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SINGLE-STAGE EXPERIMENTAL EVALUATION OF TANDEM-AIRFOIL ROTOR AND STATOR BLADING FOR COMPRESSORS

PART VI - DATA AND PERFORMANCE FOR STAGE D

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16. Abstract

An axial flow compressor stage, having single-airfoil blading, was designed for zero rotor prewhirl, constant rotor work across the span, and axial discharge flow. The stage was designed to produce a pressure ratio of 1.265 at a rotor tip velocity of 757 ft/sec. The rotor had an inlet hub/tip ratio of 0.8. The design procedure accounted for the rotor inlet boundary layer and included the effects of axial velocity ratio and secondary flow on blade row performance. The objectives of this experimental program were: (1) to obtain performance with uniform and distorted inlet flow for comparison with the performance of a stage consisting of tandem-airfoil blading designed for the same vector diagrams and (2) to evaluate the effectiveness of accounting for the inlet boundary layer, axial velocity ratio, and secondary flows in the stage design. With uniform inlet flow, the rotor achieved a maximum adiabatic efficiency of 90.1% at design equivalent rotor speed and a pressure ratio of 1.281. The stage maximum adiabatic efficiency at design equivalent rotor speed with uniform inlet flow was 86.1% at a pressure ratio of 1.266. Hub radial, tip radial, and circumferential distortion of the inlet flow caused reductions in surge pressure ratio of approximately 2, 10 and 5%, respectively, at design rotor speed.

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FOREWORD

This report was prepared by the Pratt & Whitney Aircraft Division of United Aircraft Corporation, West Palm Beach, Florida, to present the data and performance for Stage D, which was tested under Contract NAS3-11158, Single-Stage Experimental Evaluation of Tandem-Airfoil Rotor and Stator Blading for Compressors. Mr. Everett E. Bailey, NASA-Lewis Research Center, Fluid System Components Division, was Project Manager.

The requirements of NASA Policy Directive NPD 2220.4 (September 14, 1970) regarding the use of SI Units have been waived in accordance with the provisions of paragraph 5d of that Directive by the Director of Lewis Research Center.

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SUMMARY

A single-stage axial flow compressor, having single-airfoil blading, was designed and tested as part of an overall program to evaluate the effectiveness of tandem airfoils for increasing the design point loading capability and stable operating range of compressors. The stage was designed with zero rotor prewhirl, constant rotor work across the span, and axial discharge flow. The design procedure accounted for the rotor inlet boundary layer and included the effects of axial velocity ratio and secondary flow on blade row performance. The resulting blading had large variations in twist (i.e., end-bends) in the endwall regions. The rotor had an inlet hub/tip ratio of 0.8 and a design tip velocity of 757 ft/sec. The specific flow and resulting rotor inlet Mach number were generally consistent with design practice for compressor middle stages; however, the blade loading was appreciably higher. The stage was tested with uniform inlet flow and with hub radial, tip radial and 90 deg one-per-revolution circumferential distortion of the inlet flow.

Overall and blade element performance data for uniform inlet flow were obtained at 50, 70, 90, 100 and 110% of design equivalent rotor speed, and are presented herein. At design equivalent rotor speed and flow, the rotor achieved an adiabatic efficiency of 88.9% at the design pressure ratio of 1.28 compared with the design value of 89.9%. At the same flow and rotor speed, the stage achieved its design adiabatic efficiency of 84.8% at its design pressure ratio of 1.26. At design equivalent rotor speed, maximum rotor and stage adiabatic efficiencies of 90.1% and 86.1%, respectively, were reached at approximately 96% design equivalent flow.

For both hub radial and tip radial distortion of the inlet flow, overall performance, blade element performance and flow distribution data were obtained at 70, 90 and 100% of design equivalent rotor speed and are also presented herein. For circumferential distortion of the inlet flow, overall performance data were obtained at 70, 90 and 100% of design equivalent rotor speed. Flow distribution data were also obtained with circumferential distortion of the inlet flow for two operating points (defined as a combination of flow and speed) at design equivalent rotor speed and one operating point at 90% design equivalent rotor speed.

Hub radial distortion and circumferential distortion produced moderate changes in surge pressure ratio for the stage, whereas tip radial distortion caused surge pressure ratio to decrease substantially. At design equivalent rotor speed with hub radial, tip radial, and circumferential distortion the surge pressure ratio decreased 2.0, 9.7, and 4.6%, respectively, when compared with the uniform inlet flow value. Peak adiabatic efficiency with hub radial distortion was essentially unchanged from the uniform inlet flow value (which occurred at design speed), even though the stage pressure ratio was reduced significantly at 90 and 100% design equivalent rotor speed with hub distortion. Tip radial distortion of the inlet flow resulted in a slight increase in peak adiabatic efficiency at 70 and 90% design equivalent rotor speed, but the stage lost 4.5 percentage points in peak efficiency at design rotor speed. Stage pressure ratio with tip radial distortion was reduced considerably over most of the 90% speedline and over all the 100% speedline. Stage pressure ratio was not affected significantly by circumferential distortion of the inlet flow, calculated values of adiabatic efficiency with circumferential distortion were considered to be inaccurate, prohibiting an evaluation of the effects of circumferential distortion on peak efficiency.

INTRODUCTION

The effectiveness of tandem airfoils as a means for increasing the loading limit and stable operating range of highly loaded compressor blade rows was investigated for the National Aeronautics and Space Administration at the Florida Research and Development Center of Pratt & Whitney Aircraft under Task I of Contract NAS3-11158 (References 1 through 3). During this program, tandem rotors demonstrated higher pressure rise and efficiency than a single airfoil rotor with identical inlet and exit airfoil angles. The performance of the conventional stage was controlled to a large extent by three-dimensional flow effects associated with high losses near the walls. The three-dimensional flows resulted even though the blading was designed with increased work input near the walls to compensate for the high losses in these regions and, thereby, maintain a constant radial pressure distribution.

A second single-stage compressor investigation was initiated to evaluate the potential of tandem blading for improving the performance over that of a more moderately loaded stage, composed of single-airfoil blade rows. A study was performed to select a radial work gradient for the rotor, which resulted in maximum rotor and stator loading levels consistent with good performance (Reference 4). Based on this study a rotor design with uniform work input at all radii and an overall pressure ratio of 1.28 at a design tip speed of 757 ft/sec was chosen for this investigation. This rotor has lower work input near the walls than the rotors of References 1 through 3. This lower work input near the walls should reduce the three-dimensional flows and high wall losses that are characteristic of highly loaded blade rows and provide a stage design that is not characterized by a highly three-dimensional flow and associated poor performance.

A single-airfoil rotor and stator, a dual-airfoil tandem rotor, and a dual-airfoil tandem stator were designed and fabricated for this investigation. Because of the large inlet boundary layer noted during the Reference 1 through 3 testing, a design procedure was used that accounted for the inlet total pressure gradient and the effects of axial velocity ratio and secondary flow on blade row performance. This report presents the data and performance obtained with Stage D, which was composed of single-airfoil rotor and stator blading. A discussion of the aerodynamic and mechanical design of Stage D is presented in Reference 4.

DESIGN SUMMARY

Blading Design

The stage was designed with zero rotor prewhirl, constant rotor work across the span, and axial discharge flow. A rotor tip inlet Mach number of approximately 0.8 and a specific flow of 33 lb/sec-ft^2 were selected to be generally representative of current design practice for highly loaded compressor middle stages. The design velocity diagrams were calculated by means of a computer program that solves the continuity, energy, and radial equilibrium equations for an axisymmetric flow field. The rotor inlet total pressure distribution from the data of the Reference 1 program was used for the vector diagram calculations. Radial gradients of enthalpy and entropy were included in the calculation, and the influence of wall and streamline curvature on the radial distribution of static pressure was taken into account. Simulated double-circular-arc

airfoil sections (i.e., the mean camber line and the suction and pressure surface lines of each blade element are lines with a constant rate of angle change with path distance on a specified conical surface) were selected for the rotor and stator blading to be as consistent as possible with studies being conducted by NASA-Lewis Research Center (Reference 5). Design incidence (minimum loss) and deviation angles were calculated using equations 286 and 287 of Reference 6. The three-dimensional corrections to the incidence and deviation angles were omitted and a two-dimensional turning value, which includes the effects of axial velocity ratio and secondary flow, was used (Reference 4). This procedure combined with the use of the actual inlet pressure gradient resulted in blading with large variations in twist in the endwall regions of both the rotor and stator. (See figure 1.)

Rotor and stator design velocity diagram data, blade element geometry data, and predicted performance are presented in tables I and II for the rotor and stator, respectively. Symbols and performance variables are defined in Appendix C.

TEST EQUIPMENT

Compressor Test Facility

A schematic of the compressor test facility is shown in figure 2. The compressor is driven by a single-stage turbine, powered by exhaust gases from a J75 slave engine, with compressor speed controlled by means of the engine throttle. Air enters the compressor through a 103-ft combined inlet duct, plenum, and bellmouth inlet, and is exhausted through an exit diffuser to the atmosphere. The inlet duct contains a flow measuring orifice designed and installed in accordance with ASME standards. The area contraction ratio from plenum to compressor inlet is approximately 10 to 1.

Compressor Test Rig

A schematic of the compressor test rig is shown in figure 3. The flowpath dimensions are shown in figure 4. The hub/tip ratio at the rotor inlet is 0.798. The test section has a constant hub diameter of 32.85 in., and the outer wall converges from a diameter of 41.15 in. at the rotor leading edge to 39.99 in. at the stator trailing edge. Rotor bearing loads are transmitted to the rig support through struts located in the inlet and exhaust case assemblies. The inlet struts are sufficiently far upstream so that their wakes are dissipated ahead of the rotor. The stage design specifications of zero rotor prewhirl and axial discharge flow eliminated the need for inlet and exit guide vanes. Flowrate and/or backpressure were varied with a set of motor driven throttle vanes located in the exhaust case.

Distortion Screens

Twenty-mesh, 0.020-in. diameter wire was used for the distortion screens (i.e., tip radial, hub radial and circumferential). The tip and hub radial distortion screens covered 35 and 40% of the inlet annulus area respectively, and the circumferential screen covered a 90 deg sector of the inlet annulus area. The distortion screens were mounted on a 1.0-in. mesh 0.125-in. diameter wire support screen located approximately one rotor radius upstream of the rotor leading edge. The support screen, which spanned the entire annulus, was installed for all the Stage D tests.

Table I. Rotor D Blade Element Design

VELOCITY DIAGRAM DATA

Equivalent Rotor Speed = 4210 rpm

Equivalent Weight Flow = 110 lb/sec

	Percent Span From Tip: Leading Edge	Trailing Edge	V'_{le} (ft/sec)	V_{zle} (ft/sec)	$V'_{\theta le}$ (ft/sec)	β'_{le} (deg)	U_{le} (ft/sec)	V'_{te} (ft/sec)	V_{zte} (ft/sec)	$V'_{\theta te}$ (ft/sec)	β'_{te} (deg)	U_{te} (ft/sec)	α (deg)
Hub	96.8	95.0	758.6	458.8	608.7	53.00	608.7	416.8	371.3	193.5	27.95	610.5	1.52
	92.0	90.0	787.8	488.5	615.8	51.50	615.8	493.9	448.9	204.8	24.55	617.6	1.37
	86.9	85.0	800.7	500.5	623.8	51.10	623.8	535.6	491.5	215.9	23.72	624.7	0.89
	71.0	70.0	819.8	501.1	642.9	52.20	642.9	575.8	519.6	249.0	25.70	645.9	-1.17
	49.5	50.0	844.3	499.9	680.6	53.60	680.6	603.1	525.8	293.7	29.35	674.3	-4.21
	28.1	30.0	869.4	496.5	713.2	55.00	713.2	622.8	521.1	339.8	32.95	702.6	-7.16
	12.0	15.0	877.9	473.4	737.8	57.10	737.8	596.0	464.2	370.0	38.35	723.9	-9.37
	7.1	10.0	861.4	428.7	745.3	59.80	745.3	553.0	400.9	379.7	43.48	730.9	-9.64
Tip	3.0	5.0	837.2	375.1	751.5	64.10	751.5	483.5	270.0	388.9	53.00	738.0	-9.07

Note: $\beta_{1c} = 0$ and is constant with radius.

DESIGN PERFORMANCE DATA

Rotor Pressure Ratio: 1.282

Adiabatic Efficiency: 89.9%

	Percent Span From Tip: Leading Edge	Trailing Edge	M' le	i_m (deg)	D	$\bar{\omega}'$	Loss Parameter	δ^* (deg)	P_{le} (psia)	T_{le} (°R)	P_{te} (psia)	T_{te} (°R)
Hub	96.8	95.0	0.697	0.57	0.604	0.236	0.0604	12.79	14.427	518.7	17.765	561.14
	92.0	90.0	0.719	0.56	0.530	0.162	0.0432	10.38	14.659	518.7	18.361	561.15
	86.9	85.0	0.732	0.52	0.484	0.106	0.0288	9.08	14.694	518.7	18.735	561.14
	71.0	70.0	0.750	0.15	0.453	0.064	0.0177	7.05	14.699	518.7	19.000	561.34
	49.5	50.0	0.774	-0.36	0.436	0.046	0.0129	6.16	14.693	518.7	19.063	561.34
	28.1	30.0	0.796	-0.88	0.426	0.056	0.0158	5.44	14.701	518.7	19.010	561.07
	12.0	15.0	0.801	-1.41	0.461	0.123	0.0335	6.82	14.602	518.7	18.465	561.28
	7.1	10.0	0.783	-2.32	0.504	0.150	0.0382	10.45	14.308	518.7	17.915	561.14
Tip	3.0	5.0	0.757	-3.90	0.567	0.201	0.0428	17.12	13.820	518.7	17.130	561.38

GEOMETRY DATA

Airfoil: Simulated Double-Circular-Arc**

Number of Blades: 70

Chord Length: 2.57 in.

	Percent Span From Tip: Leading Edge	Trailing Edge	κ'_{1c} (deg)	κ'_{tc} (deg)	Φ (deg)	$\gamma°$ (deg)	σ	t/c	r_{le} (in.)	r_{te} (in.)
Hub	96.8	95.0	52.42	15.14	37.27	33.78	1.725	0.0782	0.009	0.009
	92.0	90.0	50.91	14.15	36.75	32.53	1.705	0.0763	0.009	0.009
	86.9	85.0	50.57	14.63	35.94	32.60	1.684	0.0743	0.009	0.009
	71.0	70.0	52.04	18.64	33.40	35.34	1.627	0.0681	0.008	0.008
	49.5	50.0	53.96	23.19	30.77	38.58	1.553	0.0599	0.007	0.007
	28.1	30.0	55.88	27.50	28.37	41.69	1.485	0.0515	0.006	0.006
	12.0	15.0	58.51	31.53	26.98	45.02	1.439	0.0454	0.006	0.006
	7.1	10.0	62.12	33.03	29.09	47.58	1.424	0.0433	0.006	0.006
Tip	3.0	5.0	68.00	35.87	32.12	51.93	1.412	0.0415	0.006	0.006

*Information included in this table is defined on planes tangent to the conic surfaces, which approximate design streamlines of revolution.

**Mean camber line and suction and pressure surface lines of each blade element are lines with a constant rate of angle change with path distance on the conic surface, which approximates the design streamline of revolution.

Table II. Stator D Blade Element Design

VELOCITY DIAGRAM DATA

Equivalent Rotor Speed = 4210 rpm

Equivalent Weight Flow = 110 lb/sec

	Percent Span From Tip: Leading Edge	Trailing Edge	V_{1c} (ft/sec)	V_{z1c} (ft/sec)	$V_{\theta 1e}$ (ft/sec)	β_{1e} (deg)	V_{tc} (ft/sec)	V_{zte} (ft/sec)	$V_{\theta te}$ (ft/sec)	β_{te} (deg)	α (deg)
Hub	95.0	95.0	569.9	383.9	417.2	47.65	395.1	395.1	0.0	0.0	-0.29
	90.0	90.0	616.6	456.9	412.8	41.90	472.2	472.2	0.0	0.0	-0.57
	85.0	85.0	645.3	501.1	407.9	39.20	514.3	514.3	0.0	0.0	-0.86
	70.0	70.0	659.8	526.2	396.8	37.00	543.9	543.9	0.0	0.0	-1.72
	50.0	50.0	655.9	533.7	380.5	35.50	554.2	554.2	0.0	0.0	-2.86
	30.0	30.0	642.5	529.8	362.9	34.40	547.8	547.8	0.0	0.0	-4.00
	15.0	15.0	595.2	471.9	354.3	36.50	486.2	486.2	0.0	0.0	-4.86
	10.0	10.0	538.1	407.2	349.0	40.40	417.2	417.2	0.0	0.0	-5.14
Tip	5.0	5.0	450.2	284.3	349.1	52.50	298.4	298.4	0.0	0.0	-5.43

DESIGN PERFORMANCE DATA

Stage Pressure Ratio: 1.265

Stage Adiabatic Efficiency: 84.8%

	Percent Span From Tip: Leading Edge	Trailing Edge	M_{1c}	i_m (deg)	D	$\bar{\omega}$	Loss Parameter	δ° (deg)	P_{te} (psia)
Hub	95.0	95.0	0.5024	-2.51	0.540	0.0972	0.02216	8.83	17.419
	90.0	90.0	0.5463	-1.48	0.462	0.0803	0.02027	11.31	18.117
	85.0	85.0	0.5751	-1.08	0.423	0.0712	0.01902	11.31	18.472
	70.0	70.0	0.5867	-1.02	0.389	0.0604	0.01714	10.97	18.748
	50.0	50.0	0.5832	-1.18	0.369	0.0534	0.01610	11.01	18.864
	30.0	30.0	0.5709	-1.43	0.364	0.0587	0.01866	11.66	18.762
	15.0	15.0	0.5262	-2.15	0.418	0.0995	0.03165	12.44	18.153
	10.0	10.0	0.4748	-3.11	0.488	0.1506	0.04575	12.68	17.534
Tip	5.0	5.0	0.3958	-6.64	0.630	0.1634	0.04282	4.85	16.738

GEOMETRY DATA

Airfoil: Simulated Double-Circular-Arc**

Number of Vanes: 66

Chord Length: 2.35 in.

	Percent Span From Tip: Leading Edge	Trailing Edge	κ_{1c} (deg)	κ_{te} (deg)	ϕ (deg)	γ° (deg)	σ	t/c	r_{1e} (in.)	r_{te} (in.)
Hub	95.0	95.0	50.16	- 8.83	59.00	20.66	1.484	0.09	0.010	0.010
	90.0	90.0	43.38	-11.31	54.70	16.03	1.468	0.09	0.010	0.010
	85.0	85.0	40.28	-11.31	51.60	14.48	1.453	0.09	0.010	0.010
	70.0	70.0	38.02	-10.97	49.00	13.52	1.407	0.09	0.010	0.010
	50.0	50.0	36.68	-11.01	47.70	12.83	1.350	0.09	0.010	0.010
	30.0	30.0	35.83	-11.66	47.50	12.08	1.298	0.09	0.010	0.010
	15.0	15.0	38.65	-12.44	51.10	13.10	1.262	0.09	0.010	0.010
	10.0	10.0	43.11	-12.68	55.80	15.21	1.250	0.09	0.023	0.010
Tip	5.0	5.0	59.14	- 4.85	64.00	27.14	1.238	0.09	0.040	0.014

*Information included in this table is defined on planes tangent to the conic surfaces, which approximate design streamlines of revolution.

**Mean camber line and suction and pressure surface lines of each blade element are lines with a constant rate of angle change with path distance on the conic surface, which approximates the design streamline of revolution.

Instrumentation

Instrumentation was provided to obtain overall and blade element performance data for each blade or vane row. The locations of axial instrumentation stations are indicated in figure 4. Axial and circumferential locations of the instrumentation are shown in figure 5. Except for the omission of one rotor inlet total pressure probe during uniform inlet and radial distortion tests, dual instrumentation was provided at each axial station. The dual instrumentation provided (1) a redundant set of measurements during uniform and radially distorted inlet flow testing, and (2) measurements within and outside of the distorted region during the circumferential distortion testing.

Airflow was measured with an ASME standard thin-plate orifice located in the compressor facility inlet duct. Compressor rotor speed was measured with an electromagnetic sensor mounted adjacent to a 60-tooth gear on the rotor shaft. Gear tooth passing frequency was displayed as rpm on a digital counter. Rotor rpm was also recorded on magnetic tape. Inlet total temperature was measured in the inlet plenum by means of six half-shielded total temperature probes; inlet total pressure was measured in the plenum by means of five Kiel total pressure probes. Six equally spaced static pressure orifices were located on both the inner and outer walls at instrumentation Station 0.

Radial distributions of static pressure at the rotor inlet and exit and at the stator exit were measured by means of 8-deg wedge probes (figure 6). Four inner wall and four outer wall static pressure orifices, approximately equally spaced, were located at each of these stations. The rotor exit (i.e., stator inlet) instrumentation station also had two inner wall and three outer wall orifices installed across a vane gap to measure the static pressure variation across the gap. Likewise, the stator exit instrumentation station had four inner wall and four outer wall orifices installed across a vane gap to measure the gap-wise static pressure gradient on each wall. Eleven static pressure orifices were located over the rotor blade tips on the outer wall, between -26% and 107% rotor axial chord, to measure the rotor tip static pressures. Stator surface static pressure distributions at 10% and 90% span were measured with eight suction surface and three pressure surface orifices situated from approximately 15 to 85% chord at both span locations. The three pressure surface orifices at each percent span were installed on the same airfoil and a different stator vane was used for each group of eight suction surface pressure orifices, i.e., a total of three stators. The three stators were positioned in the stator assembly such that at least one uninstrumented vane separated those with static pressure orifices. The circumferential location of each instrumented airfoil and the location of the pressure orifices in terms of percent chord are shown in figure 7.

Twenty-deg wedge probes (figure 8) were used to measure the radial distributions of total pressure and flow angle at the rotor inlet and exit, and flow angle at the stator exit. Stator exit total pressure and temperature across a stator gap were measured at each of two circumferential locations by means of circumferentially traversed radial rakes with elements at nine radial positions (figure 9). The elements of each radial rake were designed to measure both total pressure and temperature. A fixed radial rake with five Kiel total pressure sensors was also installed downstream of the stator for use with the wall static measurements to calculate the freestream Mach number. This Mach number was used to correct the total temperature and the 8-deg wedge static pressure measurements.

As previously stated, dual instrumentation was provided at each axial measuring station to provide measurements within and outside of the distorted regions during the circumferential distortion testing. The dual instrumentation also reduced the number of circumferential distortion screen locations required to obtain a uniform spacing of flow distribution data relative to a reference screen location. Six screen locations resulted in the circumferential distributions (relative to a reference screen location) of data shown in figures 10a through 10c for stations 1, 2, and 2A, respectively.

Steady-state pressure data were measured with a multichannel pressure transducer scanning system that includes automatic data recording on computer cards. Steady-state temperature measurements were also automatically recorded on computer cards by a multichannel scanning system in conjunction with a temperature reference oven and a digital voltmeter. Traverse pressure and temperature data and transient pressure data were recorded on magnetic tape at up to 600 samples per minute per channel.

One static pressure orifice located in the plenum, two of the outer wall static pressure orifices at Station 0, and a total pressure probe with sensors at 10, 50, and 90% spans at the rotor exit were close-coupled to transducers for transient recording during operation into and out of stall. High-response pressure transducers mounted as total pressure probes at 10, 50, and 90% span from the tip behind the rotor (figure 11) were used to measure high-frequency total pressure oscillations and to indicate the initiation of rotating stall. The high-response transducer output was recorded on magnetic tape and correlated in time with the transient recording of the plenum and Station 0 statics and the stage exit total pressures.

Five rotor blades were instrumented with strain gages to provide vibratory stress data. The gage outputs were displayed on oscilloscopes and visually monitored during tests. Gage locations were determined by bench vibration tests with the aid of stresscoat and the selected locations were verified by a fatigue test.

PROCEDURES

Test Procedures

Shakedown Tests

A shakedown test was performed to check out the rig and blade vibration levels, blade stress levels, instrumentation, and data reduction programs. Overall and blade element performance data were obtained for two operating points with uniform inlet flow at 100% design equivalent rotor speed. One stall transient was performed during this test.

Performance Tests

Overall performance, blade element performance, flow distribution and stall transient data were obtained during the uniform inlet flow tests at 50, 70, 90, 100, and 110% of design equivalent rotor speed. Five data points (defined as a combination of flow and speed) were recorded at each speed to define stage performance between maximum obtainable flow and near stall. The near-stall

point was determined on the basis of flow and rotor exit pressure. Overall performance, blade element performance and flow distribution data were obtained at three flow conditions, including maximum and near-stall flow, at 70, 90, and 100% of design equivalent rotor speed for the hub and tip radial inlet flow distortion tests. For circumferential distortion of the inlet flow, overall performance data were recorded for three data points at each of 70, 90, and 100% of design equivalent rotor speed. Flow distribution data were also obtained with circumferential distortion of the inlet flow for two of the above data points at design equivalent rotor speed and one data point at 90% design equivalent rotor speed. To obtain an approximately uniform spacing of flow distribution data around the circumference of the compressor, data were recorded for six screen locations for each of the three data points. The resulting circumferential locations of the instrumentation relative to a reference screen locations are shown in figure 10.

At each data point, traverse surveys were followed by the recording of fixed pressure and temperature instrumentation data. Blade stresses were monitored during steady-state and stall transient operation at all rotor speeds.

Transient measurements of bellmouth static pressure, rotor speed, and rotor exit total pressure were recorded ten times per second to define stall characteristics as the stage was operated into and out of stall. The output from a high-response total pressure probe (10, 50, and 90% spans) at the rotor exit was also recorded as the stage was operated into and out of stall and correlated in time with the other transient measurements.

Data Reduction Procedures

Data reduction was accomplished in two steps. The first step involved the use of two computer programs (1) to convert millivolt readings to appropriate engineering units, and (2) to provide a tabulated and plotted array of pressures, temperature, and air angle data at each station. Conversion of data to absolute values, appropriate Mach number corrections, and adjustment of pressures and temperature to equivalent NASA standard day conditions were performed in the second computer program.

The second step in the data reduction procedure involved a computer program to calculate overall and blade element performance variables for the rotor and stator. The array of data provided in step one above was analyzed for the selection of radial distributions of pressures, temperature, and air angle at each axial station for input into the computer program.

Overall Performance

Total pressure ratios and adiabatic efficiencies were calculated for the rotor and the rotor-stator (stage). The rotor and stator exit total pressures and total temperatures were weighted according to local mass flow to obtain average values. The mass-averaged stator exit total temperatures were used for both the rotor and stage efficiency calculations.

The stator wake total pressures and total temperatures at each radial measuring station were mass-averaged using the local total pressure in the wake, the local total temperature in the wake, and the 8-deg wedge probe static pressure.

Mach number was determined from the local total and static pressure measurements. The local mass flow was then obtained from the relationship

$$\bar{m} = \frac{W\sqrt{T}}{PA} = \frac{\sqrt{\gamma g_c}}{R} \quad M \left[1 + \frac{\gamma - 1}{2} M^2\right]^{\frac{1+\gamma}{2(1-\gamma)}}$$

where A is the flow area associated with each radial measurement increment.

For the circumferential distortion data, the mass flow averaged values of total pressure and total temperature measured at one circumferential location within and one circumferential location outside of the distorted flow region were weighted according to the circumferential extent of distorted and undistorted flow to obtain the actual values used to calculate the pressure ratio and efficiency. It was assumed that the relative extents of distorted and undistorted flow remained the same through each blade row.

Blade Element Performance and Flow Distribution Data

Blade element performance and flow distribution data are presented for each blade row for uniform and radially distorted inlet flow. Performance calculations were made along design streamlines that pass through 5, 10, 15, 30, 50, 70, 85, 90, and 95% span at instrumentation Station 2. The calculations were performed at the instrumentation stations and at the rotor and stator leading and trailing edges. The pressures, temperatures, and air angles at the blade row leading and trailing edges were obtained by translating the measured values from the instrumentation stations assuming conservation of angular momentum, conservation of energy, continuity, and that the actual streamlines do not deviate substantially from design streamlines for any test point. A description of the translation method is presented in Reference 3. For circumferentially distorted inlet flow, flow distribution data (i.e., total pressure, total temperature, flow angle, velocity, Mach number and turning) is presented for the three data points with six screen positions. These flow distribution data are at the instrumentation stations and not translated to the blade row leading and trailing edges.

Stall Transient Data

Bellmouth static pressure at incipient stall was determined from plots similar to the one shown in figure 12 and the corresponding weight flow was determined from the correlation of bellmouth static pressure and orifice weight flow shown in figure 13. The steady-state pressure ratio data were extrapolated to the stall flow using the shape of the transient data curve as a guide line. Incipient stall points were determined in this manner for each rotor speed.

PRESENTATION OF DATA

Uniform Inlet

Overall Performance

Overall performance data are presented in terms of total pressure ratio and adiabatic efficiency as functions of equivalent weight flow ($W\sqrt{\theta}/\delta$) and equivalent rotor speed ($N/\sqrt{\theta}$) for the rotor in figure 14 and the rotor-stator (stage)

in figure 15. The design total pressure ratio and adiabatic efficiency for the rotor were 1.28 and 89.9%, respectively, at a design flow of 110.0 lb/sec. The corresponding design values for the stage were 1.26 and 84.8%. The design point is shown on each figure for comparison with the performance results. The solid symbol on the stall line in figures 14 and 15 is the stall point determined from the transient data. Pressure ratio, adiabatic efficiency and polytropic efficiency for the rotor and stage are also tabulated for the steady-state data points in table A-1 of Appendix A.

Based on a curve faired through the data points, the rotor achieved an adiabatic efficiency of 88.9% and a total pressure ratio of 1.28 at design equivalent rotor speed and flow. At the same flow and rotor speed the stage achieved an adiabatic efficiency of 84.8% and a total pressure ratio of 1.26. Peak efficiencies of 90.1% and 86.1% for the rotor and stage, respectively, were reached at design equivalent rotor speed and an equivalent flow of 103 lb/sec (i.e., 96% of design).

Blade Element Performance and Flow Distribution Data

As discussed on page 9, the blade element performance and flow distribution data were calculated for the instrumentation stations and for the rotor and stator leading and trailing edges. Table A-2 of Appendix A presents the data at the instrumentation stations at the near design point operating condition and is included only to illustrate the small differences between values calculated from the data at the instrumentation stations and the values calculated from the data that have been translated to the rotor and stator leading edges. Because of the small differences between translated and untranslated values, only the translated values are given in table A-3 of Appendix A for the remaining compressor test points. The plotted results discussed for the rotor and stator in the following paragraphs are based on the translated data.

Rotor Blade Element Performance

Rotor diffusion factor, deviation angle, and loss coefficient are shown as functions of incidence angle in figures 16a through 16i. At the design incidence angle and rotor speed, total pressure losses were less than or equal to the design values from 10 to 95% span from the tip and greater than the design value only at 5% span. Deviation angles were greater than the design values between 30 and 90% span from the tip and were equal to or less than the design values at 5, 10, 15, and 95% span. The diffusion factor at design incidence angle and rotor speed was greater than the design value at 5% span from the tip, approximately equal to the design values from 10 to 90% span, and less than the design value at 95% span.

Loss parameter versus diffusion factor is presented in figures 17a through 17e for 10, 30, 50, 70, and 90% span, respectively. The design curve representing a correlation of the minimum loss data from Reference 3, References 7 through 13, and unpublished Pratt & Whitney Aircraft in-house data is shown in these figures for comparison with the performance data. Although the data from References 7 through 13 are for Series 65 blade sections, the data presented in Reference 6 indicates that a single correlation of loss parameter vs diffusion factor can be used for Series 65 and double-circular-arc blade sections. The range of data in the Reference 6 correlation and the two-dimensional cascade data from figure 149 of Reference 6 are also shown at 10, 50, and 90% span in

figures 17a, 17c, and 17e, respectively, for comparison with the selected design loss curves. At design equivalent rotor speed, the loss parameter values that correspond to the minimum loss coefficient at 10, 30, 50, 70, and 90% span (figures 16b, 16d, 16e, 16f, and 16h, respectively) are on or below the design curve.

Axial gradients of rotor tip static pressure ratio (p_L/p at -7.3% axial chord) are shown in figure 18 for each flowrate at design equivalent rotor speed. This figure indicates that the rotor tip loading shifted toward the leading edge of the blade as the compressor was throttled toward stall flow.

Stator Blade Element Performance

Stator diffusion factor, deviation angle, and loss coefficient are presented as functions of incidence angle in figures 19a through 19i. For design incidence angle, the stator losses were less than or equal to design at 5, 10, 30, 50, 70 and 95% span from the tip and greater than design at 15, 85, and 90% span. Deviation angles, at design incidence, were from 2 to 5 deg greater than the design values across the entire span of the vane. Diffusion factors, at design incidence angle, were less than the design value at 5, 10, 15, 30, and 95% span from the tip, approximately equal to the design value at 50, 70, and 90% span, and greater than the design value only at 85% span.

Loss parameter versus diffusion factor is shown in figures 20a through 20e for 10, 30, 50, 70, and 90% span, respectively. The design curve, representing a correlation of the minimum loss data derived from the same references discussed in the rotor blade element performance section, is shown on each figure. The design point, the range of stator data from Reference 6, and the two-dimensional cascade data from Reference 6 are also included in the figures for comparison with Stator D performance data. For design equivalent rotor speed, the loss parameter values corresponding to the minimum measured loss coefficients were below the design curve at 10 and 30% span from the tip, approximately equal to the design curve value at 50 and 70% span, and greater than the design curve value at 90% span.

The stator static pressure coefficient distributions at 10 and 90% span from the tip are shown in figures 21a through 21e for design equivalent rotor speed. Static pressure coefficient distributions for all uniform inlet data points are tabulated in Appendix B. Vane suction surface instrumentation at 90% span was inoperative at 45, 55, 65, 75, and 85% chord, preventing calculation of static pressure coefficients at these locations.

The wall static pressure data were examined to determine if circumferential gradients with respect to the stator vanes were significant. In general, the variations of static pressure at different circumferential locations (solid symbols in figure 22), at approximately the same location relative to the stator vane, are as large as any variations that may be noted within one stator vane pitch. It was therefore concluded that no significant pitch variation was present in these data. Representative curves for two flow conditions at design equivalent rotor speed are presented as figures 22a and 22b.

Hub and Tip Radial Inlet Flow Distortion

Overall performance, blade element performance and flow distribution data were obtained with hub radial and tip radial distortion of the inlet flow. The screens used to produce the distortion are described on page 3. At a flow of approximately 115 lb/sec (i.e., 105% design equivalent flow), the hub and tip radial distortion screens produced 15.6 and 17.2% total pressure distortion, i.e., $(P_{max} - P_{min})/P_{max}$, over the inner 47 and outer 38% of the compressor annulus area, respectively. Rotor inlet total pressure profiles are presented in figure 23.

Overall Performance

Overall performance data obtained with hub radial distortion of the inlet flow are presented in terms of pressure ratio and adiabatic efficiency as functions of equivalent weight flow and equivalent rotor speed for the rotor in figure 24 and the stage in figure 25. Similarly presented in figures 26 and 27, is the overall performance obtained with a tip radial distortion of the inlet flow. Uniform inlet flow data and the rotor and stage design point are presented in these figures for comparison with the radially distorted inlet flow data. The stall line shown is determined from stall transient data. Pressure ratio, adiabatic efficiency, and polytropic efficiency for the rotor and stage are also tabulated for the steady-state data points with radial distortion in table A-4 of Appendix A.

With hub radial distortion of the inlet flow, rotor pressure ratio and efficiency at 100% design equivalent rotor speed and 110 lb/sec flow were 1.25 and 89%, compared with 1.28 and 88.9% for uniform inlet flow. Similarly, stage pressure ratio and efficiency were 1.24 and 84.5% as compared with 1.26 and 84.8% with uniform inlet flow. With the addition of hub radial distortion at 90 and 100% design equivalent rotor speed, there were 2.0% and 2.1% reductions, respectively, in stage surge pressure ratio and at 70% design rotor speed the loss in surge pressure ratio was only 1.1%. Therefore, Stage D was not appreciably affected by hub radial distortion.

With tip radial distortion of the inlet flow, rotor pressure ratio at 100% design equivalent rotor speed and 110 lb/sec equivalent weight flow, was 1.25 compared with 1.28 for the uniform inlet flow. Rotor efficiency under the same conditions was 87.5%, compared with 88.9% for uniform inlet flow. The corresponding stage pressure ratio and efficiency were 1.23 and 80.5% compared with 1.26 and 84.8% for the uniform inlet. With the addition of tip radial distortion stage surge pressure ratio decreased by 4.1, 7.2, and 9.7% at 70, 90 and 100% design equivalent rotor speed, respectively, when compared with the uniform inlet test results. Consequently, Stage D was substantially affected by tip radial distortion.

Blade Element Performance and Flow Distribution Data

Blade element performance and flow distribution data with radial distortion were calculated for each of the nine design streamline locations and the results, based on data translated to the blade row leading and trailing edges, are presented in tables A-5 and A-6 of Appendix A.

Rotor and Stator Blade Element Performance

Diffusion factor, deviation angle and loss coefficient with hub radial and tip radial distortion of the inlet flow are presented as functions of incidence angle in figures 28a through 28i for the rotor and in figures 29a through 29i for the stator. Comparison of the data shown in figures 28 and 29 with the uniform inlet flow data shown in figures 16 and 19 indicates that the rotor and stator deviation angle and loss coefficient distributions with radial distortion are generally equivalent to or are a normal extension of the values obtained with uniform inlet flow. However, comparison of diffusion factor distributions indicates a different level and rate of change of diffusion factor with incidence angle for each inlet flow condition. Diffusion factor is the only one of the three variables ($\bar{\omega}$, $\delta°$ or D) that would be strongly influenced by not properly accounting for radial flow shifts through the blade row. As discussed on page 9, the blade element performance calculations were made along design and not actual streamlines. One might expect larger differences between the actual and design streamlines with radial distortion than with uniform inlet flow. One might also expect differences in axial velocity ratio along the actual streamlines with and without distortion. Therefore, the changes in diffusion factor vs incidence curves may be attributed to both radial flow shifts and changes in axial velocity along a streamline.

Flow Distribution Data

Radial distributions of total and static pressure, total temperature, air angle, and axial velocity for the rotor inlet, stator inlet and stator exit are presented for hub and tip radial distortion of the inlet flow in figures 30a through 32c and 33a through 35c, respectively. The values for the nine design streamline locations are also presented in tables A-5 and A-6 of Appendix A.

The similarity of the stage inlet and exit total pressure and axial velocity profiles shown in figures 30a and 33a for hub and tip distortion, respectively, at design rotor speed and approximately 115 lb/sec (i.e., 105% design flow) indicates very little attenuation of either distortion pattern. Generally, this result is typical of the results obtained at other rotor speeds and flows.

Circumferential Distortion

Rotor and stage overall performance were obtained with circumferential distortion of the inlet flow. The screen used to produce the distortion is described on page 3. At a flow of approximately 116 lb/sec (i.e., 105% design equivalent flow), the screen produced 13.75% total pressure distortion, i.e., $(P_{1\,max} - P_{1\,min})/P_{1\,max}$, over a 90 deg sector of the compressor flow annulus. A typical rotor inlet total pressure distribution is presented in figure 36. The profile at approximately 105% design equivalent flow is not shown because at that flow pressure data were recorded at only two circumferential locations.

Overall Performance

The rotor and stage overall performance achieved with circumferential distortion of the inlet flow is compared with uniform inlet performance in figures 37 and 38, respectively. The half-solid symbols of figures 37 and 38 indicate the data points for which both overall performance and flow distribution data were recorded. Pressure ratio, adiabatic efficiency, and polytropic efficiency for the

rotor and stage are also presented in table A-7 of Appendix A for the steady-state data points with circumferential distortion.

The rotor and stage pressure ratios at design equivalent rotor speed and flow were 1.27 and 1.25 with circumferential distortion of the inlet flow, compared with 1.28 and 1.26 for uniform inlet flow. Surge pressure ratio for the stage decreased by 2.0, 2.4, and 4.6% with circumferentially distorted inlet flow when compared with uniform inlet flow results at 70, 90, and 100% design equivalent rotor speed, respectively.

The overall performance shown on figures 37 and 38 was calculated from pressures and temperatures measured at one circumferential location within and one circumferential location outside the distorted region. The pressures and temperatures were weighted according to the circumferential extent of the distorted and undistorted flow to obtain the average values for use in calculating the pressure ratio and efficiency. (See Appendix C.) In an effort to verify the high efficiencies shown on figures 37 and 38 and table A-7 with circumferential inlet flow distortion, the overall performance was recalculated for the three data points for which data were recorded at six screen locations using a larger sample of the data within and outside of the distorted area. Average pressures and temperatures were obtained by area weighing the spanwise mass-average values from each of twelve circumferential locations around the flow field, thus providing a better average of the rotor and stage exit pressures and temperature than was used to calculate the pressure ratios and efficiencies shown in figures 37 and 38 and in table A-7. The overall performance calculated from the data at twelve circumferential locations is compared with the performance calculated from two circumferential locations in figures 39 and 40 for the rotor and stage, respectively. As shown on figures 39 and 40, the larger data sample had little effect on pressure ratio but resulted in slightly different calculated levels of efficiency at the near-surge flow points at 90 and 100% design equivalent rotor speed and a reduction in efficiency of approximately 4 percentage points at the midpoint on the design equivalent rotor speed operating characteristic. This result combined with the high efficiencies (i.e., over 100% for the rotor at 70% design equivalent rotor speed) shown on figures 37 and 38 suggest that the efficiencies are not correct and that additonal data samples should be obtained in future test programs to obtain a more accurate assessment of the rotor and stage efficiencies with circumferential distortion of the inlet flow. Although the effects of distortion on efficiency cannot be accurately evaluated, the relatively low losses in surge pressure ratio indicate that Stage D was only moderately affected by circumferential distortion.

Flow Distribution Data

Table A-8 of Appendix A presents flow distribution data at the instrumentation stations for circumferential increments of 30-deg around the compressor annulus. Circumferential distributions of total pressure, static pressure, total temperature, air angle and axial velocity for each instrumentation station at the nine design streamline locations are shown in figures 41 through 43. Figures 41 and 42 present the values for the two data points at design equivalent rotor speed and figure 43 presents the data for the one point at 90% design equivalent rotor speed. The measured variables (pressure, temperature and air angle) are plotted at the circumferential locations of the measuring instrument relative to the distortion screen, and the axial velocity is plotted at circumferential locations corresponding to the locations of the 20-deg wedge probes relative to the distortion screen. A comparison of the circumferential distributions of total pressure

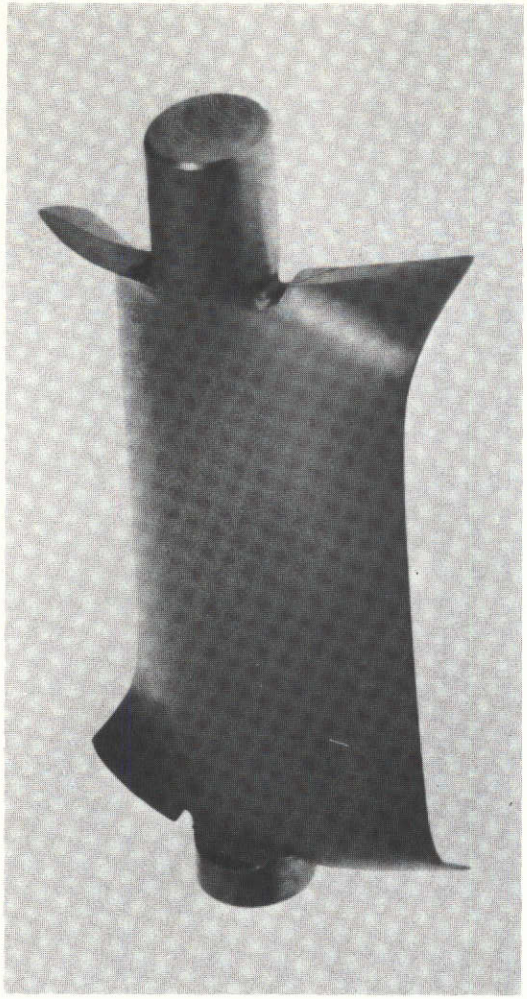
and axial velocity at the rotor inlet with the corresponding values at the stage exit indicates very little attenuation of the inlet distortion by either the hub or tip sections of the compressor. This result is consistent with the results obtained with radial distortion of the inlet flow.

SUMMARY REMARKS

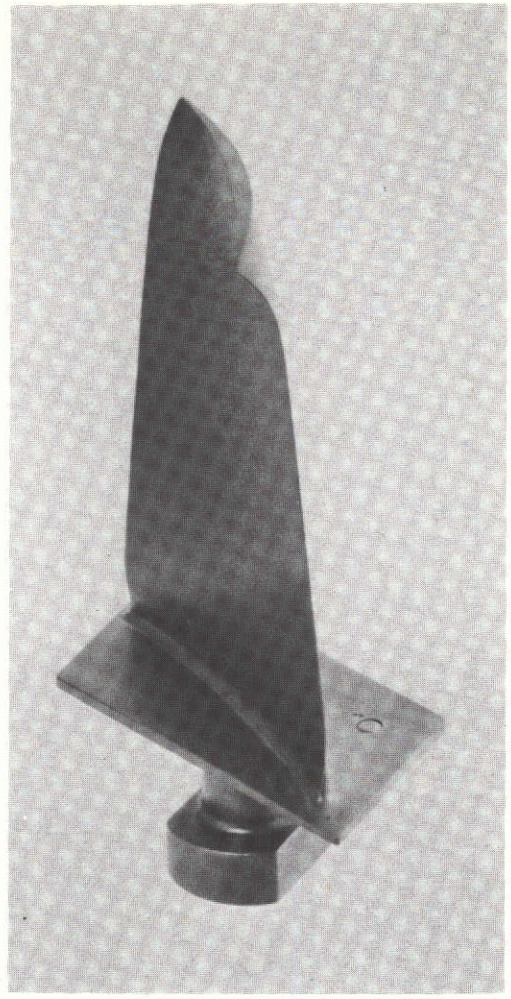
Stage D, composed of Rotor D and Stator D, was tested with uniform inlet flow and with hub radial, tip radial, and 90 deg one-per-revolution circumferential distortion of the inlet flow. The results of these tests provide performance data for: (1) comparison with data obtained from subsequent tests of a stage comprised of tandem-airfoil blading, (2) evaluating the effectiveness of accounting for the inlet boundary layer, axial velocity ratio and secondary flows in compressor design, and (3) evaluating the effects of inlet flow distortion on the stage performance.

With uniform inlet flow at design equivalent rotor speed and flow, the rotor achieved an adiabatic efficiency of 88.9% at a pressure ratio of 1.28 compared with respective design values of 89.9% and 1.28. At the same flow and rotor speed, the stage achieved its design adiabatic efficiency of 84.8% at a pressure ratio of 1.26. At design equivalent rotor speed, maximum rotor and stage adiabatic efficiencies of 90.1% and 86.1%, respectively, were reached at approximately 96% design equivalent flow.

With tip radial distortion of the inlet flow, significant decreases in stage surge pressure ratio occurred, i.e., at design equivalent rotor speed, the surge pressure ratio decreased by 9.7%. The surge pressure ratio at design speed with hub radial and circumferential distortion decreased 2.0 and 4.6%, respectively, from the uniform inlet test results. Peak adiabatic efficiency for the stage was essentially unchanged with the addition of hub radial distortion. Tip radial distortion, however, produced a slight increase in peak adiabatic efficiency at 70 and 90% design speed and a significant decrease of 4.5 percentage points at 100% design speed. The effects of circumferential distortion on adiabatic efficiency could not be accurately determined. For both radial and circumferential distortion of the inlet flow, the hub and tip regions of the compressor produced very little attenuation of the inlet distortion.



STATOR D



ROTOR D

Figure 1. Stage D Airfoils

FD 75490

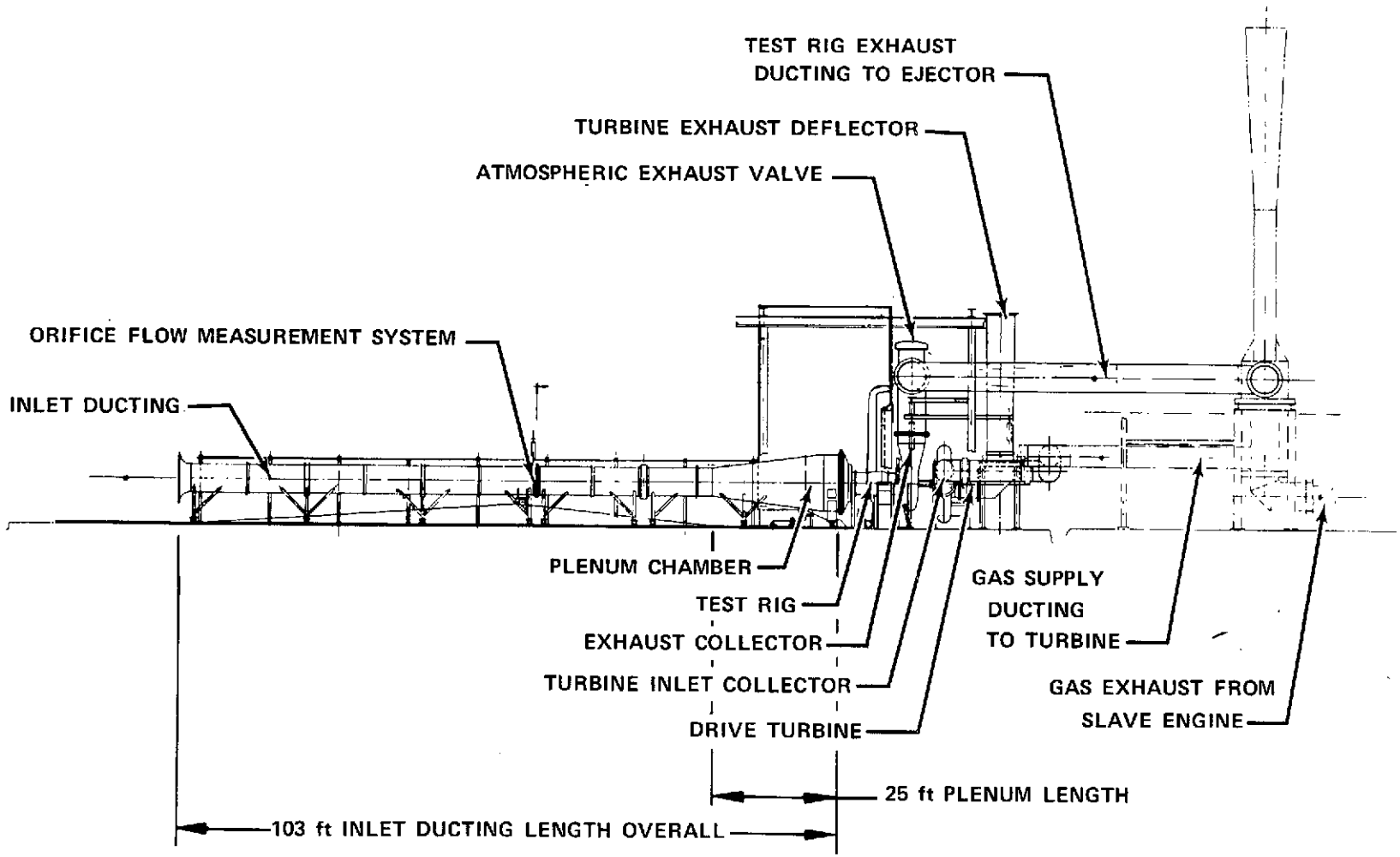


Figure 2. Compressor Research Facility

FD 75491

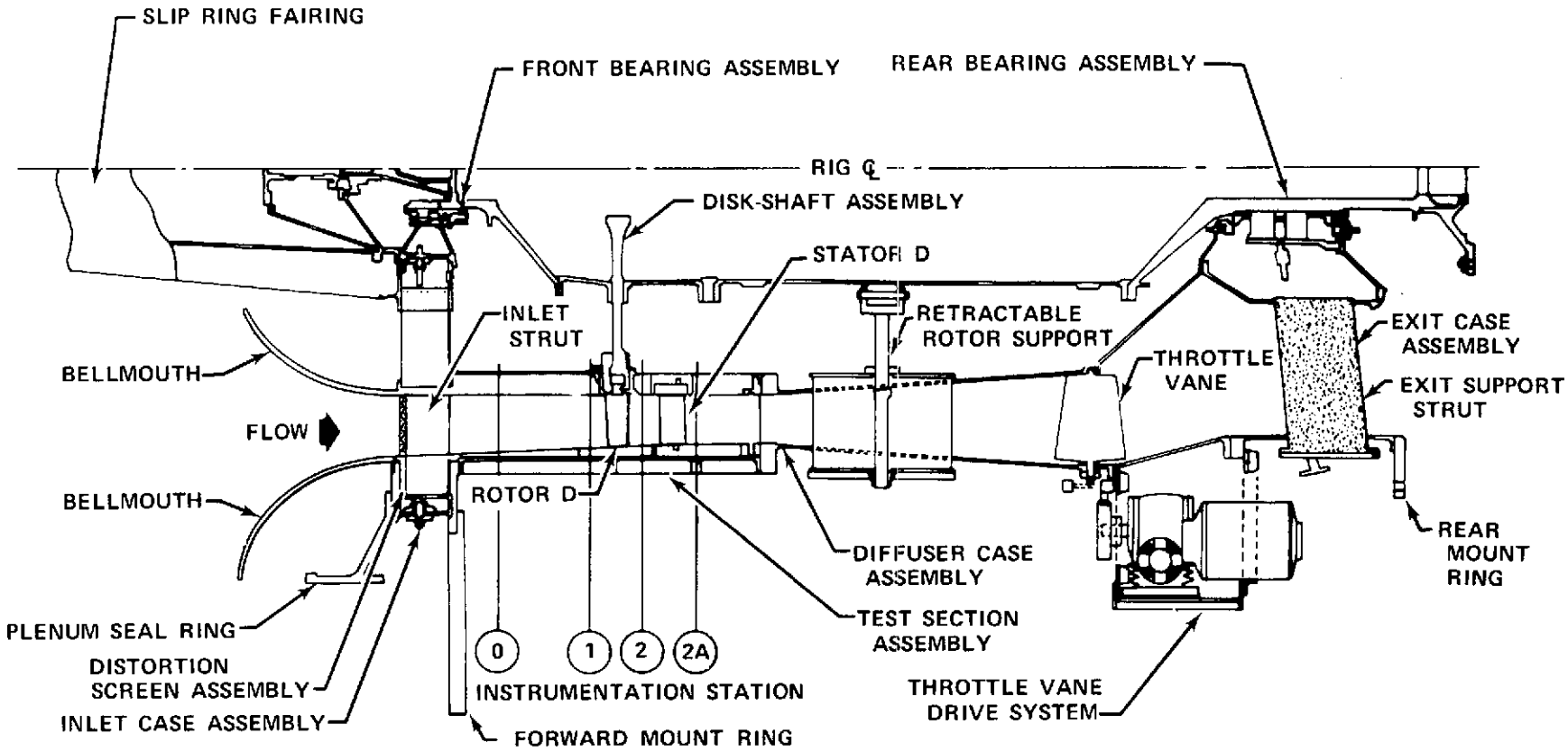
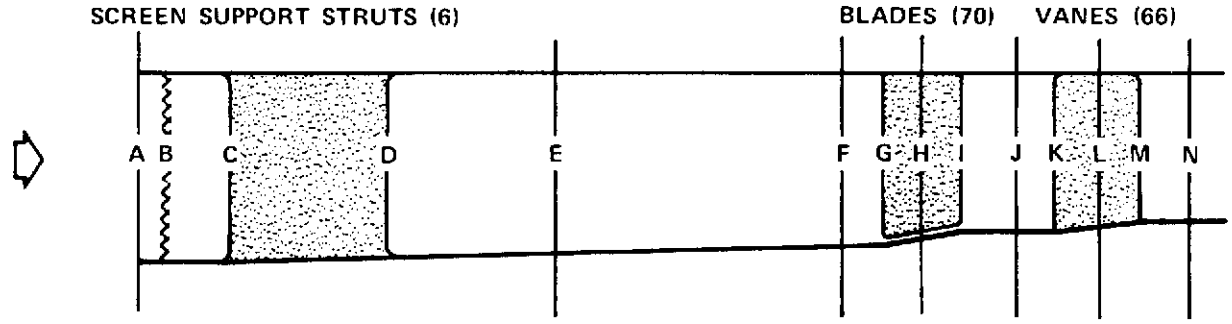


Figure 3. Single-Stage Compressor Rig

FD 75492

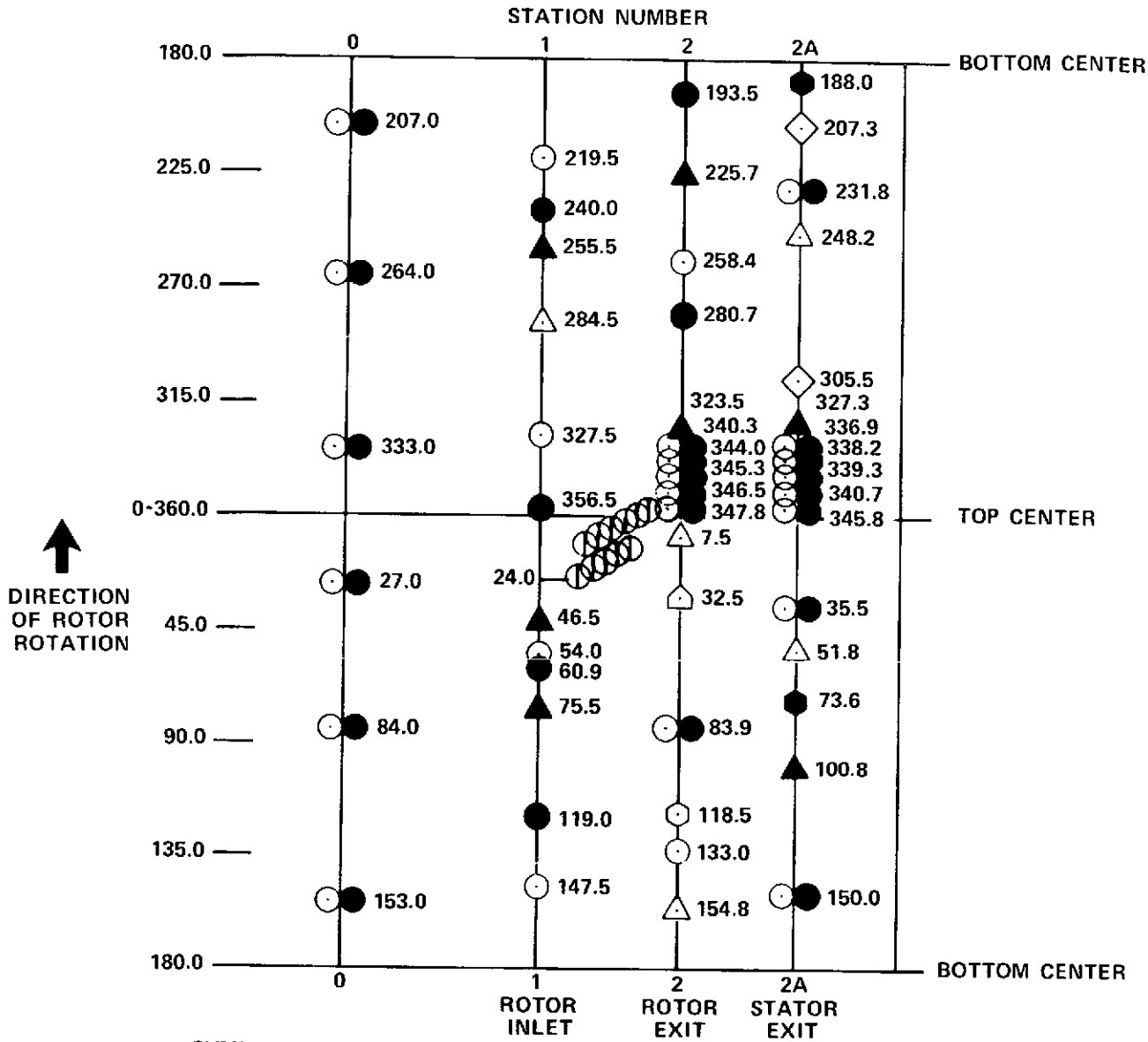


FLOWPATH LOCATION	LOCATION DESCRIPTION	INNER DIAMETER, in.	OUTER DIAMETER, in.	AXIAL DISTANCE FROM REFERENCE PLANE, in.
A	REFERENCE PLANE	32.850	41.790	0.0
B	DISTORTION SCREEN	32.850	41.790	1.500
C	SUPPORT STRUT LEADING EDGE	32.850	41.744	2.440
D	SUPPORT STRUT TRAILING EDGE	32.850	41.444	6.265
E	INSTRUMENTATION STATION 0	32.850	41.340	10.248
F	INSTRUMENTATION STATION 1	32.850	41.226	17.188
G	ROTOR INLET STATION	32.850	41.145	18.061
H	ROTOR D STACKING LINE	32.850	40.860	19.188
I	ROTOR EXIT STATION	32.850	40.562	20.315
J	INSTRUMENTATION STATION 2	32.850	40.520	21.368
K	STATOR INLET STATION	32.850	40.450	22.163
L	STATOR D STACKING LINE	32.850	40.220	23.293
M	STATOR EXIT STATION	32.850	39.990	24.468
N	INSTRUMENTATION STATION 2A	32.850	39.990	25.418

NOTE: ALL DIMENSIONS ARE IN INCHES.

