .30 | 0.00 |
| 12 | .161 | 70 | -1.1462 | .331 | 180 | -.5966 | .431 | 100 | -.8159 | 1.131 | 110 | -.2723 | 0.000 | | .3786 | .40 | 0.00 |
| 13 | .161 | 60 | -1.1914 | .331 | 170 | -.5663 | .431 | 90 | -.7560 | 1.131 | 100 | -.2747 | 0.000 | | .3554 | .45 | 0.00 |
| 14 | .161 | 50 | -1.1849 | .331 | 160 | -.5653 | .431 | 80 | -.6262 | 1.131 | 90 | -.2519 | 0.000 | | .9765 | 0.00 | .10 |
| 15 | .161 | 40 | -1.1914 | .331 | 150 | -.6311 | .431 | 70 | -.4927 | 1.131 | 80 | -.2429 | 0.000 | | .9089 | 0.00 | .20 |
| 16 | .161 | 30 | -1.1033 | .331 | 140 | -.6705 | .431 | 60 | -.3673 | 1.131 | 70 | -.2195 | 0.000 | | .7636 | 0.00 | .30 |
| 17 | .161 | 20 | -.8955 | .331 | 130 | -.7536 | .431 | 50 | -.2294 | 1.131 | 60 | -.1662 | 0.000 | | .4394 | 0.00 | .40 |
| 18 | .161 | 10 | -.8337 | .331 | 120 | -.7417 | .431 | 40 | -.1913 | 1.131 | 50 | -.1380 | 0.000 | | .4033 | 0.00 | .45 |
| 19 | .161 | 0 | -.7843 | .331 | 110 | -.7935 | .431 | 30 | -.1460 | 1.131 | 40 | -.0961 | .161 | 270 | -.9731 | | |
| 20 | .231 | 180 | -.4949 | .331 | 100 | -.8475 | .431 | 20 | -.1439 | 1.131 | 30 | -.0757 | .231 | 270 | -.9062 | | |
| 21 | .231 | 170 | -.5276 | .331 | 90 | -.9117 | .431 | 10 | -.1210 | 1.131 | 20 | -.0517 | .331 | 270 | -.9001 | | |
| 22 | .231 | 160 | -.5625 | .331 | 80 | -.8243 | .431 | 0 | -.1210 | 1.131 | 10 | -.0265 | .431 | 270 | -.7281 | | |
| 23 | .231 | 150 | -.6114 | .331 | 70 | -.7072 | .531 | 180 | -.6273 | 1.131 | 0 | -.0271 | .531 | 270 | -.5512 | | |
| 24 | .231 | 140 | -.6957 | .331 | 60 | -.5896 | .531 | 90 | -.5815 | .731 | 270 | | .731 | 270 | -.3834 | | |
| 25 | .231 | 130 | -.7204 | .331 | 50 | -.4282 | .531 | 0 | -.0823 | 1.631 | 90 | -.1896 | .931 | 270 | -.2764 | | |
| 26 | .231 | 120 | -.7875 | .331 | 40 | -.2944 | .731 | 180 | -.5728 | 1.631 | 0 | -.2291 | 1.131 | 270 | -.2405 | | |
| 27 | .231 | 110 | -.8240 | .331 | 30 | -.2307 | .731 | 90 | -.3477 | 2.131 | 180 | -.0002 | 1.631 | 270 | -.1853 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 19 POINT 45 ALPHA -1 MACH .404 Q 217.911 | | | | MODEL DOME FACE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.6494 | .231 | 100 | -.6004 | .331 | 20 | -.5229 | .731 | 0 | -.5919 | 2.131 | 90 | -.1659 | | | | | |
| 2 | .161 | 170 | -.6044 | .231 | 90 | -.5374 | .331 | 10 | -.5012 | .931 | 130 | -.1520 | 2.131 | 0 | -.0100 | | | | | |
| 3 | .161 | 160 | -.5916 | .231 | 80 | -.5573 | .331 | 0 | -.4941 | .931 | 90 | -.5322 | 0.000 | | .5220 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.5782 | .231 | 70 | -.5304 | .431 | 180 | -.6452 | .931 | 0 | .4033 | 0.000 | | .5493 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.5787 | .231 | 60 | -.4845 | .431 | 170 | -.6322 | 1.131 | 180 | -.2548 | 0.000 | | .8125 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.7040 | .231 | 50 | -.5363 | .431 | 160 | -.6251 | 1.131 | 170 | -.2835 | 0.000 | | .9552 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.5798 | .231 | 40 | -.5272 | .431 | 150 | -.6365 | 1.131 | 160 | -.2380 | 0.000 | | 1.0183 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.5487 | .231 | 30 | -.5170 | .431 | 140 | -.5952 | 1.131 | 150 | -.3714 | 0.000 | | 1.0436 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.5562 | .231 | 20 | -.5256 | .431 | 130 | -.6039 | 1.131 | 140 | -.3092 | 0.000 | | 1.0371 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.5594 | .231 | 10 | -.5218 | .431 | 120 | -.5941 | 1.131 | 130 | -.3349 | 0.000 | | .9698 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.5412 | .231 | 0 | -.4658 | .431 | 110 | -.5953 | 1.131 | 120 | -.3570 | 0.000 | | .8339 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.5273 | .331 | 180 | -.5971 | .431 | 100 | -.5833 | 1.131 | 110 | -.3463 | 0.000 | | .5693 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.5262 | .331 | 170 | -.6397 | .431 | 90 | -.5604 | 1.131 | 100 | -.3630 | 0.000 | | .4632 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.5345 | .331 | 160 | -.6111 | .431 | 80 | -.6017 | 1.131 | 90 | -.3558 | 0.000 | | 1.0189 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.5278 | .331 | 150 | -.6267 | .431 | 70 | -.5827 | 1.131 | 80 | -.3726 | 0.000 | | .9582 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.5107 | .331 | 140 | -.6079 | .431 | 60 | -.5778 | 1.131 | 70 | -.3534 | 0.000 | | .8125 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.5123 | .331 | 130 | -.5848 | .431 | 50 | -.5392 | 1.131 | 60 | -.4180 | 0.000 | | .5639 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.5294 | .331 | 120 | -.6025 | .431 | 40 | -.5735 | 1.131 | 50 | -.4013 | 0.000 | | .4973 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.5046 | .331 | 110 | -.5702 | .431 | 30 | -.5338 | 1.131 | 40 | -.4132 | .161 | 270 | -.5643 | | | | | |
| 20 | .231 | 180 | -.6034 | .331 | 100 | -.5643 | .431 | 20 | -.5680 | 1.131 | 30 | -.3492 | .231 | 270 | -.5776 | | | | | |
| 21 | .231 | 170 | -.6264 | .331 | 90 | -.5971 | .431 | 10 | -.5338 | 1.131 | 20 | -.4066 | .331 | 270 | -.5758 | | | | | |
| 22 | .231 | 150 | -.5991 | .331 | 80 | -.5514 | .431 | 0 | -.5604 | 1.131 | 10 | -.3672 | .431 | 270 | -.5964 | | | | | |
| 23 | .231 | 150 | -.5862 | .331 | 70 | -.5654 | .531 | 180 | -.6398 | 1.131 | 3 | -.3247 | .531 | 270 | -.6110 | | | | | |
| 24 | .231 | 140 | -.6232 | .331 | 60 | -.5762 | .531 | 90 | -.6371 | | | .731 | 270 | -.6152 | | | | | | |
| 25 | .231 | 130 | -.5734 | .331 | 50 | -.5826 | .531 | 0 | -.5235 | 1.631 | 90 | .0047 | .931 | 270 | -.5430 | | | | | |
| 26 | .231 | 120 | -.5926 | .331 | 40 | -.5492 | .731 | 180 | -.6425 | 1.631 | 0 | -.1496 | 1.131 | 270 | -.3338 | | | | | |
| 27 | .231 | 110 | -.5975 | .331 | 30 | -.5277 | .731 | 90 | -.5355 | 2.131 | 180 | .0369 | 1.631 | 270 | .0142 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 19 POINT 46 ALPHA 0 MACH .403 Q 217.350 | | | | MODEL DOME FACE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|---|--------|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.5298 | .231 | 100 | -.5491 | .331 | 20 | -.5717 | .731 | 0 | -.6349 | 2.131 | 90 | -.1378 | | | | | |
| 2 | .161 | 170 | -.5609 | .231 | 90 | -.5707 | .331 | 10 | -.5761 | .931 | 180 | -.1464 | 2.131 | 0 | .0507 | | | | | |
| 3 | .161 | 160 | -.5142 | .231 | 80 | -.5237 | .331 | 0 | -.5586 | .931 | 90 | -.5360 | 0.000 | | .5008 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.5491 | .231 | 70 | -.5507 | .431 | 180 | -.5755 | .931 | 0 | .1407 | 0.000 | | .5702 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.5566 | .231 | 60 | -.5566 | .431 | 170 | -.5946 | 1.131 | 180 | -.5412 | 0.000 | | .8208 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.5142 | .231 | 50 | -.5739 | .431 | 160 | -.5657 | 1.131 | 170 | -.3706 | 0.000 | | .9582 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.5625 | .231 | 40 | -.5297 | .431 | 150 | -.6039 | 1.131 | 160 | -.3322 | 0.000 | | 1.0288 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.5480 | .231 | 30 | -.5183 | .431 | 140 | -.5636 | 1.131 | 150 | -.3945 | 0.000 | | 1.0519 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.4922 | .231 | 20 | -.6020 | .431 | 130 | -.5276 | 1.131 | 140 | -.4341 | 0.000 | | 1.0330 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.5305 | .231 | 10 | -.5264 | .431 | 120 | -.5701 | 1.131 | 130 | -.3832 | 0.000 | | .9661 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.5545 | .231 | 0 | -.5534 | .431 | 110 | -.5930 | 1.131 | 120 | -.3670 | 0.000 | | .8253 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.5249 | .331 | 180 | -.5415 | .431 | 100 | -.5543 | 1.131 | 110 | -.3736 | 0.000 | | .5695 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.4965 | .331 | 170 | -.5912 | .431 | 90 | -.5548 | 1.131 | 100 | -.4239 | 0.000 | | .4564 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.5378 | .331 | 160 | -.5566 | .431 | 80 | -.5630 | 1.131 | 90 | -.4077 | 0.000 | | 1.0294 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.5464 | .331 | 150 | -.5777 | .431 | 70 | -.5728 | 1.131 | 80 | -.3843 | 0.000 | | .9667 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.5620 | .331 | 140 | -.5491 | .431 | 60 | -.5826 | 1.131 | 70 | -.3556 | 0.000 | | .8086 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.5754 | .331 | 130 | -.5523 | .431 | 50 | -.6077 | 1.131 | 60 | -.3310 | 0.000 | | .5683 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.5609 | .331 | 120 | -.5723 | .431 | 40 | -.5886 | 1.131 | 50 | -.3520 | 0.000 | | .5185 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.5749 | .331 | 110 | -.5534 | .431 | 30 | -.5946 | 1.131 | 40 | -.3742 | .161 | 270 | -.5287 | | | | | |
| 20 | .231 | 180 | -.5566 | .331 | 100 | -.5453 | .431 | 20 | -.5766 | 1.131 | 30 | -.4107 | .231 | 270 | -.5524 | | | | | |
| 21 | .231 | 170 | -.5255 | .331 | 90 | -.5464 | .431 | 13 | -.5072 | 1.131 | 20 | -.3484 | .331 | 270 | -.5609 | | | | | |
| 22 | .231 | 160 | -.5448 | .331 | 80 | -.5512 | .431 | 0 | -.5717 | 1.131 | 10 | -.4029 | .431 | 270 | -.5937 | | | | | |
| 23 | .231 | 150 | -.5652 | .331 | 70 | -.5728 | .531 | 180 | -.5914 | 1.131 | 0 | -.4335 | .531 | 270 | -.5937 | | | | | |
| 24 | .231 | 140 | -.5706 | .331 | 60 | -.5599 | .531 | 90 | -.5892 | | | .731 | 270 | -.5992 | | | | | | |
| 25 | .231 | 130 | -.5942 | .331 | 50 | -.5944 | .531 | 0 | -.6475 | 1.631 | 90 | .0026 | .931 | 270 | -.5536 | | | | | |
| 26 | .231 | 120 | -.5760 | .331 | 40 | -.5723 | .731 | 180 | -.5897 | 1.631 | 0 | -.1596 | 1.131 | 270 | -.3394 | | | | | |
| 27 | .231 | 110 | -.5604 | .331 | 30 | -.5707 | .731 | 90 | -.6039 | 2.131 | 180 | .0634 | 1.631 | 270 | .0160 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 47 ALPHA 2 MACH .403 J 217.351 MODEL DIME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 130 | -.5695 | .231 | 100 | -.5378 | .331 | 20 | -.6442 | .731 | 0 | -.6577 | 2.131 | 90 | -.1475 | | |
| 2 | .161 | 170 | -.4680 | .231 | 90 | -.5863 | .331 | 10 | -.6437 | .931 | 130 | -.1482 | 2.131 | 0 | .0179 | | |
| 3 | .161 | 160 | -.4487 | .231 | 80 | -.5906 | .331 | 0 | -.6246 | .931 | 90 | -.5444 | 0.000 | | .4953 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4804 | .231 | 70 | -.5998 | .431 | 180 | -.5178 | .931 | 0 | -.1416 | 0.000 | | .5513 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4981 | .231 | 60 | -.6230 | .431 | 170 | -.5243 | 1.131 | 180 | -.4293 | 0.000 | | .8311 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5233 | .231 | 50 | -.6176 | .431 | 160 | -.5352 | 1.131 | 170 | -.3933 | 0.000 | | .9765 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5056 | .231 | 40 | -.6165 | .431 | 150 | -.5194 | 1.131 | 150 | -.4497 | 0.000 | | 1.0318 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5507 | .231 | 30 | -.6322 | .431 | 140 | -.5973 | 1.131 | 150 | -.4005 | 0.000 | | 1.0343 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5486 | .231 | 20 | -.6289 | .431 | 130 | -.5586 | 1.131 | 140 | -.3933 | 0.000 | | 1.0081 | .10 | 0.00 |
| 10 | .161 | 90 | -.5615 | .231 | 10 | -.6090 | .431 | 120 | -.5646 | 1.131 | 130 | -.3957 | 0.000 | | .9430 | .20 | 0.00 |
| 11 | .161 | 80 | -.5604 | .231 | 0 | -.6683 | .431 | 110 | -.5843 | 1.131 | 120 | -.3975 | 0.000 | | .8042 | .30 | 0.00 |
| 12 | .161 | 70 | -.6028 | .331 | 180 | -.5173 | .431 | 100 | -.6110 | 1.131 | 110 | -.3939 | 0.000 | | .5282 | .40 | 0.00 |
| 13 | .161 | 60 | -.5969 | .331 | 170 | -.5151 | .431 | 90 | -.6072 | 1.131 | 100 | -.3400 | 0.000 | | .4625 | .45 | 0.00 |
| 14 | .161 | 50 | -.5910 | .331 | 160 | -.4730 | .431 | 80 | -.5941 | 1.131 | 90 | -.3496 | 0.000 | | 1.0184 | 0.00 | .10 |
| 15 | .161 | 40 | -.6084 | .331 | 150 | -.5119 | .431 | 70 | -.6578 | 1.131 | 80 | -.2453 | 0.000 | | .9509 | 0.00 | .20 |
| 16 | .161 | 30 | -.5974 | .331 | 140 | -.5696 | .431 | 60 | -.6159 | 1.131 | 70 | -.2944 | 0.000 | | .8115 | 0.00 | .30 |
| 17 | .161 | 20 | -.6084 | .331 | 130 | -.5761 | .431 | 50 | -.6753 | 1.131 | 60 | -.2135 | 0.000 | | .5434 | 0.00 | .40 |
| 18 | .161 | 10 | -.6307 | .331 | 120 | -.5383 | .431 | 40 | -.6339 | 1.131 | 50 | -.2837 | 0.000 | | .5067 | 0.00 | .45 |
| 19 | .161 | 0 | -.6431 | .331 | 110 | -.5545 | .431 | 30 | -.6459 | 1.131 | 40 | -.2069 | .161 | 270 | -.5749 | | |
| 20 | .231 | 180 | -.4986 | .331 | 100 | -.5529 | .431 | 20 | -.6377 | 1.131 | 30 | -.2447 | .231 | 270 | -.5761 | | |
| 21 | .231 | 170 | -.4884 | .331 | 90 | -.5966 | .431 | 10 | -.6835 | 1.131 | 20 | -.1278 | .331 | 270 | -.5907 | | |
| 22 | .231 | 160 | -.5040 | .331 | 80 | -.5923 | .431 | 0 | -.6546 | 1.131 | 10 | -.1776 | .431 | 270 | -.6016 | | |
| 23 | .231 | 150 | -.4965 | .331 | 70 | -.5874 | .531 | 180 | -.5292 | 1.131 | 0 | -.1476 | .531 | 270 | -.6351 | | |
| 24 | .231 | 140 | -.5018 | .331 | 60 | -.6138 | .531 | 90 | -.5995 | | | .731 | 270 | -.6436 | | | |
| 25 | .231 | 130 | -.5250 | .331 | 50 | -.6084 | .531 | 0 | -.6611 | 1.631 | 90 | .0075 | .931 | 270 | -.5373 | | |
| 26 | .231 | 120 | -.5357 | .331 | 40 | -.6176 | .731 | 180 | -.6159 | 1.631 | 0 | -.1236 | 1.131 | 270 | -.3597 | | |
| 27 | .231 | 110 | -.5341 | .331 | 30 | -.5993 | .731 | 90 | -.6088 | 2.131 | 180 | .0478 | 1.531 | 270 | .0197 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 19 POINT 48 ALPHA 4 MACH .404 J 218.000 MODEL DIME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5303 | .231 | 100 | -.5845 | .331 | 20 | -.7118 | .731 | 0 | -.5421 | 2.131 | 90 | -.1573 | | |
| 2 | .161 | 170 | -.4660 | .231 | 90 | -.6421 | .331 | 10 | -.7395 | .931 | 180 | -.1579 | 2.131 | 0 | .0264 | | |
| 3 | .161 | 160 | -.4350 | .231 | 80 | -.6356 | .331 | 0 | -.7227 | .931 | 90 | -.5170 | 0.000 | | .5000 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4644 | .231 | 70 | -.6528 | .431 | 180 | -.5162 | .931 | 0 | -.2541 | 0.000 | | .5940 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5180 | .231 | 60 | -.6843 | .431 | 170 | -.5232 | 1.131 | 180 | -.3963 | 0.000 | | .8705 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5260 | .231 | 50 | -.6786 | .431 | 160 | -.5493 | 1.131 | 170 | -.3813 | 0.000 | | .9942 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5458 | .231 | 40 | -.6916 | .431 | 150 | -.5374 | 1.131 | 160 | -.3963 | 0.000 | | 1.0482 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5843 | .231 | 30 | -.7045 | .431 | 140 | -.5330 | 1.131 | 150 | -.4501 | 0.000 | | 1.0500 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5908 | .231 | 20 | -.7303 | .431 | 130 | -.5662 | 1.131 | 140 | -.4112 | 0.000 | | 1.0100 | .10 | 0.00 |
| 10 | .161 | 90 | -.6218 | .231 | 10 | -.7238 | .431 | 120 | -.5922 | 1.131 | 130 | -.4053 | 0.000 | | .9233 | .20 | 0.00 |
| 11 | .161 | 80 | -.6325 | .231 | 0 | -.7115 | .431 | 110 | -.6123 | 1.131 | 120 | -.4088 | 0.000 | | .7813 | .30 | 0.00 |
| 12 | .161 | 70 | -.6502 | .331 | 180 | -.5043 | .431 | 100 | -.6330 | 1.131 | 110 | -.3180 | 0.000 | | .5091 | .40 | 0.00 |
| 13 | .161 | 60 | -.6743 | .331 | 170 | -.5146 | .431 | 90 | -.6341 | 1.131 | 100 | -.2863 | 0.000 | | .4443 | .45 | 0.00 |
| 14 | .161 | 50 | -.6957 | .331 | 160 | -.4904 | .431 | 80 | -.6564 | 1.131 | 90 | -.2857 | 0.000 | | 1.0360 | 0.00 | .10 |
| 15 | .161 | 40 | -.6995 | .331 | 150 | -.5399 | .431 | 70 | -.7004 | 1.131 | 80 | -.2110 | 0.000 | | .9572 | 0.00 | .20 |
| 16 | .161 | 30 | -.7059 | .331 | 140 | -.5286 | .431 | 60 | -.6988 | 1.131 | 70 | -.1262 | 0.000 | | .8086 | 0.00 | .30 |
| 17 | .161 | 20 | -.7142 | .331 | 130 | -.5382 | .431 | 50 | -.7221 | 1.131 | 60 | -.1280 | 0.000 | | .5467 | 0.00 | .40 |
| 18 | .161 | 10 | -.7043 | .331 | 120 | -.5888 | .431 | 40 | -.7362 | 1.131 | 50 | -.1142 | 0.000 | | .5054 | 0.00 | .45 |
| 19 | .161 | 0 | -.7182 | .331 | 110 | -.6216 | .431 | 30 | -.7650 | 1.131 | 40 | -.0425 | .161 | 270 | -.6083 | | |
| 20 | .231 | 180 | -.4666 | .331 | 100 | -.5993 | .431 | 20 | -.7455 | 1.131 | 30 | -.0192 | .231 | 270 | -.6222 | | |
| 21 | .231 | 170 | -.4419 | .331 | 90 | -.6275 | .431 | 10 | -.7667 | 1.131 | 20 | -.0210 | .331 | 270 | -.6337 | | |
| 22 | .231 | 160 | -.4658 | .331 | 80 | -.6512 | .431 | 0 | -.7649 | 1.131 | 10 | .0459 | .431 | 270 | -.6386 | | |
| 23 | .231 | 150 | -.4698 | .331 | 70 | -.6566 | .531 | 180 | -.5216 | 1.131 | 0 | -.0145 | .531 | 270 | -.6531 | | |
| 24 | .231 | 140 | -.5553 | .331 | 60 | -.7045 | .531 | 90 | -.6819 | | | .731 | 270 | -.6580 | | | |
| 25 | .231 | 130 | -.5255 | .331 | 50 | -.7217 | .531 | 0 | -.7721 | 1.631 | 90 | -.0055 | .931 | 270 | -.4628 | | |
| 26 | .231 | 120 | -.5752 | .331 | 40 | -.7475 | .731 | 180 | -.5754 | 1.631 | 0 | -.1579 | 1.131 | 270 | -.2634 | | |
| 27 | .231 | 110 | -.5785 | .331 | 30 | -.7437 | .731 | 90 | -.6710 | 2.131 | 180 | .0071 | 1.631 | 270 | .0051 | | |

ORIGINAL PAGE IS
 UNREPRODUCIBLE
 EXCEPT AS SHOWN

| 7 X 10 HIGH SPEED TUNNEL TEST 760 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 18 POINT 34 ALPHA 22 MACH .303 Q 128.692 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5139 | .231 | 100 | -.9028 | .331 | 20 | .0167 | .731 | 0 | .0839 | 2.131 | 90 | -.3155 | | |
| 2 | .161 | 170 | -.5257 | .231 | 90 | -.7679 | .331 | 10 | .0517 | .931 | 180 | -.2805 | 2.131 | 0 | .1343 | | |
| 3 | .161 | 160 | -.6472 | .231 | 80 | -.8499 | .331 | 0 | .0738 | .931 | 90 | -.5497 | 0.000 | | .7126 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6209 | .231 | 70 | -.6804 | .431 | 180 | -.6341 | .931 | 0 | -.4839 | 0.000 | | .9623 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6771 | .231 | 60 | -.4916 | .431 | 170 | -.6525 | 1.131 | 180 | -.3797 | 0.000 | | 1.0270 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7071 | .231 | 50 | -.3633 | .431 | 160 | -.6249 | 1.131 | 170 | -.3837 | 0.000 | | 1.0188 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7062 | .231 | 40 | -.2512 | .431 | 150 | -.6369 | 1.131 | 160 | -.4505 | 0.000 | | .9602 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7724 | .231 | 30 | -.1364 | .431 | 140 | -.7492 | 1.131 | 150 | -.3756 | 0.000 | | .8708 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8159 | .231 | 20 | -.0608 | .431 | 130 | -.7602 | 1.131 | 140 | -.3817 | 0.000 | | .7573 | .10 | 0.00 |
| 10 | .161 | 90 | -.8204 | .231 | 10 | -.0279 | .431 | 120 | -.7326 | 1.131 | 130 | -.4839 | 0.000 | | .6171 | .20 | 0.00 |
| 11 | .161 | 80 | -.9429 | .231 | 0 | -.0052 | .431 | 110 | -.7344 | 1.131 | 120 | -.5751 | 0.000 | | .4055 | .30 | 0.00 |
| 12 | .161 | 70 | -.9846 | .331 | 180 | -.5857 | .431 | 100 | -.6939 | 1.131 | 110 | -.5680 | 0.000 | | .1949 | .40 | 0.00 |
| 13 | .161 | 60 | -.8222 | .331 | 170 | -.6476 | .431 | 90 | -.5918 | 1.131 | 100 | -.5538 | 0.000 | | .0942 | .45 | 0.00 |
| 14 | .161 | 50 | -.7433 | .331 | 160 | -.6677 | .431 | 80 | -.5227 | 1.131 | 90 | -.5923 | 0.000 | | .8524 | 0.00 | .10 |
| 15 | .161 | 40 | -.6363 | .331 | 150 | -.6385 | .431 | 70 | -.4261 | 1.131 | 80 | -.5416 | 0.000 | | .7887 | 0.00 | .20 |
| 16 | .161 | 30 | -.5338 | .331 | 140 | -.7214 | .431 | 60 | -.3119 | 1.131 | 70 | -.4394 | 0.000 | | .6633 | 0.00 | .30 |
| 17 | .161 | 20 | -.4368 | .331 | 130 | -.6248 | .431 | 50 | -.2152 | 1.131 | 60 | -.3271 | 0.000 | | .3675 | 0.00 | .40 |
| 18 | .161 | 10 | -.3561 | .331 | 120 | -.7697 | .431 | 40 | -.1269 | 1.131 | 50 | -.2208 | 0.000 | | .2771 | 0.00 | .45 |
| 19 | .161 | 0 | -.3515 | .331 | 110 | -.8372 | .431 | 30 | -.0238 | 1.131 | 40 | -.1256 | .161 | 270 | -.8207 | | |
| 20 | .231 | 180 | -.5610 | .331 | 100 | -.7952 | .431 | 20 | .0223 | 1.131 | 30 | -.0517 | .231 | 270 | -.8648 | | |
| 21 | .231 | 170 | -.5728 | .331 | 90 | -.7387 | .431 | 10 | .0637 | 1.131 | 20 | -.0082 | .331 | 270 | -.7519 | | |
| 22 | .231 | 160 | -.5366 | .331 | 80 | -.6175 | .431 | 0 | .0784 | 1.131 | 10 | .0708 | .431 | 270 | -.6369 | | |
| 23 | .231 | 150 | -.7007 | .331 | 70 | -.4845 | .531 | 180 | -.7050 | 1.131 | 0 | .0869 | .531 | 270 | -.5866 | | |
| 24 | .231 | 140 | -.6789 | .331 | 60 | -.3706 | .531 | 90 | -.6000 | | | .731 | 270 | -.5876 | | | |
| 25 | .231 | 130 | -.7452 | .331 | 50 | -.2485 | .531 | 0 | .1060 | 1.631 | 90 | -.4981 | .931 | 270 | -.5691 | | |
| 26 | .231 | 120 | -.7442 | .331 | 40 | -.1501 | .731 | 180 | -.6534 | 1.631 | 0 | -.3291 | 1.131 | 270 | -.5424 | | |
| 27 | .231 | 110 | -.7796 | .331 | 30 | -.0498 | .731 | 90 | -.5770 | 2.131 | 180 | -.1266 | 1.631 | 270 | -.4767 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 18 POINT 35 ALPHA 24 MACH .302 Q 128.304 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5064 | .231 | 100 | -.8708 | .331 | 20 | .0528 | .731 | 0 | .1318 | 2.131 | 90 | -.3505 | | |
| 2 | .161 | 170 | -.4982 | .231 | 90 | -.8151 | .331 | 10 | .0722 | .931 | 180 | -.3819 | 2.131 | 0 | .1099 | | |
| 3 | .161 | 160 | -.6246 | .231 | 80 | -.8151 | .331 | 0 | .1054 | .931 | 90 | -.6266 | 0.000 | | .7271 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6365 | .231 | 70 | -.6313 | .431 | 180 | -.6545 | .931 | 0 | -.5687 | 0.000 | | .9590 | -.40 | 0.00 |
| 5 | .161 | 140 | -.7102 | .231 | 60 | -.4650 | .431 | 170 | -.5481 | 1.131 | 180 | -.4388 | 0.000 | | 1.0084 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6974 | .231 | 50 | -.3288 | .431 | 160 | -.6730 | 1.131 | 170 | -.4926 | 0.000 | | .9590 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6492 | .231 | 40 | -.1789 | .431 | 150 | -.6204 | 1.131 | 160 | -.4672 | 0.000 | | .9105 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7229 | .231 | 30 | -.0957 | .431 | 140 | -.7210 | 1.131 | 150 | -.4824 | 0.000 | | .8003 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7948 | .231 | 20 | -.0336 | .431 | 130 | -.7801 | 1.131 | 140 | -.4052 | 0.000 | | .6498 | .10 | 0.00 |
| 10 | .161 | 90 | -.8684 | .231 | 10 | .0304 | .431 | 120 | -.8318 | 1.131 | 130 | -.4804 | 0.000 | | .5118 | .20 | 0.00 |
| 11 | .161 | 80 | -.8311 | .231 | 0 | .0624 | .431 | 110 | -.6582 | 1.131 | 120 | -.6083 | 0.000 | | .3541 | .30 | 0.00 |
| 12 | .161 | 70 | -.8284 | .331 | 180 | -.5847 | .431 | 100 | -.6314 | 1.131 | 110 | -.6317 | 0.000 | | .1377 | .40 | 0.00 |
| 13 | .161 | 60 | -.7711 | .331 | 170 | -.5948 | .431 | 90 | -.6231 | 1.131 | 100 | -.6560 | 0.000 | | .0033 | .45 | 0.00 |
| 14 | .161 | 50 | -.6619 | .331 | 160 | -.6222 | .431 | 80 | -.5151 | 1.131 | 90 | -.6246 | 0.000 | | .8003 | 0.00 | .10 |
| 15 | .161 | 40 | -.5737 | .331 | 150 | -.7066 | .431 | 70 | -.4745 | 1.131 | 80 | -.6114 | 0.000 | | .7271 | 0.00 | .20 |
| 16 | .161 | 30 | -.4682 | .331 | 140 | -.7237 | .431 | 60 | -.3489 | 1.131 | 70 | -.5037 | 0.000 | | .5818 | 0.00 | .30 |
| 17 | .161 | 20 | -.3281 | .331 | 130 | -.7301 | .431 | 50 | -.2169 | 1.131 | 60 | -.3504 | 0.000 | | .3376 | 0.00 | .40 |
| 18 | .161 | 10 | -.2580 | .331 | 120 | -.6496 | .431 | 40 | -.1125 | 1.131 | 50 | -.2448 | 0.000 | | .2933 | 0.00 | .45 |
| 19 | .161 | 0 | -.2790 | .331 | 110 | -.7182 | .431 | 30 | -.0350 | 1.131 | 40 | -.1484 | .161 | 270 | -.8437 | | |
| 20 | .231 | 180 | -.5046 | .331 | 100 | -.7054 | .431 | 20 | .0685 | 1.131 | 30 | -.0022 | .231 | 270 | -.7408 | | |
| 21 | .231 | 170 | -.5155 | .331 | 90 | -.6935 | .431 | 10 | .1146 | 1.131 | 20 | .0750 | .331 | 270 | -.6955 | | |
| 22 | .231 | 160 | -.6337 | .331 | 80 | -.6048 | .431 | 0 | .1266 | 1.131 | 10 | .1379 | .431 | 270 | -.6317 | | |
| 23 | .231 | 150 | -.5637 | .331 | 70 | -.4769 | .531 | 180 | -.6730 | 1.131 | 0 | .1298 | .531 | 270 | -.6337 | | |
| 24 | .231 | 140 | -.7793 | .331 | 60 | -.3754 | .531 | 90 | -.6490 | | | .731 | 270 | -.6533 | | | |
| 25 | .231 | 130 | -.6392 | .331 | 50 | -.2164 | .531 | 0 | .1294 | 1.631 | 90 | -.5443 | .931 | 270 | -.6265 | | |
| 26 | .231 | 120 | -.7738 | .331 | 40 | -.1250 | .731 | 180 | -.6610 | 1.631 | 0 | -.3200 | 1.131 | 270 | -.6492 | | |
| 27 | .231 | 110 | -.7020 | .331 | 30 | -.0445 | .731 | 90 | -.6259 | 2.131 | 180 | -.0021 | 1.631 | 270 | -.5503 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 10 POINT 36 ALPHA 26 MACH .332 Q 129.304 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5573 | .231 | 100 | -.6990 | .331 | 20 | .1072 | .731 | 0 | .1867 | 2.131 | 90 | -.3247 | | |
| 2 | .161 | 170 | -.5027 | .231 | 90 | -.6670 | .331 | 10 | .1626 | .931 | 180 | -.3504 | 2.131 | 0 | .1765 | | |
| 3 | .161 | 160 | -.5446 | .231 | 80 | -.7017 | .331 | 0 | .1728 | .931 | 90 | -.6388 | 0.000 | | .8580 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6292 | .231 | 70 | -.5756 | .431 | 180 | -.6231 | .931 | 0 | -.5687 | 0.000 | | 1.0404 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5855 | .231 | 60 | -.3882 | .431 | 170 | -.6000 | 1.131 | 180 | -.4256 | 0.000 | | 1.0810 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7111 | .231 | 50 | -.2410 | .431 | 160 | -.6638 | 1.131 | 170 | -.4327 | 0.000 | | 1.0167 | -.20 | 0.00 |
| 7 | .161 | 120 | -.8248 | .231 | 40 | -.1332 | .431 | 150 | -.7644 | 1.131 | 160 | -.4253 | 0.000 | | .9260 | -.10 | 0.00 |
| 8 | .161 | 110 | -.8820 | .231 | 30 | -.0336 | .431 | 140 | -.6970 | 1.131 | 150 | -.4347 | 0.000 | | .8095 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6965 | .231 | 20 | .0569 | .431 | 130 | -.7081 | 1.131 | 140 | -.4631 | 0.000 | | .6476 | .10 | 0.00 |
| 10 | .161 | 90 | -.7547 | .231 | 10 | .1173 | .431 | 120 | -.6933 | 1.131 | 130 | -.4476 | 0.000 | | .5241 | .20 | 0.00 |
| 11 | .161 | 80 | -.8334 | .231 | 0 | .1264 | .431 | 110 | -.7145 | 1.131 | 120 | -.5758 | 0.000 | | .3129 | .30 | 0.00 |
| 12 | .161 | 70 | -.7493 | .331 | 180 | -.5482 | .431 | 100 | -.6102 | 1.131 | 110 | -.6499 | 0.000 | | .1723 | .40 | 0.00 |
| 13 | .161 | 60 | -.6892 | .331 | 170 | -.5546 | .431 | 90 | -.5779 | 1.131 | 100 | -.6774 | 0.000 | | -.0034 | .45 | 0.00 |
| 14 | .161 | 50 | -.6064 | .331 | 160 | -.6039 | .431 | 80 | -.5225 | 1.131 | 90 | -.6763 | 0.000 | | .8023 | 0.00 | .10 |
| 15 | .161 | 40 | -.4632 | .331 | 150 | -.6706 | .431 | 70 | -.4357 | 1.131 | 80 | -.5900 | 0.000 | | .7621 | 0.00 | .20 |
| 16 | .161 | 30 | -.3234 | .331 | 140 | -.7081 | .431 | 60 | -.3406 | 1.131 | 70 | -.5362 | 0.000 | | .5942 | 0.00 | .30 |
| 17 | .161 | 20 | -.2262 | .331 | 130 | -.6716 | .431 | 50 | -.2252 | 1.131 | 60 | -.3931 | 0.000 | | .3644 | 0.00 | .40 |
| 18 | .161 | 10 | -.1234 | .331 | 120 | -.6121 | .431 | 40 | -.0645 | 1.131 | 50 | -.2316 | 0.000 | | .3150 | 0.00 | .45 |
| 19 | .161 | 0 | -.0934 | .331 | 110 | -.6652 | .431 | 30 | .0324 | 1.131 | 40 | -.0885 | .161 | 270 | -.7913 | | |
| 20 | .231 | 180 | -.4745 | .331 | 100 | -.6012 | .431 | 20 | .1165 | 1.131 | 30 | .0354 | .231 | 270 | -.6955 | | |
| 21 | .231 | 170 | -.6901 | .331 | 90 | -.7072 | .431 | 10 | .1479 | 1.131 | 20 | .0801 | .331 | 270 | -.6934 | | |
| 22 | .231 | 160 | -.6037 | .331 | 80 | -.5728 | .431 | 0 | .1626 | 1.131 | 10 | .1501 | .431 | 270 | -.5812 | | |
| 23 | .231 | 150 | -.6174 | .331 | 70 | -.4275 | .531 | 180 | -.6416 | 1.131 | 0 | .1856 | .531 | 270 | -.5606 | | |
| 24 | .231 | 140 | -.6301 | .331 | 60 | -.3123 | .531 | 90 | -.6167 | | | .731 | .731 | 270 | -.6255 | | |
| 25 | .231 | 130 | -.6528 | .331 | 50 | -.2136 | .531 | 0 | .1830 | 1.631 | 90 | -.5850 | .331 | 270 | -.6244 | | |
| 26 | .231 | 120 | -.6283 | .331 | 40 | -.0875 | .731 | 180 | -.6656 | 1.631 | 0 | -.3119 | 1.131 | 270 | -.6799 | | |
| 27 | .231 | 110 | -.7347 | .331 | 30 | -.0085 | .731 | 90 | -.6631 | 2.131 | 180 | -.1595 | 1.631 | 270 | -.5647 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 18 POINT 37 ALPHA 0 MACH .333 Q 129.595 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5805 | .231 | 100 | -.5651 | .331 | 20 | -.5719 | .731 | 0 | -.6292 | 2.131 | 90 | -.1400 | | |
| 2 | .161 | 170 | -.6241 | .231 | 90 | -.5305 | .331 | 10 | -.5664 | .931 | 180 | -.1338 | 2.131 | 0 | .0696 | | |
| 3 | .161 | 160 | -.5615 | .231 | 80 | -.6007 | .331 | 0 | -.6760 | .931 | 90 | -.4406 | 0.000 | | .4695 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5842 | .231 | 70 | -.5587 | .431 | 180 | -.6272 | .931 | 0 | -.5492 | 0.000 | | .5477 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6014 | .231 | 60 | -.5569 | .431 | 170 | -.6355 | 1.131 | 180 | -.2442 | 0.000 | | .8211 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5987 | .231 | 50 | -.5496 | .431 | 160 | -.6466 | 1.131 | 170 | -.2118 | 0.000 | | .9435 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6214 | .231 | 40 | -.5524 | .431 | 150 | -.6889 | 1.131 | 160 | -.2047 | 0.000 | | 1.0257 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6132 | .231 | 30 | -.5742 | .431 | 140 | -.6705 | 1.131 | 150 | -.1409 | 0.000 | | 1.0350 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5624 | .231 | 20 | -.5560 | .431 | 130 | -.5931 | 1.131 | 140 | -.3040 | 0.000 | | 1.0164 | .10 | 0.00 |
| 10 | .161 | 90 | -.5279 | .231 | 10 | -.5578 | .431 | 120 | -.5673 | 1.131 | 130 | -.3577 | 0.000 | | .9486 | .20 | 0.00 |
| 11 | .161 | 80 | -.6005 | .231 | 0 | -.6025 | .431 | 110 | -.6447 | 1.131 | 120 | -.2361 | 0.000 | | .8036 | .30 | 0.00 |
| 12 | .161 | 70 | -.5905 | .331 | 180 | -.5761 | .431 | 100 | -.6152 | 1.131 | 110 | -.2301 | 0.000 | | .5569 | .40 | 0.00 |
| 13 | .161 | 60 | -.5787 | .331 | 170 | -.6135 | .431 | 90 | -.6143 | 1.131 | 100 | -.2341 | 0.000 | | .4469 | .45 | 0.00 |
| 14 | .161 | 50 | -.4880 | .331 | 160 | -.5396 | .431 | 80 | -.6364 | 1.131 | 90 | -.2250 | 0.000 | | 1.0195 | 0.00 | .10 |
| 15 | .161 | 40 | -.5678 | .331 | 150 | -.5460 | .431 | 70 | -.5664 | 1.131 | 80 | -.3810 | 0.000 | | .7589 | 0.00 | .20 |
| 16 | .161 | 30 | -.5750 | .331 | 140 | -.5761 | .431 | 60 | -.6355 | 1.131 | 70 | -.2979 | 0.000 | | .7995 | 0.00 | .30 |
| 17 | .161 | 20 | -.5660 | .331 | 130 | -.5651 | .431 | 50 | -.5931 | 1.131 | 60 | -.2898 | 0.000 | | .5569 | 0.00 | .40 |
| 18 | .161 | 10 | -.5388 | .331 | 120 | -.5669 | .431 | 40 | -.5729 | 1.131 | 50 | -.3455 | 0.000 | | .5127 | 0.00 | .45 |
| 19 | .161 | 0 | -.5524 | .331 | 110 | -.6463 | .431 | 30 | -.5867 | 1.131 | 40 | -.2989 | .161 | 270 | -.6014 | | |
| 20 | .231 | 180 | -.6005 | .331 | 100 | -.5788 | .431 | 20 | -.6263 | 1.131 | 30 | -.3000 | .231 | 270 | -.5860 | | |
| 21 | .231 | 170 | -.5669 | .331 | 90 | -.5697 | .431 | 10 | -.5719 | 1.131 | 20 | -.3364 | .331 | 270 | -.6014 | | |
| 22 | .231 | 160 | -.6114 | .331 | 80 | -.6463 | .431 | 0 | -.6079 | 1.131 | 10 | -.3070 | .431 | 270 | -.6117 | | |
| 23 | .231 | 150 | -.6350 | .331 | 70 | -.5642 | .531 | 180 | -.6954 | 1.131 | 0 | -.3759 | .531 | 270 | -.6425 | | |
| 24 | .231 | 140 | -.6108 | .331 | 60 | -.6007 | .531 | 90 | -.6374 | | | .731 | .731 | 270 | -.6250 | | |
| 25 | .231 | 130 | -.5923 | .331 | 50 | -.5296 | .531 | 0 | -.5747 | 1.631 | 90 | .0191 | .931 | 270 | -.3867 | | |
| 26 | .231 | 120 | -.5760 | .331 | 40 | -.5615 | .731 | 180 | -.6410 | 1.631 | 0 | -.1247 | 1.131 | 270 | -.2532 | | |
| 27 | .231 | 110 | -.5914 | .331 | 30 | -.5980 | .731 | 90 | -.6512 | 2.131 | 180 | .0252 | 1.631 | 270 | .0305 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 30 ALPHA 14 MACH .302 Q 128.207 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|---------|------|-----|--------|-------|-----|--------|-------|--------|---------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4906 | .231 | 100 | -.9410 | .331 | 20 | -.1634 | .731 | 0 | -.0205 | 2.131 | 90 | -.2384 | | |
| 2 | .161 | 170 | -.5314 | .231 | 90 | -.9730 | .331 | 10 | -.1496 | .931 | 180 | -.2704 | 2.131 | 0 | .0430 | | |
| 3 | .161 | 160 | -.6209 | .231 | 80 | -1.0261 | .331 | 0 | -.1302 | .931 | 90 | -.3304 | 0.000 | | .4379 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6716 | .231 | 70 | -.9575 | .431 | 180 | -.6421 | .931 | 0 | -.3680 | 0.000 | | .6967 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6543 | .231 | 60 | -.8358 | .431 | 170 | -.6301 | 1.131 | 180 | -.2897 | 0.000 | | .9535 | -.30 | 0.00 |
| 6 | .161 | 130 | -.8973 | .231 | 50 | -.5751 | .431 | 160 | -.7243 | 1.131 | 170 | -.2145 | 0.000 | | 1.0205 | -.20 | 0.00 |
| 7 | .161 | 120 | -.8363 | .231 | 40 | -.4653 | .431 | 150 | -.7253 | 1.131 | 160 | -.2653 | 0.000 | | 1.0145 | -.10 | 0.00 |
| 8 | .161 | 110 | -.9092 | .231 | 30 | -.4132 | .431 | 140 | -.7761 | 1.131 | 150 | -.2633 | 0.000 | | .9586 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.9829 | .231 | 20 | -.3547 | .431 | 130 | -.8075 | 1.131 | 140 | -.3121 | 0.000 | | .8844 | .10 | 0.00 |
| 10 | .161 | 90 | -1.0175 | .231 | 10 | -.3117 | .431 | 120 | -.8260 | 1.131 | 130 | -.2338 | 0.000 | | .7687 | .20 | 0.00 |
| 11 | .161 | 80 | -1.1604 | .231 | 0 | -.3025 | .431 | 110 | -.8519 | 1.131 | 120 | -.2775 | 0.000 | | .5687 | .30 | 0.00 |
| 12 | .161 | 70 | -1.3416 | .331 | 180 | -.5971 | .431 | 100 | -.7927 | 1.131 | 110 | -.3436 | 0.000 | | .3235 | .40 | 0.00 |
| 13 | .161 | 60 | -1.3243 | .331 | 170 | -.6102 | .431 | 90 | -.6458 | 1.131 | 100 | -.3050 | 0.000 | | .2801 | .45 | 0.00 |
| 14 | .161 | 50 | -1.0922 | .331 | 160 | -.6227 | .431 | 80 | -.5164 | 1.131 | 90 | -.3161 | 0.000 | | .9360 | .50 | .10 |
| 15 | .161 | 40 | -.9265 | .331 | 150 | -.6831 | .431 | 70 | -.4065 | 1.131 | 80 | -.2867 | 0.000 | | .9122 | 0.00 | .20 |
| 16 | .161 | 30 | -.8555 | .331 | 140 | -.7434 | .431 | 60 | -.3011 | 1.131 | 70 | -.2196 | 0.000 | | .7297 | 0.00 | .30 |
| 17 | .161 | 20 | -.8081 | .331 | 130 | -.7571 | .431 | 50 | -.2457 | 1.131 | 60 | -.1942 | 0.000 | | .4132 | 0.00 | .40 |
| 18 | .161 | 10 | -.7635 | .331 | 120 | -.8134 | .431 | 40 | -.1847 | 1.131 | 50 | -.1485 | 0.000 | | .3327 | 0.00 | .45 |
| 19 | .161 | 0 | -.7626 | .331 | 110 | -.8980 | .431 | 30 | -.1376 | 1.131 | 40 | -.1048 | .161 | 270 | -1.0413 | | |
| 20 | .231 | 180 | -.5405 | .331 | 100 | -.8559 | .431 | 20 | -.0997 | 1.131 | 30 | -.0550 | .231 | 270 | -.9980 | | |
| 21 | .231 | 170 | -.5623 | .331 | 90 | -.8550 | .431 | 10 | -.0886 | 1.131 | 20 | -.0408 | .331 | 270 | -.8723 | | |
| 22 | .231 | 160 | -.5832 | .331 | 80 | -.8455 | .431 | 0 | -.0673 | 1.131 | 10 | -.0032 | .431 | 270 | -.5373 | | |
| 23 | .231 | 150 | -.7052 | .331 | 70 | -.5376 | .531 | 180 | -.6578 | 1.131 | 0 | -.0073 | .531 | 270 | -.5373 | | |
| 24 | .231 | 140 | -.7280 | .331 | 60 | -.4489 | .531 | 90 | -.5349 | | | .731 | 270 | -.3652 | | | |
| 25 | .231 | 130 | -.8281 | .331 | 50 | -.3117 | .531 | 0 | -.0535 | 1.631 | 90 | -.2328 | .931 | 270 | -.3497 | | |
| 26 | .231 | 120 | -.8327 | .331 | 40 | -.2641 | .731 | 180 | -.5617 | 1.631 | 0 | -.2603 | 1.131 | 270 | -.3166 | | |
| 27 | .231 | 110 | -.9028 | .331 | 30 | -.2065 | .731 | 90 | -.3686 | 2.131 | 180 | -.0438 | 1.631 | 270 | -.2467 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 31 ALPHA 16 MACH .302 Q 128.014 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|---------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4328 | .231 | 100 | -.9328 | .331 | 20 | -.1119 | .731 | 0 | -.0192 | 2.131 | 90 | -.2553 | | |
| 2 | .161 | 170 | -.4766 | .231 | 90 | -.9205 | .331 | 10 | -.0749 | .931 | 180 | -.2536 | 2.131 | 0 | .0554 | | |
| 3 | .161 | 160 | -.5723 | .231 | 80 | -.9415 | .331 | 0 | -.0758 | .931 | 90 | -.3655 | 0.000 | | .5156 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6945 | .231 | 70 | -.9086 | .431 | 180 | -.6218 | .931 | 0 | -.3645 | 0.000 | | .7670 | -.40 | 0.00 |
| 5 | .161 | 140 | -.7501 | .231 | 60 | -.6383 | .431 | 170 | -.6436 | 1.131 | 180 | -.2373 | 0.000 | | .9328 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7574 | .231 | 50 | -.5504 | .431 | 160 | -.6857 | 1.131 | 170 | -.2171 | 0.000 | | 1.0179 | -.20 | 0.00 |
| 7 | .161 | 120 | -.8540 | .231 | 40 | -.4065 | .431 | 150 | -.7190 | 1.131 | 160 | -.2841 | 0.000 | | 1.0085 | -.10 | 0.00 |
| 8 | .161 | 110 | -.9896 | .231 | 30 | -.3488 | .431 | 140 | -.7958 | 1.131 | 150 | -.2790 | 0.000 | | .9570 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.9735 | .231 | 20 | -.2792 | .431 | 130 | -.7838 | 1.131 | 140 | -.3299 | 0.000 | | .8620 | .10 | 0.00 |
| 10 | .161 | 90 | -.9589 | .231 | 10 | -.2627 | .431 | 120 | -.7847 | 1.131 | 130 | -.2892 | 0.000 | | .7112 | .20 | 0.00 |
| 11 | .161 | 80 | -1.1659 | .231 | 0 | -.2393 | .431 | 110 | -.8310 | 1.131 | 120 | -.3441 | 0.000 | | .5222 | .30 | 0.00 |
| 12 | .161 | 70 | -1.1011 | .331 | 180 | -.5101 | .431 | 100 | -.7227 | 1.131 | 110 | -.3492 | 0.000 | | .2774 | .40 | 0.00 |
| 13 | .161 | 60 | -1.1504 | .331 | 170 | -.5971 | .431 | 90 | -.6292 | 1.131 | 100 | -.3366 | 0.000 | | .2336 | .45 | 0.00 |
| 14 | .161 | 50 | -.8996 | .331 | 160 | -.6557 | .431 | 80 | -.4932 | 1.131 | 90 | -.3594 | 0.000 | | .9374 | 0.00 | .10 |
| 15 | .161 | 40 | -.8358 | .331 | 150 | -.6750 | .431 | 70 | -.3886 | 1.131 | 80 | -.3136 | 0.000 | | .8775 | 0.00 | .20 |
| 16 | .161 | 30 | -.7755 | .331 | 140 | -.7776 | .431 | 60 | -.3044 | 1.131 | 70 | -.2780 | 0.000 | | .7112 | 0.00 | .30 |
| 17 | .161 | 20 | -.7016 | .331 | 130 | -.7592 | .431 | 50 | -.2229 | 1.131 | 60 | -.2066 | 0.000 | | .4043 | 0.00 | .40 |
| 18 | .161 | 10 | -.6589 | .331 | 120 | -.7358 | .431 | 40 | -.1776 | 1.131 | 50 | -.1437 | 0.000 | | .3064 | 0.00 | .45 |
| 19 | .161 | 0 | -.6443 | .331 | 110 | -.9498 | .431 | 30 | -.1100 | 1.131 | 40 | -.0734 | .161 | 270 | -1.0109 | | |
| 20 | .231 | 180 | -.5149 | .331 | 100 | -.8765 | .431 | 20 | -.0721 | 1.131 | 30 | -.0450 | .231 | 270 | -.8839 | | |
| 21 | .231 | 170 | -.5322 | .331 | 90 | -.8453 | .431 | 10 | -.0397 | 1.131 | 20 | -.0297 | .331 | 270 | -.8036 | | |
| 22 | .231 | 160 | -.5659 | .331 | 80 | -.8766 | .431 | 0 | -.0249 | 1.131 | 10 | .0202 | .431 | 270 | -.6538 | | |
| 23 | .231 | 150 | -.6430 | .331 | 70 | -.5082 | .531 | 180 | -.8422 | 1.131 | 0 | .0275 | .531 | 270 | -.5247 | | |
| 24 | .231 | 140 | -.7610 | .331 | 60 | -.3335 | .531 | 90 | -.5117 | | | .731 | 270 | -.4071 | | | |
| 25 | .231 | 130 | -.7820 | .331 | 50 | -.3177 | .531 | 0 | -.0110 | 1.631 | 90 | -.3034 | .931 | 270 | -.4050 | | |
| 26 | .231 | 120 | -.8449 | .331 | 40 | -.2453 | .731 | 180 | -.5311 | 1.631 | 0 | -.2312 | 1.131 | 270 | -.3752 | | |
| 27 | .231 | 110 | -.8356 | .331 | 30 | -.1619 | .731 | 90 | -.4182 | 2.131 | 180 | -.0327 | 1.631 | 270 | -.3214 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | RUN | 13 | POINT | 32 | ALPHA | 18 | MACH | .302 | Q | 127.723 | MODEL DOME FACE | | |
|-----------------------------------|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|-------|----|-------|----|------|------|---|---------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | | | | | | | | |
| 1 | .161 | 180 | -.4841 | .231 | 100 | -.9051 | .331 | 20 | -.0463 | .731 | 0 | .0630 | 2.131 | 90 | -.2518 | | | | | | | | | | | | | |
| 2 | .161 | 170 | -.5060 | .231 | 90 | -.8344 | .331 | 10 | -.0445 | .931 | 180 | -.2654 | 2.131 | 0 | .0783 | | | | | | | | | | | | | |
| 3 | .161 | 160 | -.5142 | .231 | 80 | -.8602 | .331 | 0 | -.0138 | .931 | 90 | -.4072 | 0.000 | | .6010 | -.45 | 0.00 | | | | | | | | | | | |
| 4 | .161 | 150 | -.5864 | .231 | 70 | -.7856 | .431 | 180 | -.0205 | .931 | 0 | -.3949 | 0.000 | | .8453 | -.40 | 0.00 | | | | | | | | | | | |
| 5 | .161 | 140 | -.7400 | .231 | 60 | -.6233 | .431 | 170 | -.0316 | 1.131 | 180 | -.2543 | 0.000 | | .9943 | -.30 | 0.00 | | | | | | | | | | | |
| 6 | .161 | 130 | -.6871 | .231 | 50 | -.4525 | .431 | 160 | -.7587 | 1.131 | 170 | -.2052 | 0.000 | | 1.0274 | -.20 | 0.00 | | | | | | | | | | | |
| 7 | .161 | 120 | -.8313 | .231 | 40 | -.3432 | .431 | 150 | -.7225 | 1.131 | 160 | -.3001 | 0.000 | | 1.0047 | -.10 | 0.00 | | | | | | | | | | | |
| 8 | .161 | 110 | -.9172 | .231 | 30 | -.2633 | .431 | 140 | -.8032 | 1.131 | 150 | -.3072 | 0.000 | | .9508 | 0.00 | 0.00 | | | | | | | | | | | |
| 9 | .161 | 100 | -.8697 | .231 | 20 | -.2092 | .431 | 130 | -.7438 | 1.131 | 140 | -.3250 | 0.000 | | .8328 | .10 | 0.00 | | | | | | | | | | | |
| 10 | .161 | 90 | -.9913 | .231 | 10 | -.1614 | .431 | 120 | -.7652 | 1.131 | 130 | -.3337 | 0.000 | | .6796 | .20 | 0.00 | | | | | | | | | | | |
| 11 | .161 | 80 | -1.0397 | .231 | 0 | -.1605 | .431 | 110 | -.8088 | 1.131 | 120 | -.4010 | 0.000 | | .4768 | .30 | 0.00 | | | | | | | | | | | |
| 12 | .161 | 70 | -1.1091 | .331 | 180 | -.5223 | .431 | 100 | -.6984 | 1.131 | 110 | -.4286 | 0.000 | | .2594 | .40 | 0.00 | | | | | | | | | | | |
| 13 | .161 | 60 | -.9967 | .331 | 170 | -.6407 | .431 | 90 | -.5936 | 1.131 | 100 | -.4327 | 0.000 | | .1176 | .45 | 0.00 | | | | | | | | | | | |
| 14 | .161 | 50 | -.8368 | .331 | 160 | -.6077 | .431 | 80 | -.5055 | 1.131 | 90 | -.3970 | 0.000 | | .9145 | 0.00 | .10 | | | | | | | | | | | |
| 15 | .161 | 40 | -.7345 | .331 | 150 | -.6949 | .431 | 70 | -.3877 | 1.131 | 80 | -.3572 | 0.000 | | .8515 | 0.00 | .20 | | | | | | | | | | | |
| 16 | .161 | 30 | -.6879 | .331 | 140 | -.7849 | .431 | 60 | -.3070 | 1.131 | 70 | -.3041 | 0.000 | | .6848 | 0.00 | .30 | | | | | | | | | | | |
| 17 | .161 | 20 | -.6011 | .331 | 130 | -.7399 | .431 | 50 | -.2114 | 1.131 | 60 | -.2368 | 0.000 | | .3826 | 0.00 | .40 | | | | | | | | | | | |
| 18 | .161 | 10 | -.5517 | .331 | 120 | -.7839 | .431 | 40 | -.1344 | 1.131 | 50 | -.1624 | 0.000 | | .3060 | 0.00 | .45 | | | | | | | | | | | |
| 19 | .161 | 0 | -.5362 | .331 | 110 | -.8400 | .431 | 30 | -.0732 | 1.131 | 40 | -.0910 | .161 | 270 | -.9491 | | | | | | | | | | | | | |
| 20 | .231 | 180 | -.9378 | .331 | 100 | -.7169 | .431 | 20 | -.0389 | 1.131 | 30 | -.0308 | .231 | 270 | -.8622 | | | | | | | | | | | | | |
| 21 | .231 | 170 | -.5243 | .331 | 90 | -.7527 | .431 | 10 | .0001 | 1.131 | 20 | .0120 | .331 | 270 | -.7722 | | | | | | | | | | | | | |
| 22 | .231 | 160 | -.5782 | .331 | 80 | -.5985 | .431 | 0 | .0140 | 1.131 | 10 | .0753 | .431 | 270 | -.6191 | | | | | | | | | | | | | |
| 23 | .231 | 150 | -.6769 | .331 | 70 | -.5186 | .531 | 180 | -.6631 | 1.131 | 0 | .0549 | .531 | 270 | -.5777 | | | | | | | | | | | | | |
| 24 | .231 | 140 | -.7473 | .331 | 60 | -.3799 | .531 | 90 | -.5175 | | | .731 | .731 | 270 | -.4763 | | | | | | | | | | | | | |
| 25 | .231 | 130 | -.7582 | .331 | 50 | -.2615 | .531 | 0 | .0372 | 1.631 | 90 | -.3123 | .931 | 270 | -.4618 | | | | | | | | | | | | | |
| 26 | .231 | 120 | -.8067 | .331 | 40 | -.1981 | .731 | 180 | -.6483 | 1.631 | 0 | -.2277 | 1.131 | 270 | -.4422 | | | | | | | | | | | | | |
| 27 | .231 | 110 | -.8432 | .331 | 30 | -.1183 | .731 | 90 | -.4591 | 2.131 | 180 | .0263 | 1.631 | 270 | -.3232 | | | | | | | | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | RUN | 18 | POINT | 33 | ALPHA | 20 | MACH | .303 | Q | 128.498 | MODEL DOME FACE | | |
|-----------------------------------|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|---------|------|------|-------|----|-------|----|------|------|---|---------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | | | | | | | | |
| 1 | .161 | 180 | -.4856 | .231 | 100 | -.7563 | .331 | 20 | -.0312 | .731 | 0 | .0810 | 2.131 | 90 | -.3109 | | | | | | | | | | | | | |
| 2 | .161 | 170 | -.5374 | .231 | 90 | -.8430 | .331 | 10 | .0038 | .931 | 180 | -.3073 | 2.131 | 0 | .0964 | | | | | | | | | | | | | |
| 3 | .161 | 160 | -.5247 | .231 | 80 | -.8494 | .331 | 0 | .0223 | .931 | 90 | -.4959 | 0.000 | | .6283 | -.45 | 0.00 | | | | | | | | | | | |
| 4 | .161 | 150 | -.5910 | .231 | 70 | -.7755 | .431 | 180 | -.6517 | .931 | 0 | -.4401 | 0.000 | | .8835 | -.40 | 0.00 | | | | | | | | | | | |
| 5 | .161 | 140 | -.7590 | .231 | 60 | -.5464 | .431 | 170 | -.6683 | 1.131 | 180 | -.2475 | 0.000 | | 1.0193 | -.30 | 0.00 | | | | | | | | | | | |
| 6 | .161 | 130 | -.7745 | .231 | 50 | -.4186 | .431 | 160 | -.7374 | 1.131 | 170 | -.3266 | 0.000 | | .9997 | -.20 | 0.00 | | | | | | | | | | | |
| 7 | .161 | 120 | -.8444 | .231 | 40 | -.3182 | .431 | 150 | -.7485 | 1.131 | 160 | -.4178 | 0.000 | | .9761 | -.10 | 0.00 | | | | | | | | | | | |
| 8 | .161 | 110 | -.8771 | .231 | 30 | -.2096 | .431 | 140 | -.7835 | 1.131 | 150 | -.3478 | 0.000 | | .8896 | 0.00 | 0.00 | | | | | | | | | | | |
| 9 | .161 | 100 | -.9752 | .231 | 20 | -.1384 | .431 | 130 | -.8278 | 1.131 | 140 | -.3438 | 0.000 | | .7682 | .10 | 0.00 | | | | | | | | | | | |
| 10 | .161 | 90 | -.8853 | .231 | 10 | -.1010 | .431 | 120 | -.7752 | 1.131 | 130 | -.4107 | 0.000 | | .6242 | .20 | 0.00 | | | | | | | | | | | |
| 11 | .161 | 80 | -1.0070 | .231 | 0 | -.1010 | .431 | 110 | -.8020 | 1.131 | 120 | -.4614 | 0.000 | | .4431 | .30 | 0.00 | | | | | | | | | | | |
| 12 | .161 | 70 | -1.0370 | .331 | 180 | -.6112 | .431 | 100 | -.7190 | 1.131 | 110 | -.5151 | 0.000 | | .2291 | .40 | 0.00 | | | | | | | | | | | |
| 13 | .161 | 60 | -.9044 | .331 | 170 | -.6587 | .431 | 90 | -.6480 | 1.131 | 100 | -.4748 | 0.000 | | .0913 | .45 | 0.00 | | | | | | | | | | | |
| 14 | .161 | 50 | -.7745 | .331 | 160 | -.6012 | .431 | 80 | -.5088 | 1.131 | 90 | -.5100 | 0.000 | | .8660 | 0.00 | .10 | | | | | | | | | | | |
| 15 | .161 | 40 | -.6918 | .331 | 150 | -.6851 | .431 | 70 | -.4147 | 1.131 | 80 | -.4371 | 0.000 | | .8053 | 0.00 | .20 | | | | | | | | | | | |
| 16 | .161 | 30 | -.6191 | .331 | 140 | -.7445 | .431 | 60 | -.3179 | 1.131 | 70 | -.3762 | 0.000 | | .6725 | 0.00 | .30 | | | | | | | | | | | |
| 17 | .161 | 20 | -.5428 | .331 | 130 | -.7527 | .431 | 50 | -.2340 | 1.131 | 60 | -.2951 | 0.000 | | .3557 | 0.00 | .40 | | | | | | | | | | | |
| 18 | .161 | 10 | -.4575 | .331 | 120 | -.8594 | .431 | 40 | -.1391 | 1.131 | 50 | -.2110 | 0.000 | | .2744 | 0.00 | .45 | | | | | | | | | | | |
| 19 | .161 | 0 | -.4620 | .331 | 110 | -.8759 | .431 | 30 | -.0570 | 1.131 | 40 | -.1238 | .161 | 270 | -1.1675 | | | | | | | | | | | | | |
| 20 | .231 | 180 | -.5110 | .331 | 100 | -.7563 | .431 | 20 | -.0072 | 1.131 | 30 | -.0285 | .231 | 270 | -.8374 | | | | | | | | | | | | | |
| 21 | .231 | 170 | -.5655 | .331 | 90 | -.7581 | .431 | 10 | .0462 | 1.131 | 20 | .0181 | .331 | 270 | -.7438 | | | | | | | | | | | | | |
| 22 | .231 | 160 | -.6082 | .331 | 80 | -.6112 | .431 | 0 | .0444 | 1.131 | 10 | .0769 | .431 | 270 | -.6389 | | | | | | | | | | | | | |
| 23 | .231 | 150 | -.6491 | .331 | 70 | -.5072 | .531 | 180 | -.6590 | 1.131 | 0 | .0769 | .531 | 270 | -.5875 | | | | | | | | | | | | | |
| 24 | .231 | 140 | -.7009 | .331 | 60 | -.3721 | .531 | 90 | -.5420 | | | .731 | .731 | 270 | -.5237 | | | | | | | | | | | | | |
| 25 | .231 | 130 | -.7536 | .331 | 50 | -.2662 | .531 | 0 | .0527 | 1.631 | 90 | -.4164 | .931 | 270 | -.5392 | | | | | | | | | | | | | |
| 26 | .231 | 120 | -.7726 | .331 | 40 | -.1896 | .731 | 180 | -.6517 | 1.631 | 0 | -.3499 | 1.131 | 270 | -.4980 | | | | | | | | | | | | | |
| 27 | .231 | 110 | -.7981 | .331 | 30 | -.0992 | .731 | 90 | -.5281 | 2.131 | 180 | -.0549 | 1.631 | 270 | -.4219 | | | | | | | | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 26 ALPHA 6 MACH .303 Q 128.401 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4633 | .231 | 100 | -.6847 | .331 | 20 | -.9483 | .731 | 0 | -.6093 | 2.131 | 90 | -.1609 | | |
| 2 | .161 | 170 | -.4309 | .231 | 90 | -.6811 | .331 | 10 | -.9557 | .931 | 180 | -.1513 | 2.131 | 0 | -.0003 | | |
| 3 | .161 | 160 | -.4842 | .231 | 80 | -.7441 | .331 | 0 | -.9520 | .931 | 90 | -.1756 | 0.000 | | .4589 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5260 | .231 | 70 | -.7615 | .431 | 180 | -.5562 | .931 | 0 | -.5175 | 0.000 | | .5866 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5324 | .231 | 60 | -.8044 | .431 | 170 | -.5415 | 1.131 | 180 | -.3126 | 0.000 | | .8697 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5642 | .231 | 50 | -.8391 | .431 | 160 | -.5396 | 1.131 | 170 | -.3217 | 0.000 | | .9902 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6242 | .231 | 40 | -.8720 | .431 | 150 | -.5784 | 1.131 | 160 | -.3177 | 0.000 | | 1.0334 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6460 | .231 | 30 | -.9122 | .431 | 140 | -.5950 | 1.131 | 150 | -.3025 | 0.000 | | 1.0355 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6705 | .231 | 20 | -.9222 | .431 | 130 | -.6522 | 1.131 | 140 | -.3228 | 0.000 | | .9850 | .10 | 0.00 |
| 10 | .161 | 90 | -.7042 | .231 | 10 | -.9286 | .431 | 120 | -.6162 | 1.131 | 130 | -.3349 | 0.000 | | .9015 | .20 | 0.00 |
| 11 | .161 | 80 | -.7509 | .231 | 0 | -.9779 | .431 | 110 | -.7278 | 1.131 | 120 | -.2751 | 0.000 | | .7317 | .30 | 0.00 |
| 12 | .161 | 70 | -.7605 | .331 | 180 | -.4884 | .431 | 100 | -.7057 | 1.131 | 110 | -.2193 | 0.000 | | .4959 | .40 | 0.00 |
| 13 | .161 | 60 | -.7987 | .331 | 170 | -.5012 | .431 | 90 | -.7278 | 1.131 | 100 | -.1685 | 0.000 | | .4383 | .45 | 0.00 |
| 14 | .161 | 50 | -.7878 | .331 | 160 | -.5487 | .431 | 80 | -.7371 | 1.131 | 90 | -.1391 | 0.000 | | 1.0149 | 0.00 | .10 |
| 15 | .161 | 40 | -.8332 | .331 | 150 | -.5697 | .431 | 70 | -.7998 | 1.131 | 80 | -.0823 | 0.000 | | .9345 | 0.00 | .20 |
| 16 | .161 | 30 | -.8387 | .331 | 140 | -.5459 | .431 | 60 | -.3422 | 1.131 | 70 | -.0813 | 0.000 | | .7987 | 0.00 | .30 |
| 17 | .161 | 20 | -.8496 | .331 | 130 | -.6089 | .431 | 50 | -.8229 | 1.131 | 60 | -.0529 | 0.000 | | .5145 | 0.00 | .40 |
| 18 | .161 | 10 | -.9050 | .331 | 120 | -.6318 | .431 | 40 | -.8579 | 1.131 | 50 | .0029 | 0.000 | | .4414 | 0.00 | .45 |
| 19 | .161 | 0 | -.8696 | .331 | 110 | -.6464 | .431 | 30 | -.8653 | 1.131 | 40 | -.0032 | .161 | 270 | -.7032 | | |
| 20 | .231 | 180 | -.4496 | .331 | 100 | -.7012 | .431 | 20 | -.7980 | 1.131 | 30 | -.0143 | .231 | 270 | -.6898 | | |
| 21 | .231 | 170 | -.4514 | .331 | 90 | -.7386 | .431 | 10 | -.8053 | 1.131 | 20 | -.0174 | .331 | 270 | -.6981 | | |
| 22 | .231 | 160 | -.5109 | .331 | 80 | -.7688 | .431 | 0 | -.7897 | 1.131 | 10 | .0019 | .431 | 270 | -.7145 | | |
| 23 | .231 | 150 | -.5014 | .331 | 70 | -.7934 | .531 | 180 | -.5442 | 1.131 | 0 | .0080 | .531 | 270 | -.7557 | | |
| 24 | .231 | 140 | -.5451 | .331 | 60 | -.8464 | .531 | 90 | -.7546 | | | | .731 | 270 | -.5962 | | |
| 25 | .231 | 130 | -.5705 | .331 | 50 | -.8601 | .531 | 0 | -.5092 | 1.631 | 90 | -.0153 | .931 | 270 | -.2833 | | |
| 26 | .231 | 120 | -.6451 | .331 | 40 | -.8930 | .731 | 180 | -.5571 | 1.631 | 0 | -.1767 | 1.131 | 270 | -.0919 | | |
| 27 | .231 | 110 | -.6605 | .331 | 30 | -.9332 | .731 | 90 | -.5968 | 2.131 | 180 | .0181 | 1.631 | 270 | -.0281 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 18 POINT 27 ALPHA 6 MACH .302 Q 128.207 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|---------|------|-----|---------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4339 | .231 | 100 | -.7581 | .331 | 20 | -.9175 | .731 | 0 | -.0205 | 2.131 | 90 | -.1663 | | |
| 2 | .161 | 170 | -.4276 | .231 | 90 | -.7700 | .331 | 10 | -.8426 | .931 | 180 | -.1475 | 2.131 | 0 | -.0106 | | |
| 3 | .161 | 160 | -.4931 | .231 | 80 | -.7974 | .331 | 0 | -.8602 | .931 | 90 | -.2034 | 0.000 | | .4400 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5423 | .231 | 70 | -.8633 | .431 | 180 | -.5377 | .931 | 0 | -.4574 | 0.000 | | .5936 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5860 | .231 | 60 | -.9218 | .431 | 170 | -.5589 | 1.131 | 180 | -.2491 | 0.000 | | .8772 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6242 | .231 | 50 | -.9090 | .431 | 160 | -.5478 | 1.131 | 170 | -.3009 | 0.000 | | 1.0009 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6233 | .231 | 40 | -.9758 | .431 | 150 | -.6107 | 1.131 | 160 | -.3466 | 0.000 | | 1.0267 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6925 | .231 | 30 | -1.0508 | .431 | 140 | -.6153 | 1.131 | 150 | -.3385 | 0.000 | | 1.0174 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7171 | .231 | 20 | -1.0288 | .431 | 130 | -.6319 | 1.131 | 140 | -.3456 | 0.000 | | .9648 | .10 | 0.00 |
| 10 | .161 | 90 | -.7963 | .231 | 10 | -1.1386 | .431 | 120 | -.7308 | 1.131 | 130 | -.2979 | 0.000 | | .8586 | .20 | 0.00 |
| 11 | .161 | 80 | -.8063 | .231 | 0 | -1.0672 | .431 | 110 | -.7086 | 1.131 | 120 | -.2532 | 0.000 | | .7060 | .30 | 0.00 |
| 12 | .161 | 70 | -.8218 | .331 | 180 | -.5083 | .431 | 100 | -.7137 | 1.131 | 110 | -.2115 | 0.000 | | .4451 | .40 | 0.00 |
| 13 | .161 | 60 | -.8409 | .331 | 170 | -.5394 | .431 | 90 | -.7604 | 1.131 | 100 | -.1729 | 0.000 | | .3678 | .45 | 0.00 |
| 14 | .161 | 50 | -.8691 | .331 | 160 | -.5102 | .431 | 80 | -.7631 | 1.131 | 90 | -.1627 | 0.000 | | .4963 | 0.00 | .10 |
| 15 | .161 | 40 | -.9674 | .331 | 150 | -.6282 | .431 | 70 | -.8306 | 1.131 | 80 | -.1312 | 0.000 | | .9360 | 0.00 | .20 |
| 16 | .161 | 30 | -1.0512 | .331 | 140 | -.6465 | .431 | 60 | -.8731 | 1.131 | 70 | -.1119 | 0.000 | | .7792 | 0.00 | .30 |
| 17 | .161 | 20 | -1.0421 | .331 | 130 | -.6631 | .431 | 50 | -.7862 | 1.131 | 60 | -.0865 | 0.000 | | .4884 | 0.00 | .40 |
| 18 | .161 | 10 | -1.0803 | .331 | 120 | -.6621 | .431 | 40 | -.6791 | 1.131 | 50 | -.0611 | 0.000 | | .4132 | 0.00 | .45 |
| 19 | .161 | 0 | -1.1031 | .331 | 110 | -.7114 | .431 | 30 | -.5469 | 1.131 | 40 | -.0642 | .161 | 270 | -.7909 | | |
| 20 | .231 | 180 | -.4531 | .331 | 100 | -.7718 | .431 | 20 | -.5026 | 1.131 | 30 | -.0581 | .231 | 270 | -.7335 | | |
| 21 | .231 | 170 | -.4795 | .331 | 90 | -.8102 | .431 | 10 | -.3889 | 1.131 | 20 | -.0652 | .331 | 270 | -.8465 | | |
| 22 | .231 | 160 | -.4795 | .331 | 80 | -.8084 | .431 | 0 | -.4074 | 1.131 | 10 | -.0449 | .431 | 270 | -.7929 | | |
| 23 | .231 | 150 | -.5377 | .331 | 70 | -.9310 | .531 | 180 | -.5940 | 1.131 | 0 | -.0601 | .531 | 270 | -.7857 | | |
| 24 | .231 | 140 | -.5914 | .331 | 60 | -.9520 | .531 | 90 | -.7955 | | | | .731 | 270 | -.4672 | | |
| 25 | .231 | 130 | -.6515 | .331 | 50 | -.9858 | .531 | 0 | -.1209 | 1.631 | 90 | -.0723 | .931 | 270 | -.2199 | | |
| 26 | .231 | 120 | -.6697 | .331 | 40 | -.9877 | .731 | 180 | -.6199 | 1.631 | 0 | -.1302 | 1.131 | 270 | -.1395 | | |
| 27 | .231 | 110 | -.6698 | .331 | 30 | -.9703 | .731 | 90 | -.4721 | 2.131 | 180 | -.0012 | 1.631 | 270 | -.3835 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 18 POINT 28 ALPHA 10 MACH .302 Q 128.914 | | | | MODEL DUNE FACE | | |
|-----------------------------------|------|-----|---------|------|-----|---------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.4611 | .231 | 100 | -.8124 | .331 | 20 | -.2711 | .731 | 0 | -.0877 | 2.131 | 90 | -.1614 | | | | | |
| 2 | .161 | 170 | -.4702 | .231 | 90 | -.8792 | .331 | 10 | -.2488 | .931 | 180 | -.2159 | 2.131 | 0 | .0131 | | | | | |
| 3 | .161 | 160 | -.5258 | .231 | 80 | -.9626 | .331 | 0 | -.2368 | .931 | 90 | -.2302 | 0.000 | | .2867 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.5623 | .231 | 70 | -1.0680 | .431 | 180 | -.5663 | .931 | 0 | -.4194 | 0.000 | | .5831 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.6326 | .231 | 60 | -1.0991 | .431 | 170 | -.6338 | 1.131 | 180 | -.2505 | 0.000 | | .9135 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.6498 | .231 | 50 | -.9434 | .431 | 160 | -.5774 | 1.131 | 170 | -.3421 | 0.000 | | 1.0177 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.7866 | .231 | 40 | -.8866 | .431 | 150 | -.6838 | 1.131 | 160 | -.3136 | 0.000 | | 1.0530 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.8431 | .231 | 30 | -.7153 | .431 | 140 | -.6986 | 1.131 | 150 | -.2617 | 0.000 | | 1.0117 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.8622 | .231 | 20 | -.5643 | .431 | 130 | -.7356 | 1.131 | 140 | -.2983 | 0.000 | | .9435 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.9470 | .231 | 10 | -.4798 | .431 | 120 | -.7847 | 1.131 | 130 | -.2078 | 0.000 | | .8640 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.9150 | .231 | 0 | -.4752 | .431 | 110 | -.7671 | 1.131 | 120 | -.2403 | 0.000 | | .6719 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -1.0847 | .331 | 180 | -.5137 | .431 | 100 | -.8485 | 1.131 | 110 | -.2169 | 0.000 | | .3993 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -1.2215 | .331 | 170 | -.5568 | .431 | 90 | -.8310 | 1.131 | 100 | -.2139 | 0.000 | | .3952 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -1.2543 | .331 | 160 | -.5879 | .431 | 80 | -.6727 | 1.131 | 90 | -.1793 | 0.000 | | .9983 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -1.2579 | .331 | 150 | -.6447 | .431 | 70 | -.5108 | 1.131 | 80 | -.1833 | 0.000 | | .9263 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -1.2037 | .331 | 140 | -.6814 | .431 | 60 | -.3664 | 1.131 | 70 | -.1610 | 0.000 | | .7711 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -1.0031 | .331 | 130 | -.7290 | .431 | 50 | -.2396 | 1.131 | 60 | -.1528 | 0.000 | | .4478 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.9571 | .331 | 120 | -.7391 | .431 | 40 | -.2118 | 1.131 | 50 | -.1396 | 0.000 | | .4093 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.9352 | .331 | 110 | -.8334 | .431 | 30 | -.1767 | 1.131 | 40 | -.1294 | .161 | 270 | -.8974 | | | | | |
| 20 | .231 | 180 | -.4738 | .331 | 100 | -.8921 | .431 | 20 | -.1683 | 1.131 | 30 | -.0928 | .231 | 270 | -.8974 | | | | | |
| 21 | .231 | 170 | -.5404 | .331 | 90 | -.9791 | .431 | 10 | -.1508 | 1.131 | 20 | -.0582 | .331 | 270 | -.9180 | | | | | |
| 22 | .231 | 160 | -.5185 | .331 | 80 | -.9370 | .431 | 0 | -.1545 | 1.131 | 10 | -.0521 | .431 | 270 | -.8230 | | | | | |
| 23 | .231 | 150 | -.5997 | .331 | 70 | -.8710 | .531 | 180 | -.6459 | 1.131 | 0 | -.0491 | .531 | 270 | -.5691 | | | | | |
| 24 | .231 | 140 | -.6835 | .331 | 60 | -.6759 | .531 | 90 | -.5977 | | | | .731 | 270 | -.3249 | | | | | |
| 25 | .231 | 130 | -.6808 | .331 | 50 | -.5641 | .531 | 0 | -.1036 | 1.631 | 90 | -.1498 | .931 | 270 | -.2306 | | | | | |
| 26 | .231 | 120 | -.7629 | .331 | 40 | -.3735 | .731 | 180 | -.5663 | 1.631 | 0 | -.2078 | 1.131 | 270 | -.1655 | | | | | |
| 27 | .231 | 110 | -.7802 | .331 | 30 | -.2629 | .731 | 90 | -.3081 | 2.131 | 180 | -.0312 | 1.631 | 270 | -.1284 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 18 POINT 29 ALPHA 12 MACH .302 Q 128.207 | | | | MODEL DUNE FACE | | |
|-----------------------------------|------|-----|---------|------|-----|---------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.4758 | .231 | 100 | -.9008 | .331 | 20 | -.2143 | .731 | 0 | -.0276 | 2.131 | 90 | -.2147 | | | | | |
| 2 | .161 | 170 | -.5122 | .231 | 90 | -1.0078 | .331 | 10 | -.1810 | .931 | 180 | -.2206 | 2.131 | 0 | .0234 | | | | | |
| 3 | .161 | 160 | -.5396 | .231 | 80 | -1.0215 | .331 | 0 | -.1791 | .931 | 90 | -.2481 | 0.000 | | .3564 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.6351 | .231 | 70 | -1.0618 | .431 | 180 | -.6190 | .931 | 0 | -.3720 | 0.000 | | .6400 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.6679 | .231 | 60 | -.9813 | .431 | 170 | -.6153 | 1.131 | 180 | -.2816 | 0.000 | | .9383 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.7708 | .231 | 50 | -.8459 | .431 | 160 | -.6356 | 1.131 | 170 | -.2603 | 0.000 | | 1.0205 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.9392 | .231 | 40 | -.5934 | .431 | 150 | -.7798 | 1.131 | 160 | -.2623 | 0.000 | | 1.0246 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.8354 | .231 | 30 | -.5147 | .431 | 140 | -.7511 | 1.131 | 150 | -.2816 | 0.000 | | .9855 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.9256 | .231 | 20 | -.4608 | .431 | 130 | -.7862 | 1.131 | 140 | -.2305 | 0.000 | | .9195 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.9319 | .231 | 10 | -.3995 | .431 | 120 | -.7511 | 1.131 | 130 | -.2968 | 0.000 | | .7973 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -1.0357 | .231 | 0 | -.4178 | .431 | 110 | -.8214 | 1.131 | 120 | -.2298 | 0.000 | | .6029 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -1.0612 | .331 | 180 | -.5669 | .431 | 100 | -.8038 | 1.131 | 110 | -.2338 | 0.000 | | .3719 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -1.2979 | .331 | 170 | -.6236 | .431 | 90 | -.6800 | 1.131 | 100 | -.2552 | 0.000 | | .3472 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -1.2852 | .331 | 160 | -.6465 | .431 | 80 | -.5247 | 1.131 | 90 | -.2511 | 0.000 | | .9710 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -1.1286 | .331 | 150 | -.6721 | .431 | 70 | -.4194 | 1.131 | 80 | -.2511 | 0.000 | | .9112 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.9347 | .331 | 140 | -.7233 | .431 | 60 | -.2882 | 1.131 | 70 | -.1769 | 0.000 | | .7359 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.8500 | .331 | 130 | -.7719 | .431 | 50 | -.2272 | 1.131 | 60 | -.1444 | 0.000 | | .3967 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.8336 | .331 | 120 | -.7599 | .431 | 40 | -.1930 | 1.131 | 50 | -.1282 | 0.000 | | .3603 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.8281 | .331 | 110 | -.8706 | .431 | 30 | -.1602 | 1.131 | 40 | -.0855 | .161 | 270 | -.9877 | | | | | |
| 20 | .231 | 180 | -.5013 | .331 | 100 | -.8880 | .431 | 20 | -.1366 | 1.131 | 30 | -.0469 | .231 | 270 | -.9725 | | | | | |
| 21 | .231 | 170 | -.5195 | .331 | 90 | -.9035 | .431 | 10 | -.0997 | 1.131 | 20 | -.0367 | .331 | 270 | -.9155 | | | | | |
| 22 | .231 | 160 | -.5942 | .331 | 80 | -.8490 | .431 | 0 | -.1117 | 1.131 | 10 | -.0113 | .431 | 270 | -.7177 | | | | | |
| 23 | .231 | 150 | -.6342 | .331 | 70 | -.7050 | .531 | 180 | -.6338 | 1.131 | 0 | -.0316 | .531 | 270 | -.5229 | | | | | |
| 24 | .231 | 140 | -.7626 | .331 | 60 | -.4983 | .531 | 90 | -.5072 | | | | .731 | 270 | -.3455 | | | | | |
| 25 | .231 | 130 | -.7826 | .331 | 50 | -.3355 | .531 | 0 | -.0729 | 1.631 | 90 | -.1597 | .931 | 270 | -.2893 | | | | | |
| 26 | .231 | 120 | -.7826 | .331 | 40 | -.3208 | .731 | 180 | -.4870 | 1.631 | 0 | -.2095 | 1.131 | 270 | -.2807 | | | | | |
| 27 | .231 | 110 | -.8391 | .331 | 30 | -.2705 | .731 | 90 | -.3113 | 2.131 | 180 | .0131 | 1.631 | 270 | -.1900 | | | | | |

ORIGINAL PAGE IS
OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | MODLL DOME FACE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----------------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 160 | -.6242 | .231 | 100 | -.5779 | .331 | 20 | -.5747 | .731 | 0 | -.5957 | 2.131 | 90 | -.1753 | | |
| 2 | .161 | 170 | -.6223 | .231 | 90 | -.5934 | .331 | 10 | -.5811 | .931 | 180 | -.1838 | 2.131 | 0 | .0223 | | |
| 3 | .161 | 160 | -.6451 | .231 | 80 | -.5797 | .331 | 0 | -.5784 | .931 | 90 | -.4678 | 0.000 | | .4723 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6033 | .231 | 70 | -.5432 | .431 | 180 | -.6605 | .931 | 0 | -.7631 | 0.000 | | .5135 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6033 | .231 | 60 | -.5907 | .431 | 170 | -.6716 | 1.131 | 180 | -.1361 | 0.000 | | .7976 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6369 | .231 | 50 | -.5742 | .431 | 160 | -.7205 | 1.131 | 170 | -.0661 | 0.000 | | .9377 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6233 | .231 | 40 | -.5651 | .431 | 150 | -.6771 | 1.131 | 160 | -.1036 | 0.000 | | .9963 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5923 | .231 | 30 | -.5496 | .431 | 140 | -.6632 | 1.131 | 150 | -.1807 | 0.000 | | 1.0190 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5896 | .231 | 20 | -.5313 | .431 | 130 | -.6411 | 1.131 | 140 | -.1858 | 0.000 | | 1.0190 | .10 | 0.00 |
| 10 | .161 | 90 | -.5851 | .231 | 10 | -.5304 | .431 | 120 | -.6559 | 1.131 | 130 | -.1655 | 0.000 | | .9469 | .20 | 0.00 |
| 11 | .161 | 80 | -.5678 | .231 | 0 | -.5194 | .431 | 110 | -.6596 | 1.131 | 120 | -.2325 | 0.000 | | .8131 | .30 | 0.00 |
| 12 | .161 | 70 | -.5823 | .331 | 180 | -.6309 | .431 | 100 | -.6596 | 1.131 | 110 | -.2274 | 0.000 | | .5536 | .40 | 0.00 |
| 13 | .161 | 60 | -.5605 | .331 | 170 | -.6455 | .431 | 90 | -.6153 | 1.131 | 100 | -.2467 | 0.000 | | .4208 | .45 | 0.00 |
| 14 | .161 | 50 | -.5714 | .331 | 160 | -.6893 | .431 | 80 | -.6540 | 1.131 | 90 | -.2152 | 0.000 | | .9912 | 0.00 | .10 |
| 15 | .161 | 40 | -.5769 | .331 | 150 | -.6628 | .431 | 70 | -.6605 | 1.131 | 80 | -.1970 | 0.000 | | .9232 | 0.00 | .20 |
| 16 | .161 | 30 | -.5296 | .331 | 140 | -.6372 | .431 | 60 | -.5848 | 1.131 | 70 | -.2923 | 0.000 | | .8017 | 0.00 | .30 |
| 17 | .161 | 20 | -.5196 | .331 | 130 | -.5779 | .431 | 50 | -.5673 | 1.131 | 60 | -.3593 | 0.000 | | .5361 | 0.00 | .40 |
| 18 | .161 | 10 | -.5769 | .331 | 120 | -.5961 | .431 | 40 | -.5857 | 1.131 | 50 | -.3319 | 0.000 | | .4723 | 0.00 | .45 |
| 19 | .161 | 0 | -.5096 | .331 | 110 | -.6272 | .431 | 30 | -.5894 | 1.131 | 40 | -.3613 | .161 | 270 | -.6054 | | |
| 20 | .231 | 180 | -.6151 | .331 | 100 | -.6080 | .431 | 20 | -.5848 | 1.131 | 30 | -.3075 | .231 | 270 | -.5941 | | |
| 21 | .231 | 170 | -.6305 | .331 | 90 | -.6450 | .431 | 10 | -.5876 | 1.131 | 20 | -.3339 | .331 | 270 | -.5931 | | |
| 22 | .231 | 160 | -.6369 | .331 | 80 | -.6199 | .431 | 0 | -.5977 | 1.131 | 10 | -.2467 | .431 | 270 | -.5951 | | |
| 23 | .231 | 150 | -.6523 | .331 | 70 | -.5998 | .531 | 180 | -.6872 | 1.131 | 0 | -.3065 | .531 | 270 | -.6487 | | |
| 24 | .231 | 140 | -.6251 | .331 | 60 | -.5742 | .531 | 90 | -.6245 | | | .731 | .270 | | -.6620 | | |
| 25 | .231 | 130 | -.6196 | .331 | 50 | -.6062 | .531 | 0 | -.6660 | 1.631 | 90 | .0029 | .931 | 270 | -.4758 | | |
| 26 | .231 | 120 | -.6078 | .331 | 40 | -.5852 | .731 | 180 | -.6319 | 1.631 | 0 | -.1574 | 1.131 | 270 | -.2494 | | |
| 27 | .231 | 110 | -.6114 | .331 | 30 | -.5715 | .731 | 90 | -.6679 | 2.131 | 180 | .0273 | 1.631 | 270 | .0234 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | MODLL DOME FACE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----------------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5892 | .231 | 100 | -.5857 | .331 | 20 | -.5733 | .731 | 0 | -.6247 | 2.131 | 90 | -.1307 | | |
| 2 | .161 | 170 | -.5565 | .231 | 90 | -.5857 | .331 | 10 | -.5936 | .931 | 180 | -.1732 | 2.131 | 0 | .0202 | | |
| 3 | .161 | 160 | -.6236 | .231 | 80 | -.6567 | .331 | 0 | -.5503 | .931 | 90 | -.5093 | 0.000 | | .4907 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5737 | .231 | 70 | -.5893 | .431 | 180 | -.6415 | .931 | 0 | -.7097 | 0.000 | | .5380 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5919 | .231 | 60 | -.5492 | .431 | 170 | -.6304 | 1.131 | 180 | -.2805 | 0.000 | | .8205 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5901 | .231 | 50 | -.5811 | .431 | 160 | -.6442 | 1.131 | 170 | -.2216 | 0.000 | | .9479 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5946 | .231 | 40 | -.5975 | .431 | 150 | -.6590 | 1.131 | 160 | -.2329 | 0.000 | | 1.0136 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5864 | .231 | 30 | -.6312 | .431 | 140 | -.6203 | 1.131 | 150 | -.2299 | 0.000 | | 1.0414 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5928 | .231 | 20 | -.6130 | .431 | 130 | -.6221 | 1.131 | 140 | -.2592 | 0.000 | | 1.0239 | .10 | 0.00 |
| 10 | .161 | 90 | -.6091 | .231 | 10 | -.5711 | .431 | 120 | -.6387 | 1.131 | 130 | -.2795 | 0.000 | | .9828 | .20 | 0.00 |
| 11 | .161 | 80 | -.5964 | .231 | 0 | -.6221 | .431 | 110 | -.6470 | 1.131 | 120 | -.2724 | 0.000 | | .8033 | .30 | 0.00 |
| 12 | .161 | 70 | -.5447 | .331 | 180 | -.6303 | .431 | 100 | -.5807 | 1.131 | 110 | -.3301 | 0.000 | | .5719 | .40 | 0.00 |
| 13 | .161 | 60 | -.5801 | .331 | 170 | -.5975 | .431 | 90 | -.5945 | 1.131 | 100 | -.3028 | 0.000 | | .4507 | .45 | 0.00 |
| 14 | .161 | 50 | -.5964 | .331 | 160 | -.6431 | .431 | 80 | -.6277 | 1.131 | 90 | -.3260 | 0.000 | | 1.0280 | 0.00 | .10 |
| 15 | .161 | 40 | -.5465 | .331 | 150 | -.5920 | .431 | 70 | -.5807 | 1.131 | 80 | -.3179 | 0.000 | | .9530 | 0.00 | .20 |
| 16 | .161 | 30 | -.6445 | .331 | 140 | -.6057 | .431 | 60 | -.6507 | 1.131 | 70 | -.2805 | 0.000 | | .8164 | 0.00 | .30 |
| 17 | .161 | 20 | -.5801 | .331 | 130 | -.5966 | .431 | 50 | -.6231 | 1.131 | 60 | -.2764 | 0.000 | | .5534 | 0.00 | .40 |
| 18 | .161 | 10 | -.5112 | .331 | 120 | -.6130 | .431 | 40 | -.5641 | 1.131 | 50 | -.3129 | 0.000 | | .5062 | 0.00 | .45 |
| 19 | .161 | 0 | -.5520 | .331 | 110 | -.6011 | .431 | 30 | -.5954 | 1.131 | 40 | -.3036 | .161 | 270 | -.5953 | | |
| 20 | .231 | 180 | -.5937 | .331 | 100 | -.6258 | .431 | 20 | -.6083 | 1.131 | 30 | -.3230 | .231 | 270 | -.5948 | | |
| 21 | .231 | 170 | -.6109 | .331 | 90 | -.6513 | .431 | 10 | -.5787 | 1.131 | 20 | -.3017 | .331 | 270 | -.5763 | | |
| 22 | .231 | 160 | -.5837 | .331 | 80 | -.6011 | .431 | 0 | -.5825 | 1.131 | 10 | -.3392 | .431 | 270 | -.6020 | | |
| 23 | .231 | 150 | -.5955 | .331 | 70 | -.5574 | .531 | 180 | -.6746 | 1.131 | 0 | -.3200 | .531 | 270 | -.6944 | | |
| 24 | .231 | 140 | -.6499 | .331 | 60 | -.6103 | .531 | 90 | -.6599 | | | .731 | .270 | | -.6143 | | |
| 25 | .231 | 130 | -.5992 | .331 | 50 | -.5764 | .531 | 0 | -.5954 | 1.631 | 90 | .0454 | .931 | 270 | -.4777 | | |
| 26 | .231 | 120 | -.5901 | .331 | 40 | -.6258 | .731 | 180 | -.6323 | 1.631 | 0 | -.1509 | 1.131 | 270 | -.2323 | | |
| 27 | .231 | 110 | -.5503 | .331 | 30 | -.5893 | .731 | 90 | -.6157 | 2.131 | 180 | .0242 | 1.631 | 270 | .0552 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4040 | .231 | 100 | -.6039 | .331 | 20 | -.7197 | .731 | 0 | -.6358 | 2.131 | 90 | -.2149 | | |
| 2 | .161 | 170 | -.4685 | .231 | 90 | -.5827 | .331 | 10 | -.7529 | .931 | 180 | -.1540 | 2.131 | 0 | .0077 | | |
| 3 | .161 | 160 | -.5357 | .231 | 80 | -.6157 | .331 | 0 | -.6958 | .931 | 90 | -.4556 | 0.000 | | .4774 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5347 | .231 | 70 | -.6376 | .431 | 180 | -.5991 | .931 | 0 | -.6570 | 0.000 | | .5544 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5266 | .231 | 60 | -.6330 | .431 | 170 | -.6074 | 1.131 | 180 | -.3503 | 0.000 | | .8154 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5565 | .231 | 50 | -.6658 | .431 | 160 | -.6221 | 1.131 | 170 | -.3868 | 0.000 | | .9654 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5610 | .231 | 40 | -.6631 | .431 | 150 | -.6175 | 1.131 | 160 | -.2542 | 0.000 | | 1.0342 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5311 | .231 | 30 | -.7351 | .431 | 140 | -.5221 | 1.131 | 150 | -.3260 | 0.000 | | 1.0301 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5883 | .231 | 20 | -.6841 | .431 | 130 | -.6148 | 1.131 | 140 | -.4222 | 0.000 | | 1.0065 | .10 | 0.00 |
| 10 | .161 | 90 | -.6055 | .231 | 10 | -.7041 | .431 | 120 | -.6599 | 1.131 | 130 | -.3291 | 0.000 | | .9366 | .20 | 0.00 |
| 11 | .161 | 80 | -.5692 | .231 | 0 | -.7041 | .431 | 110 | -.6267 | 1.131 | 120 | -.2754 | 0.000 | | .7959 | .30 | 0.00 |
| 12 | .161 | 70 | -.6107 | .331 | 180 | -.5647 | .431 | 100 | -.6728 | 1.131 | 110 | -.3028 | 0.000 | | .5308 | .40 | 0.00 |
| 13 | .161 | 60 | -.6273 | .331 | 170 | -.5820 | .431 | 90 | -.6829 | 1.131 | 100 | -.2795 | 0.000 | | .4445 | .45 | 0.00 |
| 14 | .161 | 50 | -.6064 | .331 | 160 | -.5875 | .431 | 80 | -.6608 | 1.131 | 90 | -.2501 | 0.000 | | 1.0106 | 0.00 | .10 |
| 15 | .161 | 40 | -.6470 | .331 | 150 | -.5255 | .431 | 70 | -.6792 | 1.131 | 80 | -.2876 | 0.000 | | .9654 | 0.00 | .20 |
| 16 | .161 | 30 | -.6880 | .331 | 140 | -.5674 | .431 | 60 | -.7455 | 1.131 | 70 | -.1479 | 0.000 | | .8133 | 0.00 | .30 |
| 17 | .161 | 20 | -.6291 | .331 | 130 | -.5884 | .431 | 50 | -.6884 | 1.131 | 60 | -.1722 | 0.000 | | .5503 | 0.00 | .40 |
| 18 | .161 | 10 | -.6608 | .331 | 120 | -.5674 | .431 | 40 | -.7151 | 1.131 | 50 | -.1884 | 0.000 | | .4702 | 0.00 | .45 |
| 19 | .161 | 0 | -.6699 | .331 | 110 | -.6248 | .431 | 30 | -.7473 | 1.131 | 40 | -.1013 | .161 | 270 | -.5948 | | |
| 20 | .231 | 180 | -.4658 | .331 | 100 | -.6203 | .431 | 20 | -.7326 | 1.131 | 30 | -.0973 | .231 | 270 | -.6153 | | |
| 21 | .231 | 170 | -.5084 | .331 | 90 | -.6586 | .431 | 10 | -.7501 | 1.131 | 20 | -.0983 | .331 | 270 | -.6143 | | |
| 22 | .231 | 160 | -.5166 | .331 | 80 | -.6622 | .431 | 0 | -.7464 | 1.131 | 10 | -.0527 | .431 | 270 | -.6431 | | |
| 23 | .231 | 150 | -.5375 | .331 | 70 | -.6558 | .531 | 180 | -.6175 | 1.131 | 0 | -.0527 | .531 | 270 | -.6194 | | |
| 24 | .231 | 140 | -.5075 | .331 | 60 | -.6602 | .531 | 90 | -.6663 | | | .731 | 270 | -.6461 | | | |
| 25 | .231 | 130 | -.5610 | .331 | 50 | -.6276 | .531 | 0 | -.7326 | 1.631 | 90 | -.0214 | .931 | 270 | -.4572 | | |
| 26 | .231 | 120 | -.5565 | .331 | 40 | -.6567 | .731 | 180 | -.6175 | 1.631 | 0 | -.1418 | 1.131 | 270 | -.1964 | | |
| 27 | .231 | 110 | -.5556 | .331 | 30 | -.6686 | .731 | 90 | -.6378 | 2.131 | 180 | .0060 | 1.631 | 270 | .0418 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4597 | .231 | 100 | -.6248 | .331 | 20 | -.7967 | .731 | 0 | -.4781 | 2.131 | 90 | -.1520 | | |
| 2 | .161 | 170 | -.5049 | .231 | 90 | -.6339 | .331 | 10 | -.8041 | .931 | 180 | -.1810 | 2.131 | 0 | .0120 | | |
| 3 | .161 | 160 | -.4941 | .231 | 80 | -.6794 | .331 | 0 | -.8363 | .931 | 90 | -.3973 | 0.000 | | .4531 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5067 | .231 | 70 | -.6894 | .431 | 180 | -.5430 | .931 | 0 | -.6126 | 0.000 | | .5690 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5086 | .231 | 60 | -.6958 | .431 | 170 | -.5339 | 1.131 | 180 | -.3488 | 0.000 | | .8480 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5475 | .231 | 50 | -.7276 | .431 | 160 | -.5219 | 1.131 | 170 | -.3488 | 0.000 | | .9721 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5765 | .231 | 40 | -.7467 | .431 | 150 | -.5669 | 1.131 | 160 | -.3488 | 0.000 | | 1.0152 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6535 | .231 | 30 | -.7549 | .431 | 140 | -.6782 | 1.131 | 150 | -.2406 | 0.000 | | 1.0255 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6462 | .231 | 20 | -.7849 | .431 | 130 | -.6092 | 1.131 | 140 | -.2391 | 0.000 | | .9963 | .10 | 0.00 |
| 10 | .161 | 90 | -.6498 | .231 | 10 | -.8122 | .431 | 120 | -.6083 | 1.131 | 130 | -.3589 | 0.000 | | .9065 | .20 | 0.00 |
| 11 | .161 | 80 | -.6444 | .231 | 0 | -.7458 | .431 | 110 | -.6203 | 1.131 | 120 | -.2592 | 0.000 | | .7557 | .30 | 0.00 |
| 12 | .161 | 70 | -.7033 | .331 | 180 | -.4928 | .431 | 100 | -.6598 | 1.131 | 110 | -.2740 | 0.000 | | .5034 | .40 | 0.00 |
| 13 | .161 | 60 | -.7395 | .331 | 170 | -.4792 | .431 | 90 | -.7011 | 1.131 | 100 | -.2113 | 0.000 | | .4377 | .45 | 0.00 |
| 14 | .161 | 50 | -.7141 | .331 | 160 | -.5711 | .431 | 80 | -.6874 | 1.131 | 90 | -.1810 | 0.000 | | 1.0091 | 0.00 | .10 |
| 15 | .161 | 40 | -.7407 | .331 | 150 | -.5438 | .431 | 70 | -.7480 | 1.131 | 80 | -.1396 | 0.000 | | .9444 | 0.00 | .20 |
| 16 | .161 | 30 | -.6870 | .331 | 140 | -.5666 | .431 | 60 | -.7443 | 1.131 | 70 | -.1476 | 0.000 | | .8121 | 0.00 | .30 |
| 17 | .161 | 20 | -.8065 | .331 | 130 | -.5866 | .431 | 50 | -.8078 | 1.131 | 60 | -.0486 | 0.000 | | .5147 | 0.00 | .40 |
| 18 | .161 | 10 | -.7540 | .331 | 120 | -.5866 | .431 | 40 | -.7967 | 1.131 | 50 | -.0173 | 0.000 | | .4490 | 0.00 | .45 |
| 19 | .161 | 0 | -.7965 | .331 | 110 | -.6330 | .431 | 30 | -.8344 | 1.131 | 40 | -.0061 | .161 | 270 | -.6554 | | |
| 20 | .231 | 180 | -.4669 | .331 | 100 | -.6330 | .431 | 20 | -.7986 | 1.131 | 30 | .0110 | .231 | 270 | -.6482 | | |
| 21 | .231 | 170 | -.4751 | .331 | 90 | -.6594 | .431 | 10 | -.8574 | 1.131 | 20 | .0040 | .331 | 270 | -.6393 | | |
| 22 | .231 | 160 | -.4932 | .331 | 80 | -.6603 | .431 | 0 | -.8216 | 1.131 | 10 | .0100 | .431 | 270 | -.7405 | | |
| 23 | .231 | 150 | -.5049 | .331 | 70 | -.7003 | .531 | 180 | -.5669 | 1.131 | 0 | .0121 | .531 | 270 | -.6923 | | |
| 24 | .231 | 140 | -.5384 | .331 | 60 | -.7613 | .531 | 90 | -.7278 | | | .731 | 270 | -.6585 | | | |
| 25 | .231 | 130 | -.5511 | .331 | 50 | -.7676 | .531 | 0 | -.7535 | 1.631 | 90 | .0100 | .931 | 270 | -.3642 | | |
| 26 | .231 | 120 | -.6254 | .331 | 40 | -.7749 | .731 | 180 | -.5458 | 1.631 | 0 | -.1699 | 1.131 | 270 | -.1664 | | |
| 27 | .231 | 110 | -.5719 | .331 | 30 | -.7863 | .731 | 90 | -.6644 | 2.131 | 180 | .0009 | 1.631 | 270 | -.0085 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4906 | .231 | 100 | -.5020 | .331 | 20 | -.5284 | .731 | 0 | -.0699 | 2.131 | 90 | -.2721 | | |
| 2 | .161 | 170 | -.4443 | .231 | 90 | -.4786 | .331 | 10 | -.4860 | .931 | 180 | -.4356 | 2.131 | 0 | -.0172 | | |
| 3 | .161 | 160 | -.4491 | .231 | 80 | -.4767 | .331 | 0 | -.4821 | .931 | 90 | -.5299 | 0.000 | | 1.0846 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4645 | .231 | 70 | -.4930 | .431 | 180 | -.4769 | .931 | 0 | -.0240 | 0.000 | | 1.1837 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4551 | .231 | 60 | -.4892 | .431 | 170 | -.4682 | 1.131 | 180 | -.4992 | 0.000 | | 1.2298 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4776 | .231 | 50 | -.5097 | .431 | 160 | -.4913 | 1.131 | 170 | -.5154 | 0.000 | | 1.2169 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4773 | .231 | 40 | -.4930 | .431 | 150 | -.4721 | 1.131 | 160 | -.5108 | 0.000 | | 1.1912 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4750 | .231 | 30 | -.5026 | .431 | 140 | -.4789 | 1.131 | 150 | -.5060 | 0.000 | | 1.1577 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4768 | .231 | 20 | -.5025 | .431 | 130 | -.4833 | 1.131 | 140 | -.5030 | 0.000 | | 1.1021 | .10 | 0.00 |
| 10 | .161 | 90 | -.4678 | .231 | 10 | -.4985 | .431 | 120 | -.4833 | 1.131 | 130 | -.5213 | 0.000 | | 1.0295 | .20 | 0.00 |
| 11 | .161 | 80 | -.4841 | .231 | 0 | -.5286 | .431 | 110 | -.5009 | 1.131 | 120 | -.5309 | 0.000 | | .9344 | .30 | 0.00 |
| 12 | .161 | 70 | -.4891 | .331 | 180 | -.4503 | .431 | 100 | -.4761 | 1.131 | 110 | -.5384 | 0.000 | | .7632 | .40 | 0.00 |
| 13 | .161 | 60 | -.4735 | .331 | 170 | -.4585 | .431 | 90 | -.4840 | 1.131 | 100 | -.5449 | 0.000 | | .5680 | .45 | 0.00 |
| 14 | .161 | 50 | -.4976 | .331 | 160 | -.4704 | .431 | 80 | -.4883 | 1.131 | 90 | -.5244 | 0.000 | | 1.1406 | 0.00 | .10 |
| 15 | .161 | 40 | -.4825 | .331 | 150 | -.4614 | .431 | 70 | -.4780 | 1.131 | 80 | -.4598 | 0.000 | | 1.1192 | 0.00 | .20 |
| 16 | .161 | 30 | -.4853 | .331 | 140 | -.4657 | .431 | 60 | -.4745 | 1.131 | 70 | -.3734 | 0.000 | | 1.0717 | 0.00 | .30 |
| 17 | .161 | 20 | -.5016 | .331 | 130 | -.4732 | .431 | 50 | -.4929 | 1.131 | 60 | -.2909 | 0.000 | | .9515 | 0.00 | .40 |
| 18 | .161 | 10 | -.5074 | .331 | 120 | -.4831 | .431 | 40 | -.5099 | 1.131 | 50 | -.2244 | 0.000 | | .7845 | 0.00 | .45 |
| 19 | .161 | 0 | -.5120 | .331 | 110 | -.4975 | .431 | 30 | -.4684 | 1.131 | 40 | -.1640 | .161 | 270 | -.5045 | | |
| 20 | .231 | 180 | -.4244 | .331 | 100 | -.4614 | .431 | 20 | -.3903 | 1.131 | 30 | -.0727 | .231 | 270 | -.4661 | | |
| 21 | .231 | 170 | -.4269 | .331 | 90 | -.4520 | .431 | 10 | -.3343 | 1.131 | 20 | -.0318 | .331 | 270 | -.4641 | | |
| 22 | .231 | 160 | -.4675 | .331 | 80 | -.4952 | .431 | 0 | -.3259 | 1.131 | 10 | -.0244 | .431 | 270 | -.4926 | | |
| 23 | .231 | 150 | -.4647 | .331 | 70 | -.4664 | .531 | 180 | -.4691 | 1.131 | 0 | -.0121 | .531 | 270 | -.4873 | | |
| 24 | .231 | 140 | -.4801 | .331 | 60 | -.4975 | .531 | 90 | -.5000 | | | .731 | 270 | -.5140 | | | |
| 25 | .231 | 130 | -.4873 | .331 | 50 | -.5044 | .531 | 0 | -.1472 | 1.631 | 90 | -.5937 | .931 | 270 | -.5652 | | |
| 26 | .231 | 120 | -.4929 | .331 | 40 | -.5035 | .731 | 180 | -.4963 | 1.631 | 0 | -.1631 | 1.131 | 270 | -.5399 | | |
| 27 | .231 | 110 | -.4856 | .331 | 30 | -.5111 | .731 | 90 | -.5052 | 2.131 | 180 | -.3824 | 1.631 | 270 | -.5783 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4607 | .231 | 100 | -.4952 | .331 | 20 | -.3847 | .731 | 0 | -.0853 | 2.131 | 90 | -.2993 | | |
| 2 | .161 | 170 | -.4593 | .231 | 90 | -.4926 | .331 | 10 | -.2878 | .931 | 180 | -.5044 | 2.131 | 0 | -.0072 | | |
| 3 | .161 | 160 | -.4219 | .231 | 80 | -.4557 | .331 | 0 | -.2752 | .931 | 90 | -.4894 | 0.000 | | 1.1227 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4599 | .231 | 70 | -.4706 | .431 | 180 | -.4605 | .931 | 0 | .0010 | 0.000 | | 1.2057 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4754 | .231 | 60 | -.4856 | .431 | 170 | -.4809 | 1.131 | 180 | -.5126 | 0.000 | | 1.2355 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4725 | .231 | 50 | -.4818 | .431 | 160 | -.4704 | 1.131 | 170 | -.5055 | 0.000 | | 1.2221 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4898 | .231 | 40 | -.4692 | .431 | 150 | -.4542 | 1.131 | 160 | -.4933 | 0.000 | | 1.1868 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4851 | .231 | 30 | -.5084 | .431 | 140 | -.4830 | 1.131 | 150 | -.5193 | 0.000 | | 1.1511 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4699 | .231 | 20 | -.5384 | .431 | 130 | -.5018 | 1.131 | 140 | -.5320 | 0.000 | | 1.0862 | .10 | 0.00 |
| 10 | .161 | 90 | -.5062 | .231 | 10 | -.5298 | .431 | 120 | -.4924 | 1.131 | 130 | -.5294 | 0.000 | | 1.0146 | .20 | 0.00 |
| 11 | .161 | 80 | -.4759 | .231 | 0 | -.5154 | .431 | 110 | -.4786 | 1.131 | 120 | -.5250 | 0.000 | | .9142 | .30 | 0.00 |
| 12 | .161 | 70 | -.4802 | .331 | 180 | -.4495 | .431 | 100 | -.4766 | 1.131 | 110 | -.5699 | 0.000 | | .7321 | .40 | 0.00 |
| 13 | .161 | 60 | -.4649 | .331 | 170 | -.4618 | .431 | 90 | -.4810 | 1.131 | 100 | -.5587 | 0.000 | | .5357 | .45 | 0.00 |
| 14 | .161 | 50 | -.4808 | .331 | 160 | -.4704 | .431 | 80 | -.4816 | 1.131 | 90 | -.5373 | 0.000 | | 1.1308 | 0.00 | .10 |
| 15 | .161 | 40 | -.4893 | .331 | 150 | -.4785 | .431 | 70 | -.4889 | 1.131 | 80 | -.4878 | 0.000 | | 1.1067 | 0.00 | .20 |
| 16 | .161 | 30 | -.4904 | .331 | 140 | -.4765 | .431 | 60 | -.5125 | 1.131 | 70 | -.4123 | 0.000 | | 1.0610 | 0.00 | .30 |
| 17 | .161 | 20 | -.5120 | .331 | 130 | -.4907 | .431 | 50 | -.5274 | 1.131 | 60 | -.3233 | 0.000 | | .9374 | 0.00 | .40 |
| 18 | .161 | 10 | -.4909 | .331 | 120 | -.4686 | .431 | 40 | -.3833 | 1.131 | 50 | -.2289 | 0.000 | | .7767 | 0.00 | .45 |
| 19 | .161 | 0 | -.5318 | .331 | 110 | -.4922 | .431 | 30 | -.1655 | 1.131 | 40 | -.1690 | .161 | 270 | -.4909 | | |
| 20 | .231 | 180 | -.4261 | .331 | 100 | -.4613 | .431 | 20 | -.0974 | 1.131 | 30 | -.0730 | .231 | 270 | -.4650 | | |
| 21 | .231 | 170 | -.4600 | .331 | 90 | -.4907 | .431 | 10 | -.0401 | 1.131 | 20 | -.0298 | .331 | 270 | -.4852 | | |
| 22 | .231 | 160 | -.4802 | .331 | 80 | -.5028 | .431 | 0 | .0403 | 1.131 | 10 | -.0090 | .431 | 270 | -.5032 | | |
| 23 | .231 | 150 | -.4909 | .331 | 70 | -.4742 | .531 | 180 | -.4713 | 1.131 | 0 | .0181 | .531 | 270 | -.4730 | | |
| 24 | .231 | 140 | -.4483 | .331 | 60 | -.4557 | .531 | 90 | -.4633 | | | .731 | 270 | -.5055 | | | |
| 25 | .231 | 130 | -.4653 | .331 | 50 | -.4972 | .531 | 0 | .1819 | 1.631 | 90 | -.6290 | .931 | 270 | -.5340 | | |
| 26 | .231 | 120 | -.4755 | .331 | 40 | -.5303 | .731 | 180 | -.4933 | 1.631 | 0 | -.1502 | 1.131 | 270 | -.5528 | | |
| 27 | .231 | 110 | -.4697 | .331 | 30 | -.4777 | .731 | 90 | -.5227 | 2.131 | 180 | -.3810 | 1.631 | 270 | -.6143 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 8 POINT 203 ALPHA 22 MACH .882 Q 703.901 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4583 | .231 | 100 | -.4939 | .331 | 20 | .0149 | .731 | 0 | .1000 | 2.131 | 90 | -.3328 | | |
| 2 | .161 | 170 | -.4474 | .231 | 90 | -.4754 | .331 | 10 | .1268 | .931 | 180 | -.5078 | 2.131 | 0 | .0275 | | |
| 3 | .161 | 160 | -.4749 | .231 | 80 | -.4637 | .331 | 0 | .2191 | .931 | 90 | -.5262 | 0.000 | | 1.1467 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4484 | .231 | 70 | -.4465 | .431 | 180 | -.4543 | .931 | 0 | .0230 | 0.000 | | 1.2169 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4940 | .231 | 60 | -.4845 | .431 | 170 | -.4905 | 1.131 | 180 | -.5265 | 0.000 | | 1.2283 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5108 | .231 | 50 | -.5092 | .431 | 160 | -.5122 | 1.131 | 170 | -.5558 | 0.000 | | 1.1986 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5028 | .231 | 40 | -.5226 | .431 | 150 | -.4735 | 1.131 | 160 | -.5131 | 0.000 | | 1.1788 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4606 | .231 | 30 | -.5351 | .431 | 140 | -.5102 | 1.131 | 150 | -.5505 | 0.000 | | 1.1301 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4920 | .231 | 20 | -.4625 | .431 | 130 | -.4762 | 1.131 | 140 | -.5243 | 0.000 | | 1.0707 | .10 | 0.00 |
| 10 | .161 | 90 | -.4698 | .231 | 10 | -.3811 | .431 | 120 | -.5010 | 1.131 | 130 | -.5582 | 0.000 | | .9901 | .20 | 0.00 |
| 11 | .161 | 80 | -.4664 | .231 | 0 | -.3436 | .431 | 110 | -.4905 | 1.131 | 120 | -.6017 | 0.000 | | .8785 | .30 | 0.00 |
| 12 | .161 | 70 | -.4952 | .331 | 180 | -.5078 | .431 | 100 | -.5281 | 1.131 | 110 | -.6727 | 0.000 | | .6932 | .40 | 0.00 |
| 13 | .161 | 60 | -.4917 | .331 | 170 | -.4648 | .431 | 90 | -.4779 | 1.131 | 100 | -.6208 | 0.000 | | .5190 | .45 | 0.00 |
| 14 | .161 | 50 | -.4907 | .331 | 160 | -.4819 | .431 | 80 | -.4941 | 1.131 | 90 | -.5969 | 0.000 | | 1.1130 | 0.00 | .10 |
| 15 | .161 | 40 | -.4905 | .331 | 150 | -.4757 | .431 | 70 | -.5322 | 1.131 | 80 | -.5466 | 0.000 | | 1.0876 | 0.00 | .20 |
| 16 | .161 | 30 | -.5453 | .331 | 140 | -.5022 | .431 | 60 | -.4932 | 1.131 | 70 | -.4531 | 0.000 | | 1.0416 | 0.00 | .30 |
| 17 | .161 | 20 | -.5648 | .331 | 130 | -.4913 | .431 | 50 | -.2042 | 1.131 | 60 | -.3404 | 0.000 | | .9202 | 0.00 | .40 |
| 18 | .161 | 10 | -.5702 | .331 | 120 | -.4984 | .431 | 40 | .0051 | 1.131 | 50 | -.2410 | 0.000 | | .7668 | 0.00 | .45 |
| 19 | .161 | 0 | -.5341 | .331 | 110 | -.4812 | .431 | 30 | .1690 | 1.131 | 40 | -.1487 | .161 | 270 | -.4749 | | |
| 20 | .231 | 180 | -.4477 | .331 | 100 | -.4772 | .431 | 20 | .1416 | 1.131 | 30 | -.0602 | .231 | 270 | -.4749 | | |
| 21 | .231 | 170 | -.4547 | .331 | 90 | -.4746 | .431 | 10 | .2606 | 1.131 | 20 | .0057 | .331 | 270 | -.4712 | | |
| 22 | .231 | 160 | -.4321 | .331 | 80 | -.4433 | .431 | 0 | .2753 | 1.131 | 10 | .0433 | .431 | 270 | -.4535 | | |
| 23 | .231 | 150 | -.4646 | .331 | 70 | -.4688 | .531 | 180 | -.4891 | 1.131 | 0 | .0518 | .531 | 270 | -.4979 | | |
| 24 | .231 | 140 | -.4635 | .331 | 60 | -.4681 | .531 | 90 | -.4852 | | | | .731 | 270 | -.5420 | | |
| 25 | .231 | 130 | -.4309 | .331 | 50 | -.5292 | .531 | 0 | .1882 | 1.631 | 90 | -.6860 | .931 | 270 | -.5241 | | |
| 26 | .231 | 120 | -.5025 | .331 | 40 | -.4005 | .731 | 180 | -.5200 | 1.631 | 0 | -.1716 | 1.131 | 270 | -.6147 | | |
| 27 | .231 | 110 | -.4995 | .331 | 30 | -.0895 | .731 | 90 | -.5670 | 2.131 | 180 | -.3583 | 1.631 | 270 | -.7109 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 8 POINT 204 ALPHA 24 MACH .882 Q 703.815 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4608 | .231 | 100 | -.5103 | .331 | 20 | .3055 | .731 | 0 | .1365 | 2.131 | 90 | -.3292 | | |
| 2 | .161 | 170 | -.4733 | .231 | 90 | -.4951 | .331 | 10 | .3355 | .931 | 180 | -.5387 | 2.131 | 0 | .0750 | | |
| 3 | .161 | 160 | -.4784 | .231 | 80 | -.4915 | .331 | 0 | .3305 | .931 | 90 | -.5759 | 0.000 | | 1.1643 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4710 | .231 | 70 | -.4637 | .431 | 180 | -.4810 | .931 | 0 | .1161 | 0.000 | | 1.2200 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4749 | .231 | 60 | -.4883 | .431 | 170 | -.4891 | 1.131 | 180 | -.5286 | 0.000 | | 1.2366 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4950 | .231 | 50 | -.5858 | .431 | 160 | -.5147 | 1.131 | 170 | -.5444 | 0.000 | | 1.1963 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5182 | .231 | 40 | -.4675 | .431 | 150 | -.5037 | 1.131 | 160 | -.5349 | 0.000 | | 1.1581 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5070 | .231 | 30 | -.1552 | .431 | 140 | -.5343 | 1.131 | 150 | -.5523 | 0.000 | | 1.1068 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5076 | .231 | 20 | .0622 | .431 | 130 | -.5223 | 1.131 | 140 | -.5665 | 0.000 | | 1.0454 | .10 | 0.00 |
| 10 | .161 | 90 | -.4953 | .231 | 10 | .1851 | .431 | 120 | -.5140 | 1.131 | 130 | -.6045 | 0.000 | | .9582 | .20 | 0.00 |
| 11 | .161 | 80 | -.4630 | .231 | 0 | .2519 | .431 | 110 | -.5099 | 1.131 | 120 | -.6325 | 0.000 | | .8536 | .30 | 0.00 |
| 12 | .161 | 70 | -.4890 | .331 | 180 | -.4933 | .431 | 100 | -.5095 | 1.131 | 110 | -.6954 | 0.000 | | .6621 | .40 | 0.00 |
| 13 | .161 | 60 | -.4882 | .331 | 170 | -.4782 | .431 | 90 | -.5099 | 1.131 | 100 | -.7009 | 0.000 | | .4838 | .45 | 0.00 |
| 14 | .161 | 50 | -.5065 | .331 | 160 | -.4984 | .431 | 80 | -.5500 | 1.131 | 90 | -.6431 | 0.000 | | 1.1003 | 0.00 | .10 |
| 15 | .161 | 40 | -.5669 | .331 | 150 | -.4878 | .431 | 70 | -.5021 | 1.131 | 80 | -.5943 | 0.000 | | 1.0691 | 0.00 | .20 |
| 16 | .161 | 30 | -.5806 | .331 | 140 | -.5434 | .431 | 60 | -.1628 | 1.131 | 70 | -.4986 | 0.000 | | 1.0152 | 0.00 | .30 |
| 17 | .161 | 20 | -.4895 | .331 | 130 | -.5110 | .431 | 50 | -.0010 | 1.131 | 60 | -.3634 | 0.000 | | .9050 | 0.00 | .40 |
| 18 | .161 | 10 | -.4330 | .331 | 120 | -.5052 | .431 | 40 | .0825 | 1.131 | 50 | -.2404 | 0.000 | | .7556 | 0.00 | .45 |
| 19 | .161 | 0 | -.3857 | .331 | 110 | -.4720 | .431 | 30 | .1602 | 1.131 | 40 | -.1181 | .161 | 270 | -.4699 | | |
| 20 | .231 | 180 | -.4464 | .331 | 100 | -.4609 | .431 | 20 | .0707 | 1.131 | 30 | -.0259 | .231 | 270 | -.4739 | | |
| 21 | .231 | 170 | -.4500 | .331 | 90 | -.4782 | .431 | 10 | .2383 | 1.131 | 20 | .0273 | .331 | 270 | -.4847 | | |
| 22 | .231 | 160 | -.4650 | .331 | 80 | -.4784 | .431 | 0 | .2511 | 1.131 | 10 | .0804 | .431 | 270 | -.5083 | | |
| 23 | .231 | 150 | -.5234 | .331 | 70 | -.5770 | .531 | 180 | -.5496 | 1.131 | 0 | .0723 | .531 | 270 | -.6105 | | |
| 24 | .231 | 140 | -.5348 | .331 | 60 | -.5765 | .531 | 90 | -.6126 | | | | .731 | 270 | -.5787 | | |
| 25 | .231 | 130 | -.5116 | .331 | 50 | -.1782 | .531 | 0 | .2016 | 1.631 | 90 | -.7851 | .931 | 270 | -.6107 | | |
| 26 | .231 | 120 | -.5270 | .331 | 40 | -.1114 | .731 | 180 | -.5523 | 1.631 | 0 | -.1585 | 1.131 | 270 | -.6824 | | |
| 27 | .231 | 110 | -.5085 | .331 | 30 | -.2395 | .731 | 90 | -.5480 | 2.131 | 180 | -.3632 | 1.631 | 270 | -.7981 | | |