Figure 4. Flowpath Dimensions

FD 64415A

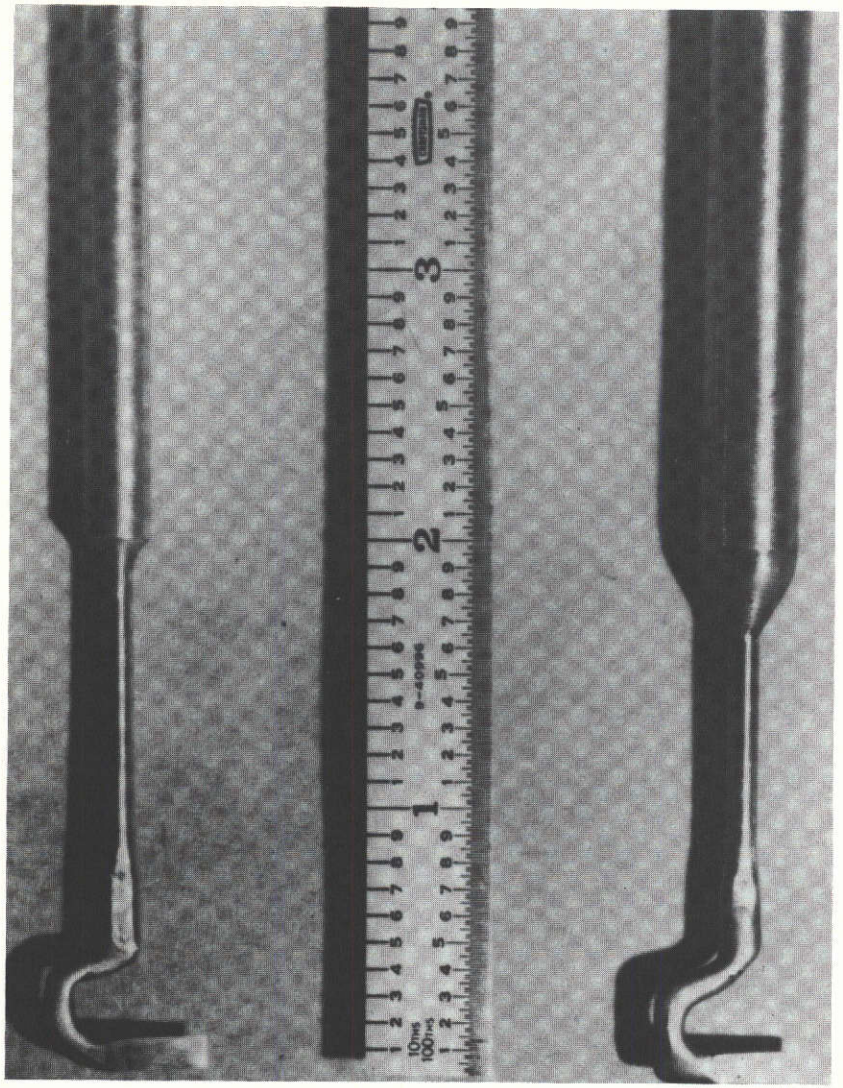


SYMBOLS

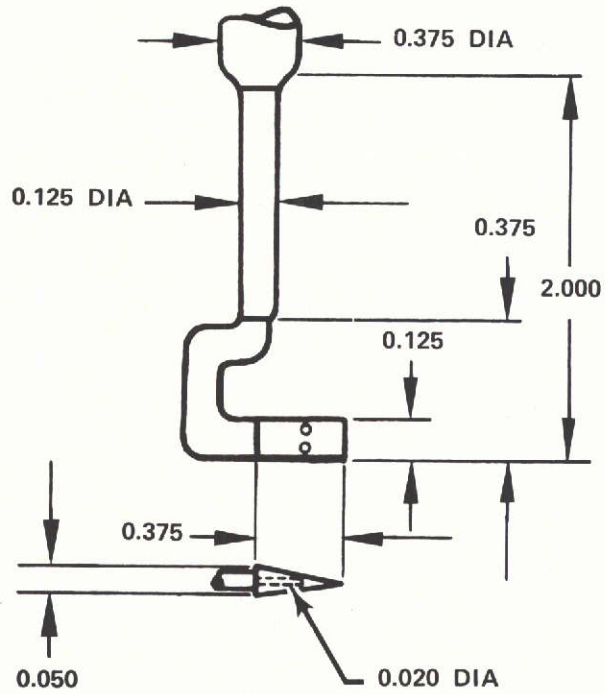
- OD WALL STATIC PRESSURE ORIFICE
- ID WALL STATIC PRESSURE ORIFICE
- 20 deg WEDGE TRAVERSE PROBE
- 8 deg WEDGE TRAVERSE PROBE
- TOTAL PRESSURE PROBE (10, 50 AND 90% SPANS)
- HIGH-RESPONSE PROBE (10, 50 AND 90% SPANS)
- TOTAL TEMPERATURE/PRESSURE PROBE, CIRCUMFERENTIAL TRAVERSE (5, 10, 15, 30, 50, 70, 85 AND 95% SPANS)
- TOTAL PRESSURE PROBE (10, 30, 50, 70, AND 90% SPANS)
- ROTOR TIP STATIC PRESSURE ORIFICE (-26, -7.3, 8.6, 18, 28.6, 38.7, 48.6, 64.6, 80, 94, AND 107% AXIAL CHORD; EQUALLY SPACED 3 deg CIRCUMFERENTIALLY)

NOTE: ALL DIMENSIONS ARE IN DEGREES

Figure 5. Instrumentation Layout FD 58981A



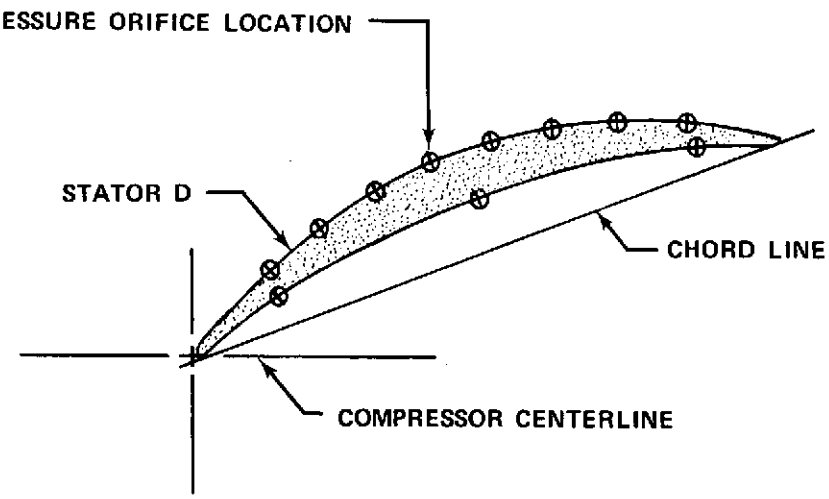
FD 47069



NOTE: ALL DIMENSIONS ARE IN INCHES

Figure 6. Eight-Degree Wedge Traverse Probe

FD 58983



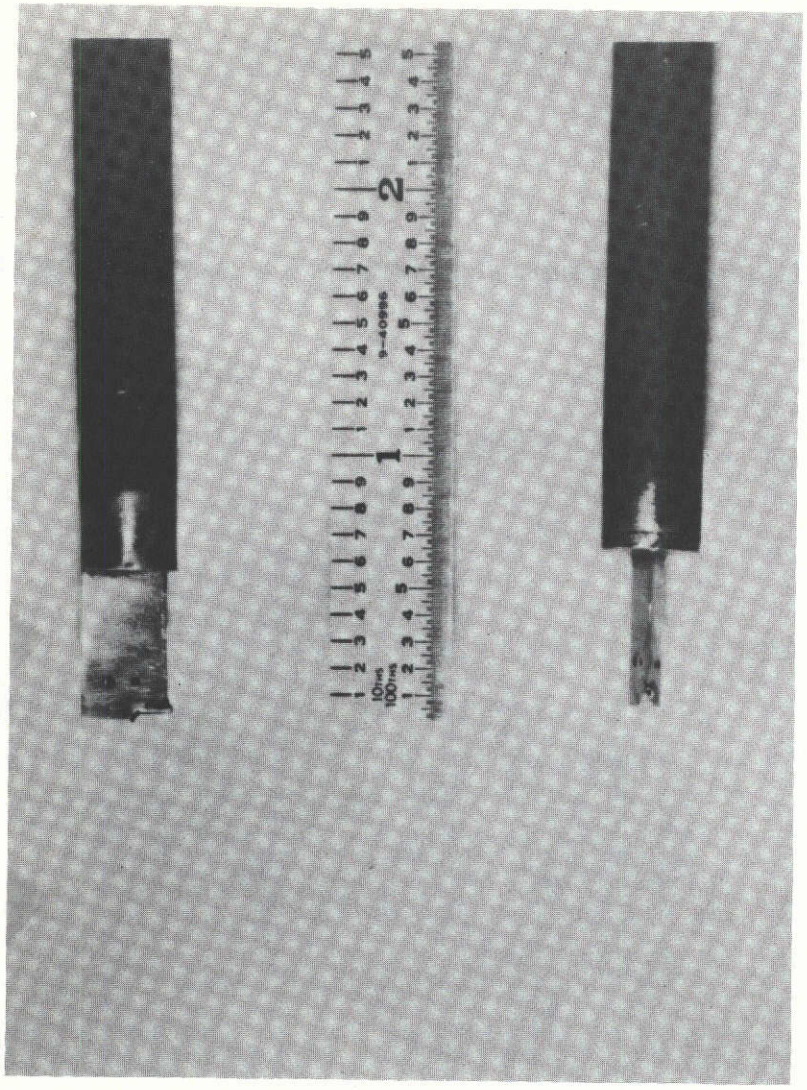
STATOR GEOMETRY IS NOT TO SCALE

PERCENT CHORD LOCATION

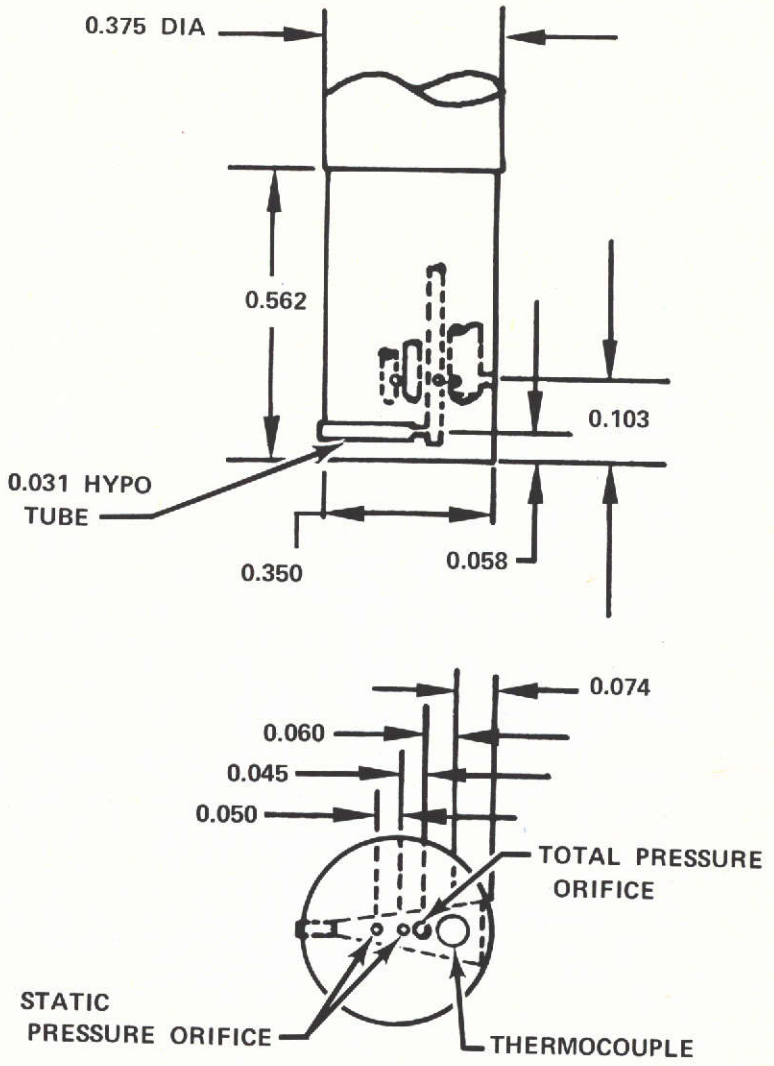
10% SPAN FROM TIP		90% SPAN FROM TIP	
SUCTION SURFACE	PRESSURE SURFACE	SUCTION SURFACE	PRESSURE SURFACE
(354° 36')	(338° 12')	(5° 30')	(338° 12')
15	15	15	15
25	50	25	50
35	85	35	85
45		45	
55		55	
65		65	
75		75	
85		85	

NOTE: NUMBERS IN PARENTHESES INDICATE THE CIRCUMFERENTIAL POSITION OF THE INSTRUMENTED AIRFOIL IN THE STATOR ASSEMBLY. ZERO DEGREES IS TOP CENTER; THE ANGLE INCREASES CLOCKWISE LOOKING AFT.

Figure 7. Stator D Static Pressure Orifice Locations FD 75493



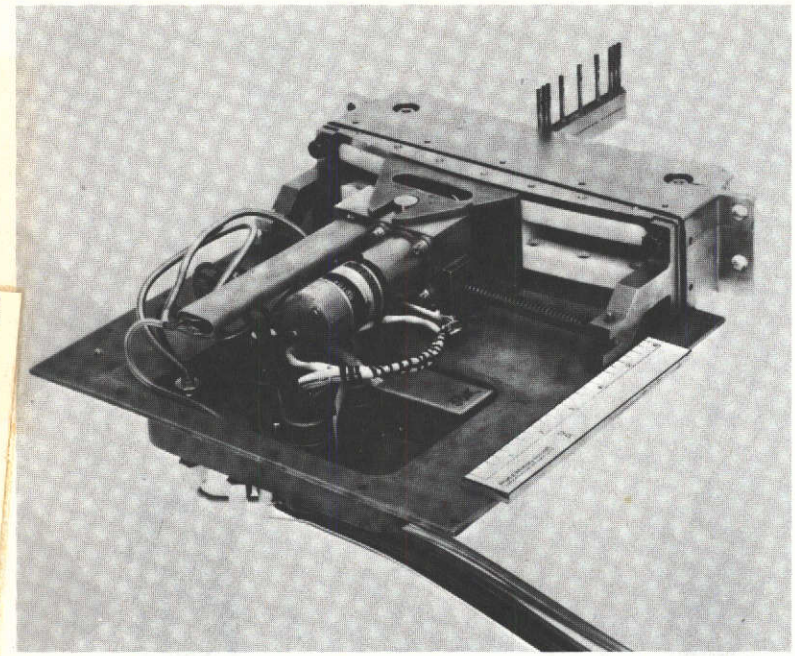
FD 47069



NOTE: ALL DIMENSIONS ARE IN INCHES

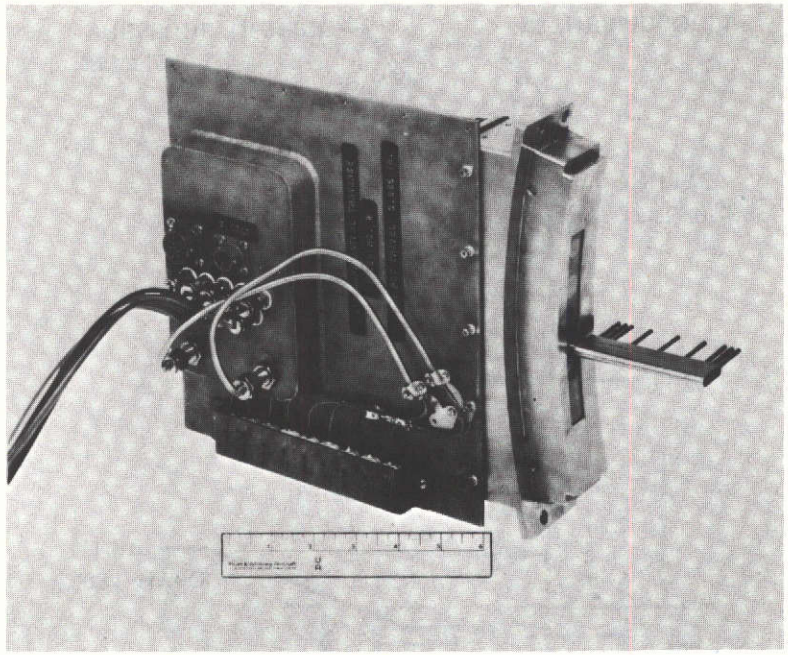
Figure 8. Twenty-Degree Wedge Traverse Probe

FD 58982



FE 97404

FRONT VIEW WITH COVER REMOVED



FE 97405

REAR VIEW

Figure 9. Total Pressure/Total Temperature Circumferential Traverse Unit

FD 47068

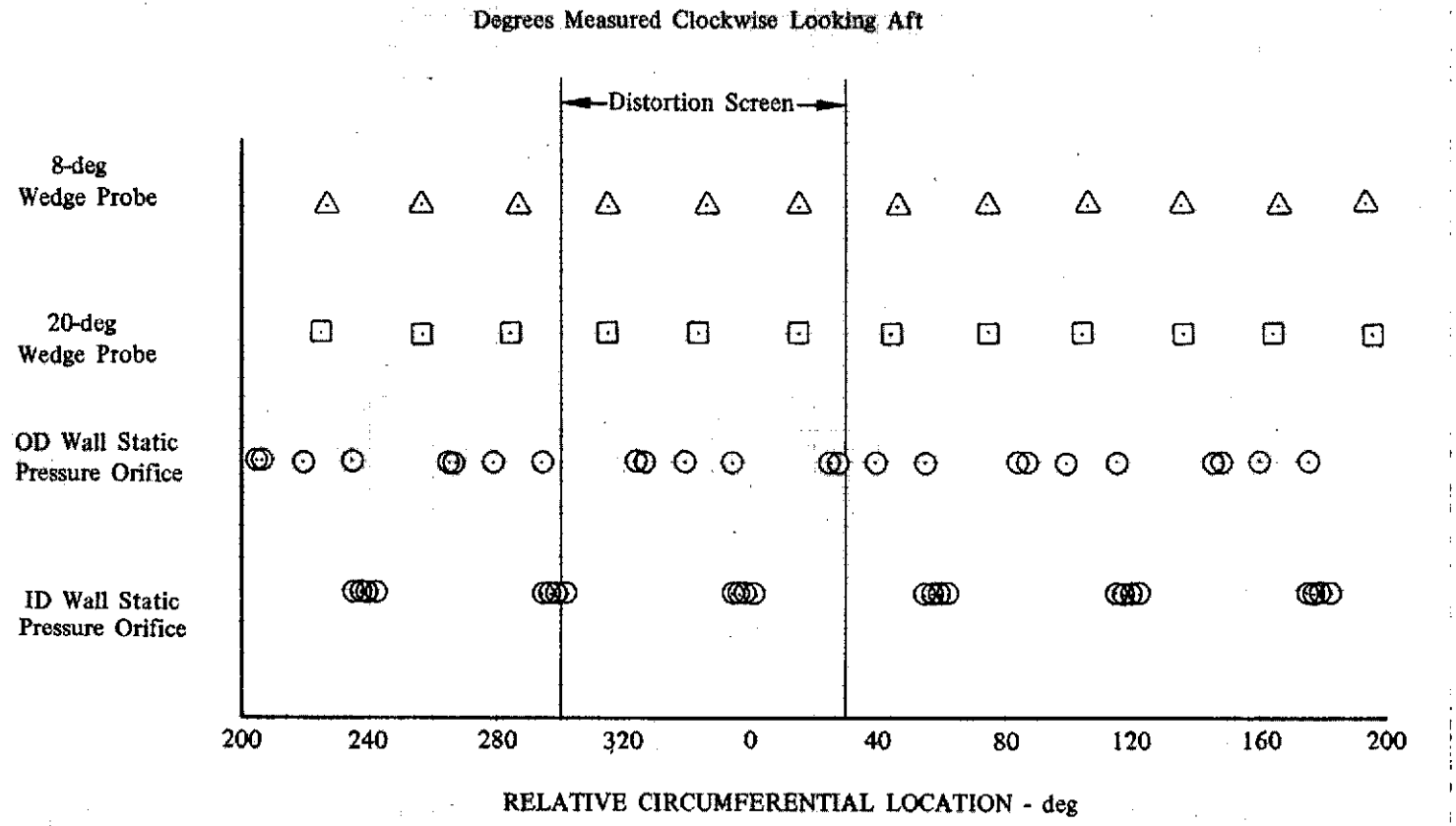


Figure 10a. Composition of Station 1 Instrumentation Relative to the Circumferential Distortion Screen for Six Screen Positions

DF 97689

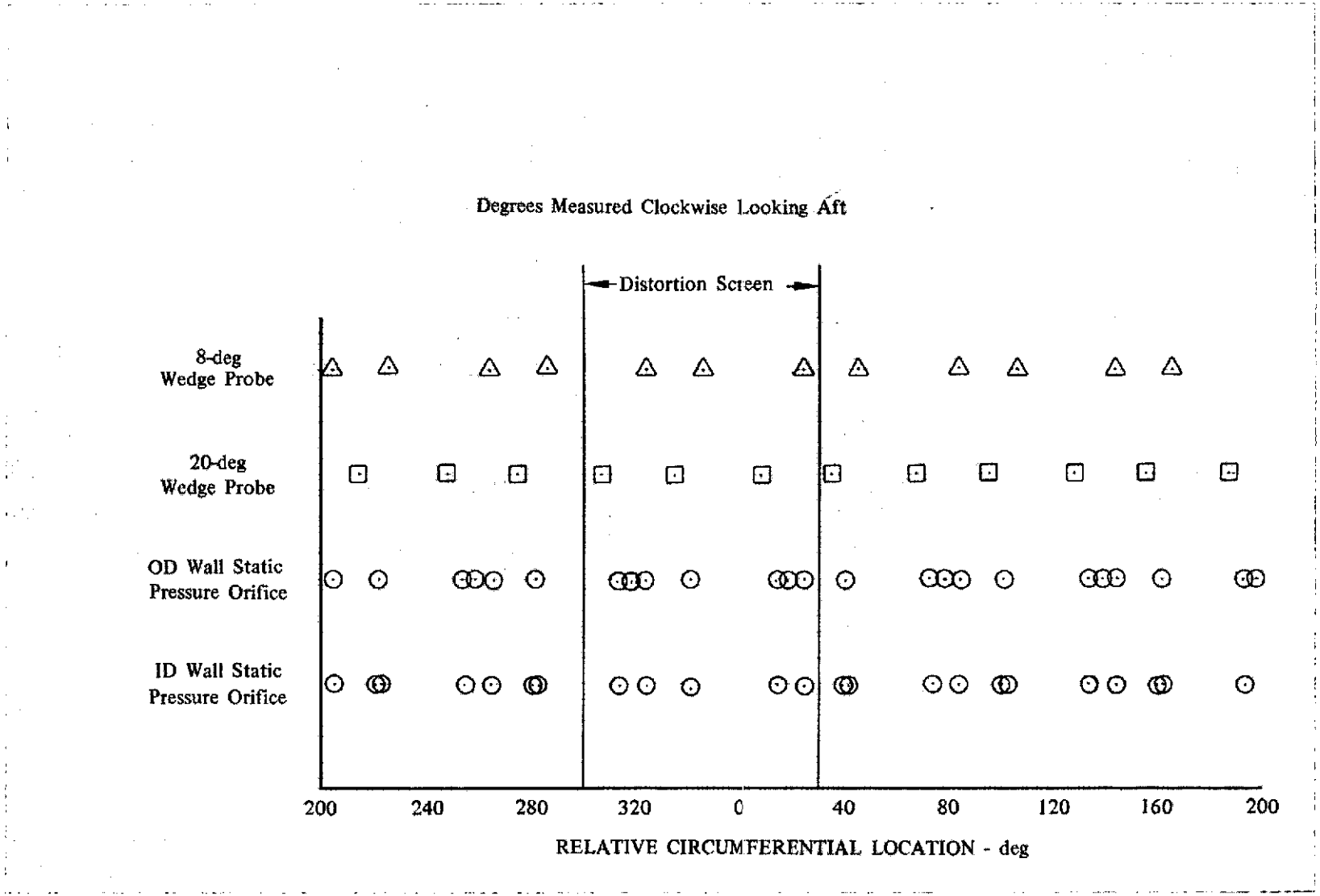


Figure 10b. Composition of Station 2 Instrumentation Relative to the Circumferential Distortion Screen for Six Screen Positions

DF 97690

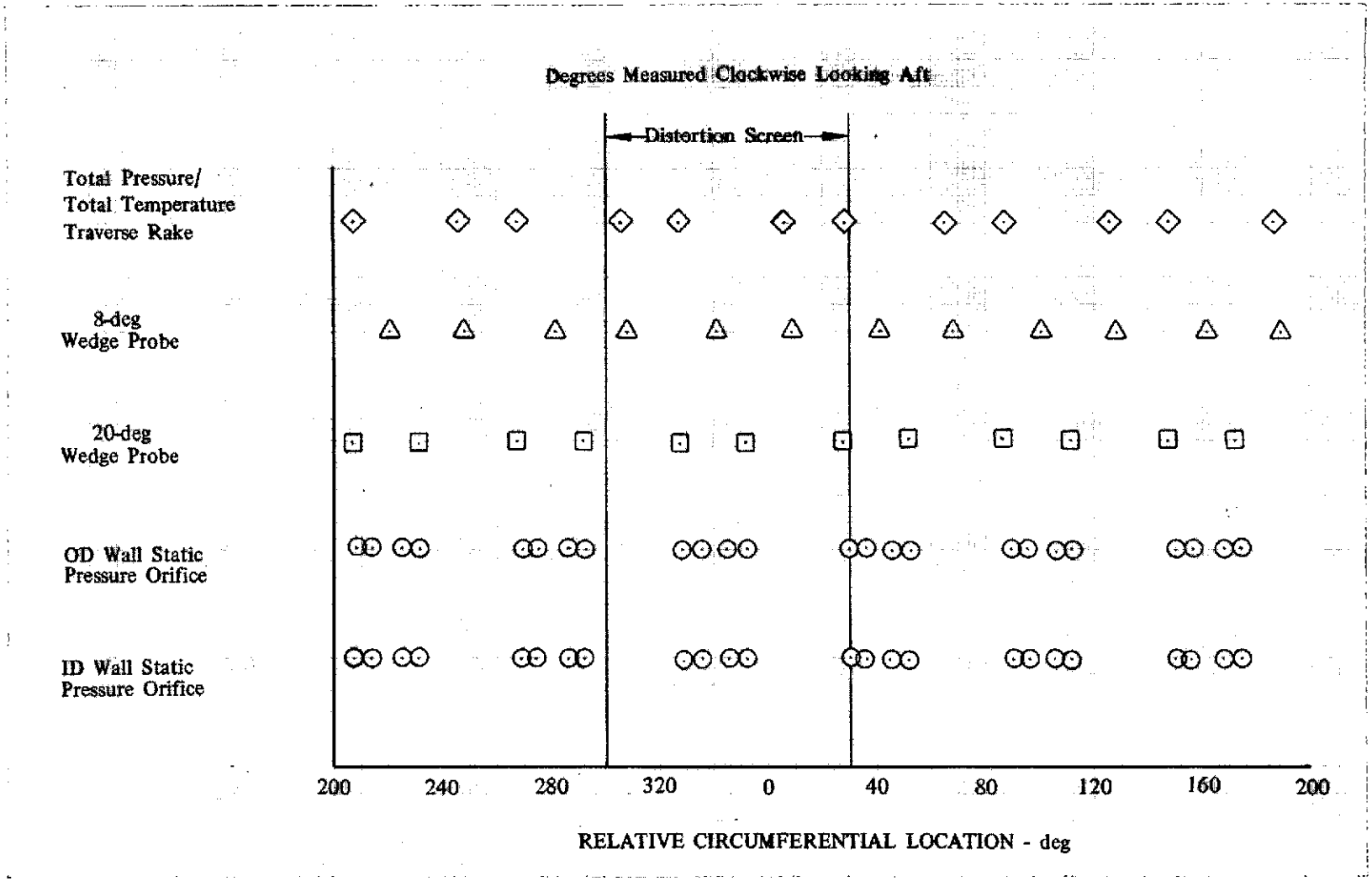
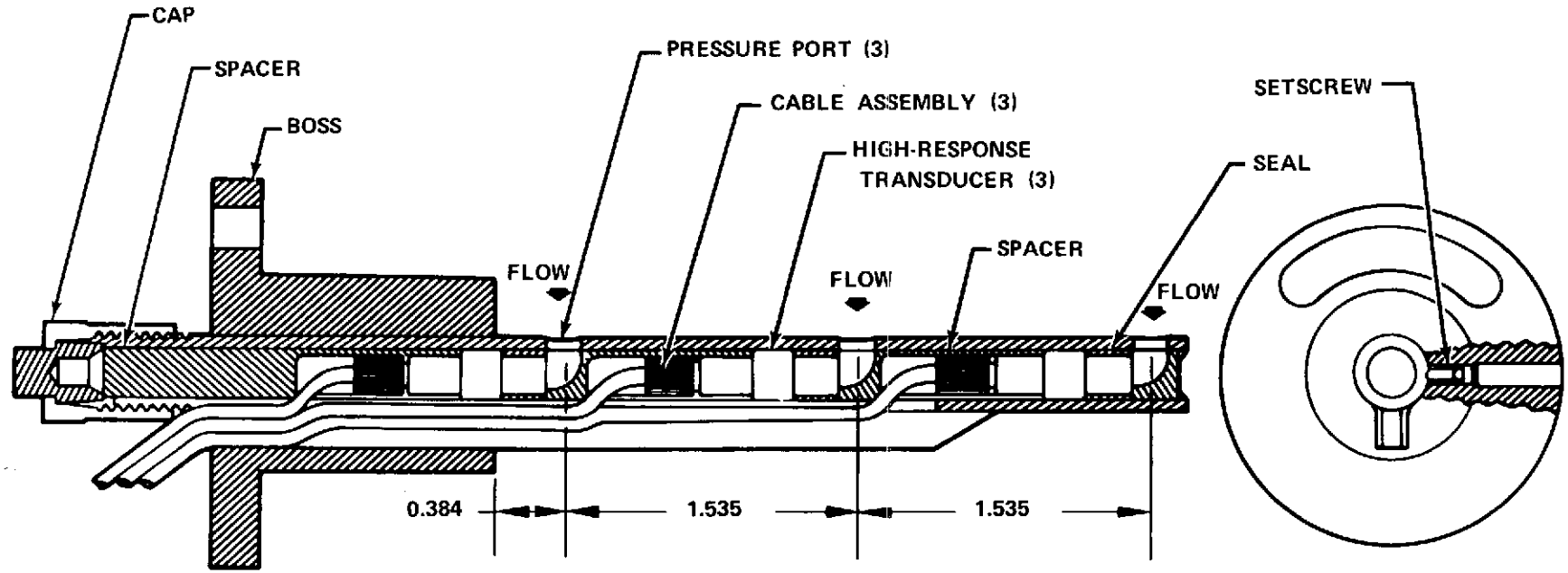


Figure 10c. Composition of Station 2A Instrumentation Relative to the Circumferential Distortion Screen for Six Screen Positions

DF 97691



NOTE: ALL DIMENSIONS ARE IN INCHES

Figure 11. High-Response Probe

FD 58984B

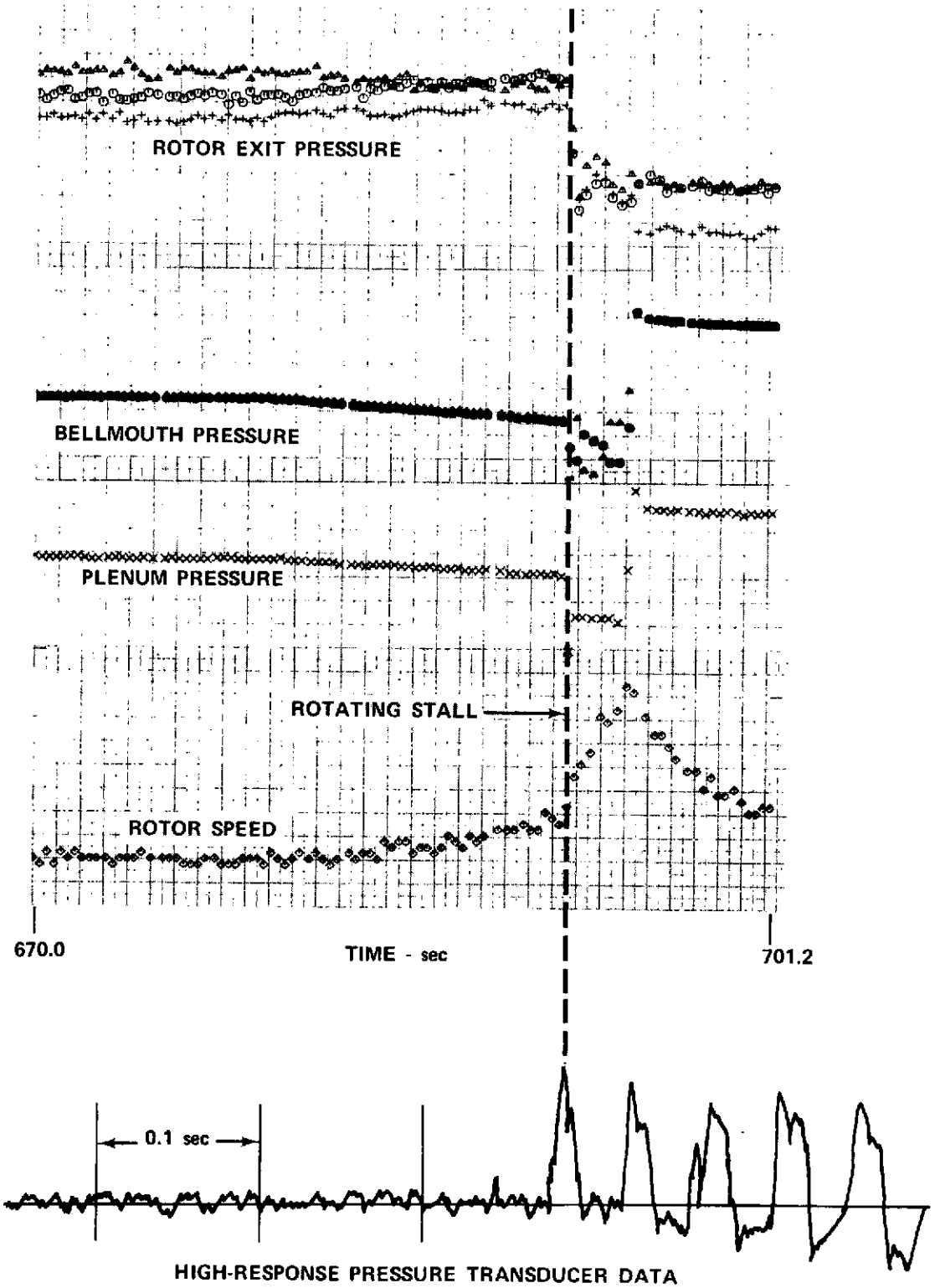


Figure 12. Typical Stall Transient Data FD 75494

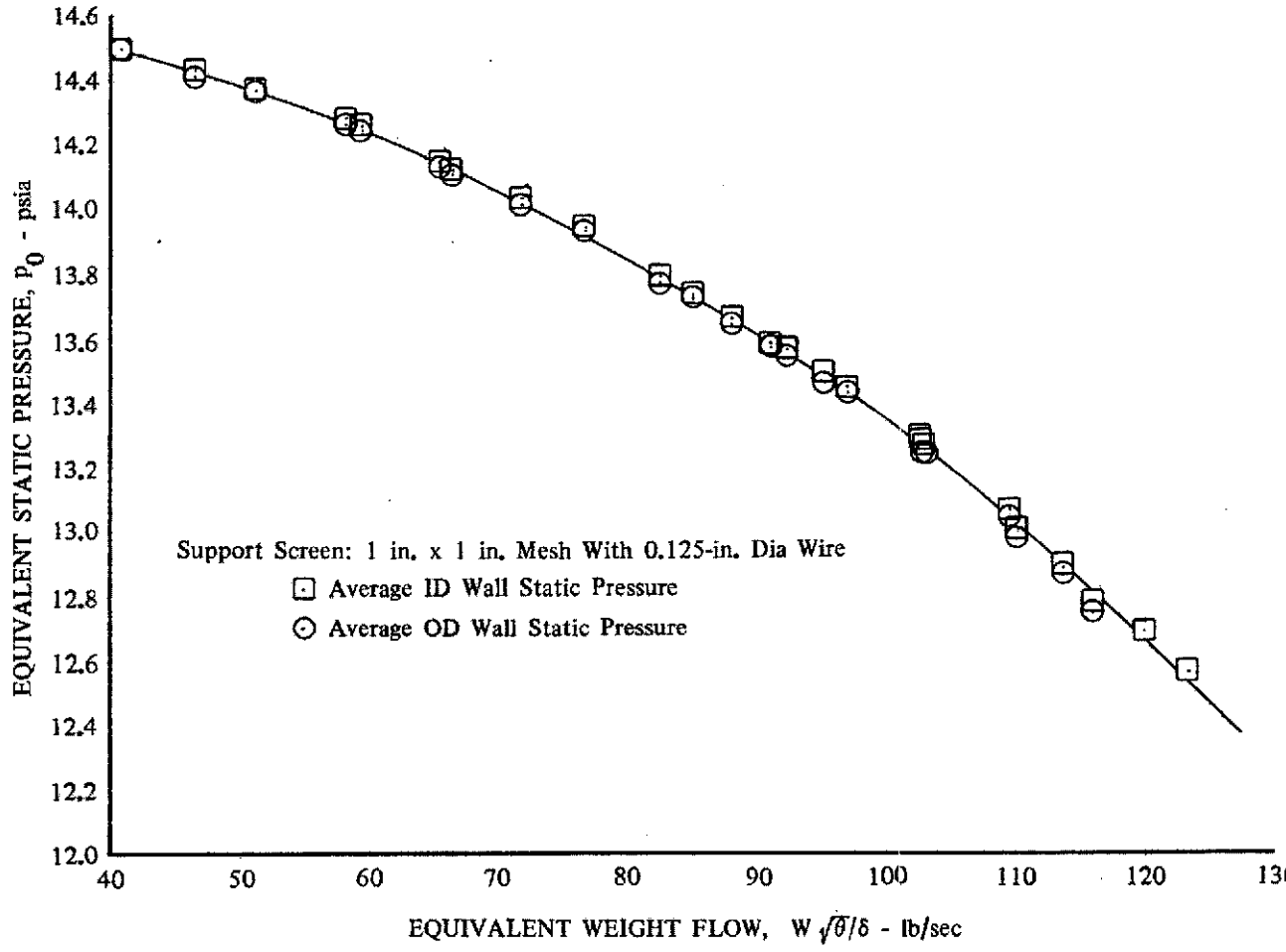


Figure 13. Station 0 Equivalent Static Pressure vs Equivalent Weight Flow for Stage D Flowpath with Support Screen

DF 97692

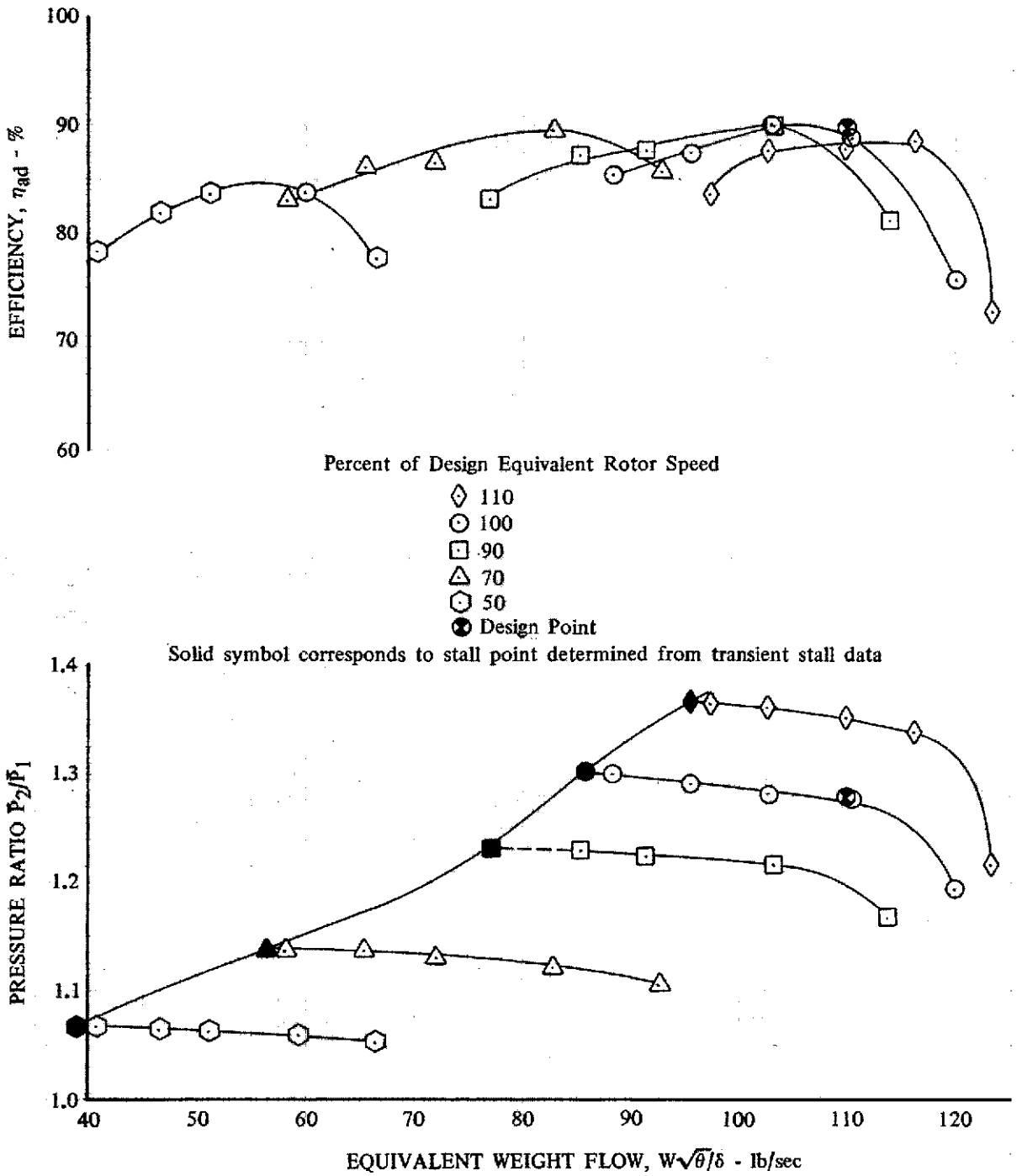


Figure 14. Overall Performance of Rotor D; Uniform Inlet Flow

DF 97693

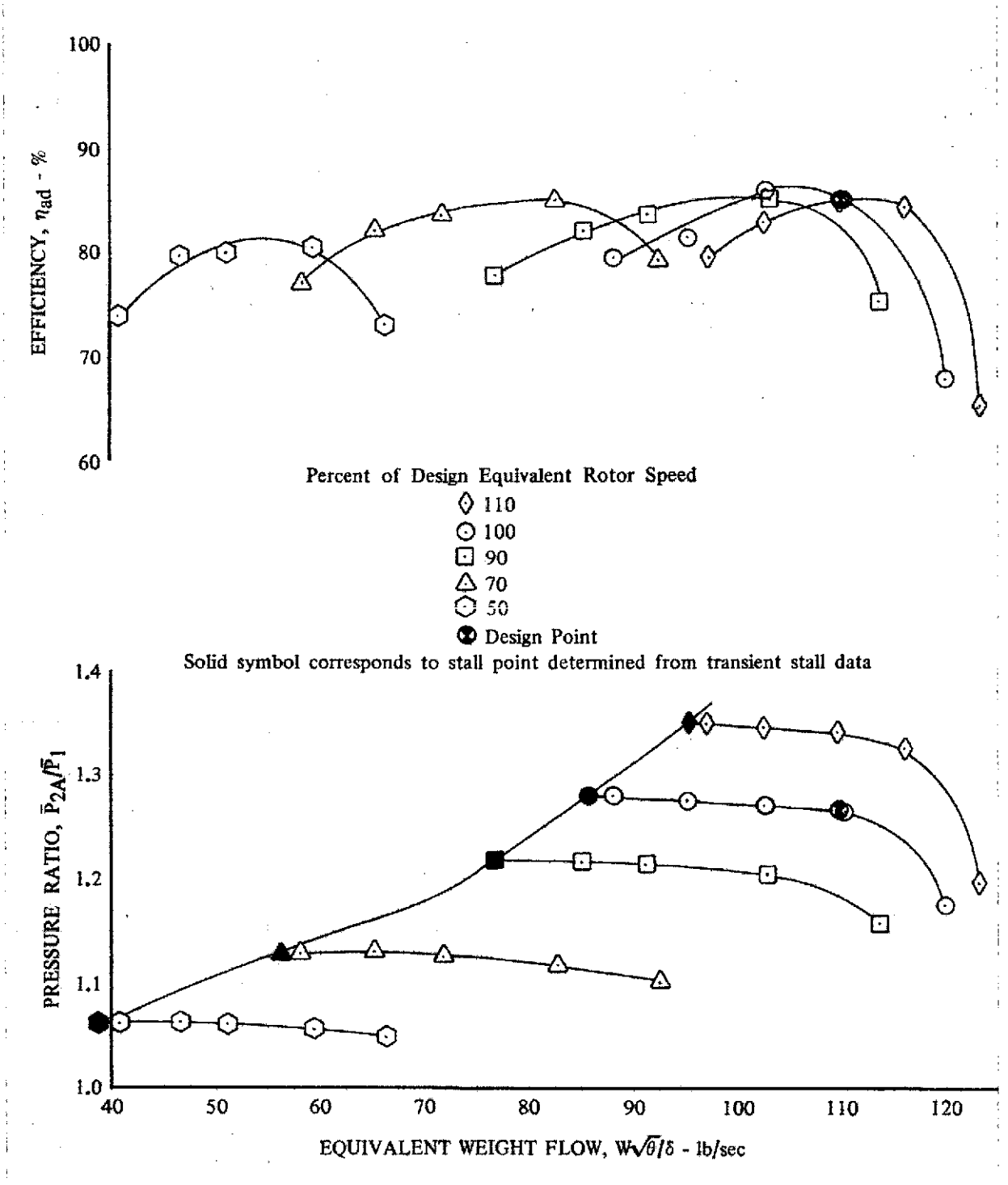


Figure 15. Overall Performance of Stage D; Uniform Inlet Flow

DF 97694

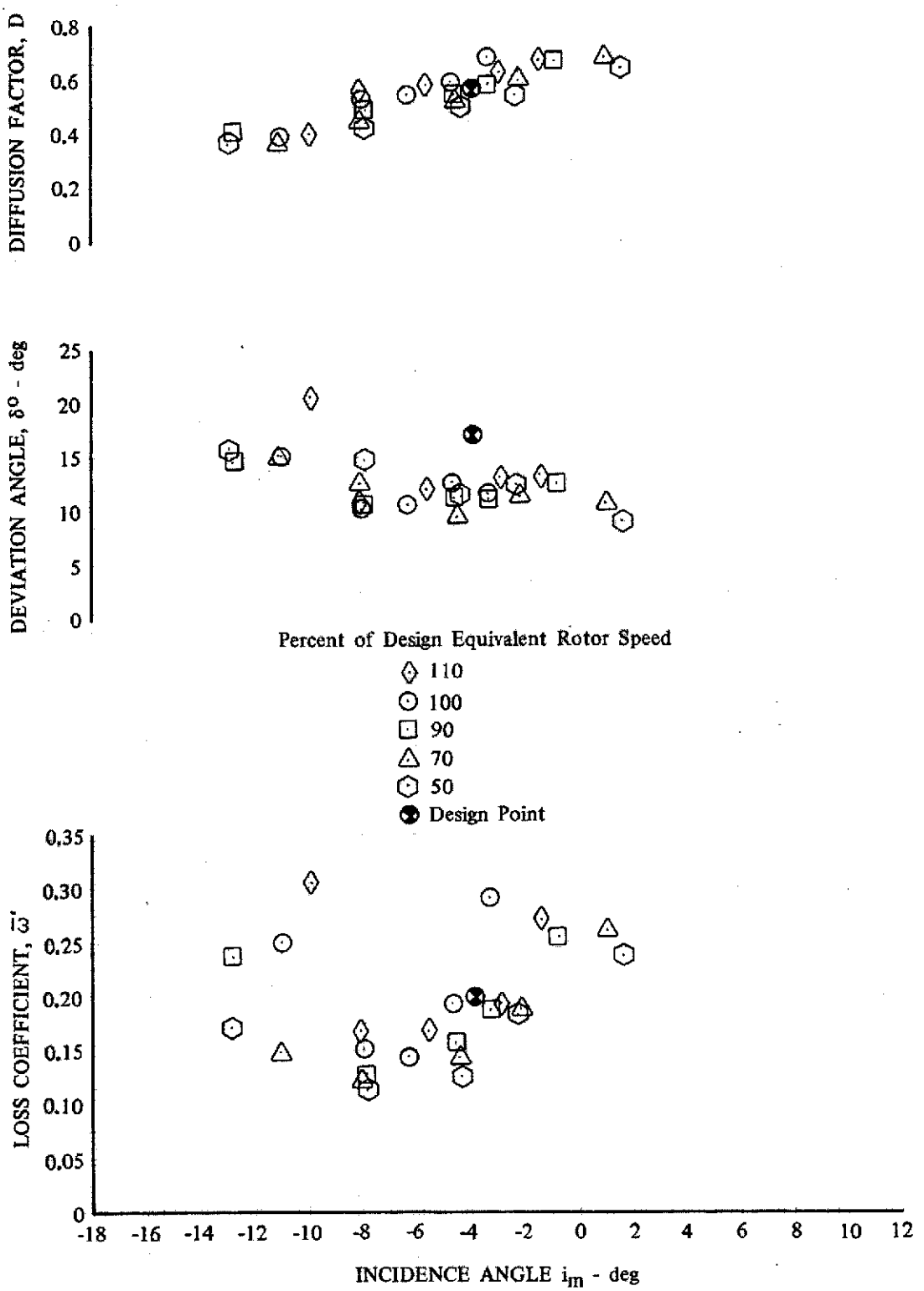


Figure 16a. Rotor D Blade Element Performance; 5% Span from Tip; Uniform Inlet Flow DF 97695

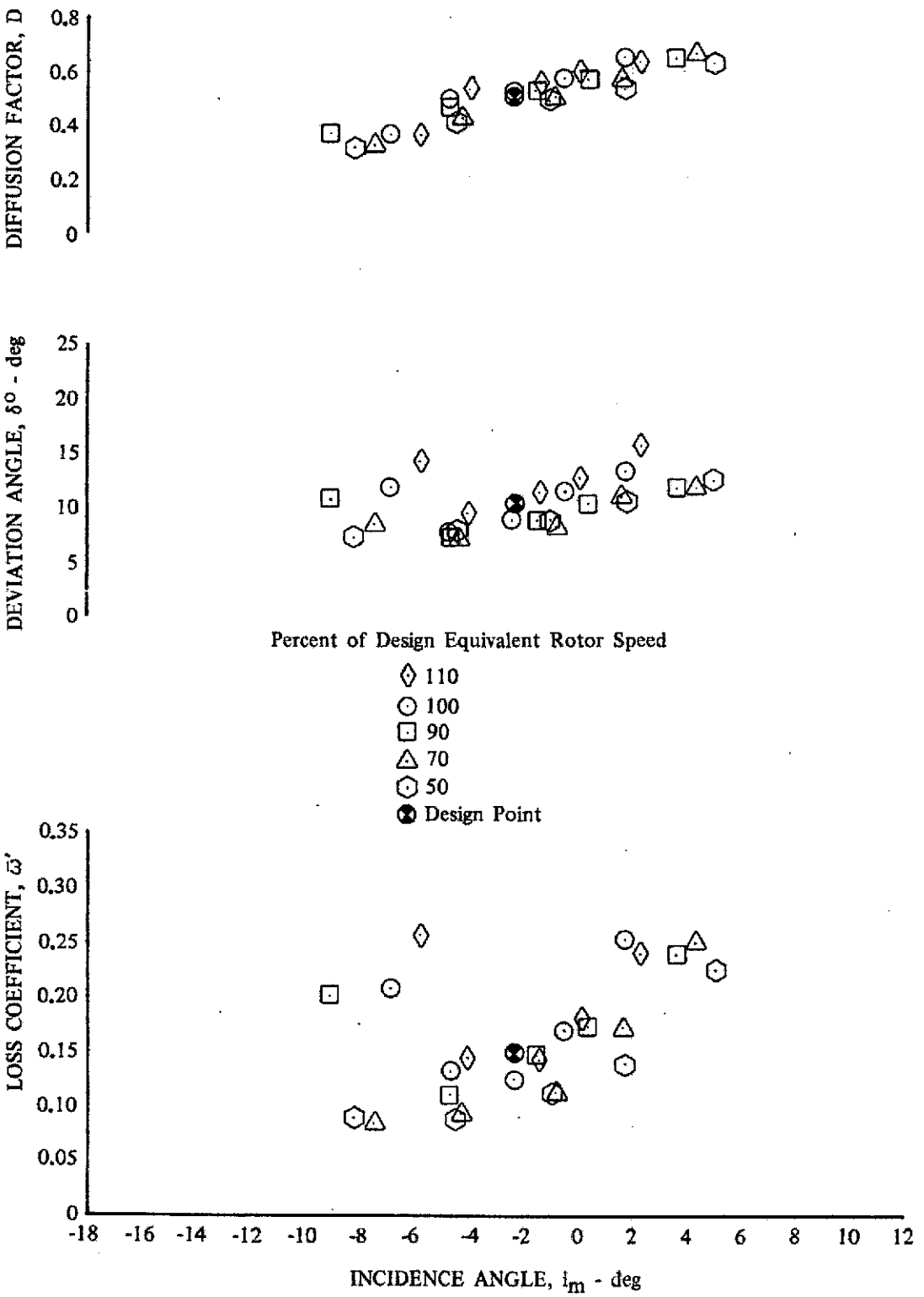


Figure 16b. Rotor D Blade Element Performance, 10% Span from Tip; Uniform Inlet Flow DF 97696

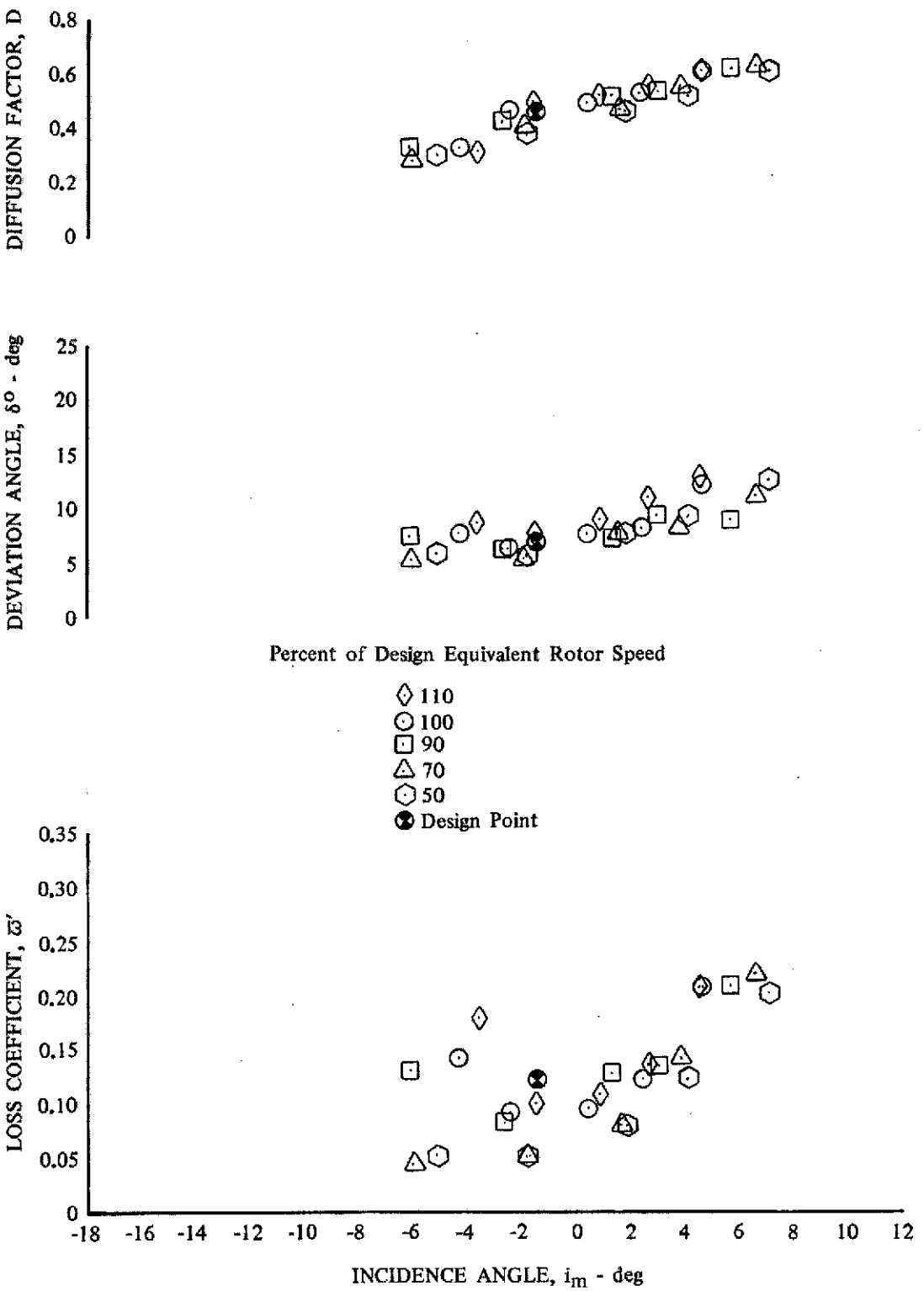


Figure 16c. Rotor D Blade Element Performance; 15% Span from Tip; Uniform Inlet Flow DF 97697

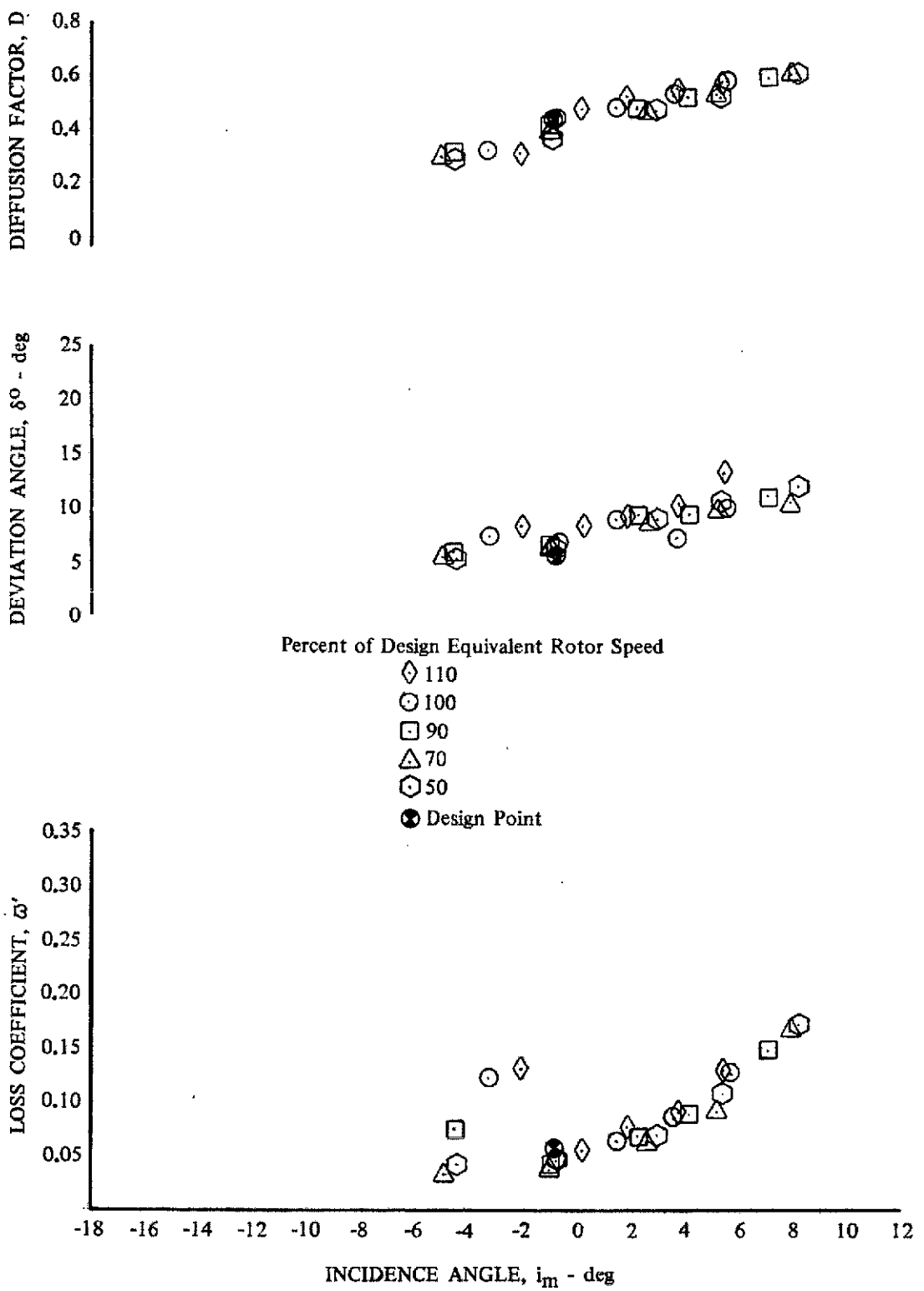


Figure 16d. Rotor D Blade Element Performance; 30% Span from Tip; Uniform Inlet Flow DF 97698

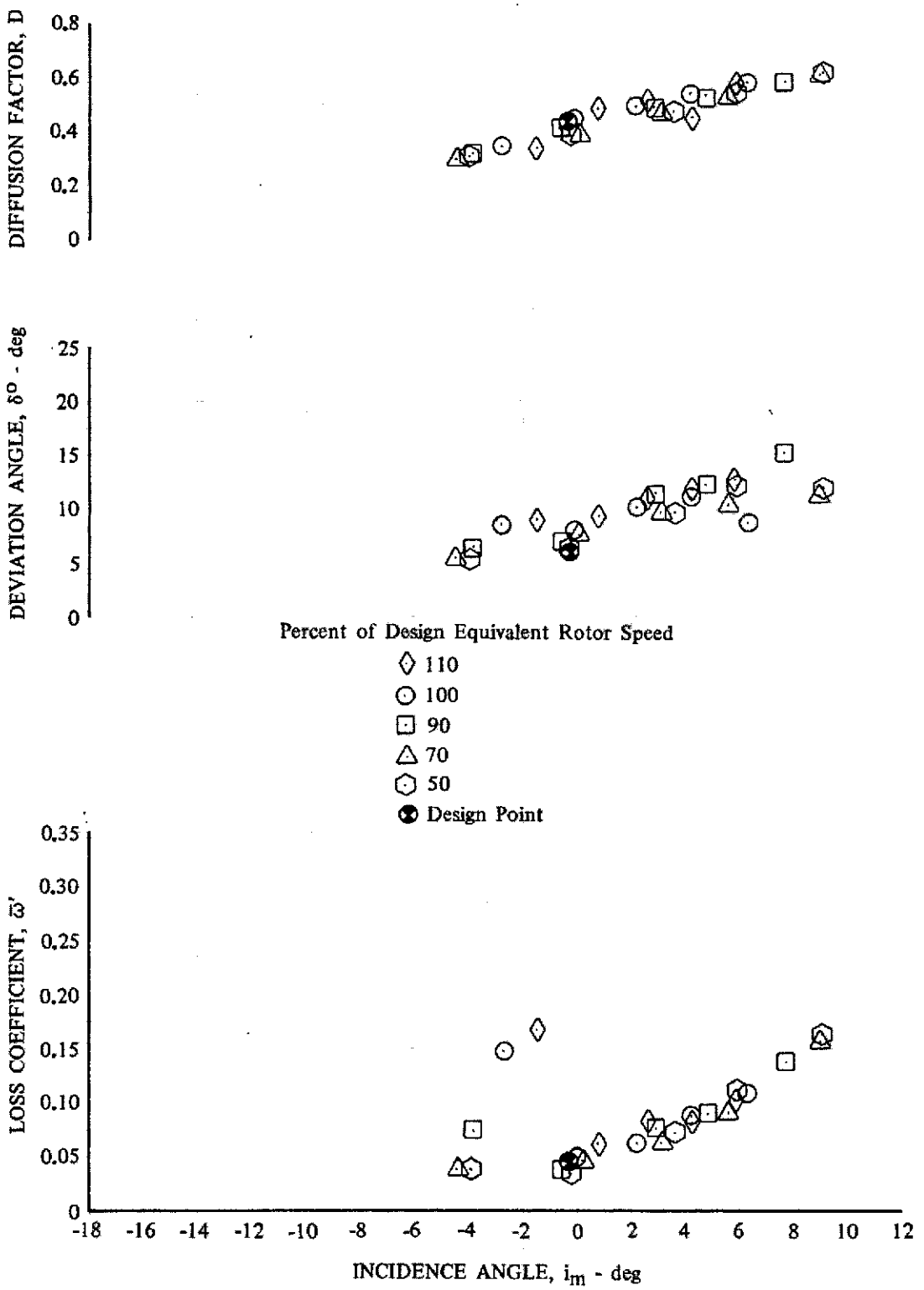


Figure 16e. Rotor D Blade Element Performance; 50% Span; Uniform Inlet Flow DF 977699

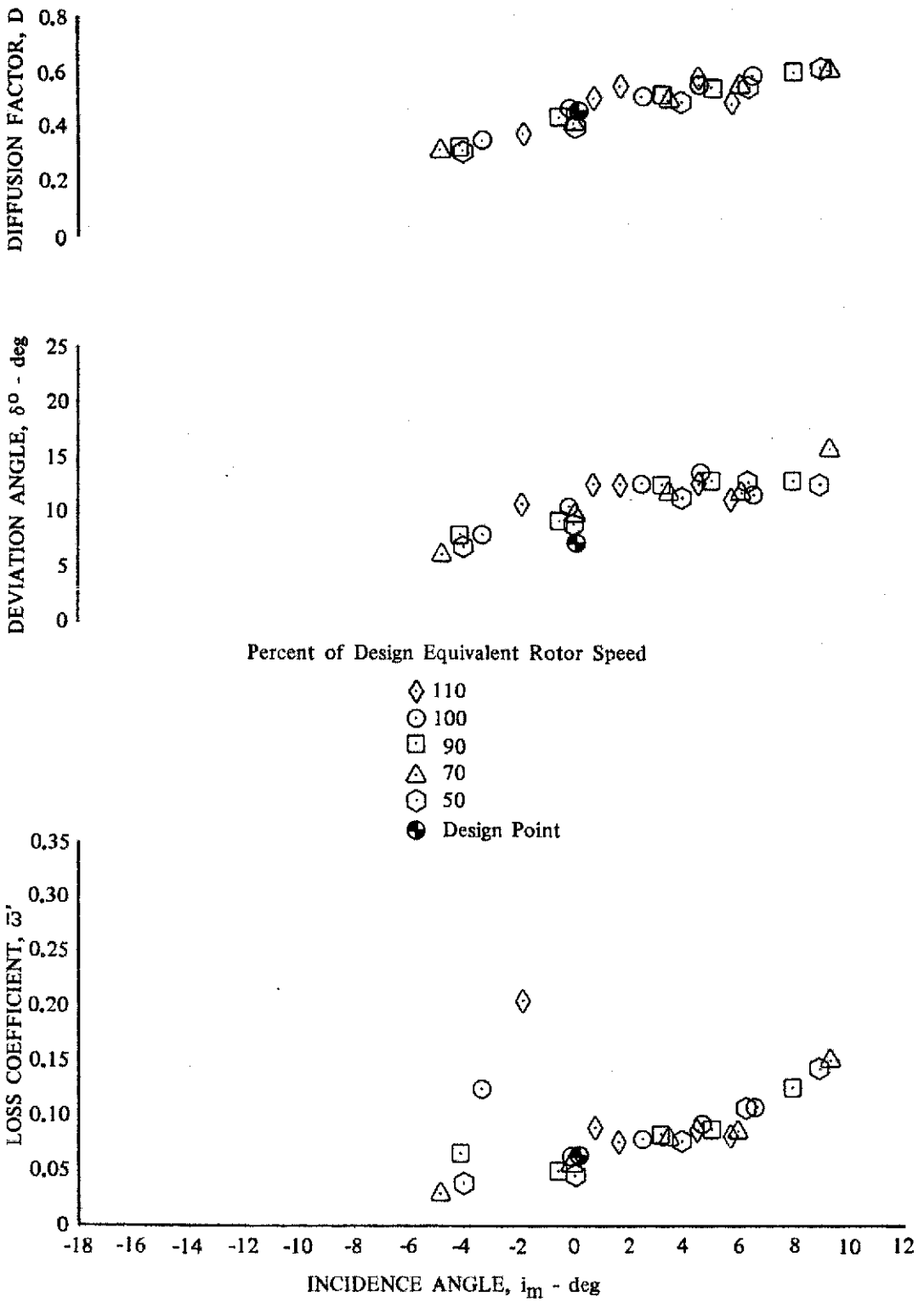


Figure 16f. Rotor D Blade Element Performance; 70% Span from Tip; Uniform Inlet Flow DF 97700

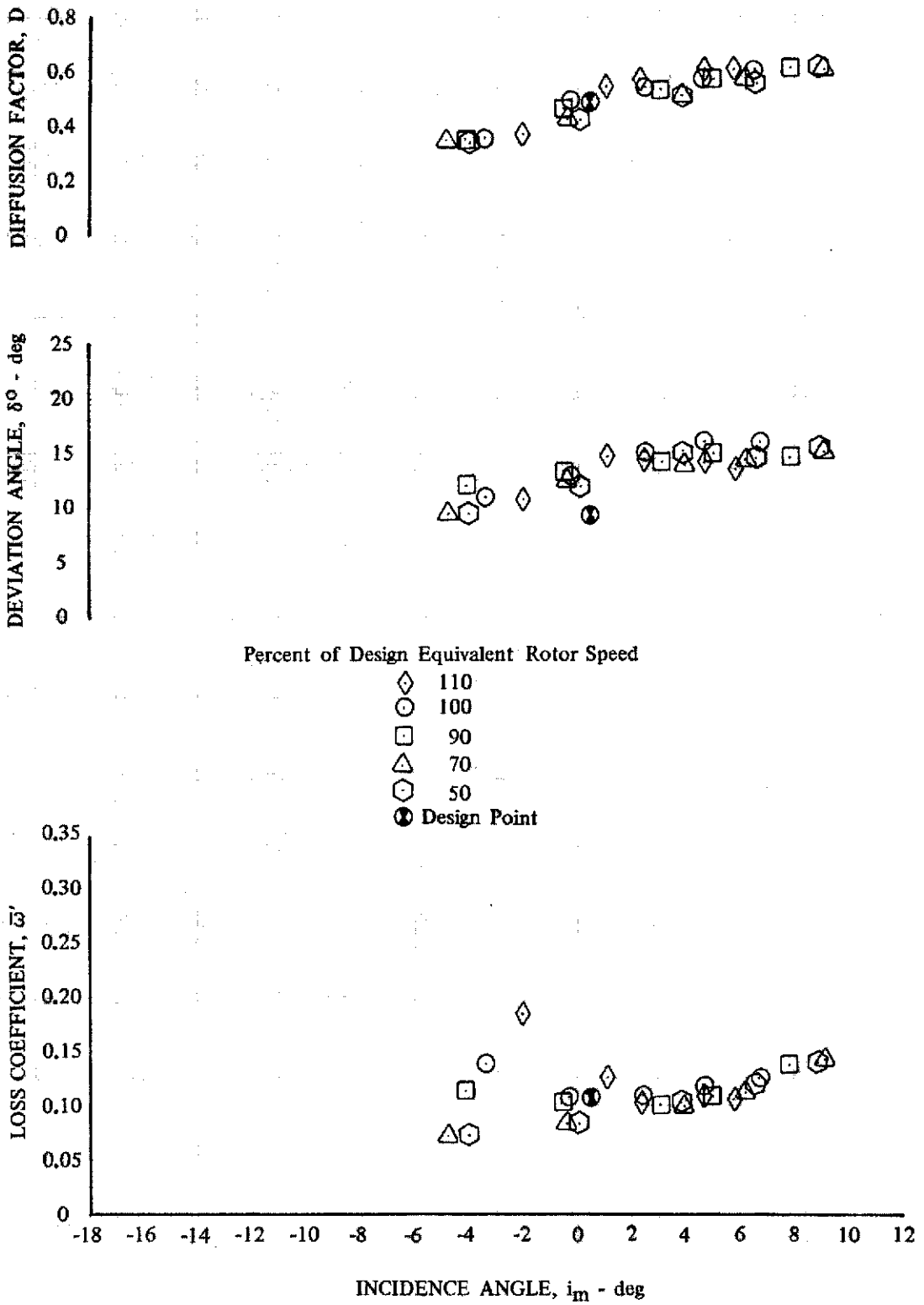


Figure 16g. Rotor D Blade Element Performance; 85% Span from Tip; Uniform Inlet Flow DF 97701

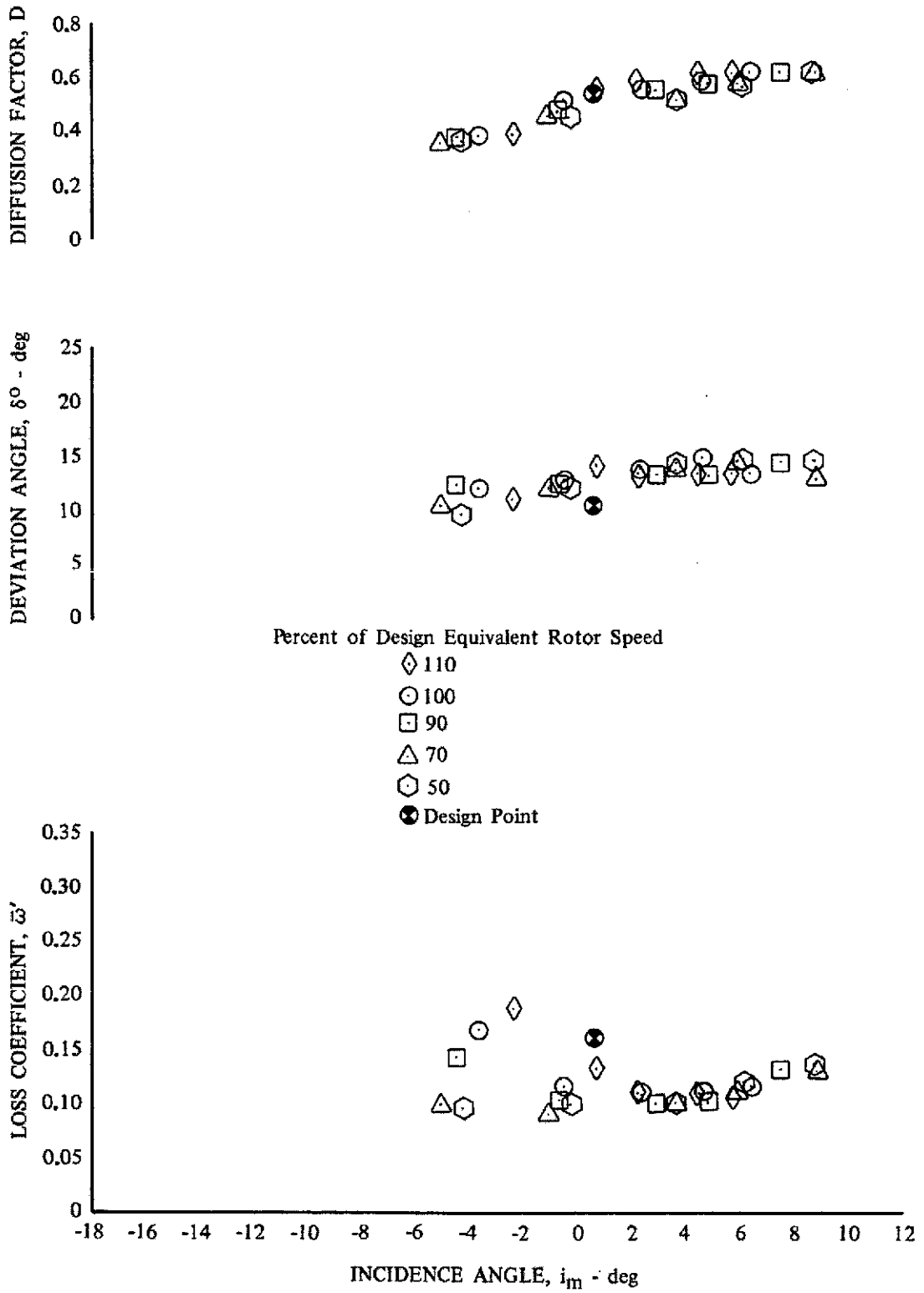


Figure 16h. Rotor D Blade Element Performance; 90% Span from Tip; Uniform Inlet Flow DF 97702

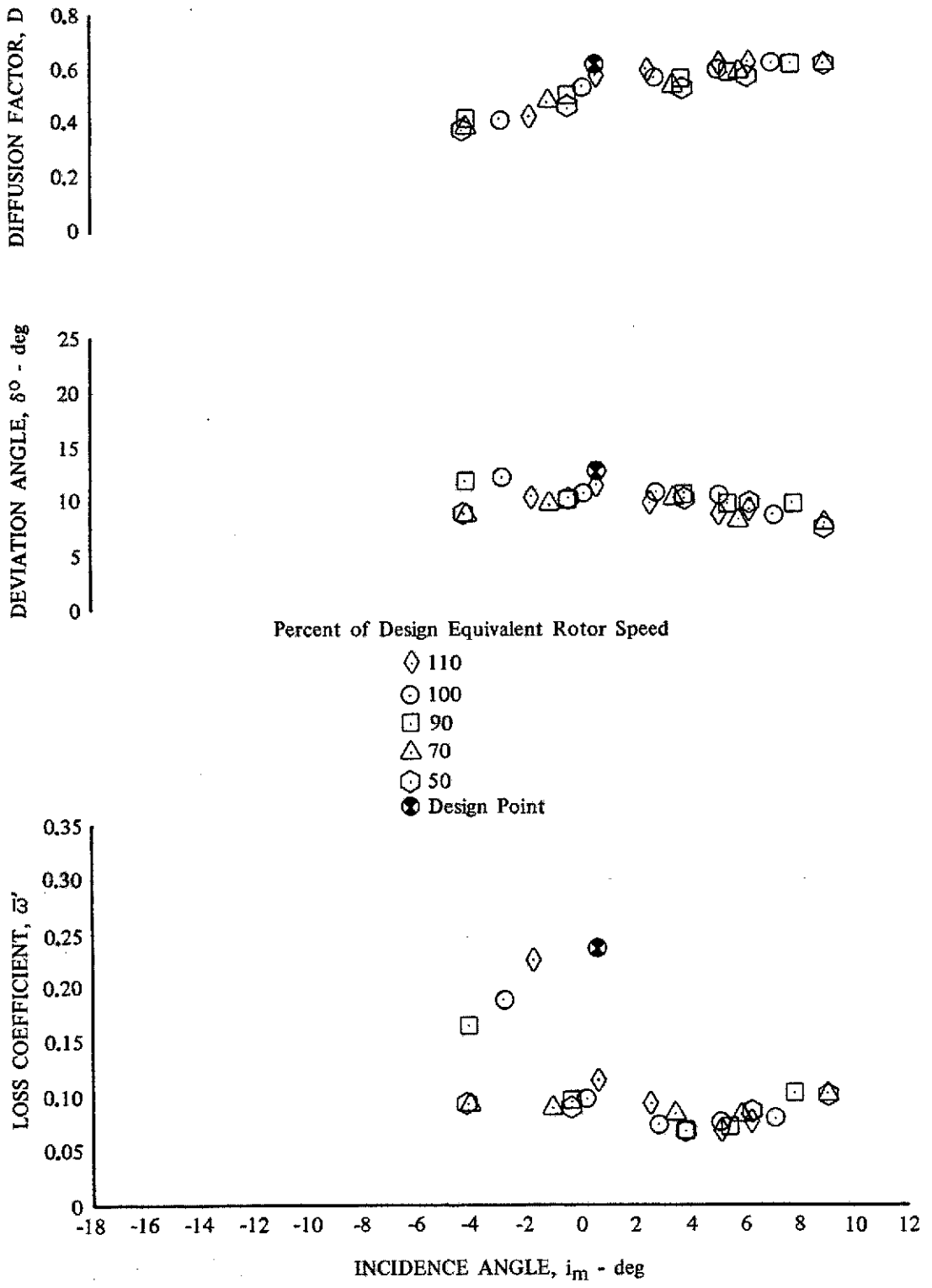


Figure 16i. Rotor D Blade Element Performance; 95% Span from Tip; Uniform Inlet Flow DF 97703

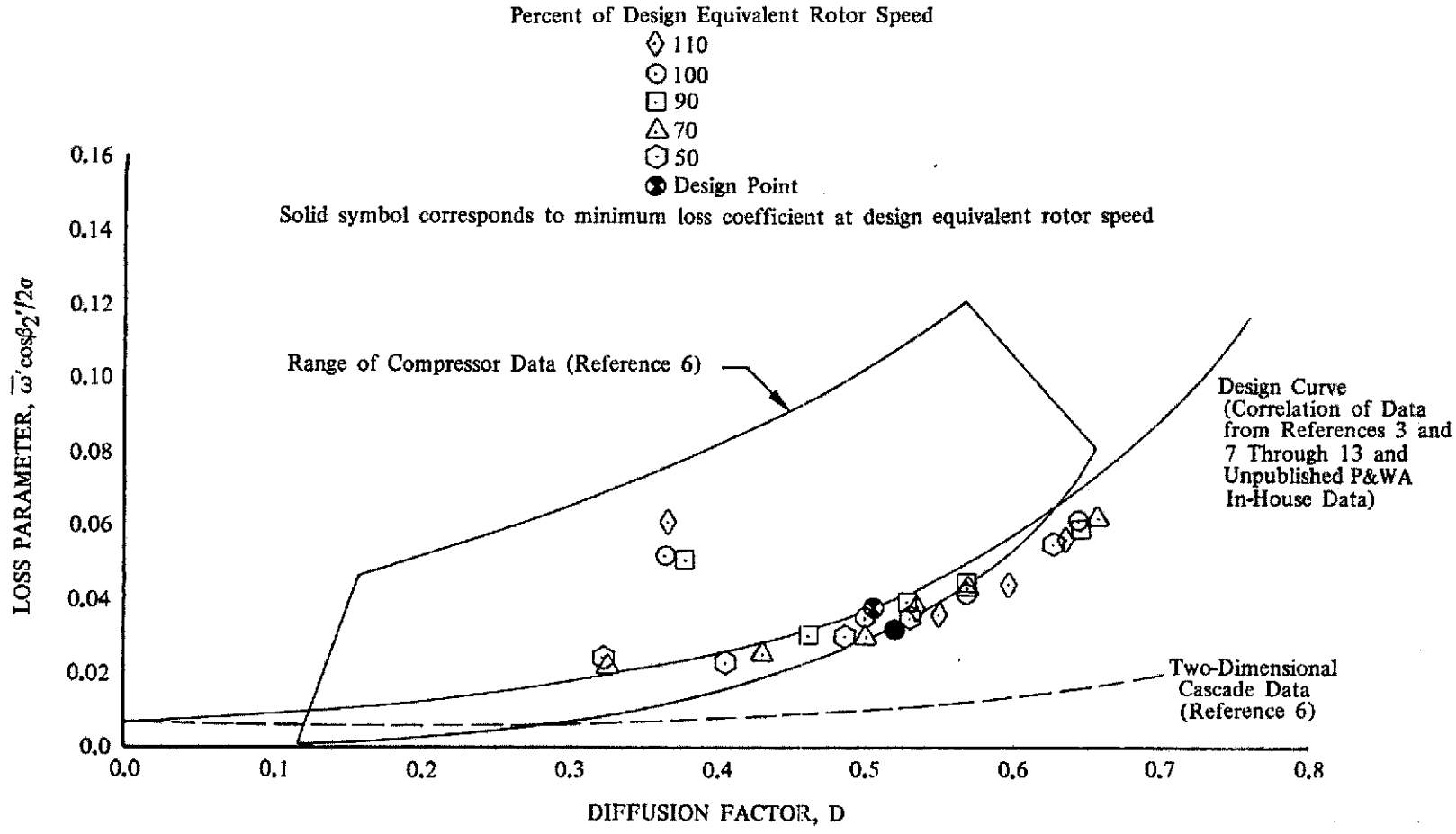


Figure 17a. Rotor D Loss Parameter vs Diffusion Factor; 10% Span from Tip; Uniform Inlet Flow DF 97704

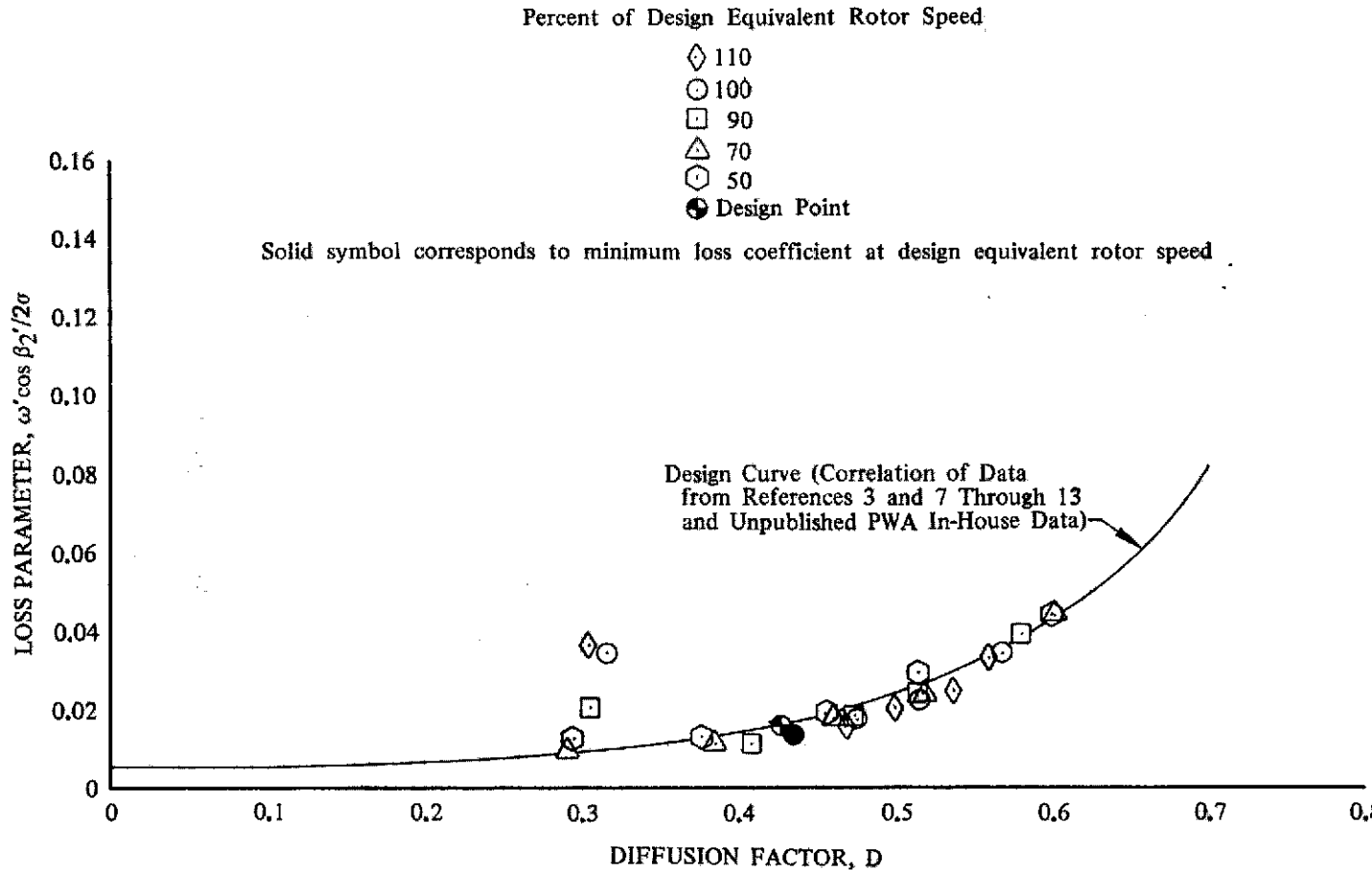


Figure 17b. Rotor D Loss Parameter vs Diffusion Factor; 30% Span from Tip; Uniform Inlet Flow DF 97705

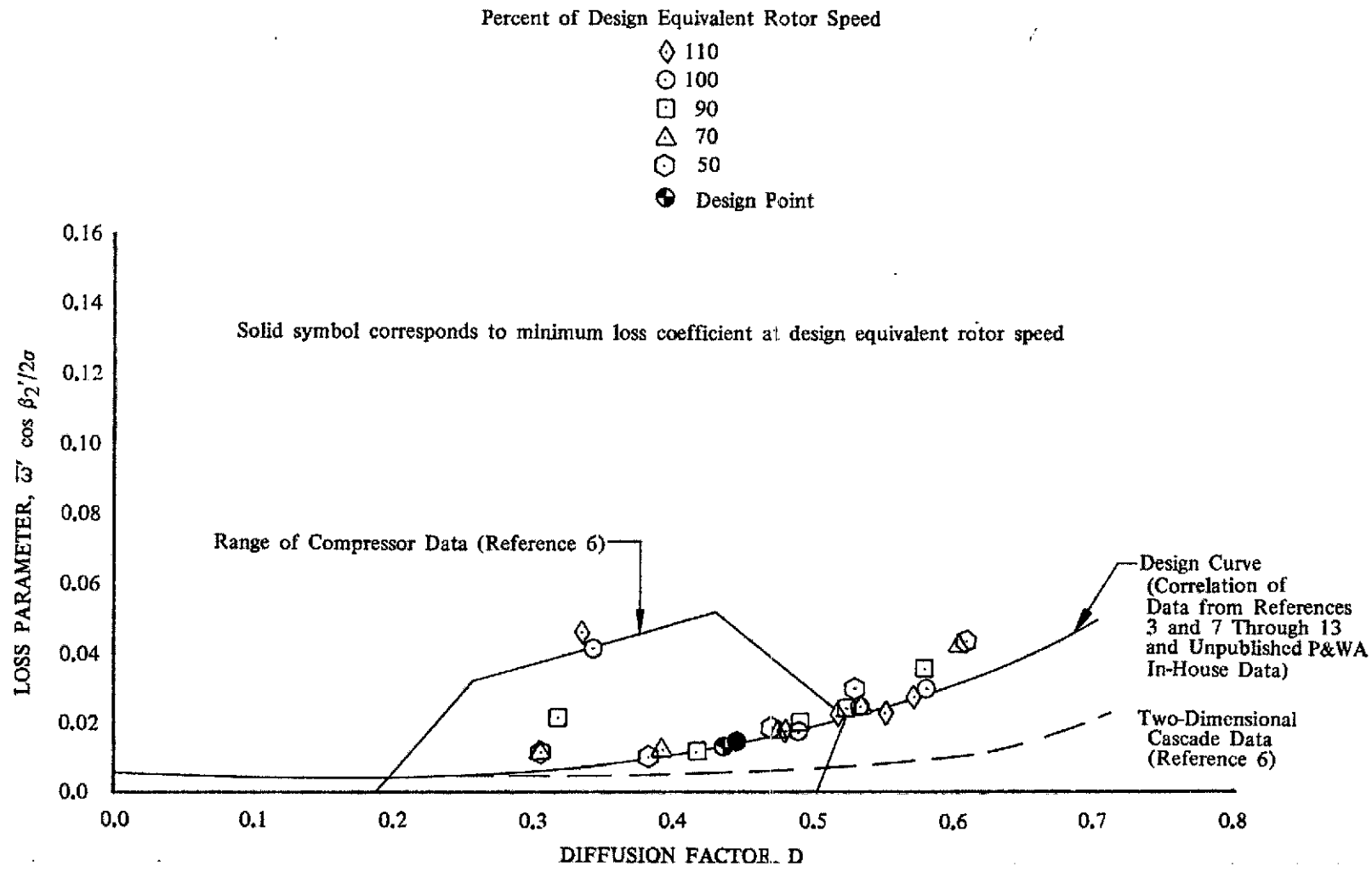


Figure 17c. Rotor D Loss Parameter vs Diffusion Factor; 50% Span; Uniform Inlet Flow

DF 97706

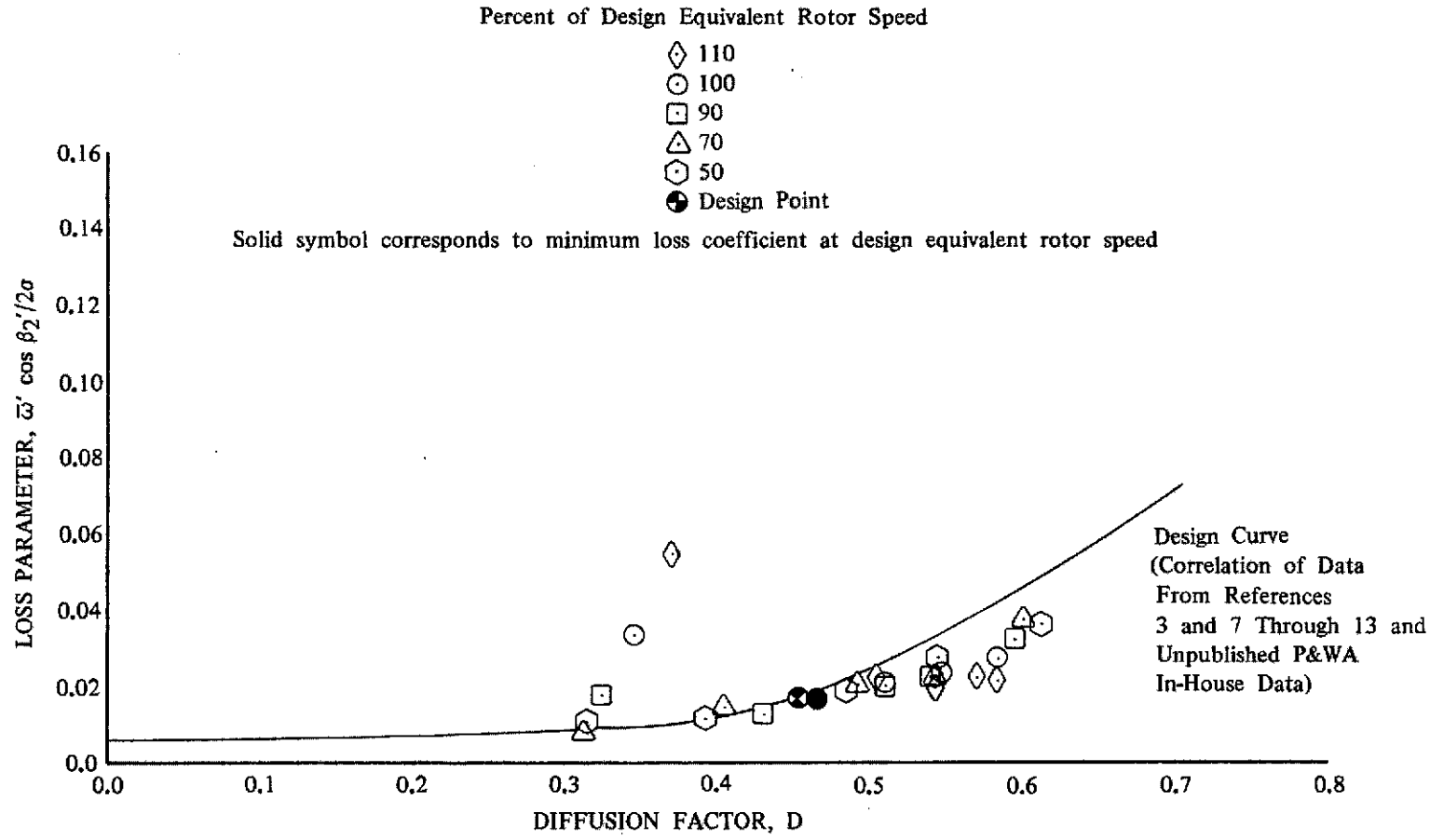


Figure 17d. Rotor D Loss Parameter vs Diffusion Factor; 70% Span from Tip; Uniform Inlet Flow DF 97707

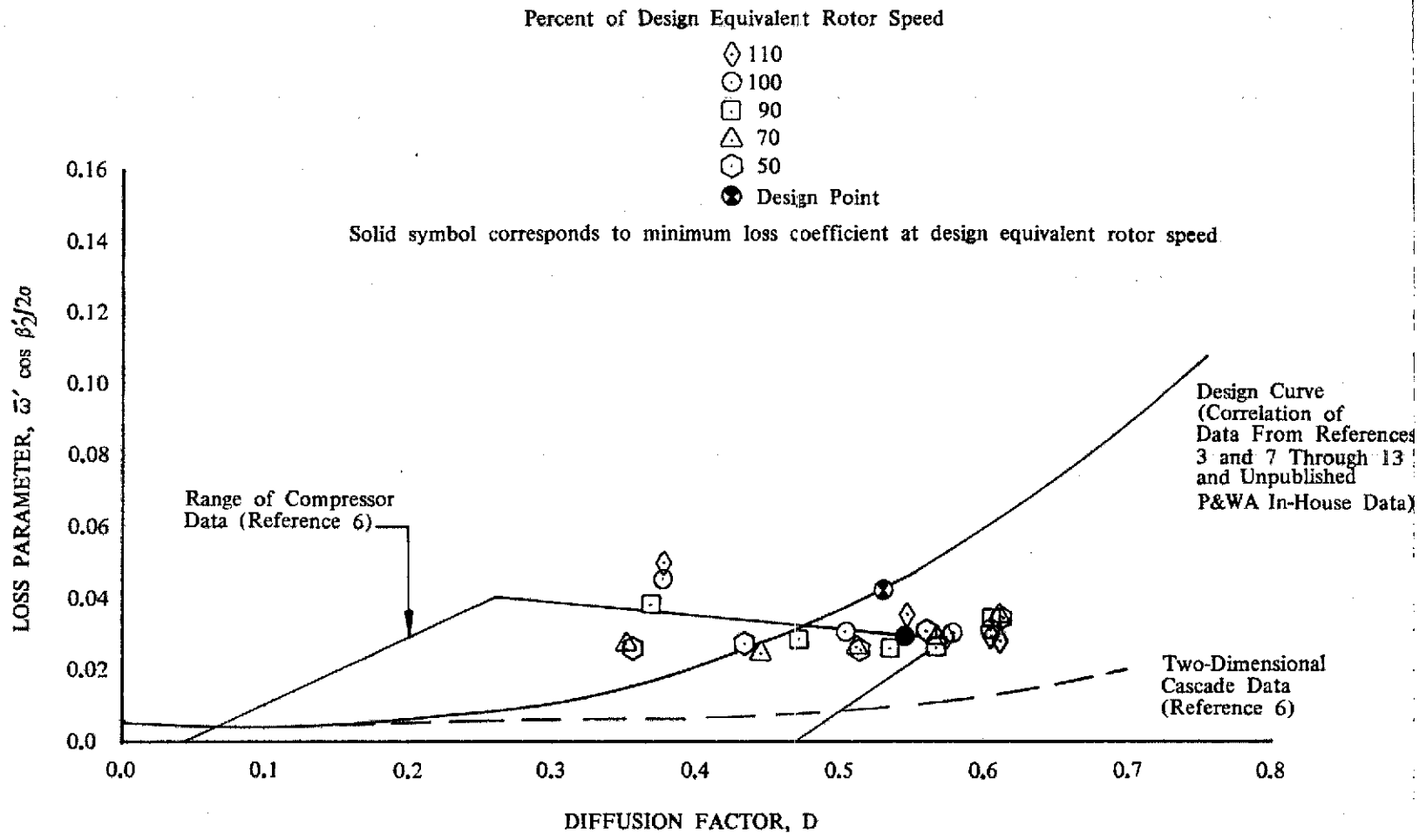


Figure 17e. Rotor D Loss Parameter vs Diffusion Factor; 90% Span from Tip; Uniform Inlet Flow DF 97708

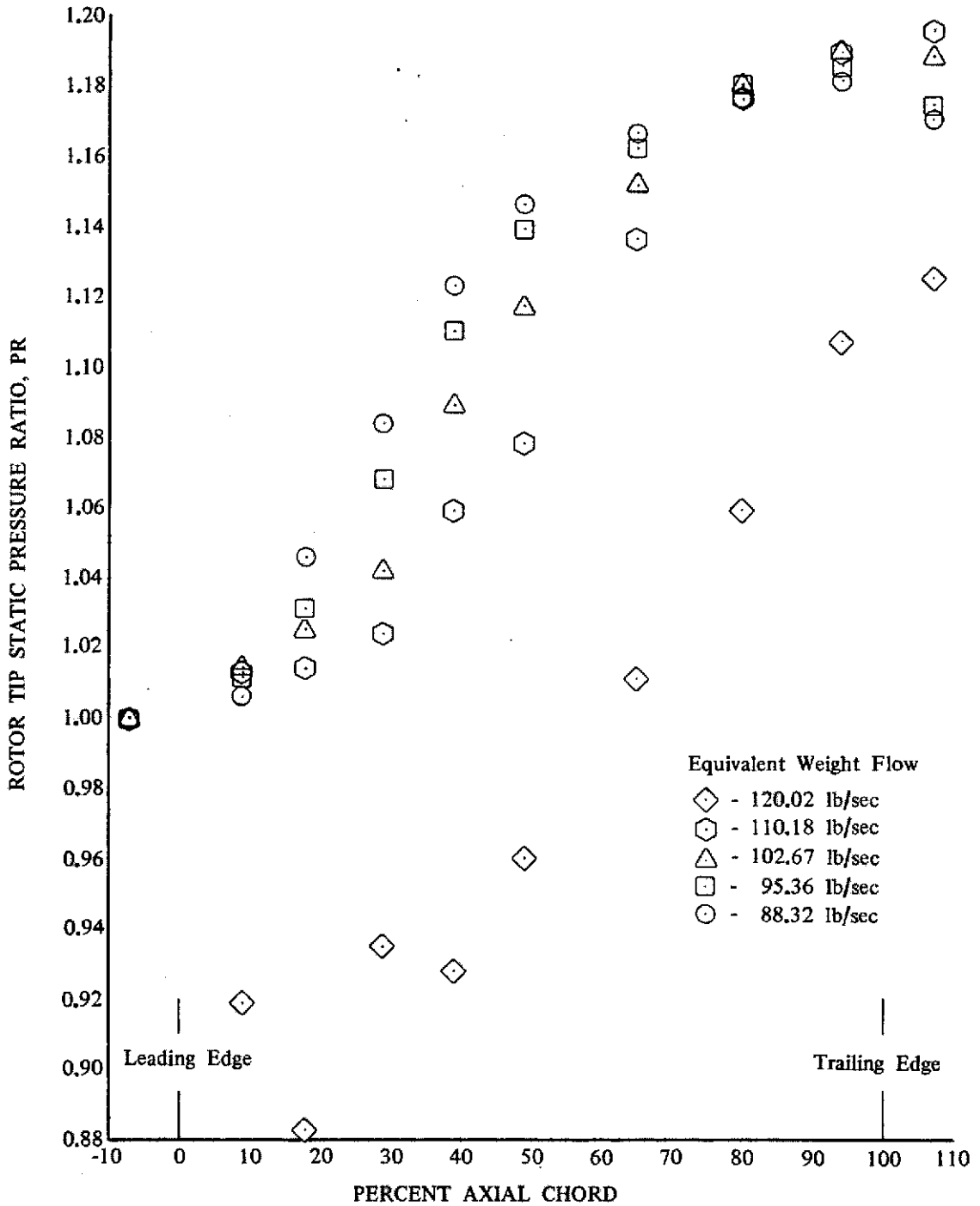


Figure 18. Rotor D Tip Static Pressure Ratio vs Percent Axial Chord; 100% Design Equivalent Rotor Speed; Uniform Inlet Flow