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| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 8 POINT 197 ALPHA 10 MACH .882 Q 703.547 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CPI | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4237 | .231 | 100 | -.5708 | .331 | 20 | -.5511 | .731 | 0 | -.5240 | 2.131 | 90 | -.1516 | | |
| 2 | .161 | 170 | -.4335 | .231 | 90 | -.5640 | .331 | 10 | -.5289 | .931 | 180 | -.5264 | 2.131 | 0 | -.2015 | | |
| 3 | .161 | 160 | -.4312 | .231 | 80 | -.5784 | .331 | 0 | -.5349 | .931 | 90 | -.5761 | 0.000 | | .9844 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4713 | .231 | 70 | -.5865 | .431 | 180 | -.4819 | .931 | 0 | -.5012 | 0.000 | | 1.1084 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4834 | .231 | 60 | -.5812 | .431 | 170 | -.4790 | 1.131 | 180 | -.5454 | 0.000 | | 1.1965 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4952 | .231 | 50 | -.5948 | .431 | 160 | -.4989 | 1.131 | 170 | -.5594 | 0.000 | | 1.2199 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5165 | .231 | 40 | -.5627 | .431 | 150 | -.5055 | 1.131 | 160 | -.5562 | 0.000 | | 1.2202 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5432 | .231 | 30 | -.5789 | .431 | 140 | -.5587 | 1.131 | 150 | -.5896 | 0.000 | | 1.2301 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5570 | .231 | 20 | -.5324 | .431 | 130 | -.5298 | 1.131 | 140 | -.5535 | 0.000 | | 1.1705 | .10 | 0.00 |
| 10 | .161 | 90 | -.5031 | .231 | 10 | -.5405 | .431 | 120 | -.5561 | 1.131 | 130 | -.5590 | 0.000 | | 1.1167 | .20 | 0.00 |
| 11 | .161 | 80 | -.5714 | .231 | 0 | -.5435 | .431 | 110 | -.5823 | 1.131 | 120 | -.5784 | 0.000 | | 1.0354 | .30 | 0.00 |
| 12 | .161 | 70 | -.5799 | .331 | 180 | -.4581 | .431 | 100 | -.5845 | 1.131 | 110 | -.5831 | 0.000 | | .8823 | .40 | 0.00 |
| 13 | .161 | 60 | -.5737 | .331 | 170 | -.4674 | .431 | 90 | -.5728 | 1.131 | 100 | -.5791 | 0.000 | | .6921 | .45 | 0.00 |
| 14 | .161 | 50 | -.5588 | .331 | 160 | -.4667 | .431 | 80 | -.5806 | 1.131 | 90 | -.5778 | 0.000 | | 1.1913 | 0.00 | .10 |
| 15 | .161 | 40 | -.5736 | .331 | 150 | -.4808 | .431 | 70 | -.5877 | 1.131 | 80 | -.5732 | 0.000 | | 1.1665 | 0.00 | .20 |
| 16 | .161 | 30 | -.5485 | .331 | 140 | -.5066 | .431 | 60 | -.5747 | 1.131 | 70 | -.5496 | 0.000 | | 1.1102 | 0.00 | .30 |
| 17 | .161 | 20 | -.5306 | .331 | 130 | -.5225 | .431 | 50 | -.5688 | 1.131 | 60 | -.5209 | 0.000 | | .9842 | 0.00 | .40 |
| 18 | .161 | 10 | -.5092 | .331 | 120 | -.5393 | .431 | 40 | -.5546 | 1.131 | 50 | -.4938 | 0.000 | | .8135 | 0.00 | .45 |
| 19 | .161 | 0 | -.5095 | .331 | 110 | -.5559 | .431 | 30 | -.5534 | 1.131 | 40 | -.4223 | .161 | 270 | -.5676 | | |
| 20 | .231 | 180 | -.4544 | .331 | 100 | -.5767 | .431 | 20 | -.5688 | 1.131 | 30 | -.4120 | .231 | 270 | -.5834 | | |
| 21 | .231 | 170 | -.4580 | .331 | 90 | -.5792 | .431 | 10 | -.5610 | 1.131 | 20 | -.3930 | .331 | 270 | -.5747 | | |
| 22 | .231 | 160 | -.4526 | .331 | 80 | -.5668 | .431 | 0 | -.5376 | 1.131 | 10 | -.3665 | .431 | 270 | -.5733 | | |
| 23 | .231 | 150 | -.4467 | .331 | 70 | -.5926 | .531 | 180 | -.5067 | 1.131 | 0 | -.3678 | .531 | 270 | -.5911 | | |
| 24 | .231 | 140 | -.5218 | .331 | 60 | -.6130 | .531 | 90 | -.6217 | | | | .731 | 270 | -.6238 | | |
| 25 | .231 | 130 | -.5203 | .331 | 50 | -.5809 | .531 | 0 | -.5520 | 1.631 | 90 | -.4118 | .931 | 270 | -.5900 | | |
| 26 | .231 | 120 | -.5598 | .331 | 40 | -.5721 | .731 | 180 | -.5309 | 1.631 | 0 | -.3951 | 1.131 | 270 | -.5965 | | |
| 27 | .231 | 110 | -.5565 | .331 | 30 | -.5652 | .731 | 90 | -.5886 | 2.131 | 180 | -.3354 | 1.631 | 270 | -.4480 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 8 POINT 198 ALPHA 12 MACH .882 Q 703.993 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CPI | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4465 | .231 | 100 | -.5275 | .331 | 20 | -.5083 | .731 | 0 | -.4724 | 2.131 | 90 | -.1821 | | |
| 2 | .161 | 170 | -.4463 | .231 | 90 | -.5037 | .331 | 10 | -.4788 | .931 | 180 | -.4684 | 2.131 | 0 | -.0193 | | |
| 3 | .161 | 160 | -.4443 | .231 | 80 | -.5233 | .331 | 0 | -.5031 | .931 | 90 | -.5370 | 0.000 | | 1.0176 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4712 | .231 | 70 | -.5538 | .431 | 180 | -.4813 | .931 | 0 | -.3984 | 0.000 | | 1.1363 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4706 | .231 | 60 | -.5356 | .431 | 170 | -.4735 | 1.131 | 180 | -.5311 | 0.000 | | 1.2151 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4785 | .231 | 50 | -.5037 | .431 | 160 | -.4653 | 1.131 | 170 | -.5330 | 0.000 | | 1.2354 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4847 | .231 | 40 | -.5319 | .431 | 150 | -.4990 | 1.131 | 160 | -.5385 | 0.000 | | 1.2190 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5057 | .231 | 30 | -.5038 | .431 | 140 | -.4990 | 1.131 | 150 | -.5348 | 0.000 | | 1.1969 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5150 | .231 | 20 | -.5015 | .431 | 130 | -.5157 | 1.131 | 140 | -.5348 | 0.000 | | 1.1657 | .10 | 0.00 |
| 10 | .161 | 90 | -.5421 | .231 | 10 | -.5025 | .431 | 120 | -.5310 | 1.131 | 130 | -.5518 | 0.000 | | 1.1097 | .20 | 0.00 |
| 11 | .161 | 80 | -.5351 | .231 | 0 | -.5083 | .431 | 110 | -.5452 | 1.131 | 120 | -.5624 | 0.000 | | 1.0193 | .30 | 0.00 |
| 12 | .161 | 70 | -.5426 | .331 | 180 | -.4517 | .431 | 100 | -.5333 | 1.131 | 110 | -.5435 | 0.000 | | .8582 | .40 | 0.00 |
| 13 | .161 | 60 | -.5295 | .331 | 170 | -.4575 | .431 | 90 | -.5223 | 1.131 | 100 | -.5333 | 0.000 | | .6595 | .45 | 0.00 |
| 14 | .161 | 50 | -.5406 | .331 | 160 | -.4751 | .431 | 80 | -.5505 | 1.131 | 90 | -.5652 | 0.000 | | 1.1853 | 0.00 | .10 |
| 15 | .161 | 40 | -.5150 | .331 | 150 | -.4790 | .431 | 70 | -.5411 | 1.131 | 80 | -.5538 | 0.000 | | 1.1620 | 0.00 | .20 |
| 16 | .161 | 30 | -.5177 | .331 | 140 | -.5032 | .431 | 60 | -.5411 | 1.131 | 70 | -.5280 | 0.000 | | 1.1146 | 0.00 | .30 |
| 17 | .161 | 20 | -.5101 | .331 | 130 | -.5192 | .431 | 50 | -.5334 | 1.131 | 60 | -.4649 | 0.000 | | .9823 | 0.00 | .40 |
| 18 | .161 | 10 | -.4902 | .331 | 120 | -.5068 | .431 | 40 | -.5143 | 1.131 | 50 | -.4036 | 0.000 | | .8161 | 0.00 | .45 |
| 19 | .161 | 0 | -.4865 | .331 | 110 | -.5176 | .431 | 30 | -.5079 | 1.131 | 40 | -.3371 | .151 | 270 | -.5307 | | |
| 20 | .231 | 180 | -.4590 | .331 | 100 | -.5429 | .431 | 20 | -.5297 | 1.131 | 30 | -.2872 | .231 | 270 | -.5154 | | |
| 21 | .231 | 170 | -.4694 | .331 | 90 | -.5586 | .431 | 10 | -.5322 | 1.131 | 20 | -.2392 | .331 | 270 | -.5432 | | |
| 22 | .231 | 160 | -.4600 | .331 | 80 | -.5268 | .431 | 0 | -.5102 | 1.131 | 10 | -.2349 | .431 | 270 | -.5242 | | |
| 23 | .231 | 150 | -.4746 | .331 | 70 | -.5362 | .531 | 180 | -.4765 | 1.131 | 0 | -.2371 | .531 | 270 | -.5432 | | |
| 24 | .231 | 140 | -.5081 | .331 | 60 | -.5478 | .531 | 90 | -.5576 | | | | .731 | 270 | -.5591 | | |
| 25 | .231 | 130 | -.5048 | .331 | 50 | -.5311 | .531 | 0 | -.5161 | 1.631 | 90 | -.4215 | .931 | 270 | -.5537 | | |
| 26 | .231 | 120 | -.5300 | .331 | 40 | -.5399 | .731 | 180 | -.5164 | 1.631 | 0 | -.3572 | 1.131 | 270 | -.5735 | | |
| 27 | .231 | 110 | -.5349 | .331 | 30 | -.5455 | .731 | 90 | -.5801 | 2.131 | 180 | -.2949 | 1.631 | 270 | -.4496 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 8 POINT 199 ALPHA 14 MACH .883 Q 704.259 MJJEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4548 | .231 | 100 | -.5199 | .331 | 20 | -.5212 | .731 | 0 | -.3215 | 2.131 | 90 | -.2093 | | |
| 2 | .161 | 170 | -.4643 | .231 | 90 | -.5332 | .331 | 10 | -.5225 | .931 | 180 | -.5321 | 2.131 | 0 | -.0407 | | |
| 3 | .161 | 160 | -.4585 | .231 | 80 | -.5104 | .331 | 0 | -.5086 | .931 | 90 | -.5236 | 0.000 | | 1.0471 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4684 | .231 | 70 | -.5218 | .431 | 180 | -.4827 | .931 | 0 | -.2259 | 0.000 | | 1.1603 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4701 | .231 | 60 | -.5137 | .431 | 170 | -.4797 | 1.131 | 180 | -.5159 | 0.000 | | 1.2183 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4840 | .231 | 50 | -.4751 | .431 | 160 | -.4547 | 1.131 | 170 | -.4943 | 0.000 | | 1.2266 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4928 | .231 | 40 | -.5344 | .431 | 150 | -.5159 | 1.131 | 160 | -.5595 | 0.000 | | 1.2118 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4999 | .231 | 30 | -.4744 | .431 | 140 | -.4723 | 1.131 | 150 | -.5050 | 0.000 | | 1.1836 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5159 | .231 | 20 | -.5223 | .431 | 130 | -.5320 | 1.131 | 140 | -.5663 | 0.000 | | 1.1334 | .10 | 0.00 |
| 10 | .161 | 90 | -.5081 | .231 | 10 | -.5149 | .431 | 120 | -.5262 | 1.131 | 130 | -.5411 | 0.000 | | 1.0799 | .20 | 0.00 |
| 11 | .161 | 80 | -.5125 | .231 | 0 | -.4888 | .431 | 110 | -.5097 | 1.131 | 120 | -.5391 | 0.000 | | .9908 | .30 | 0.00 |
| 12 | .161 | 70 | -.5034 | .331 | 180 | -.4532 | .431 | 100 | -.5118 | 1.131 | 110 | -.5321 | 0.000 | | .8230 | .40 | 0.00 |
| 13 | .161 | 60 | -.4986 | .331 | 170 | -.4610 | .431 | 90 | -.5125 | 1.131 | 100 | -.5381 | 0.000 | | .6272 | .45 | 0.00 |
| 14 | .161 | 50 | -.5117 | .331 | 160 | -.4726 | .431 | 80 | -.5147 | 1.131 | 90 | -.5496 | 0.000 | | 1.1752 | 0.00 | .10 |
| 15 | .161 | 40 | -.4933 | .331 | 150 | -.4683 | .431 | 70 | -.4983 | 1.131 | 80 | -.5269 | 0.000 | | 1.1476 | 0.00 | .20 |
| 16 | .161 | 30 | -.5208 | .331 | 140 | -.5061 | .431 | 60 | -.5294 | 1.131 | 70 | -.4856 | 0.000 | | 1.0945 | 0.00 | .30 |
| 17 | .161 | 20 | -.5034 | .331 | 130 | -.5132 | .431 | 50 | -.5207 | 1.131 | 60 | -.3755 | 0.000 | | .9712 | 0.00 | .40 |
| 18 | .161 | 10 | -.4875 | .331 | 120 | -.4974 | .431 | 40 | -.5026 | 1.131 | 50 | -.2719 | 0.000 | | .8095 | 0.00 | .45 |
| 19 | .161 | 0 | -.4918 | .331 | 110 | -.5177 | .431 | 30 | -.5157 | 1.131 | 40 | -.1863 | .161 | 270 | -.5259 | | |
| 20 | .231 | 180 | -.4585 | .331 | 100 | -.5161 | .431 | 20 | -.5164 | 1.131 | 30 | -.1300 | .231 | 270 | -.5254 | | |
| 21 | .231 | 170 | -.4407 | .331 | 90 | -.4959 | .431 | 10 | -.4935 | 1.131 | 20 | -.1059 | .331 | 270 | -.5074 | | |
| 22 | .231 | 160 | -.4795 | .331 | 80 | -.5328 | .431 | 0 | -.5164 | 1.131 | 10 | -.0729 | .431 | 270 | -.5421 | | |
| 23 | .231 | 150 | -.4834 | .331 | 70 | -.5253 | .531 | 180 | -.4948 | 1.131 | 0 | -.0797 | .531 | 270 | -.5380 | | |
| 24 | .231 | 140 | -.5024 | .331 | 60 | -.5308 | .531 | 90 | -.5370 | | | .731 | .731 | 270 | -.5402 | | |
| 25 | .231 | 130 | -.5018 | .331 | 50 | -.5217 | .531 | 0 | -.5065 | 1.631 | 90 | -.4684 | .931 | 270 | -.5434 | | |
| 26 | .231 | 120 | -.5011 | .331 | 40 | -.5104 | .731 | 180 | -.5005 | 1.631 | 0 | -.2461 | 1.131 | 270 | -.5819 | | |
| 27 | .231 | 110 | -.5077 | .331 | 30 | -.5023 | .731 | 90 | -.5194 | 2.131 | 180 | -.3381 | 1.631 | 270 | -.4600 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 9 POINT 200 ALPHA 16 MACH .882 Q 704.258 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5021 | .231 | 100 | -.5399 | .331 | 20 | -.5512 | .731 | 0 | -.0813 | 2.131 | 90 | -.2532 | | |
| 2 | .161 | 170 | -.4247 | .231 | 90 | -.4698 | .331 | 10 | -.4778 | .931 | 180 | -.4725 | 2.131 | 0 | -.0395 | | |
| 3 | .161 | 160 | -.4526 | .231 | 80 | -.4935 | .331 | 0 | -.5044 | .931 | 90 | -.5257 | 0.000 | | 1.0729 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4681 | .231 | 70 | -.5024 | .431 | 180 | -.4792 | .931 | 0 | -.0654 | 0.000 | | 1.1688 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4582 | .231 | 60 | -.5174 | .431 | 170 | -.4957 | 1.131 | 180 | -.5238 | 0.000 | | 1.2214 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4514 | .231 | 50 | -.4840 | .431 | 160 | -.4627 | 1.131 | 170 | -.5012 | 0.000 | | 1.2287 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4769 | .231 | 40 | -.4892 | .431 | 150 | -.4691 | 1.131 | 160 | -.4926 | 0.000 | | 1.2066 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4870 | .231 | 30 | -.4792 | .431 | 140 | -.4613 | 1.131 | 150 | -.5014 | 0.000 | | 1.1748 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4953 | .231 | 20 | -.4830 | .431 | 130 | -.4727 | 1.131 | 140 | -.5001 | 0.000 | | 1.1269 | .10 | 0.00 |
| 10 | .161 | 90 | -.4676 | .231 | 10 | -.4630 | .431 | 120 | -.4585 | 1.131 | 130 | -.4962 | 0.000 | | 1.0858 | .20 | 0.00 |
| 11 | .161 | 80 | -.4980 | .231 | 0 | -.5065 | .431 | 110 | -.4996 | 1.131 | 120 | -.5218 | 0.000 | | .9649 | .30 | 0.00 |
| 12 | .161 | 70 | -.5059 | .331 | 180 | -.4749 | .431 | 100 | -.5080 | 1.131 | 110 | -.5522 | 0.000 | | .7879 | .40 | 0.00 |
| 13 | .161 | 60 | -.5046 | .331 | 170 | -.4343 | .431 | 90 | -.4652 | 1.131 | 100 | -.5513 | 0.000 | | .6041 | .45 | 0.00 |
| 14 | .161 | 50 | -.4927 | .331 | 160 | -.4589 | .431 | 80 | -.4381 | 1.131 | 90 | -.5301 | 0.000 | | 1.1686 | 0.00 | .10 |
| 15 | .161 | 40 | -.4836 | .331 | 150 | -.4584 | .431 | 70 | -.4799 | 1.131 | 80 | -.4791 | 0.000 | | 1.1412 | 0.00 | .20 |
| 16 | .161 | 30 | -.4904 | .331 | 140 | -.4715 | .431 | 60 | -.4808 | 1.131 | 70 | -.3783 | 0.000 | | 1.0850 | 0.00 | .30 |
| 17 | .161 | 20 | -.4955 | .331 | 130 | -.4868 | .431 | 50 | -.4966 | 1.131 | 60 | -.2984 | 0.000 | | .9594 | 0.00 | .40 |
| 18 | .161 | 10 | -.4754 | .331 | 120 | -.4728 | .431 | 40 | -.4849 | 1.131 | 50 | -.2014 | 0.000 | | .8007 | 0.00 | .45 |
| 19 | .161 | 0 | -.4892 | .331 | 110 | -.4956 | .431 | 30 | -.5099 | 1.131 | 40 | -.1521 | .161 | 270 | -.5028 | | |
| 20 | .231 | 180 | -.4517 | .331 | 100 | -.4992 | .431 | 20 | -.5033 | 1.131 | 30 | -.1022 | .231 | 270 | -.4951 | | |
| 21 | .231 | 170 | -.4257 | .331 | 90 | -.4781 | .431 | 10 | -.4649 | 1.131 | 20 | -.0397 | .331 | 270 | -.4792 | | |
| 22 | .231 | 160 | -.4340 | .331 | 80 | -.4658 | .431 | 0 | -.4478 | 1.131 | 10 | -.0040 | .431 | 270 | -.4709 | | |
| 23 | .231 | 150 | -.4587 | .331 | 70 | -.4847 | .531 | 180 | -.4656 | 1.131 | 0 | -.0122 | .531 | 270 | -.4930 | | |
| 24 | .231 | 140 | -.4776 | .331 | 60 | -.4901 | .531 | 90 | -.4980 | | | .731 | .731 | 270 | -.5008 | | |
| 25 | .231 | 130 | -.4743 | .331 | 50 | -.4941 | .531 | 0 | -.3565 | 1.631 | 90 | -.5163 | .931 | 270 | -.5199 | | |
| 26 | .231 | 120 | -.4920 | .331 | 40 | -.5072 | .731 | 180 | -.5002 | 1.631 | 0 | -.1762 | 1.131 | 270 | -.5384 | | |
| 27 | .231 | 110 | -.4875 | .331 | 30 | -.5030 | .731 | 90 | -.4993 | 2.131 | 180 | -.3755 | 1.631 | 270 | -.5238 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 8 POINT 192 ALPHA 2 MACH .882 Q 703.371 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4023 | .231 | 100 | -.4497 | .331 | 20 | -.4906 | .731 | 0 | -.5026 | 2.131 | 90 | -.0325 | | |
| 2 | .161 | 170 | -.3926 | .231 | 90 | -.4801 | .331 | 10 | -.5012 | .931 | 180 | -.4776 | 2.131 | 0 | -.2615 | | |
| 3 | .161 | 160 | -.4051 | .231 | 80 | -.4856 | .331 | 0 | -.5288 | .931 | 90 | -.5104 | 0.000 | | .8703 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4162 | .231 | 70 | -.5096 | .431 | 180 | -.4355 | .931 | 0 | -.5682 | 0.000 | | 1.0251 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4272 | .231 | 60 | -.4752 | .431 | 170 | -.4148 | 1.131 | 180 | -.4840 | 0.000 | | 1.1537 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4255 | .231 | 50 | -.5068 | .431 | 160 | -.4338 | 1.131 | 170 | -.5069 | 0.000 | | 1.1985 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4380 | .231 | 40 | -.4785 | .431 | 150 | -.4062 | 1.131 | 150 | -.4833 | 0.000 | | 1.2198 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4634 | .231 | 30 | -.4942 | .431 | 140 | -.4338 | 1.131 | 150 | -.4969 | 0.000 | | 1.2239 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4559 | .231 | 20 | -.4962 | .431 | 130 | -.4689 | 1.131 | 140 | -.5165 | 0.000 | | 1.2150 | .10 | 0.00 |
| 10 | .161 | 90 | -.4712 | .231 | 10 | -.4977 | .431 | 120 | -.4611 | 1.131 | 130 | -.5028 | 0.000 | | 1.1819 | .20 | 0.00 |
| 11 | .161 | 80 | -.4790 | .231 | 0 | -.4957 | .431 | 110 | -.4735 | 1.131 | 120 | -.5143 | 0.000 | | 1.1234 | .30 | 0.00 |
| 12 | .161 | 70 | -.5070 | .331 | 180 | -.4252 | .431 | 100 | -.4954 | 1.131 | 110 | -.5286 | 0.000 | | .9862 | .40 | 0.00 |
| 13 | .161 | 60 | -.4860 | .331 | 170 | -.4089 | .431 | 90 | -.4647 | 1.131 | 100 | -.5074 | 0.000 | | .8165 | .45 | 0.00 |
| 14 | .161 | 50 | -.4904 | .331 | 160 | -.3937 | .431 | 80 | -.4812 | 1.131 | 90 | -.5049 | 0.000 | | 1.2171 | 0.00 | .10 |
| 15 | .161 | 40 | -.5007 | .331 | 150 | -.4157 | .431 | 70 | -.4922 | 1.131 | 80 | -.5168 | 0.000 | | 1.1896 | 0.00 | .20 |
| 16 | .161 | 30 | -.5007 | .331 | 140 | -.4333 | .431 | 60 | -.5074 | 1.131 | 70 | -.5264 | 0.000 | | 1.1325 | 0.00 | .30 |
| 17 | .161 | 20 | -.4840 | .331 | 130 | -.4344 | .431 | 50 | -.4924 | 1.131 | 60 | -.5109 | 0.000 | | 1.0054 | 0.00 | .40 |
| 18 | .161 | 10 | -.4979 | .331 | 120 | -.4550 | .431 | 40 | -.5195 | 1.131 | 50 | -.5318 | 0.000 | | .8357 | 0.00 | .45 |
| 19 | .161 | 0 | -.4816 | .331 | 110 | -.4591 | .431 | 30 | -.5195 | 1.131 | 40 | -.5213 | .161 | 270 | -.4849 | | |
| 20 | .231 | 180 | -.3800 | .331 | 100 | -.4682 | .431 | 20 | -.5240 | 1.131 | 30 | -.5106 | .231 | 270 | -.4787 | | |
| 21 | .231 | 170 | -.3827 | .331 | 90 | -.4639 | .431 | 10 | -.4954 | 1.131 | 20 | -.4997 | .331 | 270 | -.4594 | | |
| 22 | .231 | 160 | -.4023 | .331 | 80 | -.4803 | .431 | 0 | -.4959 | 1.131 | 10 | -.5133 | .431 | 270 | -.4816 | | |
| 23 | .231 | 150 | -.4132 | .331 | 70 | -.4781 | .531 | 180 | -.4293 | 1.131 | 0 | -.5150 | .531 | 270 | -.4844 | | |
| 24 | .231 | 140 | -.4157 | .331 | 60 | -.4763 | .531 | 90 | -.4723 | | | .731 | .270 | | -.4874 | | |
| 25 | .231 | 130 | -.4232 | .331 | 50 | -.4950 | .531 | 0 | -.5108 | 1.631 | 90 | -.4706 | .931 | 270 | -.4964 | | |
| 26 | .231 | 120 | -.4574 | .331 | 40 | -.5225 | .731 | 180 | -.4835 | 1.631 | 0 | -.2648 | 1.131 | 270 | -.5422 | | |
| 27 | .231 | 110 | -.4383 | .331 | 30 | -.4867 | .731 | 90 | -.4709 | 2.131 | 180 | -.3604 | 1.631 | 270 | -.4675 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 8 POINT 193 ALPHA 4 MACH .882 Q 703.995 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4176 | .231 | 100 | -.5403 | .331 | 20 | -.5809 | .731 | 0 | -.5623 | 2.131 | 90 | -.0777 | | |
| 2 | .161 | 170 | -.3943 | .231 | 90 | -.5629 | .331 | 10 | -.5858 | .931 | 180 | -.5358 | 2.131 | 0 | -.1057 | | |
| 3 | .161 | 160 | -.4254 | .231 | 80 | -.5495 | .331 | 0 | -.5697 | .931 | 90 | -.5686 | 0.000 | | .8946 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4371 | .231 | 70 | -.5647 | .431 | 180 | -.4514 | .931 | 0 | -.5689 | 0.000 | | 1.0425 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4557 | .231 | 60 | -.5948 | .431 | 170 | -.4439 | 1.131 | 180 | -.5386 | 0.000 | | 1.1587 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4650 | .231 | 50 | -.5697 | .431 | 160 | -.4579 | 1.131 | 170 | -.5290 | 0.000 | | 1.2042 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5090 | .231 | 40 | -.5818 | .431 | 150 | -.4773 | 1.131 | 160 | -.5318 | 0.000 | | 1.2190 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5123 | .231 | 30 | -.5892 | .431 | 140 | -.4947 | 1.131 | 150 | -.5502 | 0.000 | | 1.2165 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5048 | .231 | 20 | -.5454 | .431 | 130 | -.4821 | 1.131 | 140 | -.5266 | 0.000 | | 1.1976 | .10 | 0.00 |
| 10 | .161 | 90 | -.5314 | .231 | 10 | -.5346 | .431 | 120 | -.5099 | 1.131 | 130 | -.5284 | 0.000 | | 1.1651 | .20 | 0.00 |
| 11 | .161 | 80 | -.5594 | .231 | 0 | -.5108 | .431 | 110 | -.5126 | 1.131 | 120 | -.5429 | 0.000 | | 1.1020 | .30 | 0.00 |
| 12 | .161 | 70 | -.5727 | .331 | 180 | -.3979 | .431 | 100 | -.5472 | 1.131 | 110 | -.5502 | 0.000 | | .9686 | .40 | 0.00 |
| 13 | .161 | 60 | -.5829 | .331 | 170 | -.4129 | .431 | 90 | -.5044 | 1.131 | 100 | -.5669 | 0.000 | | .7643 | .45 | 0.00 |
| 14 | .161 | 50 | -.5706 | .331 | 160 | -.4334 | .431 | 80 | -.5692 | 1.131 | 90 | -.5680 | 0.000 | | 1.2113 | 0.00 | .10 |
| 15 | .161 | 40 | -.5608 | .331 | 150 | -.4417 | .431 | 70 | -.5660 | 1.131 | 80 | -.5631 | 0.000 | | 1.1821 | 0.00 | .20 |
| 16 | .161 | 30 | -.5519 | .331 | 140 | -.4619 | .431 | 60 | -.5702 | 1.131 | 70 | -.5610 | 0.000 | | 1.1268 | 0.00 | .30 |
| 17 | .161 | 20 | -.5512 | .331 | 130 | -.4649 | .431 | 50 | -.5628 | 1.131 | 60 | -.5502 | 0.000 | | 1.0039 | 0.00 | .40 |
| 18 | .161 | 10 | -.5577 | .331 | 120 | -.5262 | .431 | 40 | -.6128 | 1.131 | 50 | -.5730 | 0.000 | | .8238 | 0.00 | .45 |
| 19 | .161 | 0 | -.5226 | .331 | 110 | -.5158 | .431 | 30 | -.5677 | 1.131 | 40 | -.5664 | .161 | 270 | -.5763 | | |
| 20 | .231 | 180 | -.4157 | .331 | 100 | -.5376 | .431 | 20 | -.5963 | 1.131 | 30 | -.5693 | .231 | 270 | -.5757 | | |
| 21 | .231 | 170 | -.4182 | .331 | 90 | -.5545 | .431 | 10 | -.5935 | 1.131 | 20 | -.5704 | .331 | 270 | -.5729 | | |
| 22 | .231 | 160 | -.4312 | .331 | 80 | -.5561 | .431 | 0 | -.5837 | 1.131 | 10 | -.5745 | .431 | 270 | -.5812 | | |
| 23 | .231 | 150 | -.4416 | .331 | 70 | -.5614 | .531 | 180 | -.4782 | 1.131 | 0 | -.5612 | .531 | 270 | -.5730 | | |
| 24 | .231 | 140 | -.4502 | .331 | 60 | -.5570 | .531 | 90 | -.5489 | | | .731 | .270 | | -.5786 | | |
| 25 | .231 | 130 | -.4734 | .331 | 50 | -.5930 | .531 | 0 | -.6087 | 1.631 | 90 | -.4702 | .931 | 270 | -.5886 | | |
| 26 | .231 | 120 | -.5005 | .331 | 40 | -.5884 | .731 | 180 | -.5119 | 1.631 | 0 | -.3173 | 1.131 | 270 | -.5802 | | |
| 27 | .231 | 110 | -.5232 | .331 | 30 | -.5899 | .731 | 90 | -.5835 | 2.131 | 180 | -.3121 | 1.631 | 270 | -.4712 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 760 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4170 | .231 | 100 | -.5522 | .331 | 20 | -.5840 | .731 | 0 | -.5681 | 2.131 | 90 | -.1103 | | |
| 2 | .161 | 170 | -.4060 | .231 | 90 | -.5967 | .331 | 10 | -.6069 | .931 | 180 | -.5455 | 2.131 | 0 | -.0286 | | |
| 3 | .161 | 160 | -.4354 | .231 | 80 | -.6033 | .331 | 0 | -.5856 | .931 | 90 | -.6018 | 0.000 | | .9213 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4545 | .231 | 70 | -.5960 | .431 | 180 | -.4532 | .931 | 0 | -.5554 | 0.000 | | 1.0717 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4731 | .231 | 60 | -.6202 | .431 | 170 | -.4580 | 1.131 | 180 | -.5470 | 0.000 | | 1.1755 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4941 | .231 | 50 | -.6174 | .431 | 160 | -.4846 | 1.131 | 170 | -.5497 | 0.000 | | 1.2112 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4971 | .231 | 40 | -.6064 | .431 | 150 | -.4804 | 1.131 | 160 | -.5451 | 0.000 | | 1.2234 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5566 | .231 | 30 | -.5743 | .431 | 140 | -.5024 | 1.131 | 150 | -.5370 | 0.000 | | 1.2176 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5584 | .231 | 20 | -.5806 | .431 | 130 | -.5281 | 1.131 | 140 | -.5567 | 0.000 | | 1.1962 | .10 | 0.00 |
| 10 | .161 | 90 | -.5853 | .231 | 10 | -.5796 | .431 | 120 | -.5421 | 1.131 | 130 | -.5685 | 0.000 | | 1.1527 | .20 | 0.00 |
| 11 | .161 | 80 | -.5992 | .231 | 0 | -.5709 | .431 | 110 | -.5462 | 1.131 | 120 | -.5602 | 0.000 | | 1.0853 | .30 | 0.00 |
| 12 | .161 | 70 | -.6064 | .331 | 180 | -.4426 | .431 | 100 | -.5803 | 1.131 | 110 | -.5792 | 0.000 | | .9365 | .40 | 0.00 |
| 13 | .161 | 60 | -.6125 | .331 | 170 | -.4535 | .431 | 90 | -.5918 | 1.131 | 100 | -.5891 | 0.000 | | .7563 | .45 | 0.00 |
| 14 | .161 | 50 | -.6404 | .331 | 160 | -.4736 | .431 | 80 | -.6243 | 1.131 | 90 | -.6090 | 0.000 | | 1.2069 | 0.00 | .10 |
| 15 | .161 | 40 | -.6092 | .331 | 150 | -.4894 | .431 | 70 | -.6233 | 1.131 | 80 | -.6028 | 0.000 | | 1.1770 | 0.00 | .20 |
| 16 | .161 | 30 | -.5737 | .331 | 140 | -.4742 | .431 | 60 | -.6021 | 1.131 | 70 | -.5751 | 0.000 | | 1.1249 | 0.00 | .30 |
| 17 | .161 | 20 | -.5768 | .331 | 130 | -.5128 | .431 | 50 | -.6199 | 1.131 | 60 | -.5711 | 0.000 | | .9945 | 0.00 | .40 |
| 18 | .161 | 10 | -.5914 | .331 | 120 | -.5561 | .431 | 40 | -.6534 | 1.131 | 50 | -.5484 | 0.000 | | .8221 | 0.00 | .45 |
| 19 | .161 | 0 | -.5562 | .331 | 110 | -.5517 | .431 | 30 | -.6261 | 1.131 | 40 | -.5350 | .161 | 270 | -.5998 | | |
| 20 | .231 | 180 | -.4095 | .331 | 100 | -.5712 | .431 | 20 | -.6206 | 1.131 | 30 | -.5260 | .231 | 270 | -.6103 | | |
| 21 | .231 | 170 | -.4078 | .331 | 90 | -.5925 | .431 | 10 | -.6247 | 1.131 | 20 | -.4863 | .331 | 270 | -.5771 | | |
| 22 | .231 | 160 | -.4234 | .331 | 80 | -.5838 | .431 | 0 | -.5799 | 1.131 | 10 | -.5155 | .431 | 270 | -.5891 | | |
| 23 | .231 | 150 | -.4711 | .331 | 70 | -.6083 | .531 | 180 | -.4910 | 1.131 | 0 | -.4910 | .531 | 270 | -.6105 | | |
| 24 | .231 | 140 | -.4687 | .331 | 60 | -.6122 | .531 | 90 | -.5934 | | | | .731 | 270 | -.5998 | | |
| 25 | .231 | 130 | -.4902 | .331 | 50 | -.5829 | .531 | 0 | -.5979 | 1.631 | 90 | -.4504 | .931 | 270 | -.5941 | | |
| 26 | .231 | 120 | -.5265 | .331 | 40 | -.6280 | .731 | 180 | -.5223 | 1.631 | 0 | -.3548 | 1.131 | 270 | -.5964 | | |
| 27 | .231 | 110 | -.5589 | .331 | 30 | -.6328 | .731 | 90 | -.6193 | 2.131 | 180 | -.2646 | 1.631 | 270 | -.4285 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 760 | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4021 | .231 | 100 | -.5546 | .331 | 20 | -.5605 | .731 | 0 | -.5393 | 2.131 | 90 | -.1192 | | |
| 2 | .161 | 170 | -.4199 | .231 | 90 | -.5931 | .331 | 10 | -.5736 | .931 | 180 | -.5596 | 2.131 | 0 | -.0107 | | |
| 3 | .161 | 160 | -.4303 | .231 | 80 | -.6088 | .331 | 0 | -.6059 | .931 | 90 | -.6001 | 0.000 | | .9547 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4446 | .231 | 70 | -.5787 | .431 | 180 | -.4455 | .931 | 0 | -.5290 | 0.000 | | 1.0994 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4755 | .231 | 60 | -.6206 | .431 | 170 | -.4789 | 1.131 | 180 | -.5476 | 0.000 | | 1.1933 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4959 | .231 | 50 | -.6315 | .431 | 160 | -.5076 | 1.131 | 170 | -.5778 | 0.000 | | 1.2250 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4999 | .231 | 40 | -.5787 | .431 | 150 | -.4870 | 1.131 | 160 | -.5345 | 0.000 | | 1.2268 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5508 | .231 | 30 | -.5893 | .431 | 140 | -.5144 | 1.131 | 150 | -.5599 | 0.000 | | 1.2132 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5575 | .231 | 20 | -.5747 | .431 | 130 | -.5215 | 1.131 | 140 | -.5540 | 0.000 | | 1.1818 | .10 | 0.00 |
| 10 | .161 | 90 | -.5614 | .231 | 10 | -.5324 | .431 | 120 | -.5339 | 1.131 | 130 | -.5480 | 0.000 | | 1.1458 | .20 | 0.00 |
| 11 | .161 | 80 | -.5893 | .231 | 0 | -.5838 | .431 | 110 | -.5729 | 1.131 | 120 | -.5767 | 0.000 | | 1.0645 | .30 | 0.00 |
| 12 | .161 | 70 | -.5966 | .331 | 180 | -.4450 | .431 | 100 | -.5901 | 1.131 | 110 | -.5909 | 0.000 | | .9121 | .40 | 0.00 |
| 13 | .161 | 60 | -.5729 | .331 | 170 | -.4417 | .431 | 90 | -.5733 | 1.131 | 100 | -.5636 | 0.000 | | .7273 | .45 | 0.00 |
| 14 | .161 | 50 | -.5905 | .331 | 160 | -.4475 | .431 | 80 | -.5864 | 1.131 | 90 | -.5717 | 0.000 | | 1.2004 | 0.00 | .10 |
| 15 | .161 | 40 | -.5893 | .331 | 150 | -.4698 | .431 | 70 | -.6029 | 1.131 | 80 | -.5802 | 0.000 | | 1.1793 | 0.00 | .20 |
| 16 | .161 | 30 | -.5681 | .331 | 140 | -.5069 | .431 | 60 | -.6049 | 1.131 | 70 | -.5688 | 0.000 | | 1.1242 | 0.00 | .30 |
| 17 | .161 | 20 | -.5407 | .331 | 130 | -.5345 | .431 | 50 | -.6239 | 1.131 | 60 | -.5316 | 0.000 | | .9958 | 0.00 | .40 |
| 18 | .161 | 10 | -.5502 | .331 | 120 | -.5726 | .431 | 40 | -.6327 | 1.131 | 50 | -.5087 | 0.000 | | .8168 | 0.00 | .45 |
| 19 | .161 | 0 | -.5422 | .331 | 110 | -.5837 | .431 | 30 | -.6194 | 1.131 | 40 | -.4806 | .161 | 270 | -.6129 | | |
| 20 | .231 | 180 | -.4492 | .331 | 100 | -.6039 | .431 | 20 | -.6255 | 1.131 | 30 | -.4664 | .231 | 270 | -.6170 | | |
| 21 | .231 | 170 | -.4440 | .331 | 90 | -.5820 | .431 | 10 | -.5854 | 1.131 | 20 | -.4656 | .331 | 270 | -.5909 | | |
| 22 | .231 | 160 | -.4469 | .331 | 80 | -.5972 | .431 | 0 | -.5745 | 1.131 | 10 | -.4575 | .431 | 270 | -.5945 | | |
| 23 | .231 | 150 | -.4879 | .331 | 70 | -.6260 | .531 | 180 | -.5087 | 1.131 | 0 | -.4640 | .531 | 270 | -.6188 | | |
| 24 | .231 | 140 | -.5200 | .331 | 60 | -.6295 | .531 | 90 | -.6214 | | | | .731 | 270 | -.6239 | | |
| 25 | .231 | 130 | -.5264 | .331 | 50 | -.6050 | .531 | 0 | -.5901 | 1.631 | 90 | -.4095 | .931 | 270 | -.6054 | | |
| 26 | .231 | 120 | -.5322 | .331 | 40 | -.5963 | .731 | 180 | -.5051 | 1.631 | 0 | -.3571 | 1.131 | 270 | -.5734 | | |
| 27 | .231 | 110 | -.5769 | .331 | 30 | -.6098 | .731 | 90 | -.6162 | 2.131 | 180 | -.2483 | 1.631 | 270 | -.3900 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 8 POINT 205 ALPHA 0 MACH .882 Q 733.462 MODEL FLAT FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4310 | .231 | 100 | -.4321 | .331 | 20 | -.4414 | .731 | 0 | -.4553 | 2.131 | 90 | -.0024 | | |
| 2 | .161 | 170 | -.4649 | .231 | 90 | -.4629 | .331 | 10 | -.4719 | .931 | 180 | -.5001 | 2.131 | 0 | -.4225 | | |
| 3 | .161 | 160 | -.4232 | .231 | 80 | -.4263 | .331 | 0 | -.4324 | .931 | 90 | -.4537 | 0.000 | | .8408 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4430 | .231 | 70 | -.4457 | .431 | 180 | -.4544 | .931 | 0 | -.4636 | 0.000 | | .9994 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4391 | .231 | 60 | -.4432 | .431 | 170 | -.4611 | 1.131 | 180 | -.4927 | 0.000 | | 1.1269 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4438 | .231 | 50 | -.4378 | .431 | 160 | -.4494 | 1.131 | 170 | -.4885 | 0.000 | | 1.1798 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4305 | .231 | 40 | -.4334 | .431 | 150 | -.4377 | 1.131 | 160 | -.4839 | 0.000 | | 1.2119 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4448 | .231 | 30 | -.4296 | .431 | 140 | -.4361 | 1.131 | 150 | -.4765 | 0.000 | | 1.2204 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4074 | .231 | 20 | -.4311 | .431 | 130 | -.4492 | 1.131 | 140 | -.4874 | 0.000 | | 1.2124 | .10 | 0.00 |
| 10 | .161 | 90 | -.4443 | .231 | 10 | -.4429 | .431 | 120 | -.4382 | 1.131 | 130 | -.4756 | 0.000 | | 1.1824 | .20 | 0.00 |
| 11 | .161 | 80 | -.4259 | .231 | 0 | -.4364 | .431 | 110 | -.4341 | 1.131 | 120 | -.4737 | 0.000 | | 1.1339 | .30 | 0.00 |
| 12 | .161 | 70 | -.4225 | .331 | 180 | -.4593 | .431 | 100 | -.4411 | 1.131 | 110 | -.4842 | 0.000 | | 1.0011 | .40 | 0.00 |
| 13 | .161 | 60 | -.4237 | .331 | 170 | -.4389 | .431 | 90 | -.4364 | 1.131 | 100 | -.4912 | 0.000 | | .8318 | .45 | 0.00 |
| 14 | .161 | 50 | -.4142 | .331 | 160 | -.4278 | .431 | 80 | -.4279 | 1.131 | 90 | -.4829 | 0.000 | | 1.2099 | 0.00 | .10 |
| 15 | .161 | 40 | -.4280 | .331 | 150 | -.4437 | .431 | 70 | -.4459 | 1.131 | 80 | -.4791 | 0.000 | | 1.1842 | 0.00 | .20 |
| 16 | .161 | 30 | -.4224 | .331 | 140 | -.4290 | .431 | 60 | -.4336 | 1.131 | 70 | -.4699 | 0.000 | | 1.1314 | 0.00 | .30 |
| 17 | .161 | 20 | -.4239 | .331 | 130 | -.4339 | .431 | 50 | -.4302 | 1.131 | 60 | -.4693 | 0.000 | | 1.0049 | 0.00 | .40 |
| 18 | .161 | 10 | -.4273 | .331 | 120 | -.4429 | .431 | 40 | -.4382 | 1.131 | 50 | -.4719 | 0.000 | | .8307 | 0.00 | .45 |
| 19 | .161 | 0 | -.4092 | .331 | 110 | -.4126 | .431 | 30 | -.4144 | 1.131 | 40 | -.4619 | .161 | 270 | -.4186 | | |
| 20 | .231 | 180 | -.4325 | .331 | 100 | -.4366 | .431 | 20 | -.4471 | 1.131 | 30 | -.4785 | .231 | 270 | -.4457 | | |
| 21 | .231 | 170 | -.4453 | .331 | 90 | -.4402 | .431 | 10 | -.4519 | 1.131 | 20 | -.4839 | .331 | 270 | -.4541 | | |
| 22 | .231 | 160 | -.4298 | .331 | 80 | -.4374 | .431 | 0 | -.4577 | 1.131 | 10 | -.4887 | .431 | 270 | -.4557 | | |
| 23 | .231 | 150 | -.4546 | .331 | 70 | -.4576 | .531 | 180 | -.4782 | 1.131 | 0 | -.5040 | .531 | 270 | -.4684 | | |
| 24 | .231 | 140 | -.4391 | .331 | 60 | -.4348 | .531 | 90 | -.4542 | | | .731 | .731 | 270 | -.4655 | | |
| 25 | .231 | 130 | -.4156 | .331 | 50 | -.4321 | .531 | 0 | -.4372 | 1.631 | 90 | -.4654 | .931 | 270 | -.4564 | | |
| 26 | .231 | 120 | -.4327 | .331 | 40 | -.4368 | .731 | 180 | -.4473 | 1.631 | 0 | -.1091 | 1.131 | 270 | -.4792 | | |
| 27 | .231 | 110 | -.4137 | .331 | 30 | -.4310 | .731 | 90 | -.4462 | 2.131 | 180 | -.3663 | 1.631 | 270 | -.4701 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 84 ALPHA -1 MACH .608 Q 429.711 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5259 | .231 | 100 | -.5064 | .331 | 20 | -.4676 | .731 | 0 | -.5258 | 2.131 | 90 | -.1349 | | |
| 2 | .161 | 170 | -.5302 | .231 | 90 | -.5159 | .331 | 10 | -.4674 | .931 | 180 | -.1456 | 2.131 | 0 | -.0419 | | |
| 3 | .161 | 160 | -.5512 | .231 | 80 | -.5013 | .331 | 0 | -.4652 | .931 | 90 | -.5704 | 0.000 | | .5974 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5422 | .231 | 70 | -.4813 | .431 | 180 | -.5619 | .931 | 0 | -.2232 | 0.000 | | .6248 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4881 | .231 | 60 | -.4652 | .431 | 170 | -.5352 | 1.131 | 180 | -.5106 | 0.000 | | .8837 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5207 | .231 | 50 | -.4881 | .431 | 160 | -.5330 | 1.131 | 170 | -.5158 | 0.000 | | 1.0127 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5156 | .231 | 40 | -.4826 | .431 | 150 | -.5446 | 1.131 | 160 | -.5106 | 0.000 | | 1.0795 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5063 | .231 | 30 | -.4775 | .431 | 140 | -.5341 | 1.131 | 150 | -.5325 | 0.000 | | 1.0998 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5088 | .231 | 20 | -.4660 | .431 | 130 | -.5346 | 1.131 | 140 | -.5058 | 0.000 | | 1.0958 | .10 | 0.00 |
| 10 | .161 | 90 | -.4993 | .231 | 10 | -.4799 | .431 | 120 | -.5355 | 1.131 | 130 | -.4955 | 0.000 | | 1.0296 | .20 | 0.00 |
| 11 | .161 | 80 | -.5093 | .231 | 0 | -.4829 | .431 | 110 | -.5363 | 1.131 | 120 | -.5243 | 0.000 | | .8976 | .30 | 0.00 |
| 12 | .161 | 70 | -.4890 | .331 | 180 | -.5552 | .431 | 100 | -.5319 | 1.131 | 110 | -.5212 | 0.000 | | .6404 | .40 | 0.00 |
| 13 | .161 | 60 | -.4588 | .331 | 170 | -.5462 | .431 | 90 | -.4977 | 1.131 | 100 | -.5170 | 0.000 | | .5675 | .45 | 0.00 |
| 14 | .161 | 50 | -.4879 | .331 | 160 | -.5304 | .431 | 80 | -.5299 | 1.131 | 90 | -.5009 | 0.000 | | 1.0862 | 0.00 | .10 |
| 15 | .161 | 40 | -.4699 | .331 | 150 | -.5239 | .431 | 70 | -.5106 | 1.131 | 80 | -.5322 | 0.000 | | 1.0182 | 0.00 | .20 |
| 16 | .161 | 30 | -.4642 | .331 | 140 | -.5304 | .431 | 60 | -.4960 | 1.131 | 70 | -.5188 | 0.000 | | .8813 | 0.00 | .30 |
| 17 | .161 | 20 | -.4642 | .331 | 130 | -.5383 | .431 | 50 | -.5073 | 1.131 | 60 | -.4979 | 0.000 | | .6257 | 0.00 | .40 |
| 18 | .161 | 10 | -.4678 | .331 | 120 | -.5359 | .431 | 40 | -.4999 | 1.131 | 50 | -.5309 | 0.000 | | .5974 | 0.00 | .45 |
| 19 | .161 | 0 | -.4327 | .331 | 110 | -.4987 | .431 | 30 | -.4538 | 1.131 | 40 | -.5040 | .161 | 270 | -.5004 | | |
| 20 | .231 | 180 | -.5186 | .331 | 100 | -.5116 | .431 | 20 | -.4665 | 1.131 | 30 | -.4931 | .231 | 270 | -.5026 | | |
| 21 | .231 | 170 | -.5503 | .331 | 90 | -.5307 | .431 | 10 | -.4911 | 1.131 | 20 | -.4961 | .331 | 270 | -.5161 | | |
| 22 | .231 | 160 | -.5430 | .331 | 80 | -.5173 | .431 | 0 | -.4847 | 1.131 | 10 | -.5373 | .431 | 270 | -.5250 | | |
| 23 | .231 | 150 | -.5387 | .331 | 70 | -.5072 | .531 | 180 | -.5647 | 1.131 | 0 | -.4937 | .531 | 270 | -.5370 | | |
| 24 | .231 | 140 | -.5131 | .331 | 60 | -.4889 | .531 | 90 | -.5079 | | | .731 | .270 | -.5690 | | | |
| 25 | .231 | 130 | -.4971 | .331 | 50 | -.4725 | .531 | 0 | -.4883 | 1.631 | 90 | -.2102 | .931 | 270 | -.5681 | | |
| 26 | .231 | 120 | -.5224 | .331 | 40 | -.4900 | .731 | 180 | -.5771 | 1.631 | 0 | -.1620 | 1.131 | 270 | -.5235 | | |
| 27 | .231 | 110 | -.5186 | .331 | 30 | -.4649 | .731 | 90 | -.5454 | 2.131 | 180 | .0602 | 1.631 | 270 | -.1972 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 85 ALPHA 0 MACH .608 Q 429.711 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4656 | .231 | 100 | -.4777 | .331 | 20 | -.4853 | .731 | 0 | -.5382 | 2.131 | 90 | -.1317 | | |
| 2 | .161 | 170 | -.4816 | .231 | 90 | -.4941 | .331 | 10 | -.4977 | .931 | 180 | -.1441 | 2.131 | 0 | .0571 | | |
| 3 | .161 | 160 | -.4977 | .231 | 80 | -.4903 | .331 | 0 | -.4657 | .931 | 90 | -.5507 | 0.000 | | .6051 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4922 | .231 | 70 | -.4987 | .431 | 180 | -.5123 | .931 | 0 | -.3157 | 0.000 | | .6198 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4841 | .231 | 60 | -.4930 | .431 | 170 | -.5214 | 1.131 | 180 | -.5285 | 0.000 | | .8832 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4724 | .231 | 50 | -.4791 | .431 | 160 | -.5040 | 1.131 | 170 | -.5125 | 0.000 | | 1.0186 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4672 | .231 | 40 | -.4911 | .431 | 150 | -.5178 | 1.131 | 160 | -.5228 | 0.000 | | 1.0773 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4862 | .231 | 30 | -.4892 | .431 | 140 | -.5277 | 1.131 | 150 | -.5273 | 0.000 | | 1.0979 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4708 | .231 | 20 | -.4859 | .431 | 130 | -.4878 | 1.131 | 140 | -.5025 | 0.000 | | 1.0835 | .10 | 0.00 |
| 10 | .161 | 90 | -.4795 | .231 | 10 | -.4851 | .431 | 120 | -.5076 | 1.131 | 130 | -.5197 | 0.000 | | 1.0293 | .20 | 0.00 |
| 11 | .161 | 80 | -.5107 | .231 | 0 | -.5028 | .431 | 110 | -.5242 | 1.131 | 120 | -.5073 | 0.000 | | .8863 | .30 | 0.00 |
| 12 | .161 | 70 | -.4917 | .331 | 180 | -.4941 | .431 | 100 | -.5082 | 1.131 | 110 | -.5303 | 0.000 | | .6451 | .40 | 0.00 |
| 13 | .161 | 60 | -.5072 | .331 | 170 | -.4892 | .431 | 90 | -.5244 | 1.131 | 100 | -.5143 | 0.000 | | .5657 | .45 | 0.00 |
| 14 | .161 | 50 | -.4854 | .331 | 160 | -.4960 | .431 | 80 | -.5175 | 1.131 | 90 | -.5225 | 0.000 | | 1.0853 | 0.00 | .10 |
| 15 | .161 | 40 | -.5031 | .331 | 150 | -.5138 | .431 | 70 | -.5148 | 1.131 | 80 | -.5264 | 0.000 | | 1.0127 | 0.00 | .20 |
| 16 | .161 | 30 | -.4833 | .331 | 140 | -.5203 | .431 | 60 | -.5286 | 1.131 | 70 | -.5021 | 0.000 | | .8798 | 0.00 | .30 |
| 17 | .161 | 20 | -.4764 | .331 | 130 | -.5028 | .431 | 50 | -.5057 | 1.131 | 60 | -.5103 | 0.000 | | .6333 | 0.00 | .40 |
| 18 | .161 | 10 | -.4914 | .331 | 120 | -.5007 | .431 | 40 | -.5112 | 1.131 | 50 | -.5249 | 0.000 | | .5974 | 0.00 | .45 |
| 19 | .161 | 0 | -.4928 | .331 | 110 | -.4799 | .431 | 30 | -.5112 | 1.131 | 40 | -.5291 | .161 | 270 | -.4973 | | |
| 20 | .231 | 180 | -.5101 | .331 | 100 | -.5176 | .431 | 20 | -.5184 | 1.131 | 30 | -.5306 | .231 | 270 | -.5099 | | |
| 21 | .231 | 170 | -.4963 | .331 | 90 | -.5189 | .431 | 10 | -.5313 | 1.131 | 20 | -.5152 | .331 | 270 | -.5145 | | |
| 22 | .231 | 160 | -.4832 | .331 | 80 | -.4892 | .431 | 0 | -.5071 | 1.131 | 10 | -.5046 | .431 | 270 | -.5222 | | |
| 23 | .231 | 150 | -.4850 | .331 | 70 | -.4925 | .531 | 180 | -.5181 | 1.131 | 0 | -.5185 | .531 | 270 | -.5290 | | |
| 24 | .231 | 140 | -.4960 | .331 | 60 | -.4743 | .531 | 90 | -.5098 | | | .731 | .270 | -.5441 | | | |
| 25 | .231 | 130 | -.4710 | .331 | 50 | -.5192 | .531 | 0 | -.5534 | 1.631 | 90 | -.2242 | .931 | 270 | -.5668 | | |
| 26 | .231 | 120 | -.4702 | .331 | 40 | -.4955 | .731 | 180 | -.5366 | 1.631 | 0 | -.1393 | 1.131 | 270 | -.5192 | | |
| 27 | .231 | 110 | -.4936 | .331 | 30 | -.5083 | .731 | 90 | -.5429 | 2.131 | 180 | .0320 | 1.631 | 270 | -.1837 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 21 POINT 90 ALPHA 10 MACH .608 Q 429.633 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4228 | .231 | 100 | -.7175 | .331 | 20 | -.8783 | .731 | 0 | -.0165 | 2.131 | 90 | -.1840 | | |
| 2 | .161 | 170 | -.4584 | .231 | 90 | -.7702 | .331 | 10 | -.8973 | .931 | 180 | -.1636 | 2.131 | 0 | .0036 | | |
| 3 | .161 | 160 | -.4771 | .231 | 80 | -.7685 | .331 | 0 | -.8871 | .931 | 90 | -.3625 | 0.000 | | .6273 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5505 | .231 | 70 | -.8076 | .431 | 180 | -.5452 | .931 | 0 | -.4222 | 0.000 | | .7442 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5876 | .231 | 60 | -.8103 | .431 | 170 | -.5334 | 1.131 | 180 | -.4143 | 0.000 | | 1.0098 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6627 | .231 | 50 | -.8392 | .431 | 160 | -.5571 | 1.131 | 170 | -.4571 | 0.000 | | 1.0907 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7221 | .231 | 40 | -.9072 | .431 | 150 | -.6241 | 1.131 | 160 | -.4316 | 0.000 | | 1.1141 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7049 | .231 | 30 | -.9211 | .431 | 140 | -.6381 | 1.131 | 150 | -.4252 | 0.000 | | 1.0821 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7317 | .231 | 20 | -.9296 | .431 | 130 | -.6508 | 1.131 | 140 | -.4789 | 0.000 | | 1.0120 | .10 | 0.00 |
| 10 | .161 | 90 | -.7455 | .231 | 10 | -.9378 | .431 | 120 | -.6665 | 1.131 | 130 | -.4462 | 0.000 | | .9150 | .20 | 0.00 |
| 11 | .161 | 80 | -.8080 | .231 | 0 | -.9700 | .431 | 110 | -.7035 | 1.131 | 120 | -.3837 | 0.000 | | .7132 | .30 | 0.00 |
| 12 | .161 | 70 | -.8126 | .331 | 180 | -.5158 | .431 | 100 | -.7280 | 1.131 | 110 | -.3039 | 0.000 | | .4999 | .40 | 0.00 |
| 13 | .161 | 60 | -.8178 | .331 | 170 | -.4972 | .431 | 90 | -.7537 | 1.131 | 100 | -.3052 | 0.000 | | .4091 | .45 | 0.00 |
| 14 | .161 | 50 | -.8547 | .331 | 160 | -.5357 | .431 | 80 | -.7854 | 1.131 | 90 | -.2594 | 0.000 | | 1.0652 | 0.00 | .10 |
| 15 | .161 | 40 | -.8596 | .331 | 150 | -.5649 | .431 | 70 | -.7983 | 1.131 | 80 | -.2242 | 0.000 | | .9993 | 0.00 | .20 |
| 16 | .161 | 30 | -.8868 | .331 | 140 | -.6042 | .431 | 60 | -.7887 | 1.131 | 70 | -.1202 | 0.000 | | .8547 | 0.00 | .30 |
| 17 | .161 | 20 | -.8944 | .331 | 130 | -.6321 | .431 | 50 | -.7625 | 1.131 | 60 | -.1339 | 0.000 | | .5553 | 0.00 | .40 |
| 18 | .161 | 10 | -.9157 | .331 | 120 | -.6785 | .431 | 40 | -.7622 | 1.131 | 50 | -.0981 | 0.000 | | .5387 | 0.00 | .45 |
| 19 | .161 | 0 | -.9300 | .331 | 110 | -.7055 | .431 | 30 | -.7344 | 1.131 | 40 | -.0726 | .161 | 270 | -.7724 | | |
| 20 | .231 | 180 | -.4325 | .331 | 100 | -.7205 | .431 | 20 | -.6748 | 1.131 | 30 | -.0374 | .231 | 270 | -.7422 | | |
| 21 | .231 | 170 | -.4790 | .331 | 90 | -.7366 | .431 | 10 | -.6621 | 1.131 | 20 | -.0323 | .331 | 270 | -.7346 | | |
| 22 | .231 | 160 | -.4793 | .331 | 80 | -.7612 | .431 | 0 | -.6594 | 1.131 | 10 | -.0226 | .431 | 270 | -.7379 | | |
| 23 | .231 | 150 | -.5605 | .331 | 70 | -.8103 | .531 | 180 | -.5640 | 1.131 | 0 | -.0198 | .531 | 270 | -.7355 | | |
| 24 | .231 | 140 | -.5423 | .331 | 60 | -.8021 | .531 | 90 | -.7118 | | | .731 | 270 | -.5725 | | | |
| 25 | .231 | 130 | -.6455 | .331 | 50 | -.8526 | .531 | 0 | -.3219 | 1.631 | 90 | -.1542 | .931 | 270 | -.3523 | | |
| 26 | .231 | 120 | -.6934 | .331 | 40 | -.8886 | .731 | 180 | -.5993 | 1.631 | 0 | -.1836 | 1.131 | 270 | -.2403 | | |
| 27 | .231 | 110 | -.7072 | .331 | 30 | -.8826 | .731 | 90 | -.5835 | 2.131 | 180 | -.0177 | 1.631 | 270 | -.1496 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|---------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 21 POINT 91 ALPHA 12 MACH .608 Q 430.337 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4527 | .231 | 100 | -.7567 | .331 | 20 | -.7420 | .731 | 0 | -.0249 | 2.131 | 90 | -.2064 | | |
| 2 | .161 | 170 | -.4486 | .231 | 90 | -.7722 | .331 | 10 | -.6756 | .931 | 180 | -.2120 | 2.131 | 0 | .0196 | | |
| 3 | .161 | 160 | -.5379 | .231 | 80 | -.8259 | .331 | 0 | -.6698 | .931 | 90 | -.3622 | 0.000 | | .6304 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5542 | .231 | 70 | -.8515 | .431 | 180 | -.5476 | .931 | 0 | -.4000 | 0.000 | | .7911 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6268 | .231 | 60 | -.8837 | .431 | 170 | -.5570 | 1.131 | 180 | -.3982 | 0.000 | | 1.0246 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7155 | .231 | 50 | -.9224 | .431 | 160 | -.6063 | 1.131 | 170 | -.4496 | 0.000 | | 1.0968 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7318 | .231 | 40 | -.9662 | .431 | 150 | -.6335 | 1.131 | 160 | -.4387 | 0.000 | | 1.1014 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7340 | .231 | 30 | -.9747 | .431 | 140 | -.6462 | 1.131 | 150 | -.4696 | 0.000 | | 1.0679 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7325 | .231 | 20 | -.9867 | .431 | 130 | -.6938 | 1.131 | 140 | -.4669 | 0.000 | | .9932 | .10 | 0.00 |
| 10 | .161 | 90 | -.7858 | .231 | 10 | -.9940 | .431 | 120 | -.7021 | 1.131 | 130 | -.4397 | 0.000 | | .8765 | .20 | 0.00 |
| 11 | .161 | 80 | -.8539 | .231 | 0 | -1.0131 | .431 | 110 | -.7574 | 1.131 | 120 | -.3737 | 0.000 | | .6848 | .30 | 0.00 |
| 12 | .161 | 70 | -.8541 | .331 | 180 | -.5187 | .431 | 100 | -.7461 | 1.131 | 110 | -.3715 | 0.000 | | .4568 | .40 | 0.00 |
| 13 | .161 | 60 | -.8902 | .331 | 170 | -.5375 | .431 | 90 | -.7888 | 1.131 | 100 | -.3234 | 0.000 | | .3416 | .45 | 0.00 |
| 14 | .161 | 50 | -.9035 | .331 | 160 | -.5435 | .431 | 80 | -.7596 | 1.131 | 90 | -.2965 | 0.000 | | 1.0442 | 0.00 | .10 |
| 15 | .161 | 40 | -.9491 | .331 | 150 | -.5918 | .431 | 70 | -.7390 | 1.131 | 80 | -.2816 | 0.000 | | .9754 | 0.00 | .20 |
| 16 | .161 | 30 | -1.0000 | .331 | 140 | -.6634 | .431 | 60 | -.7106 | 1.131 | 70 | -.2247 | 0.000 | | .8279 | 0.00 | .30 |
| 17 | .161 | 20 | -1.0177 | .331 | 130 | -.6752 | .431 | 50 | -.6145 | 1.131 | 60 | -.1781 | 0.000 | | .5321 | 0.00 | .40 |
| 18 | .161 | 10 | -1.0234 | .331 | 120 | -.6975 | .431 | 40 | -.5165 | 1.131 | 50 | -.1393 | 0.000 | | .5185 | 0.00 | .45 |
| 19 | .161 | 0 | -1.0329 | .331 | 110 | -.7242 | .431 | 30 | -.4243 | 1.131 | 40 | -.1027 | .161 | 270 | -.8276 | | |
| 20 | .231 | 180 | -.4698 | .331 | 100 | -.7387 | .431 | 20 | -.3298 | 1.131 | 30 | -.0652 | .231 | 270 | -.7745 | | |
| 21 | .231 | 170 | -.5143 | .331 | 90 | -.8034 | .431 | 10 | -.1864 | 1.131 | 20 | -.0391 | .331 | 270 | -.7917 | | |
| 22 | .231 | 160 | -.4956 | .331 | 80 | -.7929 | .431 | 0 | -.1737 | 1.131 | 10 | -.0313 | .431 | 270 | -.7595 | | |
| 23 | .231 | 150 | -.5712 | .331 | 70 | -.8212 | .531 | 180 | -.5848 | 1.131 | 0 | -.0261 | .531 | 270 | -.7370 | | |
| 24 | .231 | 140 | -.6106 | .331 | 60 | -.8251 | .531 | 90 | -.7293 | | | .731 | 270 | -.5092 | | | |
| 25 | .231 | 130 | -.6439 | .331 | 50 | -.7954 | .531 | 0 | -.0818 | 1.631 | 90 | -.2233 | .931 | 270 | -.3784 | | |
| 26 | .231 | 120 | -.7104 | .331 | 40 | -.7975 | .731 | 180 | -.6010 | 1.631 | 0 | -.1935 | 1.131 | 270 | -.2936 | | |
| 27 | .231 | 110 | -.7370 | .331 | 30 | -.7853 | .731 | 90 | -.5286 | 2.131 | 180 | -.0452 | 1.631 | 270 | -.2122 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 92 ALPHA 14 MACH .608 Q 429.975 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4851 | .231 | 100 | -.7570 | .331 | 20 | -.1970 | .731 | 0 | -.0368 | 2.131 | 90 | -.2210 | | |
| 2 | .161 | 170 | -.4838 | .231 | 90 | -.8445 | .331 | 10 | -.1733 | .931 | 180 | -.2319 | 2.131 | 0 | .0337 | | |
| 3 | .161 | 160 | -.4937 | .231 | 80 | -.8233 | .331 | 0 | -.1615 | .931 | 90 | -.3955 | 0.000 | | .6373 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6021 | .231 | 70 | -.8784 | .431 | 180 | -.5693 | .931 | 0 | -.3985 | 0.000 | | .8199 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6629 | .231 | 60 | -.9264 | .431 | 170 | -.5935 | 1.131 | 180 | -.4437 | 0.000 | | 1.0379 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7080 | .231 | 50 | -.8860 | .431 | 160 | -.6078 | 1.131 | 170 | -.4128 | 0.000 | | 1.1105 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7308 | .231 | 40 | -.8653 | .431 | 150 | -.6258 | 1.131 | 160 | -.4561 | 0.000 | | 1.1059 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7886 | .231 | 30 | -.7594 | .431 | 140 | -.6765 | 1.131 | 150 | -.4552 | 0.000 | | 1.0456 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8011 | .231 | 20 | -.6454 | .431 | 130 | -.6872 | 1.131 | 140 | -.4749 | 0.000 | | .9592 | .10 | 0.00 |
| 10 | .161 | 90 | -.7957 | .231 | 10 | -.6002 | .431 | 120 | -.7037 | 1.131 | 130 | -.4721 | 0.000 | | .8325 | .20 | 0.00 |
| 11 | .161 | 80 | -.6559 | .231 | 0 | -.4922 | .431 | 110 | -.7205 | 1.131 | 120 | -.4288 | 0.000 | | .6465 | .30 | 0.00 |
| 12 | .161 | 70 | -.9800 | .331 | 180 | -.5587 | .431 | 100 | -.8159 | 1.131 | 110 | -.4034 | 0.000 | | .4162 | .40 | 0.00 |
| 13 | .161 | 60 | -1.0144 | .331 | 170 | -.5543 | .431 | 90 | -.7809 | 1.131 | 100 | -.3955 | 0.000 | | .2923 | .45 | 0.00 |
| 14 | .161 | 50 | -1.0655 | .331 | 160 | -.5827 | .431 | 80 | -.6803 | 1.131 | 90 | -.3733 | 0.000 | | 1.0219 | 0.00 | .10 |
| 15 | .161 | 40 | -1.1314 | .331 | 150 | -.6768 | .431 | 70 | -.6076 | 1.131 | 80 | -.3431 | 0.000 | | .9531 | 0.00 | .20 |
| 16 | .161 | 30 | -1.0516 | .331 | 140 | -.6329 | .431 | 60 | -.4646 | 1.131 | 70 | -.2822 | 0.000 | | .8162 | 0.00 | .30 |
| 17 | .161 | 20 | -.9995 | .331 | 130 | -.7360 | .431 | 50 | -.2976 | 1.131 | 60 | -.2131 | 0.000 | | .5174 | 0.00 | .40 |
| 18 | .161 | 10 | -.9479 | .331 | 120 | -.7196 | .431 | 40 | -.2276 | 1.131 | 50 | -.1734 | 0.000 | | .5057 | 0.00 | .45 |
| 19 | .161 | 0 | -.9289 | .331 | 110 | -.7504 | .431 | 30 | -.1612 | 1.131 | 40 | -.1231 | .161 | 270 | -.8560 | | |
| 20 | .231 | 180 | -.4900 | .331 | 100 | -.7504 | .431 | 20 | -.1224 | 1.131 | 30 | -.0810 | .231 | 270 | -.8163 | | |
| 21 | .231 | 170 | -.5223 | .331 | 90 | -.8385 | .431 | 10 | -.0945 | 1.131 | 20 | -.0465 | .331 | 270 | -.8264 | | |
| 22 | .231 | 160 | -.5432 | .331 | 80 | -.8178 | .431 | 0 | -.0783 | 1.131 | 10 | -.0153 | .431 | 270 | -.7644 | | |
| 23 | .231 | 150 | -.5796 | .331 | 70 | -.7554 | .531 | 180 | -.6095 | 1.131 | 0 | -.0122 | .531 | 270 | -.6639 | | |
| 24 | .231 | 140 | -.6607 | .331 | 60 | -.6569 | .531 | 90 | -.6415 | | | | .731 | 270 | -.4644 | | |
| 25 | .231 | 130 | -.6987 | .331 | 50 | -.5680 | .531 | 0 | -.0670 | 1.631 | 90 | -.2885 | .931 | 270 | -.3977 | | |
| 26 | .231 | 120 | -.7460 | .331 | 40 | -.3858 | .731 | 180 | -.6164 | 1.631 | 0 | -.2537 | 1.131 | 270 | -.3646 | | |
| 27 | .231 | 110 | -.7289 | .331 | 30 | -.2800 | .731 | 90 | -.4896 | 2.131 | 180 | -.0119 | 1.631 | 270 | -.2886 | | |

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| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 93 ALPHA 16 MACH .608 Q 429.723 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4841 | .231 | 100 | -.8033 | .331 | 20 | -.1407 | .731 | 0 | -.0141 | 2.131 | 90 | -.2532 | | |
| 2 | .161 | 170 | -.5028 | .231 | 90 | -.7498 | .331 | 10 | -.1271 | .931 | 180 | -.2572 | 2.131 | 0 | .0423 | | |
| 3 | .161 | 160 | -.5090 | .231 | 80 | -.7711 | .331 | 0 | -.1161 | .931 | 90 | -.4436 | 0.000 | | .6573 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5984 | .231 | 70 | -.8270 | .431 | 180 | -.5674 | .931 | 0 | -.4112 | 0.000 | | .8610 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6459 | .231 | 60 | -.8208 | .431 | 170 | -.5845 | 1.131 | 180 | -.4624 | 0.000 | | 1.0573 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6878 | .231 | 50 | -.7476 | .431 | 160 | -.6057 | 1.131 | 170 | -.4552 | 0.000 | | 1.0988 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7459 | .231 | 40 | -.6480 | .431 | 150 | -.6631 | 1.131 | 160 | -.4373 | 0.000 | | 1.0804 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7247 | .231 | 30 | -.4826 | .431 | 140 | -.6716 | 1.131 | 150 | -.4918 | 0.000 | | 1.0250 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8152 | .231 | 20 | -.3443 | .431 | 130 | -.7017 | 1.131 | 140 | -.4976 | 0.000 | | .9259 | .10 | 0.00 |
| 10 | .161 | 90 | -.8420 | .231 | 10 | -.2971 | .431 | 120 | -.7455 | 1.131 | 130 | -.4797 | 0.000 | | .7862 | .20 | 0.00 |
| 11 | .161 | 80 | -.8684 | .231 | 0 | -.2799 | .431 | 110 | -.7499 | 1.131 | 120 | -.4497 | 0.000 | | .5875 | .30 | 0.00 |
| 12 | .161 | 70 | -.9271 | .331 | 180 | -.5282 | .431 | 100 | -.7472 | 1.131 | 110 | -.4548 | 0.000 | | .3780 | .40 | 0.00 |
| 13 | .161 | 60 | -.9311 | .331 | 170 | -.5173 | .431 | 90 | -.6862 | 1.131 | 100 | -.4500 | 0.000 | | .2488 | .45 | 0.00 |
| 14 | .161 | 50 | -1.0496 | .331 | 160 | -.6087 | .431 | 80 | -.6264 | 1.131 | 90 | -.4060 | 0.000 | | 1.0007 | 0.00 | .10 |
| 15 | .161 | 40 | -1.0255 | .331 | 150 | -.6576 | .431 | 70 | -.5252 | 1.131 | 80 | -.3903 | 0.000 | | .9311 | 0.00 | .20 |
| 16 | .161 | 30 | -.9474 | .331 | 140 | -.6914 | .431 | 60 | -.4150 | 1.131 | 70 | -.3409 | 0.000 | | .7859 | 0.00 | .30 |
| 17 | .161 | 20 | -.7932 | .331 | 130 | -.6761 | .431 | 50 | -.2661 | 1.131 | 60 | -.2542 | 0.000 | | .5054 | 0.00 | .40 |
| 18 | .161 | 10 | -.7098 | .331 | 120 | -.7182 | .431 | 40 | -.1963 | 1.131 | 50 | -.1966 | 0.000 | | .4795 | 0.00 | .45 |
| 19 | .161 | 0 | -.7033 | .331 | 110 | -.7531 | .431 | 30 | -.1343 | 1.131 | 40 | -.1253 | .161 | 270 | -.8762 | | |
| 20 | .231 | 180 | -.5036 | .331 | 100 | -.7509 | .431 | 20 | -.1043 | 1.131 | 30 | -.0808 | .231 | 270 | -.7941 | | |
| 21 | .231 | 170 | -.5145 | .331 | 90 | -.7992 | .431 | 10 | -.0737 | 1.131 | 20 | -.0392 | .331 | 270 | -.7799 | | |
| 22 | .231 | 160 | -.5631 | .331 | 80 | -.7656 | .431 | 0 | -.0607 | 1.131 | 10 | -.0013 | .431 | 270 | -.7430 | | |
| 23 | .231 | 150 | -.5848 | .331 | 70 | -.6693 | .531 | 180 | -.6027 | 1.131 | 0 | .0032 | .531 | 270 | -.6314 | | |
| 24 | .231 | 140 | -.6340 | .331 | 60 | -.5470 | .531 | 90 | -.6231 | | | | .731 | 270 | -.5112 | | |
| 25 | .231 | 130 | -.6709 | .331 | 50 | -.4090 | .531 | 0 | -.0331 | 1.631 | 90 | -.3542 | .931 | 270 | -.4530 | | |
| 26 | .231 | 120 | -.6935 | .331 | 40 | -.2774 | .731 | 180 | -.6330 | 1.631 | 0 | -.2469 | 1.131 | 270 | -.4420 | | |
| 27 | .231 | 110 | -.7361 | .331 | 30 | -.1964 | .731 | 90 | -.5029 | 2.131 | 180 | -.0268 | 1.631 | 270 | -.3513 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 94 ALPHA 13 MACH .608 Q 429.807 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5051 | .231 | 100 | -.7729 | .331 | 20 | -.0803 | .731 | 0 | -.0259 | 2.131 | 90 | -.2712 | | |
| 2 | .161 | 170 | -.5000 | .231 | 90 | -.7041 | .331 | 10 | -.0690 | .931 | 130 | -.2593 | 2.131 | 0 | -.0657 | | |
| 3 | .161 | 160 | -.5489 | .231 | 80 | -.7718 | .331 | 0 | -.0549 | .931 | 90 | -.4987 | 0.000 | | .7052 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5825 | .231 | 70 | -.7475 | .431 | 180 | -.5634 | .931 | 0 | -.4333 | 0.000 | | .9273 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6417 | .231 | 60 | -.7494 | .431 | 170 | -.5764 | 1.131 | 130 | -.4954 | 0.000 | | 1.0891 | -.30 | 0.00 |
| 6 | .161 | 130 | -.7262 | .231 | 50 | -.6703 | .431 | 160 | -.6602 | 1.131 | 170 | -.4938 | 0.000 | | 1.1118 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6865 | .231 | 40 | -.4858 | .431 | 150 | -.6381 | 1.131 | 160 | -.5211 | 0.000 | | 1.0725 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7333 | .231 | 30 | -.3237 | .431 | 140 | -.6845 | 1.131 | 150 | -.5575 | 0.000 | | .9897 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.8017 | .231 | 20 | -.2449 | .431 | 130 | -.7200 | 1.131 | 140 | -.4620 | 0.000 | | .8888 | .10 | 0.00 |
| 10 | .161 | 90 | -.7569 | .231 | 10 | -.2100 | .431 | 120 | -.7090 | 1.131 | 130 | -.5236 | 0.000 | | .7606 | .20 | 0.00 |
| 11 | .161 | 80 | -.8191 | .231 | 0 | -.1955 | .431 | 110 | -.7095 | 1.131 | 120 | -.5011 | 0.000 | | .5692 | .30 | 0.00 |
| 12 | .161 | 70 | -.8870 | .331 | 180 | -.5445 | .431 | 100 | -.7239 | 1.131 | 110 | -.5278 | 0.000 | | .3386 | .40 | 0.00 |
| 13 | .161 | 60 | -.9255 | .331 | 170 | -.5589 | .431 | 90 | -.6974 | 1.131 | 100 | -.5257 | 0.000 | | .2035 | .45 | 0.00 |
| 14 | .161 | 50 | -.9361 | .331 | 160 | -.5663 | .431 | 80 | -.6087 | 1.131 | 90 | -.5014 | 0.000 | | .9805 | 0.00 | .10 |
| 15 | .161 | 40 | -.9282 | .331 | 150 | -.6462 | .431 | 70 | -.4976 | 1.131 | 80 | -.4572 | 0.000 | | .9147 | 0.00 | .20 |
| 16 | .161 | 30 | -.7683 | .331 | 140 | -.6449 | .431 | 60 | -.3559 | 1.131 | 70 | -.3908 | 0.000 | | .7824 | 0.00 | .30 |
| 17 | .161 | 20 | -.6662 | .331 | 130 | -.6776 | .431 | 50 | -.2437 | 1.131 | 60 | -.3108 | 0.000 | | .5071 | 0.00 | .40 |
| 18 | .161 | 10 | -.6406 | .331 | 120 | -.7046 | .431 | 40 | -.1825 | 1.131 | 50 | -.2283 | 0.000 | | .4730 | 0.00 | .45 |
| 19 | .161 | 0 | -.6211 | .331 | 110 | -.6929 | .431 | 30 | -.1067 | 1.131 | 40 | -.1417 | .161 | 270 | -.7401 | | |
| 20 | .231 | 180 | -.4932 | .331 | 100 | -.7027 | .431 | 20 | -.0676 | 1.131 | 30 | -.0759 | .231 | 270 | -.7386 | | |
| 21 | .231 | 170 | -.5326 | .331 | 90 | -.7431 | .431 | 10 | -.0279 | 1.131 | 20 | -.0226 | .331 | 270 | -.7284 | | |
| 22 | .231 | 160 | -.5331 | .331 | 80 | -.6667 | .431 | 0 | -.0089 | 1.131 | 10 | -.0093 | .431 | 270 | -.6620 | | |
| 23 | .231 | 150 | -.6067 | .331 | 70 | -.6151 | .531 | 180 | -.6095 | 1.131 | 0 | -.0223 | .531 | 270 | -.6297 | | |
| 24 | .231 | 140 | -.6483 | .331 | 60 | -.4904 | .531 | 90 | -.6186 | | | | .731 | 270 | -.5344 | | |
| 25 | .231 | 130 | -.7118 | .331 | 50 | -.3057 | .531 | 0 | .0066 | 1.631 | 90 | -.4323 | .931 | 270 | -.5178 | | |
| 26 | .231 | 120 | -.7039 | .331 | 40 | -.2165 | .731 | 180 | -.6390 | 1.631 | 0 | -.2768 | 1.131 | 270 | -.4926 | | |
| 27 | .231 | 110 | -.7001 | .331 | 30 | -.1469 | .731 | 90 | -.5486 | 2.131 | 180 | -.0871 | 1.631 | 270 | -.4311 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 95 ALPHA 20 MACH .607 Q 429.134 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4859 | .231 | 100 | -.6459 | .331 | 20 | -.0238 | .731 | 0 | -.0611 | 2.131 | 90 | -.2874 | | |
| 2 | .161 | 170 | -.5112 | .231 | 90 | -.6899 | .331 | 10 | -.0009 | .931 | 180 | -.2995 | 2.131 | 0 | -.0973 | | |
| 3 | .161 | 160 | -.5579 | .231 | 80 | -.7126 | .331 | 0 | -.0159 | .931 | 90 | -.5335 | 0.000 | | .7562 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6012 | .231 | 70 | -.7369 | .431 | 180 | -.5710 | .931 | 0 | -.4640 | 0.000 | | .9777 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6322 | .231 | 60 | -.6943 | .431 | 170 | -.5713 | 1.131 | 180 | -.4895 | 0.000 | | 1.0870 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6265 | .231 | 50 | -.5284 | .431 | 160 | -.5680 | 1.131 | 170 | -.5484 | 0.000 | | 1.1049 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6700 | .231 | 40 | -.3560 | .431 | 150 | -.6271 | 1.131 | 160 | -.5806 | 0.000 | | 1.0541 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6790 | .231 | 30 | -.2371 | .431 | 140 | -.6610 | 1.131 | 150 | -.5645 | 0.000 | | .9623 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6898 | .231 | 20 | -.1759 | .431 | 130 | -.6668 | 1.131 | 140 | -.5836 | 0.000 | | .8661 | .10 | 0.00 |
| 10 | .161 | 90 | -.7130 | .231 | 10 | -.1275 | .431 | 120 | -.6765 | 1.131 | 130 | -.5454 | 0.000 | | .7247 | .20 | 0.00 |
| 11 | .161 | 80 | -.7494 | .231 | 0 | -.1426 | .431 | 110 | -.6574 | 1.131 | 120 | -.5806 | 0.000 | | .5116 | .30 | 0.00 |
| 12 | .161 | 70 | -.8261 | .331 | 180 | -.5538 | .431 | 100 | -.7052 | 1.131 | 110 | -.6070 | 0.000 | | .3073 | .40 | 0.00 |
| 13 | .161 | 60 | -.9458 | .331 | 170 | -.5733 | .431 | 90 | -.6455 | 1.131 | 100 | -.6076 | 0.000 | | .1591 | .45 | 0.00 |
| 14 | .161 | 50 | -.8884 | .331 | 160 | -.5722 | .431 | 80 | -.5539 | 1.131 | 90 | -.5593 | 0.000 | | .9521 | 0.00 | .10 |
| 15 | .161 | 40 | -.7135 | .331 | 150 | -.5661 | .431 | 70 | -.4396 | 1.131 | 80 | -.5114 | 0.000 | | .8988 | 0.00 | .20 |
| 16 | .161 | 30 | -.6466 | .331 | 140 | -.6014 | .431 | 60 | -.3137 | 1.131 | 70 | -.4236 | 0.000 | | .7589 | 0.00 | .30 |
| 17 | .161 | 20 | -.6205 | .331 | 130 | -.6689 | .431 | 50 | -.2359 | 1.131 | 60 | -.3368 | 0.000 | | .4749 | 0.00 | .40 |
| 18 | .161 | 10 | -.5881 | .331 | 120 | -.6435 | .431 | 40 | -.1522 | 1.131 | 50 | -.2461 | 0.000 | | .4709 | 0.00 | .45 |
| 19 | .161 | 0 | -.5851 | .331 | 110 | -.6664 | .431 | 30 | -.0735 | 1.131 | 40 | -.1441 | .161 | 270 | -.7373 | | |
| 20 | .231 | 180 | -.5008 | .331 | 100 | -.6615 | .431 | 20 | -.0095 | 1.131 | 30 | -.0566 | .231 | 270 | -.6554 | | |
| 21 | .231 | 170 | -.5024 | .331 | 90 | -.6328 | .431 | 10 | .0270 | 1.131 | 20 | .0053 | .331 | 270 | -.6609 | | |
| 22 | .231 | 160 | -.5359 | .331 | 80 | -.6085 | .431 | 0 | .0413 | 1.131 | 10 | .0372 | .431 | 270 | -.6261 | | |
| 23 | .231 | 150 | -.5966 | .331 | 70 | -.5514 | .531 | 180 | -.6226 | 1.131 | 0 | .0435 | .531 | 270 | -.6126 | | |
| 24 | .231 | 140 | -.6180 | .331 | 60 | -.3869 | .531 | 90 | -.5696 | | | | .731 | 270 | -.5439 | | |
| 25 | .231 | 130 | -.6393 | .331 | 50 | -.2664 | .531 | 0 | .0477 | 1.631 | 90 | -.5177 | .931 | 270 | -.5544 | | |
| 26 | .231 | 120 | -.6447 | .331 | 40 | -.1797 | .731 | 180 | -.6224 | 1.631 | 0 | -.2758 | 1.131 | 270 | -.5544 | | |
| 27 | .231 | 110 | -.6401 | .331 | 30 | -.0928 | .731 | 90 | -.5337 | 2.131 | 180 | -.0994 | 1.631 | 270 | -.5141 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 96 ALPHA 22 MACH .606 Q 430.057 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4720 | .231 | 100 | -.6808 | .331 | 20 | -.6074 | .731 | 0 | -.0647 | 2.131 | 90 | -.3350 | | |
| 2 | .161 | 170 | -.4806 | .231 | 90 | -.6309 | .331 | 10 | -.0614 | .931 | 180 | -.3263 | 2.131 | 0 | -.0694 | | |
| 3 | .161 | 160 | -.5032 | .231 | 80 | -.6279 | .331 | 0 | -.0821 | .931 | 90 | -.5620 | 0.000 | | .8115 | -.45 | 0.00 |
| 4 | .161 | 150 | -.6069 | .231 | 70 | -.7285 | .431 | 180 | -.6052 | .931 | 0 | -.5066 | 0.000 | | 1.0174 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6044 | .231 | 60 | -.6088 | .431 | 170 | -.5829 | 1.131 | 180 | -.6277 | 0.000 | | 1.0820 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6267 | .231 | 50 | -.3936 | .431 | 160 | -.5923 | 1.131 | 170 | -.5629 | 0.000 | | 1.0808 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6329 | .231 | 40 | -.2431 | .431 | 150 | -.6306 | 1.131 | 160 | -.5862 | 0.000 | | 1.0267 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6356 | .231 | 30 | -.1613 | .431 | 140 | -.6422 | 1.131 | 150 | -.5902 | 0.000 | | .9252 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6959 | .231 | 20 | -.1119 | .431 | 130 | -.6915 | 1.131 | 140 | -.5684 | 0.000 | | .7958 | .10 | 0.00 |
| 10 | .161 | 90 | -.6679 | .231 | 10 | -.0470 | .431 | 120 | -.6344 | 1.131 | 130 | -.6214 | 0.000 | | .6762 | .20 | 0.00 |
| 11 | .161 | 80 | -.7219 | .231 | 0 | -.0307 | .431 | 110 | -.6474 | 1.131 | 120 | -.6156 | 0.000 | | .4641 | .30 | 0.00 |
| 12 | .161 | 70 | -.7024 | .331 | 180 | -.5324 | .431 | 100 | -.6372 | 1.131 | 110 | -.6626 | 0.000 | | .2520 | .40 | 0.00 |
| 13 | .161 | 60 | -.8031 | .331 | 170 | -.5474 | .431 | 90 | -.6028 | 1.131 | 100 | -.6617 | 0.000 | | .1158 | .45 | 0.00 |
| 14 | .161 | 50 | -.7236 | .331 | 160 | -.5769 | .431 | 80 | -.9052 | 1.131 | 90 | -.6255 | 0.000 | | .9240 | 0.00 | .10 |
| 15 | .161 | 40 | -.6272 | .331 | 150 | -.6088 | .431 | 70 | -.4262 | 1.131 | 80 | -.5811 | 0.000 | | .8419 | 0.00 | .20 |
| 16 | .161 | 30 | -.6025 | .331 | 140 | -.6197 | .431 | 60 | -.3675 | 1.131 | 70 | -.4781 | 0.000 | | .7233 | 0.00 | .30 |
| 17 | .161 | 20 | -.5498 | .331 | 130 | -.6156 | .431 | 50 | -.2223 | 1.131 | 60 | -.3827 | 0.000 | | .4580 | 0.00 | .40 |
| 18 | .161 | 10 | -.4926 | .331 | 120 | -.6701 | .431 | 40 | -.1471 | 1.131 | 50 | -.2873 | 0.000 | | .4106 | 0.00 | .45 |
| 19 | .161 | 0 | -.4676 | .331 | 110 | -.6159 | .431 | 30 | -.0361 | 1.131 | 40 | -.1597 | -.161 | 270 | -.6883 | | |
| 20 | .231 | 180 | -.5203 | .331 | 100 | -.6431 | .431 | 20 | -.0248 | 1.131 | 30 | -.0349 | .231 | 270 | -.6711 | | |
| 21 | .231 | 170 | -.5141 | .331 | 90 | -.6502 | .431 | 10 | -.0540 | 1.131 | 20 | -.0023 | .331 | 270 | -.6711 | | |
| 22 | .231 | 160 | -.5303 | .331 | 80 | -.6088 | .431 | 0 | -.0859 | 1.131 | 10 | -.0668 | .431 | 270 | -.6072 | | |
| 23 | .231 | 150 | -.5512 | .331 | 70 | -.4931 | .531 | 180 | -.5970 | 1.131 | 0 | -.0720 | .531 | 270 | -.5750 | | |
| 24 | .231 | 140 | -.6050 | .331 | 60 | -.3546 | .531 | 90 | -.5639 | | | | .731 | 270 | -.5710 | | |
| 25 | .231 | 130 | -.6424 | .331 | 50 | -.2570 | .531 | 0 | -.0686 | 1.631 | 90 | -.6117 | .931 | 270 | -.6315 | | |
| 26 | .231 | 120 | -.6096 | .331 | 40 | -.1485 | .731 | 180 | -.6744 | 1.631 | 0 | -.3266 | 1.131 | 270 | -.6429 | | |
| 27 | .231 | 110 | -.6204 | .331 | 30 | -.0574 | .731 | 90 | -.5532 | 2.131 | 180 | -.1640 | 1.631 | 270 | -.5919 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 97 ALPHA 24 MACH .608 Q 430.059 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5005 | .231 | 100 | -.6224 | .331 | 20 | -.0755 | .731 | 0 | -.1323 | 2.131 | 90 | -.3298 | | |
| 2 | .161 | 170 | -.5336 | .231 | 90 | -.6797 | .331 | 10 | -.0980 | .931 | 180 | -.3581 | 2.131 | 0 | -.1223 | | |
| 3 | .161 | 160 | -.5542 | .231 | 80 | -.6347 | .331 | 0 | -.1239 | .931 | 90 | -.6026 | 0.000 | | .8490 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5453 | .231 | 70 | -.6499 | .431 | 180 | -.5537 | .931 | 0 | -.5205 | 0.000 | | 1.0629 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6180 | .231 | 60 | -.5259 | .431 | 170 | -.5843 | 1.131 | 180 | -.6265 | 0.000 | | 1.0939 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5862 | .231 | 50 | -.2995 | .431 | 160 | -.5843 | 1.131 | 170 | -.5896 | 0.000 | | 1.0666 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5795 | .231 | 40 | -.1880 | .431 | 150 | -.5648 | 1.131 | 160 | -.5917 | 0.000 | | 1.0033 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6587 | .231 | 30 | -.0726 | .431 | 140 | -.6529 | 1.131 | 150 | -.5665 | 0.000 | | .9068 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6473 | .231 | 20 | -.0097 | .431 | 130 | -.6284 | 1.131 | 140 | -.6208 | 0.000 | | .7832 | .10 | 0.00 |
| 10 | .161 | 90 | -.6204 | .231 | 10 | -.0506 | .431 | 120 | -.5909 | 1.131 | 130 | -.6405 | 0.000 | | .6338 | .20 | 0.00 |
| 11 | .161 | 80 | -.7179 | .231 | 0 | -.0637 | .431 | 110 | -.6127 | 1.131 | 120 | -.6544 | 0.000 | | .4245 | .30 | 0.00 |
| 12 | .161 | 70 | -.8232 | .331 | 180 | -.5395 | .431 | 100 | -.6265 | 1.131 | 110 | -.7098 | 0.000 | | .2434 | .40 | 0.00 |
| 13 | .161 | 60 | -.7434 | .331 | 170 | -.5223 | .431 | 90 | -.5741 | 1.131 | 100 | -.7092 | 0.000 | | .0694 | .45 | 0.00 |
| 14 | .161 | 50 | -.5966 | .331 | 160 | -.5586 | .431 | 80 | -.4628 | 1.131 | 90 | -.6665 | 0.000 | | .8896 | 0.00 | .10 |
| 15 | .161 | 40 | -.6675 | .331 | 150 | -.5706 | .431 | 70 | -.4077 | 1.131 | 80 | -.6298 | 0.000 | | .8333 | 0.00 | .20 |
| 16 | .161 | 30 | -.5127 | .331 | 140 | -.5664 | .431 | 60 | -.2907 | 1.131 | 70 | -.4954 | 0.000 | | .7116 | 0.00 | .30 |
| 17 | .161 | 20 | -.4044 | .331 | 130 | -.5763 | .431 | 50 | -.1874 | 1.131 | 60 | -.3815 | 0.000 | | .4681 | 0.00 | .40 |
| 18 | .161 | 10 | -.3404 | .331 | 120 | -.5695 | .431 | 40 | -.1022 | 1.131 | 50 | -.2754 | 0.000 | | .4118 | 0.00 | .45 |
| 19 | .161 | 0 | -.3189 | .331 | 110 | -.6336 | .431 | 30 | -.0094 | 1.131 | 40 | -.1567 | .161 | 270 | -.6723 | | |
| 20 | .231 | 180 | -.4533 | .331 | 100 | -.5286 | .431 | 20 | -.1044 | 1.131 | 30 | -.0207 | .231 | 270 | -.5593 | | |
| 21 | .231 | 170 | -.5073 | .331 | 90 | -.5687 | .431 | 10 | -.1228 | 1.131 | 20 | -.0474 | .331 | 270 | -.5980 | | |
| 22 | .231 | 160 | -.5263 | .331 | 80 | -.5711 | .431 | 0 | -.1361 | 1.131 | 10 | -.1008 | .431 | 270 | -.5617 | | |
| 23 | .231 | 150 | -.5607 | .331 | 70 | -.4329 | .531 | 180 | -.5810 | 1.131 | 0 | -.1238 | .531 | 270 | -.5160 | | |
| 24 | .231 | 140 | -.5423 | .331 | 60 | -.3143 | .531 | 90 | -.5052 | | | | .731 | 270 | -.5547 | | |
| 25 | .231 | 130 | -.5548 | .331 | 50 | -.1441 | .531 | 0 | -.1339 | 1.631 | 90 | -.6686 | .931 | 270 | -.6349 | | |
| 26 | .231 | 120 | -.5541 | .331 | 40 | -.0950 | .731 | 180 | -.6347 | 1.631 | 0 | -.3251 | 1.131 | 270 | -.6859 | | |
| 27 | .231 | 110 | -.6839 | .331 | 30 | -.0293 | .731 | 90 | -.6251 | 2.131 | 180 | -.2327 | 1.631 | 270 | -.6905 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 98 ALPHA 26 MACH .607 U 429.389 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D |
| 1 | .161 | 180 | -.5200 | .231 | 100 | -.6423 | .331 | 20 | -.1299 | .731 | 0 | .1800 | 2.131 | 90 | -.3590 | | |
| 2 | .161 | 170 | -.4790 | .231 | 90 | -.5773 | .331 | 10 | -.1873 | .931 | 180 | -.3339 | 2.131 | 0 | .1997 | | |
| 3 | .161 | 160 | -.5030 | .231 | 80 | -.6933 | .331 | 0 | -.1768 | .931 | 90 | -.6861 | 0.000 | | .9057 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5812 | .231 | 70 | -.8196 | .431 | 180 | -.5960 | .931 | 0 | -.5620 | 0.000 | | 1.0932 | -.40 | 0.00 |
| 5 | .161 | 140 | -.8052 | .231 | 60 | -.3937 | .431 | 170 | -.5883 | 1.131 | 180 | -.5896 | 0.000 | | 1.1123 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6024 | .231 | 50 | -.2320 | .431 | 160 | -.6021 | 1.131 | 170 | -.6348 | 0.000 | | 1.0476 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5641 | .231 | 40 | -.1064 | .431 | 150 | -.5370 | 1.131 | 160 | -.6175 | 0.000 | | .9608 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5990 | .231 | 30 | .0078 | .431 | 140 | -.5886 | 1.131 | 150 | -.6045 | 0.000 | | .8637 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6307 | .231 | 20 | .0933 | .431 | 130 | -.5974 | 1.131 | 140 | -.5702 | 0.000 | | .7406 | .10 | 0.00 |
| 10 | .161 | 90 | -.6775 | .231 | 10 | .1258 | .431 | 120 | -.5980 | 1.131 | 130 | -.6343 | 0.000 | | .5962 | .20 | 0.00 |
| 11 | .161 | 80 | -.7538 | .231 | 0 | .1449 | .431 | 110 | -.6297 | 1.131 | 120 | -.6891 | 0.000 | | .3629 | .30 | 0.00 |
| 12 | .161 | 70 | -.7767 | .331 | 180 | -.5412 | .431 | 100 | -.5916 | 1.131 | 110 | -.7407 | 0.000 | | .2263 | .40 | 0.00 |
| 13 | .161 | 60 | -.6481 | .331 | 170 | -.5035 | .431 | 90 | -.5266 | 1.131 | 100 | -.7298 | 0.000 | | .0424 | .45 | 0.00 |
| 14 | .161 | 50 | -.5970 | .331 | 160 | -.5961 | .431 | 80 | -.4928 | 1.131 | 90 | -.7210 | 0.000 | | .8607 | 0.00 | .10 |
| 15 | .161 | 40 | -.5383 | .331 | 150 | -.6387 | .431 | 70 | -.4264 | 1.131 | 80 | -.6822 | 0.000 | | .7945 | 0.00 | .20 |
| 16 | .161 | 30 | -.3896 | .331 | 140 | -.5683 | .431 | 60 | -.2912 | 1.131 | 70 | -.5520 | 0.000 | | .6717 | 0.00 | .30 |
| 17 | .161 | 20 | -.2673 | .331 | 130 | -.5988 | .431 | 50 | -.1678 | 1.131 | 60 | -.4173 | 0.000 | | .4494 | 0.00 | .40 |
| 18 | .161 | 10 | -.1988 | .331 | 120 | -.6180 | .431 | 40 | -.0762 | 1.131 | 50 | -.2987 | 0.000 | | .3786 | 0.00 | .45 |
| 19 | .161 | 0 | -.1996 | .331 | 110 | -.5784 | .431 | 30 | .0466 | 1.131 | 40 | -.1373 | .161 | 270 | -.5915 | | |
| 20 | .231 | 180 | -.5521 | .331 | 100 | -.6477 | .431 | 20 | .1172 | 1.131 | 30 | -.0178 | .231 | 270 | -.6793 | | |
| 21 | .231 | 170 | -.5807 | .331 | 90 | -.6169 | .431 | 10 | .1663 | 1.131 | 20 | .0720 | .331 | 270 | -.6282 | | |
| 22 | .231 | 160 | -.5551 | .331 | 80 | -.5396 | .431 | 0 | .1834 | 1.131 | 10 | .1188 | .431 | 270 | -.5682 | | |
| 23 | .231 | 150 | -.5011 | .331 | 70 | -.4090 | .531 | 180 | -.6004 | 1.131 | 0 | .1640 | .531 | 270 | -.5248 | | |
| 24 | .231 | 140 | -.6062 | .331 | 60 | -.3132 | .531 | 90 | -.5511 | | | .731 | .731 | 270 | -.5910 | | |
| 25 | .231 | 130 | -.5907 | .331 | 50 | -.1687 | .531 | 0 | .1770 | 1.631 | 90 | -.7337 | .931 | 270 | -.6913 | | |
| 26 | .231 | 120 | -.5093 | .331 | 40 | -.0545 | .731 | 180 | -.5382 | 1.631 | 0 | -.3406 | 1.131 | 270 | -.7233 | | |
| 27 | .231 | 110 | -.6432 | .331 | 30 | .0343 | .731 | 90 | -.6165 | 2.131 | 180 | -.3078 | 1.631 | 270 | -.7005 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 21 POINT 99 ALPHA 0 MACH .607 U 428.620 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D |
| 1 | .161 | 180 | -.5143 | .231 | 100 | -.4922 | .331 | 20 | -.4996 | .731 | 0 | -.5388 | 2.131 | 90 | -.1377 | | |
| 2 | .161 | 170 | -.4848 | .231 | 90 | -.4922 | .331 | 10 | -.5065 | .931 | 180 | -.1315 | 2.131 | 0 | .0365 | | |
| 3 | .161 | 160 | -.4881 | .231 | 80 | -.4881 | .331 | 0 | -.5228 | .931 | 90 | -.5515 | 0.000 | | .6019 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4843 | .231 | 70 | -.5034 | .431 | 180 | -.5029 | .931 | 0 | -.5458 | 0.000 | | .6337 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4838 | .231 | 60 | -.4960 | .431 | 170 | -.5192 | 1.131 | 180 | -.5205 | 0.000 | | .8980 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4911 | .231 | 50 | -.4643 | .431 | 160 | -.5170 | 1.131 | 170 | -.4898 | 0.000 | | 1.0300 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4780 | .231 | 40 | -.4960 | .431 | 150 | -.5015 | 1.131 | 160 | -.5066 | 0.000 | | 1.0898 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4870 | .231 | 30 | -.4897 | .431 | 140 | -.5165 | 1.131 | 150 | -.4868 | 0.000 | | 1.1074 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5001 | .231 | 20 | -.4960 | .431 | 130 | -.5187 | 1.131 | 140 | -.5287 | 0.000 | | 1.0914 | .10 | 0.00 |
| 10 | .161 | 90 | -.4968 | .231 | 10 | -.5075 | .431 | 120 | -.5339 | 1.131 | 130 | -.5293 | 0.000 | | 1.0251 | .20 | 0.00 |
| 11 | .161 | 80 | -.4690 | .231 | 0 | -.4755 | .431 | 110 | -.4902 | 1.131 | 120 | -.5069 | 0.000 | | .9001 | .30 | 0.00 |
| 12 | .161 | 70 | -.4699 | .331 | 180 | -.5097 | .431 | 100 | -.4825 | 1.131 | 110 | -.5224 | 0.000 | | .6369 | .40 | 0.00 |
| 13 | .161 | 60 | -.4704 | .331 | 170 | -.4774 | .431 | 90 | -.4860 | 1.131 | 100 | -.5035 | 0.000 | | .5701 | .45 | 0.00 |
| 14 | .161 | 50 | -.4957 | .331 | 160 | -.4815 | .431 | 80 | -.5129 | 1.131 | 90 | -.5190 | 0.000 | | 1.0803 | 0.00 | .10 |
| 15 | .161 | 40 | -.4663 | .331 | 150 | -.5067 | .431 | 70 | -.4907 | 1.131 | 80 | -.5193 | 0.000 | | 1.0255 | 0.00 | .20 |
| 16 | .161 | 30 | -.4772 | .331 | 140 | -.4949 | .431 | 60 | -.4913 | 1.131 | 70 | -.5281 | 0.000 | | .8875 | 0.00 | .30 |
| 17 | .161 | 20 | -.4911 | .331 | 130 | -.5004 | .431 | 50 | -.5129 | 1.131 | 60 | -.5263 | 0.000 | | .6330 | 0.00 | .40 |
| 18 | .161 | 10 | -.4990 | .331 | 120 | -.4979 | .431 | 40 | -.5203 | 1.131 | 50 | -.5193 | 0.000 | | .5988 | 0.00 | .45 |
| 19 | .161 | 0 | -.4848 | .331 | 110 | -.5001 | .431 | 30 | -.5040 | 1.131 | 40 | -.5214 | .161 | 270 | -.4916 | | |
| 20 | .231 | 180 | -.4421 | .331 | 100 | -.4853 | .431 | 20 | -.4996 | 1.131 | 30 | -.5126 | .231 | 270 | -.4937 | | |
| 21 | .231 | 170 | -.4832 | .331 | 90 | -.5012 | .431 | 10 | -.5123 | 1.131 | 20 | -.5230 | .331 | 270 | -.4971 | | |
| 22 | .231 | 160 | -.5031 | .331 | 80 | -.4790 | .431 | 0 | -.4996 | 1.131 | 10 | -.5075 | .431 | 270 | -.5002 | | |
| 23 | .231 | 150 | -.4949 | .331 | 70 | -.4922 | .531 | 180 | -.5198 | 1.131 | 0 | -.5114 | .531 | 270 | -.5361 | | |
| 24 | .231 | 140 | -.4880 | .331 | 60 | -.4886 | .531 | 90 | -.5062 | | | .731 | .731 | 270 | -.5421 | | |
| 25 | .231 | 130 | -.4895 | .331 | 50 | -.4851 | .531 | 0 | -.5118 | 1.631 | 90 | -.2063 | .931 | 270 | -.5489 | | |
| 26 | .231 | 120 | -.4911 | .331 | 40 | -.5015 | .731 | 180 | -.5532 | 1.631 | 0 | -.1285 | 1.131 | 270 | -.5122 | | |
| 27 | .231 | 110 | -.5192 | .331 | 30 | -.5141 | .731 | 90 | -.5612 | 2.131 | 180 | .0511 | 1.631 | 270 | -.1741 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | RUN 22 POINT 131 ALPHA -1 MACH .713 Q 542.228 | | | MODEL DOME FACE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|---|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D | | | |
| 1 | .161 | 180 | -.4995 | .231 | 100 | -.4942 | .331 | 20 | -.4506 | .731 | 0 | -.4890 | 2.131 | 90 | -.1241 | | | | | |
| 2 | .161 | 170 | -.5150 | .231 | 90 | -.4880 | .331 | 10 | -.4613 | .931 | 180 | -.1373 | 2.131 | 0 | -.1053 | | | | | |
| 3 | .161 | 160 | -.5031 | .231 | 80 | -.4972 | .331 | 0 | -.4497 | .931 | 90 | -.5428 | 0.000 | | .6547 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.4905 | .231 | 70 | -.4635 | .431 | 180 | -.5013 | .931 | 0 | -.4626 | 0.000 | | .6781 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.5072 | .231 | 60 | -.4678 | .431 | 170 | -.5196 | 1.131 | 180 | -.5349 | 0.000 | | .9138 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.4904 | .231 | 50 | -.4641 | .431 | 160 | -.5129 | 1.131 | 170 | -.5315 | 0.000 | | 1.0550 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.4907 | .231 | 40 | -.4737 | .431 | 150 | -.5094 | 1.131 | 160 | -.5430 | 0.000 | | 1.1177 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.4874 | .231 | 30 | -.4319 | .431 | 140 | -.5170 | 1.131 | 150 | -.5421 | 0.000 | | 1.1471 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.4784 | .231 | 20 | -.4423 | .431 | 130 | -.5105 | 1.131 | 140 | -.5351 | 0.000 | | 1.1269 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.4730 | .231 | 10 | -.4408 | .431 | 120 | -.5124 | 1.131 | 130 | -.5375 | 0.000 | | 1.0672 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.4908 | .231 | 0 | -.4332 | .431 | 110 | -.5050 | 1.131 | 120 | -.5380 | 0.000 | | .9433 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.4754 | .331 | 180 | -.5119 | .431 | 100 | -.5146 | 1.131 | 110 | -.5390 | 0.000 | | .6988 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.4736 | .331 | 170 | -.5102 | .431 | 90 | -.5035 | 1.131 | 100 | -.5368 | 0.000 | | .6313 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.4482 | .331 | 160 | -.5169 | .431 | 80 | -.4823 | 1.131 | 90 | -.5303 | 0.000 | | 1.1213 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.4633 | .331 | 150 | -.5119 | .431 | 70 | -.4873 | 1.131 | 80 | -.5423 | 0.000 | | 1.0637 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.4383 | .331 | 140 | -.5042 | .431 | 60 | -.4685 | 1.131 | 70 | -.5291 | 0.000 | | .9316 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.4534 | .331 | 130 | -.5029 | .431 | 50 | -.4773 | 1.131 | 60 | -.5178 | 0.000 | | .6906 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.4448 | .331 | 120 | -.5031 | .431 | 40 | -.4602 | 1.131 | 50 | -.5183 | 0.000 | | .6672 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.4627 | .331 | 110 | -.5029 | .431 | 30 | -.4816 | 1.131 | 40 | -.5130 | .161 | 270 | -.4911 | | | | | |
| 20 | .231 | 180 | -.5105 | .331 | 100 | -.4949 | .431 | 20 | -.4543 | 1.131 | 30 | -.5159 | .231 | 270 | -.4904 | | | | | |
| 21 | .231 | 170 | -.5176 | .331 | 90 | -.4892 | .431 | 10 | -.4572 | 1.131 | 20 | -.5046 | .331 | 270 | -.4940 | | | | | |
| 22 | .231 | 160 | -.5029 | .331 | 80 | -.4750 | .431 | 0 | -.4620 | 1.131 | 10 | -.5121 | .431 | 270 | -.4979 | | | | | |
| 23 | .231 | 150 | -.5027 | .331 | 70 | -.4756 | .531 | 180 | -.5098 | 1.131 | 0 | -.5140 | .531 | 270 | -.4979 | | | | | |
| 24 | .231 | 140 | -.5049 | .331 | 60 | -.4860 | .531 | 90 | -.5085 | | | | .731 | 270 | -.5374 | | | | | |
| 25 | .231 | 130 | -.4970 | .331 | 50 | -.4678 | .531 | 0 | -.4663 | 1.631 | 90 | -.3227 | .931 | 270 | -.5435 | | | | | |
| 26 | .231 | 120 | -.4846 | .331 | 40 | -.4496 | .731 | 180 | -.5290 | 1.631 | 0 | -.1209 | 1.131 | 270 | -.5262 | | | | | |
| 27 | .231 | 110 | -.4861 | .331 | 30 | -.4553 | .731 | 90 | -.5059 | 2.131 | 180 | .0100 | 1.631 | 270 | -.3086 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | RUN 22 POINT 141 ALPHA 0 MACH .713 Q 542.467 | | | MODEL DOME FACE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D | | | |
| 1 | .161 | 180 | -.4368 | .231 | 100 | -.4632 | .331 | 20 | -.4513 | .731 | 0 | -.4909 | 2.131 | 90 | -.1096 | | | | | |
| 2 | .161 | 170 | -.4605 | .231 | 90 | -.4751 | .331 | 10 | -.4606 | .931 | 180 | -.1225 | 2.131 | 0 | -.0599 | | | | | |
| 3 | .161 | 160 | -.4635 | .231 | 80 | -.4697 | .331 | 0 | -.4674 | .931 | 90 | -.5140 | 0.000 | | .6610 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.4702 | .231 | 70 | -.4598 | .431 | 180 | -.4871 | .931 | 0 | -.4895 | 0.000 | | .6852 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.4613 | .231 | 60 | -.4654 | .431 | 170 | -.4833 | 1.131 | 180 | -.5156 | 0.000 | | .9327 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.4467 | .231 | 50 | -.4680 | .431 | 160 | -.4663 | 1.131 | 170 | -.5125 | 0.000 | | 1.0689 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.4521 | .231 | 40 | -.4650 | .431 | 150 | -.4678 | 1.131 | 160 | -.5101 | 0.000 | | 1.1250 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.4551 | .231 | 30 | -.4706 | .431 | 140 | -.4820 | 1.131 | 150 | -.5166 | 0.000 | | 1.1491 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.4665 | .231 | 20 | -.4736 | .431 | 130 | -.4857 | 1.131 | 140 | -.5104 | 0.000 | | 1.1288 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.4588 | .231 | 10 | -.4594 | .431 | 120 | -.4766 | 1.131 | 130 | -.5207 | 0.000 | | 1.0665 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.4766 | .231 | 0 | -.4784 | .431 | 110 | -.5045 | 1.131 | 120 | -.5324 | 0.000 | | .9334 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.4751 | .331 | 180 | -.4827 | .431 | 100 | -.4864 | 1.131 | 110 | -.5348 | 0.000 | | .6961 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.4530 | .331 | 170 | -.4907 | .431 | 90 | -.4785 | 1.131 | 100 | -.5089 | 0.000 | | .6299 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.4738 | .331 | 160 | -.5000 | .431 | 80 | -.4940 | 1.131 | 90 | -.5300 | 0.000 | | 1.1298 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.4624 | .331 | 150 | -.4764 | .431 | 70 | -.4853 | 1.131 | 80 | -.5128 | 0.000 | | 1.0604 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.4637 | .331 | 140 | -.4808 | .431 | 60 | -.4794 | 1.131 | 70 | -.5322 | 0.000 | | .9274 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.4394 | .331 | 130 | -.4838 | .431 | 50 | -.4637 | 1.131 | 60 | -.5070 | 0.000 | | .6942 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.4474 | .331 | 120 | -.4535 | .431 | 40 | -.4637 | 1.131 | 50 | -.5077 | 0.000 | | .6720 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.4534 | .331 | 110 | -.4581 | .431 | 30 | -.4655 | 1.131 | 40 | -.5120 | .161 | 270 | -.4770 | | | | | |
| 20 | .231 | 180 | -.4766 | .331 | 100 | -.4743 | .431 | 20 | -.4755 | 1.131 | 30 | -.5288 | .231 | 270 | -.4706 | | | | | |
| 21 | .231 | 170 | -.4969 | .331 | 90 | -.4834 | .431 | 10 | -.4681 | 1.131 | 20 | -.5087 | .331 | 270 | -.4733 | | | | | |
| 22 | .231 | 160 | -.4786 | .331 | 80 | -.4831 | .431 | 0 | -.4766 | 1.131 | 10 | -.5224 | .431 | 270 | -.4762 | | | | | |
| 23 | .231 | 150 | -.4652 | .331 | 70 | -.4728 | .531 | 180 | -.4775 | 1.131 | 0 | -.5108 | .531 | 270 | -.4772 | | | | | |
| 24 | .231 | 140 | -.4855 | .331 | 60 | -.4849 | .531 | 90 | -.5050 | | | | .731 | 270 | -.5145 | | | | | |
| 25 | .231 | 130 | -.4667 | .331 | 50 | -.4706 | .531 | 0 | -.4661 | 1.631 | 90 | -.3411 | .931 | 270 | -.5237 | | | | | |
| 26 | .231 | 120 | -.4678 | .331 | 40 | -.4555 | .731 | 180 | -.5055 | 1.631 | 0 | -.1206 | 1.131 | 270 | -.5194 | | | | | |
| 27 | .231 | 110 | -.4495 | .331 | 30 | -.4894 | .731 | 90 | -.5069 | 2.131 | 180 | -.0378 | 1.631 | 270 | -.3150 | | | | | |

ORIGINAL PAGE IS
 OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 145 ALPHA 4 MACH .712 J 541.513 MODEL DUME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4285 | .231 | 100 | -.5002 | .331 | 20 | -.5329 | .731 | 0 | -.5096 | 2.131 | 90 | -.1133 | | |
| 2 | .161 | 170 | -.4052 | .231 | 90 | -.5049 | .331 | 10 | -.5517 | .931 | 180 | -.1231 | 2.131 | 0 | .0279 | | |
| 3 | .161 | 160 | -.4125 | .231 | 80 | -.5181 | .331 | 0 | -.5438 | .931 | 90 | -.5521 | 0.000 | | .6601 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4261 | .231 | 70 | -.5043 | .431 | 180 | -.4350 | .931 | 0 | -.5092 | 0.000 | | .6975 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4375 | .231 | 60 | -.5275 | .431 | 170 | -.4531 | 1.131 | 180 | -.5102 | 0.000 | | .9452 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4796 | .231 | 50 | -.5457 | .431 | 160 | -.4826 | 1.131 | 170 | -.5203 | 0.000 | | 1.0658 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4634 | .231 | 40 | -.5067 | .431 | 150 | -.4555 | 1.131 | 160 | -.5025 | 0.000 | | 1.1312 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4750 | .231 | 30 | -.5160 | .431 | 140 | -.4771 | 1.131 | 150 | -.5095 | 0.000 | | 1.1395 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4739 | .231 | 20 | -.5272 | .431 | 130 | -.4730 | 1.131 | 140 | -.4984 | 0.000 | | 1.1148 | .10 | 0.00 |
| 10 | .161 | 90 | -.4845 | .231 | 10 | -.5298 | .431 | 120 | -.4697 | 1.131 | 130 | -.5032 | 0.000 | | 1.0453 | .20 | 0.00 |
| 11 | .161 | 80 | -.5039 | .231 | 0 | -.5348 | .431 | 110 | -.4992 | 1.131 | 120 | -.5263 | 0.000 | | .9008 | .30 | 0.00 |
| 12 | .161 | 70 | -.5136 | .331 | 180 | -.4462 | .431 | 100 | -.5071 | 1.131 | 110 | -.5367 | 0.000 | | .6628 | .40 | 0.00 |
| 13 | .161 | 60 | -.5166 | .331 | 170 | -.4506 | .431 | 90 | -.5150 | 1.131 | 100 | -.5395 | 0.000 | | .6076 | .45 | 0.00 |
| 14 | .161 | 50 | -.5300 | .331 | 160 | -.4441 | .431 | 80 | -.5233 | 1.131 | 90 | -.5321 | 0.000 | | 1.1199 | 0.00 | .10 |
| 15 | .161 | 40 | -.5108 | .331 | 150 | -.4698 | .431 | 70 | -.5167 | 1.131 | 80 | -.5290 | 0.000 | | 1.0575 | 0.00 | .20 |
| 16 | .161 | 30 | -.5337 | .331 | 140 | -.4610 | .431 | 60 | -.5362 | 1.131 | 70 | -.5242 | 0.000 | | .9230 | 0.00 | .30 |
| 17 | .161 | 20 | -.5355 | .331 | 130 | -.4722 | .431 | 50 | -.5437 | 1.131 | 60 | -.5333 | 0.000 | | .6728 | 0.00 | .40 |
| 18 | .161 | 10 | -.5354 | .331 | 120 | -.4900 | .431 | 40 | -.5456 | 1.131 | 50 | -.5410 | 0.000 | | .6523 | 0.00 | .45 |
| 19 | .161 | 0 | -.5304 | .331 | 110 | -.4885 | .431 | 30 | -.5375 | 1.131 | 40 | -.5340 | .161 | 270 | -.5253 | | |
| 20 | .231 | 180 | -.4437 | .331 | 100 | -.5212 | .431 | 20 | -.5613 | 1.131 | 30 | -.5391 | .231 | 270 | -.5212 | | |
| 21 | .231 | 170 | -.4125 | .331 | 90 | -.5000 | .431 | 10 | -.5390 | 1.131 | 20 | -.5395 | .331 | 270 | -.5009 | | |
| 22 | .231 | 160 | -.4315 | .331 | 80 | -.5158 | .431 | 0 | -.5533 | 1.131 | 10 | -.5294 | .431 | 270 | -.5193 | | |
| 23 | .231 | 150 | -.4190 | .331 | 70 | -.5142 | .531 | 180 | -.4585 | 1.131 | 0 | -.5210 | .531 | 270 | -.5260 | | |
| 24 | .231 | 140 | -.4492 | .331 | 60 | -.5383 | .531 | 90 | -.5318 | | | | .731 | 270 | -.5487 | | |
| 25 | .231 | 130 | -.4696 | .331 | 50 | -.5190 | .531 | 0 | -.5410 | 1.631 | 90 | -.2997 | .931 | 270 | -.5629 | | |
| 26 | .231 | 120 | -.4817 | .331 | 40 | -.5376 | .731 | 180 | -.5029 | 1.631 | 0 | -.1222 | 1.131 | 270 | -.5365 | | |
| 27 | .231 | 110 | -.4858 | .331 | 30 | -.5374 | .731 | 90 | -.5419 | 2.131 | 180 | -.1064 | 1.631 | 270 | -.3071 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 145 ALPHA 4 MACH .713 J 542.556 MODEL DUME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4361 | .231 | 100 | -.5468 | .331 | 20 | -.6079 | .731 | 0 | -.6344 | 2.131 | 90 | -.1405 | | |
| 2 | .161 | 170 | -.4141 | .231 | 90 | -.5762 | .331 | 10 | -.6177 | .931 | 180 | -.1419 | 2.131 | 0 | .0509 | | |
| 3 | .161 | 160 | -.4103 | .231 | 80 | -.5769 | .331 | 0 | -.6238 | .931 | 90 | -.5799 | 0.000 | | .6673 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4423 | .231 | 70 | -.5985 | .431 | 180 | -.4453 | .931 | 0 | -.5285 | 0.000 | | .7170 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4714 | .231 | 60 | -.5957 | .431 | 170 | -.4603 | 1.131 | 180 | -.4927 | 0.000 | | .9808 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5049 | .231 | 50 | -.6117 | .431 | 160 | -.4824 | 1.131 | 170 | -.5179 | 0.000 | | 1.0951 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5161 | .231 | 40 | -.5983 | .431 | 150 | -.4776 | 1.131 | 160 | -.5112 | 0.000 | | 1.1374 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5415 | .231 | 30 | -.6145 | .431 | 140 | -.5219 | 1.131 | 150 | -.5194 | 0.000 | | 1.1370 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5596 | .231 | 20 | -.6030 | .431 | 130 | -.5193 | 1.131 | 140 | -.5252 | 0.000 | | 1.0965 | .10 | 0.00 |
| 10 | .161 | 90 | -.5602 | .231 | 10 | -.5976 | .431 | 120 | -.5291 | 1.131 | 130 | -.5276 | 0.000 | | 1.0190 | .20 | 0.00 |
| 11 | .161 | 80 | -.5723 | .231 | 0 | -.6087 | .431 | 110 | -.5431 | 1.131 | 120 | -.5338 | 0.000 | | .8792 | .30 | 0.00 |
| 12 | .161 | 70 | -.5839 | .331 | 180 | -.4526 | .431 | 100 | -.5599 | 1.131 | 110 | -.5535 | 0.000 | | .6395 | .40 | 0.00 |
| 13 | .161 | 60 | -.5968 | .331 | 170 | -.4457 | .431 | 90 | -.5828 | 1.131 | 100 | -.5468 | 0.000 | | .5971 | .45 | 0.00 |
| 14 | .161 | 50 | -.5796 | .331 | 160 | -.4407 | .431 | 80 | -.5691 | 1.131 | 90 | -.5300 | 0.000 | | 1.1189 | 0.00 | .10 |
| 15 | .161 | 40 | -.5947 | .331 | 150 | -.4699 | .431 | 70 | -.5904 | 1.131 | 80 | -.5199 | 0.000 | | 1.0549 | 0.00 | .20 |
| 16 | .161 | 30 | -.6018 | .331 | 140 | -.4928 | .431 | 60 | -.6031 | 1.131 | 70 | -.5098 | 0.000 | | .9170 | 0.00 | .30 |
| 17 | .161 | 20 | -.6168 | .331 | 130 | -.5120 | .431 | 50 | -.6271 | 1.131 | 60 | -.4572 | 0.000 | | .6645 | 0.00 | .40 |
| 18 | .161 | 10 | -.6005 | .331 | 120 | -.5166 | .431 | 40 | -.6038 | 1.131 | 50 | -.4882 | 0.000 | | .6497 | 0.00 | .45 |
| 19 | .161 | 0 | -.6160 | .331 | 110 | -.5380 | .431 | 30 | -.6129 | 1.131 | 40 | -.4133 | .161 | 270 | -.5673 | | |
| 20 | .231 | 180 | -.4234 | .331 | 100 | -.5594 | .431 | 20 | -.6121 | 1.131 | 30 | -.4368 | .231 | 270 | -.5763 | | |
| 21 | .231 | 170 | -.4232 | .331 | 90 | -.5704 | .431 | 10 | -.6158 | 1.131 | 20 | -.3765 | .531 | 270 | -.5687 | | |
| 22 | .231 | 160 | -.4419 | .331 | 80 | -.5762 | .431 | 0 | -.6110 | 1.131 | 10 | -.4243 | .431 | 270 | -.5741 | | |
| 23 | .231 | 150 | -.4533 | .331 | 70 | -.5927 | .531 | 180 | -.4845 | 1.131 | 0 | -.3924 | .531 | 270 | -.5884 | | |
| 24 | .231 | 140 | -.4589 | .331 | 60 | -.6011 | .531 | 90 | -.5822 | | | | .731 | 270 | -.6109 | | |
| 25 | .231 | 130 | -.4976 | .331 | 50 | -.5922 | .531 | 0 | -.6221 | 1.631 | 90 | -.1804 | .931 | 270 | -.6001 | | |
| 26 | .231 | 120 | -.5161 | .331 | 40 | -.6212 | .731 | 180 | -.5151 | 1.631 | 0 | -.1374 | 1.131 | 270 | -.5249 | | |
| 27 | .231 | 110 | -.5265 | .331 | 30 | -.6011 | .731 | 90 | -.5880 | 2.131 | 180 | -.0778 | 1.631 | 270 | -.1651 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 146 ALPHA 6 MACH .714 J 543.359 MODLL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4471 | .231 | 100 | -.6374 | .331 | 20 | -.7111 | .731 | 0 | -.6108 | 2.131 | 90 | -.1609 | | |
| 2 | .161 | 170 | -.4128 | .231 | 90 | -.6441 | .331 | 10 | -.7013 | .931 | 180 | -.1435 | 2.131 | 0 | .0165 | | |
| 3 | .161 | 160 | -.4420 | .231 | 80 | -.6605 | .331 | 0 | -.7196 | .931 | 90 | -.5818 | 0.000 | | .6839 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4407 | .231 | 70 | -.6705 | .431 | 180 | -.4829 | .931 | 0 | -.5298 | 0.000 | | .7479 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5161 | .231 | 60 | -.6698 | .431 | 170 | -.4931 | 1.131 | 180 | -.5178 | 0.000 | | 1.0067 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5574 | .231 | 50 | -.6675 | .431 | 160 | -.5038 | 1.131 | 170 | -.5010 | 0.000 | | 1.1094 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5858 | .231 | 40 | -.6770 | .431 | 150 | -.5208 | 1.131 | 160 | -.5211 | 0.000 | | 1.1441 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6173 | .231 | 30 | -.6946 | .431 | 140 | -.5544 | 1.131 | 150 | -.5259 | 0.000 | | 1.1291 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6493 | .231 | 20 | -.7059 | .431 | 130 | -.5932 | 1.131 | 140 | -.5178 | 0.000 | | 1.0870 | .10 | 0.00 |
| 10 | .161 | 90 | -.6803 | .231 | 10 | -.6918 | .431 | 120 | -.5975 | 1.131 | 130 | -.5660 | 0.000 | | 1.0091 | .20 | 0.00 |
| 11 | .161 | 80 | -.6742 | .231 | 0 | -.6985 | .431 | 110 | -.6228 | 1.131 | 120 | -.5382 | 0.000 | | .8428 | .30 | 0.00 |
| 12 | .161 | 70 | -.6680 | .331 | 180 | -.4680 | .431 | 100 | -.6365 | 1.131 | 110 | -.5130 | 0.000 | | .6165 | .40 | 0.00 |
| 13 | .161 | 60 | -.6631 | .331 | 170 | -.4518 | .431 | 90 | -.6309 | 1.131 | 100 | -.4718 | 0.000 | | .5732 | .45 | 0.00 |
| 14 | .161 | 50 | -.6873 | .331 | 160 | -.4824 | .431 | 80 | -.6076 | 1.131 | 90 | -.4351 | 0.000 | | 1.1133 | 0.00 | .10 |
| 15 | .161 | 40 | -.6843 | .331 | 150 | -.5291 | .431 | 70 | -.6738 | 1.131 | 80 | -.3845 | 0.000 | | 1.0500 | 0.00 | .20 |
| 16 | .161 | 30 | -.6796 | .331 | 140 | -.5187 | .431 | 60 | -.6777 | 1.131 | 70 | -.3332 | 0.000 | | .9206 | 0.00 | .30 |
| 17 | .161 | 20 | -.6852 | .331 | 130 | -.5526 | .431 | 50 | -.6915 | 1.131 | 60 | -.2903 | 0.000 | | .6418 | 0.00 | .40 |
| 18 | .161 | 10 | -.6989 | .331 | 120 | -.5819 | .431 | 40 | -.7117 | 1.131 | 50 | -.2320 | 0.000 | | .6367 | 0.00 | .45 |
| 19 | .161 | 0 | -.6755 | .331 | 110 | -.6022 | .431 | 30 | -.7013 | 1.131 | 40 | -.2073 | .161 | 270 | -.6205 | | |
| 20 | .231 | 180 | -.4351 | .331 | 100 | -.6182 | .431 | 20 | -.7052 | 1.131 | 30 | -.1869 | .231 | 270 | -.6315 | | |
| 21 | .231 | 170 | -.4392 | .331 | 90 | -.6558 | .431 | 10 | -.7185 | 1.131 | 20 | -.1407 | .331 | 270 | -.6383 | | |
| 22 | .231 | 160 | -.4489 | .331 | 80 | -.6592 | .431 | 0 | -.7231 | 1.131 | 10 | -.1495 | .431 | 270 | -.6432 | | |
| 23 | .231 | 150 | -.4781 | .331 | 70 | -.6655 | .531 | 180 | -.5051 | 1.131 | 0 | -.1493 | .531 | 270 | -.6458 | | |
| 24 | .231 | 140 | -.5159 | .331 | 60 | -.6700 | .531 | 90 | -.6503 | | | | .731 | 270 | -.6602 | | |
| 25 | .231 | 130 | -.5619 | .331 | 50 | -.6843 | .531 | 0 | -.7096 | 1.631 | 90 | -.1100 | .931 | 270 | -.5940 | | |
| 26 | .231 | 120 | -.5752 | .331 | 40 | -.6771 | .731 | 180 | -.5352 | 1.631 | 0 | -.1440 | 1.131 | 270 | -.4335 | | |
| 27 | .231 | 110 | -.6272 | .331 | 30 | -.6875 | .731 | 90 | -.6729 | 2.131 | 180 | -.0726 | 1.631 | 270 | -.1219 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 148 ALPHA 8 MACH .713 Q 542.010 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4592 | .231 | 100 | -.6838 | .331 | 20 | -.7889 | .731 | 0 | -.4087 | 2.131 | 90 | -.1734 | | |
| 2 | .161 | 170 | -.4351 | .231 | 90 | -.7145 | .331 | 10 | -.8055 | .931 | 180 | -.1686 | 2.131 | 0 | .0082 | | |
| 3 | .161 | 160 | -.4685 | .231 | 80 | -.7096 | .331 | 0 | -.7950 | .931 | 90 | -.5070 | 0.000 | | .6839 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5081 | .231 | 70 | -.7427 | .431 | 180 | -.5039 | .931 | 0 | -.5106 | 0.000 | | .7781 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5736 | .231 | 60 | -.7407 | .431 | 170 | -.5225 | 1.131 | 180 | -.4736 | 0.000 | | 1.0188 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5934 | .231 | 50 | -.7383 | .431 | 160 | -.5284 | 1.131 | 170 | -.4998 | 0.000 | | 1.1136 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6565 | .231 | 40 | -.7660 | .431 | 150 | -.5811 | 1.131 | 160 | -.5053 | 0.000 | | 1.1348 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6834 | .231 | 30 | -.7825 | .431 | 140 | -.6069 | 1.131 | 150 | -.5361 | 0.000 | | 1.1243 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6692 | .231 | 20 | -.7608 | .431 | 130 | -.6101 | 1.131 | 140 | -.5089 | 0.000 | | 1.0729 | .10 | 0.00 |
| 10 | .161 | 90 | -.7177 | .231 | 10 | -.7926 | .431 | 120 | -.6460 | 1.131 | 130 | -.5212 | 0.000 | | .9693 | .20 | 0.00 |
| 11 | .161 | 80 | -.7112 | .231 | 0 | -.7872 | .431 | 110 | -.6565 | 1.131 | 120 | -.4928 | 0.000 | | .8132 | .30 | 0.00 |
| 12 | .161 | 70 | -.7381 | .331 | 180 | -.4709 | .431 | 100 | -.6906 | 1.131 | 110 | -.4554 | 0.000 | | .5767 | .40 | 0.00 |
| 13 | .161 | 60 | -.7248 | .331 | 170 | -.4793 | .431 | 90 | -.6917 | 1.131 | 100 | -.4092 | 0.000 | | .5169 | .45 | 0.00 |
| 14 | .161 | 50 | -.7397 | .331 | 160 | -.5094 | .431 | 80 | -.7170 | 1.131 | 90 | -.3275 | 0.000 | | 1.1068 | 0.00 | .10 |
| 15 | .161 | 40 | -.7493 | .331 | 150 | -.5280 | .431 | 70 | -.7347 | 1.131 | 80 | -.2816 | 0.000 | | 1.0395 | 0.00 | .20 |
| 16 | .161 | 30 | -.7612 | .331 | 140 | -.5640 | .431 | 60 | -.7509 | 1.131 | 70 | -.2287 | 0.000 | | .9005 | 0.00 | .30 |
| 17 | .161 | 20 | -.7590 | .331 | 130 | -.5992 | .431 | 50 | -.7596 | 1.131 | 60 | -.1838 | 0.000 | | .6130 | 0.00 | .40 |
| 18 | .161 | 10 | -.7735 | .331 | 120 | -.6381 | .431 | 40 | -.7775 | 1.131 | 50 | -.1624 | 0.000 | | .6162 | 0.00 | .45 |
| 19 | .161 | 0 | -.7801 | .331 | 110 | -.6613 | .431 | 30 | -.7839 | 1.131 | 40 | -.0828 | .161 | 270 | -.7096 | | |
| 20 | .231 | 180 | -.4455 | .331 | 100 | -.6678 | .431 | 20 | -.7850 | 1.131 | 30 | -.0465 | .231 | 270 | -.6937 | | |
| 21 | .231 | 170 | -.4743 | .331 | 90 | -.6994 | .431 | 10 | -.8016 | 1.131 | 20 | -.0088 | .331 | 270 | -.7037 | | |
| 22 | .231 | 160 | -.4760 | .331 | 80 | -.7199 | .431 | 0 | -.7885 | 1.131 | 10 | -.0001 | .431 | 270 | -.6952 | | |
| 23 | .231 | 150 | -.5193 | .331 | 70 | -.7461 | .531 | 180 | -.5407 | 1.131 | 0 | -.0021 | .531 | 270 | -.7198 | | |
| 24 | .231 | 140 | -.5605 | .331 | 60 | -.7539 | .531 | 90 | -.7177 | | | | .731 | 270 | -.6759 | | |
| 25 | .231 | 130 | -.5867 | .331 | 50 | -.7461 | .531 | 0 | -.7249 | 1.631 | 90 | -.1220 | .931 | 270 | -.5260 | | |
| 26 | .231 | 120 | -.6402 | .331 | 40 | -.7743 | .731 | 180 | -.5730 | 1.631 | 0 | -.1732 | 1.131 | 270 | -.3282 | | |
| 27 | .231 | 110 | -.6677 | .331 | 30 | -.7764 | .731 | 90 | -.6735 | 2.131 | 180 | -.0179 | 1.631 | 270 | -.1154 | | |

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| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 150 ALPHA 10 MACH .713 J 542.175 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 100 | -.4366 | .231 | 100 | -.7011 | .331 | 20 | -.8304 | .731 | 0 | -.1234 | 2.131 | 90 | -.1860 | | |
| 2 | .161 | 170 | -.4419 | .231 | 90 | -.7420 | .331 | 10 | -.8550 | .931 | 180 | -.1726 | 2.131 | 0 | .0319 | | |
| 3 | .161 | 160 | -.4522 | .231 | 80 | -.7480 | .331 | 0 | -.8393 | .931 | 90 | -.4403 | 0.000 | | .6994 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5241 | .231 | 70 | -.7673 | .431 | 180 | -.5208 | .931 | 0 | -.4631 | 0.000 | | .8113 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5573 | .231 | 60 | -.7915 | .431 | 170 | -.5226 | 1.131 | 180 | -.4809 | 0.000 | | 1.0443 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6214 | .231 | 50 | -.8045 | .431 | 160 | -.5383 | 1.131 | 170 | -.4667 | 0.000 | | 1.1270 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6938 | .231 | 40 | -.8309 | .431 | 150 | -.5904 | 1.131 | 160 | -.5093 | 0.000 | | 1.1389 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7123 | .231 | 30 | -.8324 | .431 | 140 | -.6423 | 1.131 | 150 | -.5201 | 0.000 | | 1.1092 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7172 | .231 | 20 | -.8499 | .431 | 130 | -.6429 | 1.131 | 140 | -.5424 | 0.000 | | 1.0463 | .10 | 0.00 |
| 10 | .161 | 90 | -.7452 | .231 | 10 | -.8668 | .431 | 120 | -.6798 | 1.131 | 130 | -.5232 | 0.000 | | .9458 | .20 | 0.00 |
| 11 | .161 | 80 | -.7547 | .231 | 0 | -.8582 | .431 | 110 | -.6862 | 1.131 | 120 | -.4528 | 0.000 | | .7693 | .30 | 0.00 |
| 12 | .161 | 70 | -.7715 | .331 | 180 | -.4865 | .431 | 100 | -.7052 | 1.131 | 110 | -.4124 | 0.000 | | .5438 | .40 | 0.00 |
| 13 | .161 | 60 | -.7891 | .331 | 170 | -.5081 | .431 | 90 | -.7318 | 1.131 | 100 | -.3576 | 0.000 | | .4502 | .45 | 0.00 |
| 14 | .161 | 50 | -.8232 | .331 | 160 | -.5481 | .431 | 80 | -.7763 | 1.131 | 90 | -.3127 | 0.000 | | 1.0843 | 0.00 | .10 |
| 15 | .161 | 40 | -.8257 | .331 | 150 | -.5581 | .431 | 70 | -.7757 | 1.131 | 80 | -.2796 | 0.000 | | 1.0319 | 0.00 | .20 |
| 16 | .161 | 30 | -.8344 | .331 | 140 | -.6055 | .431 | 60 | -.7683 | 1.131 | 70 | -.2248 | 0.000 | | .8851 | 0.00 | .30 |
| 17 | .161 | 20 | -.8400 | .331 | 130 | -.6466 | .431 | 50 | -.7677 | 1.131 | 60 | -.1570 | 0.000 | | .6011 | 0.00 | .40 |
| 18 | .161 | 10 | -.8208 | .331 | 120 | -.6580 | .431 | 40 | -.7677 | 1.131 | 50 | -.1212 | 0.000 | | .5916 | 0.00 | .45 |
| 19 | .161 | 0 | -.8759 | .331 | 110 | -.6825 | .431 | 30 | -.7550 | 1.131 | 40 | -.0804 | .161 | 270 | -.7652 | | |
| 20 | .231 | 180 | -.4552 | .331 | 100 | -.7130 | .431 | 20 | -.7508 | 1.131 | 30 | -.0523 | .231 | 270 | -.7515 | | |
| 21 | .231 | 170 | -.4841 | .331 | 90 | -.7424 | .431 | 10 | -.7301 | 1.131 | 20 | -.0381 | .331 | 270 | -.7405 | | |
| 22 | .231 | 160 | -.5028 | .331 | 80 | -.7606 | .431 | 0 | -.7432 | 1.131 | 10 | -.0191 | .431 | 270 | -.7386 | | |
| 23 | .231 | 150 | -.5127 | .331 | 70 | -.7524 | .531 | 180 | -.5354 | 1.131 | 0 | -.0042 | .531 | 270 | -.7318 | | |
| 24 | .231 | 140 | -.5917 | .331 | 60 | -.8020 | .531 | 90 | -.7349 | | | | .731 | 270 | -.6294 | | |
| 25 | .231 | 130 | -.8296 | .331 | 50 | -.8153 | .531 | 0 | -.5389 | 1.631 | 90 | -.1770 | .931 | 270 | -.4402 | | |
| 26 | .231 | 120 | -.8699 | .331 | 40 | -.8264 | .731 | 180 | -.5789 | 1.631 | 0 | -.1661 | 1.131 | 270 | -.3176 | | |
| 27 | .231 | 110 | -.7007 | .331 | 30 | -.8473 | .731 | 90 | -.6447 | 2.131 | 180 | -.0366 | 1.631 | 270 | -.1848 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 152 ALPHA 12 MACH .713 Q 542.501 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 100 | -.4573 | .231 | 100 | -.7285 | .331 | 20 | -.7958 | .731 | 0 | -.0251 | 2.131 | 90 | -.2100 | | |
| 2 | .161 | 170 | -.4721 | .231 | 90 | -.7385 | .331 | 10 | -.7886 | .931 | 180 | -.2087 | 2.131 | 0 | .0219 | | |
| 3 | .161 | 160 | -.5102 | .231 | 80 | -.7564 | .331 | 0 | -.7680 | .931 | 90 | -.4215 | 0.000 | | .7197 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5584 | .231 | 70 | -.8018 | .431 | 180 | -.5342 | .931 | 0 | -.4205 | 0.000 | | .8461 | -.40 | 0.00 |
| 5 | .161 | 140 | -.6173 | .231 | 60 | -.8409 | .431 | 170 | -.5436 | 1.131 | 180 | -.4760 | 0.000 | | 1.0730 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6488 | .231 | 50 | -.8591 | .431 | 160 | -.5779 | 1.131 | 170 | -.4662 | 0.000 | | 1.1348 | -.20 | 0.00 |
| 7 | .161 | 120 | -.7066 | .231 | 40 | -.8928 | .431 | 150 | -.6215 | 1.131 | 160 | -.4974 | 0.000 | | 1.1368 | -.10 | 0.00 |
| 8 | .161 | 110 | -.7187 | .231 | 30 | -.8935 | .431 | 140 | -.6270 | 1.131 | 150 | -.5005 | 0.000 | | 1.0990 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7495 | .231 | 20 | -.9160 | .431 | 130 | -.6676 | 1.131 | 140 | -.5183 | 0.000 | | 1.0250 | .10 | 0.00 |
| 10 | .161 | 90 | -.7639 | .231 | 10 | -.9242 | .431 | 120 | -.6779 | 1.131 | 130 | -.5137 | 0.000 | | .9139 | .20 | 0.00 |
| 11 | .161 | 80 | -.8147 | .231 | 0 | -.9467 | .431 | 110 | -.7268 | 1.131 | 120 | -.4462 | 0.000 | | .7353 | .30 | 0.00 |
| 12 | .161 | 70 | -.8192 | .331 | 180 | -.5017 | .431 | 100 | -.7176 | 1.131 | 110 | -.4426 | 0.000 | | .5109 | .40 | 0.00 |
| 13 | .161 | 60 | -.8446 | .331 | 170 | -.5268 | .431 | 90 | -.7514 | 1.131 | 100 | -.3850 | 0.000 | | .3750 | .45 | 0.00 |
| 14 | .161 | 50 | -.8381 | .331 | 160 | -.5084 | .431 | 80 | -.7200 | 1.131 | 90 | -.3298 | 0.000 | | 1.0844 | 0.00 | .10 |
| 15 | .161 | 40 | -.8654 | .331 | 150 | -.5979 | .431 | 70 | -.7573 | 1.131 | 80 | -.3106 | 0.000 | | 1.0130 | 0.00 | .20 |
| 16 | .161 | 30 | -.8950 | .331 | 140 | -.6116 | .431 | 60 | -.6969 | 1.131 | 70 | -.2577 | 0.000 | | .8829 | 0.00 | .30 |
| 17 | .161 | 20 | -.9248 | .331 | 130 | -.6377 | .431 | 50 | -.6370 | 1.131 | 60 | -.2092 | 0.000 | | .5894 | 0.00 | .40 |
| 18 | .161 | 10 | -.9205 | .331 | 120 | -.6656 | .431 | 40 | -.6189 | 1.131 | 50 | -.1494 | 0.000 | | .5947 | 0.00 | .45 |
| 19 | .161 | 0 | -.9233 | .331 | 110 | -.6931 | .431 | 30 | -.5840 | 1.131 | 40 | -.1105 | .161 | 270 | -.7708 | | |
| 20 | .231 | 180 | -.4676 | .331 | 100 | -.7385 | .431 | 20 | -.5109 | 1.131 | 30 | -.0553 | .231 | 270 | -.7556 | | |
| 21 | .231 | 170 | -.4717 | .331 | 90 | -.7488 | .431 | 10 | -.5091 | 1.131 | 20 | -.0575 | .331 | 270 | -.7354 | | |
| 22 | .231 | 160 | -.5048 | .331 | 80 | -.7603 | .431 | 0 | -.4545 | 1.131 | 10 | -.0354 | .431 | 270 | -.7464 | | |
| 23 | .231 | 150 | -.5771 | .331 | 70 | -.7888 | .531 | 180 | -.5746 | 1.131 | 0 | -.0267 | .531 | 270 | -.7352 | | |
| 24 | .231 | 140 | -.5982 | .331 | 60 | -.7977 | .531 | 90 | -.7272 | | | | .731 | 270 | -.5800 | | |
| 25 | .231 | 130 | -.8539 | .331 | 50 | -.7899 | .531 | 0 | -.1618 | 1.631 | 90 | -.2395 | .931 | 270 | -.4032 | | |
| 26 | .231 | 120 | -.8858 | .331 | 40 | -.7843 | .731 | 180 | -.5857 | 1.631 | 0 | -.2181 | 1.131 | 270 | -.3423 | | |
| 27 | .231 | 110 | -.7094 | .331 | 30 | -.7741 | .731 | 90 | -.5857 | 2.131 | 180 | -.0299 | 1.631 | 270 | -.2658 | | |

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 OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 22 POINT 153 ALPHA 14 MACH .712 Q 540.816 | | | | MODEL DOME FACE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|---|--------|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.4641 | .231 | 100 | -.7310 | .331 | 20 | -.5127 | .731 | 0 | -.0328 | 2.131 | 90 | -.2241 | | | | | |
| 2 | .161 | 170 | -.4663 | .231 | 90 | -.7542 | .331 | 10 | -.4468 | .931 | 180 | -.2308 | 2.131 | 0 | .0308 | | | | | |
| 3 | .161 | 160 | -.5086 | .231 | 80 | -.7449 | .331 | 0 | -.4404 | .931 | 90 | -.4260 | 0.000 | | .7312 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.5612 | .231 | 70 | -.7975 | .431 | 180 | -.5442 | .931 | 0 | -.4146 | 0.000 | | .8847 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.6359 | .231 | 60 | -.8443 | .431 | 170 | -.5558 | 1.131 | 180 | -.4944 | 0.000 | | 1.1010 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.6670 | .231 | 50 | -.8525 | .431 | 160 | -.5821 | 1.131 | 170 | -.4907 | 0.000 | | 1.1552 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.6877 | .231 | 40 | -.8800 | .431 | 150 | -.6185 | 1.131 | 160 | -.5069 | 0.000 | | 1.1347 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.7143 | .231 | 30 | -.8707 | .431 | 140 | -.6377 | 1.131 | 150 | -.5218 | 0.000 | | 1.0807 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.7687 | .231 | 20 | -.8627 | .431 | 130 | -.6693 | 1.131 | 140 | -.5206 | 0.000 | | .9930 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.7335 | .231 | 10 | -.8538 | .431 | 120 | -.6750 | 1.131 | 130 | -.5074 | 0.000 | | .8798 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.8131 | .231 | 0 | -.8616 | .431 | 110 | -.7161 | 1.131 | 120 | -.4669 | 0.000 | | .6877 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.8233 | .331 | 180 | -.5096 | .431 | 100 | -.7175 | 1.131 | 110 | -.4363 | 0.000 | | .4775 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.8544 | .331 | 170 | -.5090 | .431 | 90 | -.7214 | 1.131 | 100 | -.4233 | 0.000 | | .3355 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.8939 | .331 | 160 | -.5532 | .431 | 80 | -.7067 | 1.131 | 90 | -.3995 | 0.000 | | 1.0555 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.9312 | .331 | 150 | -.5916 | .431 | 70 | -.6758 | 1.131 | 80 | -.3549 | 0.000 | | 1.0310 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.9502 | .331 | 140 | -.6092 | .431 | 60 | -.5633 | 1.131 | 70 | -.2930 | 0.000 | | .8691 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.9696 | .331 | 130 | -.6760 | .431 | 50 | -.4739 | 1.131 | 60 | -.2325 | 0.000 | | .5902 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.9556 | .331 | 120 | -.6881 | .431 | 40 | -.3806 | 1.131 | 50 | -.1841 | 0.000 | | .5719 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.9573 | .331 | 110 | -.6757 | .431 | 30 | -.2801 | 1.131 | 40 | -.1321 | .161 | 270 | -.7780 | | | | | |
| 20 | .231 | 180 | -.4827 | .331 | 100 | -.7475 | .431 | 20 | -.1499 | 1.131 | 30 | -.0895 | .231 | 270 | -.7602 | | | | | |
| 21 | .231 | 170 | -.4986 | .331 | 90 | -.7221 | .431 | 10 | -.1154 | 1.131 | 20 | -.0543 | .331 | 270 | -.7160 | | | | | |
| 22 | .231 | 160 | -.5565 | .331 | 80 | -.7562 | .431 | 0 | -.1183 | 1.131 | 10 | -.0295 | .431 | 270 | -.7118 | | | | | |
| 23 | .231 | 150 | -.5530 | .331 | 70 | -.7545 | .531 | 180 | -.5731 | 1.131 | 0 | -.0266 | .531 | 270 | -.7079 | | | | | |
| 24 | .231 | 140 | -.5909 | .331 | 60 | -.7226 | .531 | 90 | -.6929 | | | | .731 | 270 | -.5259 | | | | | |
| 25 | .231 | 130 | -.6478 | .331 | 50 | -.6768 | .531 | 0 | -.0431 | 1.631 | 90 | -.3094 | .931 | 270 | -.4315 | | | | | |
| 26 | .231 | 120 | -.6966 | .331 | 40 | -.6387 | .731 | 180 | -.6084 | 1.631 | 0 | -.2265 | 1.131 | 270 | -.3934 | | | | | |
| 27 | .231 | 110 | -.6318 | .331 | 30 | -.5870 | .731 | 90 | -.5480 | 2.131 | 180 | -.0594 | 1.631 | 270 | -.3204 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 22 POINT 154 ALPHA 16 MACH .712 Q 541.439 | | | | MODEL DOME FACE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|---|--------|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.4544 | .231 | 100 | -.7117 | .331 | 20 | -.1670 | .731 | 0 | -.0257 | 2.131 | 90 | -.2584 | | | | | |
| 2 | .161 | 170 | -.4904 | .231 | 90 | -.7446 | .331 | 10 | -.1322 | .931 | 180 | -.2367 | 2.131 | 0 | .0504 | | | | | |
| 3 | .161 | 160 | -.5340 | .231 | 80 | -.7494 | .331 | 0 | -.1290 | .931 | 90 | -.4701 | 0.000 | | .7407 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.5661 | .231 | 70 | -.7678 | .431 | 180 | -.5420 | .931 | 0 | -.4234 | 0.000 | | .9211 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.6215 | .231 | 60 | -.8072 | .431 | 170 | -.5623 | 1.131 | 180 | -.5100 | 0.000 | | 1.1050 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.6407 | .231 | 50 | -.7470 | .431 | 160 | -.5717 | 1.131 | 170 | -.4963 | 0.000 | | 1.1506 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.6739 | .231 | 40 | -.7190 | .431 | 150 | -.6078 | 1.131 | 160 | -.5370 | 0.000 | | 1.1299 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.6659 | .231 | 30 | -.6346 | .431 | 140 | -.6231 | 1.131 | 150 | -.5351 | 0.000 | | 1.0659 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.7228 | .231 | 20 | -.5905 | .431 | 130 | -.6404 | 1.131 | 140 | -.5562 | 0.000 | | .9770 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.6970 | .231 | 10 | -.4617 | .431 | 120 | -.6653 | 1.131 | 130 | -.5380 | 0.000 | | .8411 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.7670 | .231 | 0 | -.4509 | .431 | 110 | -.6761 | 1.131 | 120 | -.5372 | 0.000 | | .6593 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.8341 | .331 | 180 | -.5089 | .431 | 100 | -.7030 | 1.131 | 110 | -.4783 | 0.000 | | .4478 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.8841 | .331 | 170 | -.5377 | .431 | 90 | -.6995 | 1.131 | 100 | -.4862 | 0.000 | | .2691 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.9371 | .331 | 160 | -.5832 | .431 | 80 | -.6798 | 1.131 | 90 | -.4626 | 0.000 | | 1.0398 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.9499 | .331 | 150 | -.5995 | .431 | 70 | -.5616 | 1.131 | 80 | -.4109 | 0.000 | | .9803 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.9156 | .331 | 140 | -.6103 | .431 | 60 | -.4444 | 1.131 | 70 | -.3409 | 0.000 | | .8542 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.8960 | .331 | 130 | -.6441 | .431 | 50 | -.3366 | 1.131 | 60 | -.2704 | 0.000 | | .5826 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.8714 | .331 | 120 | -.6885 | .431 | 40 | -.2285 | 1.131 | 50 | -.2129 | 0.000 | | .5625 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.8535 | .331 | 110 | -.6848 | .431 | 30 | -.1434 | 1.131 | 40 | -.1470 | .161 | 270 | -.7426 | | | | | |
| 20 | .231 | 180 | -.4939 | .331 | 100 | -.6946 | .431 | 20 | -.0951 | 1.131 | 30 | -.0847 | .231 | 270 | -.7168 | | | | | |
| 21 | .231 | 170 | -.4939 | .331 | 90 | -.6974 | .431 | 10 | -.0625 | 1.131 | 20 | -.0373 | .331 | 270 | -.7097 | | | | | |
| 22 | .231 | 160 | -.5394 | .331 | 80 | -.7221 | .431 | 0 | -.0741 | 1.131 | 10 | -.0236 | .431 | 270 | -.7221 | | | | | |
| 23 | .231 | 150 | -.5745 | .331 | 70 | -.6824 | .531 | 180 | -.5774 | 1.131 | 0 | -.0118 | .531 | 270 | -.6577 | | | | | |
| 24 | .231 | 140 | -.6290 | .331 | 60 | -.6086 | .531 | 90 | -.6857 | | | | .731 | 270 | -.5361 | | | | | |
| 25 | .231 | 130 | -.6254 | .331 | 50 | -.4857 | .531 | 0 | -.0482 | 1.631 | 90 | -.3715 | .931 | 270 | -.4783 | | | | | |
| 26 | .231 | 120 | -.6853 | .331 | 40 | -.3664 | .731 | 180 | -.6093 | 1.631 | 0 | -.2420 | 1.131 | 270 | -.4732 | | | | | |
| 27 | .231 | 110 | -.6903 | .331 | 30 | -.2464 | .731 | 90 | -.5262 | 2.131 | 180 | -.0577 | 1.631 | 270 | -.3809 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 22 POINT 155 ALPHA 18 MACH .713 Q 542.553 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4662 | .231 | 100 | -.6875 | .331 | 20 | -.0927 | .731 | 0 | .0129 | 2.131 | 90 | -.2774 | | |
| 2 | .161 | 170 | -.4824 | .231 | 90 | -.6314 | .331 | 10 | -.0661 | .931 | 180 | -.2764 | 2.131 | 0 | .0607 | | |
| 3 | .161 | 160 | -.5052 | .231 | 80 | -.6625 | .331 | 0 | -.0552 | .931 | 90 | -.5057 | 0.000 | | .7752 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5475 | .231 | 70 | -.7278 | .431 | 180 | -.5302 | .931 | 0 | -.4370 | 0.000 | | .9684 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5338 | .231 | 60 | -.6791 | .431 | 170 | -.5477 | 1.131 | 180 | -.5660 | 0.000 | | 1.1102 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5807 | .231 | 50 | -.6290 | .431 | 160 | -.5354 | 1.131 | 170 | -.5343 | 0.000 | | 1.1618 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6665 | .231 | 40 | -.6268 | .431 | 150 | -.6123 | 1.131 | 160 | -.5667 | 0.000 | | 1.1177 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6327 | .231 | 30 | -.4738 | .431 | 140 | -.6046 | 1.131 | 150 | -.5756 | 0.000 | | 1.0463 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6773 | .231 | 20 | -.3125 | .431 | 130 | -.6354 | 1.131 | 140 | -.5573 | 0.000 | | .9387 | .10 | 0.00 |
| 10 | .161 | 90 | -.6928 | .231 | 10 | -.2375 | .431 | 120 | -.6496 | 1.131 | 130 | -.5432 | 0.000 | | .6073 | .20 | 0.00 |
| 11 | .161 | 80 | -.7263 | .231 | 0 | -.2092 | .431 | 110 | -.6363 | 1.131 | 120 | -.5799 | 0.000 | | .6227 | .30 | 0.00 |
| 12 | .161 | 70 | -.7702 | .331 | 180 | -.5183 | .431 | 100 | -.6496 | 1.131 | 110 | -.5761 | 0.000 | | .4059 | .40 | 0.00 |
| 13 | .161 | 60 | -.8045 | .331 | 170 | -.5200 | .431 | 90 | -.6153 | 1.131 | 100 | -.5621 | 0.000 | | .2402 | .45 | 0.00 |
| 14 | .161 | 50 | -.8337 | .331 | 160 | -.5421 | .431 | 80 | -.5859 | 1.131 | 90 | -.5136 | 0.000 | | 1.0320 | 0.00 | .10 |
| 15 | .161 | 40 | -.8937 | .331 | 150 | -.6128 | .431 | 70 | -.5079 | 1.131 | 80 | -.4858 | 0.000 | | .9611 | 0.00 | .20 |
| 16 | .161 | 30 | -.8255 | .331 | 140 | -.5896 | .431 | 60 | -.3874 | 1.131 | 70 | -.4041 | 0.000 | | .8305 | 0.00 | .30 |
| 17 | .161 | 20 | -.7463 | .331 | 130 | -.6156 | .431 | 50 | -.2617 | 1.131 | 60 | -.3182 | 0.000 | | .5830 | 0.00 | .40 |
| 18 | .161 | 10 | -.6799 | .331 | 120 | -.6294 | .431 | 40 | -.1582 | 1.131 | 50 | -.2291 | 0.000 | | .5684 | 0.00 | .45 |
| 19 | .161 | 0 | -.6859 | .331 | 110 | -.6277 | .431 | 30 | -.1054 | 1.131 | 40 | -.1640 | .161 | 270 | -.6886 | | |
| 20 | .231 | 180 | -.4940 | .331 | 100 | -.6584 | .431 | 20 | -.0643 | 1.131 | 30 | -.0872 | .231 | 270 | -.6683 | | |
| 21 | .231 | 170 | -.4976 | .331 | 90 | -.6413 | .431 | 10 | -.0277 | 1.131 | 20 | -.0262 | .331 | 270 | -.6520 | | |
| 22 | .231 | 160 | -.5278 | .331 | 80 | -.6322 | .431 | 0 | -.0078 | 1.131 | 10 | .0108 | .431 | 270 | -.6357 | | |
| 23 | .231 | 150 | -.5424 | .331 | 70 | -.6041 | .531 | 180 | -.5568 | 1.131 | 0 | .0103 | .531 | 270 | -.6116 | | |
| 24 | .231 | 140 | -.5882 | .331 | 60 | -.5109 | .531 | 90 | -.6097 | | | .731 | 270 | -.5441 | | | |
| 25 | .231 | 130 | -.5935 | .331 | 50 | -.4009 | .531 | 0 | -.0130 | 1.631 | 90 | -.4538 | .931 | 270 | -.5254 | | |
| 26 | .231 | 120 | -.6244 | .331 | 40 | -.2407 | .731 | 180 | -.5852 | 1.631 | 0 | -.2766 | 1.131 | 270 | -.5239 | | |
| 27 | .231 | 110 | -.6346 | .331 | 30 | -.1478 | .731 | 90 | -.5383 | 2.131 | 180 | -.0726 | 1.631 | 270 | -.4900 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 22 POINT 156 ALPHA 20 MACH .712 Q 541.135 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4611 | .231 | 100 | -.5967 | .331 | 20 | -.0319 | .731 | 0 | .0503 | 2.131 | 90 | -.2842 | | |
| 2 | .161 | 170 | -.4706 | .231 | 90 | -.6249 | .331 | 10 | -.0043 | .931 | 180 | -.3259 | 2.131 | 0 | .0719 | | |
| 3 | .161 | 160 | -.5196 | .231 | 80 | -.6633 | .331 | 0 | .0082 | .931 | 90 | -.5469 | 0.000 | | .8173 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5004 | .231 | 70 | -.6368 | .431 | 180 | -.5000 | .931 | 0 | -.4612 | 0.000 | | 1.0195 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5813 | .231 | 60 | -.6540 | .431 | 170 | -.5593 | 1.131 | 180 | -.6165 | 0.000 | | 1.1350 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6158 | .231 | 50 | -.6206 | .431 | 160 | -.5814 | 1.131 | 170 | -.6210 | 0.000 | | 1.1440 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6169 | .231 | 40 | -.4088 | .431 | 150 | -.5858 | 1.131 | 160 | -.5974 | 0.000 | | 1.0989 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5925 | .231 | 30 | -.2641 | .431 | 140 | -.5779 | 1.131 | 150 | -.5873 | 0.000 | | 1.0178 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6147 | .231 | 20 | -.1698 | .431 | 130 | -.5950 | 1.131 | 140 | -.5930 | 0.000 | | .8964 | .10 | 0.00 |
| 10 | .161 | 90 | -.6156 | .231 | 10 | -.1479 | .431 | 120 | -.6066 | 1.131 | 130 | -.6218 | 0.000 | | .7535 | .20 | 0.00 |
| 11 | .161 | 80 | -.6980 | .231 | 0 | -.1494 | .431 | 110 | -.6245 | 1.131 | 120 | -.6141 | 0.000 | | .5569 | .30 | 0.00 |
| 12 | .161 | 70 | -.7036 | .331 | 180 | -.5001 | .431 | 100 | -.5770 | 1.131 | 110 | -.6278 | 0.000 | | .3857 | .40 | 0.00 |
| 13 | .161 | 60 | -.7748 | .331 | 170 | -.5200 | .431 | 90 | -.5792 | 1.131 | 100 | -.5948 | 0.000 | | .1962 | .45 | 0.00 |
| 14 | .161 | 50 | -.7945 | .331 | 160 | -.5285 | .431 | 80 | -.5359 | 1.131 | 90 | -.5748 | 0.000 | | .9963 | 0.00 | .10 |
| 15 | .161 | 40 | -.7657 | .331 | 150 | -.5384 | .431 | 70 | -.4304 | 1.131 | 80 | -.5185 | 0.000 | | .9372 | 0.00 | .20 |
| 16 | .161 | 30 | -.6725 | .331 | 140 | -.5794 | .431 | 60 | -.3271 | 1.131 | 70 | -.4391 | 0.000 | | .8066 | 0.00 | .30 |
| 17 | .161 | 20 | -.6220 | .331 | 130 | -.6050 | .431 | 50 | -.2078 | 1.131 | 60 | -.3317 | 0.000 | | .5667 | 0.00 | .40 |
| 18 | .161 | 10 | -.5720 | .331 | 120 | -.5733 | .431 | 40 | -.1258 | 1.131 | 50 | -.2398 | 0.000 | | .5493 | 0.00 | .45 |
| 19 | .161 | 0 | -.5832 | .331 | 110 | -.6104 | .431 | 30 | -.0588 | 1.131 | 40 | -.1449 | .161 | 270 | -.6512 | | |
| 20 | .231 | 180 | -.4913 | .331 | 100 | -.6106 | .431 | 20 | -.0139 | 1.131 | 30 | -.0708 | .231 | 270 | -.6287 | | |
| 21 | .231 | 170 | -.5047 | .331 | 90 | -.6102 | .431 | 10 | .0126 | 1.131 | 20 | -.0291 | .331 | 270 | -.6009 | | |
| 22 | .231 | 160 | -.5282 | .331 | 80 | -.6275 | .431 | 0 | .0342 | 1.131 | 10 | .0260 | .431 | 270 | -.5984 | | |
| 23 | .231 | 150 | -.5572 | .331 | 70 | -.5679 | .531 | 180 | -.5657 | 1.131 | 0 | .0334 | .531 | 270 | -.5850 | | |
| 24 | .231 | 140 | -.5845 | .331 | 60 | -.4290 | .531 | 90 | -.5657 | | | .731 | 270 | -.5298 | | | |
| 25 | .231 | 130 | -.6031 | .331 | 50 | -.2779 | .531 | 0 | .0439 | 1.631 | 90 | -.5228 | .931 | 270 | -.5594 | | |
| 26 | .231 | 120 | -.6123 | .331 | 40 | -.1724 | .731 | 180 | -.5915 | 1.631 | 0 | -.2863 | 1.131 | 270 | -.5872 | | |
| 27 | .231 | 110 | -.5599 | .331 | 30 | -.0907 | .731 | 90 | -.5107 | 2.131 | 180 | -.1945 | 1.631 | 270 | -.5691 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 160 ALPHA 22 MACH .713 Q 542.142 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 160 | -.5185 | .231 | 100 | -.6137 | .331 | 20 | .0247 | .731 | 0 | .0667 | 2.131 | 90 | -.3162 | | |
| 2 | .161 | 170 | -.5060 | .231 | 90 | -.6126 | .331 | 10 | .0566 | .931 | 180 | -.3142 | 2.131 | 0 | .0882 | | |
| 3 | .161 | 160 | -.5024 | .231 | 80 | -.6211 | .331 | 0 | .0717 | .931 | 90 | -.5732 | 0.000 | | .8555 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5024 | .231 | 70 | -.6276 | .431 | 180 | -.5005 | .931 | 0 | -.5009 | 0.000 | | 1.0644 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5020 | .231 | 60 | -.6126 | .431 | 170 | -.5458 | 1.131 | 180 | -.6044 | 0.000 | | 1.1375 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6109 | .231 | 50 | -.4175 | .431 | 160 | -.5861 | 1.131 | 170 | -.6222 | 0.000 | | 1.1261 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6010 | .231 | 40 | -.2371 | .431 | 150 | -.5988 | 1.131 | 160 | -.6049 | 0.000 | | 1.0778 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5995 | .231 | 30 | -.1711 | .431 | 140 | -.5892 | 1.131 | 150 | -.6328 | 0.000 | | .9813 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5934 | .231 | 20 | -.0962 | .431 | 130 | -.5800 | 1.131 | 140 | -.6241 | 0.000 | | .8579 | .10 | 0.00 |
| 10 | .161 | 90 | -.6066 | .231 | 10 | -.0698 | .431 | 120 | -.5767 | 1.131 | 130 | -.6179 | 0.000 | | .7175 | .20 | 0.00 |
| 11 | .161 | 80 | -.6477 | .231 | 0 | -.0737 | .431 | 110 | -.5964 | 1.131 | 120 | -.6522 | 0.000 | | .5144 | .30 | 0.00 |
| 12 | .161 | 70 | -.6755 | .331 | 180 | -.4969 | .431 | 100 | -.5643 | 1.131 | 110 | -.6527 | 0.000 | | .3406 | .40 | 0.00 |
| 13 | .161 | 60 | -.7461 | .331 | 170 | -.4941 | .431 | 90 | -.5580 | 1.131 | 100 | -.6630 | 0.000 | | .1606 | .45 | 0.00 |
| 14 | .161 | 50 | -.7760 | .331 | 160 | -.5410 | .431 | 80 | -.5221 | 1.131 | 90 | -.6270 | 0.000 | | .9571 | 0.00 | .10 |
| 15 | .161 | 40 | -.6449 | .331 | 150 | -.5596 | .431 | 70 | -.3998 | 1.131 | 80 | -.5578 | 0.000 | | .9137 | 0.00 | .20 |
| 16 | .161 | 30 | -.5950 | .331 | 140 | -.5618 | .431 | 60 | -.2919 | 1.131 | 70 | -.4934 | 0.000 | | .7709 | 0.00 | .30 |
| 17 | .161 | 20 | -.5650 | .331 | 130 | -.5369 | .431 | 50 | -.1804 | 1.131 | 60 | -.3521 | 0.000 | | .5514 | 0.00 | .40 |
| 18 | .161 | 10 | -.5349 | .331 | 120 | -.5769 | .431 | 40 | -.1121 | 1.131 | 50 | -.2644 | 0.000 | | .5156 | 0.00 | .45 |
| 19 | .161 | 0 | -.5269 | .331 | 110 | -.5432 | .431 | 30 | -.0291 | 1.131 | 40 | -.1539 | .161 | 270 | -.5794 | | |
| 20 | .231 | 180 | -.5140 | .331 | 100 | -.6170 | .431 | 20 | .0166 | 1.131 | 30 | -.0775 | .231 | 270 | -.6394 | | |
| 21 | .231 | 170 | -.5353 | .331 | 90 | -.6254 | .431 | 10 | .0837 | 1.131 | 20 | .0278 | .331 | 270 | -.6440 | | |
| 22 | .231 | 160 | -.4793 | .331 | 80 | -.5603 | .431 | 0 | .0944 | 1.131 | 10 | .0580 | .431 | 270 | -.5458 | | |
| 23 | .231 | 150 | -.5540 | .331 | 70 | -.5008 | .531 | 180 | -.5855 | 1.131 | 0 | .0717 | .531 | 270 | -.5570 | | |
| 24 | .231 | 140 | -.5691 | .331 | 60 | -.3422 | .531 | 90 | -.5475 | | | .731 | 270 | -.5385 | | | |
| 25 | .231 | 130 | -.6043 | .331 | 50 | -.2221 | .531 | 0 | .0828 | 1.631 | 90 | -.4626 | .931 | 270 | -.5936 | | |
| 26 | .231 | 120 | -.5691 | .331 | 40 | -.1362 | .731 | 180 | -.5977 | 1.631 | 0 | -.3269 | 1.131 | 270 | -.6540 | | |
| 27 | .231 | 110 | -.6242 | .331 | 30 | -.0402 | .731 | 90 | -.5636 | 2.131 | 180 | -.1318 | 1.631 | 270 | -.6406 | | |