DF 97709

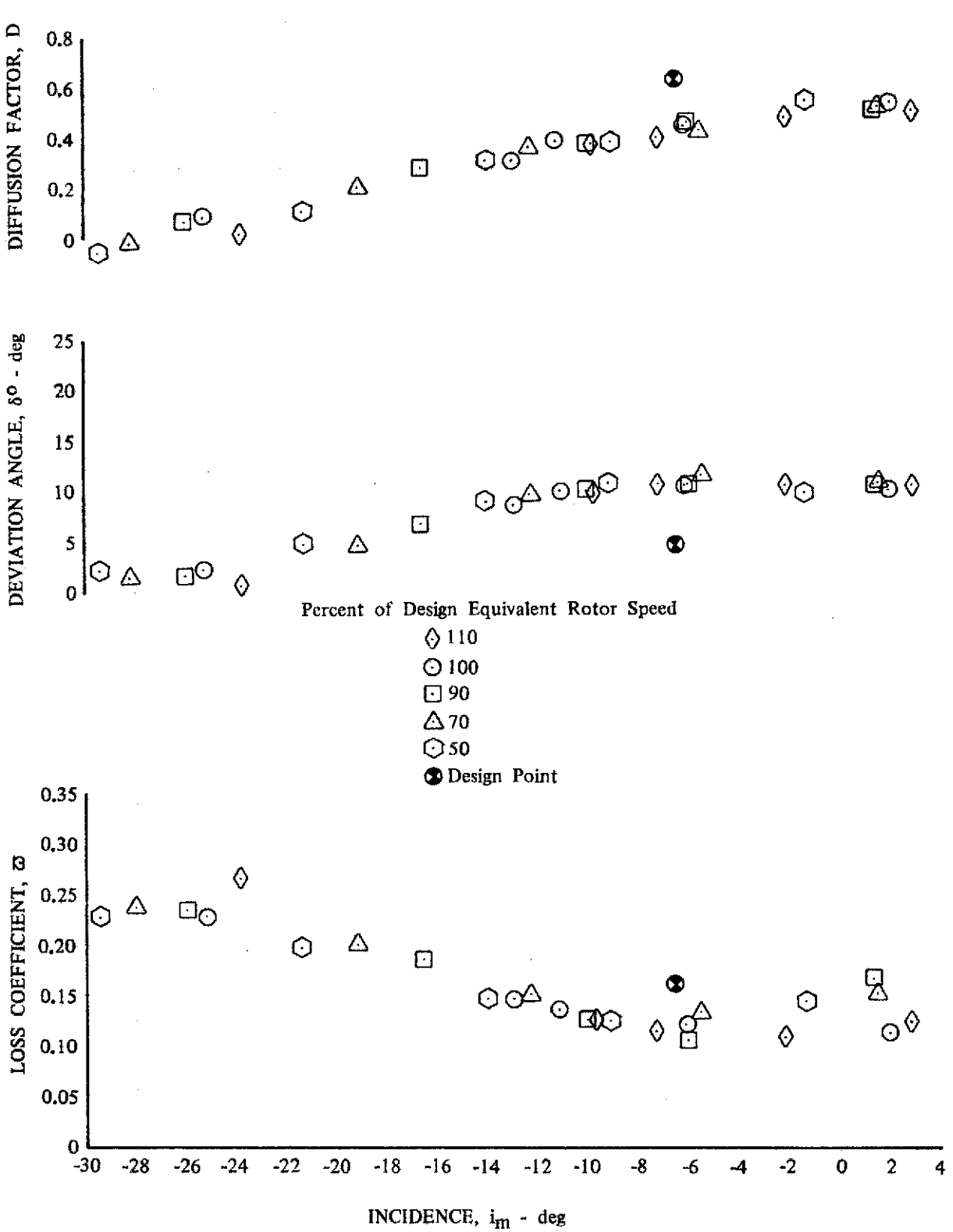


Figure 19a. Stator D Blade Element Performance; 5% Span from Tip; Uniform Inlet Flow DF 97710

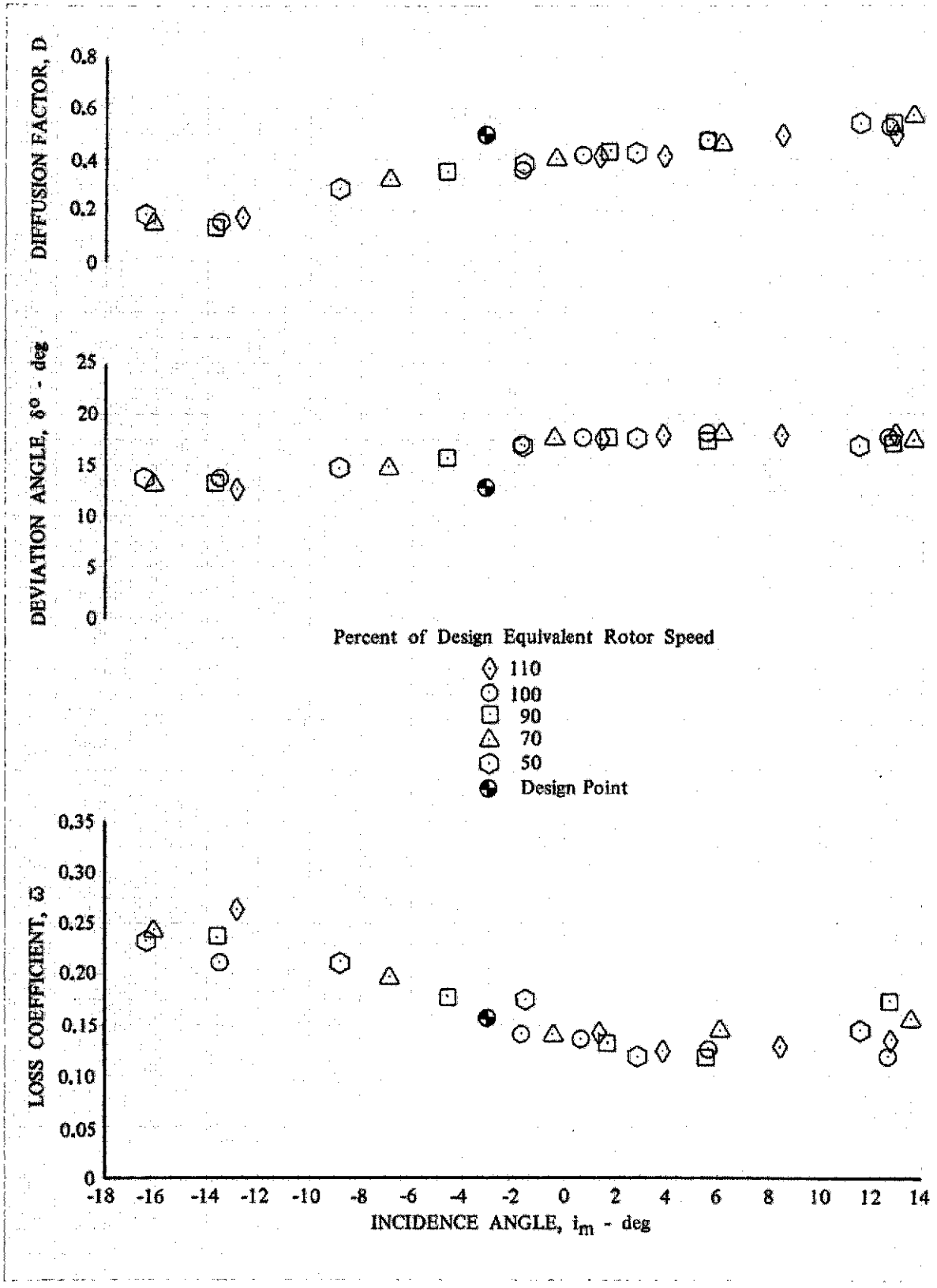


Figure 19b. Stator D Blade Element Performance; 10% Span from Tip; Uniform Inlet Flow DF 97711

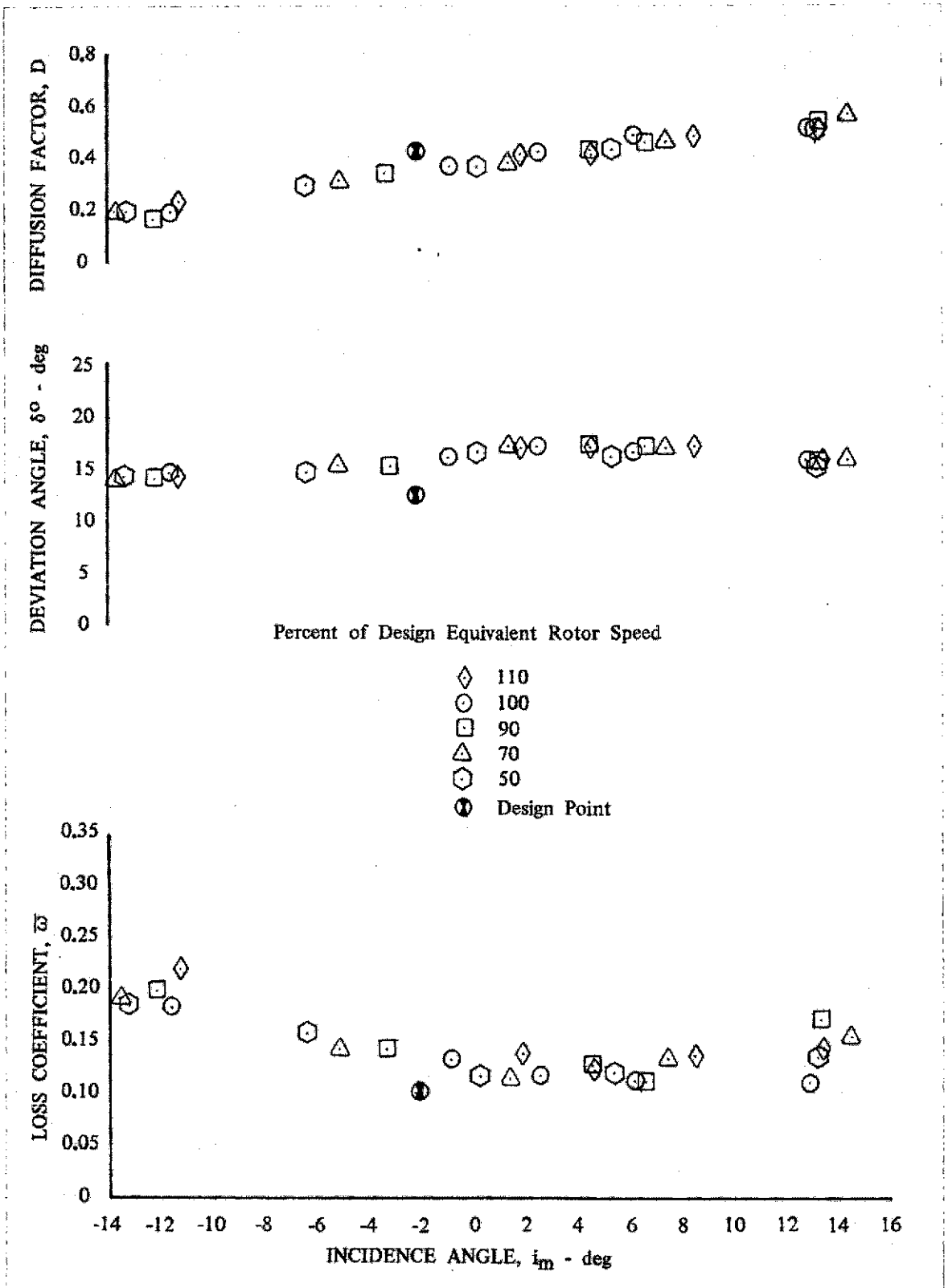


Figure 19c. Stator D Blade Element Performance; 15% Span from Tip; Uniform Inlet Flow DF 97712

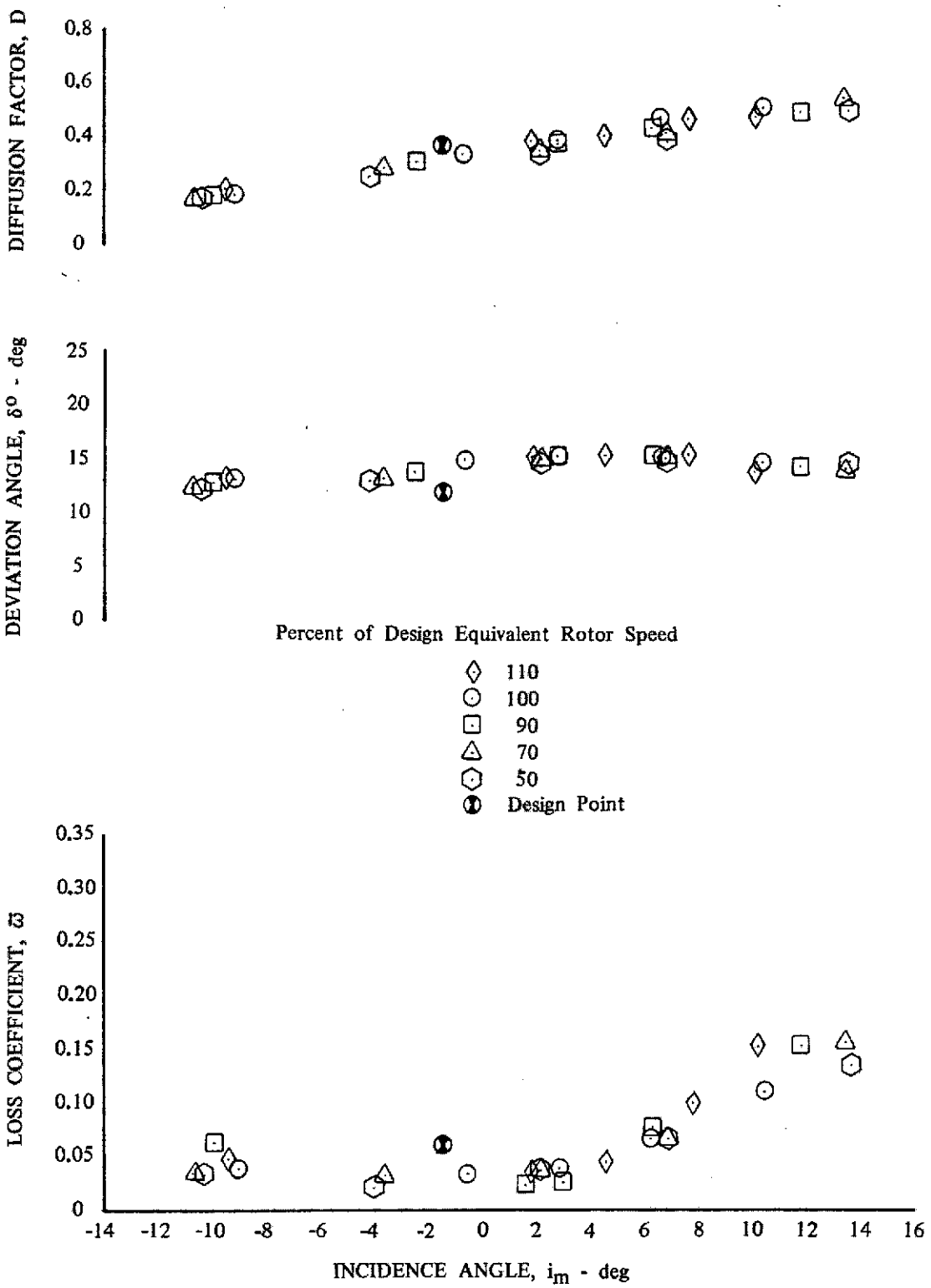


Figure 19d. Stator D Blade Element Performance; 30% Span from Tip; Uniform Inlet Flow DF 97713

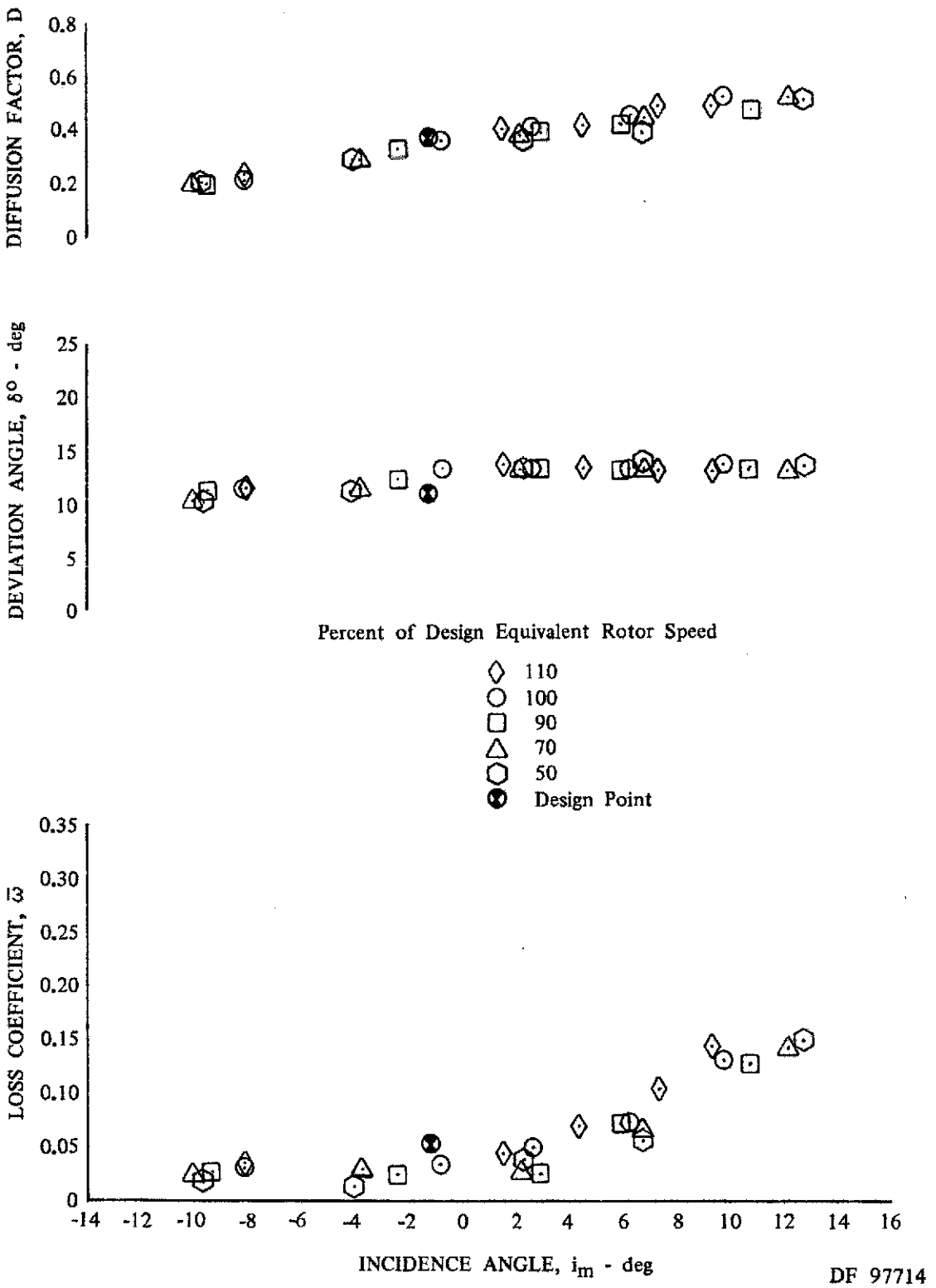


Figure 19e. Stator D Blade Element Performance; 50% Span; Uniform Inlet Flow DF 97714

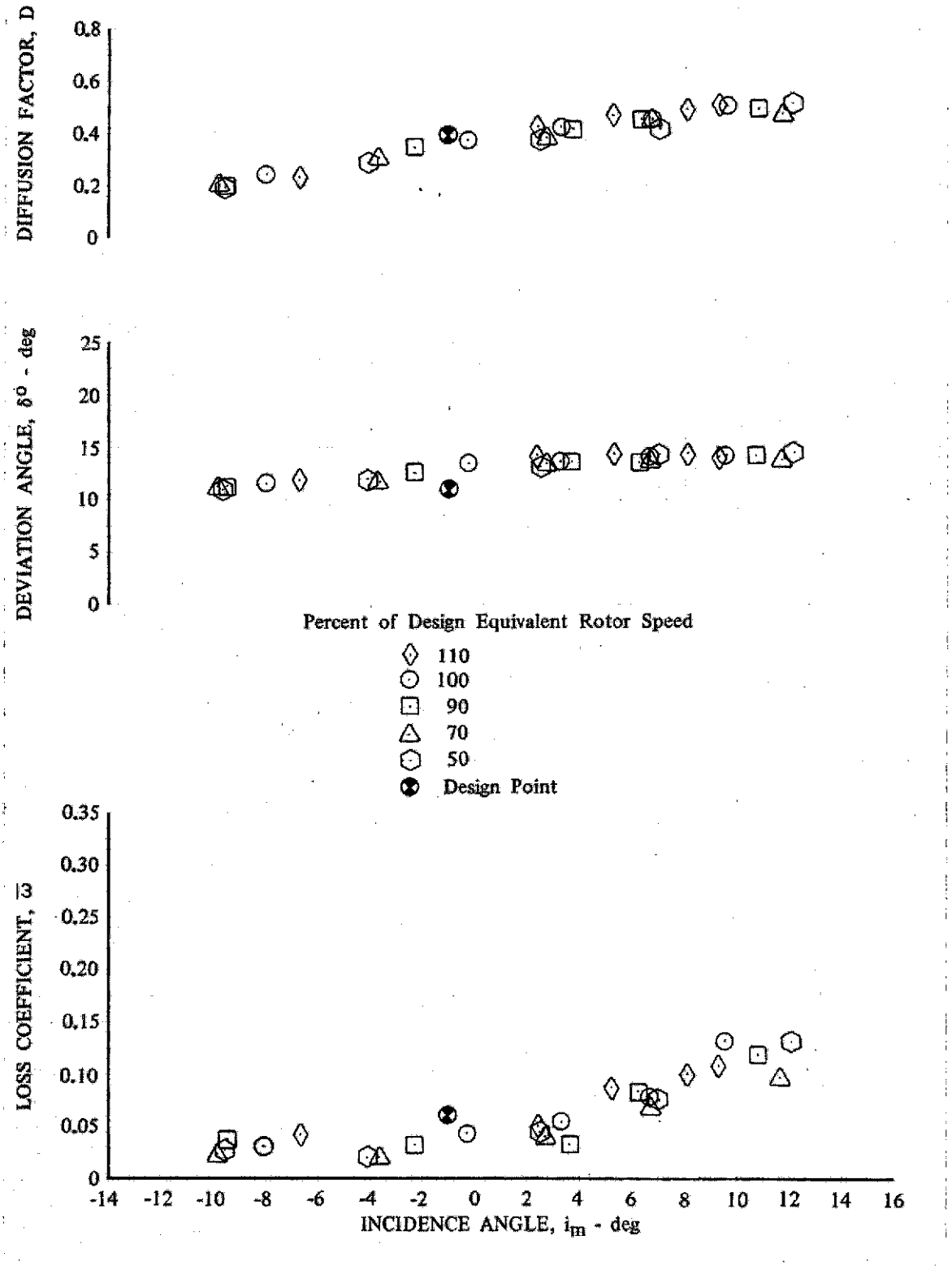


Figure 19f. Stator D Blade Element Performance; 70% Span from Tip; Uniform Inlet Flow DF 97715

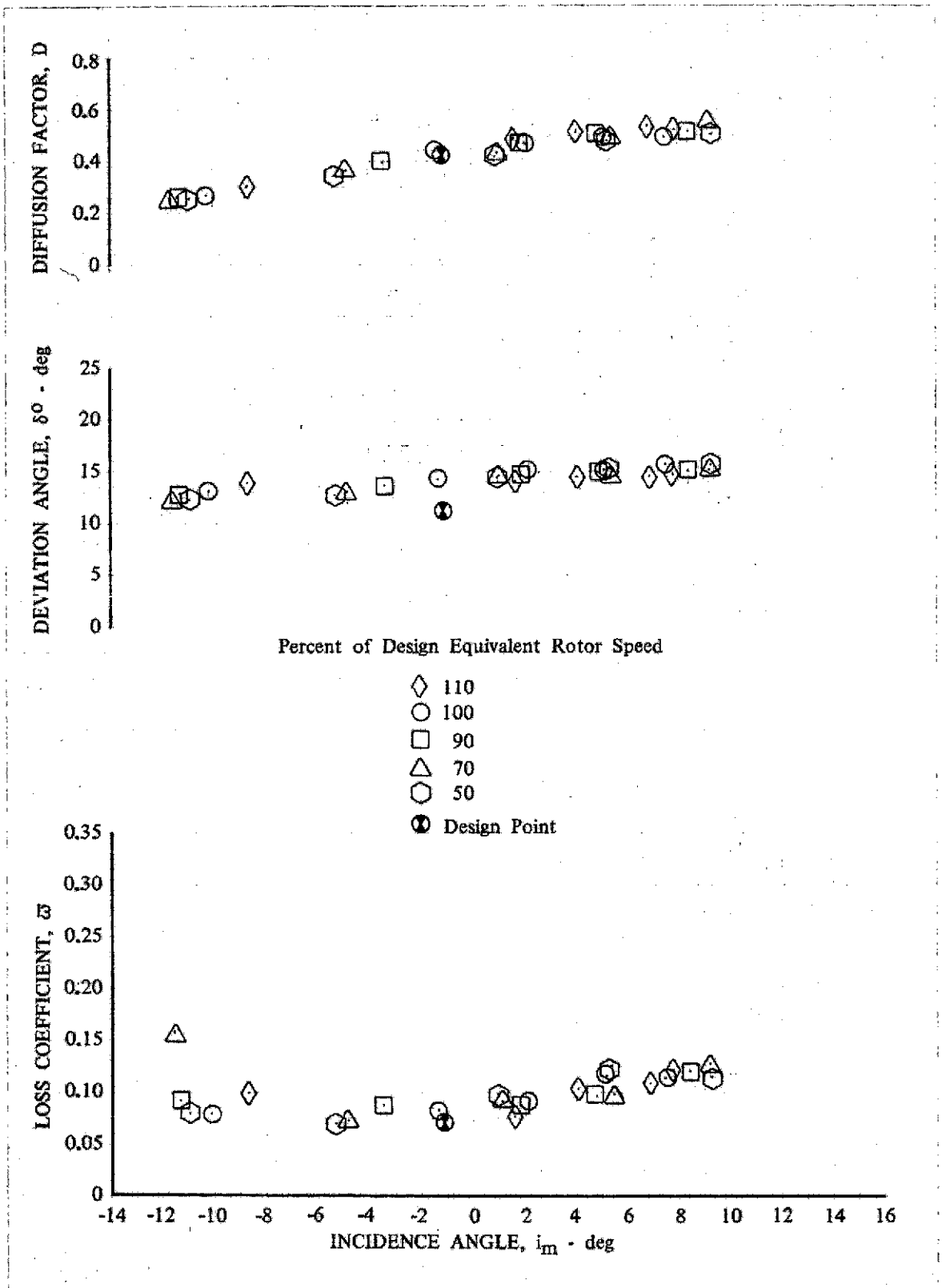


Figure 19g. Stator D Blade Element Performance; 85% Span from Tip; Uniform Inlet Flow DF 97716

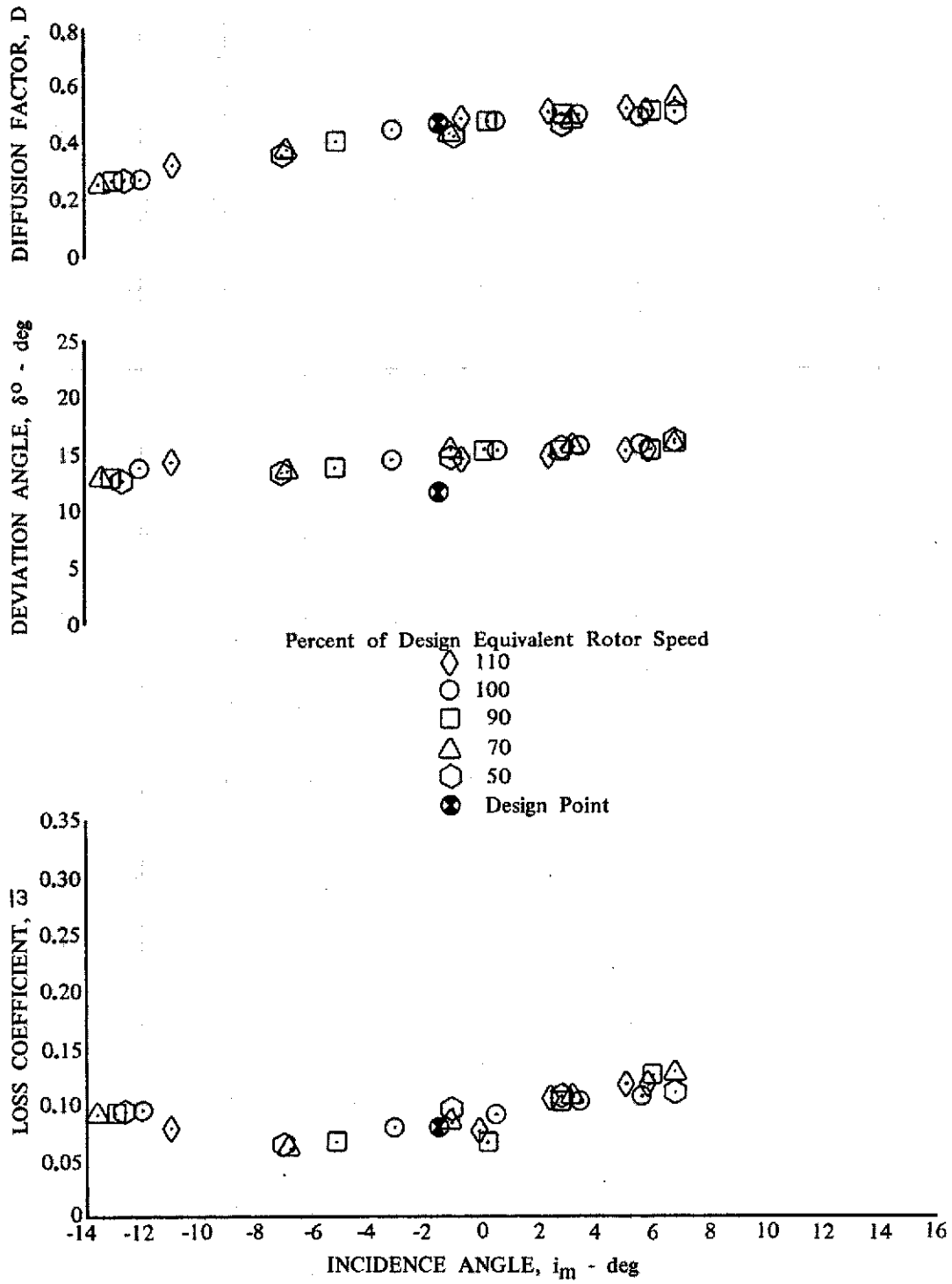


Figure 19h. Stator D Blade Element Performance; 90% Span from Tip; Uniform Inlet Flow DF 97717

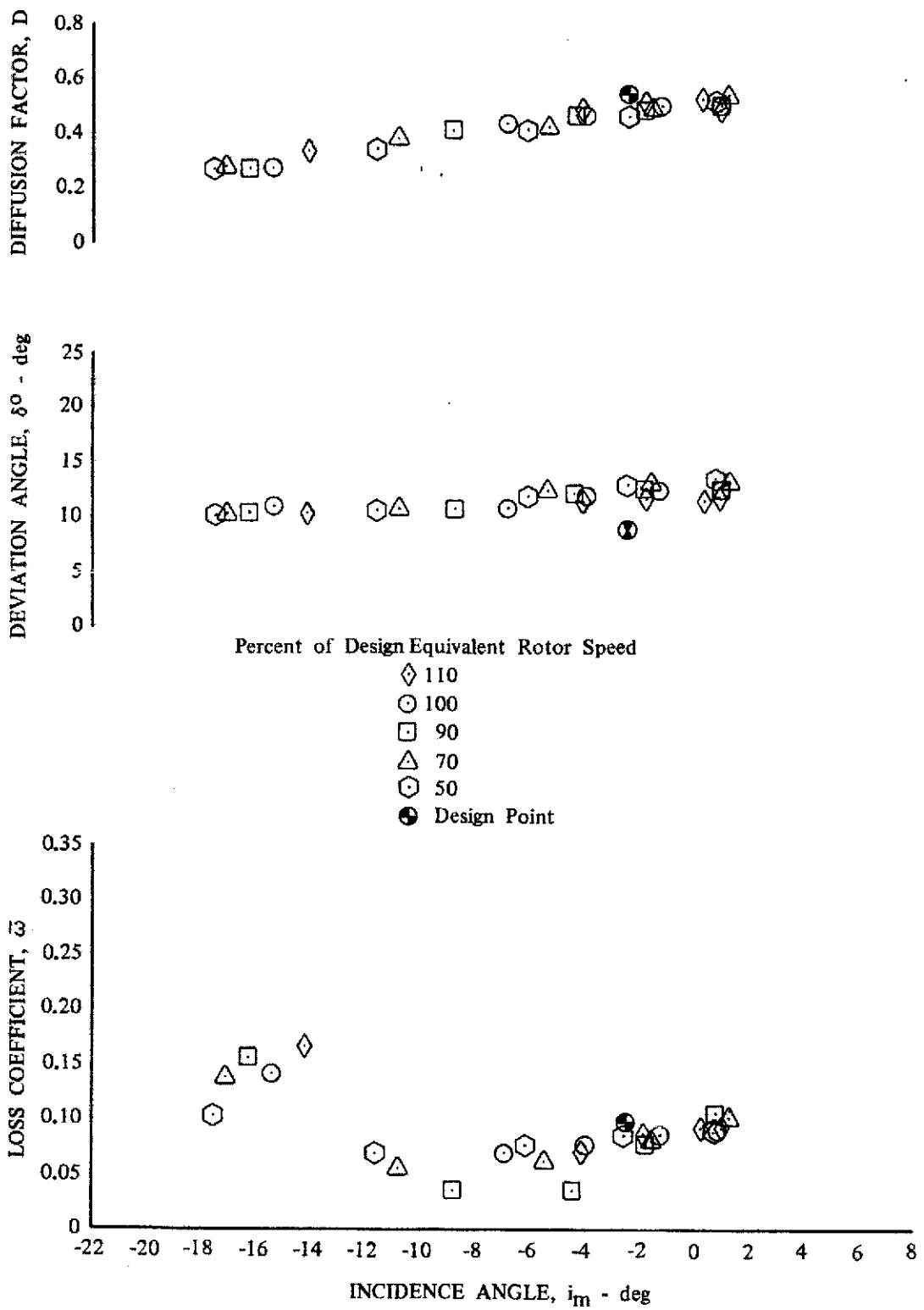


Figure 19i. Stator D Blade Element Performance; 95% Span from Tip; Uniform Inlet Flow DF 97718

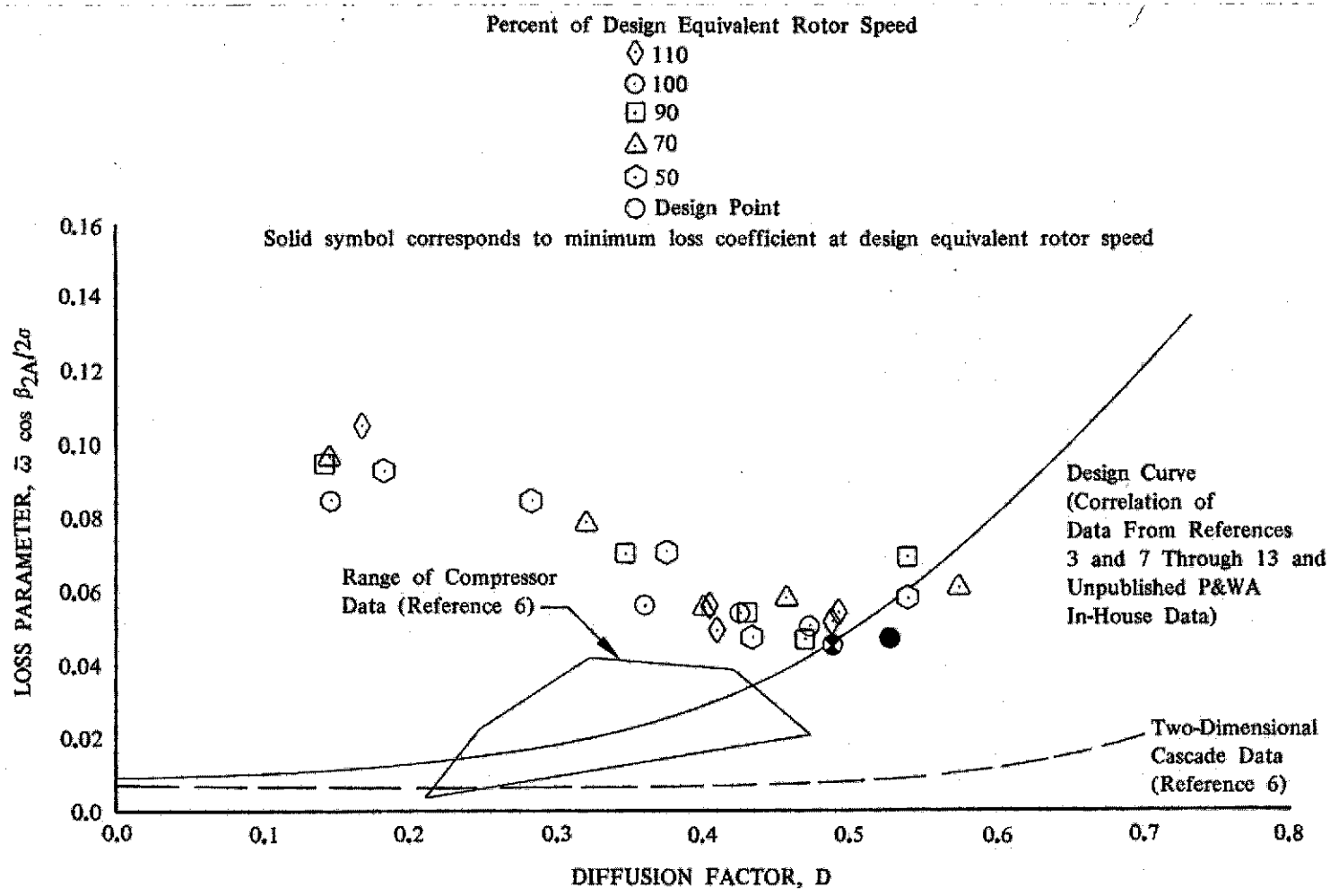


Figure 20a. Stator D Loss Parameter vs Diffusion Factor; 10% Span from Tip; Uniform Inlet Flow DF 97719

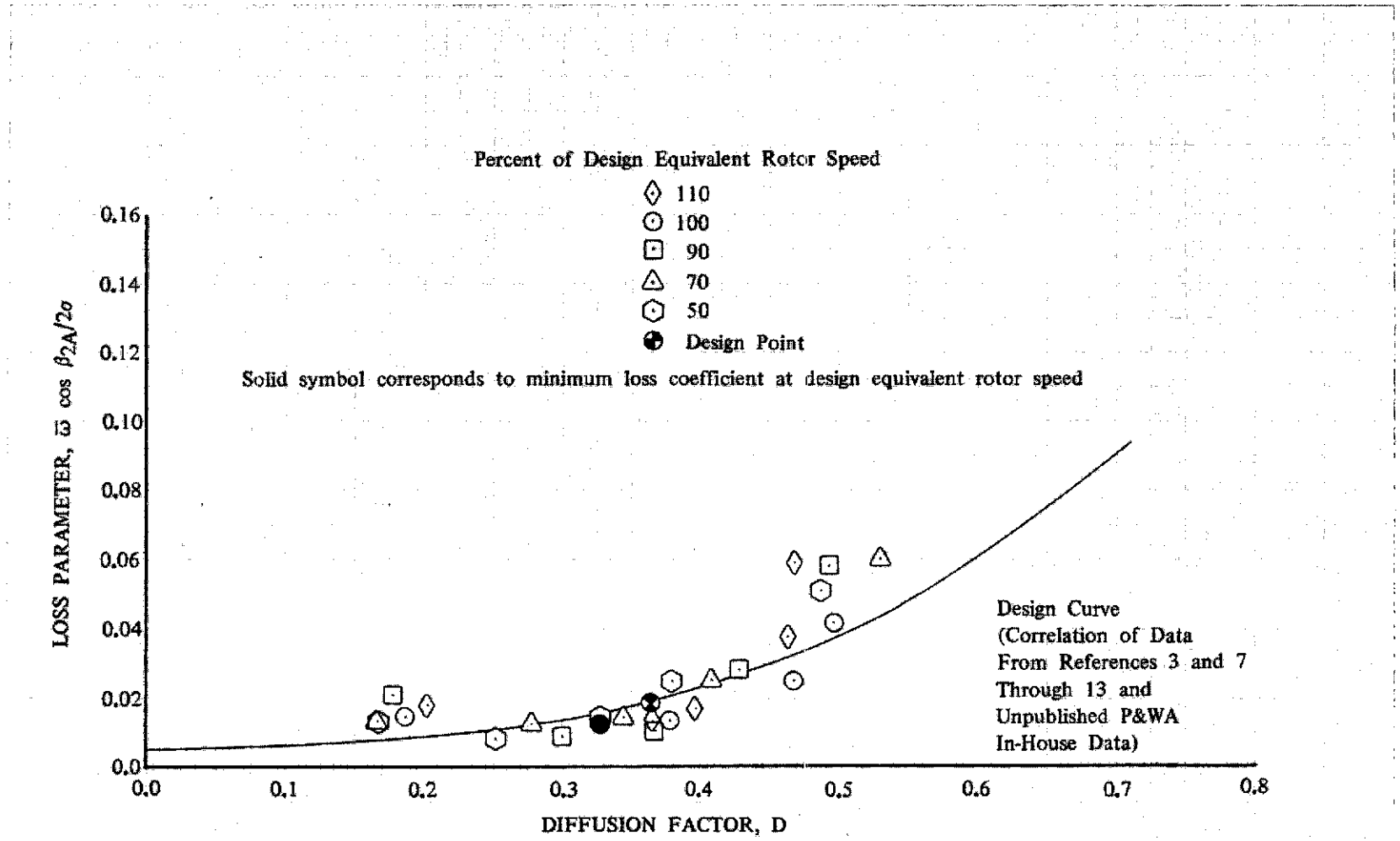


Figure 20b. Stator D Loss Parameter vs Diffusion Factor; 30% Span from Tip; Uniform Inlet Flow DF 97720

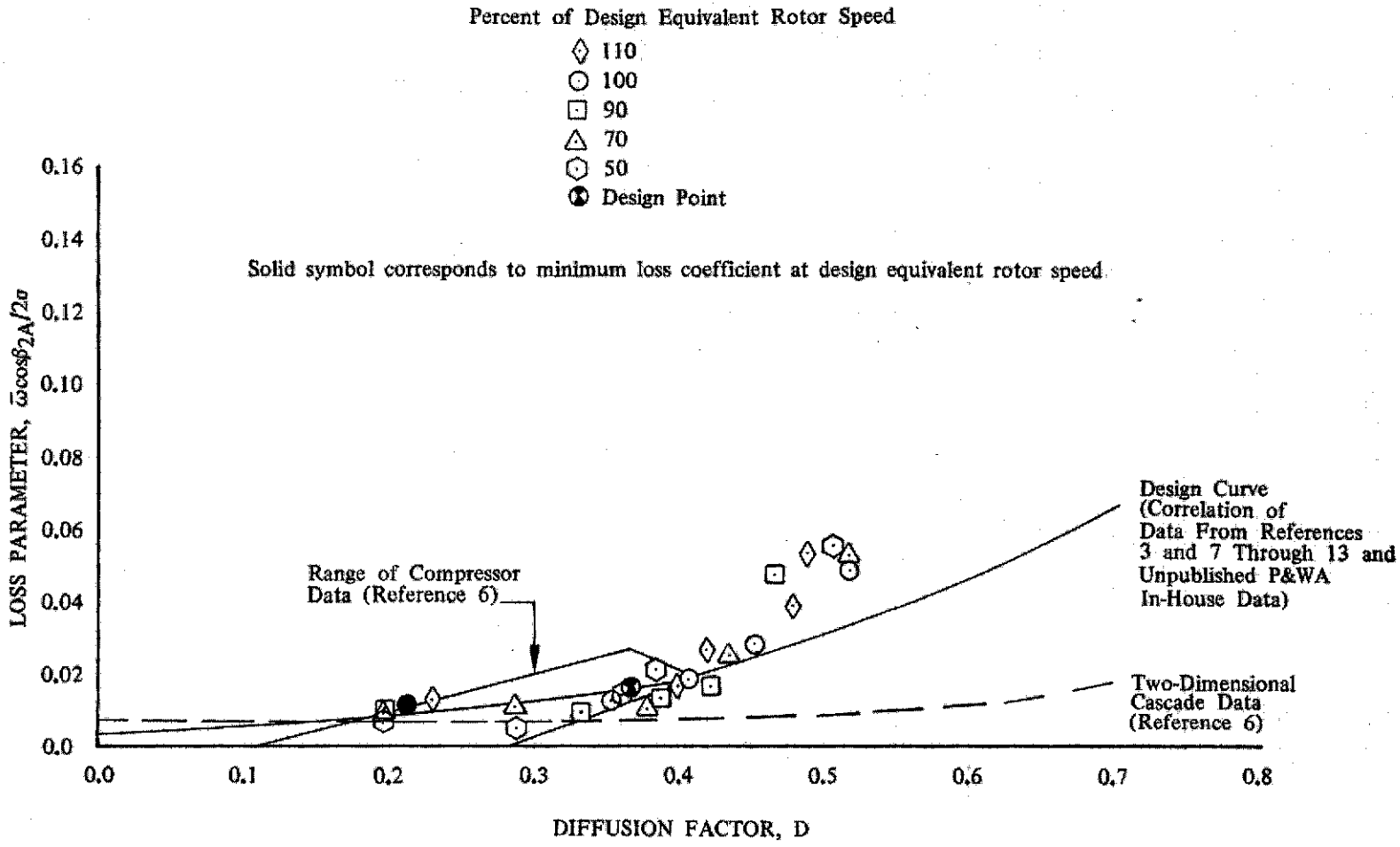


Figure 20c. Stator D Loss Parameter vs Diffusion Factor; 50% Span; Uniform Inlet Flow

DF 97721

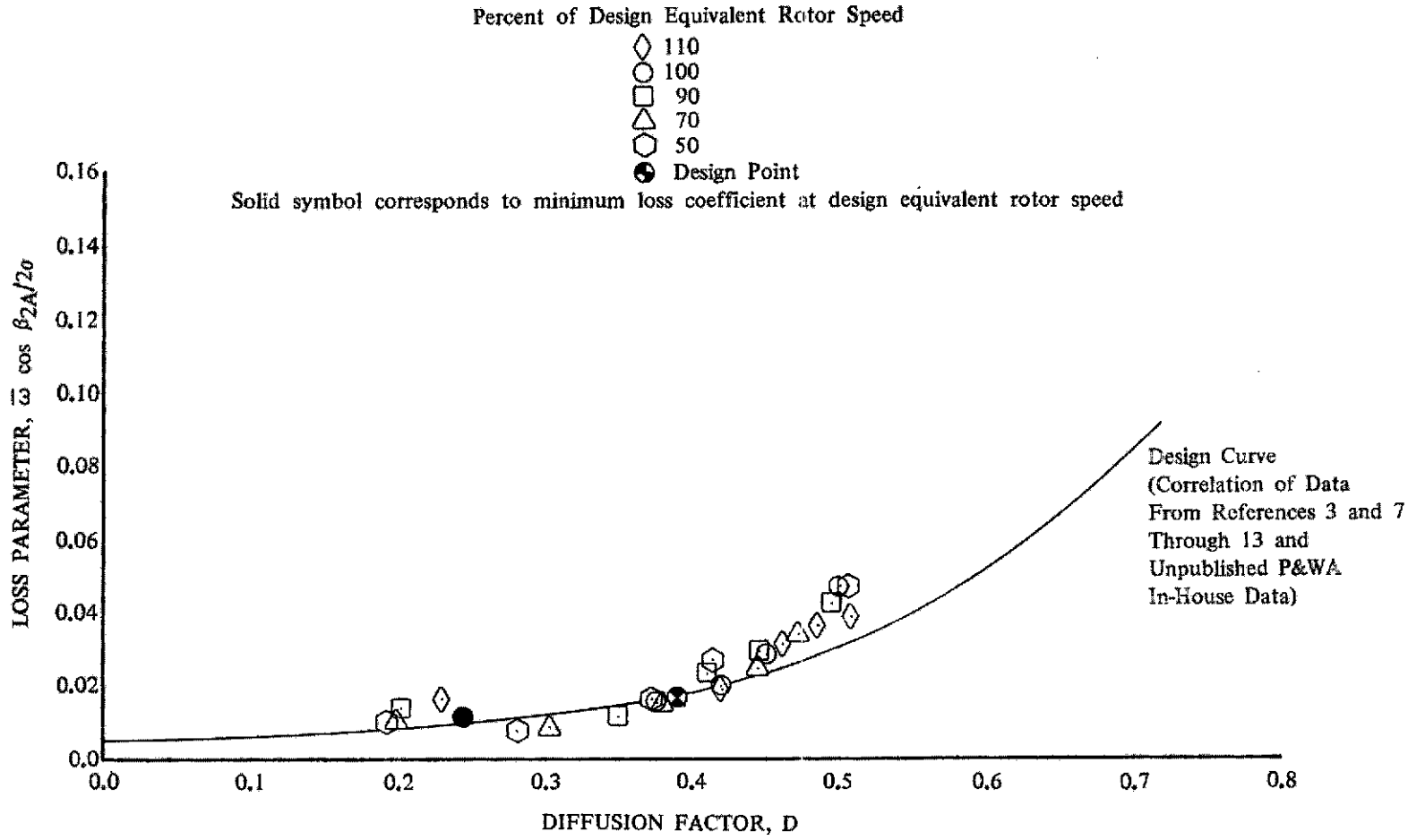


Figure 20d. Stator D Loss Parameter vs Diffusion Factor; 70% Span from Tip; Uniform Inlet Flow DF 97722

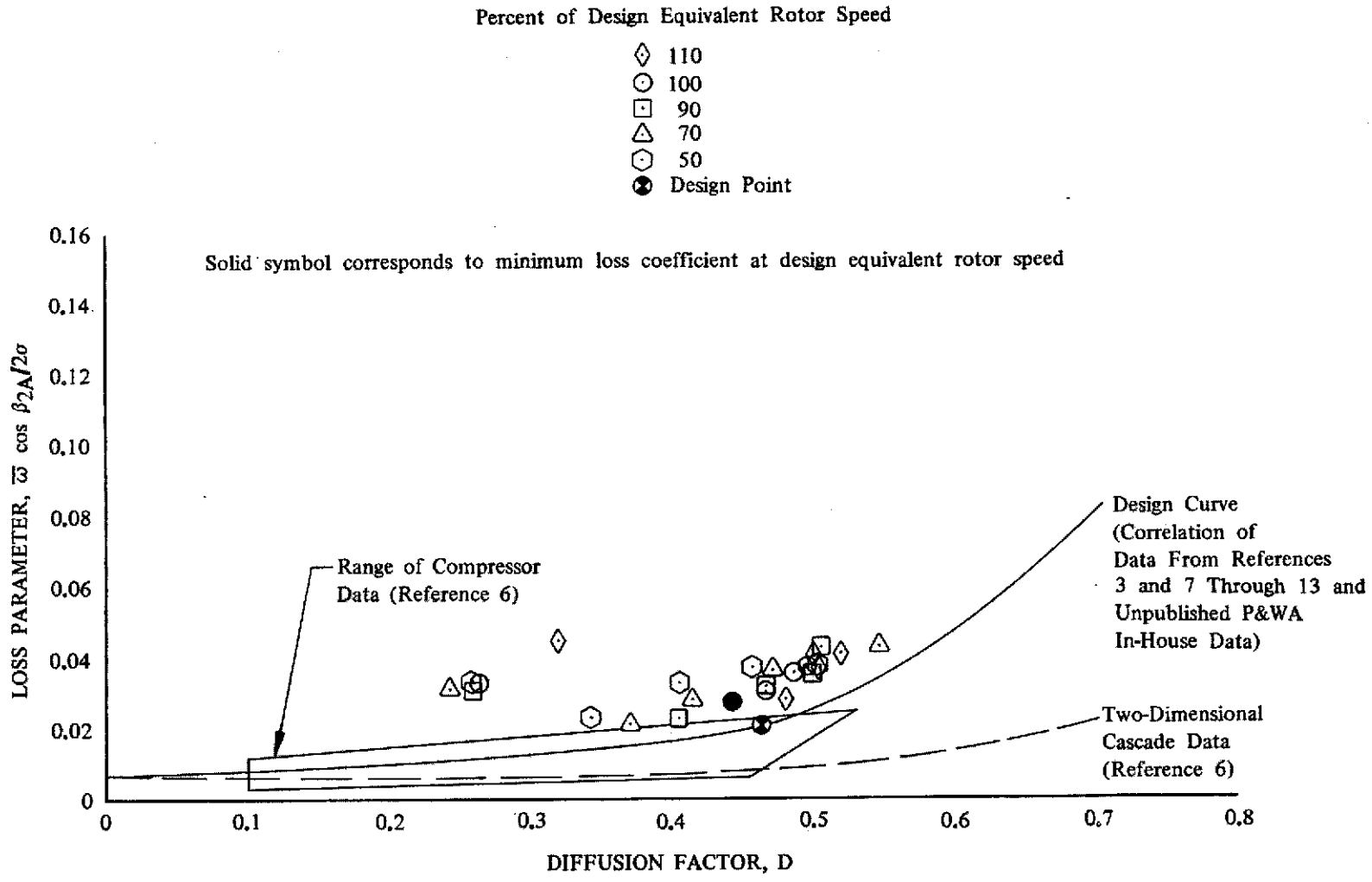


Figure 20e. Stator D Loss Parameter vs Diffusion Factor; 90% Span from Tip; Uniform Inlet Flow

DF 97723

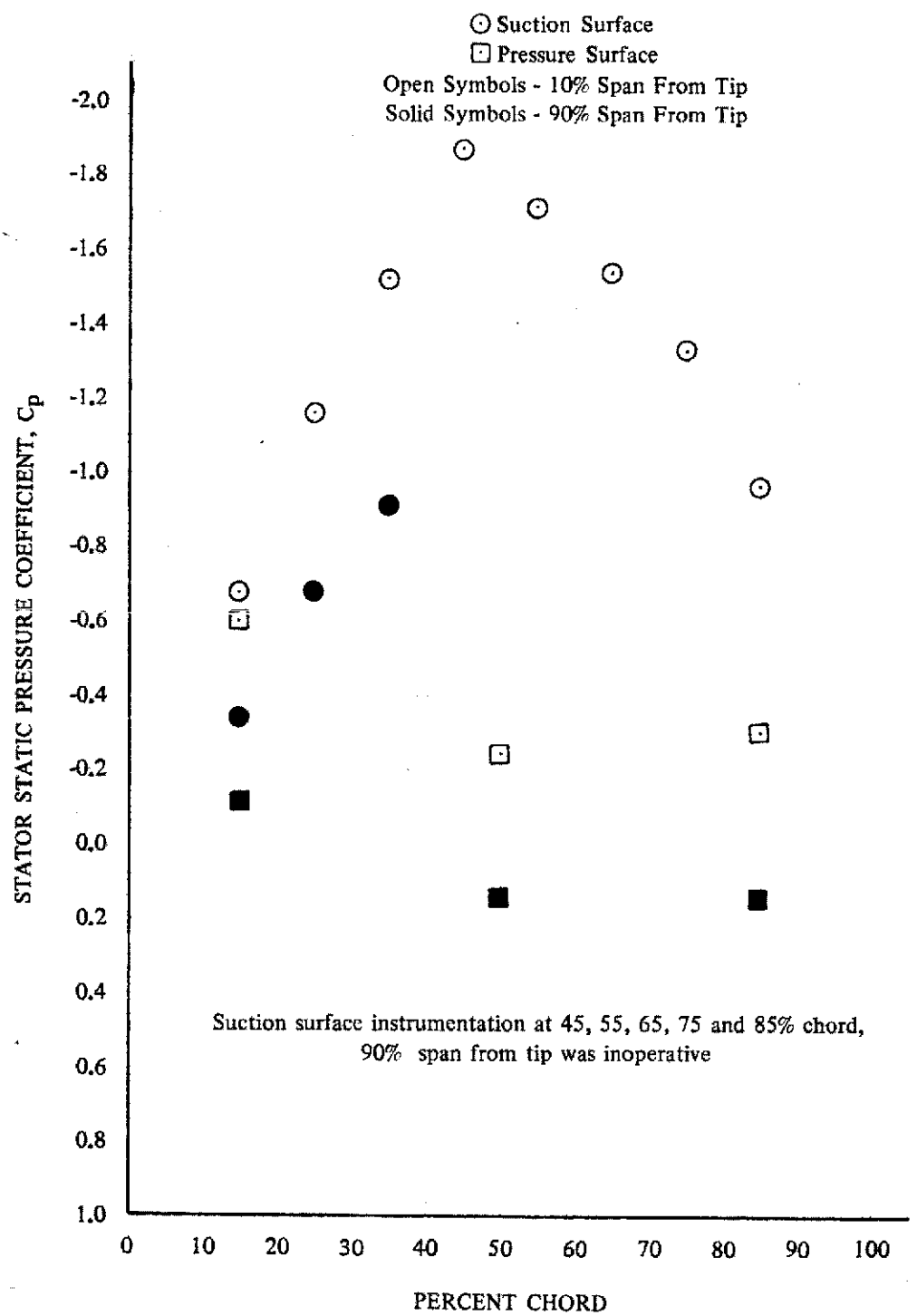


Figure 21a. Stator D Static Pressure Coefficient vs Percent Chord; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 120.02 lb/sec; Uniform Inlet Flow