ORIGINAL PAGE IS
 OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 22 POINT 161 ALPHA 24 MACH .713 Q 541.980 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4765 | .231 | 100 | -.5715 | .331 | 20 | .0752 | .731 | 0 | .1171 | 2.131 | 90 | -.3382 | | |
| 2 | .161 | 170 | -.5165 | .231 | 90 | -.6074 | .331 | 10 | .1095 | .931 | 180 | -.3441 | 2.131 | 0 | .1275 | | |
| 3 | .161 | 160 | -.5725 | .231 | 80 | -.6862 | .331 | 0 | .1331 | .931 | 90 | -.6145 | 0.000 | | .9106 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5555 | .231 | 70 | -.6639 | .431 | 180 | -.5619 | .931 | 0 | -.5207 | 0.000 | | 1.1166 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5790 | .231 | 60 | -.5438 | .431 | 170 | -.5632 | 1.131 | 180 | -.6214 | 0.000 | | 1.1364 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5137 | .231 | 50 | -.2794 | .431 | 160 | -.4948 | 1.131 | 170 | -.5886 | 0.000 | | 1.1296 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5700 | .231 | 40 | -.1878 | .431 | 150 | -.5479 | 1.131 | 160 | -.5988 | 0.000 | | 1.0462 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5934 | .231 | 30 | -.0904 | .431 | 140 | -.5898 | 1.131 | 150 | -.6174 | 0.000 | | .9428 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6725 | .231 | 20 | -.0080 | .431 | 130 | -.6355 | 1.131 | 140 | -.6080 | 0.000 | | .8208 | .10 | 0.00 |
| 10 | .161 | 90 | -.6191 | .231 | 10 | .0199 | .431 | 120 | -.5011 | 1.131 | 130 | -.6409 | 0.000 | | .6667 | .20 | 0.00 |
| 11 | .161 | 80 | -.6591 | .231 | 0 | .0582 | .431 | 110 | -.5603 | 1.131 | 120 | -.6505 | 0.000 | | .4804 | .30 | 0.00 |
| 12 | .161 | 70 | -.7074 | .331 | 180 | -.5040 | .431 | 100 | -.5470 | 1.131 | 110 | -.6580 | 0.000 | | .3226 | .40 | 0.00 |
| 13 | .161 | 60 | -.7612 | .331 | 170 | -.4906 | .431 | 90 | -.5260 | 1.131 | 100 | -.6796 | 0.000 | | .1675 | .45 | 0.00 |
| 14 | .161 | 50 | -.6729 | .331 | 160 | -.5921 | .431 | 80 | -.4863 | 1.131 | 90 | -.6746 | 0.000 | | .9349 | 0.00 | .10 |
| 15 | .161 | 40 | -.5781 | .331 | 150 | -.5791 | .431 | 70 | -.3844 | 1.131 | 80 | -.6188 | 0.000 | | .8776 | 0.00 | .20 |
| 16 | .161 | 30 | -.5575 | .331 | 140 | -.5388 | .431 | 60 | -.2756 | 1.131 | 70 | -.5041 | 0.000 | | .7555 | 0.00 | .30 |
| 17 | .161 | 20 | -.4530 | .331 | 130 | -.6016 | .431 | 50 | -.1757 | 1.131 | 60 | -.3864 | 0.000 | | .5231 | 0.00 | .40 |
| 18 | .161 | 10 | -.4155 | .331 | 120 | -.5531 | .431 | 40 | -.0817 | 1.131 | 50 | -.2684 | 0.000 | | .4996 | 0.00 | .45 |
| 19 | .161 | 0 | -.4088 | .331 | 110 | -.5845 | .431 | 30 | .0046 | 1.131 | 40 | -.1525 | .161 | 270 | -.6308 | | |
| 20 | .231 | 180 | -.5226 | .331 | 100 | -.6072 | .431 | 20 | .0806 | 1.131 | 30 | -.0398 | .231 | 270 | -.6230 | | |
| 21 | .231 | 170 | -.5058 | .331 | 90 | -.5821 | .431 | 10 | .1200 | 1.131 | 20 | .0311 | .331 | 270 | -.6082 | | |
| 22 | .231 | 160 | -.4924 | .331 | 80 | -.5267 | .431 | 0 | .1454 | 1.131 | 10 | .0991 | .431 | 270 | -.5445 | | |
| 23 | .231 | 150 | -.5189 | .331 | 70 | -.4492 | .531 | 180 | -.5492 | 1.131 | 0 | .1013 | .531 | 270 | -.5170 | | |
| 24 | .231 | 140 | -.6064 | .331 | 60 | -.3125 | .531 | 90 | -.5354 | | | .731 | 270 | -.5509 | | | |
| 25 | .231 | 130 | -.5840 | .331 | 50 | -.1950 | .531 | 0 | .1353 | 1.631 | 90 | -.4018 | .931 | 270 | -.6260 | | |
| 26 | .231 | 120 | -.5525 | .331 | 40 | -.0839 | .731 | 180 | -.5684 | 1.631 | 0 | -.3167 | 1.131 | 270 | -.6838 | | |
| 27 | .231 | 110 | -.5792 | .331 | 30 | .0083 | .731 | 90 | -.5494 | 2.131 | 180 | -.2809 | 1.631 | 270 | -.7325 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 22 POINT 162 ALPHA 26 MACH .713 Q 542.461 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5168 | .231 | 100 | -.6289 | .331 | 20 | .1158 | .731 | 0 | .1465 | 2.131 | 90 | -.3593 | | |
| 2 | .161 | 170 | -.5328 | .231 | 90 | -.6429 | .331 | 10 | .1737 | .931 | 180 | -.3425 | 2.131 | 0 | .1505 | | |
| 3 | .161 | 160 | -.4792 | .231 | 80 | -.5848 | .331 | 0 | .1822 | .931 | 90 | -.6139 | 0.000 | | .9927 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5380 | .231 | 70 | -.6271 | .431 | 180 | -.5375 | .931 | 0 | -.5461 | 0.000 | | 1.1220 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5380 | .231 | 60 | -.3709 | .431 | 170 | -.5320 | 1.131 | 180 | -.5725 | 0.000 | | 1.1520 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5875 | .231 | 50 | -.2358 | .431 | 160 | -.5757 | 1.131 | 170 | -.6244 | 0.000 | | 1.1060 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5668 | .231 | 40 | -.1205 | .431 | 150 | -.5569 | 1.131 | 160 | -.6076 | 0.000 | | 1.0204 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5816 | .231 | 30 | -.0068 | .431 | 140 | -.5720 | 1.131 | 150 | -.6122 | 0.000 | | .9074 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5016 | .231 | 20 | .0855 | .431 | 130 | -.5471 | 1.131 | 140 | -.5721 | 0.000 | | .7758 | .10 | 0.00 |
| 10 | .161 | 90 | -.6071 | .231 | 10 | .1318 | .431 | 120 | -.6010 | 1.131 | 130 | -.6669 | 0.000 | | .6289 | .20 | 0.00 |
| 11 | .161 | 80 | -.6546 | .231 | 0 | .1510 | .431 | 110 | -.5414 | 1.131 | 120 | -.6636 | 0.000 | | .4442 | .30 | 0.00 |
| 12 | .161 | 70 | -.7325 | .331 | 180 | -.5063 | .431 | 100 | -.5611 | 1.131 | 110 | -.7219 | 0.000 | | .2917 | .40 | 0.00 |
| 13 | .161 | 60 | -.6927 | .331 | 170 | -.5074 | .431 | 90 | -.5268 | 1.131 | 100 | -.7527 | 0.000 | | .1197 | .45 | 0.00 |
| 14 | .161 | 50 | -.5640 | .331 | 160 | -.6150 | .431 | 80 | -.4626 | 1.131 | 90 | -.7313 | 0.000 | | .8942 | 0.00 | .10 |
| 15 | .161 | 40 | -.5498 | .331 | 150 | -.5705 | .431 | 70 | -.3940 | 1.131 | 80 | -.6770 | 0.000 | | .8545 | 0.00 | .20 |
| 16 | .161 | 30 | -.4542 | .331 | 140 | -.6228 | .431 | 60 | -.2936 | 1.131 | 70 | -.5771 | 0.000 | | .7134 | 0.00 | .30 |
| 17 | .161 | 20 | -.3475 | .331 | 130 | -.6226 | .431 | 50 | -.1770 | 1.131 | 60 | -.4395 | 0.000 | | .5039 | 0.00 | .40 |
| 18 | .161 | 10 | -.2599 | .331 | 120 | -.5733 | .431 | 40 | -.0657 | 1.131 | 50 | -.2921 | 0.000 | | .4600 | 0.00 | .45 |
| 19 | .161 | 0 | -.2384 | .331 | 110 | -.6060 | .431 | 30 | .0490 | 1.131 | 40 | -.1465 | .161 | 270 | -.6417 | | |
| 20 | .231 | 180 | -.5253 | .331 | 100 | -.5921 | .431 | 20 | .1237 | 1.131 | 30 | -.0286 | .231 | 270 | -.6339 | | |
| 21 | .231 | 170 | -.5087 | .331 | 90 | -.5820 | .431 | 10 | .1739 | 1.131 | 20 | .0507 | .331 | 270 | -.5817 | | |
| 22 | .231 | 160 | -.5173 | .331 | 80 | -.5069 | .431 | 0 | .1914 | 1.131 | 10 | .1166 | .431 | 270 | -.5520 | | |
| 23 | .231 | 150 | -.5896 | .331 | 70 | -.4189 | .531 | 180 | -.5962 | 1.131 | 0 | .1435 | .531 | 270 | -.5362 | | |
| 24 | .231 | 140 | -.5612 | .331 | 60 | -.2855 | .531 | 90 | -.5150 | | | .731 | .270 | 270 | -.5861 | | |
| 25 | .231 | 130 | -.5373 | .331 | 50 | -.1478 | .531 | 0 | .1973 | 1.631 | 90 | -.3833 | .931 | 270 | -.6794 | | |
| 26 | .231 | 120 | -.5451 | .331 | 40 | -.0561 | .731 | 180 | -.5537 | 1.631 | 0 | -.3682 | 1.131 | 270 | -.7308 | | |
| 27 | .231 | 110 | -.5711 | .331 | 30 | .0531 | .731 | 90 | -.5696 | 2.131 | 180 | -.3761 | 1.631 | 270 | -.7910 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 22 POINT 163 ALPHA 0 MACH .713 Q 541.740 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4498 | .231 | 100 | -.4659 | .331 | 20 | -.4819 | .731 | 0 | -.5193 | 2.131 | 90 | -.1181 | | |
| 2 | .161 | 170 | -.4812 | .231 | 90 | -.4750 | .331 | 10 | -.4804 | .931 | 180 | -.1182 | 2.131 | 0 | -.0725 | | |
| 3 | .161 | 160 | -.4713 | .231 | 80 | -.4783 | .331 | 0 | -.4983 | .931 | 90 | -.5333 | 0.000 | | .6438 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4737 | .231 | 70 | -.4674 | .431 | 180 | -.4841 | .931 | 0 | -.5140 | 0.000 | | .6799 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4569 | .231 | 60 | -.4402 | .431 | 170 | -.4764 | 1.131 | 180 | -.5071 | 0.000 | | .9419 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4586 | .231 | 50 | -.4659 | .431 | 160 | -.4705 | 1.131 | 170 | -.5018 | 0.000 | | 1.0666 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4726 | .231 | 40 | -.4607 | .431 | 150 | -.4815 | 1.131 | 160 | -.5210 | 0.000 | | 1.1298 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4638 | .231 | 30 | -.4560 | .431 | 140 | -.4867 | 1.131 | 150 | -.5236 | 0.000 | | 1.1422 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4793 | .231 | 20 | -.4705 | .431 | 130 | -.4935 | 1.131 | 140 | -.5311 | 0.000 | | 1.1251 | .10 | 0.00 |
| 10 | .161 | 90 | -.4666 | .231 | 10 | -.4681 | .431 | 120 | -.4832 | 1.131 | 130 | -.5128 | 0.000 | | 1.0659 | .20 | 0.00 |
| 11 | .161 | 80 | -.4524 | .231 | 0 | -.4300 | .431 | 110 | -.4729 | 1.131 | 120 | -.5078 | 0.000 | | .9385 | .30 | 0.00 |
| 12 | .161 | 70 | -.4584 | .331 | 180 | -.4690 | .431 | 100 | -.4817 | 1.131 | 110 | -.5152 | 0.000 | | .6979 | .40 | 0.00 |
| 13 | .161 | 60 | -.4472 | .331 | 170 | -.4718 | .431 | 90 | -.4751 | 1.131 | 100 | -.5229 | 0.000 | | .6352 | .45 | 0.00 |
| 14 | .161 | 50 | -.4599 | .331 | 160 | -.4811 | .431 | 80 | -.4760 | 1.131 | 90 | -.5217 | 0.000 | | 1.1176 | 0.00 | .10 |
| 15 | .161 | 40 | -.4744 | .331 | 150 | -.4713 | .431 | 70 | -.4856 | 1.131 | 80 | -.5263 | 0.000 | | 1.0627 | 0.00 | .20 |
| 16 | .161 | 30 | -.4543 | .331 | 140 | -.4561 | .431 | 60 | -.4692 | 1.131 | 70 | -.5121 | 0.000 | | .9334 | 0.00 | .30 |
| 17 | .161 | 20 | -.4688 | .331 | 130 | -.4830 | .431 | 50 | -.4935 | 1.131 | 60 | -.5217 | 0.000 | | .6835 | 0.00 | .40 |
| 18 | .161 | 10 | -.4427 | .331 | 120 | -.4787 | .431 | 40 | -.4769 | 1.131 | 50 | -.5253 | 0.000 | | .6589 | 0.00 | .45 |
| 19 | .161 | 0 | -.4651 | .331 | 110 | -.4716 | .431 | 30 | -.4832 | 1.131 | 40 | -.5210 | .161 | 270 | -.4680 | | |
| 20 | .231 | 180 | -.4774 | .331 | 100 | -.4720 | .431 | 20 | -.4810 | 1.131 | 30 | -.5215 | .231 | 270 | -.4672 | | |
| 21 | .231 | 170 | -.4817 | .331 | 90 | -.4651 | .431 | 10 | -.4723 | 1.131 | 20 | -.5253 | .331 | 270 | -.4858 | | |
| 22 | .231 | 160 | -.4737 | .331 | 80 | -.4718 | .431 | 0 | -.4784 | 1.131 | 10 | -.5215 | .431 | 270 | -.4799 | | |
| 23 | .231 | 150 | -.4580 | .331 | 70 | -.4531 | .531 | 180 | -.4784 | 1.131 | 0 | -.5212 | .531 | 270 | -.4945 | | |
| 24 | .231 | 140 | -.4670 | .331 | 60 | -.4748 | .531 | 90 | -.4880 | | | .731 | .270 | 270 | -.5087 | | |
| 25 | .231 | 130 | -.4800 | .331 | 50 | -.4594 | .531 | 0 | -.4935 | 1.631 | 90 | -.3236 | .931 | 270 | -.5341 | | |
| 26 | .231 | 120 | -.4722 | .331 | 40 | -.4876 | .731 | 180 | -.5235 | 1.631 | 0 | -.1240 | 1.131 | 270 | -.5214 | | |
| 27 | .231 | 110 | -.4739 | .331 | 30 | -.4655 | .731 | 90 | -.5073 | 2.131 | 180 | -.0574 | 1.631 | 270 | -.3233 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 186 ALPHA -1 MACH .822 U 647.106 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D |
| 1 | .161 | 180 | -.4757 | .231 | 100 | -.4550 | .331 | 20 | -.4246 | .731 | 0 | -.4590 | 2.131 | 90 | -.0839 | | |
| 2 | .161 | 170 | -.4727 | .231 | 90 | -.4767 | .331 | 10 | -.4328 | .931 | 190 | -.1051 | 2.131 | 0 | -.2107 | | |
| 3 | .161 | 160 | -.4938 | .231 | 80 | -.4599 | .331 | 0 | -.4350 | .931 | 90 | -.5192 | 0.000 | | .7272 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4727 | .231 | 70 | -.4412 | .431 | 180 | -.4870 | .931 | 0 | -.1768 | 0.000 | | .7382 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4795 | .231 | 60 | -.4367 | .431 | 170 | -.5050 | 1.131 | 180 | -.5353 | 0.000 | | .9752 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4791 | .231 | 50 | -.4331 | .431 | 160 | -.4735 | 1.131 | 170 | -.5043 | 0.000 | | 1.1124 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5005 | .231 | 40 | -.4613 | .431 | 150 | -.5152 | 1.131 | 160 | -.5419 | 0.000 | | 1.1701 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4671 | .231 | 30 | -.4436 | .431 | 140 | -.4916 | 1.131 | 150 | -.5272 | 0.000 | | 1.1915 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4618 | .231 | 20 | -.4356 | .431 | 130 | -.4903 | 1.131 | 140 | -.5136 | 0.000 | | 1.1772 | .10 | 0.00 |
| 10 | .161 | 90 | -.4701 | .231 | 10 | -.4182 | .431 | 120 | -.4951 | 1.131 | 130 | -.5192 | 0.000 | | 1.1212 | .20 | 0.00 |
| 11 | .161 | 80 | -.4476 | .231 | 0 | -.4098 | .431 | 110 | -.4720 | 1.131 | 120 | -.5023 | 0.000 | | 1.0058 | .30 | 0.00 |
| 12 | .161 | 70 | -.4681 | .331 | 180 | -.5028 | .431 | 100 | -.4934 | 1.131 | 110 | -.5353 | 0.000 | | .7607 | .40 | 0.00 |
| 13 | .161 | 60 | -.4382 | .331 | 170 | -.4905 | .431 | 90 | -.4720 | 1.131 | 100 | -.5130 | 0.000 | | .7127 | .45 | 0.00 |
| 14 | .161 | 50 | -.4429 | .331 | 160 | -.4985 | .431 | 80 | -.4707 | 1.131 | 90 | -.5204 | 0.000 | | 1.1725 | 0.00 | .10 |
| 15 | .161 | 40 | -.4901 | .331 | 150 | -.5130 | .431 | 70 | -.4824 | 1.131 | 80 | -.5361 | 0.000 | | 1.1055 | 0.00 | .20 |
| 16 | .161 | 30 | -.4261 | .331 | 140 | -.4827 | .431 | 60 | -.4458 | 1.131 | 70 | -.4952 | 0.000 | | .9866 | 0.00 | .30 |
| 17 | .161 | 20 | -.4012 | .331 | 130 | -.4744 | .431 | 50 | -.4467 | 1.131 | 60 | -.4991 | 0.000 | | .7497 | 0.00 | .40 |
| 18 | .161 | 10 | -.4151 | .331 | 120 | -.4791 | .431 | 40 | -.4502 | 1.131 | 50 | -.4985 | 0.000 | | .7463 | 0.00 | .45 |
| 19 | .161 | 0 | -.4297 | .331 | 110 | -.4776 | .431 | 30 | -.4449 | 1.131 | 40 | -.5113 | .161 | 270 | -.4601 | | |
| 20 | .231 | 180 | -.4831 | .331 | 100 | -.4637 | .431 | 20 | -.4217 | 1.131 | 30 | -.4971 | .231 | 270 | -.4615 | | |
| 21 | .231 | 170 | -.4918 | .331 | 90 | -.4671 | .431 | 10 | -.4385 | 1.131 | 20 | -.4910 | .331 | 270 | -.4715 | | |
| 22 | .231 | 160 | -.4983 | .331 | 80 | -.4769 | .431 | 0 | -.4466 | 1.131 | 10 | -.5081 | .431 | 270 | -.4954 | | |
| 23 | .231 | 150 | -.4795 | .331 | 70 | -.4611 | .531 | 180 | -.4947 | 1.131 | 0 | -.5107 | .531 | 270 | -.4852 | | |
| 24 | .231 | 140 | -.4716 | .331 | 60 | -.4447 | .531 | 90 | -.4643 | | | | .731 | 270 | -.4935 | | |
| 25 | .231 | 130 | -.4808 | .331 | 50 | -.4539 | .531 | 0 | -.4541 | 1.631 | 90 | .2213 | .931 | 270 | -.5150 | | |
| 26 | .231 | 120 | -.4731 | .331 | 40 | -.4448 | .731 | 180 | -.4521 | 1.631 | 0 | -.0936 | 1.131 | 270 | -.5226 | | |
| 27 | .231 | 110 | -.4772 | .331 | 30 | -.4492 | .731 | 90 | -.4959 | 2.131 | 180 | -.1583 | 1.631 | 270 | -.4105 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 187 ALPHA 0 MACH .822 U 646.815 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D |
| 1 | .161 | 180 | -.4802 | .231 | 100 | -.4734 | .331 | 20 | -.4741 | .731 | 0 | -.4980 | 2.131 | 90 | -.0924 | | |
| 2 | .161 | 170 | -.4704 | .231 | 90 | -.4613 | .331 | 10 | -.4686 | .931 | 180 | -.0903 | 2.131 | 0 | -.2435 | | |
| 3 | .161 | 160 | -.4563 | .231 | 80 | -.4544 | .331 | 0 | -.4734 | .931 | 90 | -.4986 | 0.000 | | .7286 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4390 | .231 | 70 | -.4464 | .431 | 180 | -.4600 | .931 | 0 | -.2577 | 0.000 | | .7315 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4740 | .231 | 60 | -.4624 | .431 | 170 | -.4725 | 1.131 | 180 | -.5173 | 0.000 | | .9857 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4603 | .231 | 50 | -.4636 | .431 | 160 | -.4740 | 1.131 | 170 | -.5080 | 0.000 | | 1.1188 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4582 | .231 | 40 | -.4522 | .431 | 150 | -.4769 | 1.131 | 160 | -.5161 | 0.000 | | 1.1687 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4634 | .231 | 30 | -.4428 | .431 | 140 | -.4884 | 1.131 | 150 | -.5090 | 0.000 | | 1.1877 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4383 | .231 | 20 | -.4520 | .431 | 130 | -.4567 | 1.131 | 140 | -.4958 | 0.000 | | 1.1729 | .10 | 0.00 |
| 10 | .161 | 90 | -.4513 | .231 | 10 | -.4482 | .431 | 120 | -.4665 | 1.131 | 130 | -.5050 | 0.000 | | 1.1131 | .20 | 0.00 |
| 11 | .161 | 80 | -.4508 | .231 | 0 | -.4562 | .431 | 110 | -.4672 | 1.131 | 120 | -.5068 | 0.000 | | .9900 | .30 | 0.00 |
| 12 | .161 | 70 | -.4424 | .331 | 180 | -.4645 | .431 | 100 | -.4562 | 1.131 | 110 | -.5030 | 0.000 | | .7577 | .40 | 0.00 |
| 13 | .161 | 60 | -.4466 | .331 | 170 | -.4506 | .431 | 90 | -.4494 | 1.131 | 100 | -.4929 | 0.000 | | .7103 | .45 | 0.00 |
| 14 | .161 | 50 | -.4661 | .331 | 160 | -.4992 | .431 | 80 | -.4807 | 1.131 | 90 | -.5209 | 0.000 | | 1.1664 | 0.00 | .10 |
| 15 | .161 | 40 | -.4515 | .331 | 150 | -.4734 | .431 | 70 | -.4679 | 1.131 | 80 | -.5147 | 0.000 | | 1.1151 | 0.00 | .20 |
| 16 | .161 | 30 | -.4398 | .331 | 140 | -.4691 | .431 | 60 | -.4690 | 1.131 | 70 | -.5157 | 0.000 | | .9457 | 0.00 | .30 |
| 17 | .161 | 20 | -.4471 | .331 | 130 | -.4700 | .431 | 50 | -.4697 | 1.131 | 60 | -.5109 | 0.000 | | .7444 | 0.00 | .40 |
| 18 | .161 | 10 | -.4724 | .331 | 120 | -.4642 | .431 | 40 | -.4771 | 1.131 | 50 | -.5151 | 0.000 | | .7348 | 0.00 | .45 |
| 19 | .161 | 0 | -.4199 | .331 | 110 | -.4518 | .431 | 30 | -.4518 | 1.131 | 40 | -.4865 | .161 | 270 | -.4269 | | |
| 20 | .231 | 180 | -.4551 | .331 | 100 | -.4428 | .431 | 20 | -.4509 | 1.131 | 30 | -.5012 | .231 | 270 | -.4475 | | |
| 21 | .231 | 170 | -.4536 | .331 | 90 | -.4486 | .431 | 10 | -.4630 | 1.131 | 20 | -.4972 | .331 | 270 | -.4653 | | |
| 22 | .231 | 160 | -.4444 | .331 | 80 | -.4510 | .431 | 0 | -.4575 | 1.131 | 10 | -.5032 | .431 | 270 | -.4600 | | |
| 23 | .231 | 150 | -.4500 | .331 | 70 | -.4529 | .531 | 180 | -.4721 | 1.131 | 0 | -.5125 | .531 | 270 | -.4765 | | |
| 24 | .231 | 140 | -.4610 | .331 | 60 | -.4660 | .531 | 90 | -.4776 | | | | .731 | 270 | -.4843 | | |
| 25 | .231 | 130 | -.4704 | .331 | 50 | -.4580 | .531 | 0 | -.4721 | 1.631 | 90 | .0398 | .931 | 270 | -.4998 | | |
| 26 | .231 | 120 | -.4616 | .331 | 40 | -.4536 | .731 | 180 | -.4910 | 1.631 | 0 | -.0789 | 1.131 | 270 | -.5086 | | |
| 27 | .231 | 110 | -.4594 | .331 | 30 | -.4656 | .731 | 90 | -.4904 | 2.131 | 180 | -.1848 | 1.631 | 270 | -.4134 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|---------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 23 POINT 188 ALPHA 2 MACH .821 J 646.597 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.3869 | .231 | 100 | -.4662 | .331 | 20 | -.5059 | .731 | 0 | -.5300 | 2.131 | 90 | -.0899 | | |
| 2 | .161 | 170 | -.4037 | .231 | 90 | -.4901 | .331 | 10 | -.5270 | .931 | 180 | -.0967 | 2.131 | 0 | -.0536 | | |
| 3 | .161 | 160 | -.4127 | .231 | 80 | -.5168 | .331 | 0 | -.5277 | .931 | 90 | -.5470 | 0.000 | | .7413 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4220 | .231 | 70 | -.5081 | .431 | 180 | -.4418 | .931 | 0 | -.3135 | 0.000 | | .7711 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4240 | .231 | 60 | -.5299 | .431 | 170 | -.4498 | 1.131 | 180 | -.5284 | 0.000 | | 1.0032 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4400 | .231 | 50 | -.5259 | .431 | 160 | -.4495 | 1.131 | 170 | -.5230 | 0.000 | | 1.1215 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4647 | .231 | 40 | -.5243 | .431 | 150 | -.44595 | 1.131 | 160 | -.5212 | 0.000 | | 1.1757 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4837 | .231 | 30 | -.5233 | .431 | 140 | -.4575 | 1.131 | 150 | -.5081 | 0.000 | | 1.1338 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4739 | .231 | 20 | -.5190 | .431 | 130 | -.4637 | 1.131 | 140 | -.5143 | 0.000 | | 1.1335 | .10 | 0.00 |
| 10 | .161 | 90 | -.5125 | .231 | 10 | -.5426 | .431 | 120 | -.5052 | 1.131 | 130 | -.5405 | 0.000 | | 1.0342 | .20 | 0.00 |
| 11 | .161 | 80 | -.4995 | .231 | 0 | -.5239 | .431 | 110 | -.4824 | 1.131 | 120 | -.5157 | 0.000 | | .9658 | .30 | 0.00 |
| 12 | .161 | 70 | -.5078 | .331 | 180 | -.4145 | .431 | 100 | -.4436 | 1.131 | 110 | -.5167 | 0.000 | | .7335 | .40 | 0.00 |
| 13 | .161 | 60 | -.5174 | .331 | 170 | -.4452 | .431 | 90 | -.5081 | 1.131 | 100 | -.5371 | 0.000 | | .6881 | .45 | 0.00 |
| 14 | .161 | 50 | -.5115 | .331 | 160 | -.4281 | .431 | 80 | -.5053 | 1.131 | 90 | -.5411 | 0.000 | | 1.1677 | 0.00 | .10 |
| 15 | .161 | 40 | -.5301 | .331 | 150 | -.4404 | .431 | 70 | -.5205 | 1.131 | 80 | -.5528 | 0.000 | | 1.1076 | 0.00 | .20 |
| 16 | .161 | 30 | -.5320 | .331 | 140 | -.4584 | .431 | 60 | -.5284 | 1.131 | 70 | -.5534 | 0.000 | | .9774 | 0.00 | .30 |
| 17 | .161 | 20 | -.5165 | .331 | 130 | -.4769 | .431 | 50 | -.5163 | 1.131 | 60 | -.5466 | 0.000 | | .7454 | 0.00 | .40 |
| 18 | .161 | 10 | -.5190 | .331 | 120 | -.4602 | .431 | 40 | -.5248 | 1.131 | 50 | -.5250 | 0.000 | | .7296 | 0.00 | .45 |
| 19 | .161 | 0 | -.5284 | .331 | 110 | -.4954 | .431 | 30 | -.5343 | 1.131 | 40 | -.5552 | .161 | 270 | -.5027 | | |
| 20 | .231 | 180 | -.4163 | .331 | 100 | -.4934 | .431 | 20 | -.5308 | 1.131 | 30 | -.5486 | .231 | 270 | -.5021 | | |
| 21 | .231 | 170 | -.4078 | .331 | 90 | -.5045 | .431 | 10 | -.5297 | 1.131 | 20 | -.5341 | .331 | 270 | -.4986 | | |
| 22 | .231 | 160 | -.4201 | .331 | 80 | -.5092 | .431 | 0 | -.5306 | 1.131 | 10 | -.5443 | .431 | 270 | -.5053 | | |
| 23 | .231 | 150 | -.4183 | .331 | 70 | -.5255 | .531 | 180 | -.4495 | 1.131 | 0 | -.5284 | .531 | 270 | -.5096 | | |
| 24 | .231 | 140 | -.4637 | .331 | 60 | -.5239 | .531 | 90 | -.5169 | | | .731 | 270 | -.5135 | | | |
| 25 | .231 | 130 | -.4519 | .331 | 50 | -.5204 | .531 | 0 | -.5348 | 1.631 | 90 | -.0830 | .931 | 270 | -.5401 | | |
| 26 | .231 | 120 | -.4748 | .331 | 40 | -.5295 | .731 | 180 | -.4892 | 1.631 | 0 | -.1136 | 1.131 | 270 | -.5438 | | |
| 27 | .231 | 110 | -.4544 | .331 | 30 | -.5092 | .731 | 90 | -.5108 | 2.131 | 180 | -.1633 | 1.631 | 270 | -.3856 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| RUN 23 POINT 189 ALPHA 4 MACH .822 J 647.658 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4009 | .231 | 100 | -.5916 | .331 | 20 | -.6149 | .731 | 0 | -.6319 | 2.131 | 90 | -.1329 | | |
| 2 | .161 | 170 | -.3919 | .231 | 90 | -.5860 | .331 | 10 | -.6072 | .931 | 180 | -.1194 | 2.131 | 0 | .0642 | | |
| 3 | .161 | 160 | -.4250 | .231 | 80 | -.5985 | .331 | 0 | -.6257 | .931 | 90 | -.6174 | 0.000 | | .7530 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4709 | .231 | 70 | -.6974 | .431 | 180 | -.4726 | .931 | 0 | -.3481 | 0.000 | | .7932 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4801 | .231 | 60 | -.6503 | .431 | 170 | -.4719 | 1.131 | 180 | -.5110 | 0.000 | | 1.0349 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5235 | .231 | 50 | -.6327 | .431 | 160 | -.4825 | 1.131 | 170 | -.5307 | 0.000 | | 1.1457 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5466 | .231 | 40 | -.6256 | .431 | 150 | -.5026 | 1.131 | 160 | -.5325 | 0.000 | | 1.1861 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5711 | .231 | 30 | -.6244 | .431 | 140 | -.5262 | 1.131 | 150 | -.5426 | 0.000 | | 1.1896 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5711 | .231 | 20 | -.6025 | .431 | 130 | -.5264 | 1.131 | 140 | -.5361 | 0.000 | | 1.1551 | .10 | 0.00 |
| 10 | .161 | 90 | -.5990 | .231 | 10 | -.6188 | .431 | 120 | -.5736 | 1.131 | 130 | -.5800 | 0.000 | | 1.0798 | .20 | 0.00 |
| 11 | .161 | 80 | -.5971 | .231 | 0 | -.6251 | .431 | 110 | -.5906 | 1.131 | 120 | -.5740 | 0.000 | | .9404 | .30 | 0.00 |
| 12 | .161 | 70 | -.6955 | .331 | 180 | -.4405 | .431 | 100 | -.5992 | 1.131 | 110 | -.5730 | 0.000 | | .7103 | .40 | 0.00 |
| 13 | .161 | 60 | -.6243 | .331 | 170 | -.4659 | .431 | 90 | -.6078 | 1.131 | 100 | -.5649 | 0.000 | | .6569 | .45 | 0.00 |
| 14 | .161 | 50 | -.6131 | .331 | 160 | -.4601 | .431 | 80 | -.6197 | 1.131 | 90 | -.5585 | 0.000 | | 1.1524 | 0.00 | .10 |
| 15 | .161 | 40 | -.5967 | .331 | 150 | -.4746 | .431 | 70 | -.6089 | 1.131 | 80 | -.5255 | 0.000 | | 1.1071 | 0.00 | .20 |
| 16 | .161 | 30 | -.6004 | .331 | 140 | -.4940 | .431 | 60 | -.6310 | 1.131 | 70 | -.4742 | 0.000 | | .9765 | 0.00 | .30 |
| 17 | .161 | 20 | -.6088 | .331 | 130 | -.5269 | .431 | 50 | -.6217 | 1.131 | 60 | -.4778 | 0.000 | | .7245 | 0.00 | .40 |
| 18 | .161 | 10 | -.6145 | .331 | 120 | -.5594 | .431 | 40 | -.6327 | 1.131 | 50 | -.4495 | 0.000 | | .7238 | 0.00 | .45 |
| 19 | .161 | 0 | -.6007 | .331 | 110 | -.5874 | .431 | 30 | -.6290 | 1.131 | 40 | -.4404 | .161 | 270 | -.5771 | | |
| 20 | .231 | 180 | -.4204 | .331 | 100 | -.6142 | .431 | 20 | -.6369 | 1.131 | 30 | -.4466 | .231 | 270 | -.5871 | | |
| 21 | .231 | 170 | -.4215 | .331 | 90 | -.5941 | .431 | 10 | -.6252 | 1.131 | 20 | -.4619 | .331 | 270 | -.5877 | | |
| 22 | .231 | 160 | -.4642 | .331 | 80 | -.6233 | .431 | 0 | -.6407 | 1.131 | 10 | -.4495 | .431 | 270 | -.5824 | | |
| 23 | .231 | 150 | -.4752 | .331 | 70 | -.6271 | .531 | 180 | -.4859 | 1.131 | 0 | -.4456 | .531 | 270 | -.5630 | | |
| 24 | .231 | 140 | -.4950 | .331 | 60 | -.6488 | .531 | 90 | -.6250 | | | .731 | 270 | -.6018 | | | |
| 25 | .231 | 130 | -.5230 | .331 | 50 | -.6311 | .531 | 0 | -.6407 | 1.631 | 90 | -.1027 | .931 | 270 | -.5861 | | |
| 26 | .231 | 120 | -.5376 | .331 | 40 | -.6197 | .731 | 180 | -.5035 | 1.631 | 0 | -.1176 | 1.131 | 270 | -.5412 | | |
| 27 | .231 | 110 | -.5792 | .331 | 30 | -.6251 | .731 | 90 | -.6197 | 2.131 | 180 | -.1389 | 1.631 | 270 | -.2856 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 190 ALPHA 6 MACH .821 Q 646.922 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D |
| 1 | .161 | 180 | -.4254 | .231 | 100 | -.6588 | .331 | 20 | -.6790 | .731 | 0 | -.6232 | 2.131 | 90 | -.1447 | | |
| 2 | .161 | 170 | -.4243 | .231 | 90 | -.6483 | .331 | 10 | -.6841 | .931 | 180 | -.1463 | 2.131 | 0 | .0170 | | |
| 3 | .161 | 160 | -.4418 | .231 | 80 | -.6614 | .331 | 0 | -.6730 | .931 | 90 | -.6014 | 0.000 | | .7606 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4859 | .231 | 70 | -.7747 | .431 | 180 | -.4794 | .931 | 0 | -.3555 | 0.000 | | .8154 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5346 | .231 | 60 | -.6944 | .431 | 170 | -.5001 | 1.131 | 180 | -.5333 | 0.000 | | 1.0544 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5667 | .231 | 50 | -.6634 | .431 | 160 | -.5015 | 1.131 | 170 | -.5215 | 0.000 | | 1.1558 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6046 | .231 | 40 | -.7274 | .431 | 150 | -.5488 | 1.131 | 160 | -.5583 | 0.000 | | 1.1863 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6189 | .231 | 30 | -.6864 | .431 | 140 | -.5598 | 1.131 | 150 | -.5434 | 0.000 | | 1.1791 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7070 | .231 | 20 | -.6811 | .431 | 130 | -.5876 | 1.131 | 140 | -.5603 | 0.000 | | 1.1351 | .10 | 0.00 |
| 10 | .161 | 90 | -.6337 | .231 | 10 | -.6824 | .431 | 120 | -.6242 | 1.131 | 130 | -.5948 | 0.000 | | 1.0458 | .20 | 0.00 |
| 11 | .161 | 80 | -.7187 | .231 | 0 | -.6821 | .431 | 110 | -.6407 | 1.131 | 120 | -.5766 | 0.000 | | .8938 | .30 | 0.00 |
| 12 | .161 | 70 | -.7311 | .331 | 180 | -.4527 | .431 | 100 | -.6614 | 1.131 | 110 | -.5718 | 0.000 | | .6803 | .40 | 0.00 |
| 13 | .161 | 60 | -.6972 | .331 | 170 | -.4701 | .431 | 90 | -.6750 | 1.131 | 100 | -.5315 | 0.000 | | .6208 | .45 | 0.00 |
| 14 | .161 | 50 | -.6754 | .331 | 160 | -.4967 | .431 | 80 | -.6730 | 1.131 | 90 | -.4504 | 0.000 | | 1.1666 | 0.00 | .10 |
| 15 | .161 | 40 | -.6837 | .331 | 150 | -.5170 | .431 | 70 | -.7048 | 1.131 | 80 | -.3847 | 0.000 | | 1.1038 | 0.00 | .20 |
| 16 | .161 | 30 | -.6757 | .331 | 140 | -.5680 | .431 | 60 | -.6898 | 1.131 | 70 | -.3896 | 0.000 | | .9570 | 0.00 | .30 |
| 17 | .161 | 20 | -.6790 | .331 | 130 | -.5832 | .431 | 50 | -.6979 | 1.131 | 60 | -.3521 | 0.000 | | .6928 | 0.00 | .40 |
| 18 | .161 | 10 | -.6721 | .331 | 120 | -.6142 | .431 | 40 | -.6889 | 1.131 | 50 | -.3670 | 0.000 | | .6944 | 0.00 | .45 |
| 19 | .161 | 0 | -.6857 | .331 | 110 | -.6621 | .431 | 30 | -.7063 | 1.131 | 40 | -.3376 | .161 | 270 | -.6721 | | |
| 20 | .231 | 180 | -.4238 | .331 | 100 | -.6755 | .431 | 20 | -.6942 | 1.131 | 30 | -.3004 | .231 | 270 | -.6390 | | |
| 21 | .231 | 170 | -.4426 | .331 | 90 | -.6612 | .431 | 10 | -.6920 | 1.131 | 20 | -.2959 | .331 | 270 | -.6513 | | |
| 22 | .231 | 160 | -.4657 | .331 | 80 | -.6877 | .431 | 0 | -.6927 | 1.131 | 10 | -.2679 | .431 | 270 | -.6666 | | |
| 23 | .231 | 150 | -.5018 | .331 | 70 | -.7314 | .531 | 180 | -.5129 | 1.131 | 0 | -.2885 | .531 | 270 | -.6635 | | |
| 24 | .231 | 140 | -.5236 | .331 | 60 | -.7158 | .531 | 90 | -.6920 | | | | .731 | 270 | -.6601 | | |
| 25 | .231 | 130 | -.5577 | .331 | 50 | -.6721 | .531 | 0 | -.6827 | 1.631 | 90 | -.0551 | .931 | 270 | -.6064 | | |
| 26 | .231 | 120 | -.6088 | .331 | 40 | -.6933 | .731 | 180 | -.5499 | 1.631 | 0 | -.1495 | 1.131 | 270 | -.4891 | | |
| 27 | .231 | 110 | -.6297 | .331 | 30 | -.6857 | .731 | 90 | -.6759 | 2.131 | 180 | -.0815 | 1.631 | 270 | -.1784 | | |