DF 97724

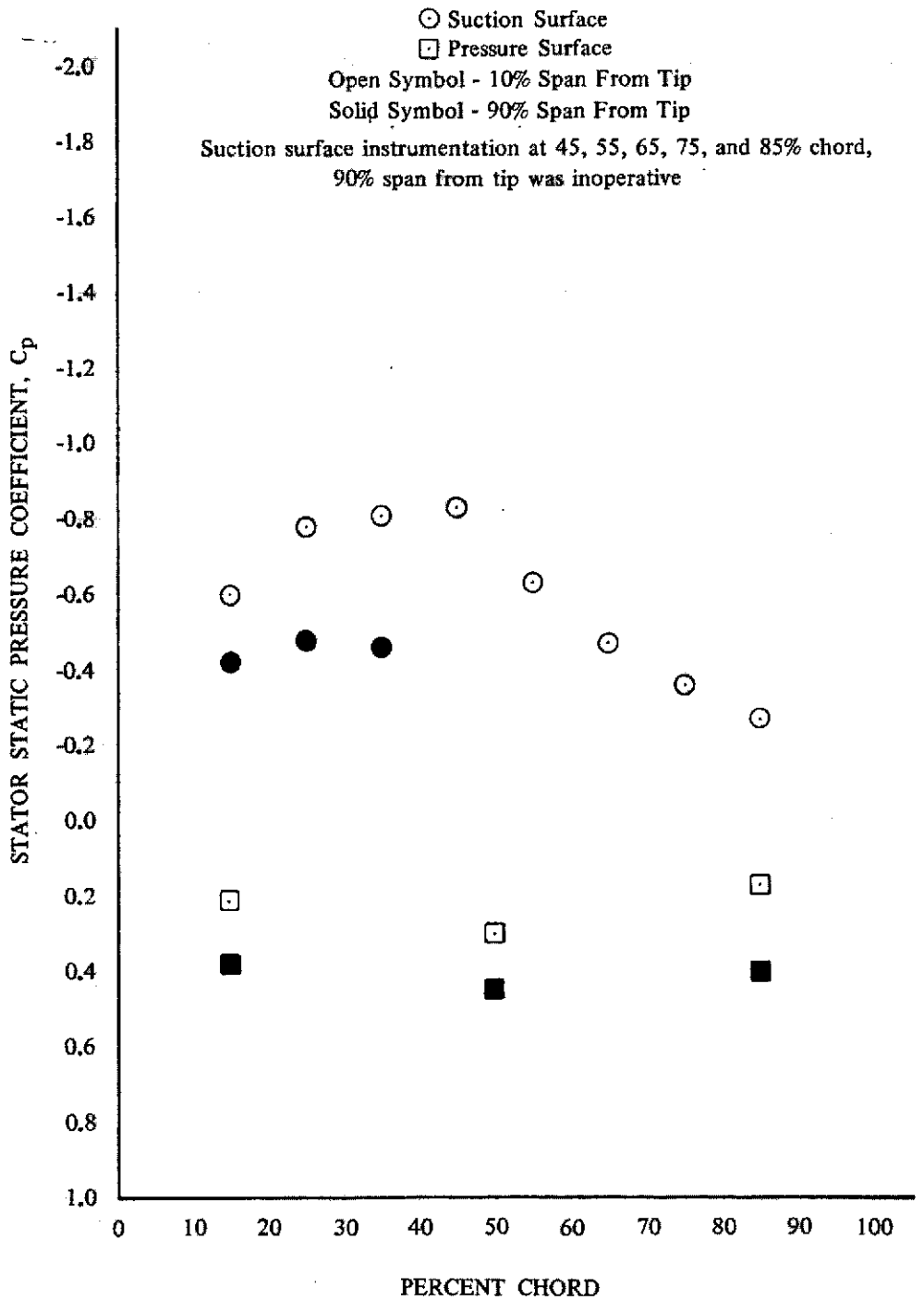


Figure 21b. Stator D Static Pressure Coefficient vs Percent Chord; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 110.18 lb/sec; Uniform Inlet Flow DF 97725

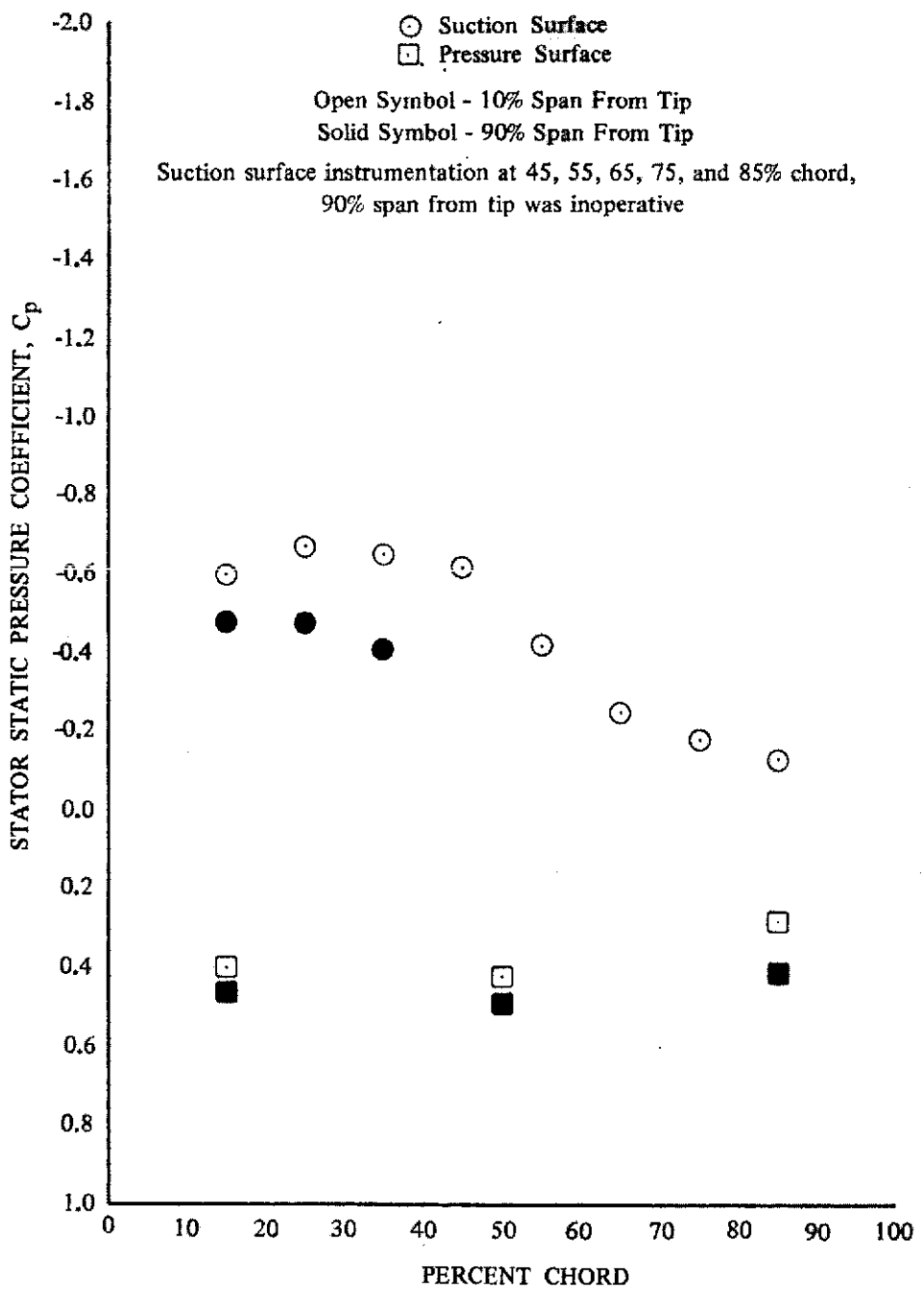


Figure 21c. Stator D Static Pressure Coefficient vs Percent Chord; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 102.67 lb/sec; Uniform Inlet Flow

DF 97726

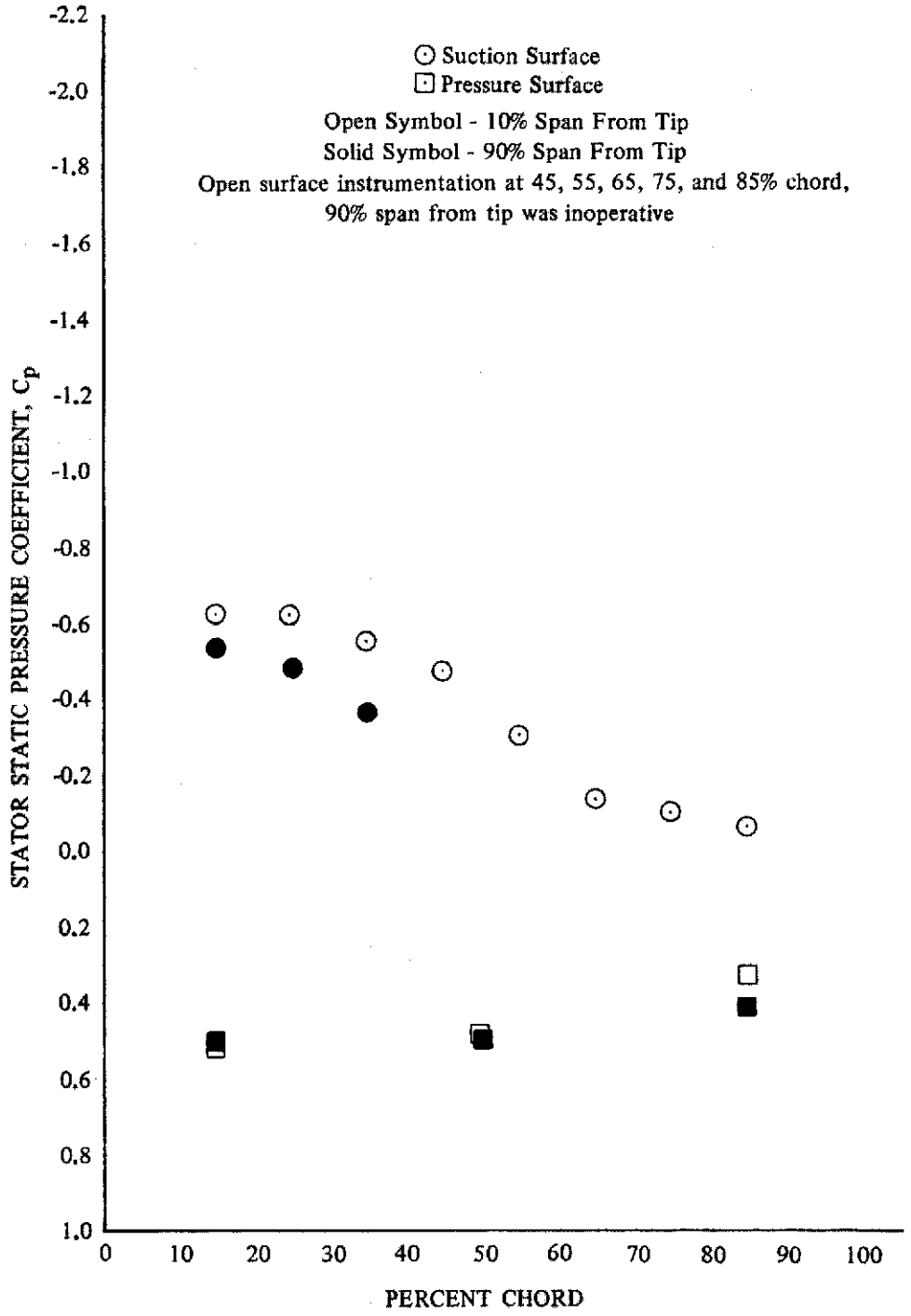


Figure 21d. Stator D Static Pressure Coefficient vs Percent Chord; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 95.36 lb/sec; Uniform Inlet Flow DF 97727

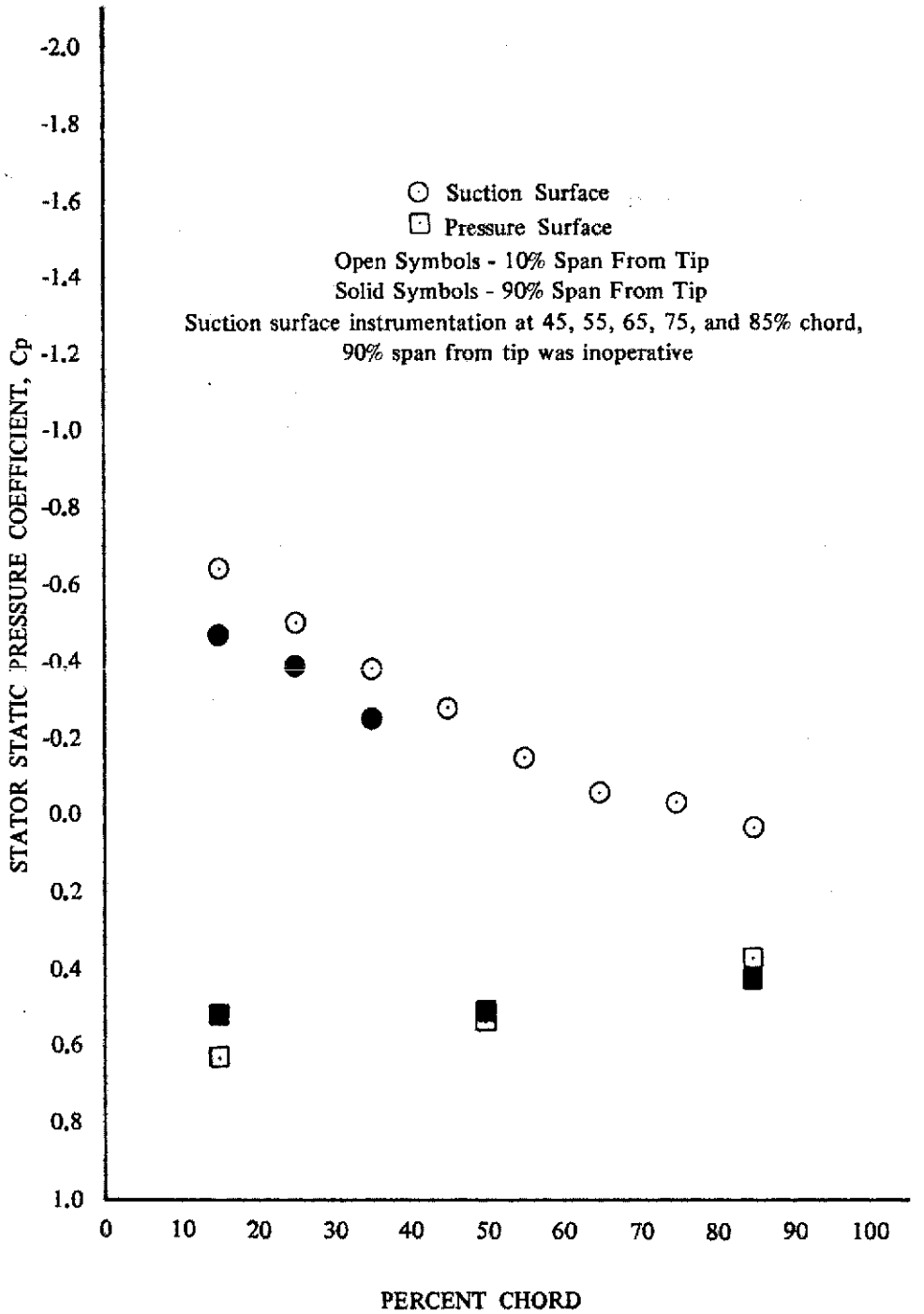


Figure 21e. Stator D Static Pressure Coefficient vs Percent Chord; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 88.32 lb/sec; Uniform Inlet Flow

DF 97728

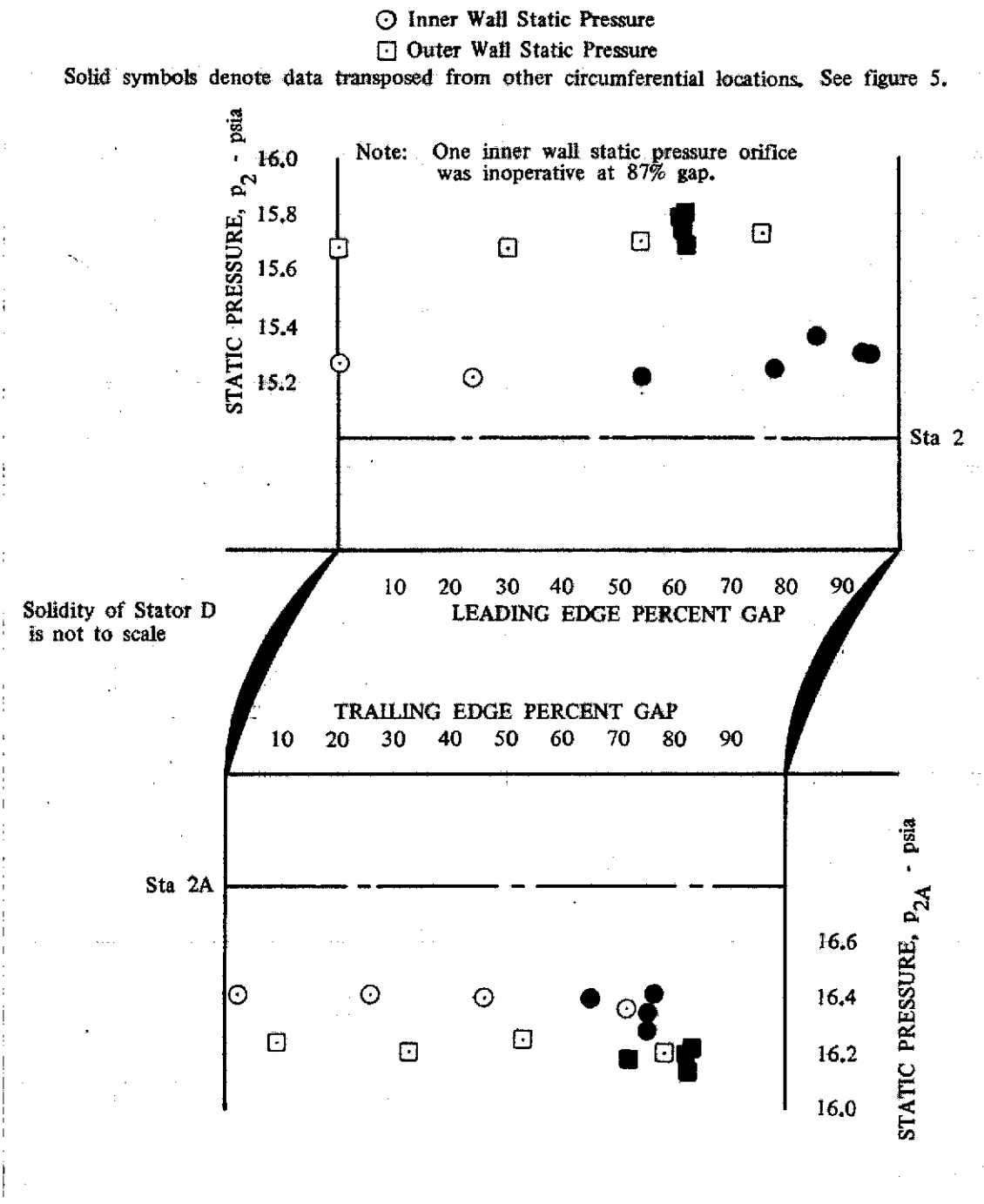


Figure 22a. Wall Static Pressure Distributions Upstream and Downstream of Stator D; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 110.18 lb/sec; Uniform Inlet Flow

DF 97229

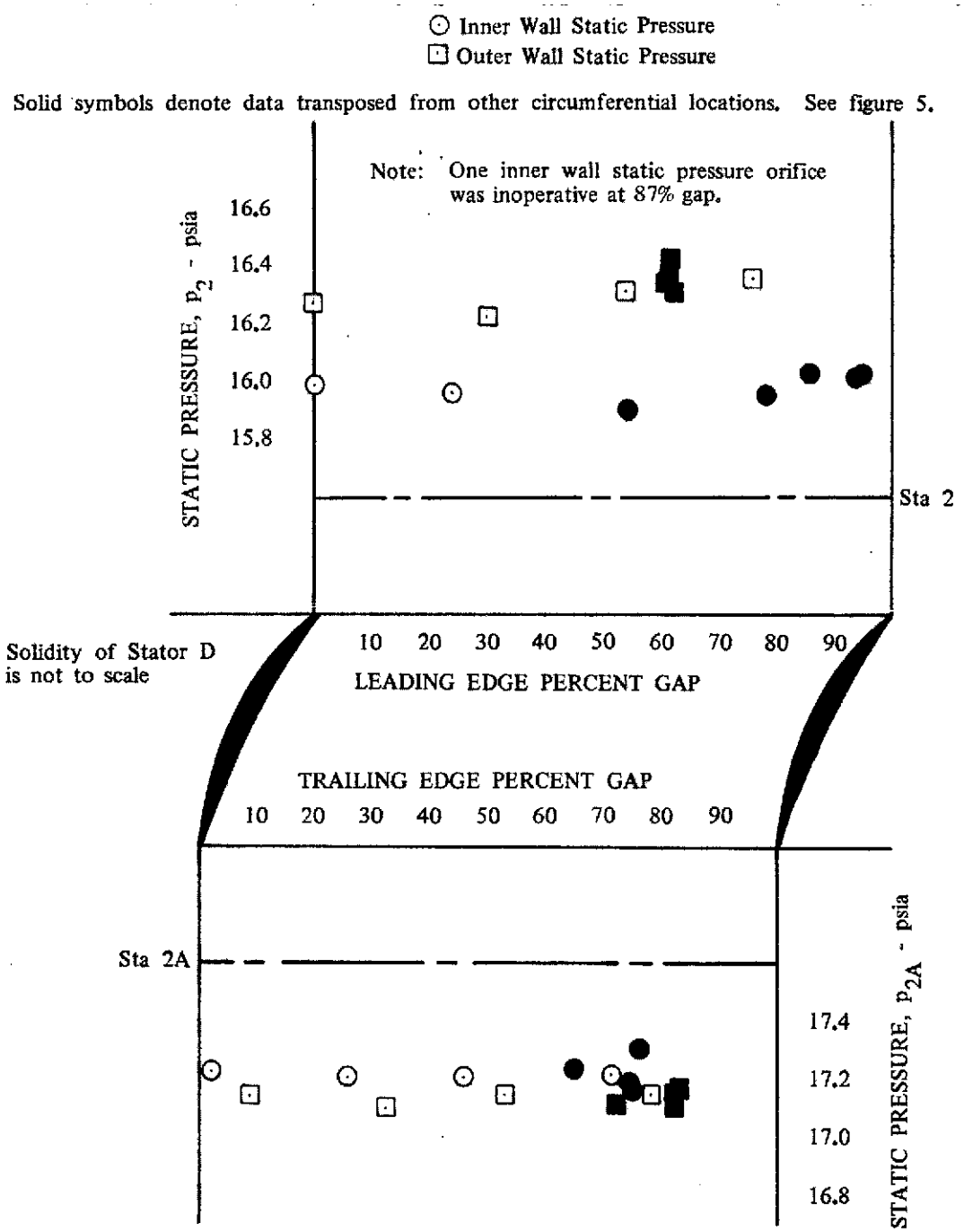


Figure 22b. Wall Static Pressure Distribution Upstream and Downstream of Stator D; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 88.32 lb/sec; Uniform Inlet Flow

DF 97730

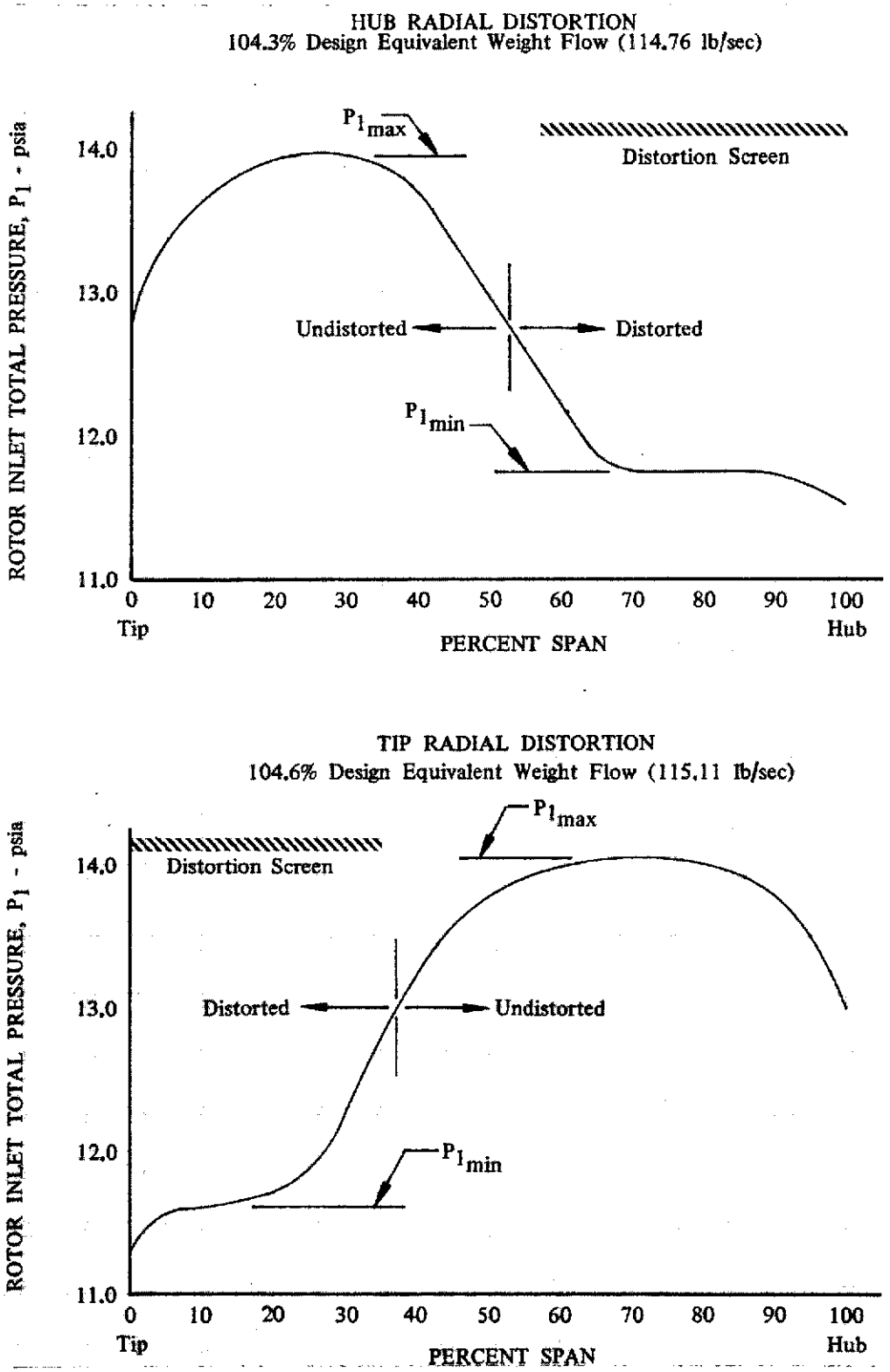


Figure 23. Typical Rotor Inlet Total Pressure Profiles With Hub and Tip Radial Distortion; 100% Design Equivalent Rotor Speed

DF 97731

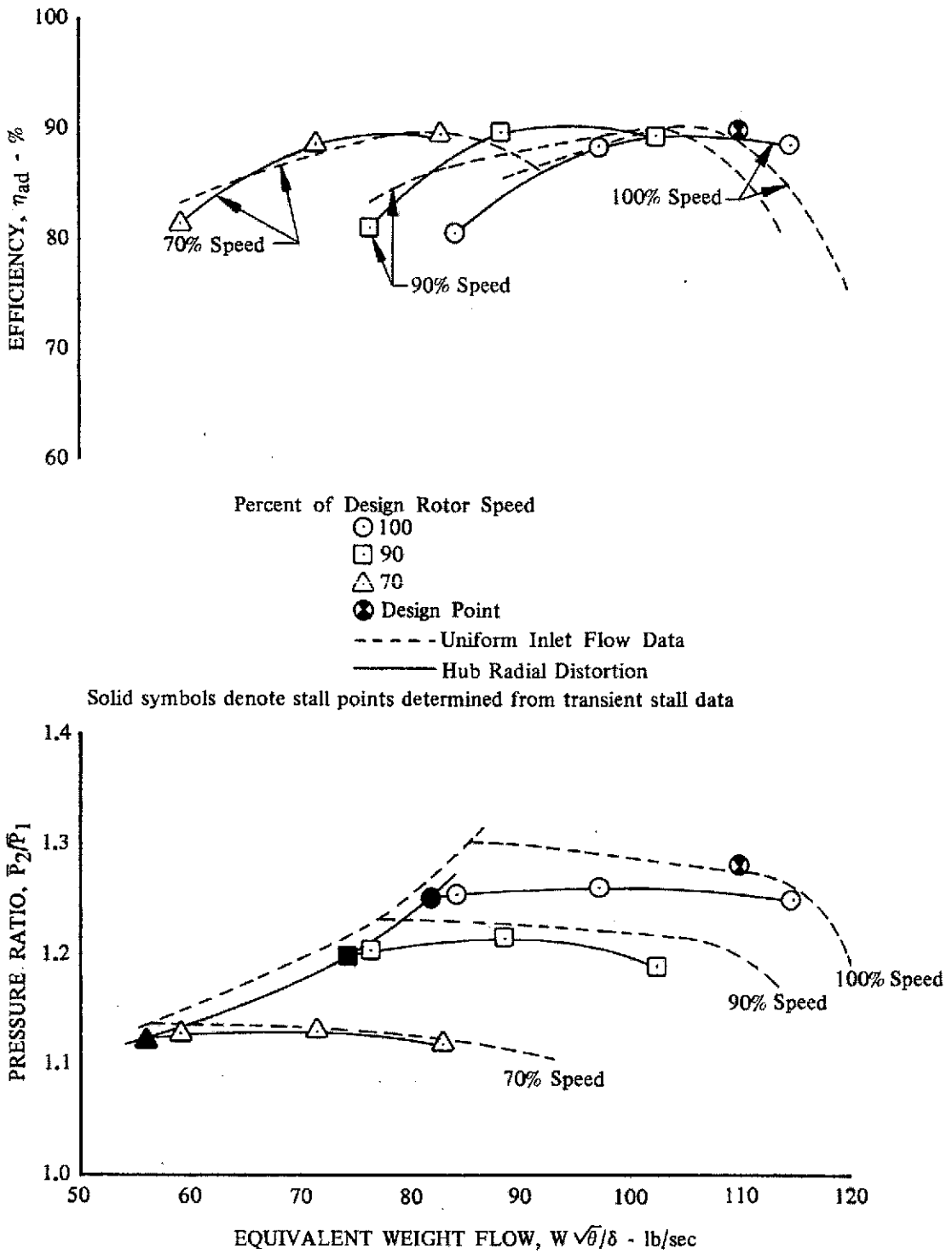


Figure 24. Overall Performance of Rotor D; Hub Radial Distortion Compared With Uniform Inlet Flow

DF 97732

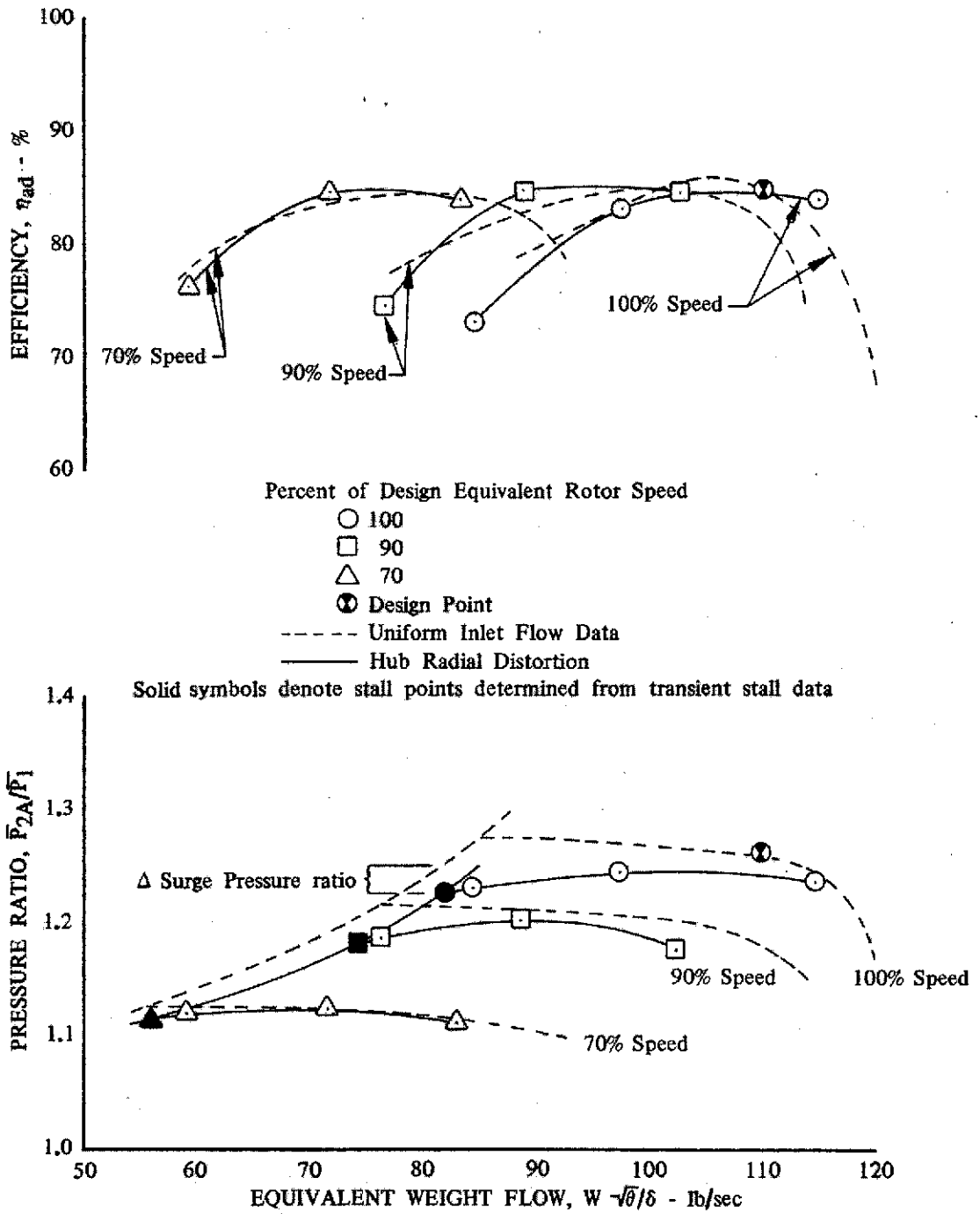


Figure 25. Overall Performance of Stage D; Hub Radial Distortion Compared With Uniform Inlet Flow DF 97733

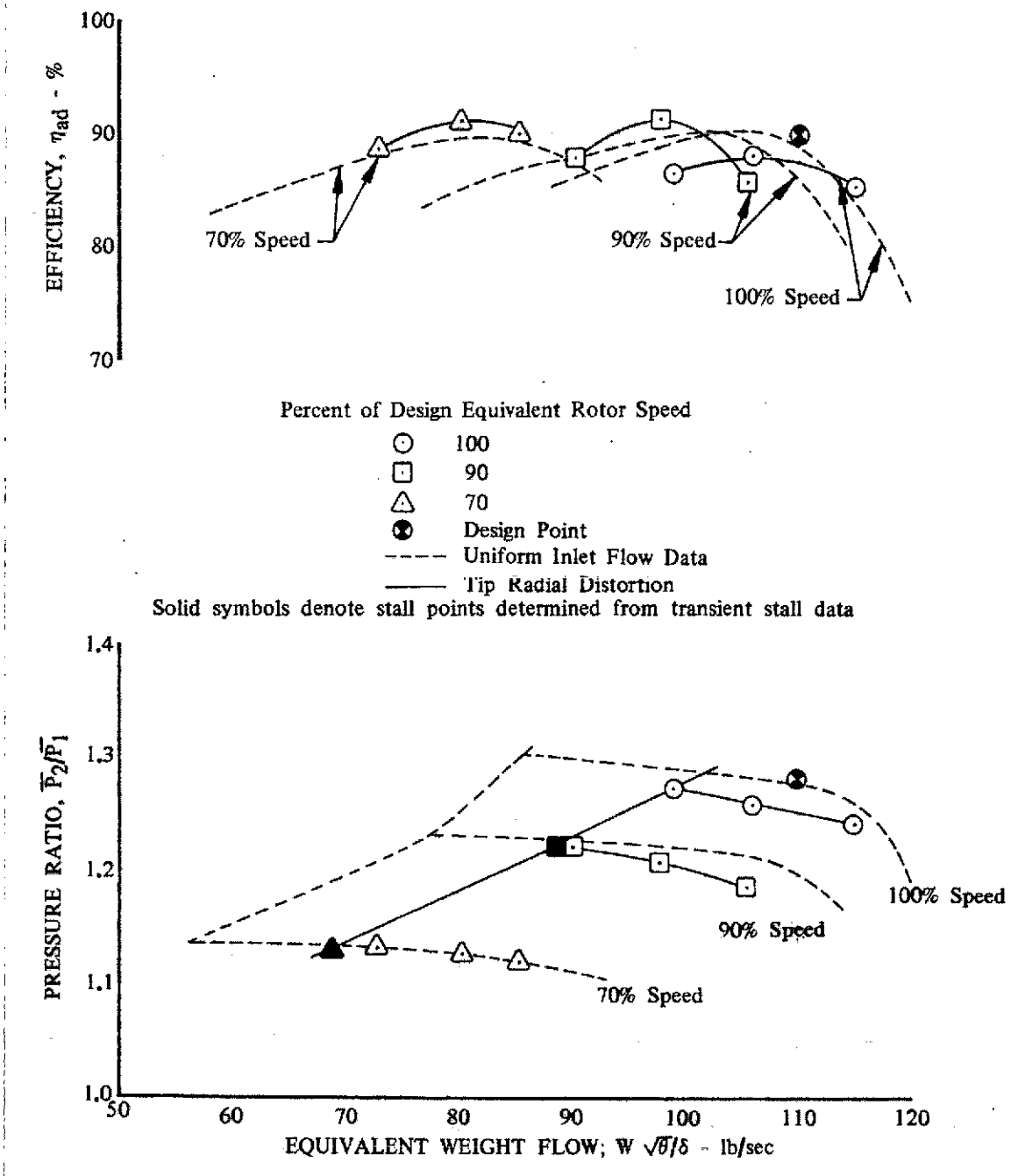


Figure 26. Overall Performance of Rotor D; Tip Radial Distortion Compared With Uniform Inlet Flow

DF 97734

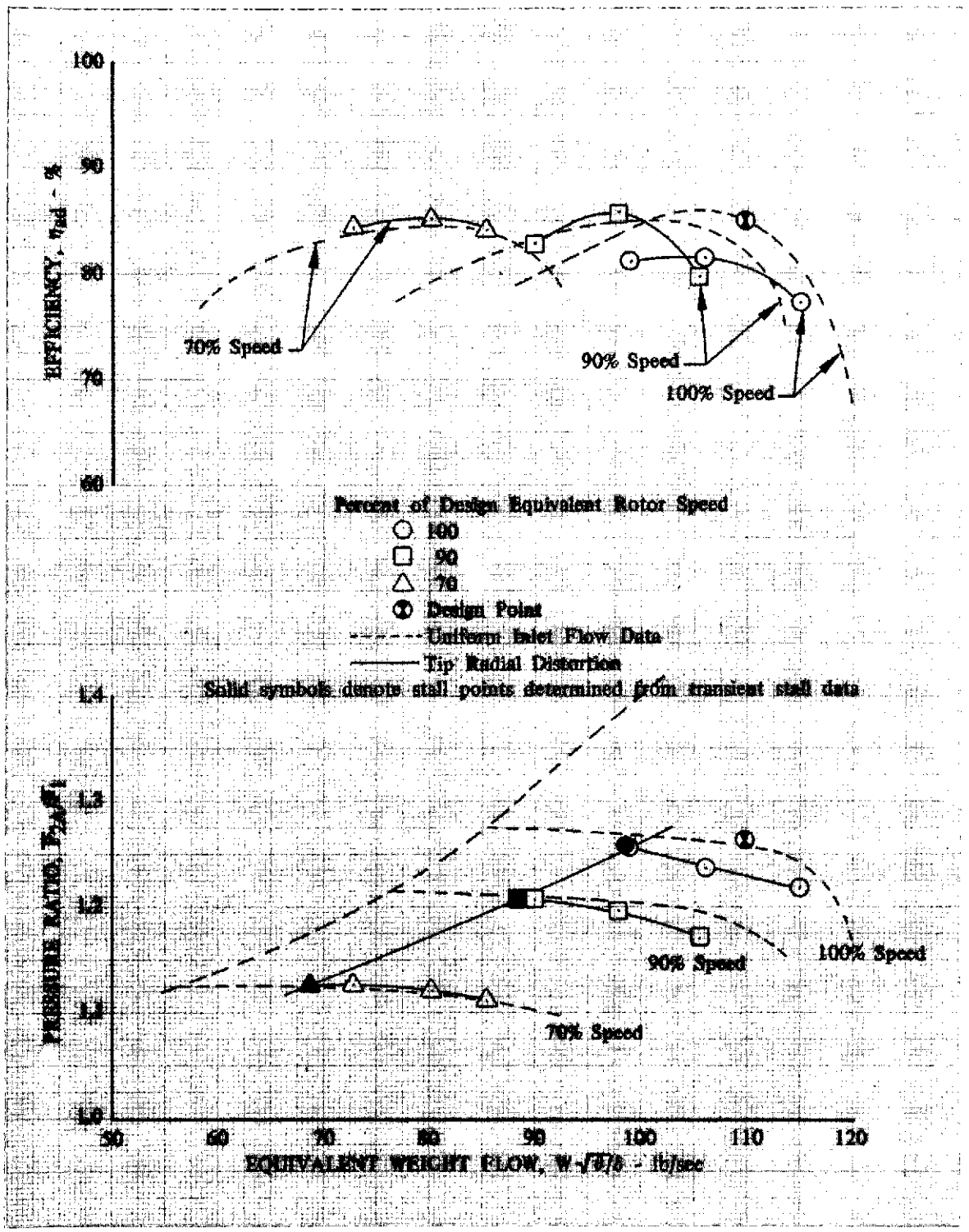


Figure 27. Overall Performance of Stage D; Tip Radial Distortion Compared With Uniform Inlet Flow

DF 97735

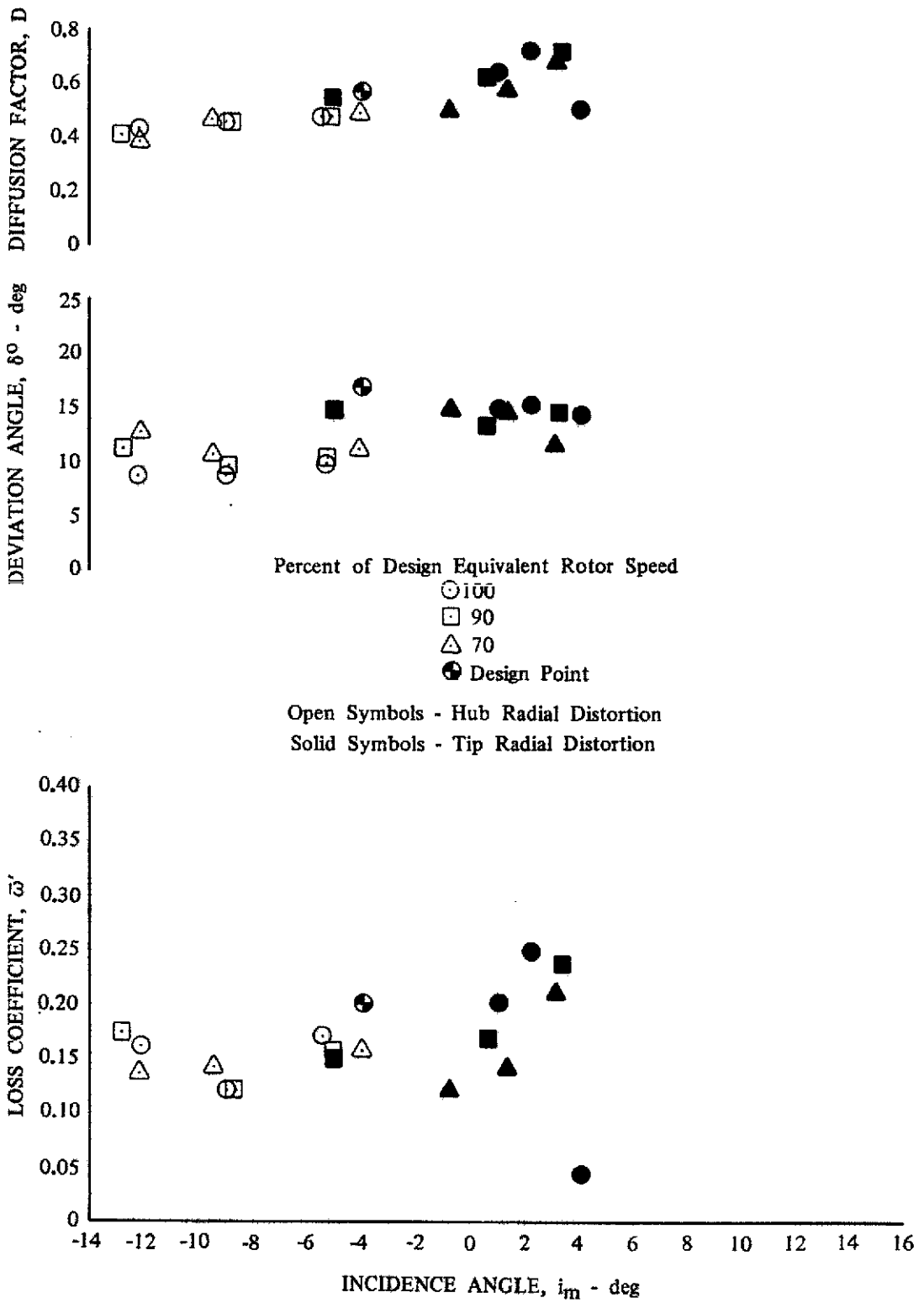


Figure 28a. Rotor D Blade Element Performance; 5% Span from Tip; Hub and Tip Radial Distortion

DF 97736

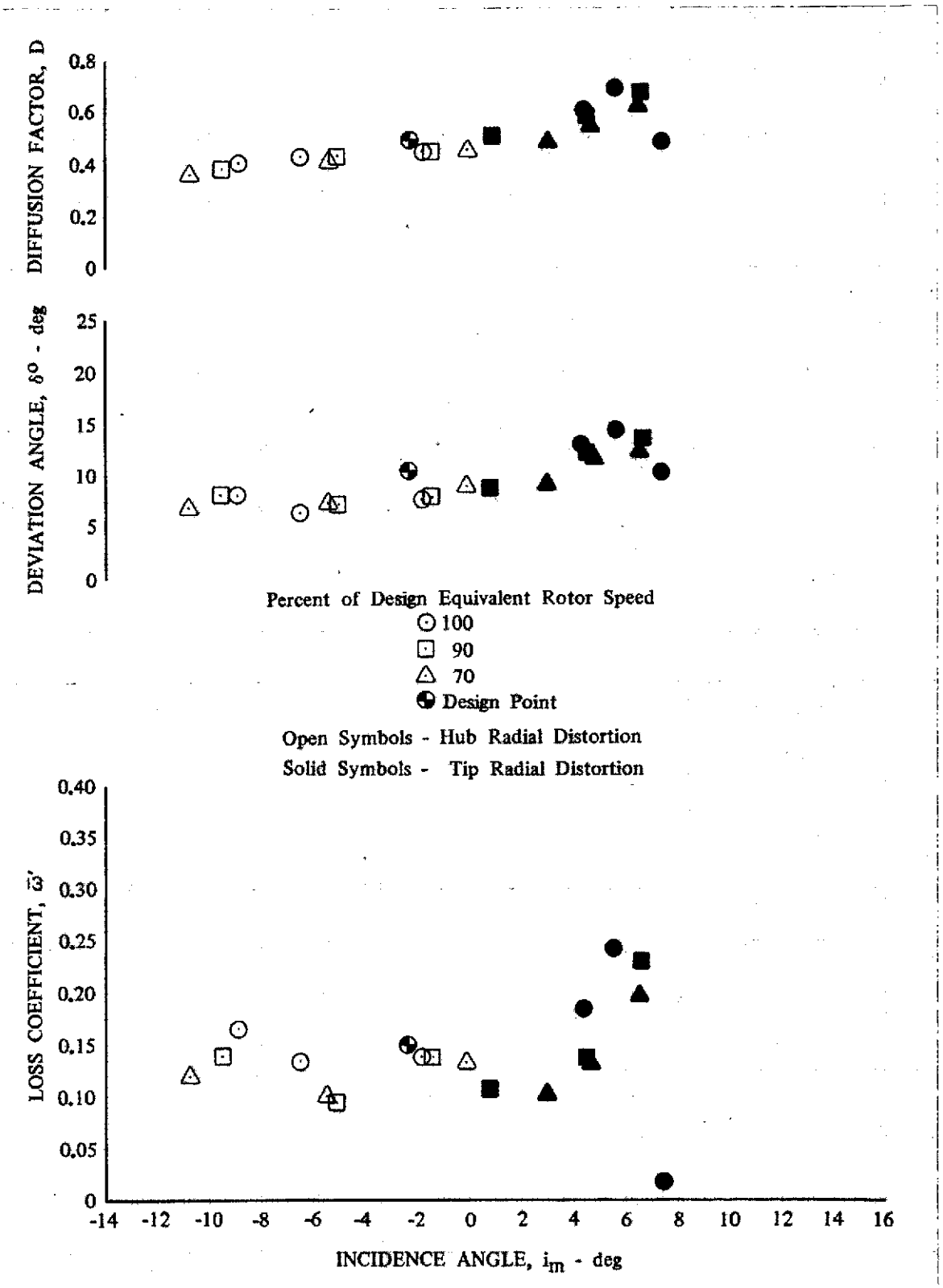


Figure 28b. Rotor D Blade Element Performance; 10% Span from Tip; Hub and Tip Radial Distortion

DF 97737

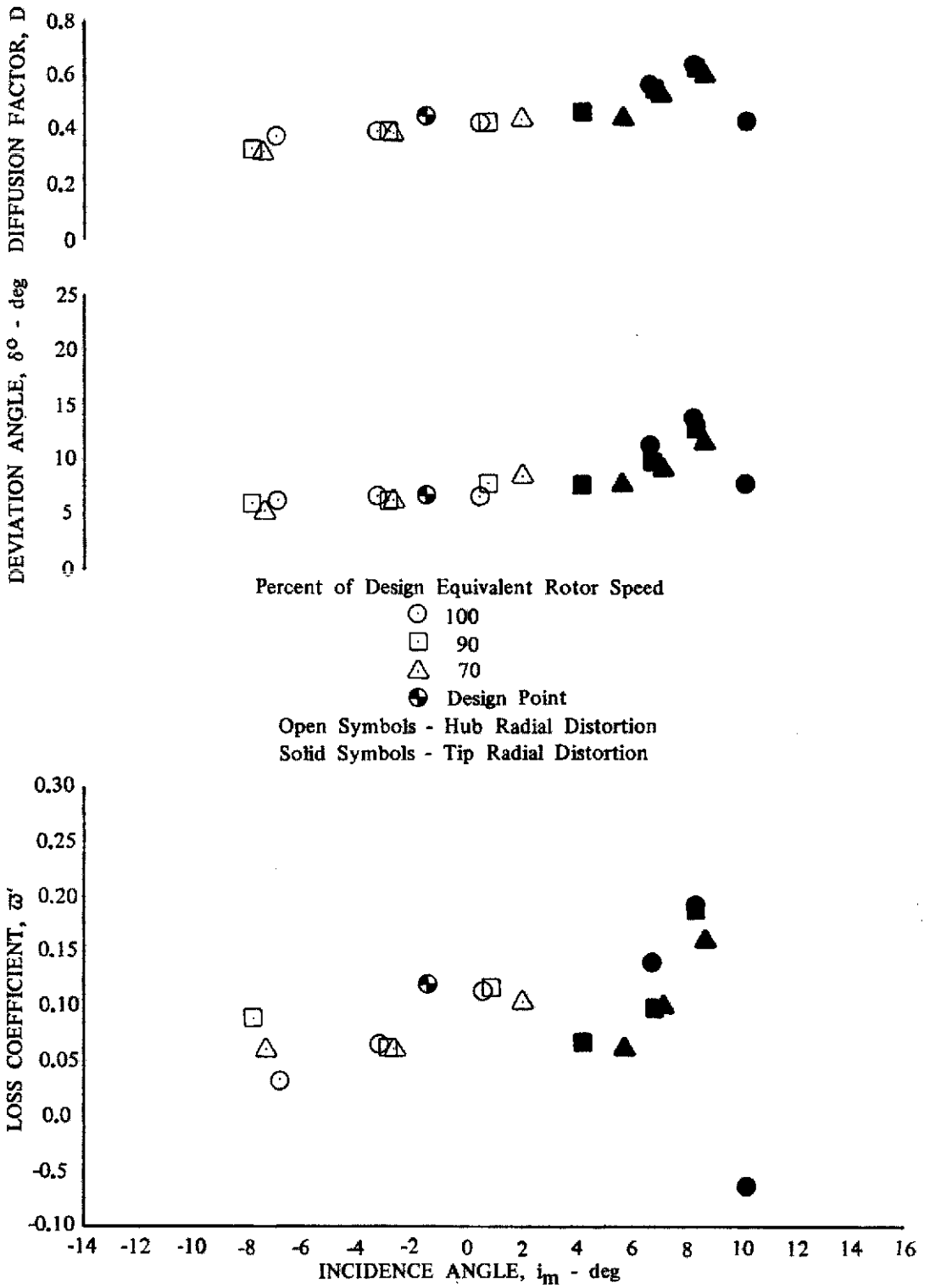


Figure 28c. Rotor D Blade Element Performance; 15% Span from Tip; Hub and Tip Radial Distortion

DF 97738

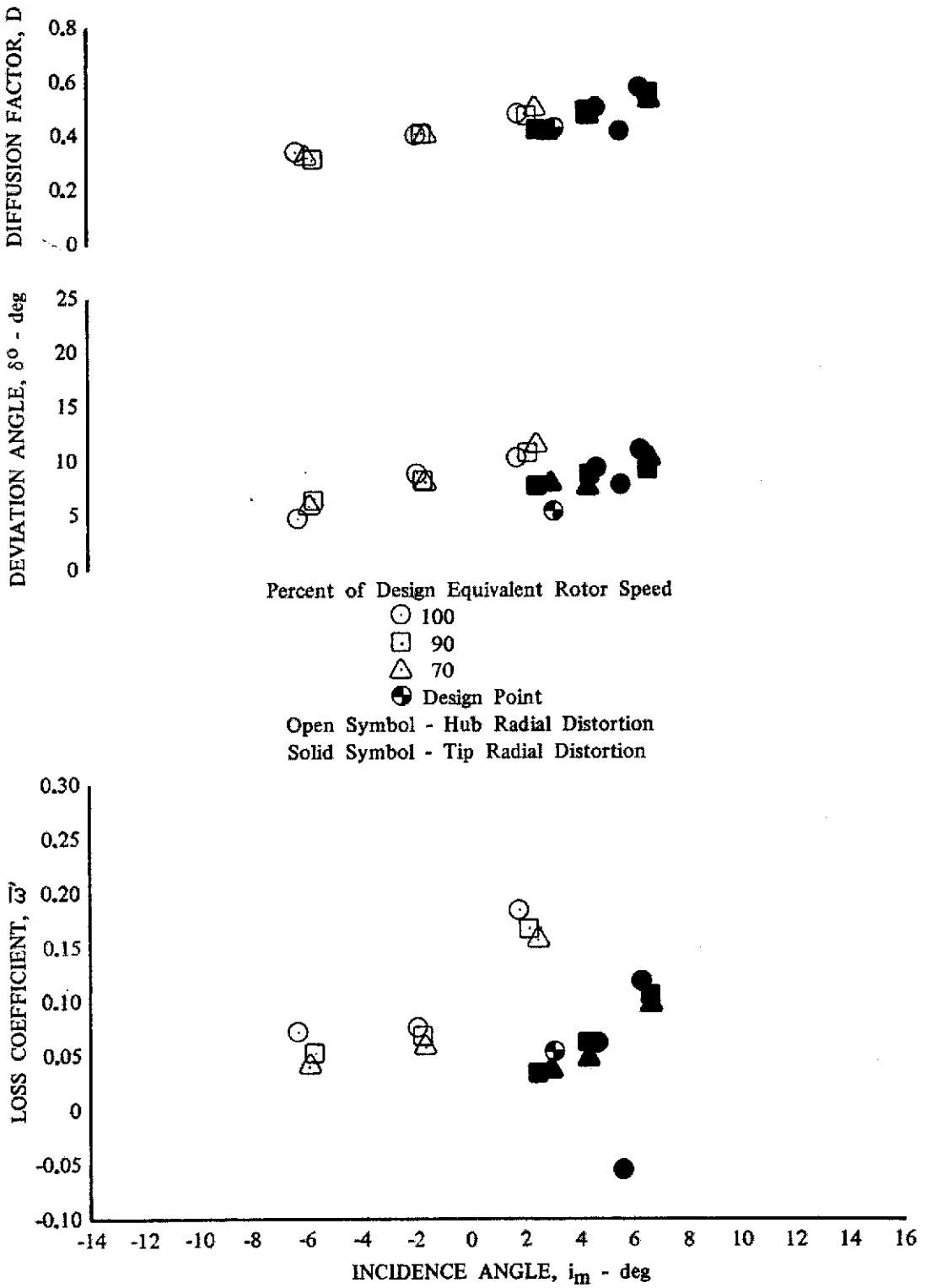


Figure 28d. Rotor D Blade Element Performance; 30% Span from Tip; Hub and Tip Radial Distortion

DF 97739

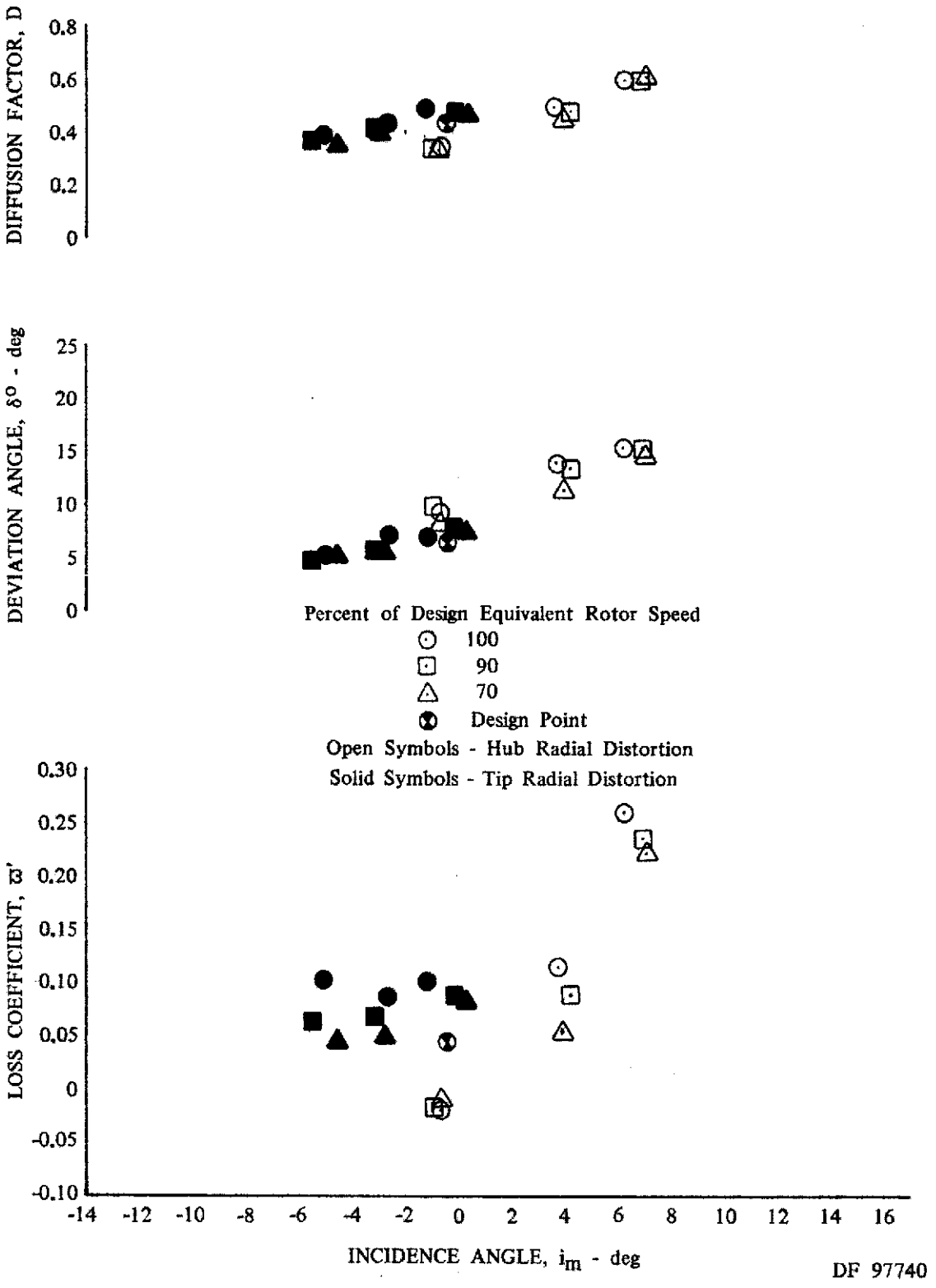


Figure 28e. Rotor D Blade Element Performance; 50% Span; Hub and Tip Radial Distortion DF 97740

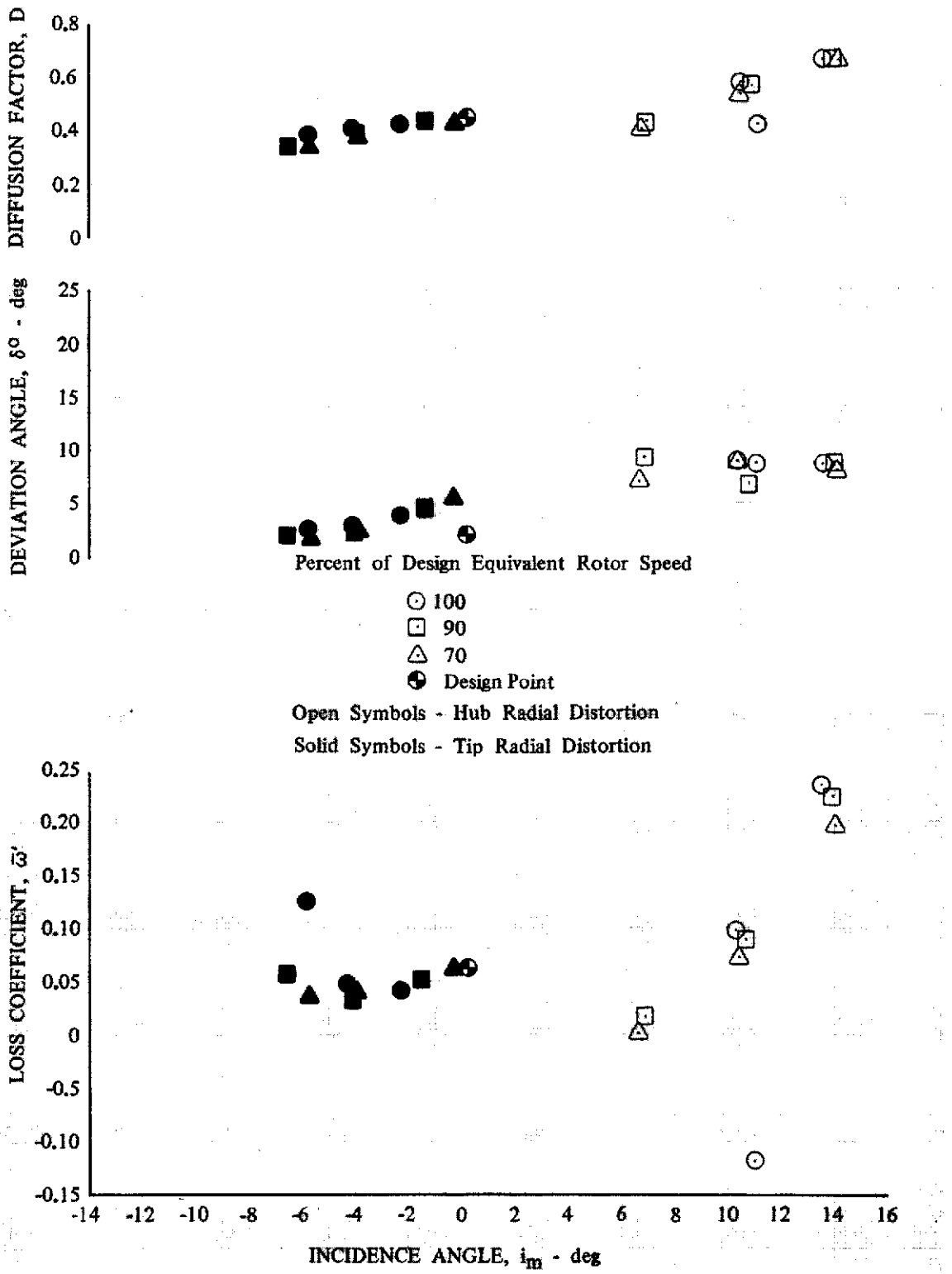


Figure 28f. Rotor D Blade Element Performance; 70% Span from Tip; Hub and Tip Radial Distortion

DF 97741

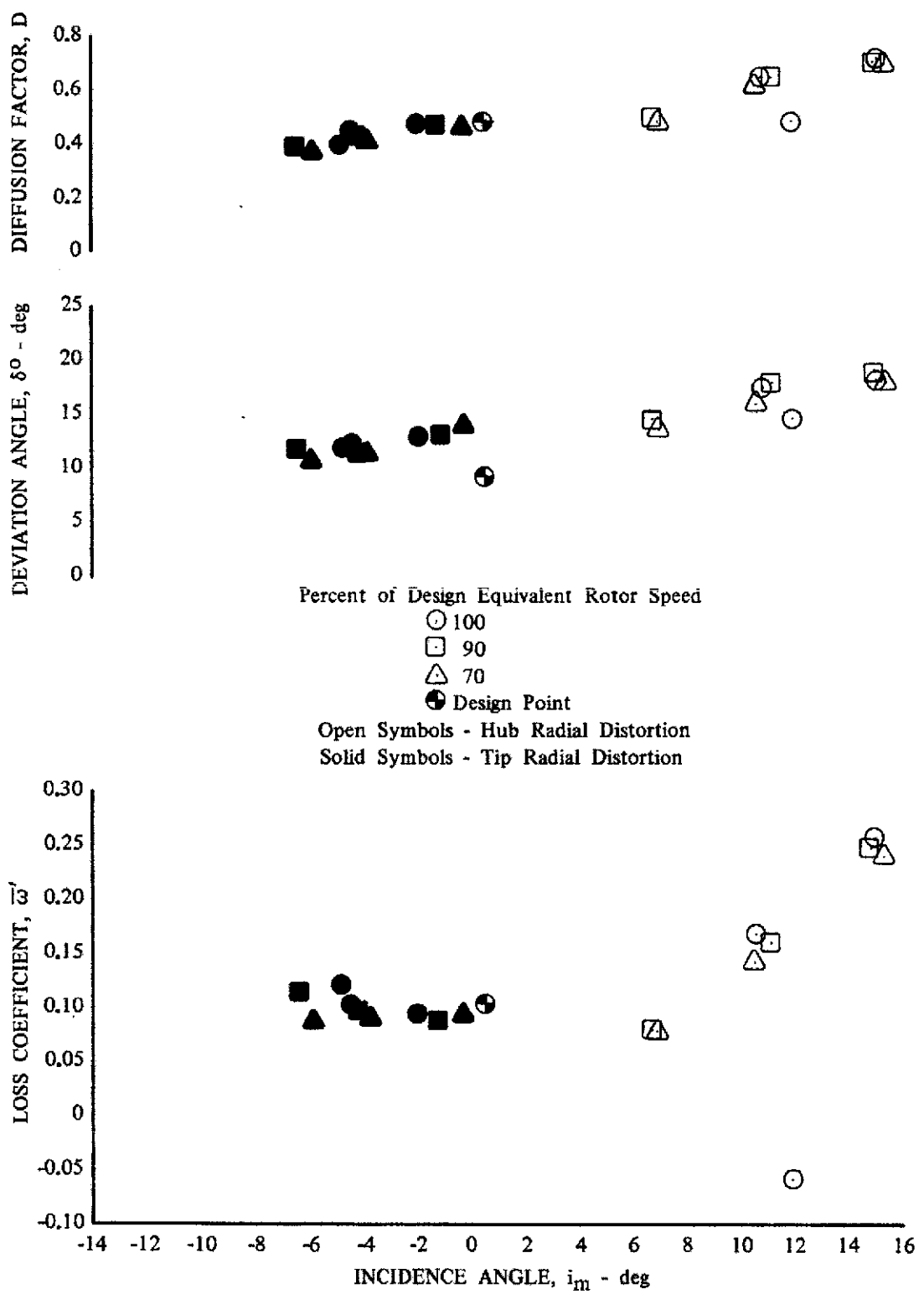


Figure 28g. Rotor D Blade Element Performance; 85% Span from Tip; Hub and Tip Radial Distortion

DF 97742

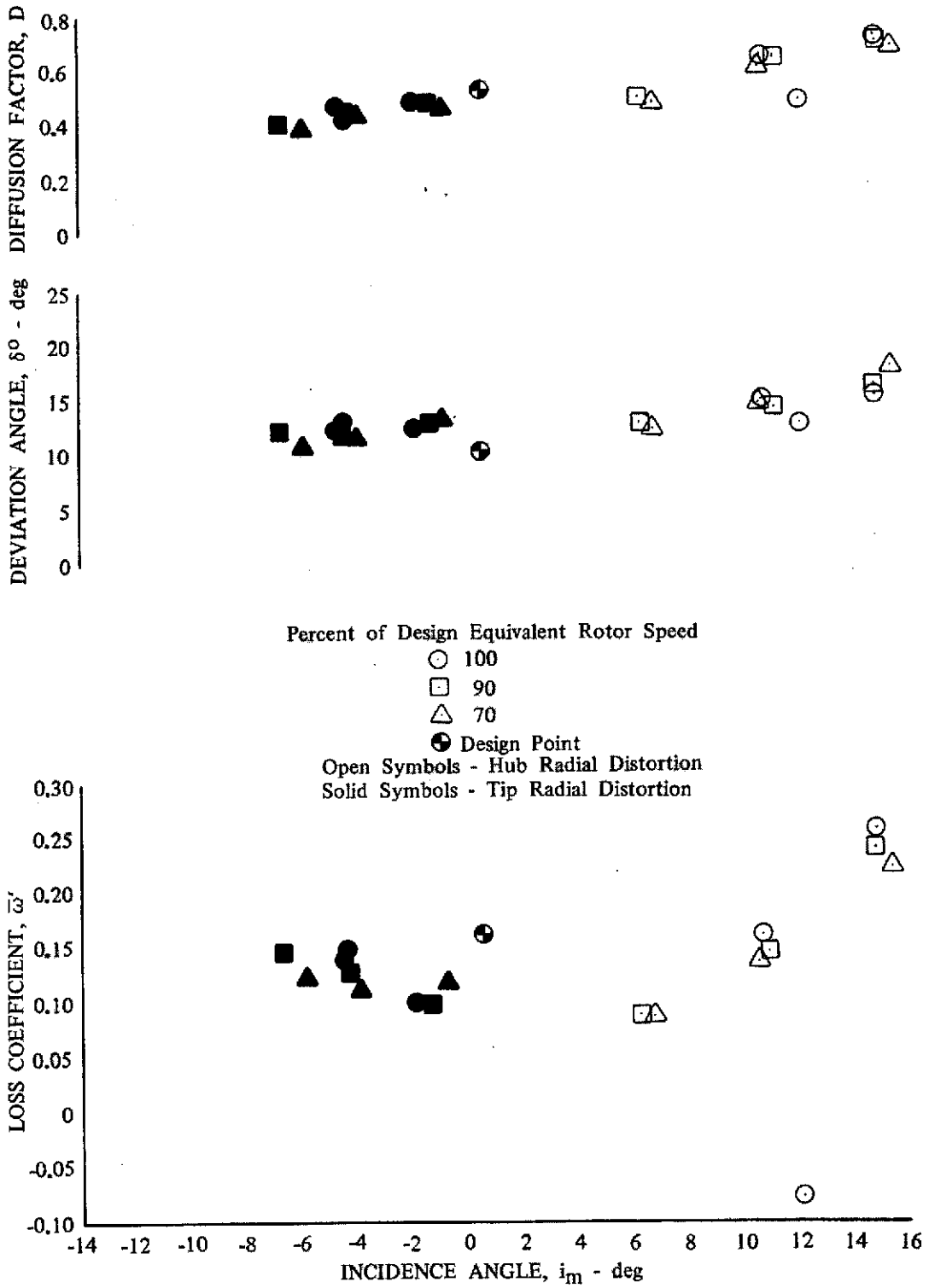


Figure 28h. Rotor D Blade Element Performance; 90% Span from Tip; Hub and Tip Radial Distortion

DF 97743

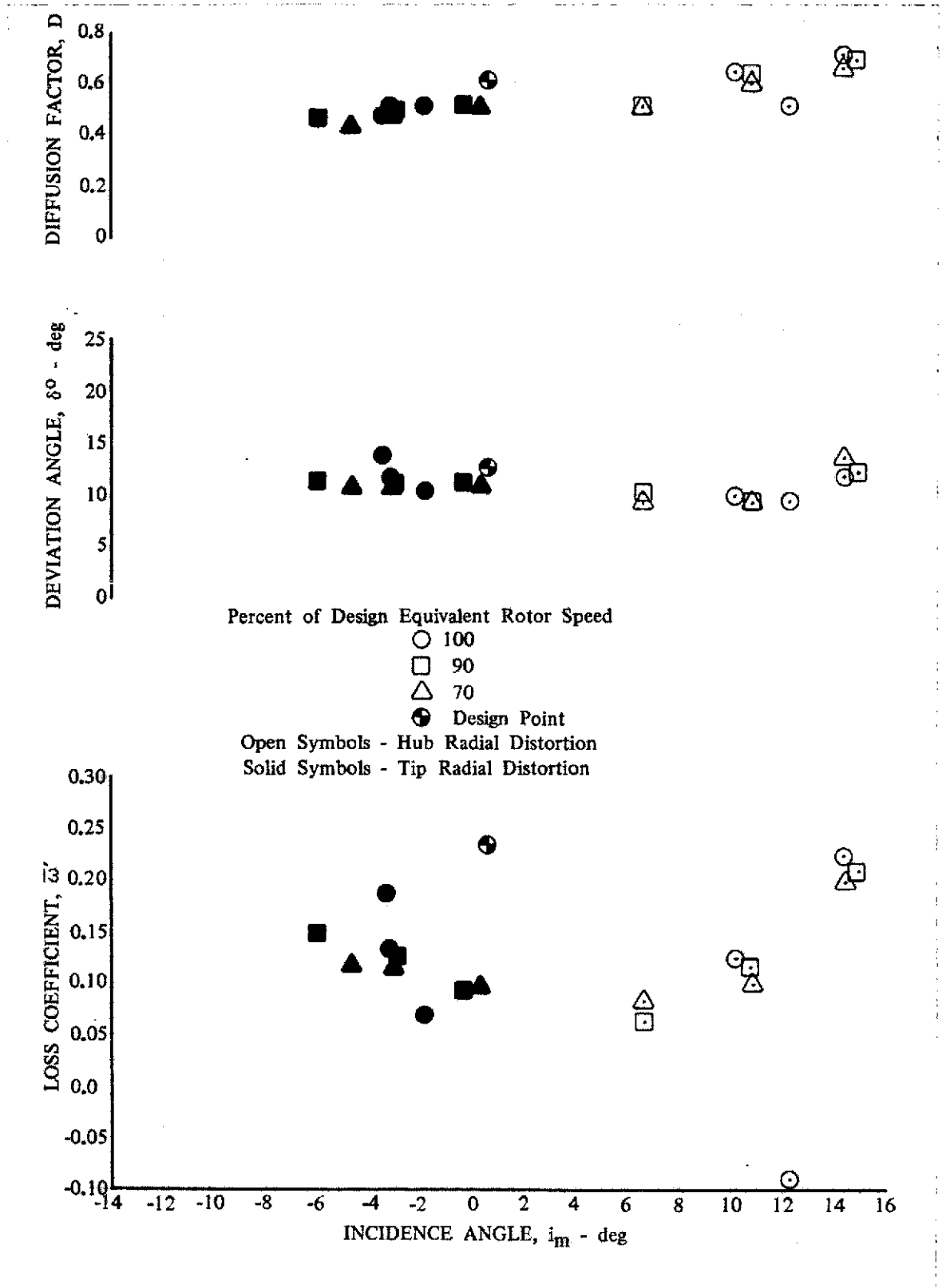


Figure 28i. Rotor D Blade Element Performance; 95% Span from Tip; Hub and Tip Radial Distortion

DF 97744

C.2

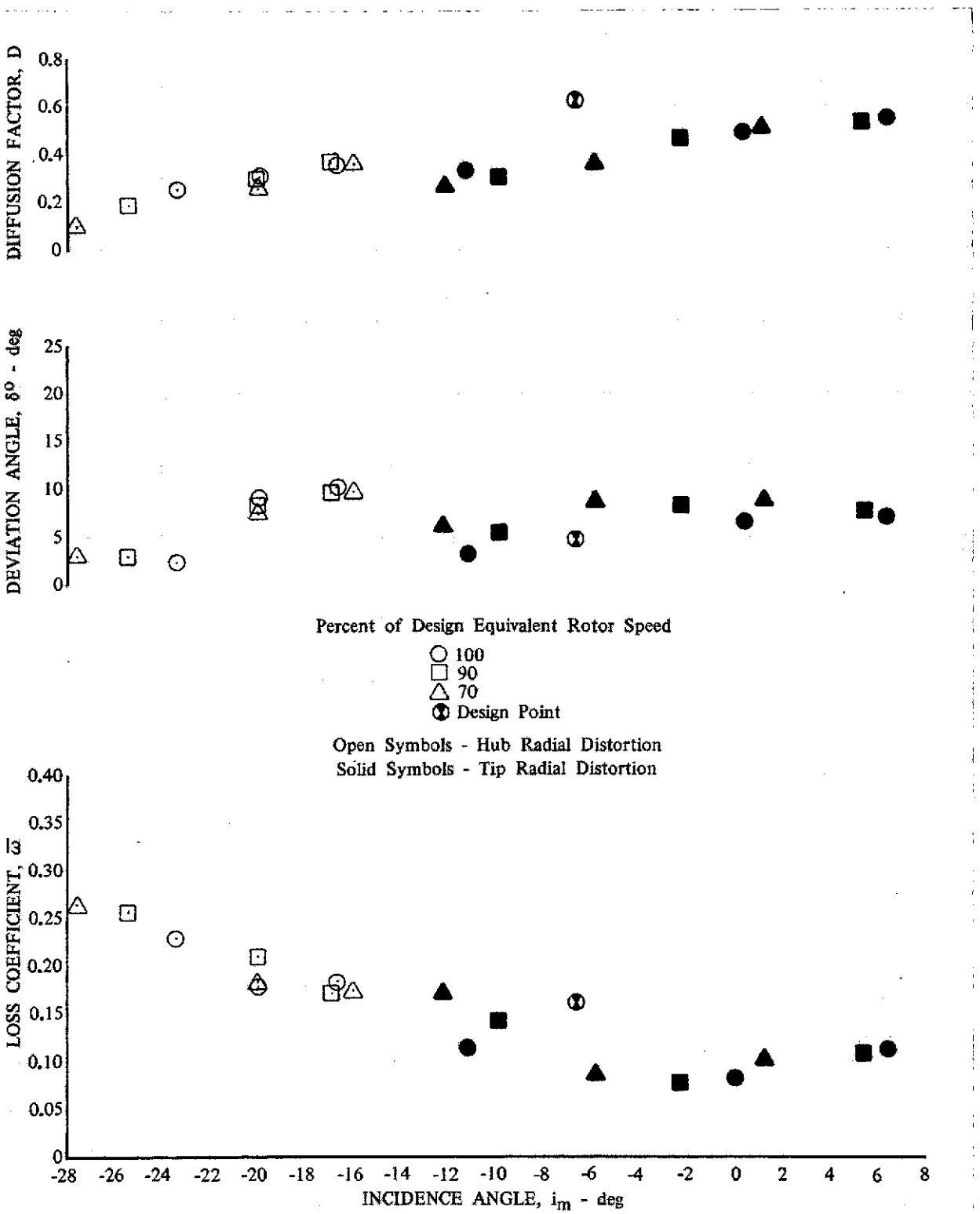


Figure 29a. Stator D Blade Element Performance; 5% Span from Tip; Hub and Tip Radial Distortion

DF 97745

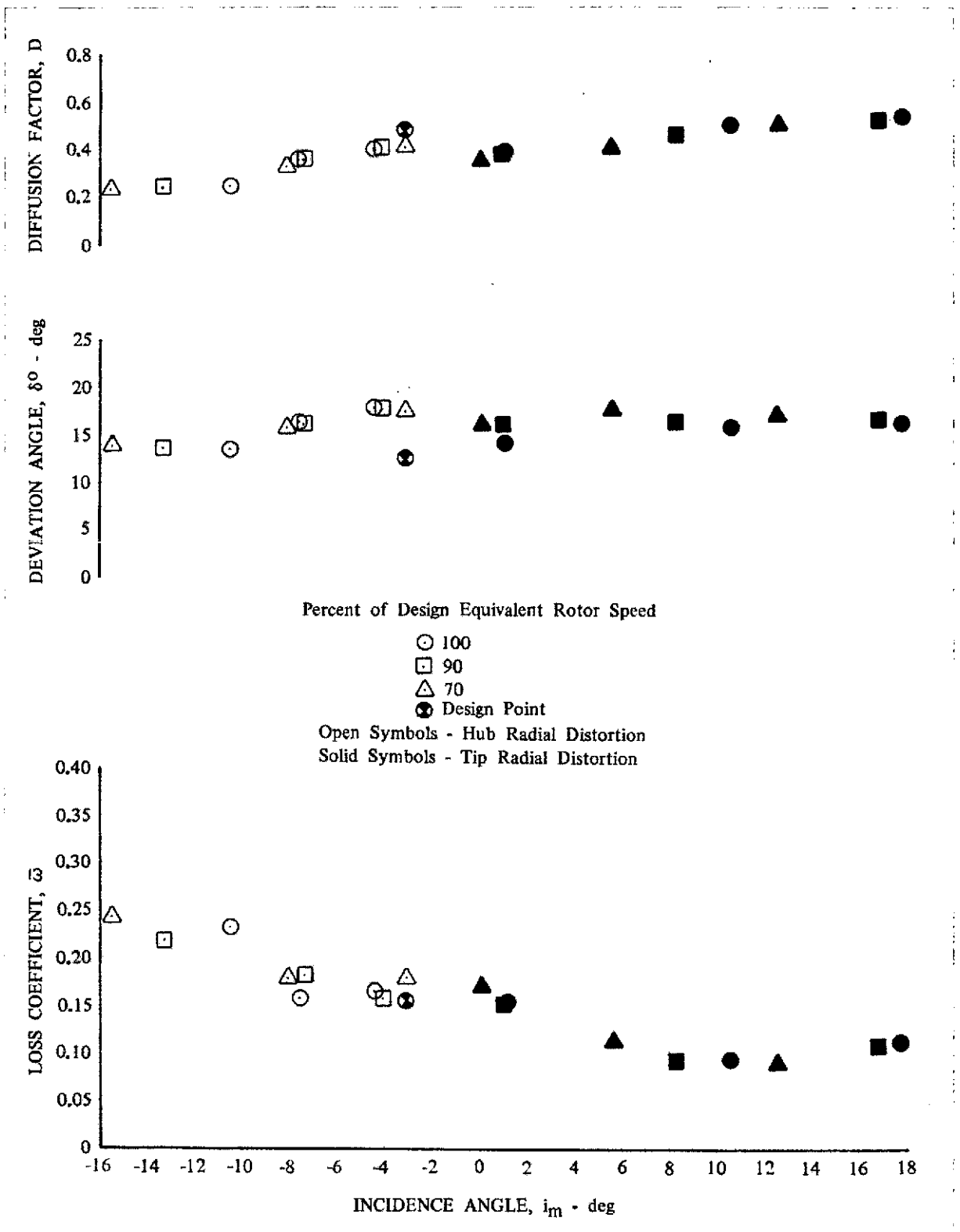


Figure 29b. Stator D Blade Element Performance; 10% Span from Tip; Hub and Tip Radial Distortion

DF 97746

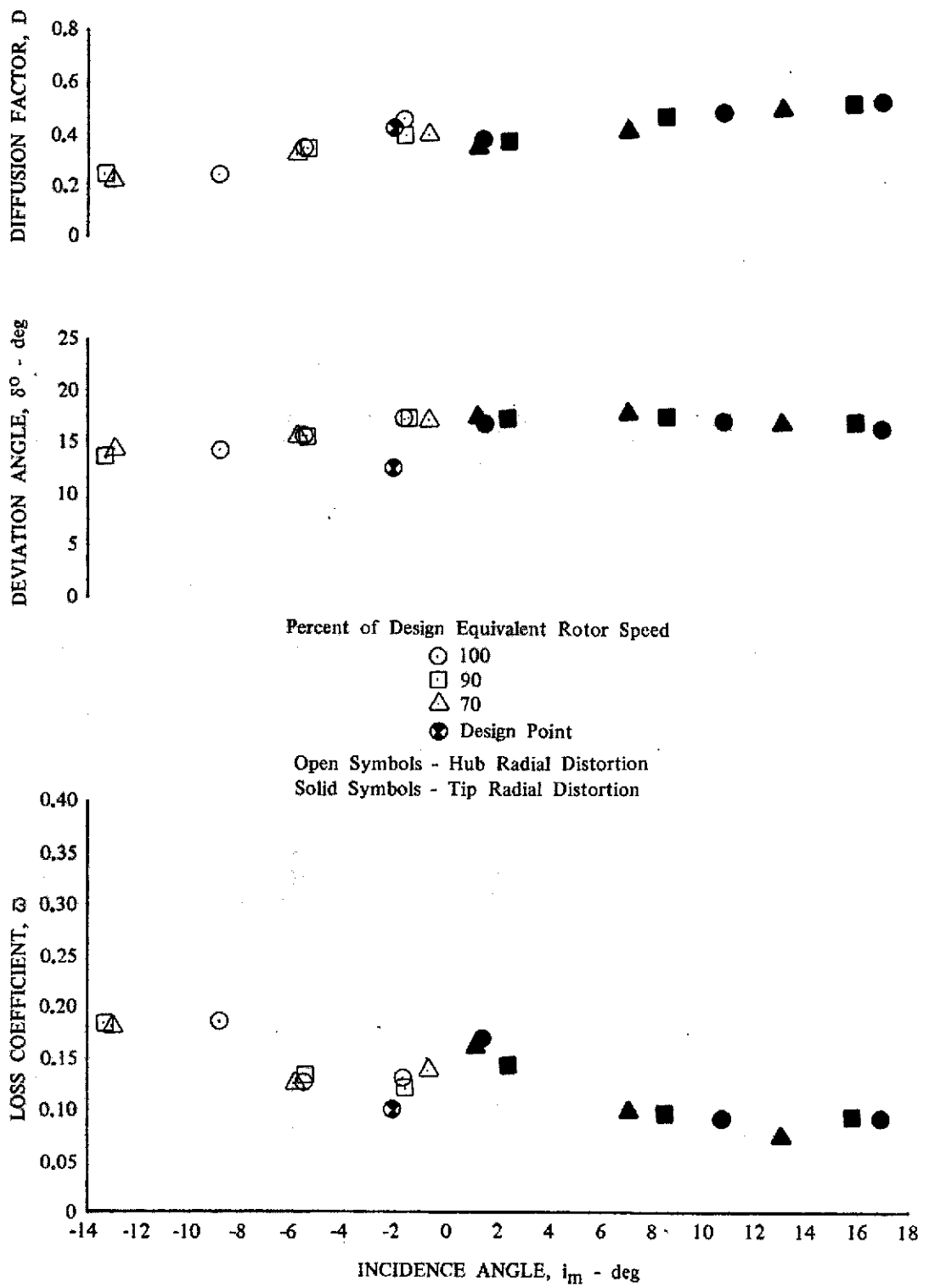


Figure 29c. Stator D Blade Element Performance; 15% Span from Tip; Hub and Tip Radial Distortion

DF 97747

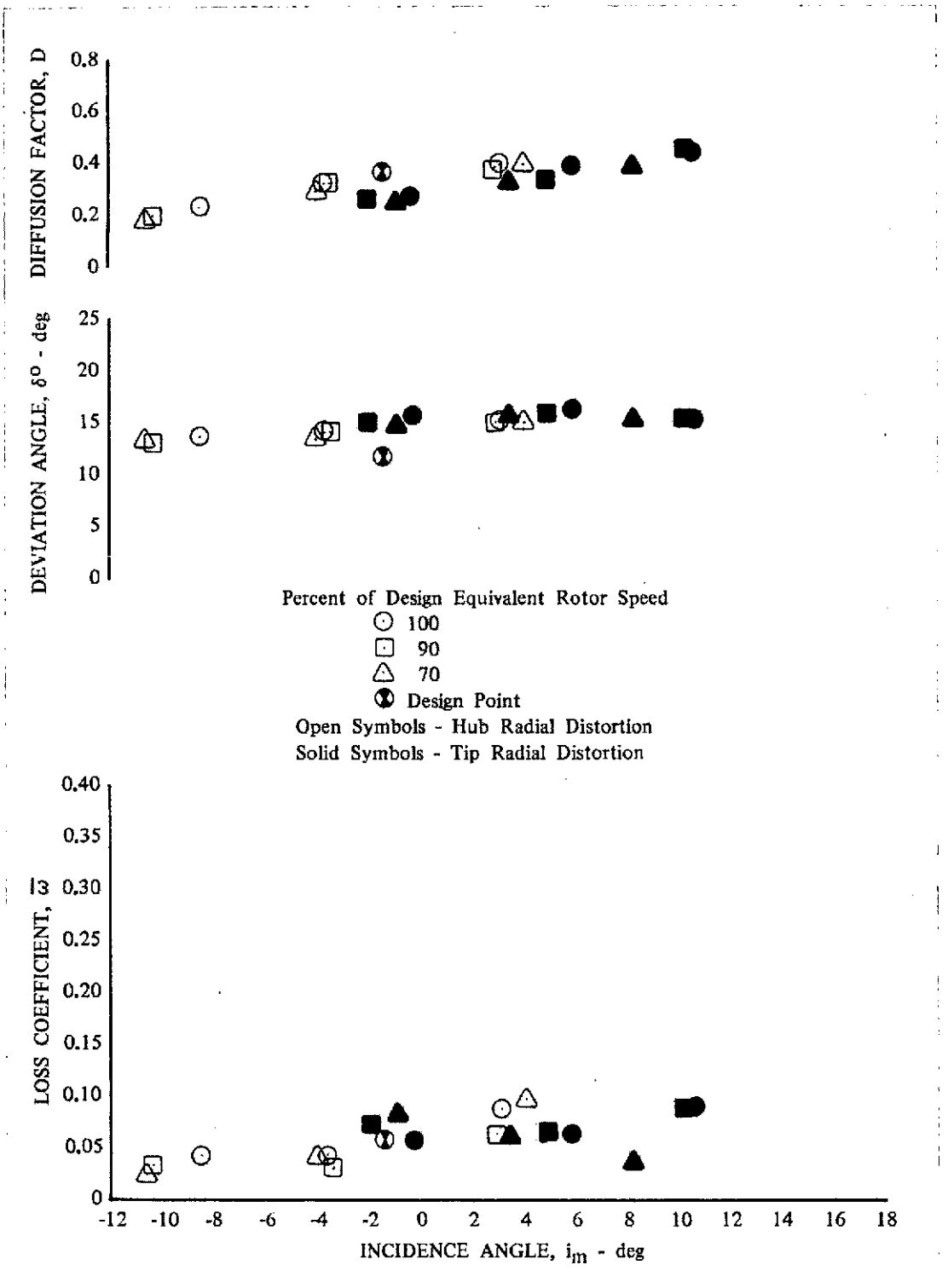


Figure 29d. Stator D Blade Element Performance; 30% Span from Tip; Hub and Tip Radial Distortion

DF 97748

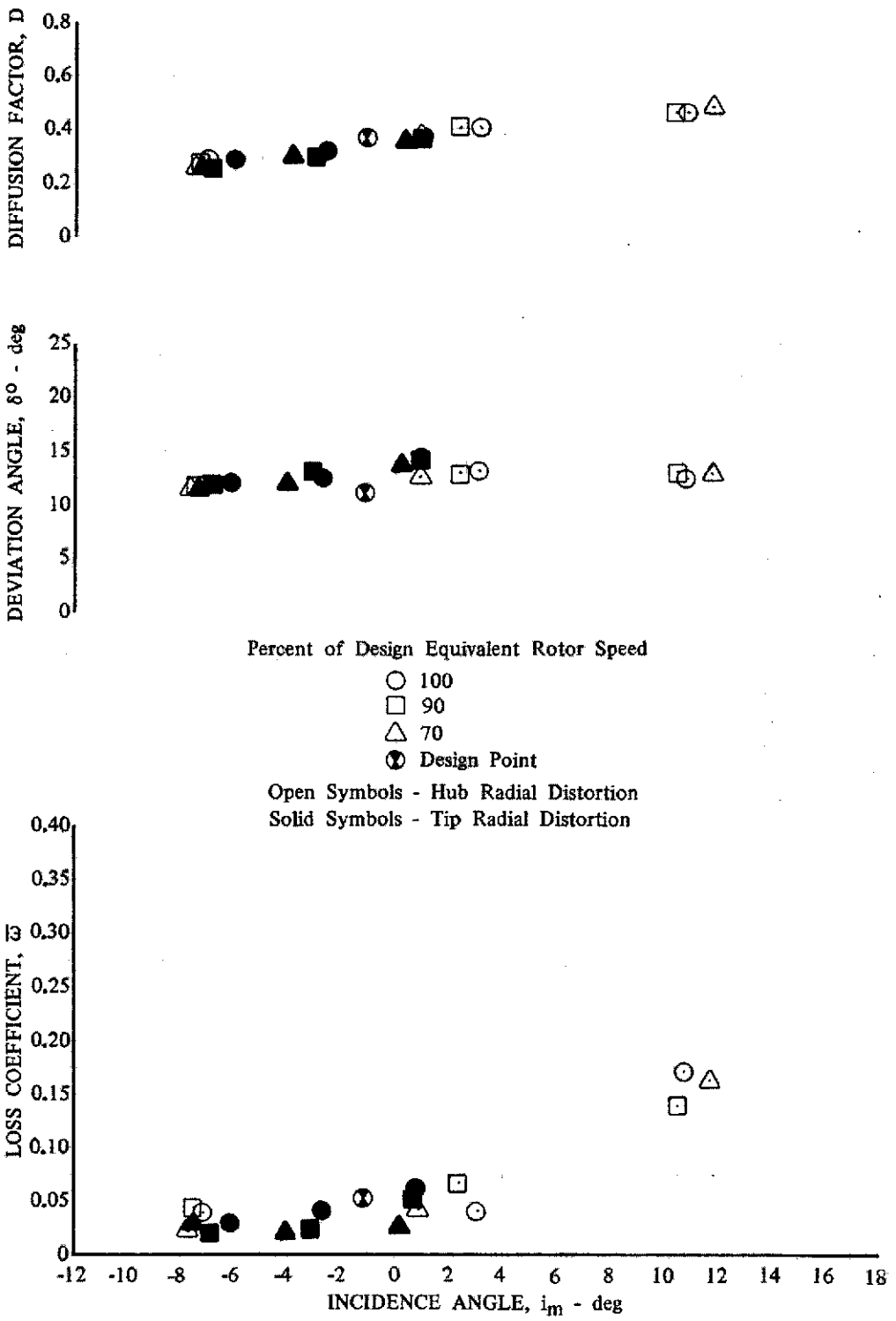


Figure 29e. Stator D Blade Element Performance; 50% Span; Hub and Tip Radial Distortion DF 97749

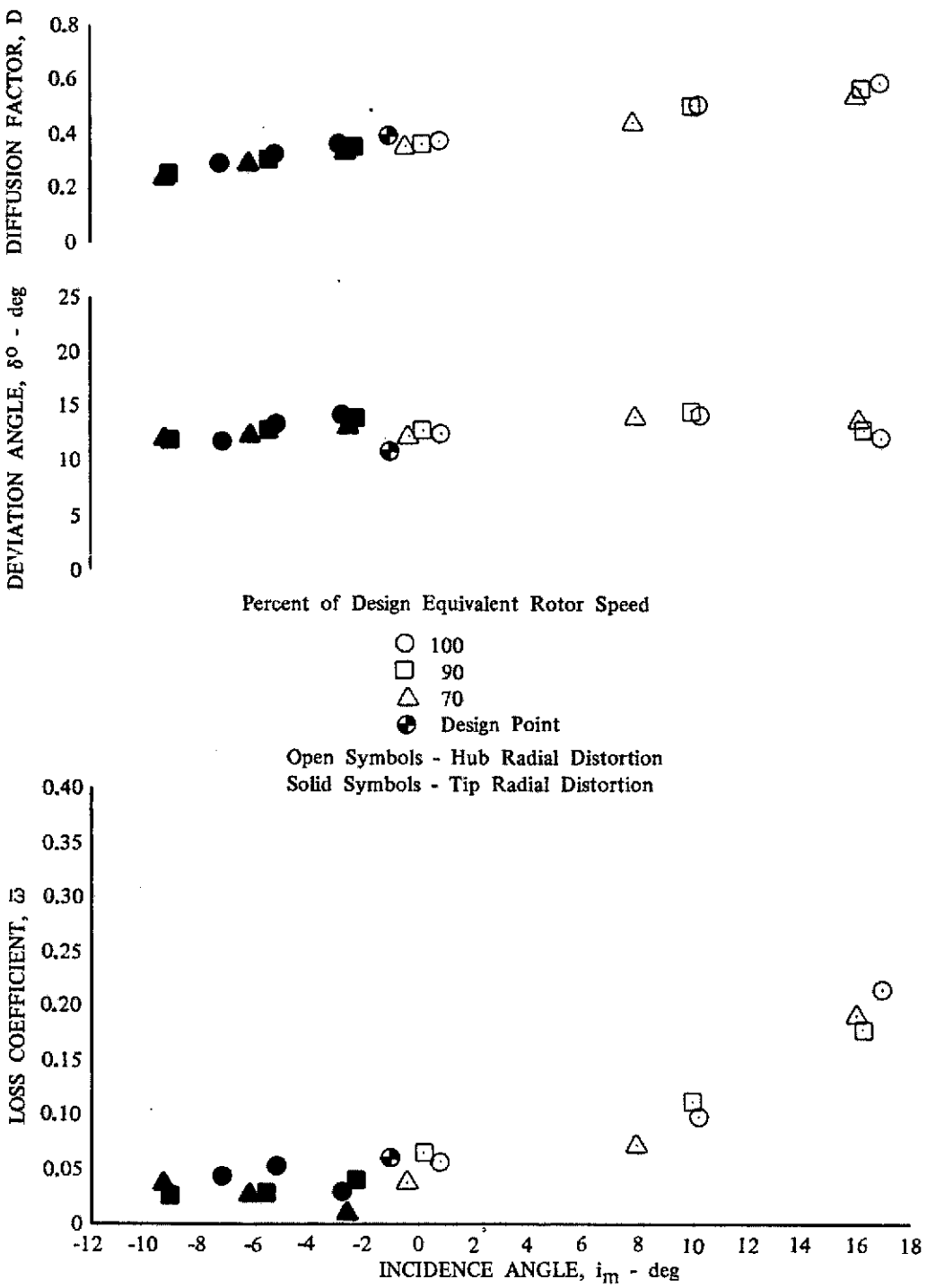


Figure 29f. Stator D Blade Element Performance; 70% Span from Tip; Hub and Tip Radial Distortion

DF 97750

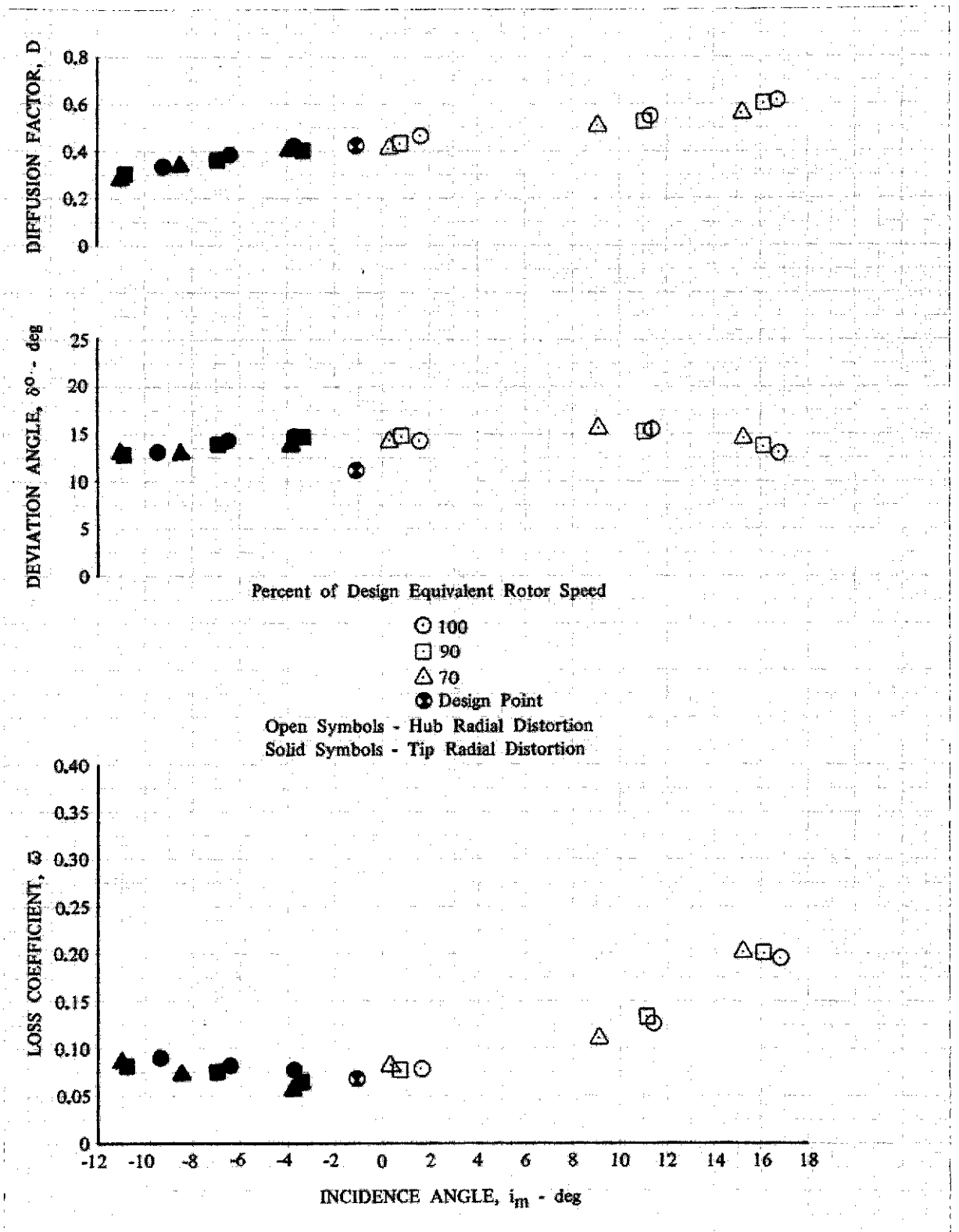


Figure 29g. Stator D Blade Element Performance; 85% Span from Tip; Hub and Tip Radial Distortion

DF 97751

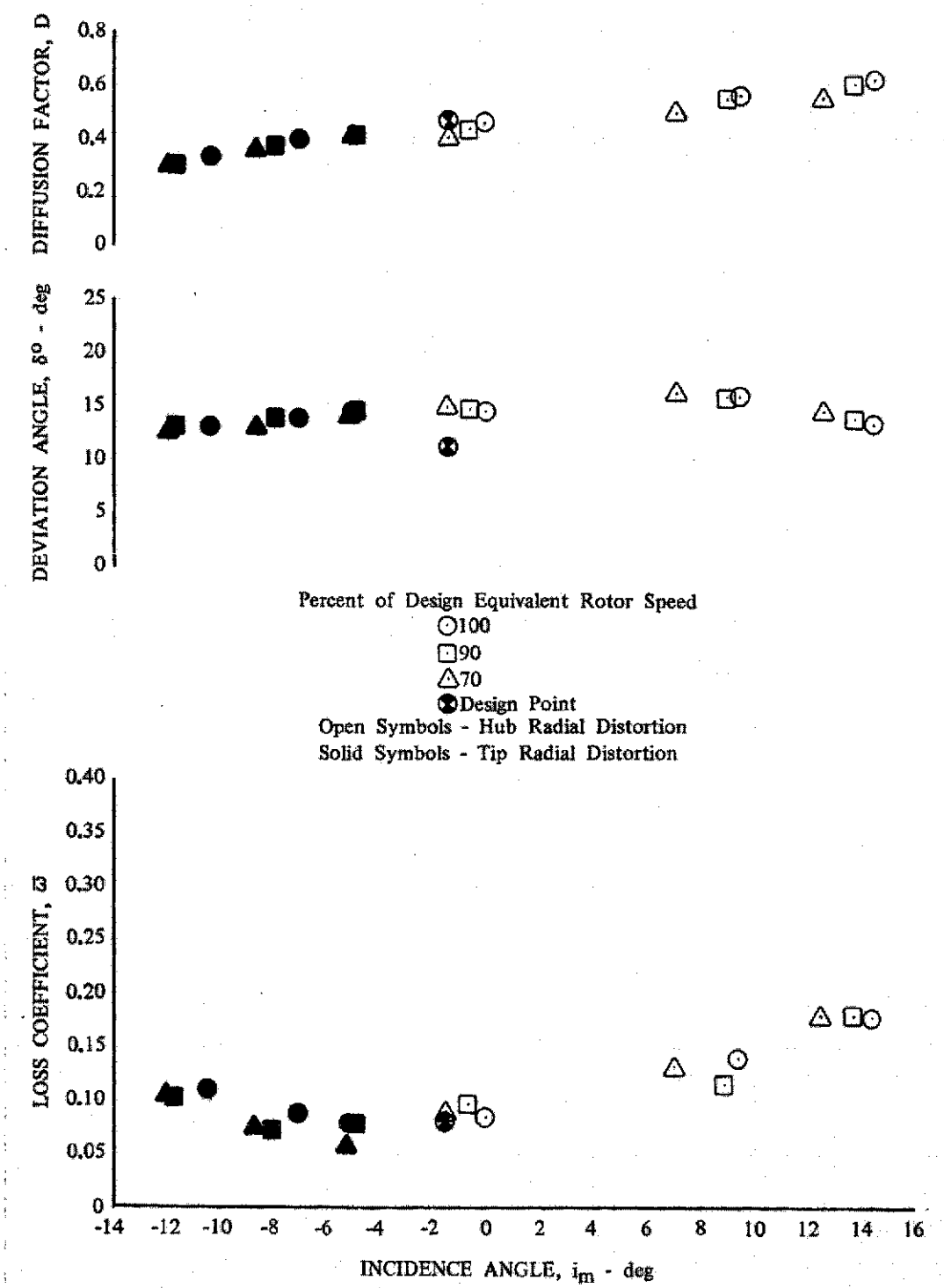


Figure 29h. Stator D Blade Element Performance; 90% Span from Tip; Hub and Tip Radial Distortion