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OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 191 ALPHA 8 MACH .823 Q 648.170 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D |
| 1 | .161 | 180 | -.4332 | .231 | 100 | -.6809 | .331 | 20 | -.7594 | .731 | 0 | -.5332 | 2.131 | 90 | -.1655 | | |
| 2 | .161 | 170 | -.4295 | .231 | 90 | -.6997 | .331 | 10 | -.7673 | .931 | 180 | -.1577 | 2.131 | 0 | -.0075 | | |
| 3 | .161 | 160 | -.4704 | .231 | 80 | -.7848 | .331 | 0 | -.7667 | .931 | 90 | -.5756 | 0.000 | | .7691 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4866 | .231 | 70 | -.7734 | .431 | 180 | -.4958 | .931 | 0 | -.3165 | 0.000 | | .8370 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5514 | .231 | 60 | -.7546 | .431 | 170 | -.5132 | 1.131 | 180 | -.5436 | 0.000 | | 1.0717 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6017 | .231 | 50 | -.7577 | .431 | 160 | -.5357 | 1.131 | 170 | -.5412 | 0.000 | | 1.1666 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6582 | .231 | 40 | -.7504 | .431 | 150 | -.5753 | 1.131 | 160 | -.5468 | 0.000 | | 1.1890 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6782 | .231 | 30 | -.7294 | .431 | 140 | -.5931 | 1.131 | 150 | -.5738 | 0.000 | | 1.1674 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6861 | .231 | 20 | -.7506 | .431 | 130 | -.6397 | 1.131 | 140 | -.5916 | 0.000 | | 1.1135 | .10 | 0.00 |
| 10 | .161 | 90 | -.6733 | .231 | 10 | -.7307 | .431 | 120 | -.6371 | 1.131 | 130 | -.5764 | 0.000 | | 1.0293 | .20 | 0.00 |
| 11 | .161 | 80 | -.6798 | .231 | 0 | -.7401 | .431 | 110 | -.6686 | 1.131 | 120 | -.5703 | 0.000 | | .8682 | .30 | 0.00 |
| 12 | .161 | 70 | -.7353 | .331 | 180 | -.4686 | .431 | 100 | -.6876 | 1.131 | 110 | -.5386 | 0.000 | | .6490 | .40 | 0.00 |
| 13 | .161 | 60 | -.7791 | .331 | 170 | -.4799 | .431 | 90 | -.6930 | 1.131 | 100 | -.4879 | 0.000 | | .5621 | .45 | 0.00 |
| 14 | .161 | 50 | -.7295 | .331 | 160 | -.5113 | .431 | 80 | -.7071 | 1.131 | 90 | -.4266 | 0.000 | | 1.1513 | 0.00 | .10 |
| 15 | .161 | 40 | -.7184 | .331 | 150 | -.5233 | .431 | 70 | -.7077 | 1.131 | 80 | -.3659 | 0.000 | | 1.0915 | 0.00 | .20 |
| 16 | .161 | 30 | -.7557 | .331 | 140 | -.5779 | .431 | 60 | -.7395 | 1.131 | 70 | -.3507 | 0.000 | | .9618 | 0.00 | .30 |
| 17 | .161 | 20 | -.7353 | .331 | 130 | -.6044 | .431 | 50 | -.7269 | 1.131 | 60 | -.3143 | 0.000 | | .7150 | 0.00 | .40 |
| 18 | .161 | 10 | -.7465 | .331 | 120 | -.6321 | .431 | 40 | -.7389 | 1.131 | 50 | -.2427 | 0.000 | | .6855 | 0.00 | .45 |
| 19 | .161 | 0 | -.7519 | .331 | 110 | -.6558 | .431 | 30 | -.7408 | 1.131 | 40 | -.1979 | .161 | 270 | -.7080 | | |
| 20 | .231 | 180 | -.4489 | .331 | 100 | -.6797 | .431 | 20 | -.7344 | 1.131 | 30 | -.1907 | .231 | 270 | -.7039 | | |
| 21 | .231 | 170 | -.4500 | .331 | 90 | -.6746 | .431 | 10 | -.7349 | 1.131 | 20 | -.1181 | .331 | 270 | -.6821 | | |
| 22 | .231 | 160 | -.4754 | .331 | 80 | -.7070 | .431 | 0 | -.7391 | 1.131 | 10 | -.0934 | .431 | 270 | -.6868 | | |
| 23 | .231 | 150 | -.5143 | .331 | 70 | -.7129 | .531 | 180 | -.5273 | 1.131 | 0 | -.1308 | .531 | 270 | -.6909 | | |
| 24 | .231 | 140 | -.5498 | .331 | 60 | -.7440 | .531 | 90 | -.6983 | | | | .731 | 270 | -.6906 | | |
| 25 | .231 | 130 | -.6024 | .331 | 50 | -.7535 | .531 | 0 | -.7111 | 1.631 | 90 | .0163 | .931 | 270 | -.5802 | | |
| 26 | .231 | 120 | -.6612 | .331 | 40 | -.7309 | .731 | 180 | -.5534 | 1.631 | 0 | -.1553 | 1.131 | 270 | -.4266 | | |
| 27 | .231 | 110 | -.6834 | .331 | 30 | -.7716 | .731 | 90 | -.6998 | 2.131 | 180 | -.0954 | 1.631 | 270 | -.1743 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 192 ALPHA 10 MACH .822 J 647.049 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4263 | .231 | 100 | -.6887 | .331 | 20 | -.7837 | .731 | 0 | -.3099 | 2.131 | 90 | -.1702 | | |
| 2 | .161 | 170 | -.4532 | .231 | 90 | -.7323 | .331 | 10 | -.7833 | .931 | 180 | -.1597 | 2.131 | 0 | .0065 | | |
| 3 | .161 | 160 | -.4906 | .231 | 80 | -.7424 | .331 | 0 | -.7822 | .931 | 90 | -.5092 | 0.000 | | .7922 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5370 | .231 | 70 | -.7248 | .431 | 180 | -.5310 | .931 | 0 | -.3375 | 0.000 | | .8755 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5682 | .231 | 60 | -.8102 | .431 | 170 | -.5270 | 1.131 | 180 | -.5455 | 0.000 | | 1.0976 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5974 | .231 | 50 | -.9199 | .431 | 160 | -.5212 | 1.131 | 170 | -.5199 | 0.000 | | 1.1822 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6770 | .231 | 40 | -.8717 | .431 | 150 | -.5878 | 1.131 | 160 | -.5670 | 0.000 | | 1.1877 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6734 | .231 | 30 | -.8175 | .431 | 140 | -.5959 | 1.131 | 150 | -.5553 | 0.000 | | 1.1615 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7024 | .231 | 20 | -.8209 | .431 | 130 | -.6451 | 1.131 | 140 | -.5924 | 0.000 | | 1.0974 | .10 | 0.00 |
| 10 | .161 | 90 | -.7704 | .231 | 10 | -.8147 | .431 | 120 | -.6762 | 1.131 | 130 | -.5972 | 0.000 | | .9942 | .20 | 0.00 |
| 11 | .161 | 80 | -.7483 | .231 | 0 | -.8039 | .431 | 110 | -.6947 | 1.131 | 120 | -.5523 | 0.000 | | .8294 | .30 | 0.00 |
| 12 | .161 | 70 | -.6698 | .331 | 180 | -.4873 | .431 | 100 | -.6962 | 1.131 | 110 | -.5038 | 0.000 | | .6151 | .40 | 0.00 |
| 13 | .161 | 60 | -.10961 | .331 | 170 | -.4928 | .431 | 90 | -.7026 | 1.131 | 100 | -.4909 | 0.000 | | .4896 | .45 | 0.00 |
| 14 | .161 | 50 | -.9023 | .331 | 160 | -.5229 | .431 | 80 | -.7429 | 1.131 | 90 | -.3725 | 0.000 | | 1.1380 | 0.00 | .10 |
| 15 | .161 | 40 | -.8892 | .331 | 150 | -.5495 | .431 | 70 | -.7509 | 1.131 | 80 | -.3341 | 0.000 | | 1.0327 | 0.00 | .20 |
| 16 | .161 | 30 | -.8186 | .331 | 140 | -.5841 | .431 | 60 | -.7293 | 1.131 | 70 | -.2805 | 0.000 | | .9464 | 0.00 | .30 |
| 17 | .161 | 20 | -.8063 | .331 | 130 | -.6215 | .431 | 50 | -.6801 | 1.131 | 60 | -.2400 | 0.000 | | .6896 | 0.00 | .40 |
| 18 | .161 | 10 | -.7923 | .331 | 120 | -.6612 | .431 | 40 | -.6898 | 1.131 | 50 | -.2161 | 0.000 | | .6825 | 0.00 | .45 |
| 19 | .161 | 0 | -.8183 | .331 | 110 | -.6976 | .431 | 30 | -.6898 | 1.131 | 40 | -.1549 | .161 | 270 | -.7532 | | |
| 20 | .231 | 180 | -.4767 | .331 | 100 | -.7071 | .431 | 20 | -.7200 | 1.131 | 30 | -.1168 | .231 | 270 | -.7354 | | |
| 21 | .231 | 170 | -.4731 | .331 | 90 | -.7301 | .431 | 10 | -.7149 | 1.131 | 20 | -.0842 | .331 | 270 | -.7042 | | |
| 22 | .231 | 160 | -.4756 | .331 | 80 | -.7346 | .431 | 0 | -.6951 | 1.131 | 10 | -.0721 | .431 | 270 | -.6942 | | |
| 23 | .231 | 150 | -.5444 | .331 | 70 | -.7493 | .531 | 180 | -.5534 | 1.131 | 0 | -.0431 | .531 | 270 | -.7132 | | |
| 24 | .231 | 140 | -.5804 | .331 | 60 | -.7620 | .531 | 90 | -.7292 | | | .731 | 270 | -.6645 | | | |
| 25 | .231 | 130 | -.6304 | .331 | 50 | -.8245 | .531 | 0 | -.5977 | 1.631 | 90 | -.0301 | .931 | 270 | -.5331 | | |
| 26 | .231 | 120 | -.6459 | .331 | 40 | -.7944 | .731 | 180 | -.5810 | 1.631 | 0 | -.1764 | 1.131 | 270 | -.3903 | | |
| 27 | .231 | 110 | -.6548 | .331 | 30 | -.7709 | .731 | 90 | -.6621 | 2.131 | 180 | -.1164 | 1.631 | 270 | -.2178 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 193 ALPHA 12 MACH .823 Q 647.799 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4705 | .231 | 100 | -.7010 | .331 | 20 | -.7614 | .731 | 0 | -.0980 | 2.131 | 90 | -.1877 | | |
| 2 | .161 | 170 | -.4686 | .231 | 90 | -.7357 | .331 | 10 | -.7574 | .931 | 180 | -.1979 | 2.131 | 0 | .0093 | | |
| 3 | .161 | 160 | -.5075 | .231 | 80 | -.7180 | .331 | 0 | -.7722 | .931 | 90 | -.5076 | 0.000 | | .7917 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5334 | .231 | 70 | -.6999 | .431 | 180 | -.5240 | .931 | 0 | -.3498 | 0.000 | | .9184 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5614 | .231 | 60 | -.8880 | .431 | 170 | -.5306 | 1.131 | 180 | -.5229 | 0.000 | | 1.1302 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6122 | .231 | 50 | -.8308 | .431 | 160 | -.5489 | 1.131 | 170 | -.5281 | 0.000 | | 1.1904 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6628 | .231 | 40 | -.8055 | .431 | 150 | -.5820 | 1.131 | 160 | -.5547 | 0.000 | | 1.1869 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6798 | .231 | 30 | -.8390 | .431 | 140 | -.6217 | 1.131 | 150 | -.5694 | 0.000 | | 1.1535 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.7052 | .231 | 20 | -.8324 | .431 | 130 | -.6308 | 1.131 | 140 | -.5591 | 0.000 | | 1.0800 | .10 | 0.00 |
| 10 | .161 | 90 | -.7250 | .231 | 10 | -.8371 | .431 | 120 | -.6469 | 1.131 | 130 | -.5318 | 0.000 | | .9676 | .20 | 0.00 |
| 11 | .161 | 80 | -.7299 | .231 | 0 | -.8411 | .431 | 110 | -.6769 | 1.131 | 120 | -.5446 | 0.000 | | .7974 | .30 | 0.00 |
| 12 | .161 | 70 | -.6783 | .331 | 180 | -.4973 | .431 | 100 | -.6935 | 1.131 | 110 | -.4982 | 0.000 | | .5807 | .40 | 0.00 |
| 13 | .161 | 60 | -.9802 | .331 | 170 | -.5333 | .431 | 90 | -.7201 | 1.131 | 100 | -.4574 | 0.000 | | .4284 | .45 | 0.00 |
| 14 | .161 | 50 | -.8737 | .331 | 160 | -.5422 | .431 | 80 | -.7307 | 1.131 | 90 | -.4012 | 0.000 | | 1.1314 | 0.00 | .10 |
| 15 | .161 | 40 | -.8458 | .331 | 150 | -.5793 | .431 | 70 | -.7343 | 1.131 | 80 | -.3653 | 0.000 | | 1.0747 | 0.00 | .20 |
| 16 | .161 | 30 | -.8216 | .331 | 140 | -.5970 | .431 | 60 | -.8387 | 1.131 | 70 | -.3039 | 0.000 | | .9435 | 0.00 | .30 |
| 17 | .161 | 20 | -.8472 | .331 | 130 | -.6309 | .431 | 50 | -.8187 | 1.131 | 60 | -.2671 | 0.000 | | .6694 | 0.00 | .40 |
| 18 | .161 | 10 | -.8553 | .331 | 120 | -.6564 | .431 | 40 | -.6065 | 1.131 | 50 | -.2152 | 0.000 | | .6874 | 0.00 | .45 |
| 19 | .161 | 0 | -.8548 | .331 | 110 | -.6725 | .431 | 30 | -.6154 | 1.131 | 40 | -.1563 | .161 | 270 | -.7652 | | |
| 20 | .231 | 180 | -.4866 | .331 | 100 | -.6961 | .431 | 20 | -.5933 | 1.131 | 30 | -.1334 | .231 | 270 | -.7489 | | |
| 21 | .231 | 170 | -.4716 | .331 | 90 | -.7151 | .431 | 10 | -.5842 | 1.131 | 20 | -.0801 | .331 | 270 | -.7145 | | |
| 22 | .231 | 160 | -.5174 | .331 | 80 | -.7383 | .431 | 0 | -.5527 | 1.131 | 10 | -.0576 | .431 | 270 | -.7007 | | |
| 23 | .231 | 150 | -.5628 | .331 | 70 | -.7513 | .531 | 180 | -.5621 | 1.131 | 0 | -.0548 | .531 | 270 | -.7185 | | |
| 24 | .231 | 140 | -.5927 | .331 | 60 | -.7352 | .531 | 90 | -.7073 | | | .731 | 270 | -.6315 | | | |
| 25 | .231 | 130 | -.6201 | .331 | 50 | -.7510 | .531 | 0 | -.3686 | 1.631 | 90 | .0367 | .931 | 270 | -.4813 | | |
| 26 | .231 | 120 | -.6477 | .331 | 40 | -.7352 | .731 | 180 | -.5778 | 1.631 | 0 | -.2048 | 1.131 | 270 | -.4033 | | |
| 27 | .231 | 110 | -.6574 | .331 | 30 | -.7415 | .731 | 90 | -.6186 | 2.131 | 180 | -.1010 | 1.631 | 270 | -.3075 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | RUN 23 POINT 194 ALPHA 14 MACH .822 J 647.142 | | | MODEL DOME FACE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|---|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D | | | |
| 1 | .161 | 180 | -.4797 | .231 | 100 | -.6596 | .331 | 20 | -.5108 | .731 | 0 | -.0755 | 2.131 | 90 | -.2298 | | | | | |
| 2 | .161 | 170 | -.4862 | .231 | 90 | -.7068 | .331 | 10 | -.4669 | .931 | 180 | -.2142 | 2.131 | 0 | .0089 | | | | | |
| 3 | .161 | 160 | -.5398 | .231 | 80 | -.6763 | .331 | 0 | -.4594 | .931 | 90 | -.4813 | 0.000 | | .8183 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.5515 | .231 | 70 | -.6635 | .431 | 180 | -.5317 | .931 | 0 | -.3608 | 0.000 | | .9479 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.5813 | .231 | 60 | -.8130 | .431 | 170 | -.5436 | 1.131 | 180 | -.5520 | 0.000 | | 1.1395 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.6011 | .231 | 50 | -.7561 | .431 | 160 | -.5403 | 1.131 | 170 | -.5444 | 0.000 | | 1.1904 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.6605 | .231 | 40 | -.8143 | .431 | 150 | -.6051 | 1.131 | 160 | -.5492 | 0.000 | | 1.1757 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.6267 | .231 | 30 | -.7782 | .431 | 140 | -.5866 | 1.131 | 150 | -.5583 | 0.000 | | 1.1299 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.6821 | .231 | 20 | -.7813 | .431 | 130 | -.6077 | 1.131 | 140 | -.5826 | 0.000 | | 1.0492 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.7236 | .231 | 10 | -.7704 | .431 | 120 | -.6492 | 1.131 | 130 | -.5951 | 0.000 | | .9235 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.7070 | .231 | 0 | -.7786 | .431 | 110 | -.6701 | 1.131 | 120 | -.5560 | 0.000 | | .7510 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.6868 | .331 | 160 | -.5027 | .431 | 100 | -.6461 | 1.131 | 110 | -.5126 | 0.000 | | .5425 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.4539 | .331 | 170 | -.5099 | .431 | 90 | -.6701 | 1.131 | 100 | -.4739 | 0.000 | | .4019 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.8257 | .331 | 160 | -.5304 | .431 | 80 | -.6675 | 1.131 | 90 | -.4608 | 0.000 | | 1.1081 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.8459 | .331 | 150 | -.5853 | .431 | 70 | -.6564 | 1.131 | 80 | -.4244 | 0.000 | | 1.0484 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.8925 | .331 | 140 | -.5770 | .431 | 60 | -.5150 | 1.131 | 70 | -.3479 | 0.000 | | .9281 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.8981 | .331 | 130 | -.6065 | .431 | 50 | -.5066 | 1.131 | 60 | -.2891 | 0.000 | | .6415 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.9639 | .331 | 120 | -.6778 | .431 | 40 | -.4255 | 1.131 | 50 | -.2426 | 0.000 | | .6726 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.9202 | .331 | 110 | -.6430 | .431 | 30 | -.3252 | 1.131 | 40 | -.1756 | .161 | 270 | -.7221 | | | | | |
| 20 | .231 | 180 | -.4797 | .331 | 100 | -.6584 | .431 | 20 | -.2555 | 1.131 | 30 | -.1200 | .231 | 270 | -.7031 | | | | | |
| 21 | .231 | 170 | -.4974 | .331 | 90 | -.6845 | .431 | 10 | -.2139 | 1.131 | 20 | -.0932 | .331 | 270 | -.7004 | | | | | |
| 22 | .231 | 160 | -.5259 | .331 | 80 | -.7010 | .431 | 0 | -.1885 | 1.131 | 10 | -.0675 | .431 | 270 | -.6773 | | | | | |
| 23 | .231 | 150 | -.5540 | .331 | 70 | -.7026 | .531 | 180 | -.5559 | 1.131 | 0 | -.0568 | .531 | 270 | -.6812 | | | | | |
| 24 | .231 | 140 | -.5764 | .331 | 60 | -.6595 | .531 | 90 | -.6544 | | | .731 | 270 | -.5875 | | | | | | |
| 25 | .231 | 130 | -.6231 | .331 | 50 | -.6571 | .531 | 0 | -.1086 | 1.631 | 90 | -.0049 | .931 | 270 | -.4891 | | | | | |
| 26 | .231 | 120 | -.6358 | .331 | 40 | -.6234 | .731 | 180 | -.5930 | 1.631 | 0 | -.2416 | 1.131 | 270 | -.4419 | | | | | |
| 27 | .231 | 110 | -.6522 | .331 | 30 | -.5427 | .731 | 90 | -.5881 | 2.131 | 180 | -.1031 | 1.631 | 270 | -.3866 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | RUN 23 POINT 195 ALPHA 16 MACH .822 U 647.522 | | | MODEL DOME FACE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|---|------|------|-----------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D | | | |
| 1 | .161 | 180 | -.4943 | .231 | 100 | -.6778 | .331 | 20 | -.2795 | .731 | 0 | -.0629 | 2.131 | 90 | -.2565 | | | | | |
| 2 | .161 | 170 | -.5015 | .231 | 90 | -.6468 | .331 | 10 | -.2241 | .931 | 180 | -.2875 | 2.131 | 0 | .0035 | | | | | |
| 3 | .161 | 160 | -.5239 | .231 | 80 | -.6680 | .331 | 0 | -.1965 | .931 | 90 | -.5168 | 0.000 | | .8413 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.5664 | .231 | 70 | -.6892 | .431 | 180 | -.5397 | .931 | 0 | -.3800 | 0.000 | | .9897 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.5700 | .231 | 60 | -.7258 | .431 | 170 | -.5370 | 1.131 | 180 | -.5792 | 0.000 | | 1.1483 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.5743 | .231 | 50 | -.7195 | .431 | 160 | -.5337 | 1.131 | 170 | -.5649 | 0.000 | | 1.1928 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.6436 | .231 | 40 | -.7456 | .431 | 150 | -.6005 | 1.131 | 160 | -.5794 | 0.000 | | 1.1663 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.6322 | .231 | 30 | -.7199 | .431 | 140 | -.6087 | 1.131 | 150 | -.6077 | 0.000 | | 1.1024 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.6605 | .231 | 20 | -.6452 | .431 | 130 | -.5959 | 1.131 | 140 | -.5810 | 0.000 | | 1.0130 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.6483 | .231 | 10 | -.5863 | .431 | 120 | -.6110 | 1.131 | 130 | -.6021 | 0.000 | | .8946 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.6452 | .231 | 0 | -.5796 | .431 | 110 | -.6048 | 1.131 | 120 | -.5840 | 0.000 | | .7155 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.7456 | .331 | 180 | -.4871 | .431 | 100 | -.5908 | 1.131 | 110 | -.5530 | 0.000 | | .3143 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.7813 | .331 | 170 | -.5304 | .431 | 90 | -.6312 | 1.131 | 100 | -.5488 | 0.000 | | .3538 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.8176 | .331 | 160 | -.5293 | .431 | 80 | -.6209 | 1.131 | 90 | -.5035 | 0.000 | | 1.0871 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.8250 | .331 | 150 | -.5557 | .431 | 70 | -.5679 | 1.131 | 80 | -.4611 | 0.000 | | 1.0260 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.8403 | .331 | 140 | -.5528 | .431 | 60 | -.4669 | 1.131 | 70 | -.3782 | 0.000 | | .8987 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.8699 | .331 | 130 | -.6075 | .431 | 50 | -.3868 | 1.131 | 60 | -.3219 | 0.000 | | .6114 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.8974 | .331 | 120 | -.6097 | .431 | 40 | -.2958 | 1.131 | 50 | -.2619 | 0.000 | | .6516 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.8953 | .331 | 110 | -.6144 | .431 | 30 | -.1787 | 1.131 | 40 | -.1754 | .161 | 270 | -.6734 | | | | | |
| 20 | .231 | 180 | -.5066 | .331 | 100 | -.6336 | .431 | 20 | -.1290 | 1.131 | 30 | -.1299 | .231 | 270 | -.6505 | | | | | |
| 21 | .231 | 170 | -.5073 | .331 | 90 | -.6467 | .431 | 10 | -.0723 | 1.131 | 20 | -.0792 | .331 | 270 | -.6491 | | | | | |
| 22 | .231 | 160 | -.5249 | .331 | 80 | -.6412 | .431 | 0 | -.0766 | 1.131 | 10 | -.0641 | .431 | 270 | -.6538 | | | | | |
| 23 | .231 | 150 | -.5426 | .331 | 70 | -.6249 | .531 | 180 | -.5412 | 1.131 | 0 | -.0489 | .531 | 270 | -.6085 | | | | | |
| 24 | .231 | 140 | -.5713 | .331 | 60 | -.5979 | .531 | 90 | -.6252 | | | .731 | 270 | -.5677 | | | | | | |
| 25 | .231 | 130 | -.6169 | .331 | 50 | -.5525 | .531 | 0 | -.0770 | 1.631 | 90 | -.0165 | .931 | 270 | -.5363 | | | | | |
| 26 | .231 | 120 | -.6501 | .331 | 40 | -.4934 | .731 | 180 | -.6076 | 1.631 | 0 | -.2856 | 1.131 | 270 | -.5293 | | | | | |
| 27 | .231 | 110 | -.6169 | .331 | 30 | -.3702 | .731 | 90 | -.5073 | 2.131 | 180 | -.1663 | 1.631 | 270 | -.4750 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 23 POINT 196 ALPHA 18 MACH .821 Q 645.922 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5155 | .231 | 100 | -.6434 | .331 | 20 | -.1016 | .731 | 0 | -.0034 | 2.131 | 90 | -.2930 | | |
| 2 | .161 | 170 | -.4464 | .231 | 90 | -.6048 | .331 | 10 | -.3774 | .931 | 180 | -.3012 | 2.131 | 0 | .0262 | | |
| 3 | .161 | 160 | -.5191 | .231 | 80 | -.6311 | .331 | 0 | -.0404 | .931 | 90 | -.5136 | 0.000 | | .8662 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5306 | .231 | 70 | -.6637 | .431 | 180 | -.5266 | .931 | 0 | -.3861 | 0.000 | | 1.0213 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5582 | .231 | 60 | -.6958 | .431 | 170 | -.5407 | 1.131 | 180 | -.5750 | 0.000 | | 1.1562 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5537 | .231 | 50 | -.6518 | .431 | 160 | -.5324 | 1.131 | 170 | -.5869 | 0.000 | | 1.1852 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5835 | .231 | 40 | -.6416 | .431 | 150 | -.5580 | 1.131 | 150 | -.5897 | 0.000 | | 1.1537 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5925 | .231 | 30 | -.5680 | .431 | 140 | -.5770 | 1.131 | 150 | -.5946 | 0.000 | | 1.0886 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6099 | .231 | 20 | -.4287 | .431 | 130 | -.5678 | 1.131 | 140 | -.5656 | 0.000 | | .9321 | .10 | 0.00 |
| 10 | .161 | 90 | -.6257 | .231 | 10 | -.3395 | .431 | 120 | -.5927 | 1.131 | 130 | -.6097 | 0.000 | | .8545 | .20 | 0.00 |
| 11 | .161 | 80 | -.6104 | .231 | 0 | -.3203 | .431 | 110 | -.5695 | 1.131 | 120 | -.5770 | 0.000 | | .6750 | .30 | 0.00 |
| 12 | .161 | 70 | -.7122 | .331 | 180 | -.5078 | .431 | 100 | -.5810 | 1.131 | 110 | -.5946 | 0.000 | | .4782 | .40 | 0.00 |
| 13 | .161 | 60 | -.7528 | .331 | 170 | -.5395 | .431 | 90 | -.6239 | 1.131 | 100 | -.5835 | 0.000 | | .3086 | .45 | 0.00 |
| 14 | .161 | 50 | -.7827 | .331 | 160 | -.5341 | .431 | 80 | -.5960 | 1.131 | 90 | -.5362 | 0.000 | | 1.0671 | 0.00 | .10 |
| 15 | .161 | 40 | -.7716 | .331 | 150 | -.5314 | .431 | 70 | -.4983 | 1.131 | 80 | -.5015 | 0.000 | | 1.0123 | 0.00 | .20 |
| 16 | .161 | 30 | -.8385 | .331 | 140 | -.5845 | .431 | 60 | -.4491 | 1.131 | 70 | -.4296 | 0.000 | | .8807 | 0.00 | .30 |
| 17 | .161 | 20 | -.8338 | .331 | 130 | -.6017 | .431 | 50 | -.3076 | 1.131 | 60 | -.3370 | 0.000 | | .5859 | 0.00 | .40 |
| 18 | .161 | 10 | -.8271 | .331 | 120 | -.5704 | .431 | 40 | -.1721 | 1.131 | 50 | -.2482 | 0.000 | | .6343 | 0.00 | .45 |
| 19 | .161 | 0 | -.7925 | .331 | 110 | -.5874 | .431 | 30 | -.0939 | 1.131 | 40 | -.1665 | .161 | 270 | -.6190 | | |
| 20 | .231 | 180 | -.5010 | .331 | 100 | -.6229 | .431 | 20 | -.0512 | 1.131 | 30 | -.0907 | .231 | 270 | -.6329 | | |
| 21 | .231 | 170 | -.4888 | .331 | 90 | -.5879 | .431 | 10 | -.0146 | 1.131 | 20 | -.0448 | .331 | 270 | -.5825 | | |
| 22 | .231 | 160 | -.5124 | .331 | 80 | -.6171 | .431 | 0 | -.0120 | 1.131 | 10 | -.0187 | .431 | 270 | -.5959 | | |
| 23 | .231 | 150 | -.5397 | .331 | 70 | -.5970 | .531 | 180 | -.5378 | 1.131 | 0 | -.0062 | .531 | 270 | -.5914 | | |
| 24 | .231 | 140 | -.5545 | .331 | 60 | -.5450 | .531 | 90 | -.5942 | | | | .731 | 270 | -.5332 | | |
| 25 | .231 | 130 | -.5855 | .331 | 50 | -.4369 | .531 | 0 | -.0141 | 1.631 | 90 | -.0239 | .931 | 270 | -.5334 | | |
| 26 | .231 | 120 | -.5907 | .331 | 40 | -.3143 | .731 | 180 | -.5981 | 1.631 | 0 | -.2563 | 1.131 | 270 | -.5541 | | |
| 27 | .231 | 110 | -.5707 | .331 | 30 | -.1825 | .731 | 90 | -.5261 | 2.131 | 180 | -.1995 | 1.631 | 270 | -.5663 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 23 POINT 197 ALPHA 20 MACH .820 Q 645.271 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5089 | .231 | 100 | -.6013 | .331 | 20 | -.0147 | .731 | 0 | .0412 | 2.131 | 90 | -.2850 | | |
| 2 | .161 | 170 | -.5056 | .231 | 90 | -.6061 | .331 | 10 | .0033 | .931 | 180 | -.2322 | 2.131 | 0 | .0435 | | |
| 3 | .161 | 160 | -.5075 | .231 | 80 | -.6153 | .331 | 0 | .0200 | .931 | 90 | -.5216 | 0.000 | | .8932 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5371 | .231 | 70 | -.6486 | .431 | 180 | -.5198 | .931 | 0 | -.3924 | 0.000 | | 1.0680 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5382 | .231 | 60 | -.6275 | .431 | 170 | -.5185 | 1.131 | 180 | -.5680 | 0.000 | | 1.1831 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5740 | .231 | 50 | -.6348 | .431 | 160 | -.5613 | 1.131 | 170 | -.6072 | 0.000 | | 1.1841 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5905 | .231 | 40 | -.5092 | .431 | 150 | -.5695 | 1.131 | 160 | -.6088 | 0.000 | | 1.1372 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5882 | .231 | 30 | -.2917 | .431 | 140 | -.5649 | 1.131 | 150 | -.6102 | 0.000 | | 1.0682 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5845 | .231 | 20 | -.1639 | .431 | 130 | -.5495 | 1.131 | 140 | -.5812 | 0.000 | | .9375 | .10 | 0.00 |
| 10 | .161 | 90 | -.5853 | .231 | 10 | -.1459 | .431 | 120 | -.5493 | 1.131 | 130 | -.6046 | 0.000 | | .8178 | .20 | 0.00 |
| 11 | .161 | 80 | -.6412 | .231 | 0 | -.1267 | .431 | 110 | -.5886 | 1.131 | 120 | -.6226 | 0.000 | | .6238 | .30 | 0.00 |
| 12 | .161 | 70 | -.6509 | .331 | 180 | -.5008 | .431 | 100 | -.5552 | 1.131 | 110 | -.6066 | 0.000 | | .4368 | .40 | 0.00 |
| 13 | .161 | 60 | -.7170 | .331 | 170 | -.5150 | .431 | 90 | -.5741 | 1.131 | 100 | -.6082 | 0.000 | | .2760 | .45 | 0.00 |
| 14 | .161 | 50 | -.7479 | .331 | 160 | -.5135 | .431 | 80 | -.5326 | 1.131 | 90 | -.5755 | 0.000 | | 1.0346 | 0.00 | .10 |
| 15 | .161 | 40 | -.7526 | .331 | 150 | -.5252 | .431 | 70 | -.4438 | 1.131 | 80 | -.5115 | 0.000 | | .9856 | 0.00 | .20 |
| 16 | .161 | 30 | -.7305 | .331 | 140 | -.5535 | .431 | 60 | -.3171 | 1.131 | 70 | -.4390 | 0.000 | | .8680 | 0.00 | .30 |
| 17 | .161 | 20 | -.7329 | .331 | 130 | -.5455 | .431 | 50 | -.2157 | 1.131 | 60 | -.3468 | 0.000 | | .6113 | 0.00 | .40 |
| 18 | .161 | 10 | -.7041 | .331 | 120 | -.5946 | .431 | 40 | -.1357 | 1.131 | 50 | -.2634 | 0.000 | | .6062 | 0.00 | .45 |
| 19 | .161 | 0 | -.6622 | .331 | 110 | -.5728 | .431 | 30 | -.0626 | 1.131 | 40 | -.1724 | .161 | 270 | -.6180 | | |
| 20 | .231 | 180 | -.5207 | .331 | 100 | -.6135 | .431 | 20 | -.0151 | 1.131 | 30 | -.0918 | .231 | 270 | -.6315 | | |
| 21 | .231 | 170 | -.5259 | .331 | 90 | -.6106 | .431 | 10 | .0207 | 1.131 | 20 | -.0349 | .331 | 270 | -.6272 | | |
| 22 | .231 | 160 | -.5113 | .331 | 80 | -.5904 | .431 | 0 | .0446 | 1.131 | 10 | .0107 | .431 | 270 | -.5731 | | |
| 23 | .231 | 150 | -.5310 | .331 | 70 | -.5659 | .531 | 180 | -.5385 | 1.131 | 0 | .0132 | .531 | 270 | -.5525 | | |
| 24 | .231 | 140 | -.5411 | .331 | 60 | -.4486 | .531 | 90 | -.5392 | | | | .731 | 270 | -.5117 | | |
| 25 | .231 | 130 | -.5417 | .331 | 50 | -.3165 | .531 | 0 | .0299 | 1.631 | 90 | -.1802 | .931 | 270 | -.5180 | | |
| 26 | .231 | 120 | -.5601 | .331 | 40 | -.1718 | .731 | 180 | -.5503 | 1.631 | 0 | -.3169 | 1.131 | 270 | -.5926 | | |
| 27 | .231 | 110 | -.5516 | .331 | 30 | -.0771 | .731 | 90 | -.5297 | 2.131 | 180 | -.2947 | 1.631 | 270 | -.6243 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 198 ALPHA 22 MACH .822 U 647.306 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D |
| 1 | .161 | 180 | -.4765 | .231 | 100 | -.5852 | .331 | 20 | .0360 | .731 | 0 | .0706 | 2.131 | 90 | -.3213 | | |
| 2 | .161 | 170 | -.4684 | .231 | 90 | -.5761 | .331 | 10 | .0642 | .931 | 180 | -.3317 | 2.131 | 0 | .0667 | | |
| 3 | .161 | 160 | -.4814 | .231 | 80 | -.6011 | .331 | 0 | .1017 | .931 | 90 | -.5219 | 0.000 | | .9435 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5201 | .231 | 70 | -.6491 | .431 | 180 | -.5290 | .931 | 0 | -.4047 | 0.000 | | 1.1131 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5421 | .231 | 60 | -.6205 | .431 | 170 | -.5303 | 1.131 | 180 | -.5855 | 0.000 | | 1.1919 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5435 | .231 | 50 | -.5395 | .431 | 160 | -.5173 | 1.131 | 170 | -.5873 | 0.000 | | 1.1697 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5632 | .231 | 40 | -.2568 | .431 | 150 | -.5572 | 1.131 | 160 | -.6114 | 0.000 | | 1.1188 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5800 | .231 | 30 | -.1529 | .431 | 140 | -.5588 | 1.131 | 150 | -.5975 | 0.000 | | 1.0349 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6062 | .231 | 20 | -.0875 | .431 | 130 | -.5689 | 1.131 | 140 | -.6012 | 0.000 | | .9269 | .10 | 0.00 |
| 10 | .161 | 90 | -.5906 | .231 | 10 | -.0460 | .431 | 120 | -.5599 | 1.131 | 130 | -.6008 | 0.000 | | .7839 | .20 | 0.00 |
| 11 | .161 | 80 | -.6183 | .231 | 0 | -.0478 | .431 | 110 | -.5526 | 1.131 | 120 | -.6456 | 0.000 | | .5842 | .30 | 0.00 |
| 12 | .161 | 70 | -.6579 | .331 | 180 | -.5043 | .431 | 100 | -.5473 | 1.131 | 110 | -.6356 | 0.000 | | .4072 | .40 | 0.00 |
| 13 | .161 | 60 | -.7156 | .331 | 170 | -.4978 | .431 | 90 | -.5563 | 1.131 | 100 | -.6438 | 0.000 | | .2642 | .45 | 0.00 |
| 14 | .161 | 50 | -.7337 | .331 | 160 | -.5170 | .431 | 80 | -.5045 | 1.131 | 90 | -.6130 | 0.000 | | 1.0096 | 0.00 | .10 |
| 15 | .161 | 40 | -.6895 | .331 | 150 | -.5505 | .431 | 70 | -.4111 | 1.131 | 80 | -.5680 | 0.000 | | .9534 | 0.00 | .20 |
| 16 | .161 | 30 | -.6029 | .331 | 140 | -.5371 | .431 | 60 | -.2587 | 1.131 | 70 | -.4557 | 0.000 | | .8538 | 0.00 | .30 |
| 17 | .161 | 20 | -.5512 | .331 | 130 | -.5560 | .431 | 50 | -.1747 | 1.131 | 60 | -.3665 | 0.000 | | .6079 | 0.00 | .40 |
| 18 | .161 | 10 | -.5216 | .331 | 120 | -.5484 | .431 | 40 | -.0945 | 1.131 | 50 | -.2582 | 0.000 | | .5993 | 0.00 | .45 |
| 19 | .161 | 0 | -.5131 | .331 | 110 | -.5703 | .431 | 30 | -.0063 | 1.131 | 40 | -.1518 | .161 | 270 | -.6137 | | |
| 20 | .231 | 180 | -.4817 | .331 | 100 | -.5456 | .431 | 20 | .0505 | 1.131 | 30 | -.0550 | .231 | 270 | -.5785 | | |
| 21 | .231 | 170 | -.5156 | .331 | 90 | -.5850 | .431 | 10 | .0852 | 1.131 | 20 | .0080 | .331 | 270 | -.5713 | | |
| 22 | .231 | 160 | -.4992 | .331 | 80 | -.5698 | .431 | 0 | .0997 | 1.131 | 10 | .0402 | .431 | 270 | -.5632 | | |
| 23 | .231 | 150 | -.5441 | .331 | 70 | -.5239 | .531 | 180 | -.5572 | 1.131 | 0 | .0424 | .531 | 270 | -.5455 | | |
| 24 | .231 | 140 | -.5317 | .331 | 60 | -.3728 | .531 | 90 | -.5261 | | | .731 | .731 | 270 | -.5187 | | |
| 25 | .231 | 130 | -.5421 | .331 | 50 | -.2004 | .531 | 0 | .0898 | 1.631 | 90 | -.3188 | .931 | 270 | -.5500 | | |
| 26 | .231 | 120 | -.5553 | .331 | 40 | -.1082 | .731 | 180 | -.5475 | 1.631 | 0 | -.3110 | 1.131 | 270 | -.6143 | | |
| 27 | .231 | 110 | -.5457 | .331 | 30 | -.0241 | .731 | 90 | -.4913 | 2.131 | 180 | -.3564 | 1.631 | 270 | -.7141 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 199 ALPHA 24 MACH .821 U 646.931 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | V/D | Z/D |
| 1 | .161 | 180 | -.4366 | .231 | 100 | -.5165 | .331 | 20 | .1156 | .731 | 0 | .1362 | 2.131 | 90 | -.3245 | | |
| 2 | .161 | 170 | -.5001 | .231 | 90 | -.5992 | .331 | 10 | .1326 | .931 | 180 | -.3324 | 2.131 | 0 | .0963 | | |
| 3 | .161 | 160 | -.4758 | .231 | 80 | -.5034 | .331 | 0 | .1605 | .931 | 90 | -.5495 | 0.000 | | .9772 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5054 | .231 | 70 | -.4179 | .431 | 180 | -.4900 | .931 | 0 | -.4027 | 0.000 | | 1.1566 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5099 | .231 | 60 | -.5749 | .431 | 170 | -.5052 | 1.131 | 180 | -.5652 | 0.000 | | 1.1905 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5328 | .231 | 50 | -.2855 | .431 | 160 | -.5166 | 1.131 | 170 | -.5756 | 0.000 | | 1.1727 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5222 | .231 | 40 | -.1386 | .431 | 150 | -.5058 | 1.131 | 160 | -.5603 | 0.000 | | 1.1163 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5220 | .231 | 30 | -.0866 | .431 | 140 | -.4979 | 1.131 | 150 | -.5505 | 0.000 | | 1.0125 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5786 | .231 | 20 | -.0077 | .431 | 130 | -.5426 | 1.131 | 140 | -.5915 | 0.000 | | .8913 | .10 | 0.00 |
| 10 | .161 | 90 | -.5483 | .231 | 10 | .0412 | .431 | 120 | -.5092 | 1.131 | 130 | -.5617 | 0.000 | | .7448 | .20 | 0.00 |
| 11 | .161 | 80 | -.6025 | .231 | 0 | .0583 | .431 | 110 | -.5149 | 1.131 | 120 | -.6125 | 0.000 | | .5507 | .30 | 0.00 |
| 12 | .161 | 70 | -.6638 | .331 | 180 | -.4808 | .431 | 100 | -.5336 | 1.131 | 110 | -.6483 | 0.000 | | .3977 | .40 | 0.00 |
| 13 | .161 | 60 | -.7133 | .331 | 170 | -.5083 | .431 | 90 | -.5431 | 1.131 | 100 | -.7079 | 0.000 | | .2254 | .45 | 0.00 |
| 14 | .161 | 50 | -.6322 | .331 | 160 | -.5181 | .431 | 80 | -.4475 | 1.131 | 90 | -.6524 | 0.000 | | .9913 | 0.00 | .10 |
| 15 | .161 | 40 | -.5653 | .331 | 150 | -.5176 | .431 | 70 | -.3437 | 1.131 | 80 | -.5883 | 0.000 | | .9392 | 0.00 | .20 |
| 16 | .161 | 30 | -.5131 | .331 | 140 | -.5225 | .431 | 60 | -.2430 | 1.131 | 70 | -.4830 | 0.000 | | .8241 | 0.00 | .30 |
| 17 | .161 | 20 | -.4913 | .331 | 130 | -.5401 | .431 | 50 | -.1523 | 1.131 | 60 | -.3662 | 0.000 | | .4041 | 0.00 | .40 |
| 18 | .161 | 10 | -.4366 | .331 | 120 | -.5292 | .431 | 40 | -.0555 | 1.131 | 50 | -.2528 | 0.000 | | .5791 | 0.00 | .45 |
| 19 | .161 | 0 | -.4402 | .331 | 110 | -.5368 | .431 | 30 | .0354 | 1.131 | 40 | -.1373 | .161 | 270 | -.5569 | | |
| 20 | .231 | 180 | -.4902 | .331 | 100 | -.5524 | .431 | 20 | .0976 | 1.131 | 30 | -.0440 | .231 | 270 | -.5776 | | |
| 21 | .231 | 170 | -.4962 | .331 | 90 | -.5591 | .431 | 10 | .1462 | 1.131 | 20 | .0389 | .331 | 270 | -.5745 | | |
| 22 | .231 | 160 | -.5079 | .331 | 80 | -.5513 | .431 | 0 | .1540 | 1.131 | 10 | .0802 | .431 | 270 | -.5373 | | |
| 23 | .231 | 150 | -.5245 | .331 | 70 | -.4342 | .531 | 180 | -.5321 | 1.131 | 0 | .0953 | .531 | 270 | -.5026 | | |
| 24 | .231 | 140 | -.4895 | .331 | 60 | -.2813 | .531 | 90 | -.4768 | | | .731 | .731 | 270 | -.5067 | | |
| 25 | .231 | 130 | -.5057 | .331 | 50 | -.1673 | .531 | 0 | .1431 | 1.631 | 90 | -.4345 | .931 | 270 | -.5496 | | |
| 26 | .231 | 120 | -.5158 | .331 | 40 | -.0614 | .731 | 180 | -.5127 | 1.631 | 0 | -.3249 | 1.131 | 270 | -.6463 | | |
| 27 | .231 | 110 | -.5611 | .331 | 30 | .0407 | .731 | 90 | -.5272 | 2.131 | 180 | -.3257 | 1.631 | 270 | -.7828 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 201 ALPHA 26 MACH .822 4 647.456 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4754 | .231 | 100 | -.5460 | .331 | 20 | .1577 | .731 | 0 | .1768 | 2.131 | 90 | -.3463 | | |
| 2 | .161 | 170 | -.4940 | .231 | 90 | -.6004 | .331 | 10 | .2088 | .931 | 180 | -.3569 | 2.131 | 0 | -.1503 | | |
| 3 | .161 | 160 | -.5201 | .231 | 80 | -.6700 | .331 | 0 | .2084 | .931 | 90 | -.6131 | 0.000 | | 1.0131 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4913 | .231 | 70 | -.5993 | .431 | 180 | -.4986 | .931 | 0 | -.4280 | 0.000 | | 1.1743 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5075 | .231 | 60 | -.4199 | .431 | 170 | -.5158 | 1.131 | 180 | -.5539 | 0.000 | | 1.1844 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5137 | .231 | 50 | -.2034 | .431 | 160 | -.5065 | 1.131 | 170 | -.5457 | 0.000 | | 1.1539 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5331 | .231 | 40 | -.1005 | .431 | 150 | -.5266 | 1.131 | 160 | -.5086 | 0.000 | | 1.0733 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5443 | .231 | 30 | -.0054 | .431 | 140 | -.5360 | 1.131 | 150 | -.5760 | 0.000 | | .9661 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5036 | .231 | 20 | .0881 | .431 | 130 | -.5338 | 1.131 | 140 | -.5835 | 0.000 | | .8373 | .10 | 0.00 |
| 10 | .161 | 90 | -.5730 | .231 | 10 | .1308 | .431 | 120 | -.5281 | 1.131 | 130 | -.6082 | 0.000 | | .6925 | .20 | 0.00 |
| 11 | .161 | 80 | -.6338 | .231 | 0 | .1770 | .431 | 110 | -.5321 | 1.131 | 120 | -.6479 | 0.000 | | .5090 | .30 | 0.00 |
| 12 | .161 | 70 | -.6001 | .331 | 180 | -.4806 | .431 | 100 | -.5402 | 1.131 | 110 | -.6935 | 0.000 | | .3755 | .40 | 0.00 |
| 13 | .161 | 60 | -.6077 | .331 | 170 | -.5040 | .431 | 90 | -.5156 | 1.131 | 100 | -.7350 | 0.000 | | .2083 | .45 | 0.00 |
| 14 | .161 | 50 | -.4643 | .331 | 160 | -.4913 | .431 | 80 | -.4254 | 1.131 | 90 | -.6887 | 0.000 | | .9406 | 0.00 | .10 |
| 15 | .161 | 40 | -.5016 | .331 | 150 | -.5268 | .431 | 70 | -.3577 | 1.131 | 80 | -.6277 | 0.000 | | .9026 | 0.00 | .20 |
| 16 | .161 | 30 | -.4455 | .331 | 140 | -.5279 | .431 | 60 | -.2456 | 1.131 | 70 | -.5273 | 0.000 | | .7889 | 0.00 | .30 |
| 17 | .161 | 20 | -.3822 | .331 | 130 | -.5009 | .431 | 50 | -.1268 | 1.131 | 60 | -.3760 | 0.000 | | .5792 | 0.00 | .40 |
| 18 | .161 | 10 | -.2888 | .331 | 120 | -.5210 | .431 | 40 | -.0198 | 1.131 | 50 | -.2457 | 0.000 | | .5508 | 0.00 | .45 |
| 19 | .161 | 0 | -.2994 | .331 | 110 | -.5477 | .431 | 30 | .0684 | 1.131 | 40 | -.1318 | .161 | 270 | -.5455 | | |
| 20 | .231 | 180 | -.4572 | .331 | 100 | -.5121 | .431 | 20 | .1401 | 1.131 | 30 | -.0133 | .231 | 270 | -.5502 | | |
| 21 | .231 | 170 | -.4826 | .331 | 90 | -.5674 | .431 | 10 | .1905 | 1.131 | 20 | .0732 | .331 | 270 | -.5872 | | |
| 22 | .231 | 160 | -.4727 | .331 | 80 | -.5004 | .431 | 0 | .2108 | 1.131 | 10 | .1193 | .431 | 270 | -.5184 | | |
| 23 | .231 | 150 | -.5025 | .331 | 70 | -.3851 | .531 | 180 | -.5111 | 1.131 | 0 | .1384 | .531 | 270 | -.4757 | | |
| 24 | .231 | 140 | -.5312 | .331 | 60 | -.2639 | .531 | 90 | -.4931 | | | | .731 | 270 | -.5533 | | |
| 25 | .231 | 130 | -.5097 | .331 | 50 | -.1192 | .531 | 0 | .1971 | 1.631 | 90 | -.4733 | .931 | 270 | -.6106 | | |
| 26 | .231 | 120 | -.5429 | .331 | 40 | -.0145 | .731 | 180 | -.5403 | 1.631 | 0 | -.3278 | 1.131 | 270 | -.6963 | | |
| 27 | .231 | 110 | -.5180 | .331 | 30 | .0901 | .731 | 90 | -.5290 | 2.131 | 180 | -.4115 | 1.631 | 270 | -.8404 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 23 POINT 202 ALPHA 0 MACH .821 4 646.356 MODEL DOME FACE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4477 | .231 | 100 | -.4553 | .331 | 20 | -.4500 | .731 | 0 | -.4833 | 2.131 | 90 | -.0895 | | |
| 2 | .161 | 170 | -.4582 | .231 | 90 | -.4526 | .331 | 10 | -.4665 | .931 | 180 | -.0903 | 2.131 | 0 | -.1935 | | |
| 3 | .161 | 160 | -.4640 | .231 | 80 | -.4708 | .331 | 0 | -.4861 | .931 | 90 | -.5182 | 0.000 | | .7268 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4687 | .231 | 70 | -.4628 | .431 | 180 | -.4790 | .931 | 0 | -.3977 | 0.000 | | .7430 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4593 | .231 | 60 | -.4626 | .431 | 170 | -.4680 | 1.131 | 180 | -.5023 | 0.000 | | .9847 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4447 | .231 | 50 | -.4524 | .431 | 160 | -.4619 | 1.131 | 170 | -.5135 | 0.000 | | 1.1144 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4440 | .231 | 40 | -.4510 | .431 | 150 | -.4630 | 1.131 | 160 | -.5089 | 0.000 | | 1.1712 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4497 | .231 | 30 | -.4675 | .431 | 140 | -.4638 | 1.131 | 150 | -.5220 | 0.000 | | 1.1853 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4633 | .231 | 20 | -.4622 | .431 | 130 | -.4836 | 1.131 | 140 | -.5176 | 0.000 | | 1.1710 | .10 | 0.00 |
| 10 | .161 | 90 | -.4328 | .231 | 10 | -.4385 | .431 | 120 | -.4528 | 1.131 | 130 | -.4914 | 0.000 | | 1.1236 | .20 | 0.00 |
| 11 | .161 | 80 | -.4575 | .231 | 0 | -.4521 | .431 | 110 | -.4810 | 1.131 | 120 | -.5236 | 0.000 | | .9876 | .30 | 0.00 |
| 12 | .161 | 70 | -.4447 | .331 | 180 | -.4684 | .431 | 100 | -.4594 | 1.131 | 110 | -.5061 | 0.000 | | .7544 | .40 | 0.00 |
| 13 | .161 | 60 | -.4537 | .331 | 170 | -.4748 | .431 | 90 | -.4728 | 1.131 | 100 | -.5156 | 0.000 | | .7047 | .45 | 0.00 |
| 14 | .161 | 50 | -.4609 | .331 | 160 | -.4615 | .431 | 80 | -.4660 | 1.131 | 90 | -.5103 | 0.000 | | 1.1753 | 0.00 | .10 |
| 15 | .161 | 40 | -.4485 | .331 | 150 | -.4693 | .431 | 70 | -.4612 | 1.131 | 80 | -.5049 | 0.000 | | 1.1113 | 0.00 | .20 |
| 16 | .161 | 30 | -.4499 | .331 | 140 | -.4735 | .431 | 60 | -.4684 | 1.131 | 70 | -.5115 | 0.000 | | .9865 | 0.00 | .30 |
| 17 | .161 | 20 | -.4295 | .331 | 130 | -.4488 | .431 | 50 | -.4544 | 1.131 | 60 | -.4982 | 0.000 | | .7532 | 0.00 | .40 |
| 18 | .161 | 10 | -.4631 | .331 | 120 | -.4631 | .431 | 40 | -.4720 | 1.131 | 50 | -.5176 | 0.000 | | .7329 | 0.00 | .45 |
| 19 | .161 | 0 | -.4718 | .331 | 110 | -.4759 | .431 | 30 | -.4772 | 1.131 | 40 | -.5164 | .161 | 270 | -.4635 | | |
| 20 | .231 | 180 | -.4714 | .331 | 100 | -.4699 | .431 | 20 | -.4757 | 1.131 | 30 | -.5238 | .231 | 270 | -.4653 | | |
| 21 | .231 | 170 | -.4627 | .331 | 90 | -.4639 | .431 | 10 | -.4676 | 1.131 | 20 | -.5097 | .331 | 270 | -.4663 | | |
| 22 | .231 | 160 | -.4515 | .331 | 80 | -.4572 | .431 | 0 | -.4696 | 1.131 | 10 | -.5115 | .431 | 270 | -.4735 | | |
| 23 | .231 | 150 | -.4501 | .331 | 70 | -.4615 | .531 | 180 | -.4781 | 1.131 | 0 | -.5142 | .531 | 270 | -.4810 | | |
| 24 | .231 | 140 | -.4530 | .331 | 60 | -.4535 | .531 | 90 | -.4614 | | | | .731 | 270 | -.4714 | | |
| 25 | .231 | 130 | -.4618 | .331 | 50 | -.4637 | .531 | 0 | -.4812 | 1.631 | 90 | -.3251 | .931 | 270 | -.5015 | | |
| 26 | .231 | 120 | -.4472 | .331 | 40 | -.4644 | .731 | 180 | -.4857 | 1.631 | 0 | -.0972 | 1.131 | 270 | -.5317 | | |
| 27 | .231 | 110 | -.4532 | .331 | 30 | -.4664 | .731 | 90 | -.4807 | 2.131 | 180 | -.2239 | 1.631 | 270 | -.4097 | | |

ORIGINAL PAGE
 OF POOR
 QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 203 ALPHA -1 MACH .885 J 702.472 MODEL DOME SHAPE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5140 | .231 | 100 | -.4827 | .331 | 20 | -.4546 | .731 | 0 | -.4994 | 2.131 | 90 | -.0955 | | |
| 2 | .161 | 170 | -.5142 | .231 | 90 | -.4915 | .331 | 10 | -.4355 | .931 | 180 | -.0975 | 2.131 | 0 | -.2844 | | |
| 3 | .161 | 160 | -.4839 | .231 | 80 | -.4585 | .331 | 0 | -.4311 | .931 | 90 | -.5001 | 0.000 | | .7813 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5078 | .231 | 70 | -.4635 | .431 | 180 | -.5159 | .931 | 0 | -.2551 | 0.000 | | .7729 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4861 | .231 | 60 | -.4453 | .431 | 170 | -.5055 | 1.131 | 180 | -.5097 | 0.000 | | 1.0075 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4404 | .231 | 50 | -.4371 | .431 | 160 | -.4957 | 1.131 | 170 | -.5114 | 0.000 | | 1.1342 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5123 | .231 | 40 | -.4730 | .431 | 150 | -.5299 | 1.131 | 160 | -.5411 | 0.000 | | 1.1934 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5060 | .231 | 30 | -.4538 | .431 | 140 | -.5227 | 1.131 | 150 | -.5383 | 0.000 | | 1.2198 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4822 | .231 | 20 | -.4287 | .431 | 130 | -.4981 | 1.131 | 140 | -.5181 | 0.000 | | 1.2062 | .10 | 0.00 |
| 10 | .161 | 90 | -.4743 | .231 | 10 | -.4500 | .431 | 120 | -.4994 | 1.131 | 130 | -.5259 | 0.000 | | 1.1562 | .20 | 0.00 |
| 11 | .161 | 80 | -.4714 | .231 | 0 | -.4339 | .431 | 110 | -.4991 | 1.131 | 120 | -.5324 | 0.000 | | 1.0352 | .30 | 0.00 |
| 12 | .161 | 70 | -.4527 | .331 | 180 | -.4965 | .431 | 100 | -.4822 | 1.131 | 110 | -.5157 | 0.000 | | .8096 | .40 | 0.00 |
| 13 | .161 | 60 | -.4503 | .331 | 170 | -.5041 | .431 | 90 | -.4930 | 1.131 | 100 | -.5205 | 0.000 | | .7631 | .45 | 0.00 |
| 14 | .161 | 50 | -.4483 | .331 | 160 | -.5032 | .431 | 80 | -.4890 | 1.131 | 90 | -.5229 | 0.000 | | 1.2089 | 0.00 | .10 |
| 15 | .161 | 40 | -.4149 | .331 | 150 | -.4778 | .431 | 70 | -.4520 | 1.131 | 80 | -.4808 | 0.000 | | 1.1481 | 0.00 | .20 |
| 16 | .161 | 30 | -.4329 | .331 | 140 | -.4992 | .431 | 60 | -.4635 | 1.131 | 70 | -.5090 | 0.000 | | 1.0158 | 0.00 | .30 |
| 17 | .161 | 20 | -.4518 | .331 | 130 | -.5268 | .431 | 50 | -.4885 | 1.131 | 60 | -.5363 | 0.000 | | .7889 | 0.00 | .40 |
| 18 | .161 | 10 | -.4209 | .331 | 120 | -.4778 | .431 | 40 | -.4507 | 1.131 | 50 | -.4949 | 0.000 | | .7853 | 0.00 | .45 |
| 19 | .161 | 0 | -.4209 | .331 | 110 | -.4790 | .431 | 30 | -.4593 | 1.131 | 40 | -.4695 | .161 | 270 | -.4685 | | |
| 20 | .231 | 180 | -.4897 | .331 | 100 | -.4697 | .431 | 20 | -.4507 | 1.131 | 30 | -.4975 | .231 | 270 | -.4693 | | |
| 21 | .231 | 170 | -.5190 | .331 | 90 | -.4969 | .431 | 10 | -.4775 | 1.131 | 20 | -.5242 | .331 | 270 | -.4958 | | |
| 22 | .231 | 160 | -.5125 | .331 | 80 | -.4835 | .431 | 0 | -.4753 | 1.131 | 10 | -.5181 | .431 | 270 | -.5035 | | |
| 23 | .231 | 150 | -.4660 | .331 | 70 | -.4451 | .531 | 180 | -.4777 | 1.131 | 0 | -.4866 | .531 | 270 | -.4670 | | |
| 24 | .231 | 140 | -.4987 | .331 | 60 | -.4665 | .531 | 90 | -.4873 | | | .731 | 270 | -.5048 | | | |
| 25 | .231 | 130 | -.4904 | .331 | 50 | -.4506 | .531 | 0 | -.4431 | 1.631 | 90 | -.1346 | .931 | 270 | -.5187 | | |
| 26 | .231 | 120 | -.4837 | .331 | 40 | -.4488 | .731 | 180 | -.5197 | 1.631 | 0 | -.0892 | 1.131 | 270 | -.5161 | | |
| 27 | .231 | 110 | -.4964 | .331 | 30 | -.4428 | .731 | 90 | -.5180 | 2.131 | 180 | -.1936 | 1.631 | 270 | -.4267 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 204 ALPHA 0 MACH .885 Q 702.471 MODEL DOME SHAPE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4542 | .231 | 100 | -.4692 | .331 | 20 | -.4755 | .731 | 0 | -.4938 | 2.131 | 90 | -.0632 | | |
| 2 | .161 | 170 | -.4712 | .231 | 90 | -.4680 | .331 | 10 | -.4711 | .931 | 180 | -.0922 | 2.131 | 0 | -.2738 | | |
| 3 | .161 | 160 | -.4444 | .231 | 80 | -.4405 | .331 | 0 | -.4431 | .931 | 90 | -.4872 | 0.000 | | .7873 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4706 | .231 | 70 | -.4664 | .431 | 180 | -.4841 | .931 | 0 | -.3045 | 0.000 | | .7875 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4594 | .231 | 60 | -.4632 | .431 | 170 | -.4774 | 1.131 | 180 | -.5165 | 0.000 | | 1.0205 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4713 | .231 | 50 | -.4593 | .431 | 160 | -.4925 | 1.131 | 170 | -.5239 | 0.000 | | 1.1443 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4760 | .231 | 40 | -.4864 | .431 | 150 | -.4932 | 1.131 | 160 | -.5268 | 0.000 | | 1.1998 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4615 | .231 | 30 | -.4443 | .431 | 140 | -.4713 | 1.131 | 150 | -.5094 | 0.000 | | 1.2278 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4512 | .231 | 20 | -.4540 | .431 | 130 | -.4625 | 1.131 | 140 | -.5055 | 0.000 | | 1.2064 | .10 | 0.00 |
| 10 | .161 | 90 | -.4612 | .231 | 10 | -.4613 | .431 | 120 | -.4774 | 1.131 | 130 | -.5153 | 0.000 | | 1.1415 | .20 | 0.00 |
| 11 | .161 | 80 | -.4545 | .231 | 0 | -.4330 | .431 | 110 | -.4689 | 1.131 | 120 | -.5024 | 0.000 | | 1.0261 | .30 | 0.00 |
| 12 | .161 | 70 | -.4589 | .331 | 180 | -.4725 | .431 | 100 | -.4791 | 1.131 | 110 | -.5083 | 0.000 | | .7950 | .40 | 0.00 |
| 13 | .161 | 60 | -.4447 | .331 | 170 | -.4659 | .431 | 90 | -.4662 | 1.131 | 100 | -.5016 | 0.000 | | .7676 | .45 | 0.00 |
| 14 | .161 | 50 | -.4397 | .331 | 160 | -.4532 | .431 | 80 | -.4475 | 1.131 | 90 | -.4970 | 0.000 | | 1.2054 | 0.00 | .10 |
| 15 | .161 | 40 | -.4645 | .331 | 150 | -.4869 | .431 | 70 | -.4870 | 1.131 | 80 | -.5254 | 0.000 | | 1.1424 | 0.00 | .20 |
| 16 | .161 | 30 | -.4851 | .331 | 140 | -.4994 | .431 | 60 | -.4959 | 1.131 | 70 | -.5373 | 0.000 | | 1.0150 | 0.00 | .30 |
| 17 | .161 | 20 | -.4360 | .331 | 130 | -.4754 | .431 | 50 | -.4718 | 1.131 | 60 | -.5118 | 0.000 | | .7933 | 0.00 | .40 |
| 18 | .161 | 10 | -.4517 | .331 | 120 | -.4647 | .431 | 40 | -.4617 | 1.131 | 50 | -.5035 | 0.000 | | .7883 | 0.00 | .45 |
| 19 | .161 | 0 | -.4717 | .331 | 110 | -.4647 | .431 | 30 | -.4728 | 1.131 | 40 | -.5129 | .161 | 270 | -.4618 | | |
| 20 | .231 | 180 | -.4662 | .331 | 100 | -.4680 | .431 | 20 | -.4650 | 1.131 | 30 | -.5079 | .231 | 270 | -.4631 | | |
| 21 | .231 | 170 | -.4798 | .331 | 90 | -.4841 | .431 | 10 | -.4855 | 1.131 | 20 | -.5192 | .331 | 270 | -.4913 | | |
| 22 | .231 | 160 | -.4647 | .331 | 80 | -.4538 | .431 | 0 | -.4672 | 1.131 | 10 | -.5037 | .431 | 270 | -.4730 | | |
| 23 | .231 | 150 | -.4499 | .331 | 70 | -.4542 | .531 | 180 | -.4622 | 1.131 | 0 | -.5013 | .531 | 270 | -.4714 | | |
| 24 | .231 | 140 | -.4444 | .331 | 60 | -.4400 | .531 | 90 | -.4408 | | | .731 | 270 | -.4796 | | | |
| 25 | .231 | 130 | -.4667 | .331 | 50 | -.4630 | .531 | 0 | -.4883 | 1.631 | 90 | -.1620 | .931 | 270 | -.5035 | | |
| 26 | .231 | 120 | -.4632 | .331 | 40 | -.4730 | .731 | 180 | -.4909 | 1.631 | 0 | -.0851 | 1.131 | 270 | -.5035 | | |
| 27 | .231 | 110 | -.4603 | .331 | 30 | -.4647 | .731 | 90 | -.4976 | 2.131 | 180 | -.2379 | 1.631 | 270 | -.4119 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 24 POINT 205 ALPHA 2 MACH .884 J 702.108 | | | | MODEL DOME SHAPE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|------------------|--|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | |
| 1 | .161 | 180 | -.4460 | .231 | 100 | -.5210 | .331 | 20 | -.5673 | .731 | 0 | -.5802 | 2.131 | 90 | -.1114 | | | | | | |
| 2 | .161 | 170 | -.3951 | .231 | 90 | -.4662 | .331 | 10 | -.5177 | .931 | 180 | -.0677 | 2.131 | 0 | -.1067 | | | | | | |
| 3 | .161 | 160 | -.3403 | .231 | 80 | -.4799 | .331 | 0 | -.5060 | .931 | 90 | -.5095 | 0.000 | | .7992 | -.45 | 0.00 | | | | |
| 4 | .161 | 150 | -.4207 | .231 | 70 | -.5352 | .431 | 180 | -.4642 | .431 | 0 | -.3277 | 0.000 | | .8030 | -.40 | 0.00 | | | | |
| 5 | .161 | 140 | -.4533 | .231 | 60 | -.5280 | .431 | 170 | -.4476 | 1.131 | 180 | -.5106 | 0.000 | | 1.0423 | -.30 | 0.00 | | | | |
| 6 | .161 | 130 | -.4523 | .231 | 50 | -.5203 | .431 | 160 | -.4466 | 1.131 | 170 | -.4495 | 0.000 | | 1.1646 | -.20 | 0.00 | | | | |
| 7 | .161 | 120 | -.4786 | .231 | 40 | -.5420 | .431 | 150 | -.4701 | 1.131 | 160 | -.5264 | 0.000 | | 1.2136 | -.10 | 0.00 | | | | |
| 8 | .161 | 110 | -.4610 | .231 | 30 | -.5118 | .431 | 140 | -.4522 | 1.131 | 150 | -.4908 | 0.000 | | 1.2197 | 0.00 | 0.00 | | | | |
| 9 | .161 | 100 | -.5017 | .231 | 20 | -.5437 | .431 | 130 | -.4814 | 1.131 | 140 | -.5262 | 0.000 | | 1.1917 | .10 | 0.00 | | | | |
| 10 | .161 | 90 | -.5125 | .231 | 10 | -.5517 | .431 | 120 | -.4935 | 1.131 | 130 | -.5253 | 0.000 | | 1.1297 | .20 | 0.00 | | | | |
| 11 | .161 | 80 | -.5415 | .231 | 0 | -.5654 | .431 | 110 | -.5180 | 1.131 | 120 | -.5394 | 0.000 | | 1.0027 | .30 | 0.00 | | | | |
| 12 | .161 | 70 | -.5396 | .331 | 180 | -.4257 | .431 | 100 | -.5141 | 1.131 | 110 | -.5334 | 0.000 | | .7743 | .40 | 0.00 | | | | |
| 13 | .161 | 60 | -.5533 | .331 | 170 | -.4449 | .431 | 90 | -.5215 | 1.131 | 100 | -.5359 | 0.000 | | .7322 | .45 | 0.00 | | | | |
| 14 | .161 | 50 | -.5440 | .331 | 160 | -.4620 | .431 | 80 | -.5303 | 1.131 | 90 | -.5366 | 0.000 | | 1.2017 | 0.00 | .10 | | | | |
| 15 | .161 | 40 | -.5330 | .331 | 150 | -.4615 | .431 | 70 | -.5322 | 1.131 | 80 | -.5437 | 0.000 | | 1.1392 | 0.00 | .20 | | | | |
| 16 | .161 | 30 | -.5604 | .331 | 140 | -.4782 | .431 | 60 | -.5558 | 1.131 | 70 | -.5561 | 0.000 | | 1.0157 | 0.00 | .30 | | | | |
| 17 | .161 | 20 | -.5445 | .331 | 130 | -.4561 | .431 | 50 | -.5393 | 1.131 | 60 | -.5316 | 0.000 | | .7955 | 0.00 | .40 | | | | |
| 18 | .161 | 10 | -.5288 | .331 | 120 | -.4784 | .431 | 40 | -.5337 | 1.131 | 50 | -.5360 | 0.000 | | .7804 | 0.00 | .45 | | | | |
| 19 | .161 | 0 | -.5445 | .331 | 110 | -.5011 | .431 | 30 | -.5477 | 1.131 | 40 | -.5412 | .161 | 270 | -.5185 | | | | | | |
| 20 | .231 | 180 | -.4194 | .331 | 100 | -.4855 | .431 | 20 | -.5286 | 1.131 | 30 | -.5208 | .231 | 270 | -.4968 | | | | | | |
| 21 | .231 | 170 | -.4182 | .331 | 90 | -.5049 | .431 | 10 | -.5360 | 1.131 | 20 | -.5240 | .331 | 270 | -.5070 | | | | | | |
| 22 | .231 | 160 | -.4246 | .331 | 80 | -.5170 | .431 | 0 | -.5445 | 1.131 | 10 | -.5312 | .431 | 270 | -.5014 | | | | | | |
| 23 | .231 | 150 | -.4432 | .331 | 70 | -.5320 | .531 | 180 | -.4719 | 1.131 | 0 | -.5479 | .531 | 270 | -.5319 | | | | | | |
| 24 | .231 | 140 | -.4478 | .331 | 60 | -.5240 | .531 | 90 | -.5182 | | | | .731 | 270 | -.5360 | | | | | | |
| 25 | .231 | 130 | -.4681 | .331 | 50 | -.5226 | .531 | 0 | -.5352 | 1.631 | 90 | -.1919 | .931 | 270 | -.5465 | | | | | | |
| 26 | .231 | 120 | -.4685 | .331 | 40 | -.5303 | .731 | 180 | -.5013 | 1.631 | 0 | -.0971 | 1.131 | 270 | -.5309 | | | | | | |
| 27 | .231 | 110 | -.4708 | .331 | 30 | -.5271 | .731 | 90 | -.5254 | 2.131 | 180 | -.2321 | 1.631 | 270 | -.3995 | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 24 POINT 206 ALPHA 4 MACH .887 J 704.079 | | | | MODEL DOME SHAPE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|------------------|--|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | |
| 1 | .161 | 180 | -.4116 | .231 | 100 | -.6225 | .331 | 20 | -.6652 | .731 | 0 | -.6323 | 2.131 | 90 | -.1284 | | | | | | |
| 2 | .161 | 170 | -.4209 | .231 | 90 | -.6433 | .331 | 10 | -.6569 | .931 | 180 | -.1133 | 2.131 | 0 | .0090 | | | | | | |
| 3 | .161 | 160 | -.4523 | .231 | 80 | -.6250 | .331 | 0 | -.6561 | .931 | 90 | -.6293 | 0.000 | | .7967 | -.45 | 0.00 | | | | |
| 4 | .161 | 150 | -.4606 | .231 | 70 | -.7065 | .431 | 180 | -.4759 | .931 | 0 | -.3359 | 0.000 | | .8234 | -.40 | 0.00 | | | | |
| 5 | .161 | 140 | -.4992 | .231 | 60 | -.8318 | .431 | 170 | -.4991 | 1.131 | 180 | -.5396 | 0.000 | | 1.0643 | -.30 | 0.00 | | | | |
| 6 | .161 | 130 | -.5569 | .231 | 50 | -.6826 | .431 | 160 | -.5115 | 1.131 | 170 | -.5618 | 0.000 | | 1.1728 | -.20 | 0.00 | | | | |
| 7 | .161 | 120 | -.5595 | .231 | 40 | -.6743 | .431 | 150 | -.5142 | 1.131 | 160 | -.5401 | 0.000 | | 1.2148 | -.10 | 0.00 | | | | |
| 8 | .161 | 110 | -.6275 | .231 | 30 | -.6765 | .431 | 140 | -.5726 | 1.131 | 150 | -.5745 | 0.000 | | 1.2150 | 0.00 | 0.00 | | | | |
| 9 | .161 | 100 | -.6308 | .231 | 20 | -.6563 | .431 | 130 | -.5809 | 1.131 | 140 | -.5701 | 0.000 | | 1.1763 | .10 | 0.00 | | | | |
| 10 | .161 | 90 | -.6206 | .231 | 10 | -.6293 | .431 | 120 | -.5928 | 1.131 | 130 | -.5621 | 0.000 | | 1.1384 | .20 | 0.00 | | | | |
| 11 | .161 | 80 | -.6211 | .231 | 0 | -.6443 | .431 | 110 | -.6324 | 1.131 | 120 | -.5927 | 0.000 | | .9708 | .30 | 0.00 | | | | |
| 12 | .161 | 70 | -.6273 | .331 | 180 | -.4311 | .431 | 100 | -.6320 | 1.131 | 110 | -.5697 | 0.000 | | .7504 | .40 | 0.00 | | | | |
| 13 | .161 | 60 | -.7028 | .331 | 170 | -.4939 | .431 | 90 | -.6780 | 1.131 | 100 | -.5869 | 0.000 | | .7089 | .45 | 0.00 | | | | |
| 14 | .161 | 50 | -.7429 | .331 | 160 | -.4992 | .431 | 80 | -.6983 | 1.131 | 90 | -.5647 | 0.000 | | 1.1966 | 0.00 | .10 | | | | |
| 15 | .161 | 40 | -.7114 | .331 | 150 | -.5382 | .431 | 70 | -.7145 | 1.131 | 80 | -.5397 | 0.000 | | 1.1358 | 0.00 | .20 | | | | |
| 16 | .161 | 30 | -.6529 | .331 | 140 | -.5302 | .431 | 60 | -.6938 | 1.131 | 70 | -.4804 | 0.000 | | 1.0089 | 0.00 | .30 | | | | |
| 17 | .161 | 20 | -.6245 | .331 | 130 | -.5390 | .431 | 50 | -.6482 | 1.131 | 60 | -.4308 | 0.000 | | .7645 | 0.00 | .40 | | | | |
| 18 | .161 | 10 | -.6711 | .331 | 120 | -.6143 | .431 | 40 | -.6906 | 1.131 | 50 | -.4713 | 0.000 | | .7556 | 0.00 | .45 | | | | |
| 19 | .161 | 0 | -.6531 | .331 | 110 | -.6222 | .431 | 30 | -.6800 | 1.131 | 40 | -.4313 | .161 | 270 | -.6119 | | | | | | |
| 20 | .231 | 180 | -.4236 | .331 | 100 | -.6238 | .431 | 20 | -.6446 | 1.131 | 30 | -.4587 | .231 | 270 | -.5912 | | | | | | |
| 21 | .231 | 170 | -.4312 | .331 | 90 | -.6233 | .431 | 10 | -.6506 | 1.131 | 20 | -.4178 | .331 | 270 | -.6089 | | | | | | |
| 22 | .231 | 160 | -.4607 | .331 | 80 | -.6403 | .431 | 0 | -.6712 | 1.131 | 10 | -.4334 | .431 | 270 | -.6119 | | | | | | |
| 23 | .231 | 150 | -.4663 | .331 | 70 | -.6715 | .531 | 180 | -.5104 | 1.131 | 0 | -.4524 | .531 | 270 | -.6211 | | | | | | |
| 24 | .231 | 140 | -.5270 | .331 | 60 | -.6815 | .531 | 90 | -.6620 | | | | .731 | 270 | -.6316 | | | | | | |
| 25 | .231 | 130 | -.5287 | .331 | 50 | -.6305 | .531 | 0 | -.6305 | 1.631 | 90 | -.1556 | .931 | 270 | -.5945 | | | | | | |
| 26 | .231 | 120 | -.5799 | .331 | 40 | -.6650 | .731 | 180 | -.5573 | 1.631 | 0 | -.1416 | 1.131 | 270 | -.5364 | | | | | | |
| 27 | .231 | 110 | -.6025 | .331 | 30 | -.6726 | .731 | 90 | -.6717 | 2.131 | 180 | -.1643 | 1.631 | 270 | -.3066 | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 24 POINT 207 ALPHA 6 MACH .886 Q 703.453 MODEL DOME SHAPE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|---|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4224 | .231 | 100 | -.6772 | .331 | 20 | -.7098 | .731 | 0 | -.6008 | 2.131 | 90 | -.1453 | | |
| 2 | .161 | 170 | -.4322 | .231 | 90 | -.6612 | .331 | 10 | -.7021 | .931 | 180 | -.1592 | 2.131 | 0 | .0099 | | |
| 3 | .161 | 160 | -.4724 | .231 | 80 | -.7035 | .331 | 0 | -.7198 | .931 | 90 | -.6420 | 0.000 | | .8326 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5031 | .231 | 70 | -.8020 | .431 | 180 | -.5018 | .931 | 0 | -.3551 | 0.000 | | .8609 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5560 | .231 | 60 | -.7177 | .431 | 170 | -.5135 | 1.131 | 180 | -.5442 | 0.000 | | 1.0956 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5545 | .231 | 50 | -.6924 | .431 | 160 | -.5008 | 1.131 | 170 | -.5362 | 0.000 | | 1.1882 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6081 | .231 | 40 | -.6950 | .431 | 150 | -.5483 | 1.131 | 160 | -.5623 | 0.000 | | 1.2192 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6501 | .231 | 30 | -.7085 | .431 | 140 | -.5795 | 1.131 | 150 | -.5886 | 0.000 | | 1.2040 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6977 | .231 | 20 | -.7099 | .431 | 130 | -.6194 | 1.131 | 140 | -.6023 | 0.000 | | 1.1687 | .10 | 0.00 |
| 10 | .161 | 90 | -.6649 | .231 | 10 | -.7150 | .431 | 120 | -.6425 | 1.131 | 130 | -.6092 | 0.000 | | 1.0802 | .20 | 0.00 |
| 11 | .161 | 80 | -.7754 | .231 | 0 | -.6630 | .431 | 110 | -.6531 | 1.131 | 120 | -.6016 | 0.000 | | .9419 | .30 | 0.00 |
| 12 | .161 | 70 | -.7761 | .331 | 180 | -.4632 | .431 | 100 | -.6873 | 1.131 | 110 | -.5727 | 0.000 | | .7134 | .40 | 0.00 |
| 13 | .161 | 60 | -.7216 | .331 | 170 | -.4488 | .431 | 90 | -.6937 | 1.131 | 100 | -.5481 | 0.000 | | .6547 | .45 | 0.00 |
| 14 | .161 | 50 | -.7120 | .331 | 160 | -.5048 | .431 | 80 | -.7058 | 1.131 | 90 | -.5025 | 0.000 | | 1.1907 | 0.00 | .10 |
| 15 | .161 | 40 | -.7084 | .331 | 150 | -.5433 | .431 | 70 | -.7317 | 1.131 | 80 | -.4414 | 0.000 | | 1.1289 | 0.00 | .20 |
| 16 | .161 | 30 | -.7037 | .331 | 140 | -.5706 | .431 | 60 | -.7219 | 1.131 | 70 | -.3818 | 0.000 | | 1.0018 | 0.00 | .30 |
| 17 | .161 | 20 | -.7125 | .331 | 130 | -.5861 | .431 | 50 | -.7290 | 1.131 | 60 | -.3581 | 0.000 | | .7476 | 0.00 | .40 |
| 18 | .161 | 10 | -.7150 | .331 | 120 | -.6258 | .431 | 40 | -.7322 | 1.131 | 50 | -.3475 | 0.000 | | .7525 | 0.00 | .45 |
| 19 | .161 | 0 | -.7014 | .331 | 110 | -.6550 | .431 | 30 | -.7135 | 1.131 | 40 | -.3410 | .161 | 270 | -.6765 | | |
| 20 | .231 | 180 | -.4523 | .331 | 100 | -.6874 | .431 | 20 | -.7159 | 1.131 | 30 | -.3451 | .231 | 270 | -.6737 | | |
| 21 | .231 | 170 | -.4440 | .331 | 90 | -.6740 | .431 | 10 | -.7134 | 1.131 | 20 | -.3410 | .331 | 270 | -.6929 | | |
| 22 | .231 | 160 | -.4797 | .331 | 80 | -.6867 | .431 | 0 | -.7130 | 1.131 | 10 | -.3429 | .431 | 270 | -.6792 | | |
| 23 | .231 | 150 | -.5288 | .331 | 70 | -.7662 | .531 | 180 | -.5535 | 1.131 | 0 | -.3346 | .531 | 270 | -.7011 | | |
| 24 | .231 | 140 | -.5633 | .331 | 60 | -.7469 | .531 | 90 | -.7159 | | | .731 | 270 | -.6925 | | | |
| 25 | .231 | 130 | -.5723 | .331 | 50 | -.7219 | .531 | 0 | -.6989 | 1.631 | 90 | -.1177 | .931 | 270 | -.6138 | | |
| 26 | .231 | 120 | -.6015 | .331 | 40 | -.6899 | .731 | 180 | -.5621 | 1.631 | 0 | -.1384 | 1.131 | 270 | -.4731 | | |
| 27 | .231 | 110 | -.6474 | .331 | 30 | -.6892 | .731 | 90 | -.6763 | 2.131 | 180 | -.1266 | 1.631 | 270 | -.2298 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 24 POINT 208 ALPHA 8 MACH .885 Q 702.468 MODEL DOME SHAPE | | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|---|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4443 | .231 | 100 | -.6853 | .331 | 20 | -.7707 | .731 | 0 | -.4958 | 2.131 | 90 | -.1581 | | |
| 2 | .161 | 170 | -.4308 | .231 | 90 | -.6710 | .331 | 10 | -.7479 | .931 | 180 | -.1484 | 2.131 | 0 | .0079 | | |
| 3 | .161 | 160 | -.4664 | .231 | 80 | -.7832 | .331 | 0 | -.7414 | .931 | 90 | -.5942 | 0.000 | | .8266 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5050 | .231 | 70 | -.7431 | .431 | 180 | -.5014 | .931 | 0 | -.3467 | 0.000 | | .8898 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5506 | .231 | 60 | -.7582 | .431 | 170 | -.5176 | 1.131 | 180 | -.5610 | 0.000 | | 1.1064 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5990 | .231 | 50 | -.8108 | .431 | 160 | -.5324 | 1.131 | 170 | -.5384 | 0.000 | | 1.1988 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6326 | .231 | 40 | -.7921 | .431 | 150 | -.5542 | 1.131 | 160 | -.5657 | 0.000 | | 1.2180 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6708 | .231 | 30 | -.7608 | .431 | 140 | -.5801 | 1.131 | 150 | -.5653 | 0.000 | | 1.2041 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6775 | .231 | 20 | -.7855 | .431 | 130 | -.6287 | 1.131 | 140 | -.5957 | 0.000 | | 1.1486 | .10 | 0.00 |
| 10 | .161 | 90 | -.6908 | .231 | 10 | -.7712 | .431 | 120 | -.6542 | 1.131 | 130 | -.6100 | 0.000 | | 1.0533 | .20 | 0.00 |
| 11 | .161 | 80 | -.8789 | .231 | 0 | -.7381 | .431 | 110 | -.6741 | 1.131 | 120 | -.5931 | 0.000 | | .9066 | .30 | 0.00 |
| 12 | .161 | 70 | -.7459 | .331 | 180 | -.4850 | .431 | 100 | -.7058 | 1.131 | 110 | -.5712 | 0.000 | | .6853 | .40 | 0.00 |
| 13 | .161 | 60 | -.8889 | .331 | 170 | -.4816 | .431 | 90 | -.6985 | 1.131 | 100 | -.5165 | 0.000 | | .6091 | .45 | 0.00 |
| 14 | .161 | 50 | -.7981 | .331 | 160 | -.4935 | .431 | 80 | -.7048 | 1.131 | 90 | -.4477 | 0.000 | | 1.1851 | 0.00 | .10 |
| 15 | .161 | 40 | -.8229 | .331 | 150 | -.5441 | .431 | 70 | -.7611 | 1.131 | 80 | -.4142 | 0.000 | | 1.1275 | 0.00 | .20 |
| 16 | .161 | 30 | -.7546 | .331 | 140 | -.5823 | .431 | 60 | -.7358 | 1.131 | 70 | -.3320 | 0.000 | | .9967 | 0.00 | .30 |
| 17 | .161 | 20 | -.7634 | .331 | 130 | -.6124 | .431 | 50 | -.7355 | 1.131 | 60 | -.3035 | 0.000 | | .7583 | 0.00 | .40 |
| 18 | .161 | 10 | -.7707 | .331 | 120 | -.6666 | .431 | 40 | -.7520 | 1.131 | 50 | -.3066 | 0.000 | | .7385 | 0.00 | .45 |
| 19 | .161 | 0 | -.7649 | .331 | 110 | -.6965 | .431 | 30 | -.7358 | 1.131 | 40 | -.2619 | .161 | 270 | -.7194 | | |
| 20 | .231 | 180 | -.4295 | .331 | 100 | -.6650 | .431 | 20 | -.7134 | 1.131 | 30 | -.2120 | .231 | 270 | -.6814 | | |
| 21 | .231 | 170 | -.4707 | .331 | 90 | -.7032 | .431 | 10 | -.7341 | 1.131 | 20 | -.1913 | .331 | 270 | -.7028 | | |
| 22 | .231 | 160 | -.4837 | .331 | 80 | -.7288 | .431 | 0 | -.7387 | 1.131 | 10 | -.1945 | .431 | 270 | -.6992 | | |
| 23 | .231 | 150 | -.5262 | .331 | 70 | -.7957 | .531 | 180 | -.5527 | 1.131 | 0 | -.1840 | .531 | 270 | -.7077 | | |
| 24 | .231 | 140 | -.5794 | .331 | 60 | -.7460 | .531 | 90 | -.7134 | | | .731 | 270 | -.6637 | | | |
| 25 | .231 | 130 | -.6105 | .331 | 50 | -.8383 | .531 | 0 | -.6903 | 1.631 | 90 | -.0590 | .931 | 270 | -.6024 | | |
| 26 | .231 | 120 | -.6221 | .331 | 40 | -.7777 | .731 | 180 | -.5616 | 1.631 | 0 | -.1590 | 1.131 | 270 | -.4523 | | |
| 27 | .231 | 110 | -.6894 | .331 | 30 | -.7675 | .731 | 90 | -.6938 | 2.131 | 180 | -.1354 | 1.631 | 270 | -.2194 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 24 POINT 209 ALPHA 10 MACH .887 Q 704.261 MODEL DUNE SHAPE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4493 | .231 | 100 | -.6661 | .331 | 20 | -.7561 | .731 | 0 | -.3222 | 2.131 | 90 | -.1719 | | |
| 2 | .161 | 170 | -.4670 | .231 | 90 | -.7356 | .331 | 10 | -.7782 | .931 | 180 | -.1565 | 2.131 | 0 | .0092 | | |
| 3 | .161 | 160 | -.4510 | .231 | 80 | -.6679 | .331 | 0 | -.7420 | .431 | 90 | -.5670 | 0.000 | | .8423 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5327 | .231 | 70 | -.6758 | .431 | 180 | -.5186 | .431 | 0 | -.3554 | 0.000 | | .9219 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5383 | .231 | 60 | -.7684 | .431 | 170 | -.5153 | 1.131 | 180 | -.5289 | 0.000 | | 1.1381 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5890 | .231 | 50 | -.8871 | .431 | 160 | -.5240 | 1.131 | 170 | -.5488 | 0.000 | | 1.2147 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6512 | .231 | 40 | -.8327 | .431 | 150 | -.5709 | 1.131 | 160 | -.5720 | 0.000 | | 1.2196 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6487 | .231 | 30 | -.7984 | .431 | 140 | -.5852 | 1.131 | 150 | -.5851 | 0.000 | | 1.1899 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6759 | .231 | 20 | -.7934 | .431 | 130 | -.6231 | 1.131 | 140 | -.5882 | 0.000 | | 1.1259 | .10 | 0.00 |
| 10 | .161 | 90 | -.7256 | .231 | 10 | -.7849 | .431 | 120 | -.6402 | 1.131 | 130 | -.6071 | 0.000 | | 1.0330 | .20 | 0.00 |
| 11 | .161 | 80 | -.6968 | .231 | 0 | -.7925 | .431 | 110 | -.6693 | 1.131 | 120 | -.5819 | 0.000 | | .8699 | .30 | 0.00 |
| 12 | .161 | 70 | -.6525 | .331 | 180 | -.4841 | .431 | 100 | -.6749 | 1.131 | 110 | -.5570 | 0.000 | | .6597 | .40 | 0.00 |
| 13 | .161 | 60 | -.9867 | .331 | 170 | -.4676 | .431 | 90 | -.6677 | 1.131 | 100 | -.4922 | 0.000 | | .5443 | .45 | 0.00 |
| 14 | .161 | 50 | -.9317 | .331 | 160 | -.5175 | .431 | 80 | -.7132 | 1.131 | 90 | -.4645 | 0.000 | | 1.1749 | 0.00 | .10 |
| 15 | .161 | 40 | -.8390 | .331 | 150 | -.5422 | .431 | 70 | -.7032 | 1.131 | 80 | -.3866 | 0.000 | | 1.1113 | 0.00 | .20 |
| 16 | .161 | 30 | -.8327 | .331 | 140 | -.5950 | .431 | 60 | -.7035 | 1.131 | 70 | -.3432 | 0.000 | | .9845 | 0.00 | .30 |
| 17 | .161 | 20 | -.7949 | .331 | 130 | -.5952 | .431 | 50 | -.6774 | 1.131 | 60 | -.2751 | 0.000 | | .7432 | 0.00 | .40 |
| 18 | .161 | 10 | -.7732 | .331 | 120 | -.6263 | .431 | 40 | -.6705 | 1.131 | 50 | -.2571 | 0.000 | | .7579 | 0.00 | .45 |
| 19 | .161 | 0 | -.8024 | .331 | 110 | -.6633 | .431 | 30 | -.6752 | 1.131 | 40 | -.2094 | .161 | 270 | -.7430 | | |
| 20 | .231 | 180 | -.4758 | .331 | 100 | -.6849 | .431 | 20 | -.6958 | 1.131 | 30 | -.1798 | .231 | 270 | -.7239 | | |
| 21 | .231 | 170 | -.4732 | .331 | 90 | -.6756 | .431 | 10 | -.6784 | 1.131 | 20 | -.1432 | .331 | 270 | -.6969 | | |
| 22 | .231 | 160 | -.5080 | .331 | 80 | -.7121 | .431 | 0 | -.6941 | 1.131 | 10 | -.1156 | .431 | 270 | -.7168 | | |
| 23 | .231 | 150 | -.5445 | .331 | 70 | -.6989 | .531 | 180 | -.5496 | 1.131 | 0 | -.0957 | .531 | 270 | -.7051 | | |
| 24 | .231 | 140 | -.5889 | .331 | 60 | -.6946 | .531 | 90 | -.6963 | | | | .731 | 270 | -.6794 | | |
| 25 | .231 | 130 | -.6104 | .331 | 50 | -.8447 | .531 | 0 | -.5778 | 1.631 | 90 | -.0542 | .931 | 270 | -.5678 | | |
| 26 | .231 | 120 | -.6580 | .331 | 40 | -.7765 | .731 | 180 | -.5950 | 1.631 | 0 | -.1824 | 1.131 | 270 | -.4498 | | |
| 27 | .231 | 110 | -.6587 | .331 | 30 | -.7581 | .731 | 90 | -.6717 | 2.131 | 180 | -.0966 | 1.631 | 270 | -.2673 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| RUN 24 POINT 210 ALPHA 12 MACH .885 Q 702.556 MODEL DUNE SHAPE | | | | | | | | | | | | | | | | | |
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4605 | .231 | 100 | -.6542 | .331 | 20 | -.6485 | .731 | 0 | -.1499 | 2.131 | 90 | -.2071 | | |
| 2 | .161 | 170 | -.4595 | .231 | 90 | -.6725 | .331 | 10 | -.6620 | .931 | 180 | -.2059 | 2.131 | 0 | -.0325 | | |
| 3 | .161 | 160 | -.4746 | .231 | 80 | -.6615 | .331 | 0 | -.6681 | .931 | 90 | -.5044 | 0.000 | | .8502 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5557 | .231 | 70 | -.6700 | .431 | 180 | -.5354 | .931 | 0 | -.3714 | 0.000 | | .9424 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5546 | .231 | 60 | -.8597 | .431 | 170 | -.5214 | 1.131 | 180 | -.5422 | 0.000 | | 1.1520 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5805 | .231 | 50 | -.7791 | .431 | 160 | -.5234 | 1.131 | 170 | -.5409 | 0.000 | | 1.2169 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6307 | .231 | 40 | -.8058 | .431 | 150 | -.5689 | 1.131 | 160 | -.5832 | 0.000 | | 1.2132 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6661 | .231 | 30 | -.8323 | .431 | 140 | -.6112 | 1.131 | 150 | -.5901 | 0.000 | | 1.1772 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6907 | .231 | 20 | -.8292 | .431 | 130 | -.6333 | 1.131 | 140 | -.6077 | 0.000 | | 1.0973 | .10 | 0.00 |
| 10 | .161 | 90 | -.6775 | .231 | 10 | -.7983 | .431 | 120 | -.6230 | 1.131 | 130 | -.5748 | 0.000 | | .9941 | .20 | 0.00 |
| 11 | .161 | 80 | -.6932 | .231 | 0 | -.8347 | .431 | 110 | -.6600 | 1.131 | 120 | -.5800 | 0.000 | | .8342 | .30 | 0.00 |
| 12 | .161 | 70 | -.6669 | .331 | 180 | -.5228 | .431 | 100 | -.6838 | 1.131 | 110 | -.5743 | 0.000 | | .6274 | .40 | 0.00 |
| 13 | .161 | 60 | -.9366 | .331 | 170 | -.5163 | .431 | 90 | -.6947 | 1.131 | 100 | -.4801 | 0.000 | | .4965 | .45 | 0.00 |
| 14 | .161 | 50 | -.8397 | .331 | 160 | -.5106 | .431 | 80 | -.6698 | 1.131 | 90 | -.4293 | 0.000 | | 1.1622 | 0.00 | .10 |
| 15 | .161 | 40 | -.8337 | .331 | 150 | -.5595 | .431 | 70 | -.6962 | 1.131 | 80 | -.3853 | 0.000 | | 1.1001 | 0.00 | .20 |
| 16 | .161 | 30 | -.8351 | .331 | 140 | -.5782 | .431 | 60 | -.6107 | 1.131 | 70 | -.3421 | 0.000 | | .9725 | 0.00 | .30 |
| 17 | .161 | 20 | -.9103 | .331 | 130 | -.6121 | .431 | 50 | -.5944 | 1.131 | 60 | -.3145 | 0.000 | | .7025 | 0.00 | .40 |
| 18 | .161 | 10 | -.9123 | .331 | 120 | -.6336 | .431 | 40 | -.5571 | 1.131 | 50 | -.2439 | 0.000 | | .7465 | 0.00 | .45 |
| 19 | .161 | 0 | -.9033 | .331 | 110 | -.6498 | .431 | 30 | -.5180 | 1.131 | 40 | -.2120 | .161 | 270 | -.7264 | | |
| 20 | .231 | 180 | -.4901 | .331 | 100 | -.6695 | .431 | 20 | -.4812 | 1.131 | 30 | -.1769 | .231 | 270 | -.7051 | | |
| 21 | .231 | 170 | -.4711 | .331 | 90 | -.6715 | .431 | 10 | -.4622 | 1.131 | 20 | -.1256 | .331 | 270 | -.6311 | | |
| 22 | .231 | 160 | -.5074 | .331 | 80 | -.6794 | .431 | 0 | -.4443 | 1.131 | 10 | -.1222 | .431 | 270 | -.6855 | | |
| 23 | .231 | 150 | -.5466 | .331 | 70 | -.6884 | .531 | 180 | -.5615 | 1.131 | 0 | -.1139 | .531 | 270 | -.6959 | | |
| 24 | .231 | 140 | -.5468 | .331 | 60 | -.6677 | .531 | 90 | -.6467 | | | | .731 | 270 | -.6397 | | |
| 25 | .231 | 130 | -.5891 | .331 | 50 | -.7073 | .531 | 0 | -.3000 | 1.631 | 90 | -.0718 | .931 | 270 | -.5349 | | |
| 26 | .231 | 120 | -.6372 | .331 | 40 | -.7014 | .731 | 180 | -.5799 | 1.631 | 0 | -.2098 | 1.131 | 270 | -.4377 | | |
| 27 | .231 | 110 | -.6473 | .331 | 30 | -.6749 | .731 | 90 | -.6467 | 2.131 | 180 | -.1269 | 1.631 | 270 | -.3465 | | |