DF 97752

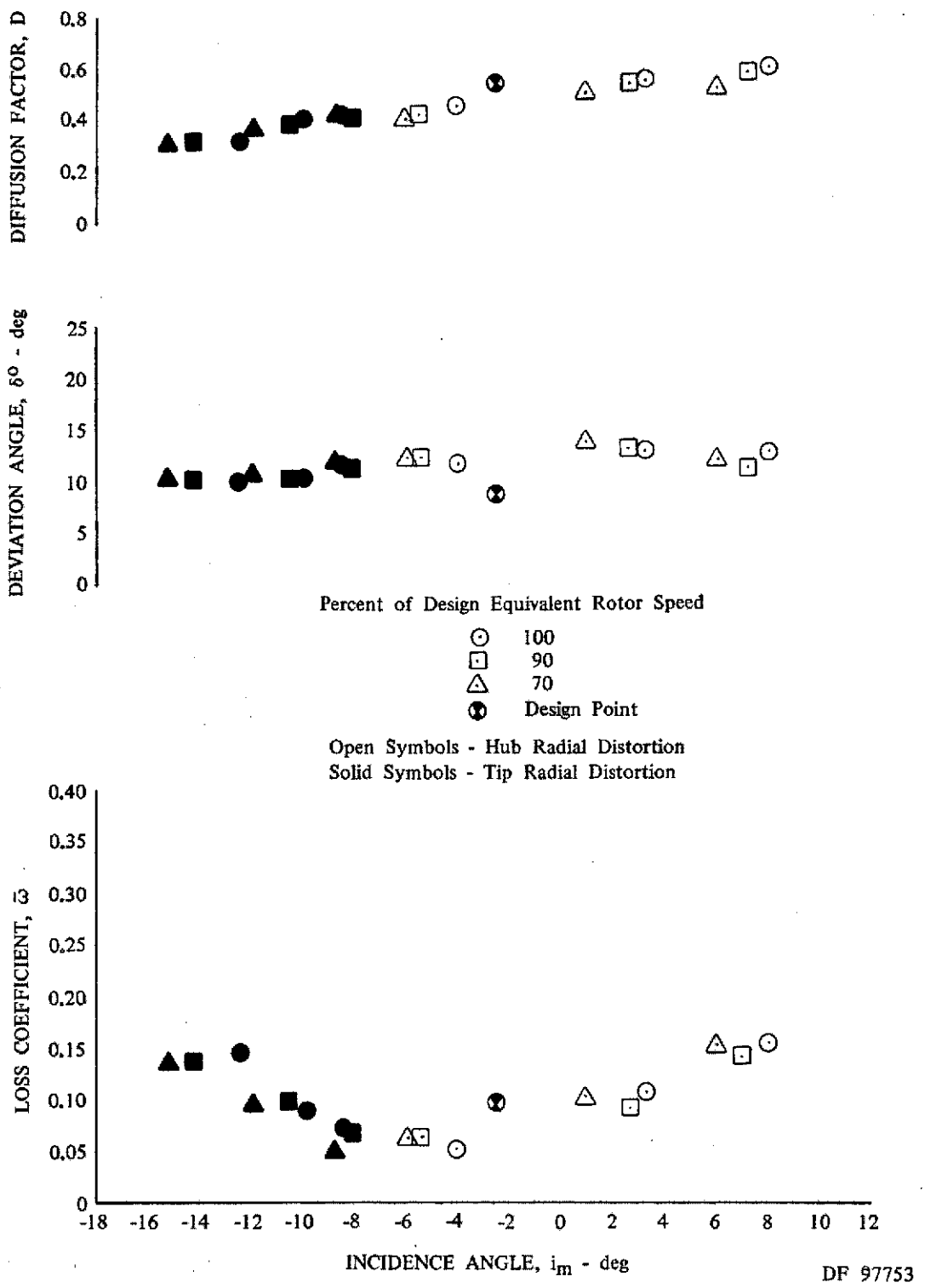


Figure 29i. Stator D Blade Element Performance; 95% Span from Tip; Hub and Tip Radial Distortion DF 97753

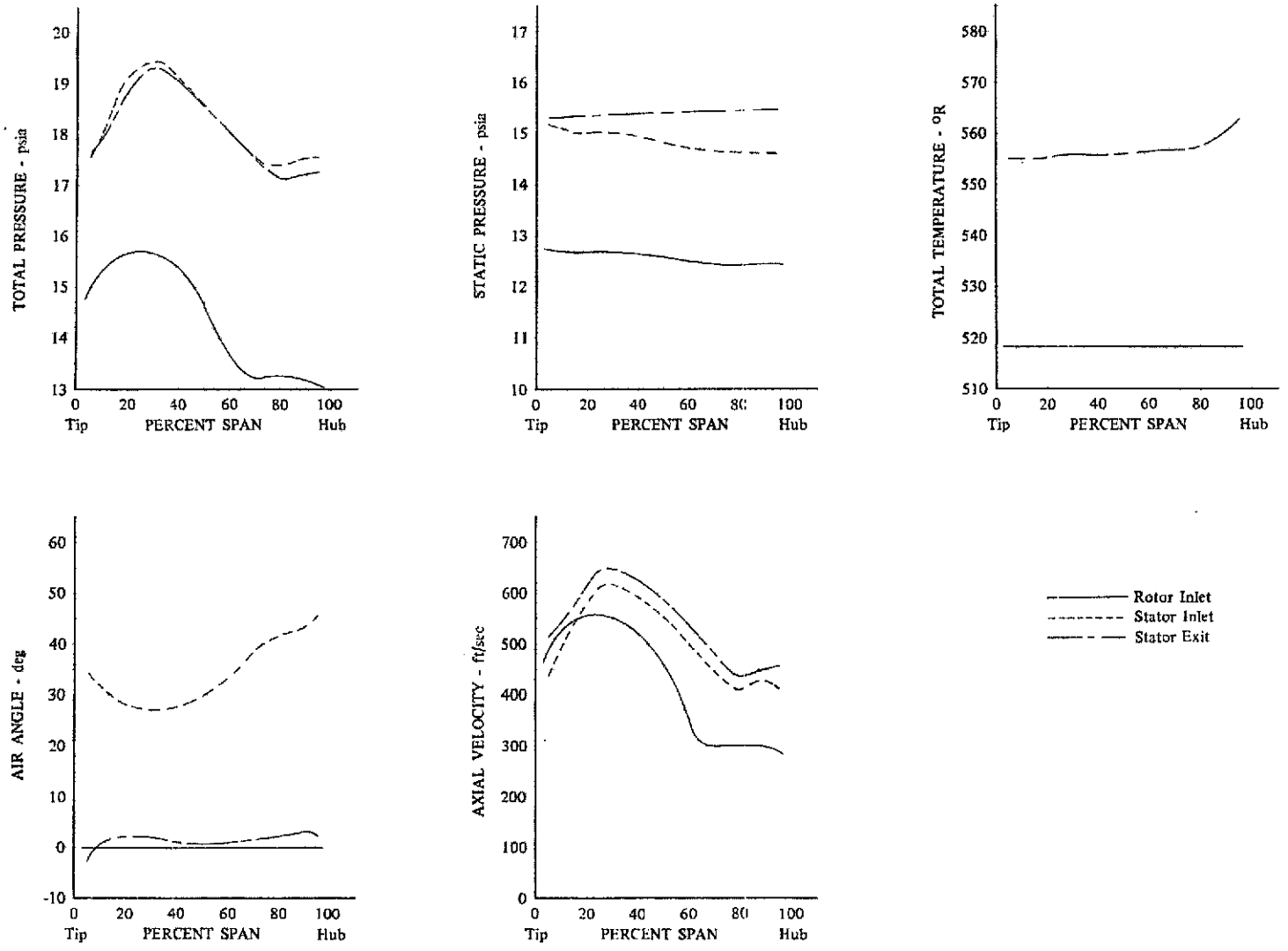


Figure 30a. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 114.76 lb/sec; Hub Radial Distortion

DF 97754

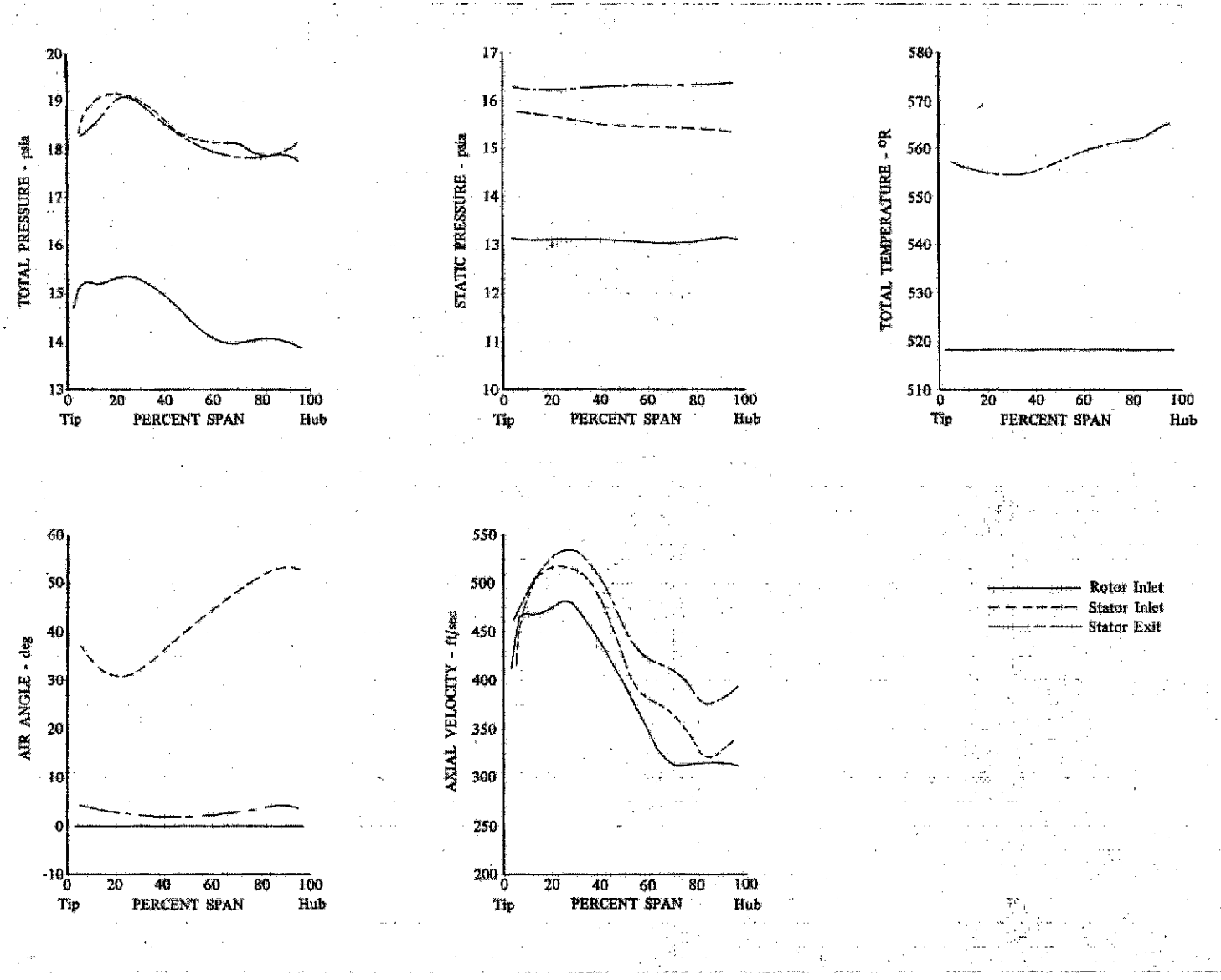


Figure 30b. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 97.44 lb/sec; Hub Radial Distortion

DF 97755

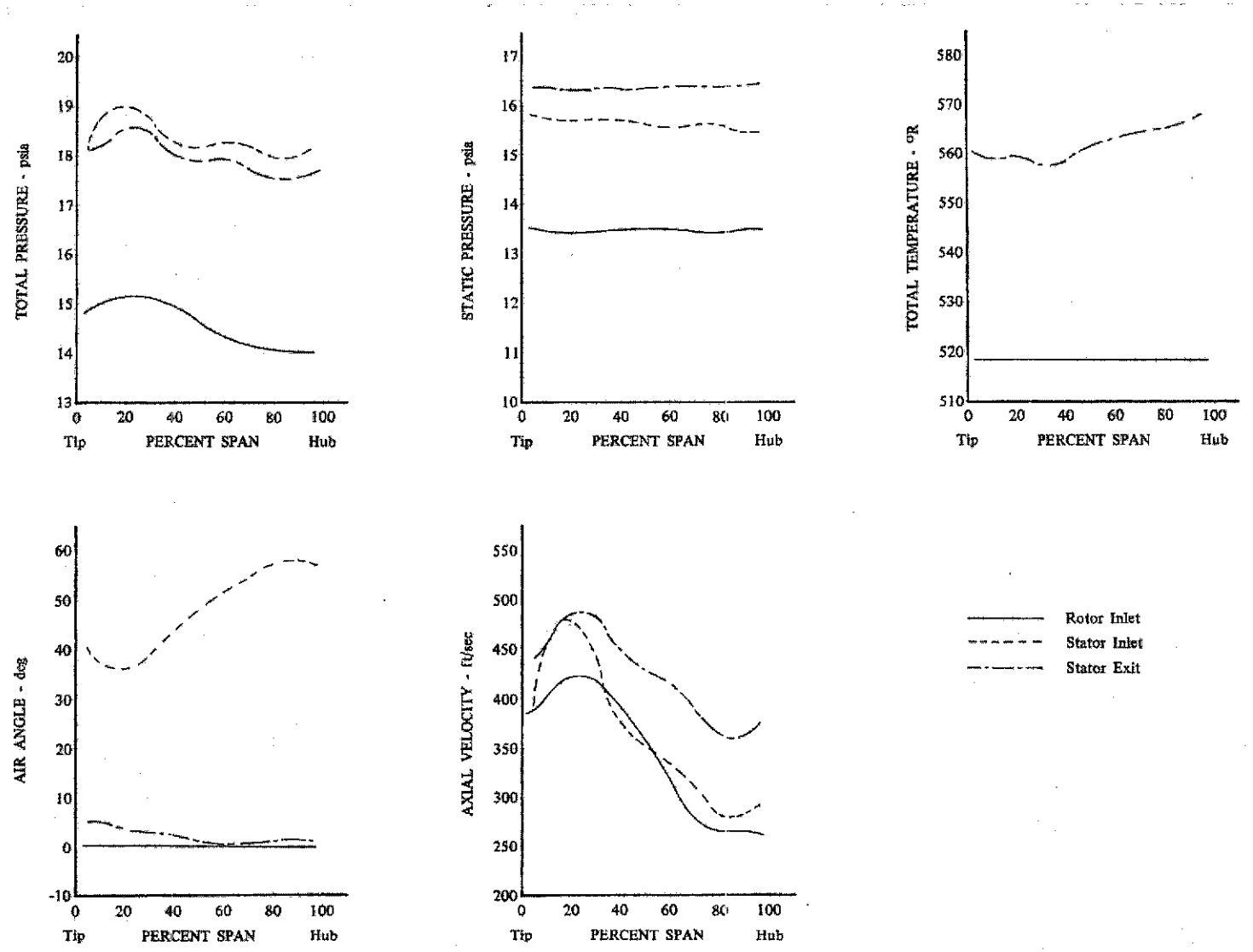


Figure 30c. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 84.40 lb/sec; Hub Radial Distortion

DF 97756

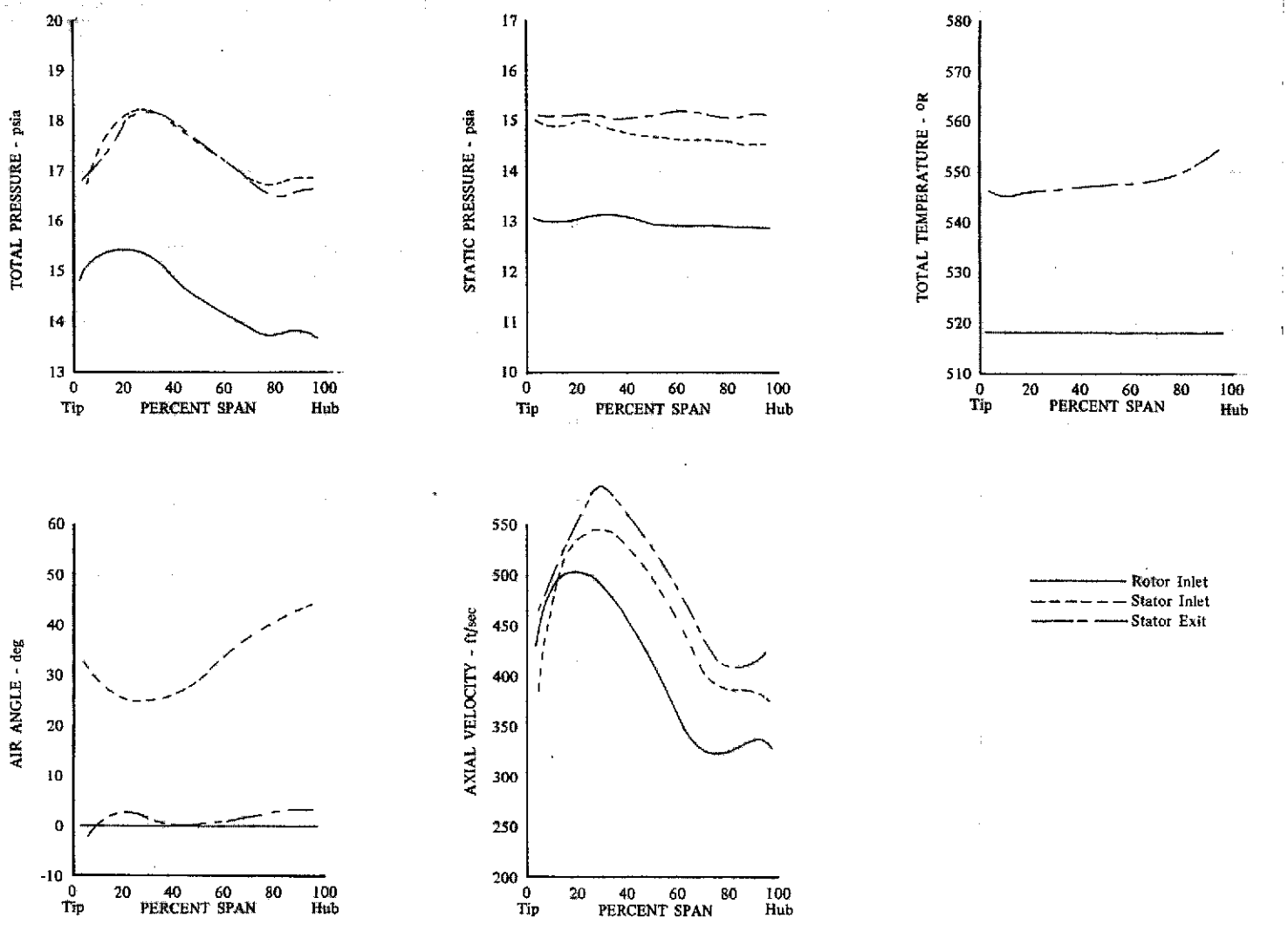


Figure 31a. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit, 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 102.52 lb/sec; Hub Radial Distortion

DF 97757

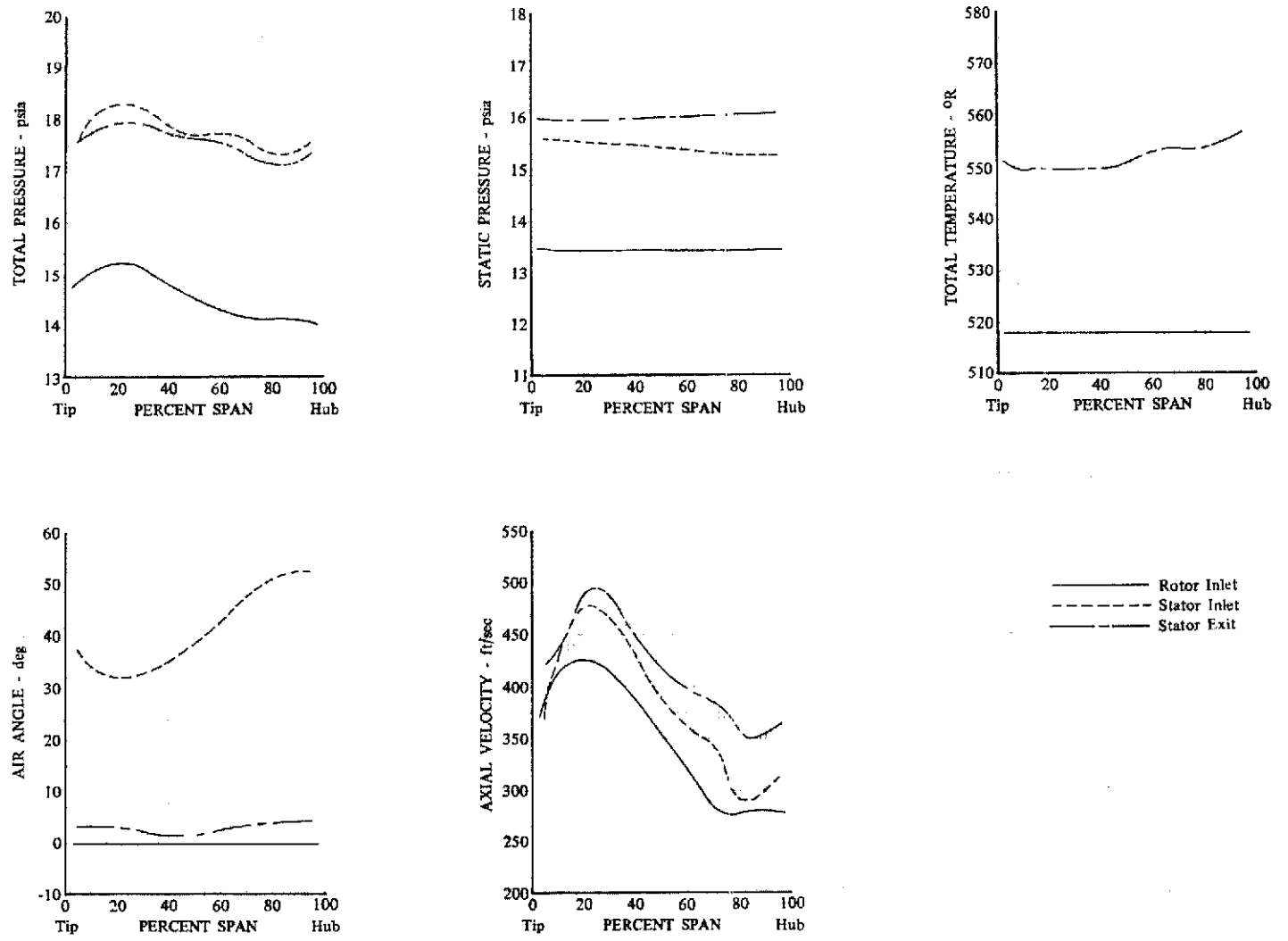


Figure 31b. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 88.60 lb/sec; Hub Radial Distortion

DF 97758

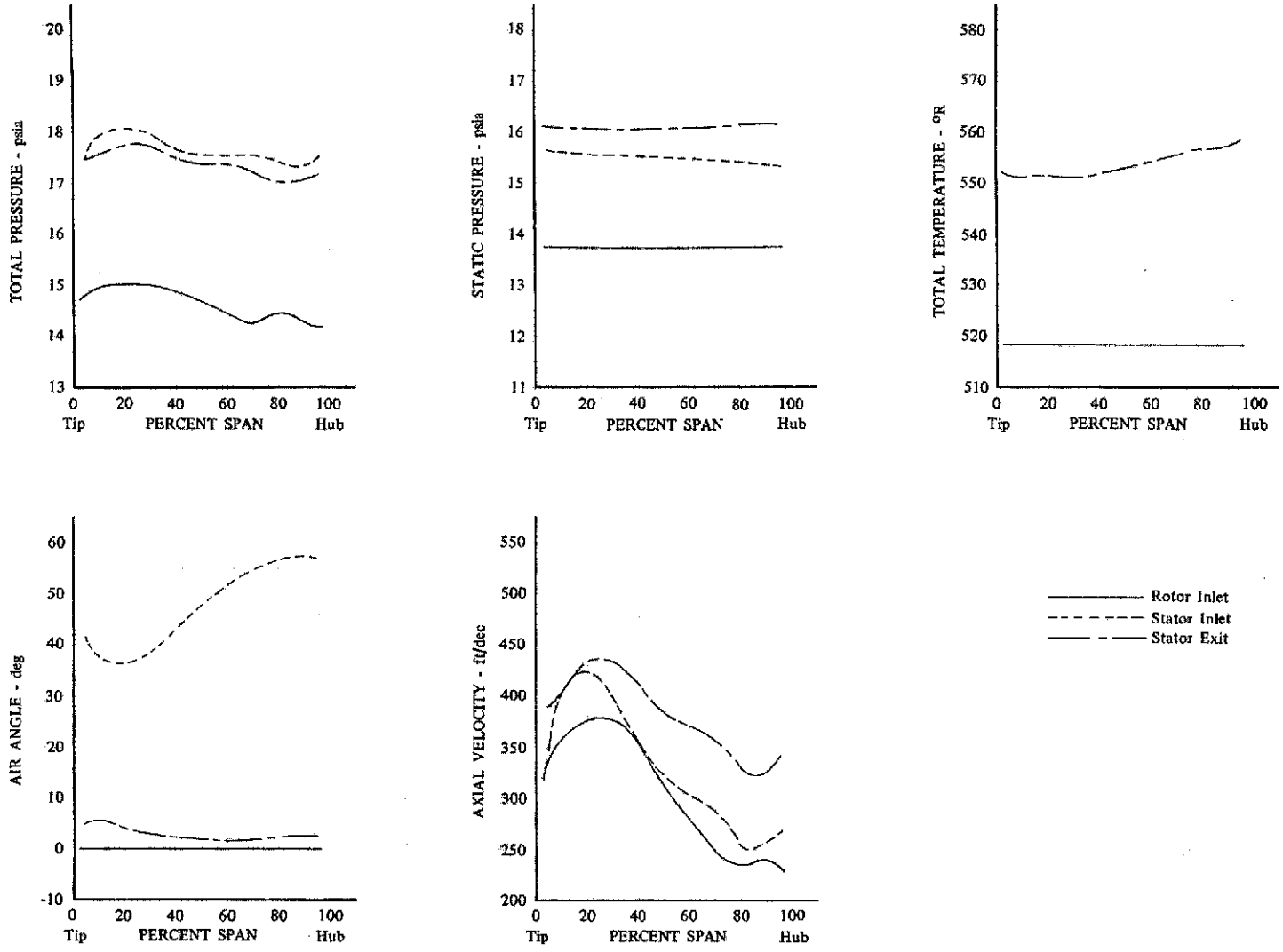


Figure 31c. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 76.35 lb/sec; Hub Radial Distortion

DF 97759

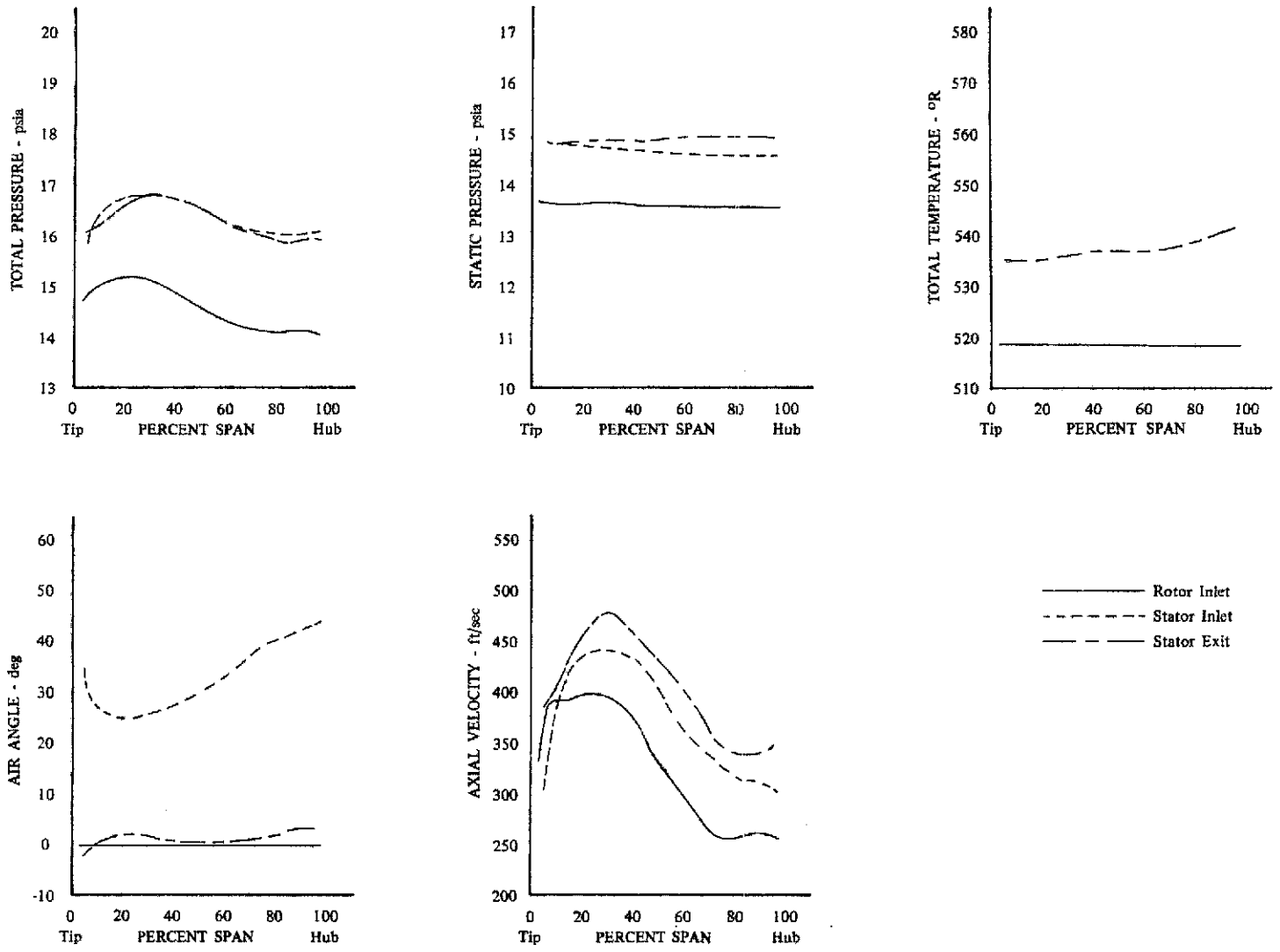


Figure 32a. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 70% Design Equivalent Rotor Speed; Equivalent Weight Flow = 82.96 lb/sec; Hub Radial Distortion

DF 97760

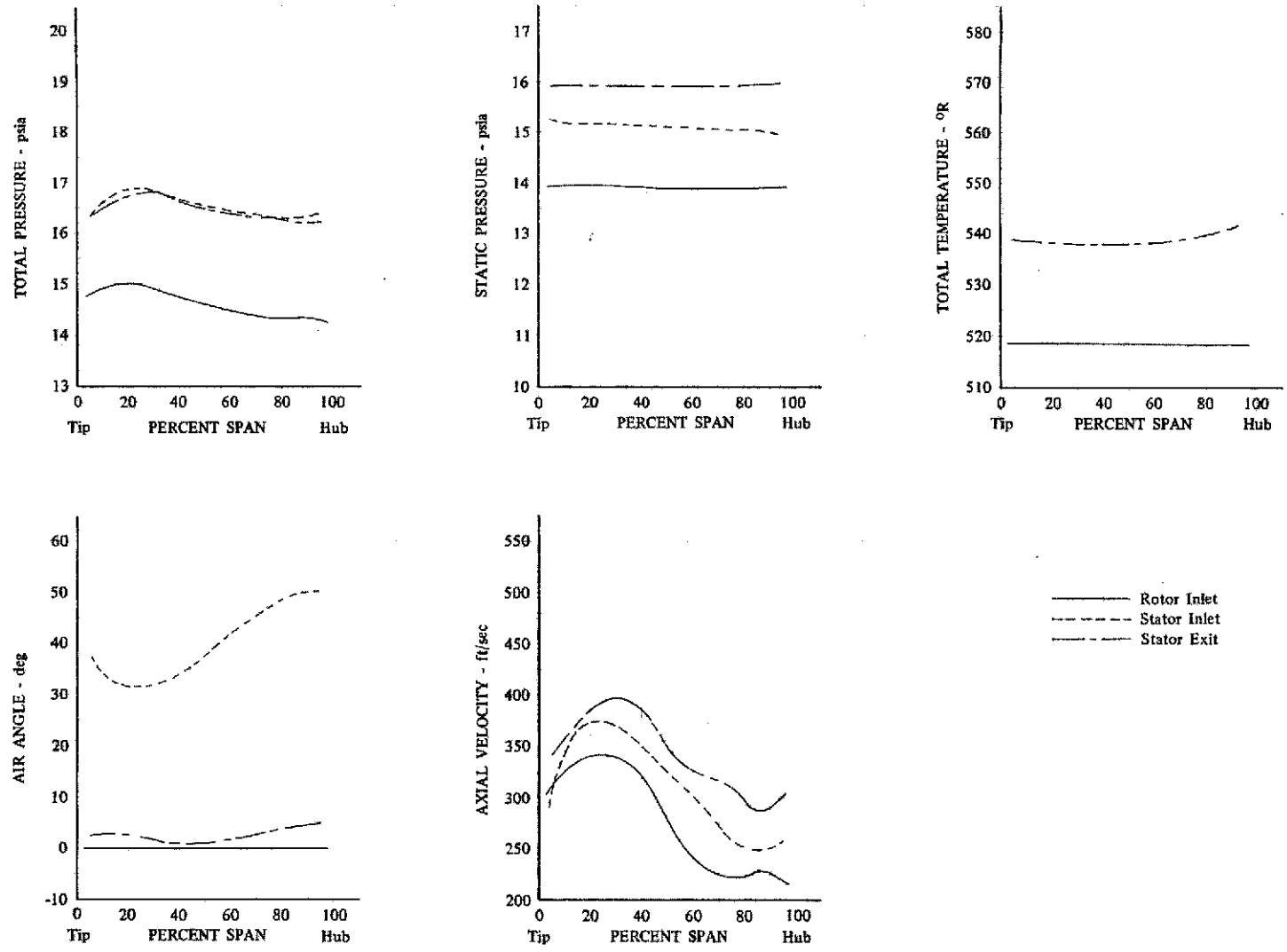


Figure 32b. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 70% Design Equivalent Rotor Speed; Equivalent Weight Flow = 71.46 lb/sec; Hub Radial Distortion

DF 97761

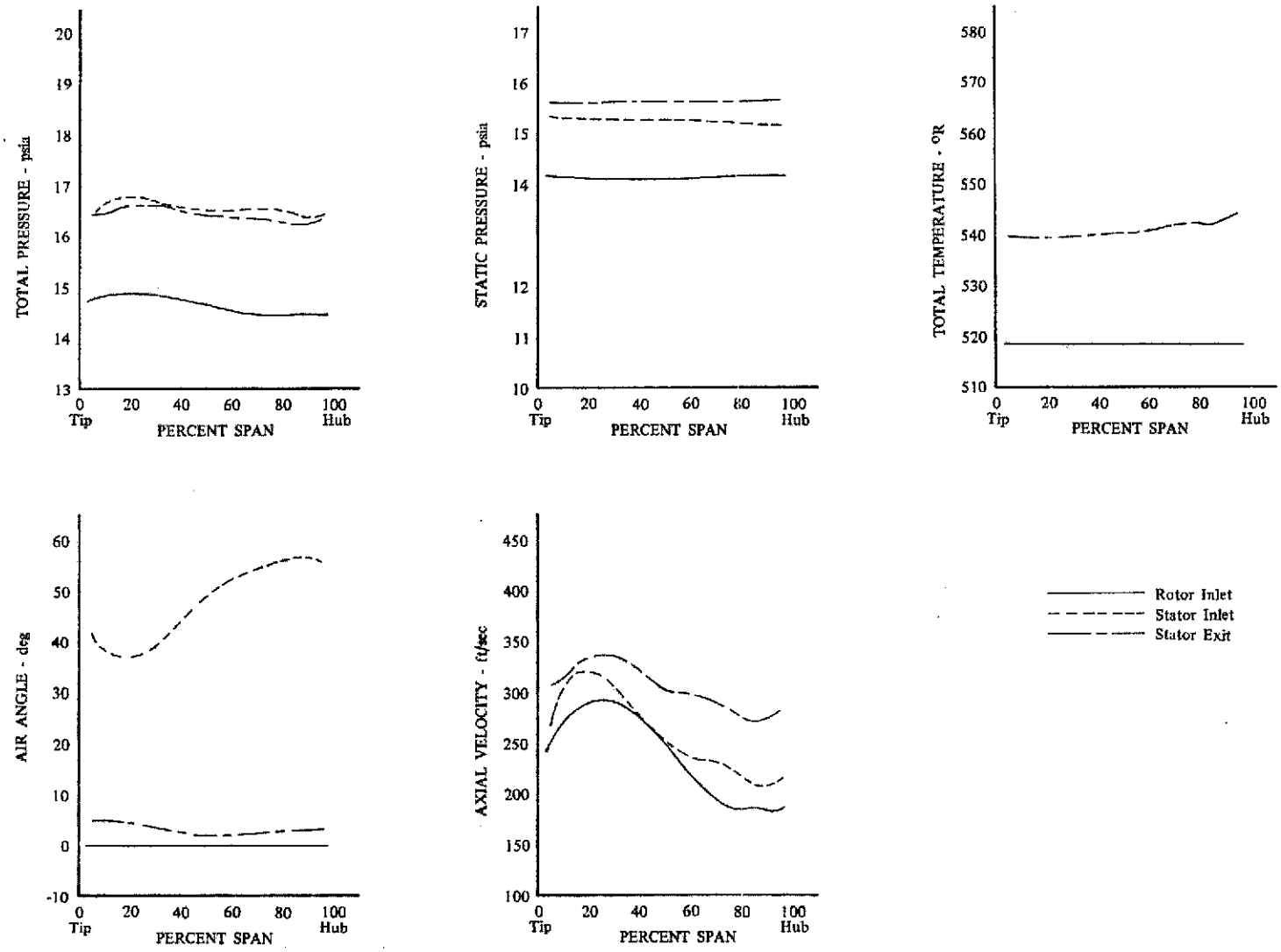


Figure 32c. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 70% Design Equivalent Rotor Speed; Equivalent Weight Flow = 59.11 lb/sec; Hub Radial Distortion

DF 97762

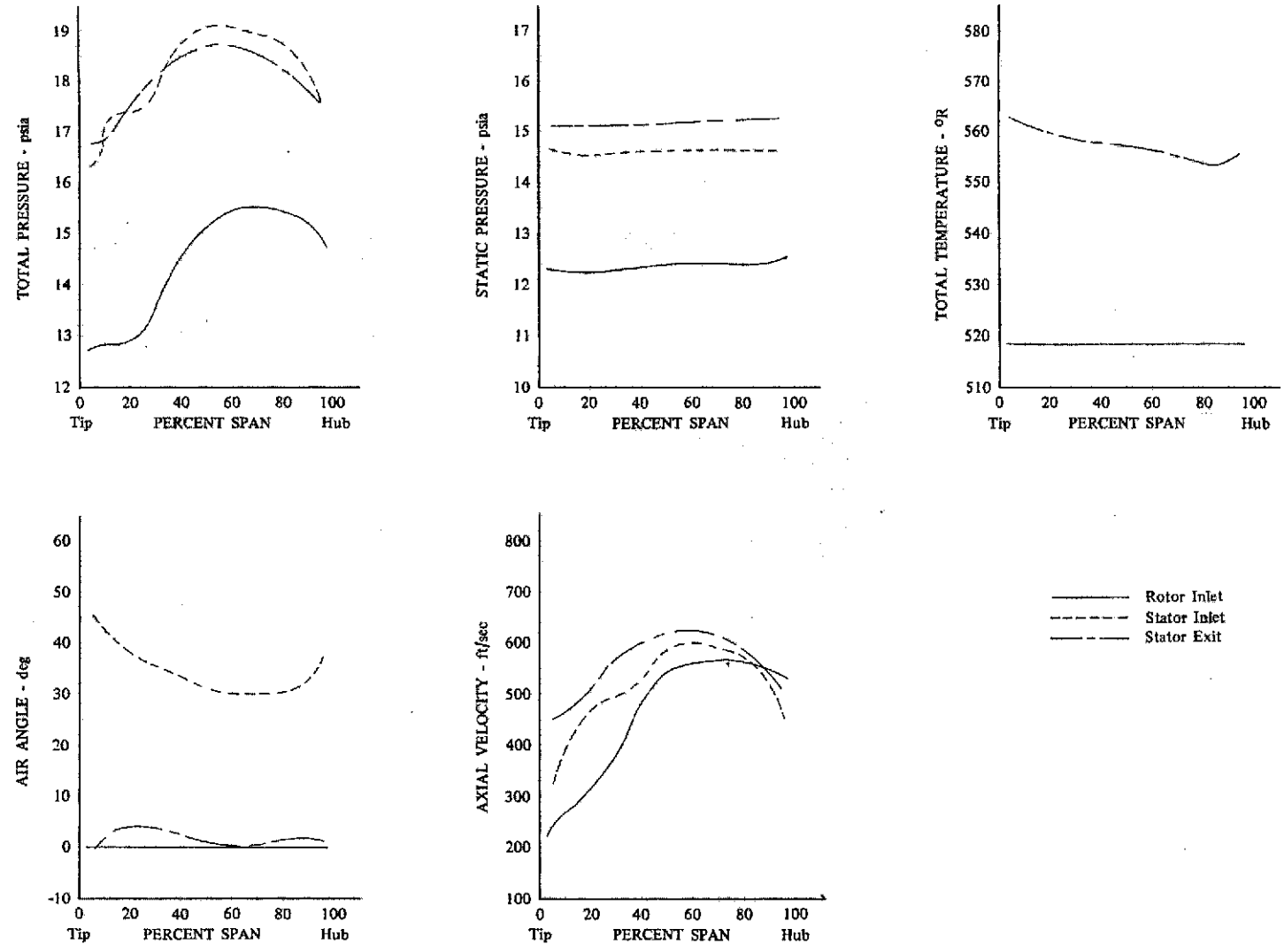


Figure 33a. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 115.11 lb/sec; Tip Radial Distortion

DF 97763

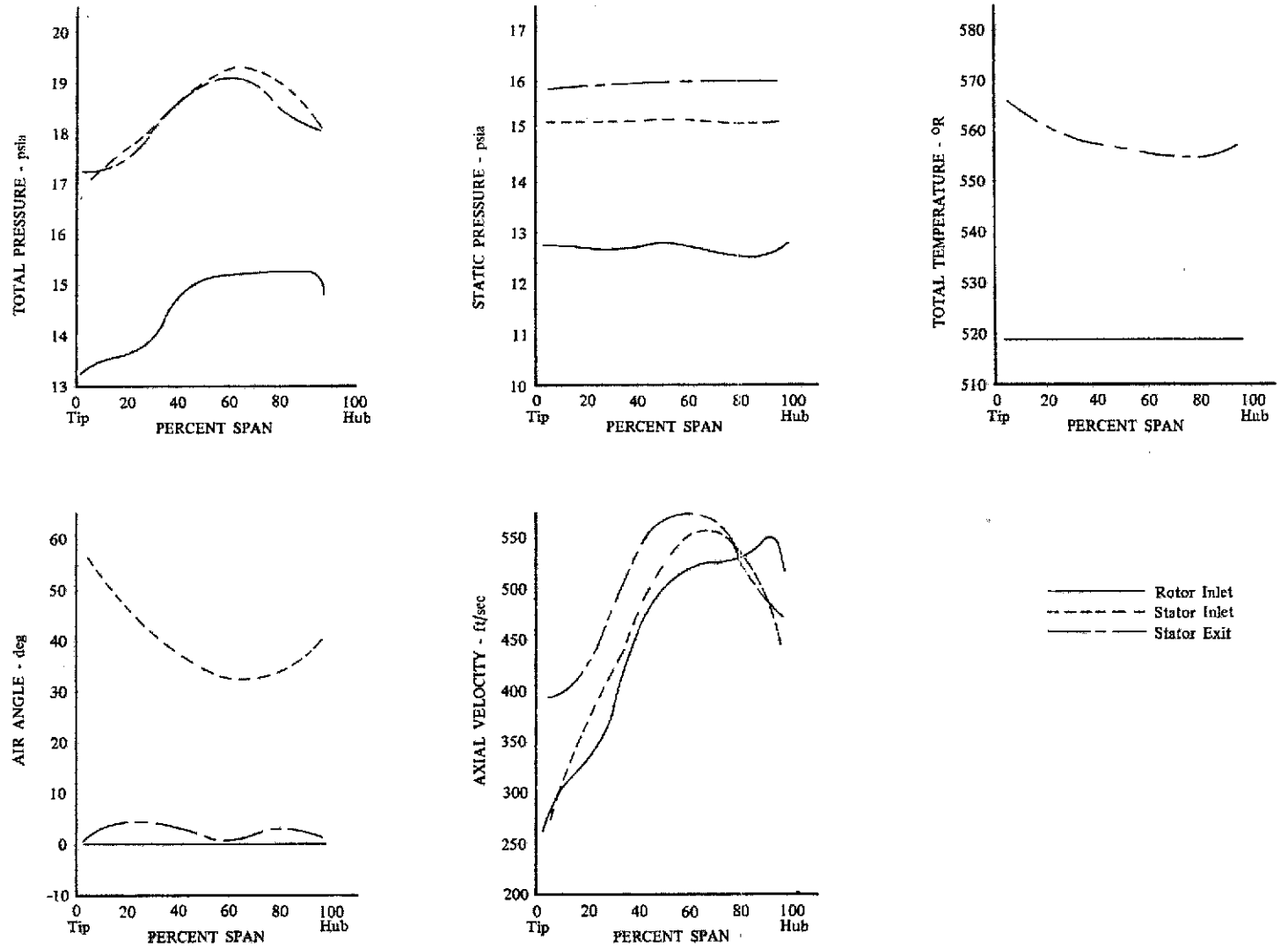


Figure 33b. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 106.05 lb/sec; Tip Radial Distortion

DF 97764

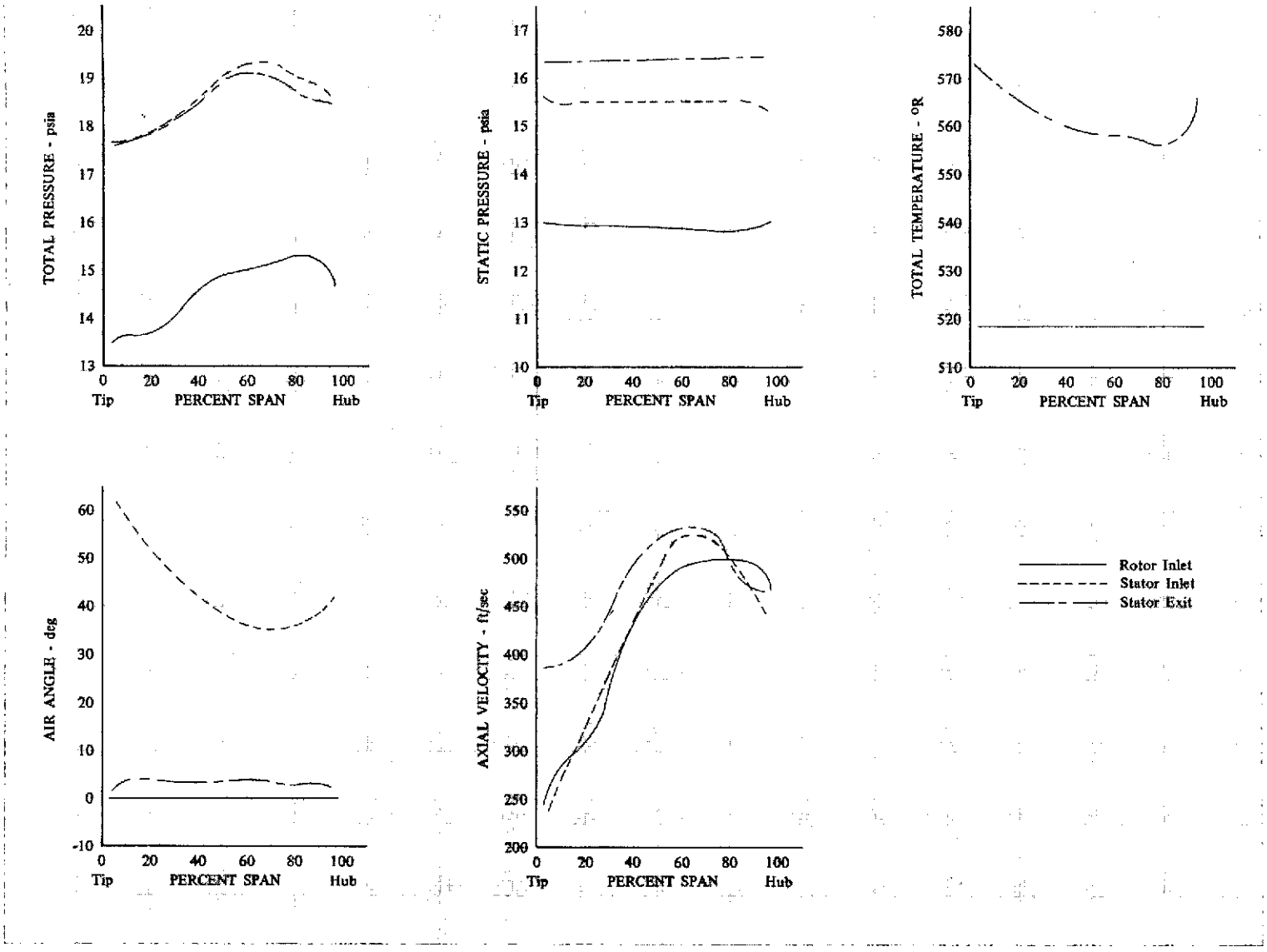


Figure 33c. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 99.09 lb/sec; Tip Radial Distortion

DF 97765

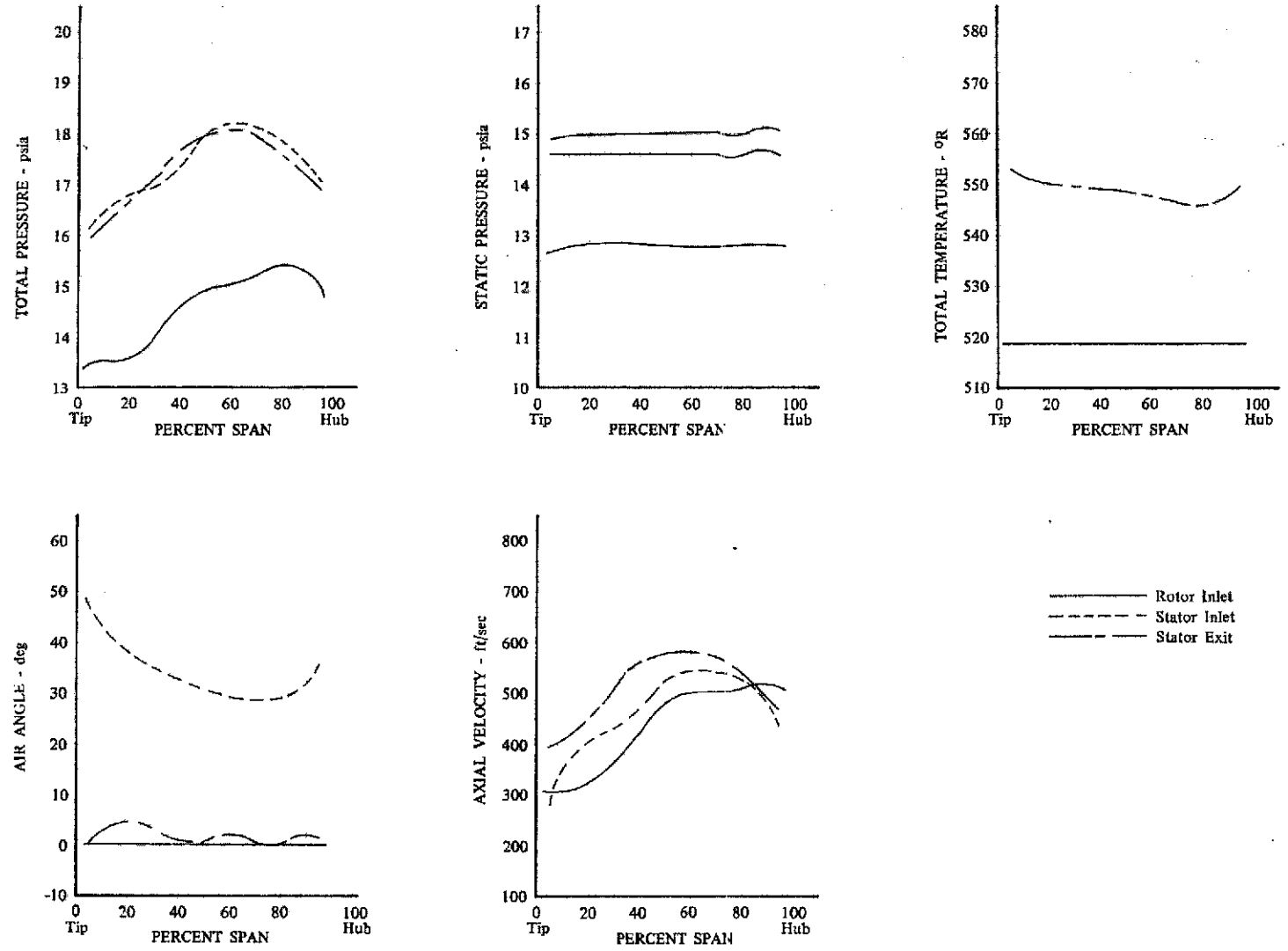


Figure 34a. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 105.62 lb/sec; Tip Radial Distortion

DF 97766

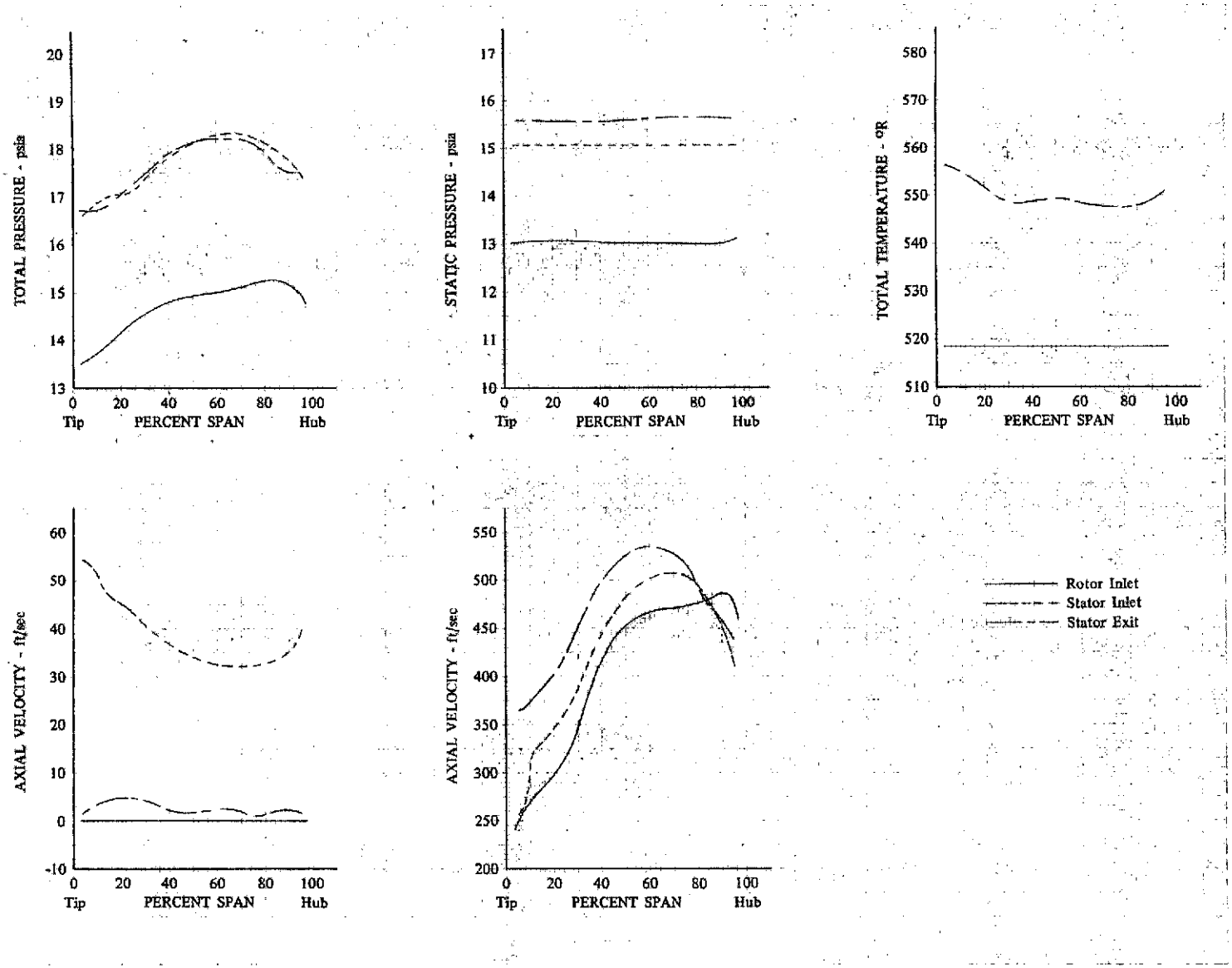


Figure 34b. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 97.85 lb/sec; Tip Radial Distortion