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| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 211 ALPHA 14 MACH .886 U 703.719 MODEL DOME SHAPE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4900 | .231 | 100 | -.6416 | .331 | 20 | -.4988 | .731 | 0 | -.0951 | 2.131 | 90 | -.2137 | | |
| 2 | .161 | 170 | -.4923 | .231 | 90 | -.6630 | .331 | 10 | -.4490 | .931 | 180 | -.2162 | 2.131 | 0 | -.0392 | | |
| 3 | .161 | 160 | -.5112 | .231 | 80 | -.6540 | .331 | 0 | -.4227 | .931 | 90 | -.4974 | 0.000 | | .8652 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5424 | .231 | 70 | -.6591 | .431 | 180 | -.5301 | .931 | 0 | -.3700 | 0.000 | | .9907 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5494 | .231 | 60 | -.7453 | .431 | 170 | -.5215 | 1.131 | 180 | -.5555 | 0.000 | | 1.1655 | -.30 | 0.00 |
| 6 | .161 | 130 | -.6023 | .231 | 50 | -.7595 | .431 | 160 | -.5574 | 1.131 | 170 | -.5733 | 0.000 | | 1.2125 | -.20 | 0.00 |
| 7 | .161 | 120 | -.6303 | .231 | 40 | -.7646 | .431 | 150 | -.5500 | 1.131 | 160 | -.5574 | 0.000 | | 1.2024 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6371 | .231 | 30 | -.7726 | .431 | 140 | -.6018 | 1.131 | 150 | -.5833 | 0.000 | | 1.1573 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6572 | .231 | 20 | -.7391 | .431 | 130 | -.5971 | 1.131 | 140 | -.5859 | 0.000 | | 1.0734 | .10 | 0.00 |
| 10 | .161 | 90 | -.6597 | .231 | 10 | -.7366 | .431 | 120 | -.6202 | 1.131 | 130 | -.6075 | 0.000 | | .9625 | .20 | 0.00 |
| 11 | .161 | 80 | -.6683 | .231 | 0 | -.6960 | .431 | 110 | -.6266 | 1.131 | 120 | -.5707 | 0.000 | | .7955 | .30 | 0.00 |
| 12 | .161 | 70 | -.6754 | .331 | 180 | -.5043 | .431 | 100 | -.6232 | 1.131 | 110 | -.5398 | 0.000 | | .5945 | .40 | 0.00 |
| 13 | .161 | 60 | -.7947 | .331 | 170 | -.5246 | .431 | 90 | -.6480 | 1.131 | 100 | -.5244 | 0.000 | | .4461 | .45 | 0.00 |
| 14 | .161 | 50 | -.7972 | .331 | 160 | -.5246 | .431 | 80 | -.6394 | 1.131 | 90 | -.4672 | 0.000 | | 1.1434 | 0.00 | .10 |
| 15 | .161 | 40 | -.8085 | .331 | 150 | -.5478 | .431 | 70 | -.6135 | 1.131 | 80 | -.4435 | 0.000 | | 1.0906 | 0.00 | .20 |
| 16 | .161 | 30 | -.8607 | .331 | 140 | -.5686 | .431 | 60 | -.5332 | 1.131 | 70 | -.3767 | 0.000 | | .9636 | 0.00 | .30 |
| 17 | .161 | 20 | -.9492 | .331 | 130 | -.6095 | .431 | 50 | -.5029 | 1.131 | 60 | -.3348 | 0.000 | | .6971 | 0.00 | .40 |
| 18 | .161 | 10 | -.9940 | .331 | 120 | -.6060 | .431 | 40 | -.4195 | 1.131 | 50 | -.2584 | 0.000 | | .7301 | 0.00 | .45 |
| 19 | .161 | 0 | -1.1672 | .331 | 110 | -.6395 | .431 | 30 | -.3569 | 1.131 | 40 | -.2053 | .161 | 270 | -.6870 | | |
| 20 | .231 | 180 | -.4778 | .331 | 100 | -.6360 | .431 | 20 | -.2702 | 1.131 | 30 | -.1383 | .231 | 270 | -.6669 | | |
| 21 | .231 | 170 | -.4973 | .331 | 90 | -.6476 | .431 | 10 | -.2281 | 1.131 | 20 | -.1222 | .331 | 270 | -.6508 | | |
| 22 | .231 | 160 | -.5407 | .331 | 80 | -.6820 | .431 | 0 | -.1988 | 1.131 | 10 | -.0981 | .431 | 270 | -.6780 | | |
| 23 | .231 | 150 | -.5593 | .331 | 70 | -.6770 | .531 | 180 | -.5569 | 1.131 | 0 | -.0961 | .531 | 270 | -.6469 | | |
| 24 | .231 | 140 | -.5550 | .331 | 60 | -.6451 | .531 | 90 | -.6185 | | | | .731 | 270 | -.5918 | | |
| 25 | .231 | 130 | -.5742 | .331 | 50 | -.6233 | .531 | 0 | -.1283 | 1.631 | 90 | -.1160 | .931 | 270 | -.5221 | | |
| 26 | .231 | 120 | -.6255 | .331 | 40 | -.6133 | .731 | 180 | -.5914 | 1.631 | 0 | -.2671 | 1.131 | 270 | -.4910 | | |
| 27 | .231 | 110 | -.6466 | .331 | 30 | -.5493 | .731 | 90 | -.6017 | 2.131 | 180 | -.1475 | 1.631 | 270 | -.4367 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 212 ALPHA 16 MACH .885 U 703.090 MODEL DOME SHAPE | | | | | | | | | | | | | | | | | |
|--|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4682 | .231 | 100 | -.6222 | .331 | 20 | -.3030 | .731 | 0 | -.0588 | 2.131 | 90 | -.2299 | | |
| 2 | .161 | 170 | -.5044 | .231 | 90 | -.6247 | .331 | 10 | -.2022 | .931 | 180 | -.2454 | 2.131 | 0 | -.0054 | | |
| 3 | .161 | 160 | -.4949 | .231 | 80 | -.6218 | .331 | 0 | -.1704 | .931 | 90 | -.5085 | 0.000 | | .8860 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5113 | .231 | 70 | -.6424 | .431 | 180 | -.5016 | .931 | 0 | -.3579 | 0.000 | | 1.0236 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5180 | .231 | 60 | -.6691 | .431 | 170 | -.5217 | 1.131 | 180 | -.5382 | 0.000 | | 1.1862 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5603 | .231 | 50 | -.6969 | .431 | 160 | -.5316 | 1.131 | 170 | -.5680 | 0.000 | | 1.2223 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5636 | .231 | 40 | -.6771 | .431 | 150 | -.5266 | 1.131 | 160 | -.5450 | 0.000 | | 1.2069 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6012 | .231 | 30 | -.6924 | .431 | 140 | -.5732 | 1.131 | 150 | -.5689 | 0.000 | | 1.1415 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6520 | .231 | 20 | -.6666 | .431 | 130 | -.6037 | 1.131 | 140 | -.5989 | 0.000 | | 1.0554 | .10 | 0.00 |
| 10 | .161 | 90 | -.6221 | .231 | 10 | -.5466 | .431 | 120 | -.5961 | 1.131 | 130 | -.5811 | 0.000 | | .9286 | .20 | 0.00 |
| 11 | .161 | 80 | -.6387 | .231 | 0 | -.5272 | .431 | 110 | -.5865 | 1.131 | 120 | -.5780 | 0.000 | | .7641 | .30 | 0.00 |
| 12 | .161 | 70 | -.7136 | .331 | 180 | -.5002 | .431 | 100 | -.5803 | 1.131 | 110 | -.5598 | 0.000 | | .5637 | .40 | 0.00 |
| 13 | .161 | 60 | -.7167 | .331 | 170 | -.5174 | .431 | 90 | -.6015 | 1.131 | 100 | -.5432 | 0.000 | | .3968 | .45 | 0.00 |
| 14 | .161 | 50 | -.7949 | .331 | 160 | -.5291 | .431 | 80 | -.6111 | 1.131 | 90 | -.4959 | 0.000 | | 1.1264 | 0.00 | .10 |
| 15 | .161 | 40 | -.7875 | .331 | 150 | -.5428 | .431 | 70 | -.5719 | 1.131 | 80 | -.4678 | 0.000 | | 1.0665 | 0.00 | .20 |
| 16 | .161 | 30 | -.8379 | .331 | 140 | -.5675 | .431 | 60 | -.4844 | 1.131 | 70 | -.4003 | 0.000 | | .9495 | 0.00 | .30 |
| 17 | .161 | 20 | -.9198 | .331 | 130 | -.5766 | .431 | 50 | -.3918 | 1.131 | 60 | -.3245 | 0.000 | | .6859 | 0.00 | .40 |
| 18 | .161 | 10 | -1.1134 | .331 | 120 | -.5730 | .431 | 40 | -.3167 | 1.131 | 50 | -.2628 | 0.000 | | .7190 | 0.00 | .45 |
| 19 | .161 | 0 | -1.1064 | .331 | 110 | -.5851 | .431 | 30 | -.1751 | 1.131 | 40 | -.1811 | .161 | 270 | -.6244 | | |
| 20 | .231 | 180 | -.4977 | .331 | 100 | -.6047 | .431 | 20 | -.1090 | 1.131 | 30 | -.1337 | .231 | 270 | -.6312 | | |
| 21 | .231 | 170 | -.4931 | .331 | 90 | -.6133 | .431 | 10 | -.0805 | 1.131 | 20 | -.0989 | .331 | 270 | -.6058 | | |
| 22 | .231 | 160 | -.5015 | .331 | 80 | -.6040 | .431 | 0 | -.0613 | 1.131 | 10 | -.0663 | .431 | 270 | -.5951 | | |
| 23 | .231 | 150 | -.5701 | .331 | 70 | -.6646 | .531 | 180 | -.5724 | 1.131 | 0 | -.0794 | .531 | 270 | -.6427 | | |
| 24 | .231 | 140 | -.5655 | .331 | 60 | -.6244 | .531 | 90 | -.6069 | | | | .731 | 270 | -.5622 | | |
| 25 | .231 | 130 | -.5791 | .331 | 50 | -.5371 | .531 | 0 | -.0548 | 1.631 | 90 | -.2150 | .931 | 270 | -.5226 | | |
| 26 | .231 | 120 | -.5631 | .331 | 40 | -.4702 | .731 | 180 | -.5528 | 1.631 | 0 | -.2539 | 1.131 | 270 | -.5182 | | |
| 27 | .231 | 110 | -.5877 | .331 | 30 | -.4063 | .731 | 90 | -.5603 | 2.131 | 180 | -.2330 | 1.631 | 270 | -.5449 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 213 ALPHA 18 MACH .885 Q 702.911 | | | | | | | | | | | | | | MODEL DOME SHAPE | | | |
|---|------|-----|---------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|------------------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5016 | .231 | 100 | -.6146 | .331 | 20 | -.0905 | .731 | 0 | -.0127 | 2.131 | 90 | -.2822 | | |
| 2 | .161 | 170 | -.5021 | .231 | 90 | -.6038 | .331 | 10 | -.0402 | .931 | 180 | -.2847 | 2.131 | 0 | -.0115 | | |
| 3 | .161 | 160 | -.5114 | .231 | 80 | -.6145 | .331 | 0 | -.0296 | .931 | 90 | -.5064 | 0.000 | | .9141 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5109 | .231 | 70 | -.6472 | .431 | 180 | -.5127 | .931 | 0 | -.3494 | 0.000 | | 1.0604 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5003 | .231 | 60 | -.6991 | .431 | 170 | -.5245 | 1.131 | 180 | -.5742 | 0.000 | | 1.2075 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5573 | .231 | 50 | -.6528 | .431 | 160 | -.5342 | 1.131 | 170 | -.5649 | 0.000 | | 1.2212 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5961 | .231 | 40 | -.6719 | .431 | 150 | -.5762 | 1.131 | 160 | -.6020 | 0.000 | | 1.1856 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5868 | .231 | 30 | -.5821 | .431 | 140 | -.5649 | 1.131 | 150 | -.5894 | 0.000 | | 1.1164 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6151 | .231 | 20 | -.3872 | .431 | 130 | -.5767 | 1.131 | 140 | -.5853 | 0.000 | | 1.0177 | .10 | 0.00 |
| 10 | .161 | 90 | -.5872 | .231 | 10 | -.3212 | .431 | 120 | -.5590 | 1.131 | 130 | -.5922 | 0.000 | | .8868 | .20 | 0.00 |
| 11 | .161 | 80 | -.6239 | .231 | 0 | -.3104 | .431 | 110 | -.5639 | 1.131 | 120 | -.5846 | 0.000 | | .7230 | .30 | 0.00 |
| 12 | .161 | 70 | -.6757 | .331 | 180 | -.5075 | .431 | 100 | -.5706 | 1.131 | 110 | -.5785 | 0.000 | | .5359 | .40 | 0.00 |
| 13 | .161 | 60 | -.7154 | .331 | 170 | -.5217 | .431 | 90 | -.5899 | 1.131 | 100 | -.5903 | 0.000 | | .3495 | .45 | 0.00 |
| 14 | .161 | 50 | -.7400 | .331 | 160 | -.5288 | .431 | 80 | -.5846 | 1.131 | 90 | -.5421 | 0.000 | | 1.0965 | 0.00 | .10 |
| 15 | .161 | 40 | -.7454 | .331 | 150 | -.5162 | .431 | 70 | -.4914 | 1.131 | 80 | -.4880 | 0.000 | | 1.0416 | 0.00 | .20 |
| 16 | .161 | 30 | -.8524 | .331 | 140 | -.5684 | .431 | 60 | -.4072 | 1.131 | 70 | -.4241 | 0.000 | | .9348 | 0.00 | .30 |
| 17 | .161 | 20 | -1.0270 | .331 | 130 | -.5677 | .431 | 50 | -.2868 | 1.131 | 60 | -.3357 | 0.000 | | .6847 | 0.00 | .40 |
| 18 | .161 | 10 | -1.0391 | .331 | 120 | -.5838 | .431 | 40 | -.1658 | 1.131 | 50 | -.2530 | 0.000 | | .6918 | 0.00 | .45 |
| 19 | .161 | 0 | -1.0150 | .331 | 110 | -.5761 | .431 | 30 | -.0704 | 1.131 | 40 | -.1672 | .161 | 270 | -.6142 | | |
| 20 | .231 | 180 | -.4930 | .331 | 100 | -.5614 | .431 | 20 | -.0382 | 1.131 | 30 | -.1122 | .231 | 270 | -.5984 | | |
| 21 | .231 | 170 | -.4930 | .331 | 90 | -.5764 | .431 | 10 | -.0094 | 1.131 | 20 | -.0701 | .331 | 270 | -.5869 | | |
| 22 | .231 | 160 | -.5172 | .331 | 80 | -.6046 | .431 | 0 | .0014 | 1.131 | 10 | -.0431 | .431 | 270 | -.5937 | | |
| 23 | .231 | 150 | -.5196 | .331 | 70 | -.5951 | .531 | 180 | -.5189 | 1.131 | 0 | -.0219 | .531 | 270 | -.5638 | | |
| 24 | .231 | 140 | -.5505 | .331 | 60 | -.5469 | .531 | 90 | -.5846 | | | .731 | 270 | -.5296 | | | |
| 25 | .231 | 130 | -.5614 | .331 | 50 | -.4639 | .531 | 0 | -.0057 | 1.631 | 90 | -.3513 | .931 | 270 | -.5225 | | |
| 26 | .231 | 120 | -.5559 | .331 | 40 | -.3411 | .731 | 180 | -.5491 | 1.631 | 0 | -.2666 | 1.131 | 270 | -.5328 | | |
| 27 | .231 | 110 | -.5735 | .331 | 30 | -.1892 | .731 | 90 | -.5240 | 2.131 | 180 | -.2580 | 1.631 | 270 | -.5888 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 214 ALPHA 20 MACH .885 Q 702.820 | | | | | | | | | | | | | | MODEL DOME SHAPE | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|------------------|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4956 | .231 | 100 | -.5806 | .331 | 20 | -.0043 | .731 | 0 | .0202 | 2.131 | 90 | -.3185 | | |
| 2 | .161 | 170 | -.4867 | .231 | 90 | -.5744 | .331 | 10 | .0476 | .931 | 180 | -.2973 | 2.131 | 0 | .0303 | | |
| 3 | .161 | 160 | -.5063 | .231 | 80 | -.6123 | .331 | 0 | .0470 | .931 | 90 | -.5130 | 0.000 | | .9359 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5255 | .231 | 70 | -.6480 | .431 | 180 | -.5191 | .931 | 0 | -.3557 | 0.000 | | 1.1046 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5395 | .231 | 60 | -.6394 | .431 | 170 | -.5243 | 1.131 | 180 | -.5677 | 0.000 | | 1.2030 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5664 | .231 | 50 | -.6485 | .431 | 160 | -.5422 | 1.131 | 170 | -.5786 | 0.000 | | 1.2186 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5917 | .231 | 40 | -.5347 | .431 | 150 | -.5678 | 1.131 | 160 | -.5983 | 0.000 | | 1.1633 | -.10 | 0.00 |
| 8 | .161 | 110 | -.6010 | .231 | 30 | -.2920 | .431 | 140 | -.5735 | 1.131 | 150 | -.5959 | 0.000 | | 1.0913 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5805 | .231 | 20 | -.1729 | .431 | 130 | -.5489 | 1.131 | 140 | -.5714 | 0.000 | | .9899 | .10 | 0.00 |
| 10 | .161 | 90 | -.6041 | .231 | 10 | -.1570 | .431 | 120 | -.5611 | 1.131 | 130 | -.6083 | 0.000 | | .8571 | .20 | 0.00 |
| 11 | .161 | 80 | -.6043 | .231 | 0 | -.1420 | .431 | 110 | -.5322 | 1.131 | 120 | -.5907 | 0.000 | | .6745 | .30 | 0.00 |
| 12 | .161 | 70 | -.6342 | .331 | 180 | -.4905 | .431 | 100 | -.5437 | 1.131 | 110 | -.6046 | 0.000 | | .4986 | .40 | 0.00 |
| 13 | .161 | 60 | -.6991 | .331 | 170 | -.5113 | .431 | 90 | -.5762 | 1.131 | 100 | -.6198 | 0.000 | | .3224 | .45 | 0.00 |
| 14 | .161 | 50 | -.7121 | .331 | 160 | -.5085 | .431 | 80 | -.5353 | 1.131 | 90 | -.5557 | 0.000 | | 1.0687 | 0.00 | .10 |
| 15 | .161 | 40 | -.7845 | .331 | 150 | -.5404 | .431 | 70 | -.4432 | 1.131 | 80 | -.5236 | 0.000 | | 1.0183 | 0.00 | .20 |
| 16 | .161 | 30 | -.9335 | .331 | 140 | -.5477 | .431 | 60 | -.3342 | 1.131 | 70 | -.4409 | 0.000 | | .8989 | 0.00 | .30 |
| 17 | .161 | 20 | -.9760 | .331 | 130 | -.5541 | .431 | 50 | -.1835 | 1.131 | 60 | -.3394 | 0.000 | | .6720 | 0.00 | .40 |
| 18 | .161 | 10 | -.9422 | .331 | 120 | -.5402 | .431 | 40 | -.0973 | 1.131 | 50 | -.2480 | 0.000 | | .6733 | 0.00 | .45 |
| 19 | .161 | 0 | -.9287 | .331 | 110 | -.5576 | .431 | 30 | -.0378 | 1.131 | 40 | -.1646 | .161 | 270 | -.6022 | | |
| 20 | .231 | 180 | -.5003 | .331 | 100 | -.5733 | .431 | 20 | .0006 | 1.131 | 30 | -.1030 | .231 | 270 | -.6010 | | |
| 21 | .231 | 170 | -.5192 | .331 | 90 | -.6003 | .431 | 10 | .0279 | 1.131 | 20 | -.0506 | .331 | 270 | -.6001 | | |
| 22 | .231 | 160 | -.5267 | .331 | 80 | -.6033 | .431 | 0 | .0461 | 1.131 | 10 | -.0109 | .431 | 270 | -.5869 | | |
| 23 | .231 | 150 | -.5252 | .331 | 70 | -.5591 | .531 | 180 | -.5251 | 1.131 | 0 | .0187 | .531 | 270 | -.5420 | | |
| 24 | .231 | 140 | -.5267 | .331 | 60 | -.4471 | .531 | 90 | -.5290 | | | .731 | 270 | -.5044 | | | |
| 25 | .231 | 130 | -.5465 | .331 | 50 | -.3393 | .531 | 0 | .0431 | 1.631 | 90 | -.3560 | .931 | 270 | -.5224 | | |
| 26 | .231 | 120 | -.5601 | .331 | 40 | -.1583 | .731 | 180 | -.5555 | 1.631 | 0 | -.2804 | 1.131 | 270 | -.5907 | | |
| 27 | .231 | 110 | -.5870 | .331 | 30 | -.0445 | .731 | 90 | -.5093 | 2.131 | 180 | -.2645 | 1.631 | 270 | -.6559 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 215 ALPHA 22 MACH .885 Q 703.088 MODEL DOME SHAPE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4759 | .231 | 100 | -.5563 | .331 | 20 | .0651 | .731 | 0 | .0850 | 2.131 | 90 | -.3007 | | |
| 2 | .161 | 170 | -.4639 | .231 | 90 | -.5532 | .331 | 10 | .1047 | .931 | 130 | -.2896 | 2.131 | 0 | .0560 | | |
| 3 | .161 | 160 | -.4991 | .231 | 80 | -.5909 | .331 | 0 | .1111 | .931 | 90 | -.5197 | 0.000 | | .9739 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4873 | .231 | 70 | -.6112 | .431 | 180 | -.4879 | .931 | 0 | -.3326 | 0.000 | | 1.1444 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5074 | .231 | 60 | -.6012 | .431 | 170 | -.5083 | 1.131 | 180 | -.5508 | 0.000 | | 1.2232 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5069 | .231 | 50 | -.5154 | .431 | 160 | -.4923 | 1.131 | 170 | -.5379 | 0.000 | | 1.2140 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5409 | .231 | 40 | -.2162 | .431 | 150 | -.5197 | 1.131 | 160 | -.5390 | 0.000 | | 1.1561 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5544 | .231 | 30 | -.1347 | .431 | 140 | -.5258 | 1.131 | 150 | -.5453 | 0.000 | | 1.0688 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5095 | .231 | 20 | -.0475 | .431 | 130 | -.5425 | 1.131 | 140 | -.5679 | 0.000 | | .9630 | .10 | 0.00 |
| 10 | .161 | 90 | -.5816 | .231 | 10 | -.0094 | .431 | 120 | -.5334 | 1.131 | 130 | -.5751 | 0.000 | | .8276 | .20 | 0.00 |
| 11 | .161 | 80 | -.5950 | .231 | 0 | -.0003 | .431 | 110 | -.5327 | 1.131 | 120 | -.5920 | 0.000 | | .6462 | .30 | 0.00 |
| 12 | .161 | 70 | -.6490 | .331 | 180 | -.5030 | .431 | 100 | -.5598 | 1.131 | 110 | -.6359 | 0.000 | | .4742 | .40 | 0.00 |
| 13 | .161 | 60 | -.6808 | .331 | 170 | -.4794 | .431 | 90 | -.5399 | 1.131 | 100 | -.6014 | 0.000 | | .3341 | .45 | 0.00 |
| 14 | .161 | 50 | -.6955 | .331 | 160 | -.4894 | .431 | 80 | -.4823 | 1.131 | 90 | -.5790 | 0.000 | | 1.0640 | 0.00 | .10 |
| 15 | .161 | 40 | -.8169 | .331 | 150 | -.5173 | .431 | 70 | -.3775 | 1.131 | 80 | -.5306 | 0.000 | | 1.0107 | 0.00 | .20 |
| 16 | .161 | 30 | -.9247 | .331 | 140 | -.5340 | .431 | 60 | -.2363 | 1.131 | 70 | -.4489 | 0.000 | | .8908 | 0.00 | .30 |
| 17 | .161 | 20 | -.8528 | .331 | 130 | -.5330 | .431 | 50 | -.1431 | 1.131 | 60 | -.3381 | 0.000 | | .6629 | 0.00 | .40 |
| 18 | .161 | 10 | -.8649 | .331 | 120 | -.5774 | .431 | 40 | -.0835 | 1.131 | 50 | -.2592 | 0.000 | | .6484 | 0.00 | .45 |
| 19 | .161 | 0 | -.7553 | .331 | 110 | -.5545 | .431 | 30 | .0025 | 1.131 | 40 | -.1506 | .161 | 270 | -.5745 | | |
| 20 | .231 | 180 | -.4754 | .331 | 100 | -.5418 | .431 | 20 | .0709 | 1.131 | 30 | -.0517 | .231 | 270 | -.5649 | | |
| 21 | .231 | 170 | -.5106 | .331 | 90 | -.5916 | .431 | 10 | .0988 | 1.131 | 20 | .0006 | .331 | 270 | -.5801 | | |
| 22 | .231 | 160 | -.4837 | .331 | 80 | -.5624 | .431 | 0 | .1147 | 1.131 | 10 | .0430 | .431 | 270 | -.5493 | | |
| 23 | .231 | 150 | -.5245 | .331 | 70 | -.5075 | .531 | 180 | -.5278 | 1.131 | 0 | .0497 | .531 | 270 | -.5247 | | |
| 24 | .231 | 140 | -.5169 | .331 | 60 | -.3363 | .531 | 90 | -.5024 | | | | .731 | 270 | -.4974 | | |
| 25 | .231 | 130 | -.5566 | .331 | 50 | -.1858 | .531 | 0 | .1046 | 1.631 | 90 | -.3509 | .931 | 270 | -.5407 | | |
| 26 | .231 | 120 | -.5534 | .331 | 40 | -.0733 | .731 | 180 | -.5362 | 1.631 | 0 | -.3024 | 1.131 | 270 | -.6138 | | |
| 27 | .231 | 110 | -.5510 | .331 | 30 | -.0036 | .731 | 90 | -.5081 | 2.131 | 180 | -.3509 | 1.631 | 270 | -.7296 | | |

ORIGINAL PAGE IS OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 216 ALPHA 24 MACH .883 Q 701.030 MODEL DOME SHAPE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4766 | .231 | 100 | -.5688 | .331 | 20 | .1183 | .731 | 0 | .1323 | 2.131 | 90 | -.3151 | | |
| 2 | .161 | 170 | -.5106 | .231 | 90 | -.6222 | .331 | 10 | .1478 | .931 | 180 | -.3300 | 2.131 | 0 | .0579 | | |
| 3 | .161 | 160 | -.4887 | .231 | 80 | -.6169 | .331 | 0 | .1715 | .931 | 90 | -.5473 | 0.000 | | 1.0088 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5347 | .231 | 70 | -.6642 | .431 | 180 | -.5317 | .931 | 0 | -.3527 | 0.000 | | 1.1872 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5329 | .231 | 60 | -.5600 | .431 | 170 | -.5239 | 1.131 | 180 | -.5597 | 0.000 | | 1.2217 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5182 | .231 | 50 | -.2444 | .431 | 160 | -.4989 | 1.131 | 170 | -.5350 | 0.000 | | 1.2004 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5447 | .231 | 40 | -.1222 | .431 | 150 | -.5314 | 1.131 | 160 | -.5768 | 0.000 | | 1.1287 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5793 | .231 | 30 | -.0658 | .431 | 140 | -.5562 | 1.131 | 150 | -.5779 | 0.000 | | 1.0247 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.5630 | .231 | 20 | -.0011 | .431 | 130 | -.5358 | 1.131 | 140 | -.5844 | 0.000 | | .9155 | .10 | 0.00 |
| 10 | .161 | 90 | -.5614 | .231 | 10 | .0635 | .431 | 120 | -.5097 | 1.131 | 130 | -.5844 | 0.000 | | .7818 | .20 | 0.00 |
| 11 | .161 | 80 | -.6486 | .231 | 0 | .0750 | .431 | 110 | -.5471 | 1.131 | 120 | -.6403 | 0.000 | | .5891 | .30 | 0.00 |
| 12 | .161 | 70 | -.6613 | .331 | 180 | -.4967 | .431 | 100 | -.5581 | 1.131 | 110 | -.6738 | 0.000 | | .4347 | .40 | 0.00 |
| 13 | .161 | 60 | -.6734 | .331 | 170 | -.5145 | .431 | 90 | -.5466 | 1.131 | 100 | -.6911 | 0.000 | | .2883 | .45 | 0.00 |
| 14 | .161 | 50 | -.6033 | .331 | 160 | -.5108 | .431 | 80 | -.4335 | 1.131 | 90 | -.6337 | 0.000 | | 1.0155 | 0.00 | .10 |
| 15 | .161 | 40 | -.5828 | .331 | 150 | -.4833 | .431 | 70 | -.3057 | 1.131 | 80 | -.5486 | 0.000 | | .9741 | 0.00 | .20 |
| 16 | .161 | 30 | -.4981 | .331 | 140 | -.5406 | .431 | 60 | -.2382 | 1.131 | 70 | -.4822 | 0.000 | | .8427 | 0.00 | .30 |
| 17 | .161 | 20 | -.4468 | .331 | 130 | -.5382 | .431 | 50 | -.1349 | 1.131 | 60 | -.3663 | 0.000 | | .6219 | 0.00 | .40 |
| 18 | .161 | 10 | -.4281 | .331 | 120 | -.5268 | .431 | 40 | -.0413 | 1.131 | 50 | -.2421 | 0.000 | | .6283 | 0.00 | .45 |
| 19 | .161 | 0 | -.3747 | .331 | 110 | -.5289 | .431 | 30 | .0512 | 1.131 | 40 | -.1314 | .161 | 270 | -.5837 | | |
| 20 | .231 | 180 | -.4719 | .331 | 100 | -.5411 | .431 | 20 | .1140 | 1.131 | 30 | -.0303 | .231 | 270 | -.5813 | | |
| 21 | .231 | 170 | -.4956 | .331 | 90 | -.5990 | .431 | 10 | .1428 | 1.131 | 20 | .0284 | .331 | 270 | -.5918 | | |
| 22 | .231 | 160 | -.4862 | .331 | 80 | -.5355 | .431 | 0 | .1793 | 1.131 | 10 | .0990 | .431 | 270 | -.5270 | | |
| 23 | .231 | 150 | -.5027 | .331 | 70 | -.4534 | .531 | 180 | -.5097 | 1.131 | 0 | .1037 | .531 | 270 | -.4925 | | |
| 24 | .231 | 140 | -.5247 | .331 | 60 | -.2648 | .531 | 90 | -.4884 | | | | .731 | 270 | -.5306 | | |
| 25 | .231 | 130 | -.5319 | .331 | 50 | -.1405 | .531 | 0 | .1602 | 1.631 | 90 | -.3055 | .931 | 270 | -.5781 | | |
| 26 | .231 | 120 | -.5320 | .331 | 40 | -.0389 | .731 | 180 | -.5226 | 1.631 | 0 | -.3283 | 1.131 | 270 | -.6486 | | |
| 27 | .231 | 110 | -.5372 | .331 | 30 | .0613 | .731 | 90 | -.5002 | 2.131 | 180 | -.3729 | 1.631 | 270 | -.7773 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 217 ALPHA 26 MACH .885 Q 703.002 MODEL DUNE SHAPE | | | | | | | | | | | | | | | | | |
|--|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4705 | .231 | 100 | -.5691 | .331 | 20 | .1973 | .731 | 0 | .1935 | 2.131 | 90 | -.3456 | | |
| 2 | .161 | 170 | -.5001 | .231 | 90 | -.6148 | .331 | 10 | .2175 | .931 | 180 | -.3513 | 2.131 | 0 | .1074 | | |
| 3 | .161 | 160 | -.5262 | .231 | 80 | -.6635 | .331 | 0 | .2378 | .931 | 90 | -.6159 | 0.000 | | 1.0440 | -.45 | 0.00 |
| 4 | .161 | 150 | -.5347 | .231 | 70 | -.6003 | .431 | 180 | -.5297 | .931 | 0 | -.3542 | 0.000 | | 1.2131 | -.40 | 0.00 |
| 5 | .161 | 140 | -.5253 | .231 | 60 | -.3626 | .431 | 170 | -.5103 | 1.131 | 180 | -.5746 | 0.000 | | 1.2235 | -.30 | 0.00 |
| 6 | .161 | 130 | -.5249 | .231 | 50 | -.1531 | .431 | 160 | -.5041 | 1.131 | 170 | -.5475 | 0.000 | | 1.1903 | -.20 | 0.00 |
| 7 | .161 | 120 | -.5538 | .231 | 40 | -.1043 | .431 | 150 | -.5379 | 1.131 | 160 | -.5933 | 0.000 | | 1.1102 | -.10 | 0.00 |
| 8 | .161 | 110 | -.5401 | .231 | 30 | -.0039 | .431 | 140 | -.5228 | 1.131 | 150 | -.5592 | 0.000 | | 1.0021 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.6097 | .231 | 20 | .0984 | .431 | 130 | -.5051 | 1.131 | 140 | -.6305 | 0.000 | | .8774 | .10 | 0.00 |
| 10 | .161 | 90 | -.5641 | .231 | 10 | .1971 | .431 | 120 | -.5103 | 1.131 | 130 | -.6007 | 0.000 | | .7356 | .20 | 0.00 |
| 11 | .161 | 80 | -.5815 | .231 | 0 | .1925 | .431 | 110 | -.5219 | 1.131 | 120 | -.6494 | 0.000 | | .5506 | .30 | 0.00 |
| 12 | .161 | 70 | -.6175 | .331 | 180 | -.5015 | .431 | 100 | -.5607 | 1.131 | 110 | -.7345 | 0.000 | | .4145 | .40 | 0.00 |
| 13 | .161 | 60 | -.6242 | .331 | 170 | -.5167 | .431 | 90 | -.5098 | 1.131 | 100 | -.7326 | 0.000 | | .2639 | .45 | 0.00 |
| 14 | .161 | 50 | -.5023 | .331 | 160 | -.5147 | .431 | 80 | -.4272 | 1.131 | 90 | -.6856 | 0.000 | | .9917 | 0.00 | .10 |
| 15 | .161 | 40 | -.4707 | .331 | 150 | -.5549 | .431 | 70 | -.3561 | 1.131 | 80 | -.6374 | 0.000 | | .9289 | 0.00 | .20 |
| 16 | .161 | 30 | -.4111 | .331 | 140 | -.5033 | .431 | 60 | -.2070 | 1.131 | 70 | -.4871 | 0.000 | | .8362 | 0.00 | .30 |
| 17 | .161 | 20 | -.3603 | .331 | 130 | -.5313 | .431 | 50 | -.1030 | 1.131 | 60 | -.3646 | 0.000 | | .6281 | 0.00 | .40 |
| 18 | .161 | 10 | -.3096 | .331 | 120 | -.5333 | .431 | 40 | .0060 | 1.131 | 50 | -.2379 | 0.000 | | .6031 | 0.00 | .45 |
| 19 | .161 | 0 | -.2885 | .331 | 110 | -.5325 | .431 | 30 | .1048 | 1.131 | 40 | -.1158 | .161 | 270 | -.5867 | | |
| 20 | .231 | 180 | -.4664 | .331 | 100 | -.5400 | .431 | 20 | .1736 | 1.131 | 30 | .0002 | .231 | 270 | -.5802 | | |
| 21 | .231 | 170 | -.4762 | .331 | 90 | -.5711 | .431 | 10 | .2241 | 1.131 | 20 | .0766 | .331 | 270 | -.5779 | | |
| 22 | .231 | 160 | -.4482 | .331 | 80 | -.5222 | .431 | 0 | .2440 | 1.131 | 10 | .1379 | .431 | 270 | -.4877 | | |
| 23 | .231 | 150 | -.5330 | .331 | 70 | -.3992 | .531 | 180 | -.5416 | 1.131 | 0 | .1446 | .531 | 270 | -.4952 | | |
| 24 | .231 | 140 | -.5068 | .331 | 60 | -.2318 | .531 | 90 | -.4702 | | | .731 | .731 | 270 | -.5503 | | |
| 25 | .231 | 130 | -.5403 | .331 | 50 | -.1035 | .531 | 0 | .2189 | 1.631 | 90 | -.2314 | .931 | 270 | -.6253 | | |
| 26 | .231 | 120 | -.5282 | .331 | 40 | .0111 | .731 | 180 | -.5349 | 1.631 | 0 | -.3563 | 1.131 | 270 | -.6965 | | |
| 27 | .231 | 110 | -.5626 | .331 | 30 | .1072 | .731 | 90 | -.5652 | 2.131 | 180 | -.3952 | 1.631 | 270 | -.8523 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 24 POINT 218 ALPHA 0 MACH .884 Q 701.576 MODEL DUNE SHAPE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--------|------|------|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.5038 | .231 | 100 | -.4903 | .331 | 20 | -.4948 | .731 | 0 | -.5153 | 2.131 | 90 | -.0880 | | |
| 2 | .161 | 170 | -.4559 | .231 | 90 | -.4530 | .331 | 10 | -.4570 | .931 | 180 | -.0474 | 2.131 | 0 | -.2336 | | |
| 3 | .161 | 160 | -.4614 | .231 | 80 | -.4514 | .331 | 0 | -.4560 | .931 | 90 | -.4949 | 0.000 | | .7820 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4815 | .231 | 70 | -.4781 | .431 | 180 | -.4935 | .931 | 0 | -.2636 | 0.000 | | .7852 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4799 | .231 | 60 | -.4678 | .431 | 170 | -.4740 | 1.131 | 180 | -.5213 | 0.000 | | 1.0169 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4336 | .231 | 50 | -.4392 | .431 | 160 | -.4526 | 1.131 | 170 | -.4867 | 0.000 | | 1.1440 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4807 | .231 | 40 | -.4736 | .431 | 150 | -.4941 | 1.131 | 160 | -.5157 | 0.000 | | 1.1984 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4576 | .231 | 30 | -.4495 | .431 | 140 | -.4693 | 1.131 | 150 | -.4942 | 0.000 | | 1.2231 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4474 | .231 | 20 | -.4494 | .431 | 130 | -.4664 | 1.131 | 140 | -.4984 | 0.000 | | 1.2016 | .10 | 0.00 |
| 10 | .161 | 90 | -.4757 | .231 | 10 | -.4838 | .431 | 120 | -.4850 | 1.131 | 130 | -.5218 | 0.000 | | 1.1415 | .20 | 0.00 |
| 11 | .161 | 80 | -.4509 | .231 | 0 | -.4560 | .431 | 110 | -.4621 | 1.131 | 120 | -.4951 | 0.000 | | 1.0245 | .30 | 0.00 |
| 12 | .161 | 70 | -.4419 | .331 | 180 | -.4509 | .431 | 100 | -.4512 | 1.131 | 110 | -.4942 | 0.000 | | .8033 | .40 | 0.00 |
| 13 | .161 | 60 | -.4438 | .331 | 170 | -.4564 | .431 | 90 | -.4561 | 1.131 | 100 | -.4958 | 0.000 | | .7553 | .45 | 0.00 |
| 14 | .161 | 50 | -.4454 | .331 | 160 | -.4534 | .431 | 80 | -.4531 | 1.131 | 90 | -.4932 | 0.000 | | 1.2043 | 0.00 | .10 |
| 15 | .161 | 40 | -.4434 | .331 | 150 | -.4552 | .431 | 70 | -.4582 | 1.131 | 80 | -.4923 | 0.000 | | 1.1421 | 0.00 | .20 |
| 16 | .161 | 30 | -.4467 | .331 | 140 | -.4649 | .431 | 60 | -.4675 | 1.131 | 70 | -.5049 | 0.000 | | 1.0208 | 0.00 | .30 |
| 17 | .161 | 20 | -.4657 | .331 | 130 | -.4898 | .431 | 50 | -.4881 | 1.131 | 60 | -.5228 | 0.000 | | .7905 | 0.00 | .40 |
| 18 | .161 | 10 | -.4300 | .331 | 120 | -.4417 | .431 | 40 | -.4423 | 1.131 | 50 | -.4728 | 0.000 | | .7890 | 0.00 | .45 |
| 19 | .161 | 0 | -.4409 | .331 | 110 | -.4564 | .431 | 30 | -.4577 | 1.131 | 40 | -.4990 | .161 | 270 | -.4528 | | |
| 20 | .231 | 180 | -.4732 | .331 | 100 | -.4761 | .431 | 20 | -.4800 | 1.131 | 30 | -.5174 | .231 | 270 | -.4771 | | |
| 21 | .231 | 170 | -.4920 | .331 | 90 | -.4925 | .431 | 10 | -.5087 | 1.131 | 20 | -.5317 | .331 | 270 | -.4982 | | |
| 22 | .231 | 160 | -.4705 | .331 | 80 | -.4771 | .431 | 0 | -.4845 | 1.131 | 10 | -.5157 | .431 | 270 | -.4755 | | |
| 23 | .231 | 150 | -.4692 | .331 | 70 | -.4661 | .531 | 180 | -.4811 | 1.131 | 0 | -.5018 | .531 | 270 | -.4835 | | |
| 24 | .231 | 140 | -.4802 | .331 | 60 | -.4846 | .531 | 90 | -.4933 | | | .731 | .731 | 270 | -.5054 | | |
| 25 | .231 | 130 | -.4805 | .331 | 50 | -.4815 | .531 | 0 | -.4827 | 1.631 | 90 | -.1642 | .931 | 270 | -.5272 | | |
| 26 | .231 | 120 | -.4722 | .331 | 40 | -.4785 | .731 | 180 | -.5011 | 1.631 | 0 | -.0023 | 1.131 | 270 | -.5161 | | |
| 27 | .231 | 110 | -.4414 | .331 | 30 | -.4576 | .731 | 90 | -.4724 | 2.131 | 180 | -.2333 | 1.631 | 270 | -.4266 | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | RUN 25 POINT 221 ALPHA U MACH .712 W 539.496 | | | | MODEL DOME SHAPE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--|------|------|--|------------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | |
| 1 | .161 | 180 | -.4456 | .231 | 100 | -.4672 | .331 | 20 | -.4774 | .731 | 0 | -.5181 | 2.131 | 90 | -.1142 | | | | | | |
| 2 | .161 | 170 | -.4630 | .231 | 90 | -.4627 | .331 | 10 | -.4713 | .931 | 180 | -.1114 | 2.131 | 0 | -.0821 | | | | | | |
| 3 | .161 | 160 | -.4777 | .231 | 80 | -.4705 | .331 | 0 | -.4917 | .931 | 90 | -.5246 | 0.000 | | .6490 | -.45 | 0.00 | | | | |
| 4 | .161 | 150 | -.4712 | .231 | 70 | -.4805 | .431 | 180 | -.4970 | .931 | 0 | -.5514 | 0.000 | | .6804 | -.40 | 0.00 | | | | |
| 5 | .161 | 140 | -.4638 | .231 | 60 | -.4657 | .431 | 170 | -.4831 | 1.131 | 180 | -.5149 | 0.000 | | .9330 | -.30 | 0.00 | | | | |
| 6 | .161 | 130 | -.4624 | .231 | 50 | -.4722 | .431 | 160 | -.4904 | 1.131 | 170 | -.5219 | 0.000 | | 1.0641 | -.20 | 0.00 | | | | |
| 7 | .161 | 120 | -.4673 | .231 | 40 | -.4753 | .431 | 150 | -.4794 | 1.131 | 160 | -.5270 | 0.000 | | 1.1204 | -.10 | 0.00 | | | | |
| 8 | .161 | 110 | -.4690 | .231 | 30 | -.4770 | .431 | 140 | -.4939 | 1.131 | 150 | -.5258 | 0.000 | | 1.1413 | 0.00 | 0.00 | | | | |
| 9 | .161 | 100 | -.4577 | .231 | 20 | -.4714 | .431 | 130 | -.5016 | 1.131 | 140 | -.5289 | 0.000 | | 1.1241 | .10 | 0.00 | | | | |
| 10 | .161 | 90 | -.4710 | .231 | 10 | -.4814 | .431 | 120 | -.4878 | 1.131 | 130 | -.5282 | 0.000 | | 1.0599 | .20 | 0.00 | | | | |
| 11 | .161 | 80 | -.4452 | .231 | 0 | -.4731 | .431 | 110 | -.4706 | 1.131 | 120 | -.5033 | 0.000 | | .9372 | .30 | 0.00 | | | | |
| 12 | .161 | 70 | -.4762 | .331 | 180 | -.4875 | .431 | 100 | -.4713 | 1.131 | 110 | -.5219 | 0.000 | | .6929 | .40 | 0.00 | | | | |
| 13 | .161 | 60 | -.4751 | .331 | 170 | -.4614 | .431 | 90 | -.4809 | 1.131 | 100 | -.5214 | 0.000 | | .6282 | .45 | 0.00 | | | | |
| 14 | .161 | 50 | -.4507 | .331 | 160 | -.4831 | .431 | 80 | -.4662 | 1.131 | 90 | -.5299 | 0.000 | | 1.1236 | 0.00 | .10 | | | | |
| 15 | .161 | 40 | -.4885 | .331 | 150 | -.4905 | .431 | 70 | -.4921 | 1.131 | 80 | -.5251 | 0.000 | | 1.0575 | 0.00 | .20 | | | | |
| 16 | .161 | 30 | -.4694 | .331 | 140 | -.4768 | .431 | 60 | -.4796 | 1.131 | 70 | -.5229 | 0.000 | | .9296 | 0.00 | .30 | | | | |
| 17 | .161 | 20 | -.4653 | .331 | 130 | -.4670 | .431 | 50 | -.4757 | 1.131 | 60 | -.5147 | 0.000 | | .6828 | 0.00 | .40 | | | | |
| 18 | .161 | 10 | -.4790 | .331 | 120 | -.4864 | .431 | 40 | -.5047 | 1.131 | 50 | -.5311 | 0.000 | | .6561 | 0.00 | .45 | | | | |
| 19 | .161 | 0 | -.4638 | .331 | 110 | -.4714 | .431 | 30 | -.4667 | 1.131 | 40 | -.5200 | .161 | 270 | -.4678 | | | | | | |
| 20 | .231 | 180 | -.4701 | .331 | 100 | -.4779 | .431 | 20 | -.4827 | 1.131 | 30 | -.5214 | .231 | 270 | -.4612 | | | | | | |
| 21 | .231 | 170 | -.4811 | .331 | 90 | -.4912 | .431 | 10 | -.4926 | 1.131 | 20 | -.5219 | .331 | 270 | -.4891 | | | | | | |
| 22 | .231 | 160 | -.4725 | .331 | 80 | -.4775 | .431 | 0 | -.5016 | 1.131 | 10 | -.5323 | .431 | 270 | -.4830 | | | | | | |
| 23 | .231 | 150 | -.4757 | .331 | 70 | -.4875 | .531 | 180 | -.4932 | 1.131 | 0 | -.5359 | .531 | 270 | -.4960 | | | | | | |
| 24 | .231 | 140 | -.4878 | .331 | 60 | -.4903 | .531 | 90 | -.4932 | | | | .731 | 270 | -.5217 | | | | | | |
| 25 | .231 | 130 | -.4735 | .331 | 50 | -.4814 | .531 | 0 | -.4864 | 1.631 | 90 | -.2993 | .931 | 270 | -.5271 | | | | | | |
| 26 | .231 | 120 | -.4666 | .331 | 40 | -.4703 | .731 | 180 | -.5086 | 1.631 | 0 | -.1143 | 1.131 | 270 | -.5171 | | | | | | |
| 27 | .231 | 110 | -.4720 | .331 | 30 | -.4773 | .731 | 90 | -.5080 | 2.131 | 180 | -.0559 | 1.631 | 270 | -.3341 | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | | RUN 25 POINT 222 ALPHA U MACH .608 W 429.627 | | | | MODEL DOME SHAPE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|-----|--|------|------|--|------------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | |
| 1 | .161 | 180 | -.4835 | .231 | 100 | -.5080 | .331 | 20 | -.5019 | .731 | 0 | -.5511 | 2.131 | 90 | -.1290 | | | | | | |
| 2 | .161 | 170 | -.4938 | .231 | 90 | -.4886 | .331 | 10 | -.5152 | .931 | 180 | -.1299 | 2.131 | 0 | .0630 | | | | | | |
| 3 | .161 | 160 | -.5055 | .231 | 80 | -.5080 | .331 | 0 | -.5254 | .931 | 90 | -.5714 | 0.000 | | .5913 | -.45 | 0.00 | | | | |
| 4 | .161 | 150 | -.4900 | .231 | 70 | -.4927 | .431 | 180 | -.5204 | .931 | 0 | -.8464 | 0.000 | | .6251 | -.40 | 0.00 | | | | |
| 5 | .161 | 140 | -.4623 | .231 | 60 | -.4864 | .431 | 170 | -.5119 | 1.131 | 180 | -.5089 | 0.000 | | .8949 | -.30 | 0.00 | | | | |
| 6 | .161 | 130 | -.4497 | .231 | 50 | -.4739 | .431 | 160 | -.5190 | 1.131 | 170 | -.5189 | 0.000 | | 1.0223 | -.20 | 0.00 | | | | |
| 7 | .161 | 120 | -.4954 | .231 | 40 | -.4919 | .431 | 150 | -.5187 | 1.131 | 160 | -.5198 | 0.000 | | 1.0872 | -.10 | 0.00 | | | | |
| 8 | .161 | 110 | -.4852 | .231 | 30 | -.5053 | .431 | 140 | -.5005 | 1.131 | 150 | -.5208 | 0.000 | | 1.1054 | 0.00 | 0.00 | | | | |
| 9 | .161 | 100 | -.4805 | .231 | 20 | -.4826 | .431 | 130 | -.5154 | 1.131 | 140 | -.5026 | 0.000 | | 1.0903 | .10 | 0.00 | | | | |
| 10 | .161 | 90 | -.4702 | .231 | 10 | -.4810 | .431 | 120 | -.5063 | 1.131 | 130 | -.5256 | 0.000 | | 1.0257 | .20 | 0.00 | | | | |
| 11 | .161 | 80 | -.4889 | .231 | 0 | -.5061 | .431 | 110 | -.5265 | 1.131 | 120 | -.5047 | 0.000 | | .8989 | .30 | 0.00 | | | | |
| 12 | .161 | 70 | -.4821 | .331 | 180 | -.4902 | .431 | 100 | -.4978 | 1.131 | 110 | -.5056 | 0.000 | | .6399 | .40 | 0.00 | | | | |
| 13 | .161 | 60 | -.4838 | .331 | 170 | -.5118 | .431 | 90 | -.5063 | 1.131 | 100 | -.5180 | 0.000 | | .5596 | .45 | 0.00 | | | | |
| 14 | .161 | 50 | -.4870 | .331 | 160 | -.5083 | .431 | 80 | -.5171 | 1.131 | 90 | -.5232 | 0.000 | | 1.0823 | 0.00 | .10 | | | | |
| 15 | .161 | 40 | -.4810 | .331 | 150 | -.4984 | .431 | 70 | -.4967 | 1.131 | 80 | -.5065 | 0.000 | | 1.0285 | 0.00 | .20 | | | | |
| 16 | .161 | 30 | -.5069 | .331 | 140 | -.4998 | .431 | 60 | -.5295 | 1.131 | 70 | -.5283 | 0.000 | | .8903 | 0.00 | .30 | | | | |
| 17 | .161 | 20 | -.4938 | .331 | 130 | -.4927 | .431 | 50 | -.5146 | 1.131 | 60 | -.5232 | 0.000 | | .6362 | 0.00 | .40 | | | | |
| 18 | .161 | 10 | -.4723 | .331 | 120 | -.4661 | .431 | 40 | -.4909 | 1.131 | 50 | -.5165 | 0.000 | | .6048 | 0.00 | .45 | | | | |
| 19 | .161 | 0 | -.4789 | .331 | 110 | -.4990 | .431 | 30 | -.5025 | 1.131 | 40 | -.5253 | .161 | 270 | -.4931 | | | | | | |
| 20 | .231 | 180 | -.5109 | .331 | 100 | -.5039 | .431 | 20 | -.4898 | 1.131 | 30 | -.5311 | .231 | 270 | -.4901 | | | | | | |
| 21 | .231 | 170 | -.5221 | .331 | 90 | -.5150 | .431 | 10 | -.5212 | 1.131 | 20 | -.4935 | .331 | 270 | -.5174 | | | | | | |
| 22 | .231 | 160 | -.4954 | .331 | 80 | -.5066 | .431 | 0 | -.5080 | 1.131 | 10 | -.5080 | .431 | 270 | -.5205 | | | | | | |
| 23 | .231 | 150 | -.4957 | .331 | 70 | -.4979 | .531 | 180 | -.5273 | 1.131 | 0 | -.5010 | .531 | 270 | -.5276 | | | | | | |
| 24 | .231 | 140 | -.4857 | .331 | 60 | -.4984 | .531 | 90 | -.5176 | | | | .731 | 270 | -.5420 | | | | | | |
| 25 | .231 | 130 | -.4982 | .331 | 50 | -.4957 | .531 | 0 | -.4978 | 1.631 | 90 | -.3279 | .931 | 270 | -.5571 | | | | | | |
| 26 | .231 | 120 | -.4935 | .331 | 40 | -.5020 | .731 | 180 | -.5350 | 1.631 | 0 | -.1263 | 1.131 | 270 | -.5233 | | | | | | |
| 27 | .231 | 110 | -.4946 | .331 | 30 | -.4889 | .731 | 90 | -.5414 | 2.131 | 180 | .0532 | 1.631 | 270 | -.1997 | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 25 POINT 219 ALPHA 0 MACH .886 Q 703.010 | | | | MODEL DUME SHAPE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|------------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.4657 | .231 | 100 | -.4415 | .331 | 20 | -.4636 | .731 | 0 | -.4813 | 2.131 | 90 | -.0644 | | | | | |
| 2 | .161 | 170 | -.4621 | .231 | 90 | -.4475 | .331 | 10 | -.4635 | .931 | 130 | -.0718 | 2.131 | 0 | -.2775 | | | | | |
| 3 | .161 | 160 | -.4551 | .231 | 80 | -.4392 | .331 | 0 | -.4479 | .931 | 90 | -.4901 | 0.000 | | .7815 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.4727 | .231 | 70 | -.4724 | .431 | 180 | -.4927 | .931 | 0 | -.2812 | 0.000 | | .7823 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.4677 | .231 | 60 | -.4816 | .431 | 170 | -.4870 | 1.131 | 180 | -.5210 | 0.000 | | 1.0201 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.4661 | .231 | 50 | -.4514 | .431 | 160 | -.4752 | 1.131 | 170 | -.5078 | 0.000 | | 1.1501 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.4557 | .231 | 40 | -.4342 | .431 | 150 | -.4695 | 1.131 | 160 | -.4954 | 0.000 | | 1.2029 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.4695 | .231 | 30 | -.4652 | .431 | 140 | -.4799 | 1.131 | 150 | -.5141 | 0.000 | | 1.2164 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.4690 | .231 | 20 | -.4696 | .431 | 130 | -.4838 | 1.131 | 140 | -.5190 | 0.000 | | 1.2013 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.4491 | .231 | 10 | -.4677 | .431 | 120 | -.4611 | 1.131 | 130 | -.5015 | 0.000 | | 1.1473 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.4650 | .231 | 0 | -.4667 | .431 | 110 | -.4751 | 1.131 | 120 | -.5049 | 0.000 | | 1.0275 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.4528 | .331 | 180 | -.4686 | .431 | 100 | -.4739 | 1.131 | 110 | -.5056 | 0.000 | | .7994 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.4518 | .331 | 170 | -.4596 | .431 | 90 | -.4670 | 1.131 | 100 | -.5049 | 0.000 | | .7531 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.4476 | .331 | 160 | -.4612 | .431 | 80 | -.4604 | 1.131 | 90 | -.5073 | 0.000 | | 1.2003 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.4531 | .331 | 150 | -.4686 | .431 | 70 | -.4688 | 1.131 | 80 | -.5141 | 0.000 | | 1.1425 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.4670 | .331 | 140 | -.4604 | .431 | 60 | -.4762 | 1.131 | 70 | -.5147 | 0.000 | | 1.0205 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.4418 | .331 | 130 | -.4292 | .431 | 50 | -.4533 | 1.131 | 60 | -.4812 | 0.000 | | .7981 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.4730 | .331 | 120 | -.4669 | .431 | 40 | -.4971 | 1.131 | 50 | -.5177 | 0.000 | | .7838 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.4823 | .331 | 110 | -.4866 | .431 | 30 | -.4897 | 1.131 | 40 | -.5245 | .161 | 270 | -.4911 | | | | | |
| 20 | .231 | 180 | -.4835 | .331 | 100 | -.4727 | .431 | 20 | -.4777 | 1.131 | 30 | -.5167 | .231 | 270 | -.4817 | | | | | |
| 21 | .231 | 170 | -.4443 | .331 | 90 | -.4379 | .431 | 10 | -.4547 | 1.131 | 20 | -.4878 | .331 | 270 | -.4497 | | | | | |
| 22 | .231 | 160 | -.4640 | .331 | 80 | -.4544 | .431 | 0 | -.4685 | 1.131 | 10 | -.4949 | .431 | 270 | -.4787 | | | | | |
| 23 | .231 | 150 | -.4534 | .331 | 70 | -.4537 | .531 | 180 | -.4794 | 1.131 | 0 | -.4988 | .531 | 270 | -.4802 | | | | | |
| 24 | .231 | 140 | -.4733 | .331 | 60 | -.4552 | .531 | 90 | -.4840 | | | | .731 | 270 | -.4993 | | | | | |
| 25 | .231 | 130 | -.4690 | .331 | 50 | -.4697 | .531 | 0 | -.4852 | 1.631 | 90 | -.1441 | .931 | 270 | -.5172 | | | | | |
| 26 | .231 | 120 | -.4569 | .331 | 40 | -.4472 | .731 | 180 | -.4862 | 1.631 | 0 | -.0613 | 1.131 | 270 | -.4948 | | | | | |
| 27 | .231 | 110 | -.4471 | .331 | 30 | -.4502 | .731 | 90 | -.4858 | 2.131 | 180 | -.2358 | 1.631 | 270 | -.4219 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 25 POINT 220 ALPHA 0 MACH .822 Q 647.004 | | | | MODEL DUME SHAPE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--|--------|------|------|------------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.4316 | .231 | 100 | -.4583 | .331 | 20 | -.4490 | .731 | 0 | -.4909 | 2.131 | 90 | -.0856 | | | | | |
| 2 | .161 | 170 | -.4653 | .231 | 90 | -.4714 | .331 | 10 | -.4627 | .931 | 180 | -.0922 | 2.131 | 0 | -.2334 | | | | | |
| 3 | .161 | 160 | -.4408 | .231 | 80 | -.4726 | .331 | 0 | -.4679 | .931 | 90 | -.5122 | 0.000 | | .7314 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.4518 | .231 | 70 | -.4578 | .431 | 180 | -.4706 | .931 | 0 | -.3719 | 0.000 | | .7439 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.4790 | .231 | 60 | -.4790 | .431 | 170 | -.4776 | 1.131 | 180 | -.5330 | 0.000 | | .9821 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.4680 | .231 | 50 | -.4783 | .431 | 160 | -.4858 | 1.131 | 170 | -.5241 | 0.000 | | 1.1169 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.4617 | .231 | 40 | -.4587 | .431 | 150 | -.4798 | 1.131 | 160 | -.5165 | 0.000 | | 1.1735 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.4613 | .231 | 30 | -.4543 | .431 | 140 | -.4726 | 1.131 | 150 | -.5173 | 0.000 | | 1.1931 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.4608 | .231 | 20 | -.4701 | .431 | 130 | -.4805 | 1.131 | 140 | -.5249 | 0.000 | | 1.1717 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.4406 | .231 | 10 | -.4505 | .431 | 120 | -.4618 | 1.131 | 130 | -.5007 | 0.000 | | 1.1173 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.4558 | .231 | 0 | -.4761 | .431 | 110 | -.4884 | 1.131 | 120 | -.5211 | 0.000 | | .9849 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.4404 | .331 | 180 | -.4706 | .431 | 100 | -.4713 | 1.131 | 110 | -.5128 | 0.000 | | .7533 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.4494 | .331 | 170 | -.4672 | .431 | 90 | -.4635 | 1.131 | 100 | -.5034 | 0.000 | | .7016 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.4599 | .331 | 160 | -.4712 | .431 | 80 | -.4673 | 1.131 | 90 | -.5094 | 0.000 | | 1.1717 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.4543 | .331 | 150 | -.4603 | .431 | 70 | -.4684 | 1.131 | 80 | -.5156 | 0.000 | | 1.1114 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.4503 | .331 | 140 | -.4701 | .431 | 60 | -.4637 | 1.131 | 70 | -.5076 | 0.000 | | .9635 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.4453 | .331 | 130 | -.4705 | .431 | 50 | -.4615 | 1.131 | 60 | -.5052 | 0.000 | | .7481 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.4642 | .331 | 120 | -.4650 | .431 | 40 | -.4646 | 1.131 | 50 | -.5148 | 0.000 | | .7408 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.4639 | .331 | 110 | -.4728 | .431 | 30 | -.4688 | 1.131 | 40 | -.5215 | .161 | 270 | -.4661 | | | | | |
| 20 | .231 | 180 | -.4747 | .331 | 100 | -.4726 | .431 | 20 | -.4816 | 1.131 | 30 | -.5177 | .231 | 270 | -.4706 | | | | | |
| 21 | .231 | 170 | -.4532 | .331 | 90 | -.4601 | .431 | 10 | -.4631 | 1.131 | 20 | -.4991 | .331 | 270 | -.4546 | | | | | |
| 22 | .231 | 160 | -.4655 | .331 | 80 | -.4706 | .431 | 0 | -.4734 | 1.131 | 10 | -.5201 | .431 | 270 | -.4810 | | | | | |
| 23 | .231 | 150 | -.4709 | .331 | 70 | -.4710 | .531 | 180 | -.4933 | 1.131 | 0 | -.5189 | .531 | 270 | -.4887 | | | | | |
| 24 | .231 | 140 | -.4632 | .331 | 60 | -.4692 | .531 | 90 | -.4818 | | | | .731 | 270 | -.5071 | | | | | |
| 25 | .231 | 130 | -.4722 | .331 | 50 | -.4661 | .531 | 0 | -.4743 | 1.631 | 90 | -.1999 | .931 | 270 | -.5169 | | | | | |
| 26 | .231 | 120 | -.4554 | .331 | 40 | -.4583 | .731 | 180 | -.4887 | 1.631 | 0 | -.0848 | 1.131 | 270 | -.5061 | | | | | |
| 27 | .231 | 110 | -.4498 | .331 | 30 | -.4523 | .731 | 90 | -.4792 | 2.131 | 180 | -.1873 | 1.631 | 270 | -.4121 | | | | | |

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OF POOR QUALITY

| 7 X 10 HIGH SPEED TUNNEL | | | | | | | | | | | | | | TEST 780 | | RUN 25 | | POINT 223 | | ALPHA | | Q | | MACH .906 | | Q 321.122 | | MODEL DOME SHAPE | | |
|--------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|---------|-------|----------|--------|--------|------|-----------|--|-------|--|---|--|-----------|--|-----------|--|------------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | | | | | | | | | | |
| 1 | .161 | 180 | -.5213 | .231 | 100 | -.5158 | .331 | 20 | -.5270 | .731 | 0 | -.5735 | 2.131 | 90 | -.1354 | | | | | | | | | | | | | | | |
| 2 | .161 | 170 | -.5216 | .231 | 90 | -.4994 | .331 | 10 | -.5252 | .931 | 180 | -.1178 | 2.131 | 0 | .0716 | | | | | | | | | | | | | | | |
| 3 | .161 | 160 | -.5388 | .231 | 80 | -.5144 | .331 | 0 | -.5063 | .931 | 90 | -.5734 | 0.000 | | .5528 | -.45 | 0.00 | | | | | | | | | | | | | |
| 4 | .161 | 150 | -.5133 | .231 | 70 | -.5341 | .431 | 180 | -.5370 | .931 | 0 | -1.2435 | 0.000 | | .5933 | -.40 | 0.00 | | | | | | | | | | | | | |
| 5 | .161 | 140 | -.5126 | .231 | 60 | -.5114 | .431 | 170 | -.5473 | 1.131 | 180 | -.4801 | 0.000 | | .8620 | -.30 | 0.00 | | | | | | | | | | | | | |
| 6 | .161 | 130 | -.4988 | .231 | 50 | -.5034 | .431 | 160 | -.5248 | 1.131 | 170 | -.4537 | 0.000 | | .9991 | -.20 | 0.00 | | | | | | | | | | | | | |
| 7 | .161 | 120 | -.5107 | .231 | 40 | -.5133 | .431 | 150 | -.5237 | 1.131 | 160 | -.4931 | 0.000 | | 1.0645 | -.10 | 0.00 | | | | | | | | | | | | | |
| 8 | .161 | 110 | -.5137 | .231 | 30 | -.5158 | .431 | 140 | -.5477 | 1.131 | 150 | -.4739 | 0.000 | | 1.0781 | 0.00 | 0.00 | | | | | | | | | | | | | |
| 9 | .161 | 100 | -.5133 | .231 | 20 | -.5038 | .431 | 130 | -.5307 | 1.131 | 140 | -.4935 | 0.000 | | 1.0649 | .10 | 0.00 | | | | | | | | | | | | | |
| 10 | .161 | 90 | -.5248 | .231 | 10 | -.5458 | .431 | 120 | -.5469 | 1.131 | 130 | -.4675 | 0.000 | | .9937 | .20 | 0.00 | | | | | | | | | | | | | |
| 11 | .161 | 80 | -.5231 | .231 | 0 | -.5155 | .431 | 110 | -.5444 | 1.131 | 120 | -.4484 | 0.000 | | .8607 | .30 | 0.00 | | | | | | | | | | | | | |
| 12 | .161 | 70 | -.5344 | .331 | 180 | -.5323 | .431 | 100 | -.5473 | 1.131 | 110 | -.4655 | 0.000 | | .5953 | .40 | 0.00 | | | | | | | | | | | | | |
| 13 | .161 | 60 | -.4951 | .331 | 170 | -.5271 | .431 | 90 | -.5119 | 1.131 | 100 | -.4801 | 0.000 | | .5158 | .45 | 0.00 | | | | | | | | | | | | | |
| 14 | .161 | 50 | -.5198 | .331 | 160 | -.5673 | .431 | 80 | -.5407 | 1.131 | 90 | -.4608 | 0.000 | | 1.0025 | 0.00 | .10 | | | | | | | | | | | | | |
| 15 | .161 | 40 | -.5104 | .331 | 150 | -.5381 | .431 | 70 | -.5436 | 1.131 | 80 | -.4732 | 0.000 | | 1.0015 | 0.00 | .20 | | | | | | | | | | | | | |
| 16 | .161 | 30 | -.5027 | .331 | 140 | -.5341 | .431 | 60 | -.5410 | 1.131 | 70 | -.4667 | 0.000 | | .8536 | 0.00 | .30 | | | | | | | | | | | | | |
| 17 | .161 | 20 | -.5284 | .331 | 130 | -.5432 | .431 | 50 | -.5410 | 1.131 | 60 | -.4634 | 0.000 | | .5977 | 0.00 | .40 | | | | | | | | | | | | | |
| 18 | .161 | 10 | -.5071 | .331 | 120 | -.5169 | .431 | 40 | -.5336 | 1.131 | 50 | -.4938 | 0.000 | | .5627 | 0.00 | .45 | | | | | | | | | | | | | |
| 19 | .161 | 0 | -.5208 | .331 | 110 | -.5399 | .431 | 30 | -.5532 | 1.131 | 40 | -.4444 | .161 | 270 | -.5139 | | | | | | | | | | | | | | | |
| 20 | .231 | 180 | -.5206 | .331 | 160 | -.5213 | .431 | 20 | -.5495 | 1.131 | 30 | -.4801 | .231 | 270 | -.5444 | | | | | | | | | | | | | | | |
| 21 | .231 | 170 | -.5373 | .331 | 90 | -.5410 | .431 | 10 | -.5362 | 1.131 | 20 | -.4829 | .331 | 270 | -.5411 | | | | | | | | | | | | | | | |
| 22 | .231 | 160 | -.5500 | .331 | 80 | -.5355 | .431 | 0 | -.5222 | 1.131 | 10 | -.4845 | .431 | 270 | -.5201 | | | | | | | | | | | | | | | |
| 23 | .231 | 150 | -.4998 | .331 | 70 | -.5184 | .531 | 180 | -.5388 | 1.131 | 0 | -.4776 | .531 | 270 | -.5563 | | | | | | | | | | | | | | | |
| 24 | .231 | 140 | -.5227 | .331 | 60 | -.5063 | .531 | 90 | -.5384 | | | .731 | 270 | -.5843 | | | | | | | | | | | | | | | | |
| 25 | .231 | 130 | -.5227 | .331 | 50 | -.5304 | .531 | 0 | -.5384 | 1.631 | 90 | -.4042 | .931 | 270 | -.5621 | | | | | | | | | | | | | | | |
| 26 | .231 | 120 | -.5035 | .331 | 40 | -.5180 | .731 | 180 | -.5820 | 1.631 | 0 | -.1336 | 1.131 | 270 | -.4609 | | | | | | | | | | | | | | | |
| 27 | .231 | 110 | -.5322 | .331 | 30 | -.5410 | .731 | 90 | -.5764 | 2.131 | 180 | .0509 | 1.631 | 270 | -.0737 | | | | | | | | | | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL | | | | | | | | | | | | | | TEST 780 | | RUN 25 | | POINT 224 | | ALPHA | | Q | | MACH .904 | | Q 218.001 | | MODEL DOME SHAPE | | |
|--------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|---------|-------|----------|--------|--------|------|-----------|--|-------|--|---|--|-----------|--|-----------|--|------------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | | | | | | | | | | | |
| 1 | .161 | 180 | -.5258 | .231 | 100 | -.5395 | .331 | 20 | -.5298 | .731 | 0 | -.5875 | 2.131 | 90 | -.1428 | | | | | | | | | | | | | | | |
| 2 | .161 | 170 | -.5642 | .231 | 90 | -.5115 | .331 | 10 | -.5705 | .931 | 180 | -.1405 | 2.131 | 0 | .0712 | | | | | | | | | | | | | | | |
| 3 | .161 | 160 | -.5240 | .231 | 80 | -.5599 | .331 | 0 | -.5874 | .931 | 90 | -.5646 | 0.000 | | .5157 | -.45 | 0.00 | | | | | | | | | | | | | |
| 4 | .161 | 150 | -.5443 | .231 | 70 | -.5427 | .431 | 180 | -.5944 | .931 | 0 | -1.8249 | 0.000 | | .5624 | -.40 | 0.00 | | | | | | | | | | | | | |
| 5 | .161 | 140 | -.5572 | .231 | 60 | -.5567 | .431 | 170 | -.5846 | 1.131 | 180 | -.3419 | 0.000 | | .8346 | -.30 | 0.00 | | | | | | | | | | | | | |
| 6 | .161 | 130 | -.5288 | .231 | 50 | -.5578 | .431 | 160 | -.5683 | 1.131 | 170 | -.3891 | 0.000 | | .9711 | -.20 | 0.00 | | | | | | | | | | | | | |
| 7 | .161 | 120 | -.5497 | .231 | 40 | -.5432 | .431 | 150 | -.5678 | 1.131 | 160 | -.3294 | 0.000 | | 1.0499 | -.10 | 0.00 | | | | | | | | | | | | | |
| 8 | .161 | 110 | -.5556 | .231 | 30 | -.5448 | .431 | 140 | -.5863 | 1.131 | 150 | -.3820 | 0.000 | | 1.0541 | 0.00 | 0.00 | | | | | | | | | | | | | |
| 9 | .161 | 100 | -.5272 | .231 | 20 | -.5739 | .431 | 130 | -.5428 | 1.131 | 140 | -.4035 | 0.000 | | 1.0469 | .10 | 0.00 | | | | | | | | | | | | | |
| 10 | .161 | 90 | -.5717 | .231 | 10 | -.5486 | .431 | 120 | -.6069 | 1.131 | 130 | -.3210 | 0.000 | | .9741 | .20 | 0.00 | | | | | | | | | | | | | |
| 11 | .161 | 80 | -.5358 | .231 | 0 | -.5330 | .431 | 110 | -.5705 | 1.131 | 120 | -.3939 | 0.000 | | .8346 | .30 | 0.00 | | | | | | | | | | | | | |
| 12 | .161 | 70 | -.5390 | .331 | 180 | -.5287 | .431 | 100 | -.5700 | 1.131 | 110 | -.3885 | 0.000 | | .5733 | .40 | 0.00 | | | | | | | | | | | | | |
| 13 | .161 | 60 | -.5538 | .331 | 170 | -.5734 | .431 | 90 | -.5874 | 1.131 | 100 | -.3013 | 0.000 | | .4757 | .45 | 0.00 | | | | | | | | | | | | | |
| 14 | .161 | 50 | -.5652 | .331 | 160 | -.6062 | .431 | 80 | -.5944 | 1.131 | 90 | -.3449 | 0.000 | | 1.0481 | 0.00 | .10 | | | | | | | | | | | | | |
| 15 | .161 | 40 | -.5820 | .331 | 150 | -.5890 | .431 | 70 | -.5837 | 1.131 | 80 | -.3927 | 0.000 | | .9717 | .00 | .20 | | | | | | | | | | | | | |
| 16 | .161 | 30 | -.5336 | .331 | 140 | -.5777 | .431 | 60 | -.5792 | 1.131 | 70 | -.3634 | 0.000 | | .8371 | 0.00 | .30 | | | | | | | | | | | | | |
| 17 | .161 | 20 | -.5492 | .331 | 130 | -.5885 | .431 | 50 | -.5912 | 1.131 | 60 | -.3581 | 0.000 | | .5715 | 0.00 | .40 | | | | | | | | | | | | | |
| 18 | .161 | 10 | -.6027 | .331 | 120 | -.5809 | .431 | 40 | -.6075 | 1.131 | 50 | -.3545 | 0.000 | | .5151 | 0.00 | .45 | | | | | | | | | | | | | |
| 19 | .161 | 0 | -.5558 | .331 | 110 | -.6008 | .431 | 30 | -.6124 | 1.131 | 40 | -.3091 | .161 | 270 | -.5513 | | | | | | | | | | | | | | | |
| 20 | .231 | 180 | -.5804 | .331 | 100 | -.5944 | .431 | 20 | -.5857 | 1.131 | 30 | -.3873 | .231 | 270 | -.5445 | | | | | | | | | | | | | | | |
| 21 | .231 | 170 | -.5979 | .331 | 90 | -.5594 | .431 | 10 | -.5596 | 1.131 | 20 | -.4280 | .331 | 270 | -.5743 | | | | | | | | | | | | | | | |
| 22 | .231 | 160 | -.5572 | .331 | 80 | -.5755 | .431 | 0 | -.5287 | 1.131 | 10 | -.4718 | .431 | 270 | -.5531 | | | | | | | | | | | | | | | |
| 23 | .231 | 150 | -.5893 | .331 | 70 | -.5970 | .531 | 180 | -.6395 | 1.131 | 0 | -.3431 | .531 | 270 | -.6277 | | | | | | | | | | | | | | | |
| 24 | .231 | 140 | -.5287 | .331 | 60 | -.6347 | .531 | 90 | -.6151 | | | .731 | 270 | -.6095 | | | | | | | | | | | | | | | | |
| 25 | .231 | 130 | -.5647 | .331 | 50 | -.5384 | .531 | 0 | -.6189 | 1.631 | 90 | -.4029 | .931 | 270 | -.5355 | | | | | | | | | | | | | | | |
| 26 | .231 | 120 | -.5176 | .331 | 40 | -.5798 | .731 | 180 | -.5971 | 1.631 | 0 | -.1567 | 1.131 | 270 | -.3594 | | | | | | | | | | | | | | | |
| 27 | .231 | 110 | -.5599 | .331 | 30 | -.5475 | .731 | 90 | -.5912 | 2.131 | 180 | .0588 | 1.631 | 270 | .0108 | | | | | | | | | | | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 25 POINT 225 ALPHA 0 MACH .302 Q 128.109 | | | | MODEL DOME SHAPE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|---------|-------|--|--------|------|------|------------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.5984 | .231 | 100 | -.5949 | .331 | 20 | -.5631 | .731 | 0 | -.6408 | 2.131 | 90 | -.1375 | | | | | |
| 2 | .161 | 170 | -.6085 | .231 | 90 | -.6068 | .331 | 10 | -.5917 | .931 | 180 | -.1547 | 2.131 | 0 | .0750 | | | | | |
| 3 | .161 | 160 | -.5802 | .231 | 80 | -.5803 | .331 | 0 | -.5723 | .931 | 90 | -.4964 | 0.000 | | .4845 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.6121 | .231 | 70 | -.5514 | .431 | 180 | -.6565 | .931 | 0 | -2.9562 | 0.000 | | .5341 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.5757 | .231 | 60 | -.5794 | .431 | 170 | -.6269 | 1.131 | 180 | -.3093 | 0.000 | | .7993 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.6577 | .231 | 50 | -.5849 | .431 | 160 | -.6676 | 1.131 | 170 | -.1578 | 0.000 | | .9562 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.5875 | .231 | 40 | -.5345 | .431 | 150 | -.6398 | 1.131 | 160 | -.2188 | 0.000 | | 1.0160 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.6075 | .231 | 30 | -.5711 | .431 | 140 | -.6269 | 1.131 | 150 | -.2422 | 0.000 | | 1.0150 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.6057 | .231 | 20 | -.5318 | .431 | 130 | -.6380 | 1.131 | 140 | -.2198 | 0.000 | | 1.0026 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.5939 | .231 | 10 | -.5519 | .431 | 120 | -.6195 | 1.131 | 130 | -.2554 | 0.000 | | .9458 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.5802 | .231 | 0 | -.5162 | .431 | 110 | -.6306 | 1.131 | 120 | -.2554 | 0.000 | | .8024 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.5693 | .331 | 180 | -.5821 | .431 | 100 | -.5908 | 1.131 | 110 | -.2462 | 0.000 | | .5333 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.5702 | .331 | 170 | -.5666 | .431 | 90 | -.5843 | 1.131 | 100 | -.2940 | 0.000 | | .4268 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.5720 | .331 | 160 | -.5812 | .431 | 80 | -.5899 | 1.131 | 90 | -.2361 | 0.000 | | 1.0232 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.5583 | .331 | 150 | -.5647 | .431 | 70 | -.5695 | 1.131 | 80 | -.3245 | 0.000 | | .9355 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.5620 | .331 | 140 | -.6041 | .431 | 60 | -.6112 | 1.131 | 70 | -.2930 | 0.000 | | .7931 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.6003 | .331 | 130 | -.6105 | .431 | 50 | -.6139 | 1.131 | 60 | -.2503 | 0.000 | | .5293 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.5702 | .331 | 120 | -.5894 | .431 | 40 | -.6324 | 1.131 | 50 | -.2442 | 0.000 | | .4815 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.5237 | .331 | 110 | -.6114 | .431 | 30 | -.5649 | 1.131 | 40 | -.3540 | .161 | 270 | -.5883 | | | | | |
| 20 | .231 | 180 | -.5866 | .331 | 100 | -.6517 | .431 | 20 | -.6426 | 1.131 | 30 | -.2208 | .231 | 270 | -.5976 | | | | | |
| 21 | .231 | 170 | -.6057 | .331 | 90 | -.6068 | .431 | 10 | -.6084 | 1.131 | 20 | -.2747 | .331 | 270 | -.6151 | | | | | |
| 22 | .231 | 160 | -.5993 | .331 | 80 | -.6105 | .431 | 0 | -.6435 | 1.131 | 10 | -.2013 | .431 | 270 | -.6656 | | | | | |
| 23 | .231 | 150 | -.5757 | .331 | 70 | -.6197 | .531 | 180 | -.6269 | 1.131 | 0 | -.2717 | .531 | 270 | -.6326 | | | | | |
| 24 | .231 | 140 | -.6085 | .331 | 60 | -.5528 | .531 | 90 | -.6056 | | | | .731 | 270 | -.6347 | | | | | |
| 25 | .231 | 130 | -.6549 | .331 | 50 | -.6297 | .531 | 0 | -.6935 | 1.631 | 90 | -.4720 | .931 | 270 | -.4851 | | | | | |
| 26 | .231 | 120 | -.6057 | .331 | 40 | -.6416 | .731 | 180 | -.6213 | 1.631 | 0 | -.1761 | 1.131 | 270 | -.2314 | | | | | |
| 27 | .231 | 110 | -.5729 | .331 | 30 | -.5867 | .731 | 90 | -.6241 | 2.131 | 180 | .0242 | 1.631 | 270 | .0430 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 | | | | | | | | | | | | | | RUN 25 POINT 226 ALPHA 0 MACH .404 Q 217.907 | | | | MODEL DOME SHAPE | | |
|-----------------------------------|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|---------|-------|--|--------|------|------|------------------|--|--|
| PORT | X/D | PHI | CP1 | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D | | | |
| 1 | .161 | 180 | -.5355 | .231 | 100 | -.5478 | .331 | 20 | -.5539 | .731 | 0 | -.6069 | 2.131 | 90 | -.1447 | | | | | |
| 2 | .161 | 170 | -.5312 | .231 | 90 | -.5359 | .331 | 10 | -.5626 | .931 | 180 | -.1245 | 2.131 | 0 | .0640 | | | | | |
| 3 | .161 | 160 | -.5317 | .231 | 80 | -.5478 | .331 | 0 | -.5528 | .931 | 90 | -.5226 | 0.000 | | .4971 | -.45 | 0.00 | | | |
| 4 | .161 | 150 | -.5633 | .231 | 70 | -.5779 | .431 | 180 | -.5876 | .931 | 0 | -1.1396 | 0.000 | | .5487 | -.40 | 0.00 | | | |
| 5 | .161 | 140 | -.5457 | .231 | 60 | -.5516 | .431 | 170 | -.5941 | 1.131 | 180 | -.3642 | 0.000 | | .8192 | -.30 | 0.00 | | | |
| 6 | .161 | 130 | -.5842 | .231 | 50 | -.5849 | .431 | 160 | -.6355 | 1.131 | 170 | -.2817 | 0.000 | | .9751 | -.20 | 0.00 | | | |
| 7 | .161 | 120 | -.5457 | .231 | 40 | -.5855 | .431 | 150 | -.6088 | 1.131 | 160 | -.3552 | 0.000 | | 1.0243 | -.10 | 0.00 | | | |
| 8 | .161 | 110 | -.5055 | .231 | 30 | -.5785 | .431 | 140 | -.5604 | 1.131 | 150 | -.3785 | 0.000 | | 1.0582 | 0.00 | 0.00 | | | |
| 9 | .161 | 100 | -.5435 | .231 | 20 | -.5930 | .431 | 130 | -.5729 | 1.131 | 140 | -.3720 | 0.000 | | 1.0340 | .10 | 0.00 | | | |
| 10 | .161 | 90 | -.5612 | .231 | 10 | -.5279 | .431 | 120 | -.6115 | 1.131 | 130 | -.2871 | 0.000 | | .9727 | .20 | 0.00 | | | |
| 11 | .161 | 80 | -.5253 | .231 | 0 | -.5133 | .431 | 110 | -.5691 | 1.131 | 120 | -.3594 | 0.000 | | .8277 | .30 | 0.00 | | | |
| 12 | .161 | 70 | -.5237 | .331 | 180 | -.5564 | .431 | 100 | -.5577 | 1.131 | 110 | -.3833 | 0.000 | | .5633 | .40 | 0.00 | | | |
| 13 | .161 | 60 | -.5253 | .331 | 170 | -.5699 | .431 | 90 | -.5632 | 1.131 | 100 | -.3875 | 0.000 | | .4533 | .45 | 0.00 | | | |
| 14 | .161 | 50 | -.5328 | .331 | 160 | -.5435 | .431 | 80 | -.5528 | 1.131 | 90 | -.4616 | 0.000 | | 1.0327 | 0.00 | .10 | | | |
| 15 | .161 | 40 | -.5039 | .331 | 150 | -.5343 | .431 | 70 | -.5458 | 1.131 | 80 | -.3875 | 0.000 | | .9666 | 0.00 | .20 | | | |
| 16 | .161 | 30 | -.5837 | .331 | 140 | -.5693 | .431 | 60 | -.6126 | 1.131 | 70 | -.3564 | 0.000 | | .8131 | 0.00 | .30 | | | |
| 17 | .161 | 20 | -.5574 | .331 | 130 | -.5634 | .431 | 50 | -.5963 | 1.131 | 60 | -.3516 | 0.000 | | .5573 | 0.00 | .40 | | | |
| 18 | .161 | 10 | -.5537 | .331 | 120 | -.5559 | .431 | 40 | -.6039 | 1.131 | 50 | -.4007 | 0.000 | | .5123 | 0.00 | .45 | | | |
| 19 | .161 | 0 | -.5414 | .331 | 110 | -.5618 | .431 | 30 | -.5474 | 1.131 | 40 | -.4132 | .161 | 270 | -.5534 | | | | | |
| 20 | .231 | 180 | -.5628 | .331 | 100 | -.5359 | .431 | 20 | -.5735 | 1.131 | 30 | -.4042 | .231 | 270 | -.5753 | | | | | |
| 21 | .231 | 170 | -.5799 | .331 | 90 | -.5494 | .431 | 10 | -.5686 | 1.131 | 20 | -.3756 | .331 | 270 | -.5758 | | | | | |
| 22 | .231 | 160 | -.5483 | .331 | 80 | -.5575 | .431 | 0 | -.5409 | 1.131 | 10 | -.4192 | .431 | 270 | -.5788 | | | | | |
| 23 | .231 | 150 | -.5307 | .331 | 70 | -.5731 | .531 | 180 | -.5762 | 1.131 | 0 | -.3295 | .531 | 270 | -.6153 | | | | | |
| 24 | .231 | 140 | -.5617 | .331 | 60 | -.5569 | .531 | 90 | -.5865 | | | | .731 | 270 | -.6183 | | | | | |
| 25 | .231 | 130 | -.5590 | .331 | 50 | -.5542 | .531 | 0 | -.5893 | 1.631 | 90 | -.0073 | .931 | 270 | -.5364 | | | | | |
| 26 | .231 | 120 | -.5108 | .331 | 40 | -.5542 | .731 | 180 | -.6061 | 1.631 | 0 | -.1328 | 1.131 | 270 | -.3624 | | | | | |
| 27 | .231 | 110 | -.5365 | .331 | 30 | -.5849 | .731 | 90 | -.6170 | 2.131 | 180 | .0363 | 1.631 | 270 | -.0113 | | | | | |

| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 227 ALPHA 0 MACH .607 Q 428.274 MODEL DOME SHAPE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CPI | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4388 | .231 | 100 | -.4755 | .331 | 20 | -.4959 | .731 | 0 | -.5566 | 2.131 | 90 | -.1221 | | |
| 2 | .161 | 170 | -.4701 | .231 | 90 | -.4927 | .331 | 10 | -.4984 | .931 | 180 | -.1219 | 2.131 | 0 | -.0209 | | |
| 3 | .161 | 160 | -.4941 | .231 | 80 | -.4812 | .331 | 0 | -.4842 | .931 | 90 | -.5365 | 0.000 | | .5884 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4867 | .231 | 70 | -.5048 | .431 | 180 | -.5174 | .931 | 0 | -.1983 | 0.000 | | .6239 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4900 | .231 | 60 | -.4777 | .431 | 170 | -.5114 | 1.131 | 180 | -.4681 | 0.000 | | .8748 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4952 | .231 | 50 | -.4708 | .431 | 163 | -.5197 | 1.131 | 170 | -.5301 | 0.000 | | 1.0119 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4908 | .231 | 40 | -.4708 | .431 | 150 | -.5202 | 1.131 | 160 | -.5112 | 0.000 | | 1.0733 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4698 | .231 | 30 | -.4620 | .431 | 140 | -.5031 | 1.131 | 150 | -.4918 | 0.000 | | 1.0921 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4903 | .231 | 20 | -.4946 | .431 | 130 | -.5080 | 1.131 | 140 | -.5085 | 0.000 | | 1.0873 | .10 | 0.00 |
| 10 | .161 | 90 | -.4318 | .231 | 10 | -.4927 | .431 | 120 | -.5213 | 1.131 | 130 | -.5131 | 0.000 | | 1.0186 | .20 | 0.00 |
| 11 | .161 | 80 | -.4848 | .231 | 0 | -.4938 | .431 | 110 | -.5083 | 1.131 | 120 | -.5228 | 0.000 | | .8825 | .30 | 0.00 |
| 12 | .161 | 70 | -.4723 | .331 | 180 | -.5149 | .431 | 100 | -.4981 | 1.131 | 110 | -.5210 | 0.000 | | .6310 | .40 | 0.00 |
| 13 | .161 | 60 | -.4750 | .331 | 170 | -.4755 | .431 | 90 | -.5006 | 1.131 | 100 | -.5146 | 0.000 | | .5640 | .45 | 0.00 |
| 14 | .161 | 50 | -.4780 | .331 | 160 | -.5294 | .431 | 80 | -.5266 | 1.131 | 90 | -.4997 | 0.000 | | 1.0785 | 0.00 | .10 |
| 15 | .161 | 40 | -.4690 | .331 | 150 | -.5124 | .431 | 70 | -.4986 | 1.131 | 80 | -.5079 | 0.000 | | 1.0168 | 0.00 | .20 |
| 16 | .161 | 30 | -.4808 | .331 | 140 | -.4990 | .431 | 60 | -.5072 | 1.131 | 70 | -.5115 | 0.000 | | .8807 | 0.00 | .30 |
| 17 | .161 | 20 | -.4794 | .331 | 130 | -.5108 | .431 | 50 | -.5125 | 1.131 | 60 | -.5234 | 0.000 | | .6331 | 0.00 | .40 |
| 18 | .161 | 10 | -.4878 | .331 | 120 | -.5004 | .431 | 40 | -.4997 | 1.131 | 50 | -.5301 | 0.000 | | .5983 | 0.00 | .45 |
| 19 | .161 | 0 | -.4846 | .331 | 110 | -.5009 | .431 | 30 | -.5238 | 1.131 | 40 | -.4875 | .161 | 270 | -.4973 | | |
| 20 | .231 | 180 | -.4917 | .331 | 100 | -.4900 | .431 | 20 | -.5039 | 1.131 | 30 | -.5143 | .231 | 270 | -.4773 | | |
| 21 | .231 | 170 | -.5001 | .331 | 90 | -.4922 | .431 | 10 | -.5036 | 1.131 | 20 | -.5161 | .331 | 270 | -.5135 | | |
| 22 | .231 | 160 | -.4930 | .331 | 80 | -.5165 | .431 | 0 | -.5501 | 1.131 | 10 | -.5277 | .431 | 270 | -.5148 | | |
| 23 | .231 | 150 | -.4810 | .331 | 70 | -.5092 | .531 | 180 | -.5219 | 1.131 | 0 | -.5143 | .531 | 270 | -.5330 | | |
| 24 | .231 | 140 | -.5063 | .331 | 60 | -.5165 | .531 | 90 | -.5399 | | | .731 | 270 | -.5688 | | | |
| 25 | .231 | 130 | -.4955 | .331 | 50 | -.4996 | .531 | 0 | -.5105 | 1.631 | 90 | .0019 | .931 | 270 | -.5550 | | |
| 26 | .231 | 120 | -.4887 | .331 | 40 | -.4971 | .731 | 180 | -.5412 | 1.631 | 0 | -.1262 | 1.131 | 270 | -.5145 | | |
| 27 | .231 | 110 | -.4952 | .331 | 30 | -.5182 | .731 | 90 | -.5578 | 2.131 | 180 | .0557 | 1.631 | 270 | -.1884 | | |

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| 7 X 10 HIGH SPEED TUNNEL TEST 780 RUN 25 POINT 228 ALPHA 0 MACH .881 Q 639.169 MODEL DOME SHAPE | | | | | | | | | | | | | | | | | |
|---|------|-----|--------|------|-----|--------|------|-----|--------|-------|-----|--------|-------|--------|--------|------|------|
| PORT | X/D | PHI | CPI | X/D | PHI | CP2 | X/D | PHI | CP3 | X/D | PHI | CP4 | X/D | PHI | CP5 | Y/D | Z/D |
| 1 | .161 | 180 | -.4389 | .231 | 100 | -.4352 | .331 | 20 | -.4363 | .731 | 0 | -.4544 | 2.131 | 90 | -.0451 | | |
| 2 | .161 | 170 | -.4734 | .231 | 90 | -.4745 | .331 | 10 | -.4735 | .931 | 180 | -.0695 | 2.131 | 0 | -.2592 | | |
| 3 | .161 | 160 | -.4437 | .231 | 80 | -.4574 | .331 | 0 | -.4542 | .931 | 90 | -.4947 | 0.000 | | .7737 | -.45 | 0.00 |
| 4 | .161 | 150 | -.4621 | .231 | 70 | -.4491 | .431 | 180 | -.4759 | .931 | 0 | .1790 | 0.000 | | .7818 | -.40 | 0.00 |
| 5 | .161 | 140 | -.4579 | .231 | 60 | -.4616 | .431 | 170 | -.4754 | 1.131 | 180 | -.5025 | 0.000 | | 1.0163 | -.30 | 0.00 |
| 6 | .161 | 130 | -.4496 | .231 | 50 | -.4515 | .431 | 160 | -.4642 | 1.131 | 170 | -.5021 | 0.000 | | 1.1427 | -.20 | 0.00 |
| 7 | .161 | 120 | -.4654 | .231 | 40 | -.4585 | .431 | 150 | -.4840 | 1.131 | 160 | -.5075 | 0.000 | | 1.1964 | -.10 | 0.00 |
| 8 | .161 | 110 | -.4539 | .231 | 30 | -.4419 | .431 | 140 | -.4625 | 1.131 | 150 | -.4915 | 0.000 | | 1.2187 | 0.00 | 0.00 |
| 9 | .161 | 100 | -.4527 | .231 | 20 | -.4513 | .431 | 130 | -.4603 | 1.131 | 140 | -.4921 | 0.000 | | 1.2055 | .10 | 0.00 |
| 10 | .161 | 90 | -.4415 | .231 | 10 | -.4443 | .431 | 120 | -.4530 | 1.131 | 130 | -.4876 | 0.000 | | 1.1458 | .20 | 0.00 |
| 11 | .161 | 80 | -.4609 | .231 | 0 | -.4653 | .431 | 110 | -.4790 | 1.131 | 120 | -.5068 | 0.000 | | 1.0181 | .30 | 0.00 |
| 12 | .161 | 70 | -.4322 | .331 | 180 | -.4475 | .431 | 100 | -.4425 | 1.131 | 110 | -.4766 | 0.000 | | .7975 | .40 | 0.00 |
| 13 | .161 | 60 | -.4726 | .331 | 170 | -.4815 | .431 | 90 | -.4837 | 1.131 | 100 | -.5211 | 0.000 | | .7442 | .45 | 0.00 |
| 14 | .161 | 50 | -.4309 | .331 | 160 | -.4357 | .431 | 80 | -.4395 | 1.131 | 90 | -.4770 | 0.000 | | 1.2032 | 0.00 | .10 |
| 15 | .161 | 40 | -.4339 | .331 | 150 | -.4584 | .431 | 70 | -.4595 | 1.131 | 80 | -.4941 | 0.000 | | 1.1384 | 0.00 | .20 |
| 16 | .161 | 30 | -.4531 | .331 | 140 | -.4810 | .431 | 60 | -.4707 | 1.131 | 70 | -.5092 | 0.000 | | 1.0074 | 0.00 | .30 |
| 17 | .161 | 20 | -.4780 | .331 | 130 | -.4897 | .431 | 50 | -.4863 | 1.131 | 60 | -.5148 | 0.000 | | .7818 | 0.00 | .40 |
| 18 | .161 | 10 | -.4694 | .331 | 120 | -.4641 | .431 | 40 | -.4724 | 1.131 | 50 | -.5081 | 0.000 | | .7841 | 0.00 | .45 |
| 19 | .161 | 0 | -.4614 | .331 | 110 | -.4567 | .431 | 30 | -.4598 | 1.131 | 40 | -.4939 | .161 | 270 | -.4654 | | |
| 20 | .231 | 180 | -.4604 | .331 | 100 | -.4543 | .431 | 20 | -.4702 | 1.131 | 30 | -.5030 | .231 | 270 | -.4703 | | |
| 21 | .231 | 170 | -.4532 | .331 | 90 | -.4470 | .431 | 10 | -.4637 | 1.131 | 20 | -.4954 | .331 | 270 | -.4613 | | |
| 22 | .231 | 160 | -.4843 | .331 | 80 | -.4736 | .431 | 0 | -.4930 | 1.131 | 10 | -.5163 | .431 | 270 | -.4800 | | |
| 23 | .231 | 150 | -.4703 | .331 | 70 | -.4693 | .531 | 180 | -.4930 | 1.131 | 0 | -.5111 | .531 | 270 | -.4915 | | |
| 24 | .231 | 140 | -.4447 | .331 | 60 | -.4532 | .531 | 90 | -.4666 | | | .731 | 270 | -.4919 | | | |
| 25 | .231 | 130 | -.4359 | .331 | 50 | -.4471 | .531 | 0 | -.4700 | 1.631 | 90 | -.0031 | .931 | 270 | -.4934 | | |
| 26 | .231 | 120 | -.4748 | .331 | 40 | -.4809 | .731 | 180 | -.5103 | 1.631 | 0 | -.0641 | 1.131 | 270 | -.5244 | | |
| 27 | .231 | 110 | -.4477 | .331 | 30 | -.4458 | .731 | 90 | -.4818 | 2.131 | 180 | -.2390 | 1.631 | 270 | -.4265 | | |

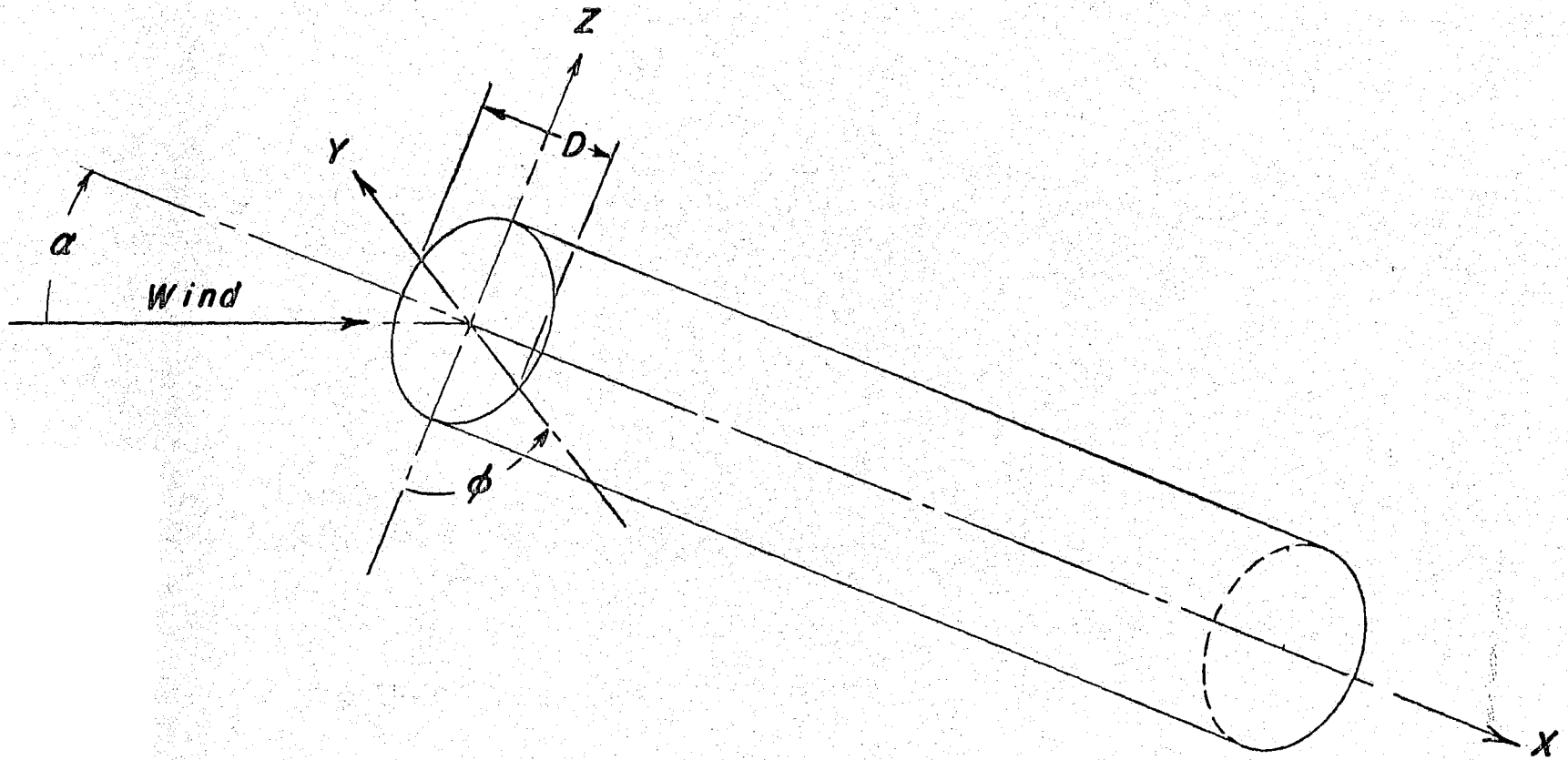


Figure 1.- Axis system used for data presentation.

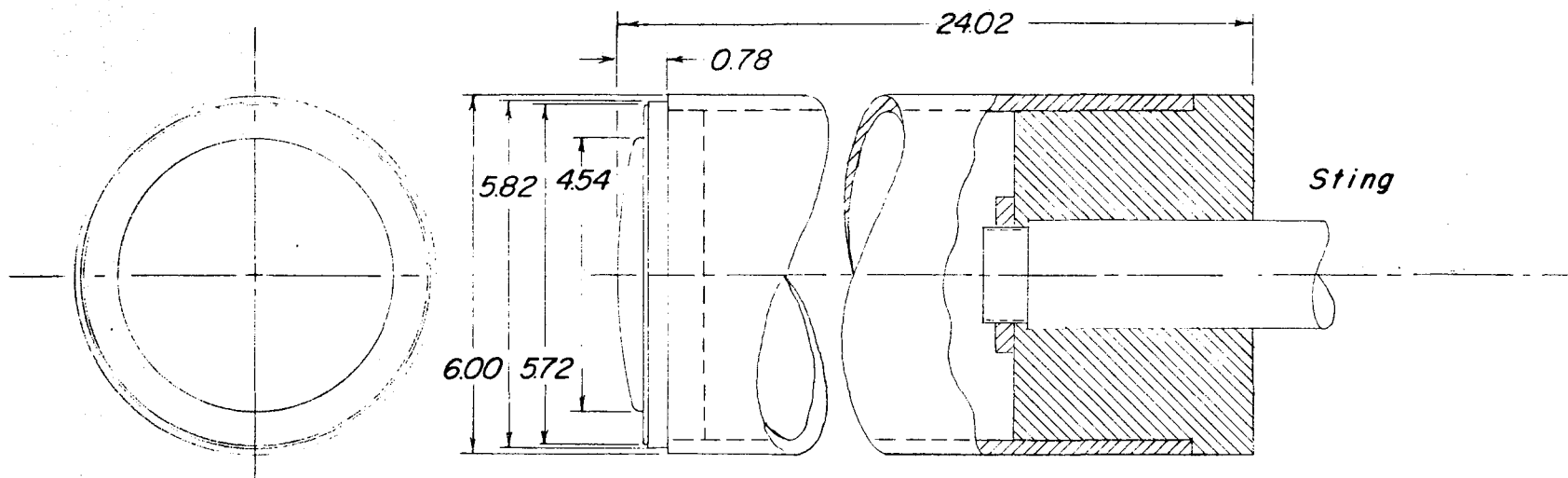
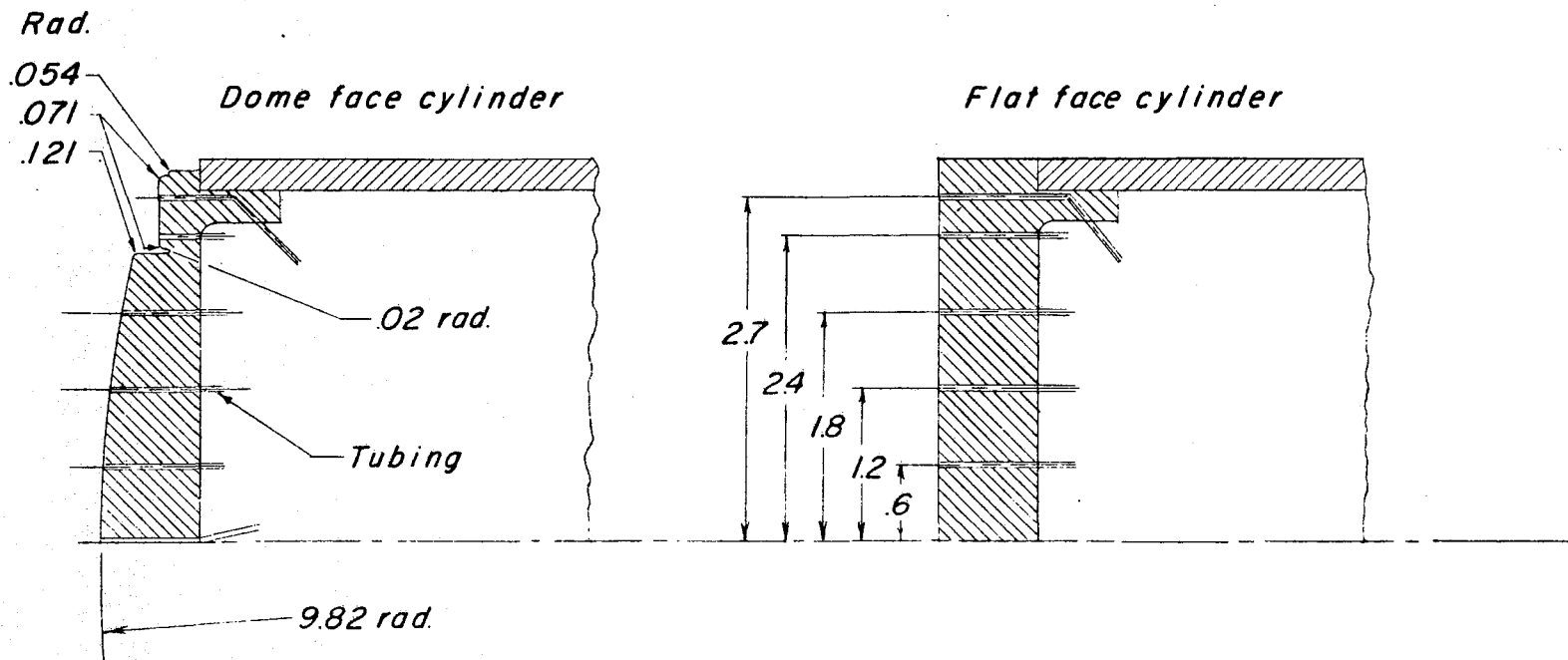


Figure 2.- Sketch of model. (Dimensions in inches).

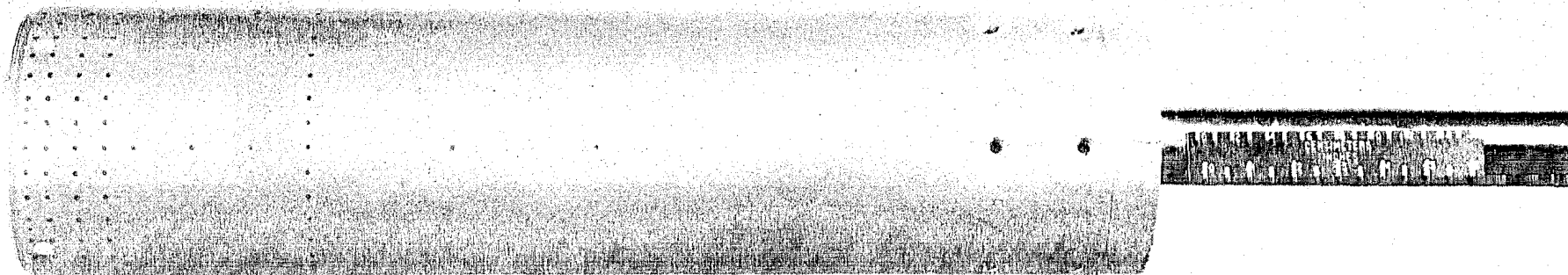


Figure 3.- Photograph of dome face cylinder model.

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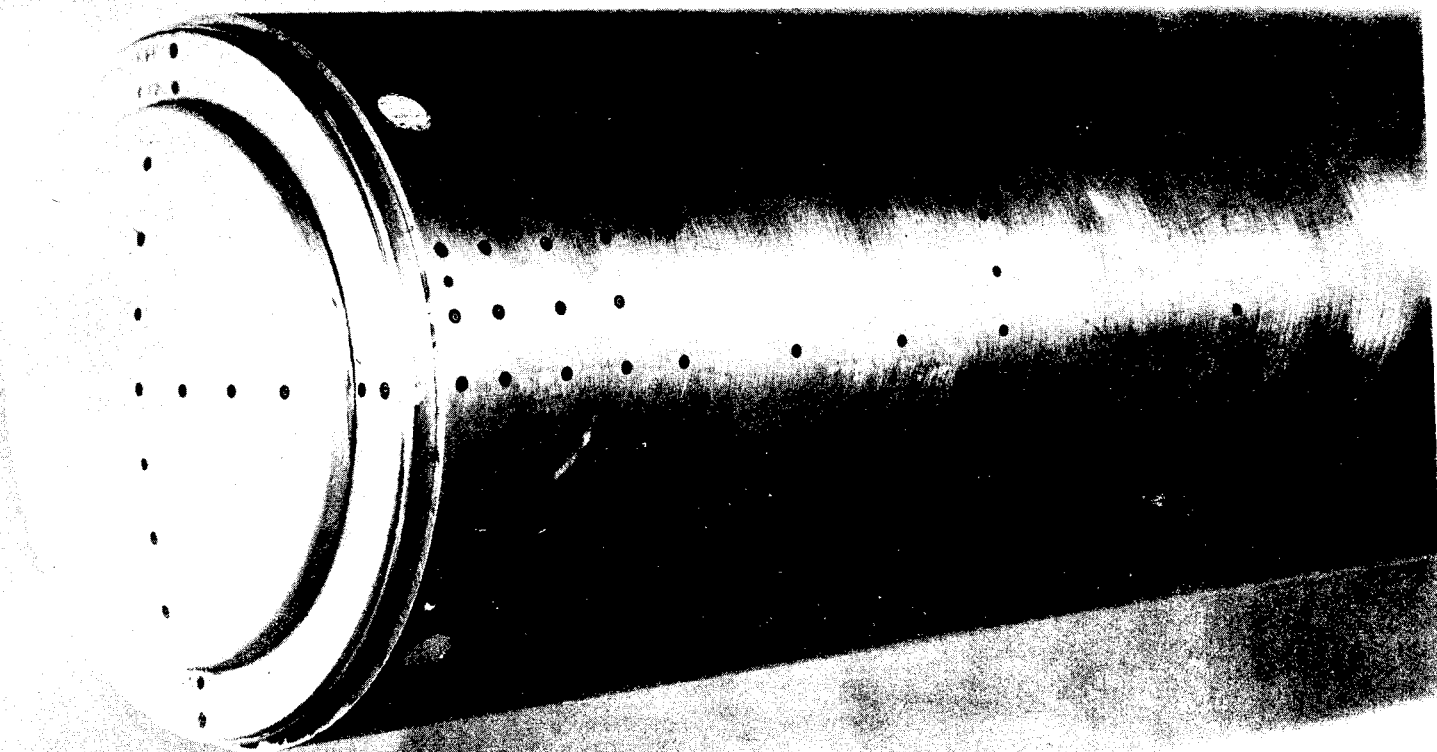


Figure 3.- Concluded.

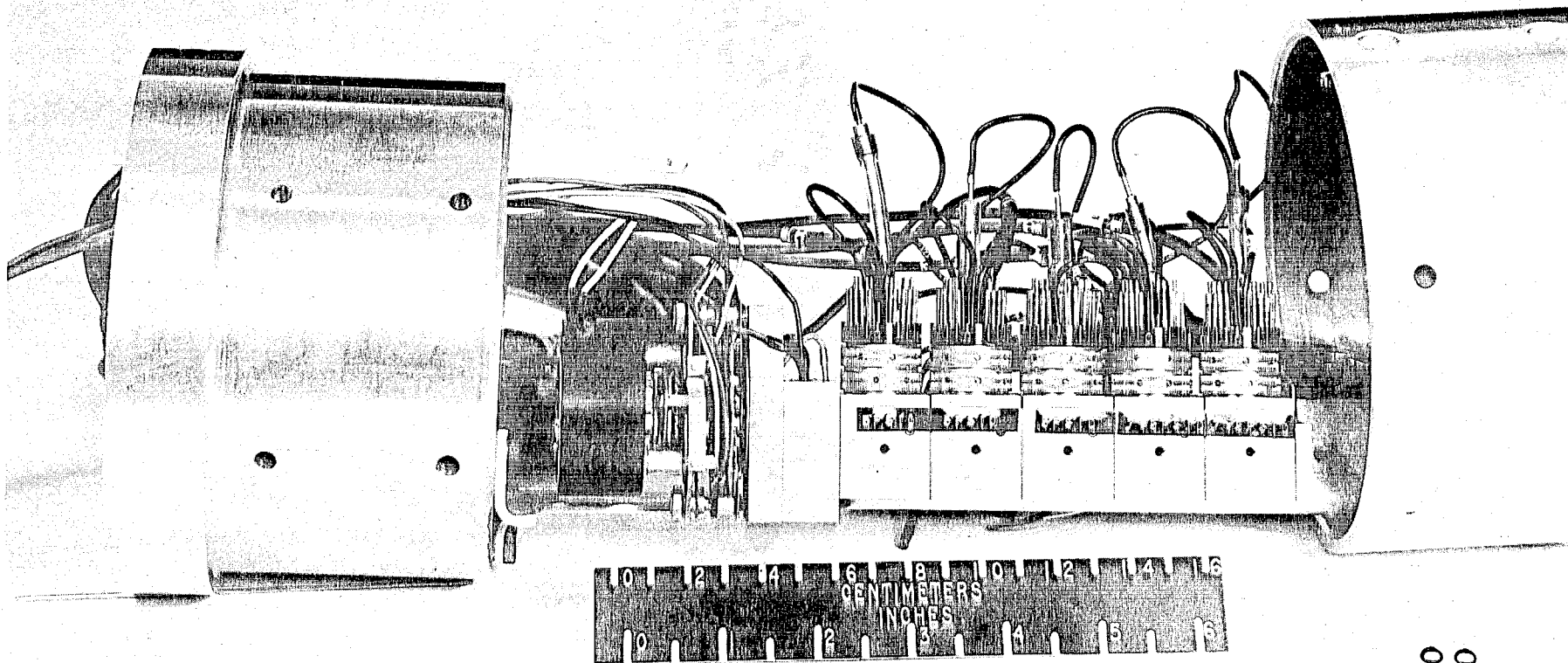


Figure 4.- Photograph of multiple valve scanning system used for measuring orifice pressures.

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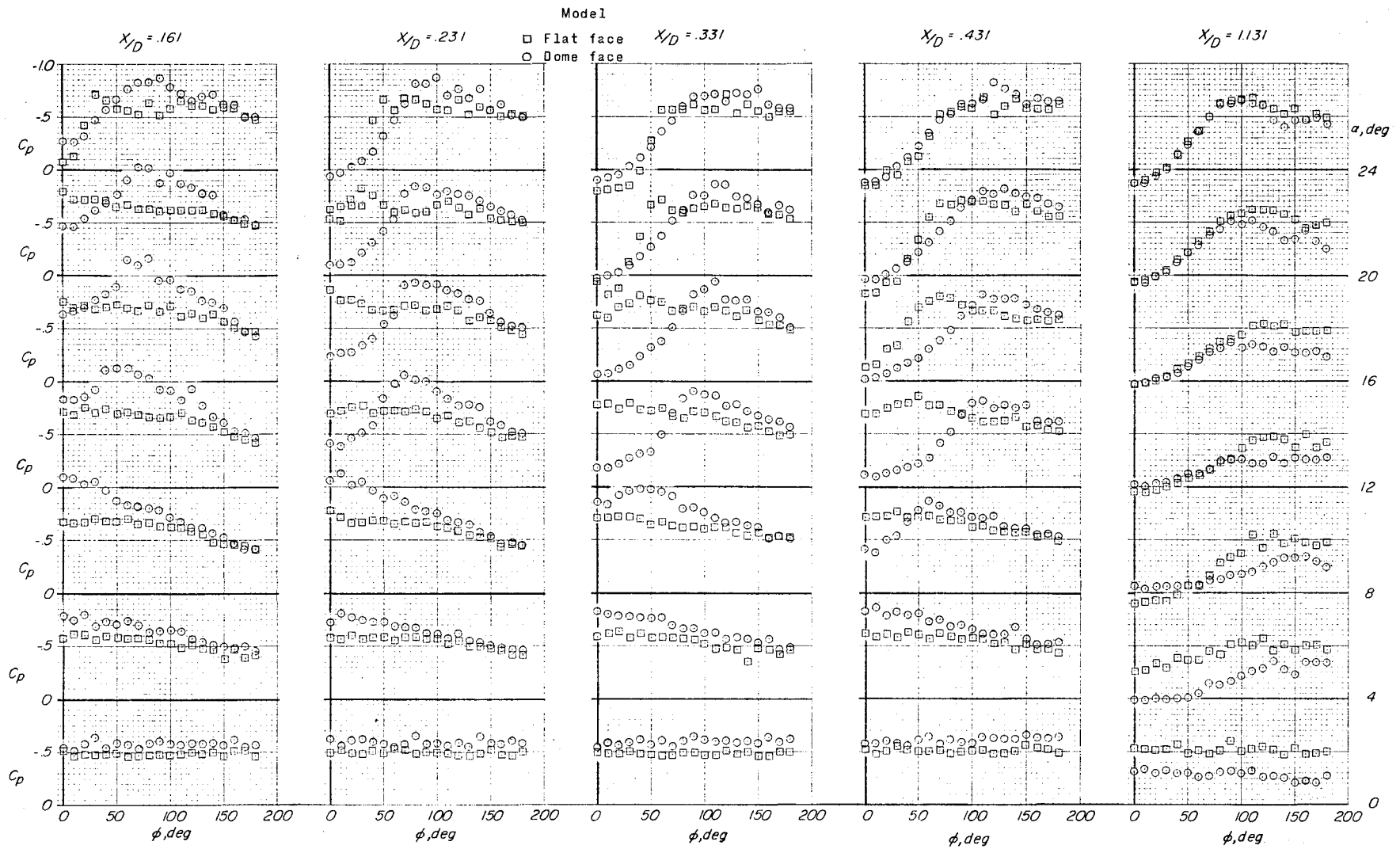
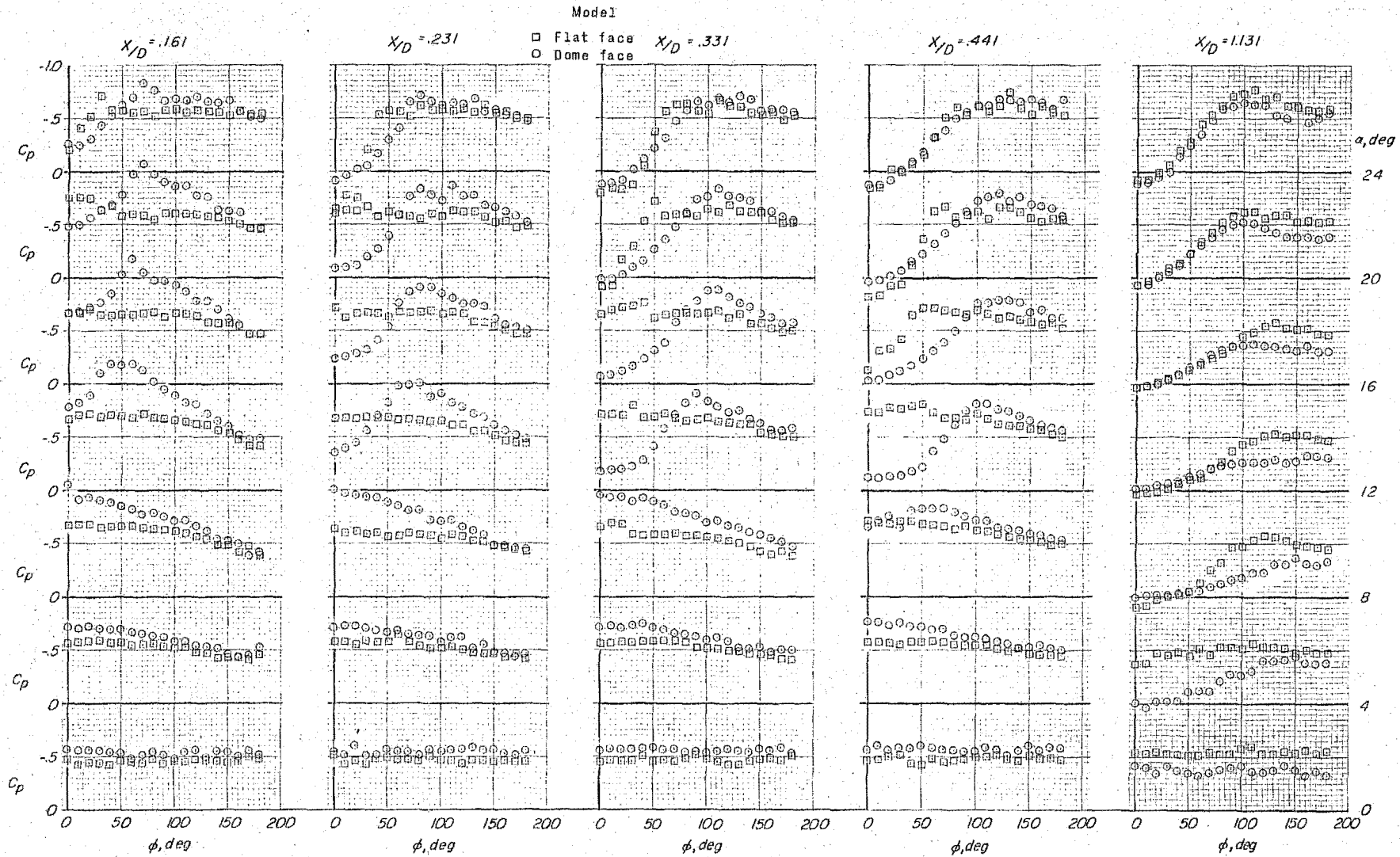
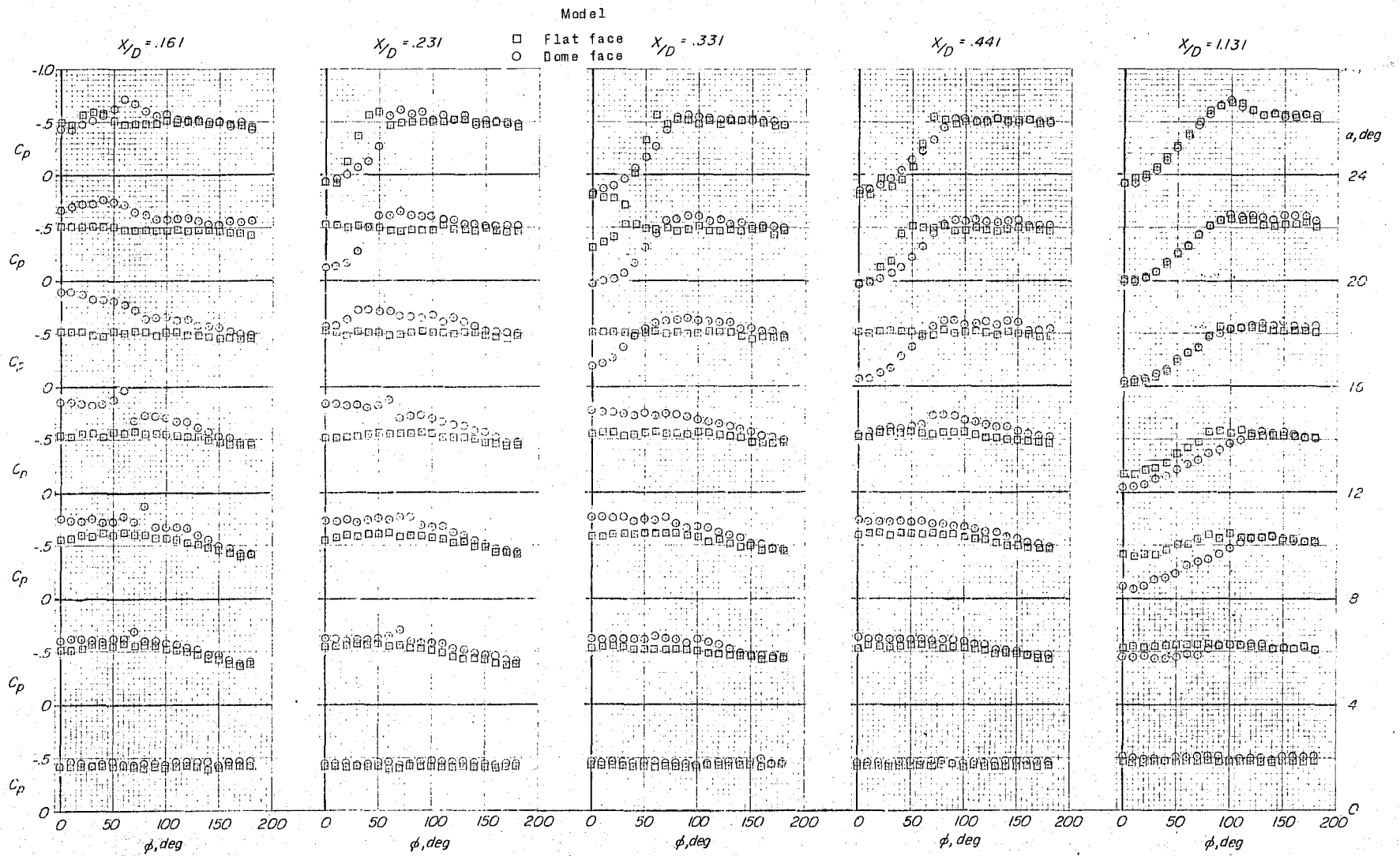


Figure 5.- Pressure coefficient variation over surface of the cylinders.

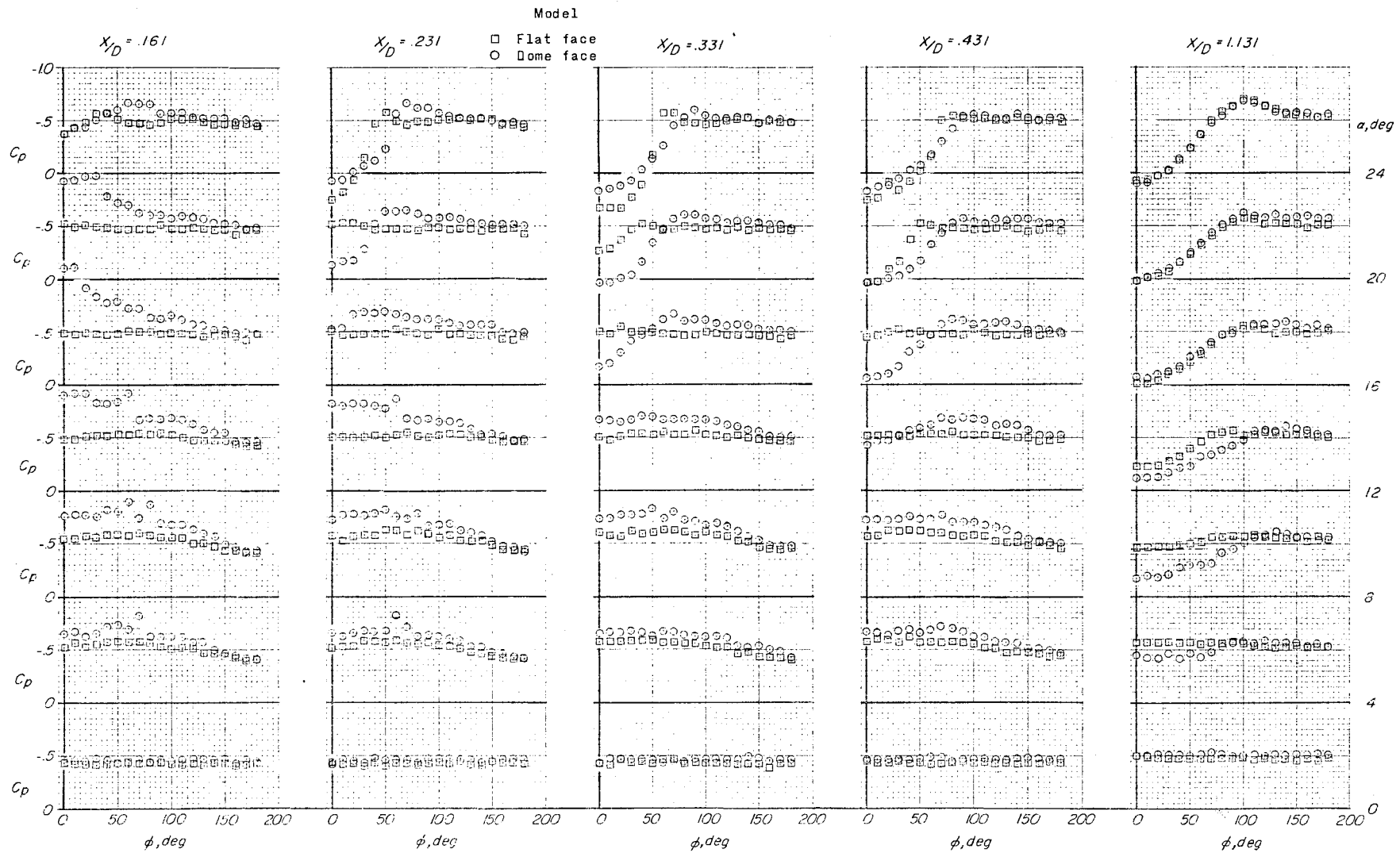


(b) $M = 0.403$

Figure 5.- Continued.

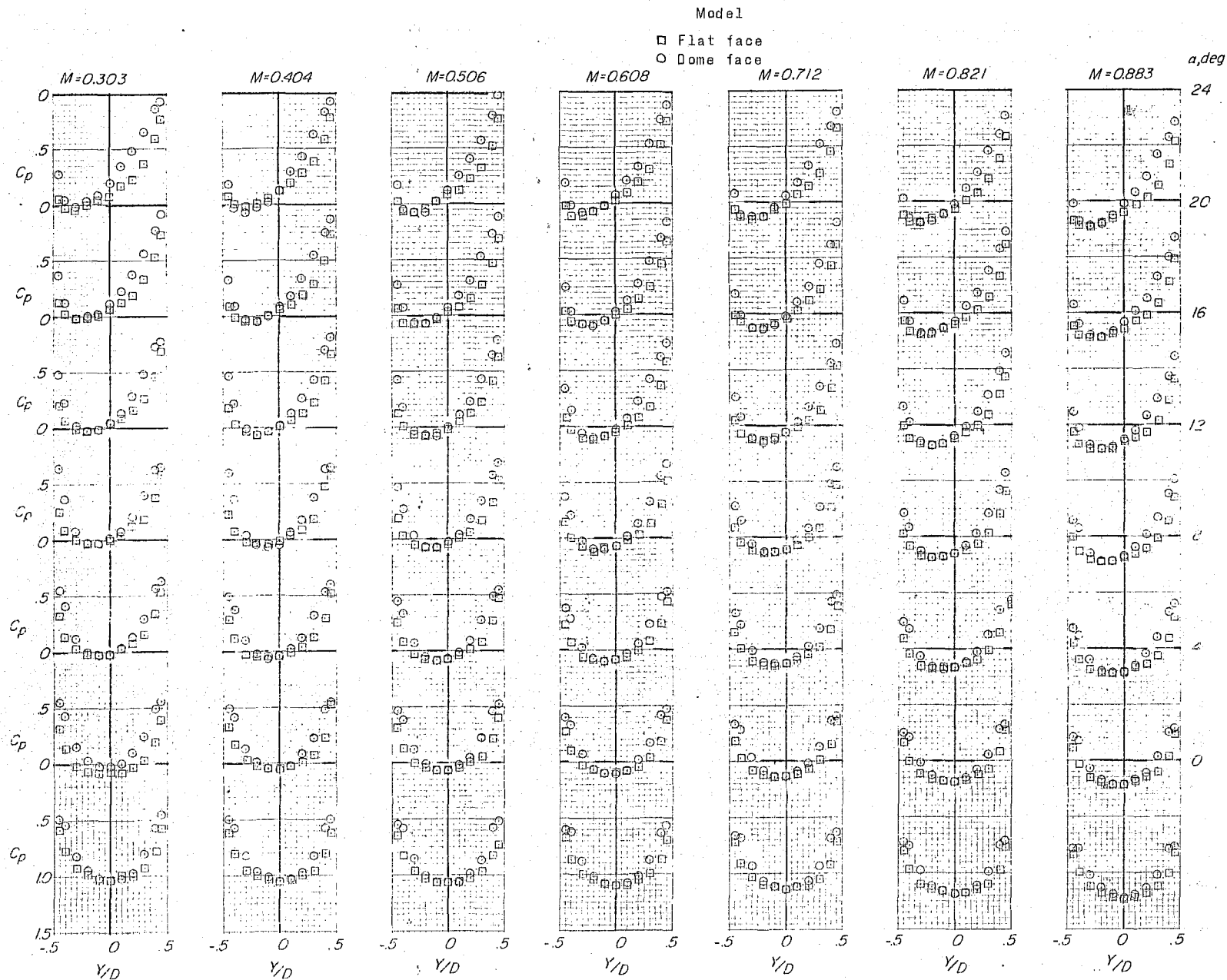


(f) $M = 0.820$
 Figure 5.- Continued.



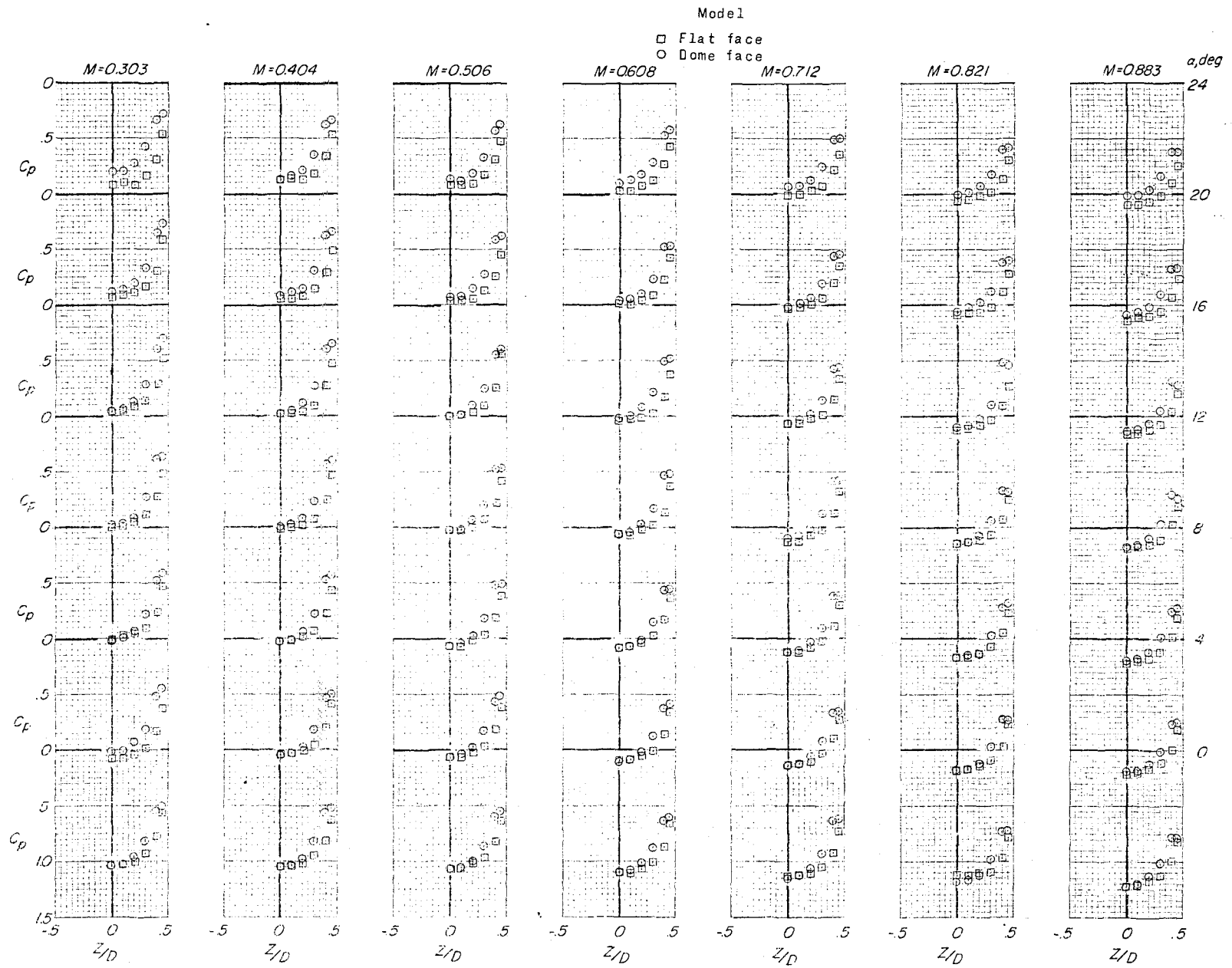
(9) $M = 0.895$

Figure 5.- Concluded.



(a) Along Y-axis

Pressure coefficient variation over forward face of cylinders.



(b) Along Z-axis
 Figure 6.- Concluded.