DF 97767

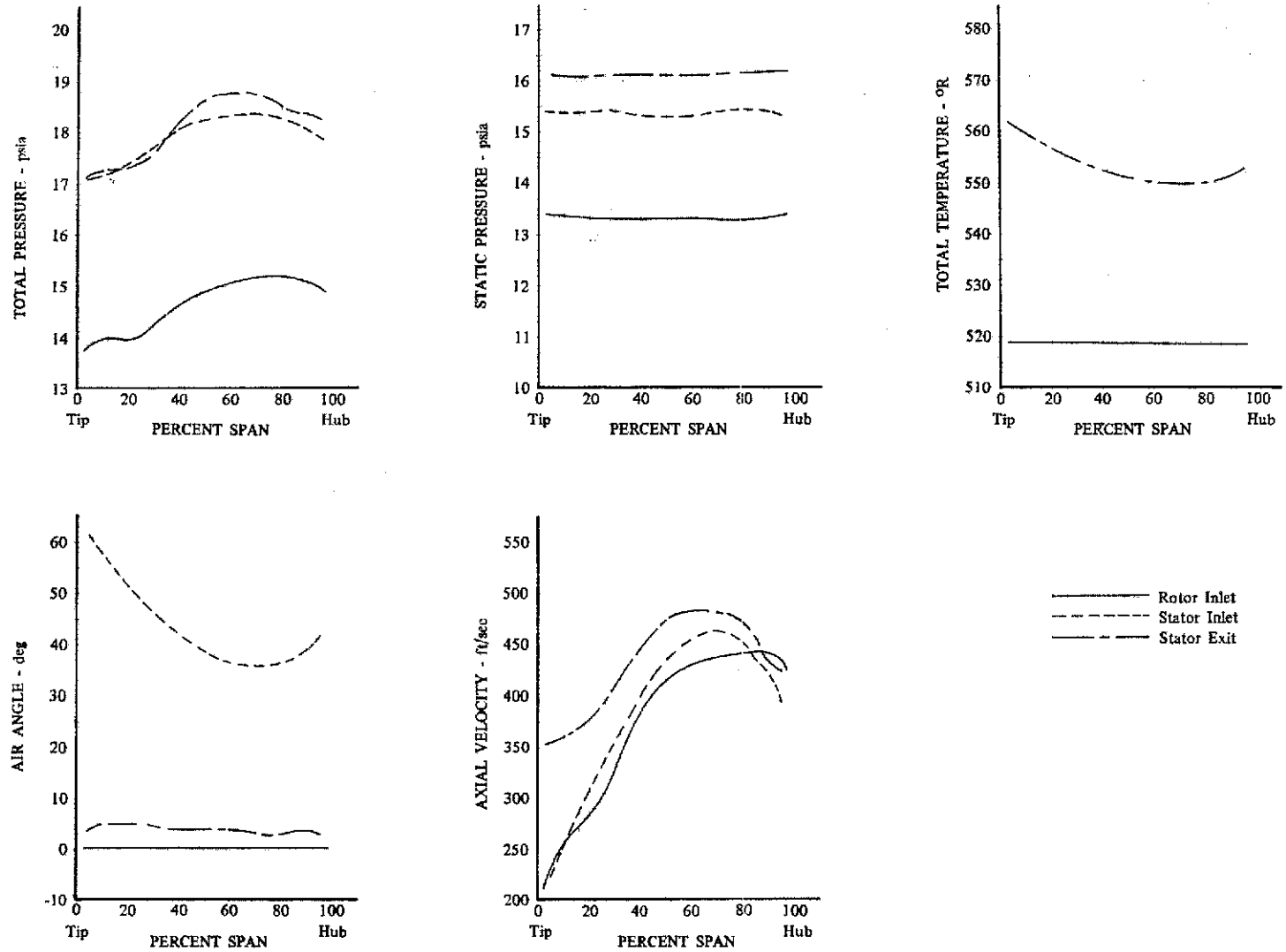


Figure 34c. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.04 lb/sec; Tip Radial Distortion

DF 97768

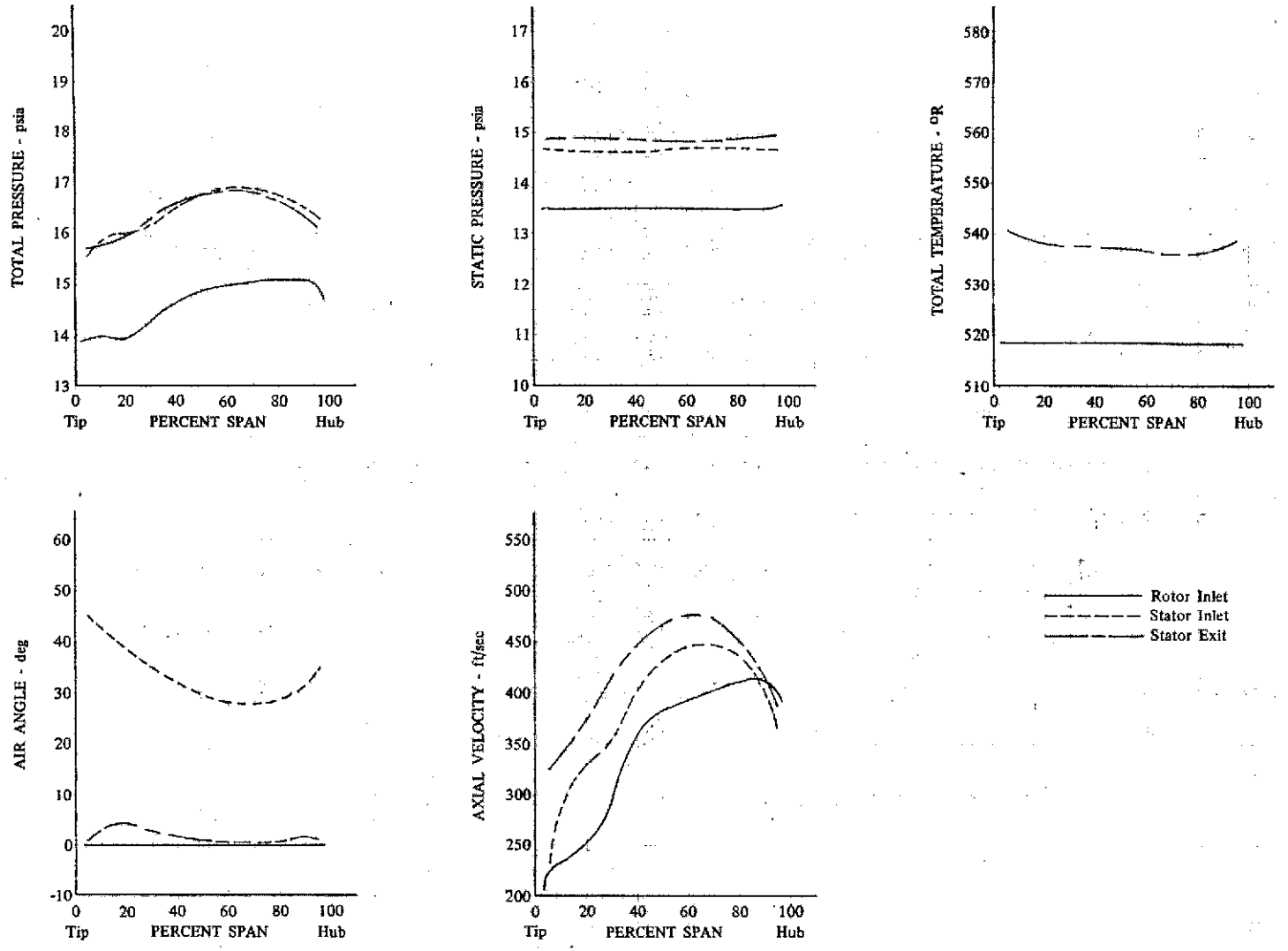


Figure 35a. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 70% Design Equivalent Rotor Speed; Equivalent Weight Flow = 85.36 lb/sec; Tip Radial Distortion

DF 97769

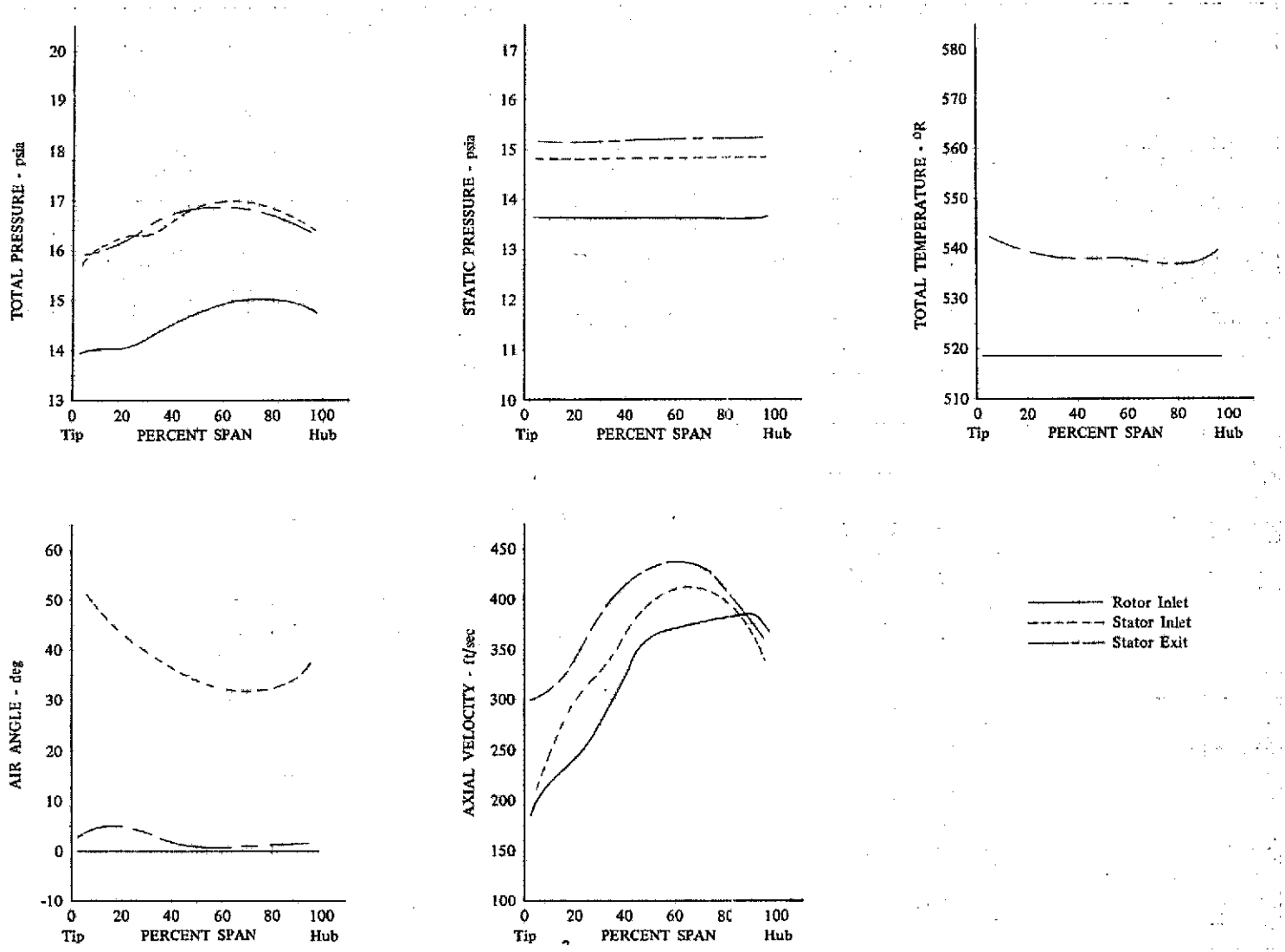


Figure 35b. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 70% Design Equivalent Rotor Speed; Equivalent Weight Flow = 80.21 lb/sec; Tip Radial Distortion

DF 97770

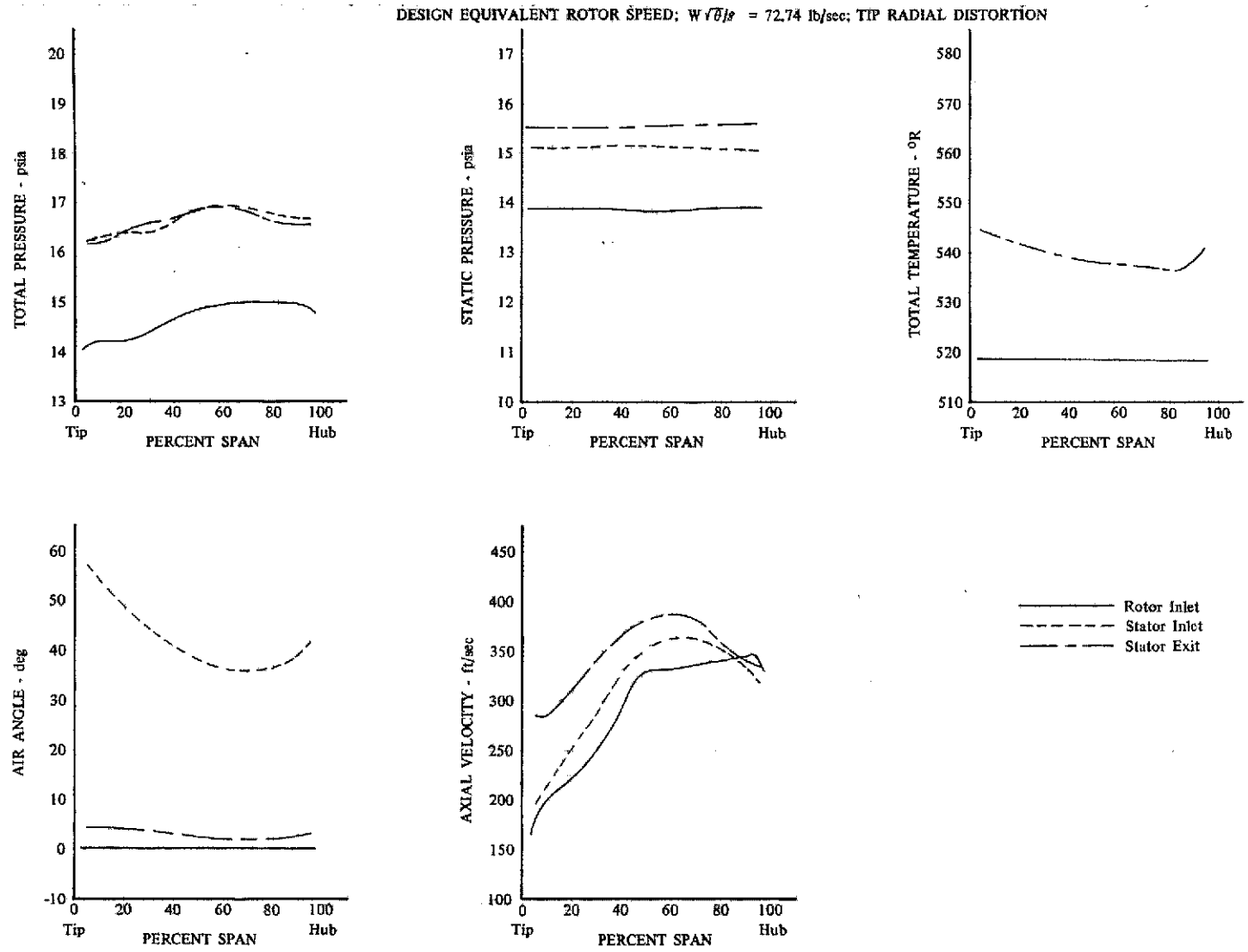


Figure 35c. Total and Static Pressure, Total Temperature, Air Angle and Axial Velocity vs Span at Rotor Inlet, Stator Inlet and Stator Exit; 70% Design Equivalent Rotor Speed; Equivalent Weight Flow = 72.74 lb/sec; Tip Radial Distortion

DF 97771

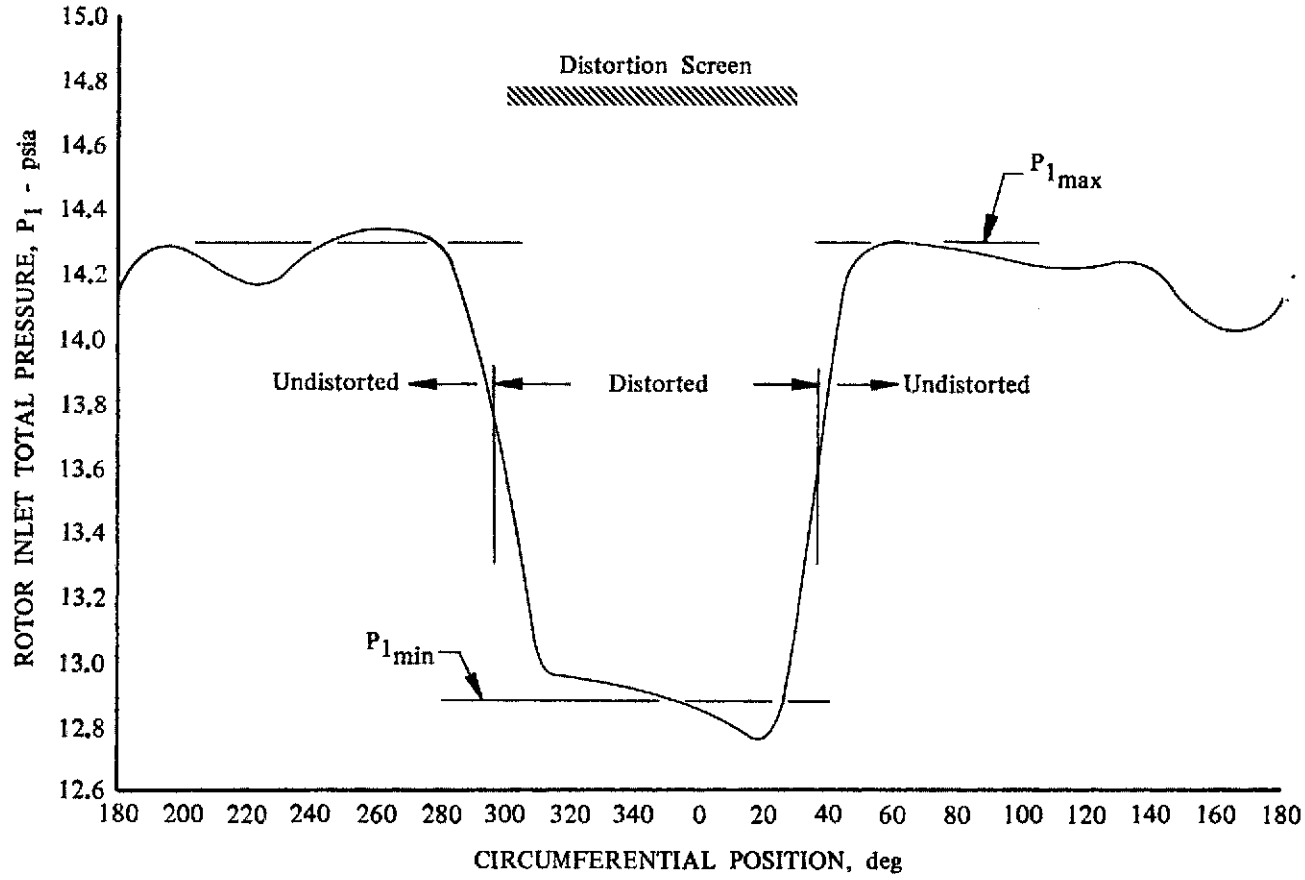


Figure 36. Typical Rotor Inlet Total Pressure Distribution With Circumferential Distortion; 100% Design Equivalent Rotor Speed; 92.4% Design Equivalent Flow (101.6 lb/sec); 50% Span

DF 97772

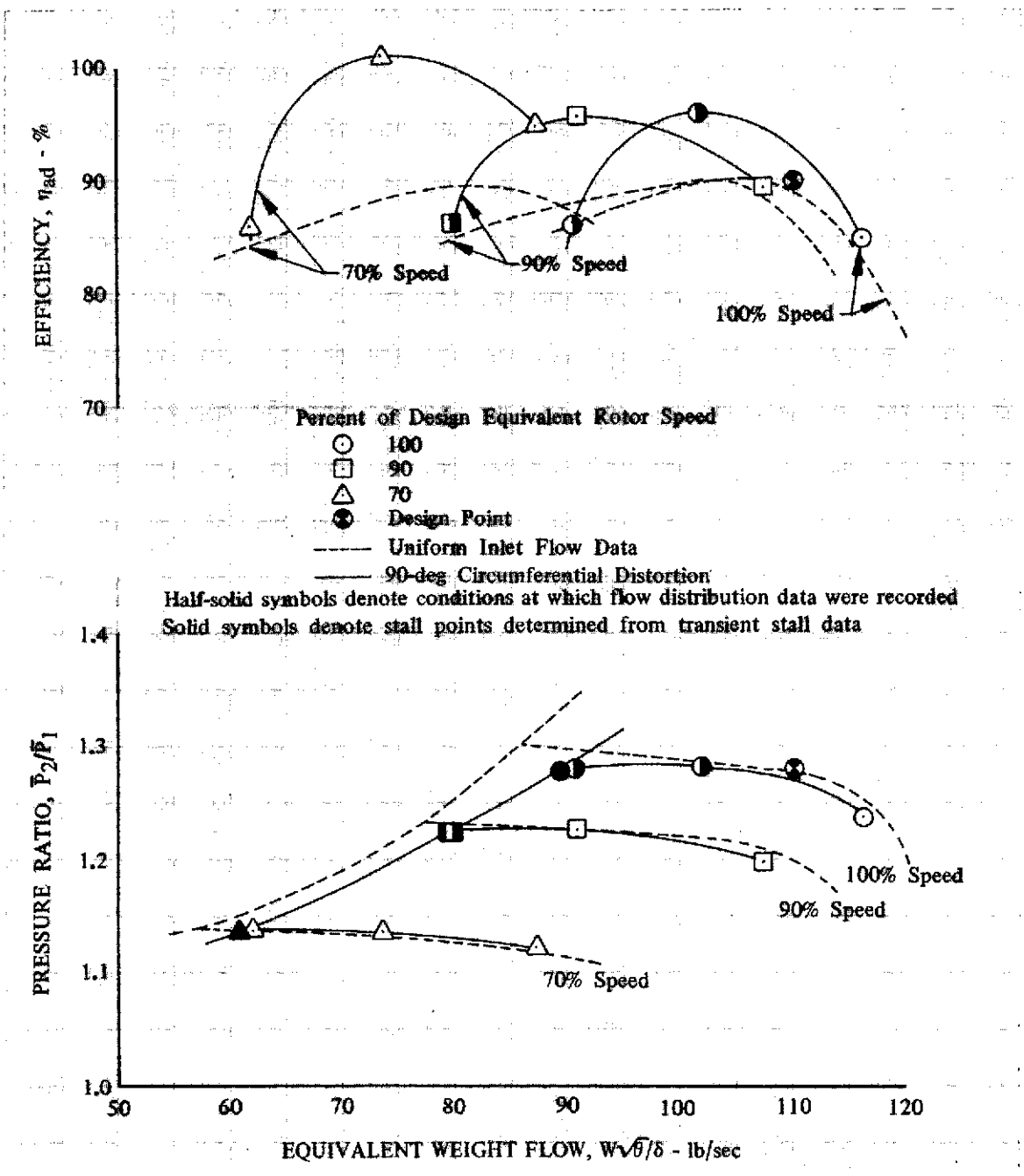


Figure 37. Overall Performance of Rotor D; Circumferential Distortion Compared With Uniform Inlet Flow

DF 97773

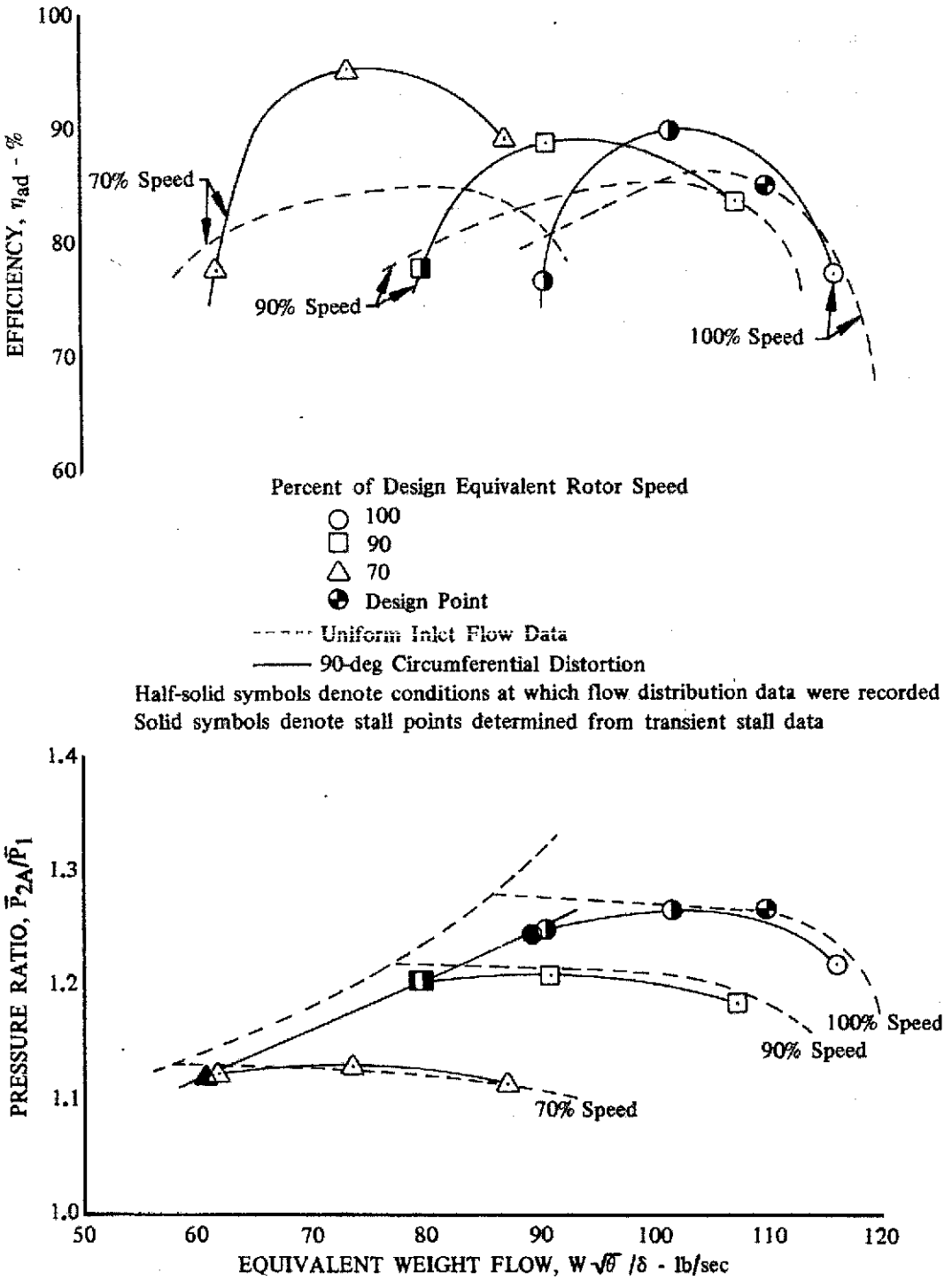


Figure 38. Overall Performance of Stage D; Circumferential Distortion Compared With Uniform Inlet Flow

DF 97774

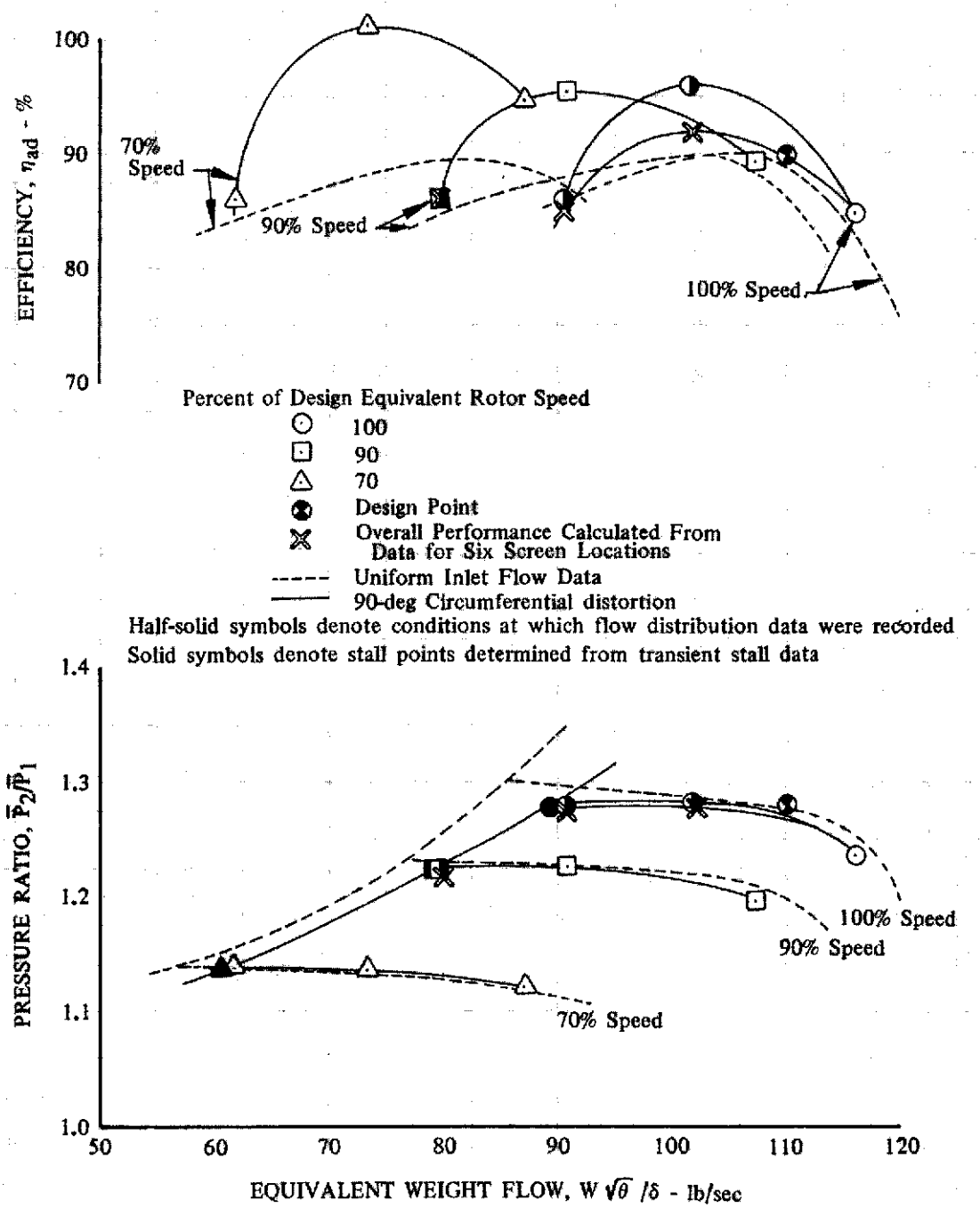


Figure 39. Overall Performance of Rotor D; Circumferential Distortion Compared With Uniform Inlet Flow

DF 97775

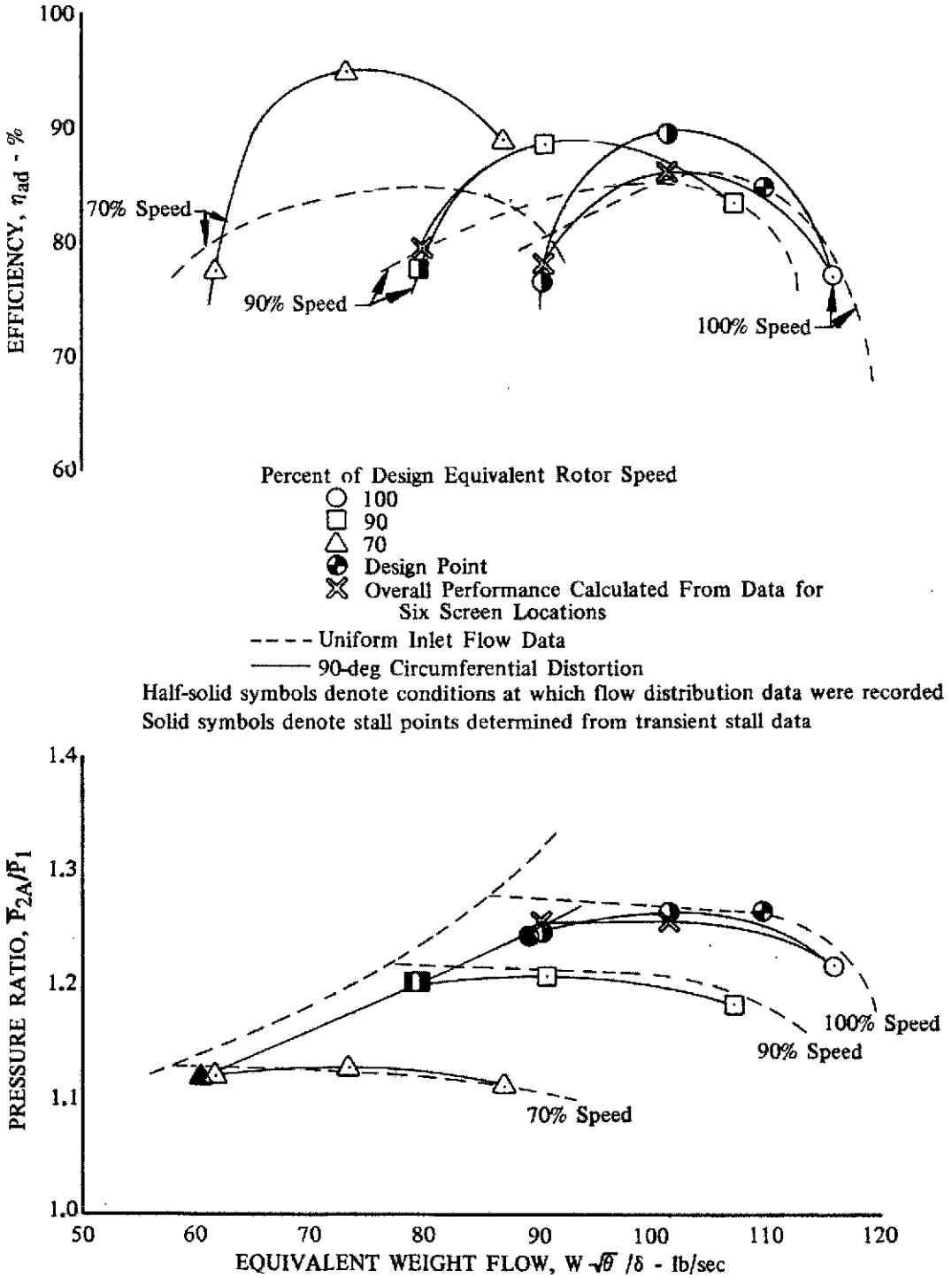


Figure 40. Overall Performance of Stage D; Circumferential Distortion Compared With Uniform Inlet Flow

DF 97776

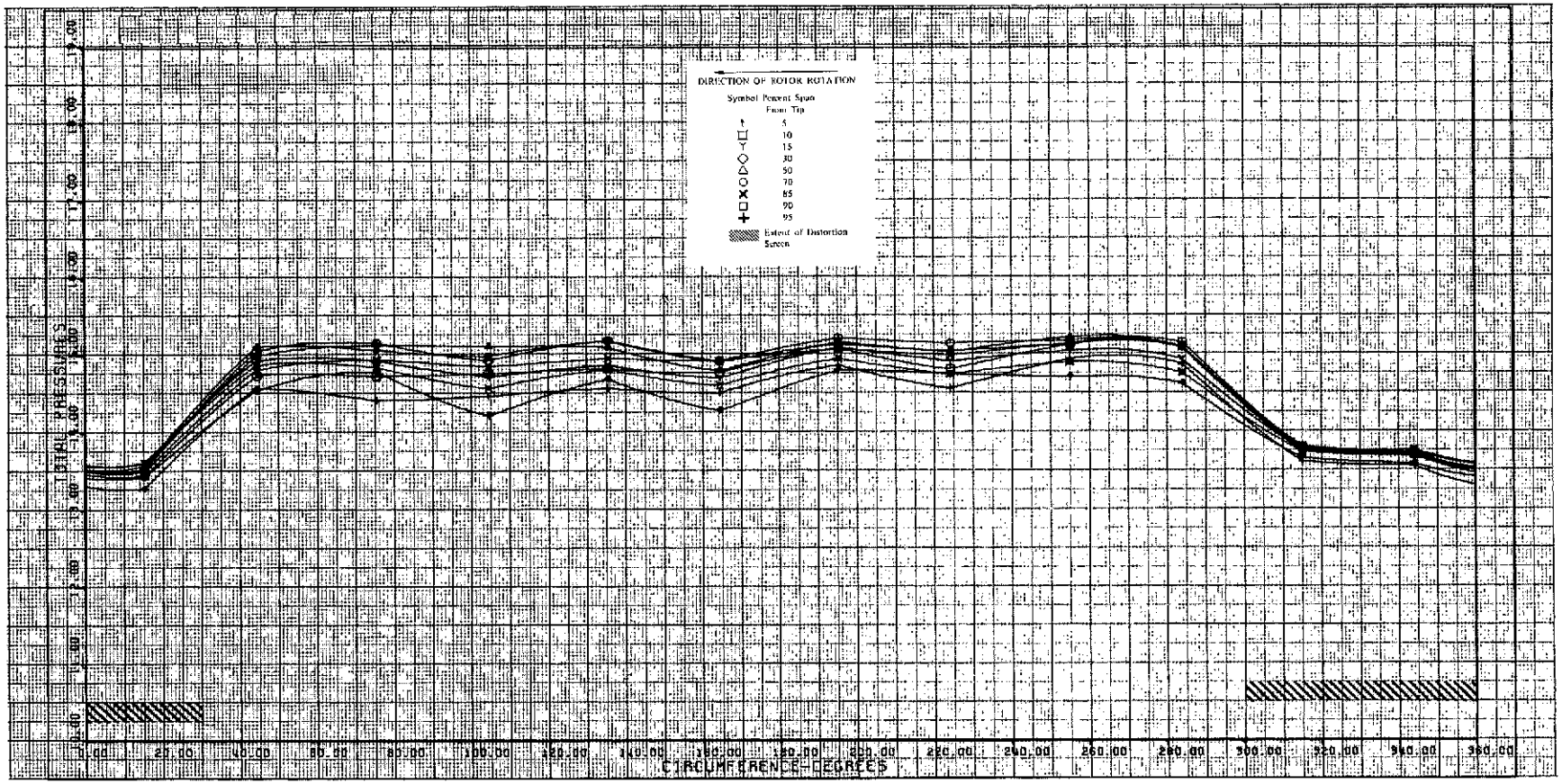


Figure 41a. Rotor Inlet Total Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion DF 97777

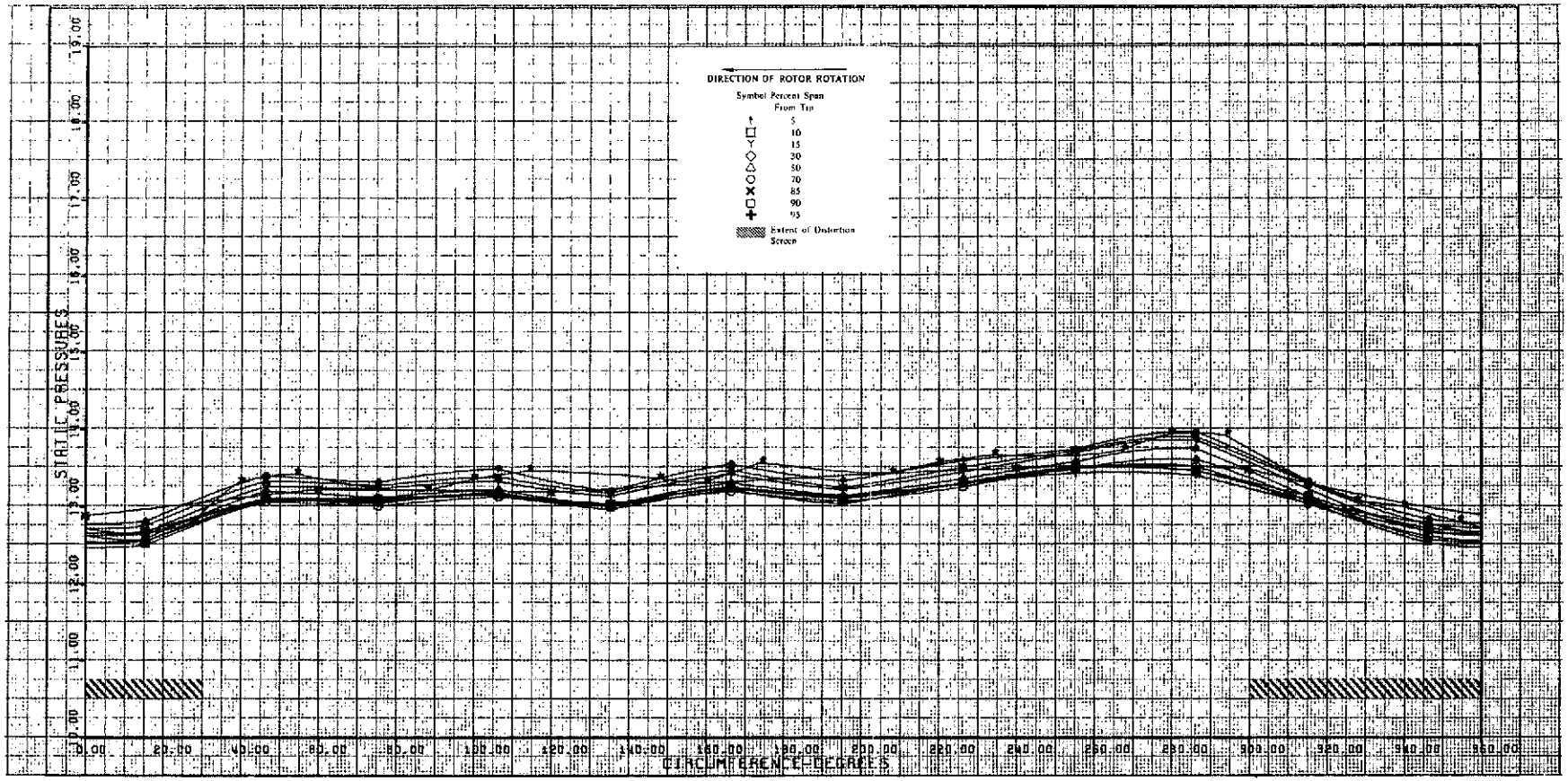


Figure 41b. Rotor Inlet Static Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97778

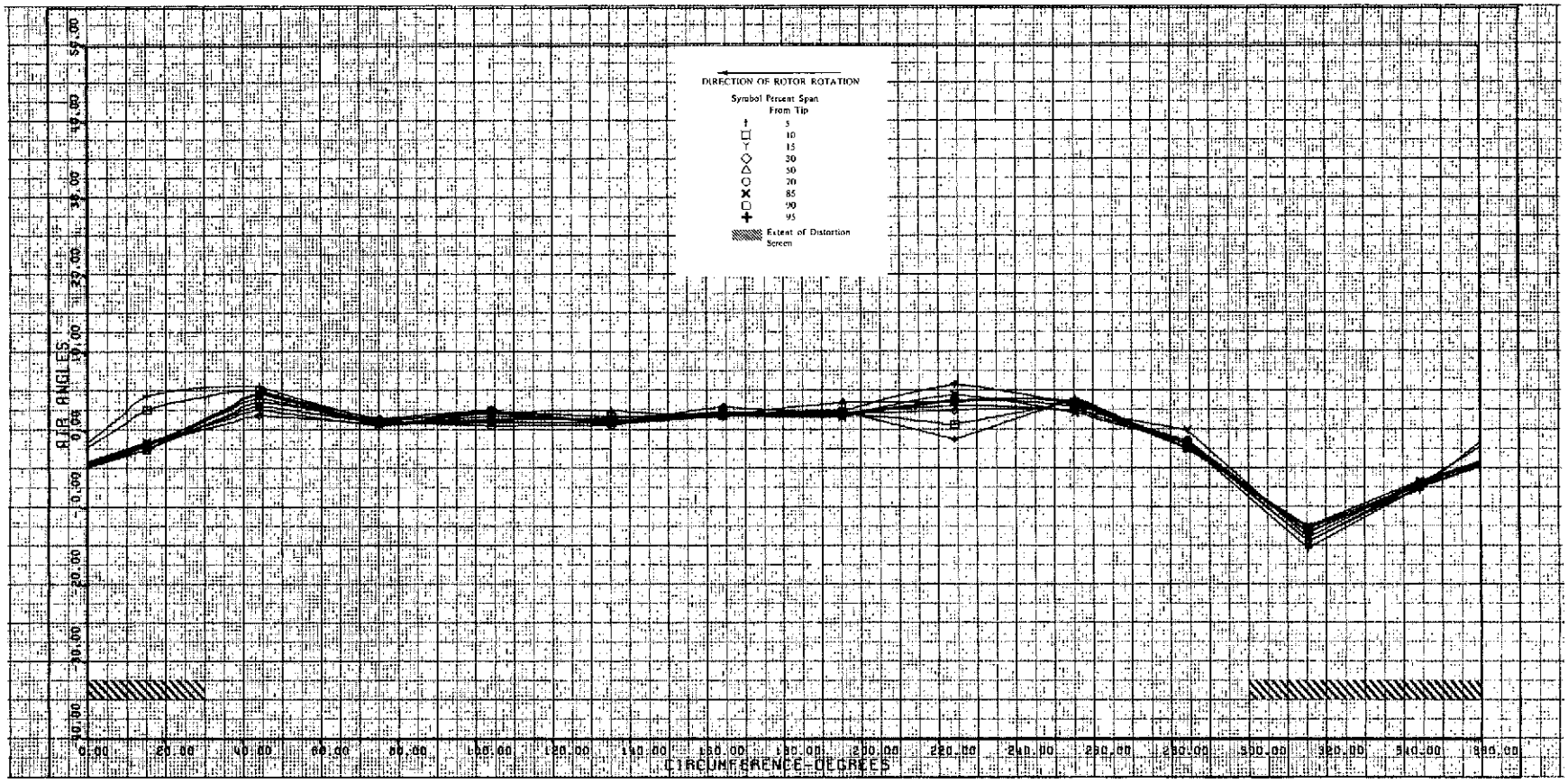


Figure 41c. Rotor Inlet Air Angle vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97779

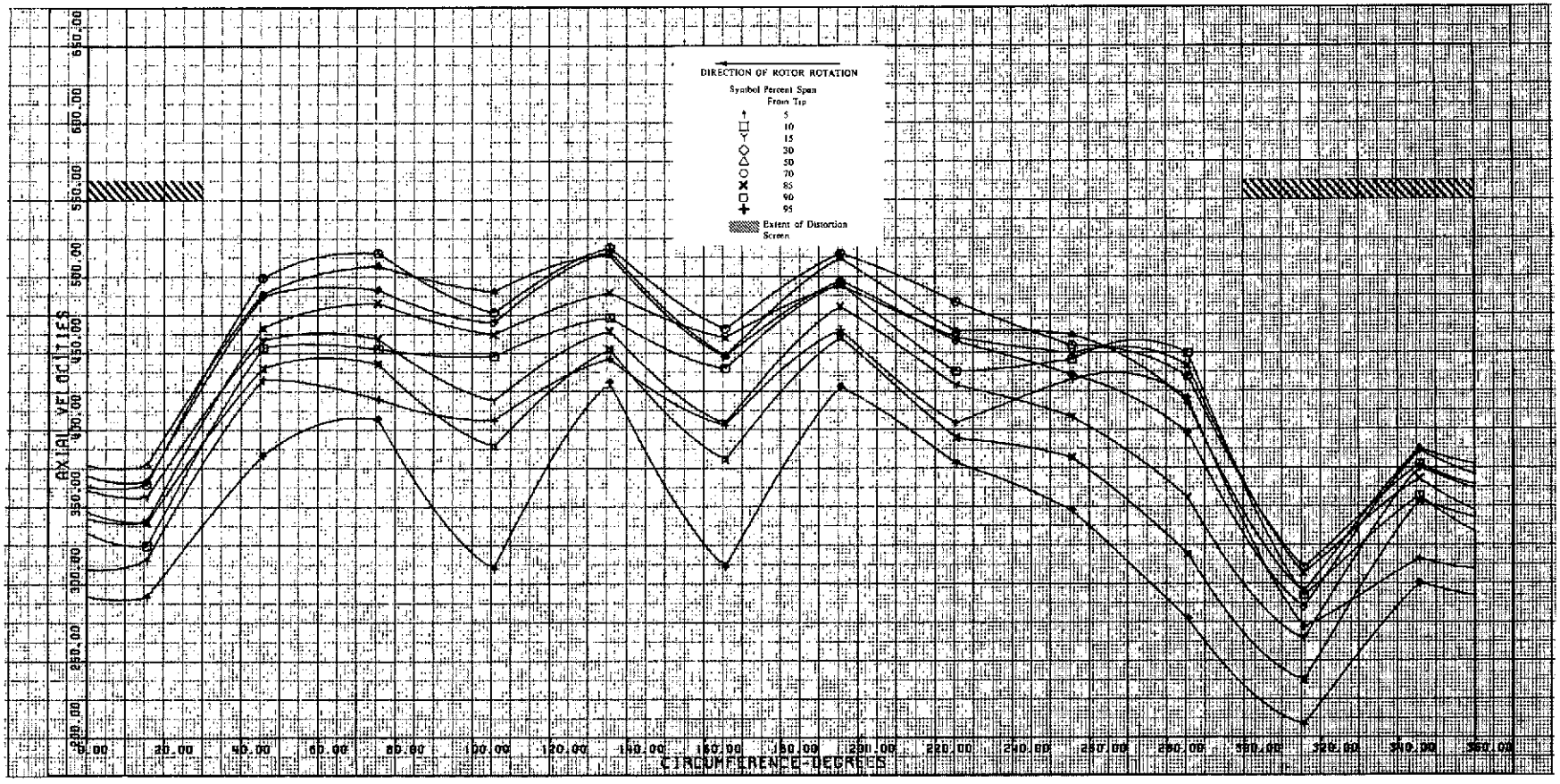


Figure 41d. Rotor Inlet Axial Velocity vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97780

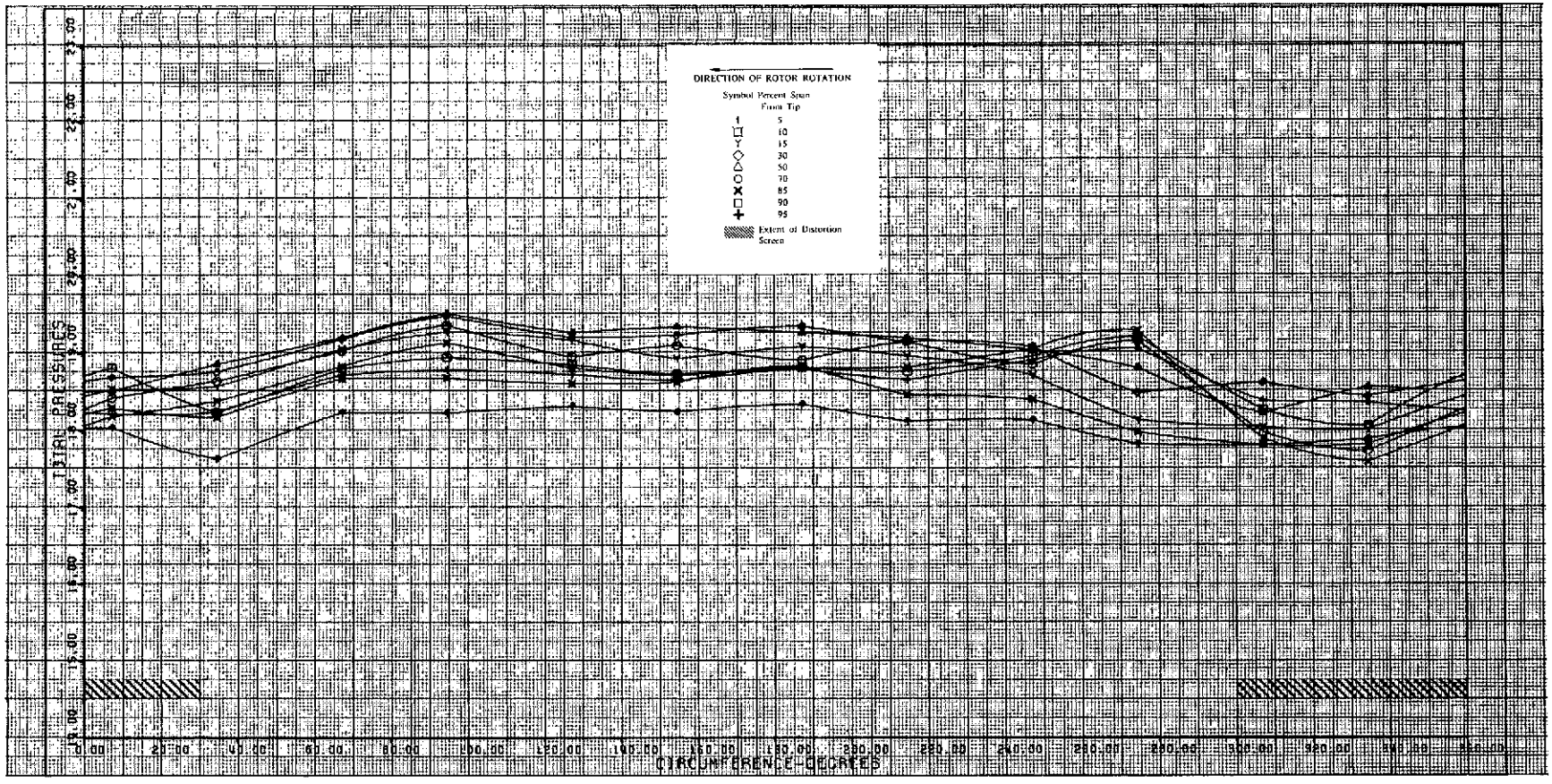


Figure 41e. Stator Inlet Total Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97781

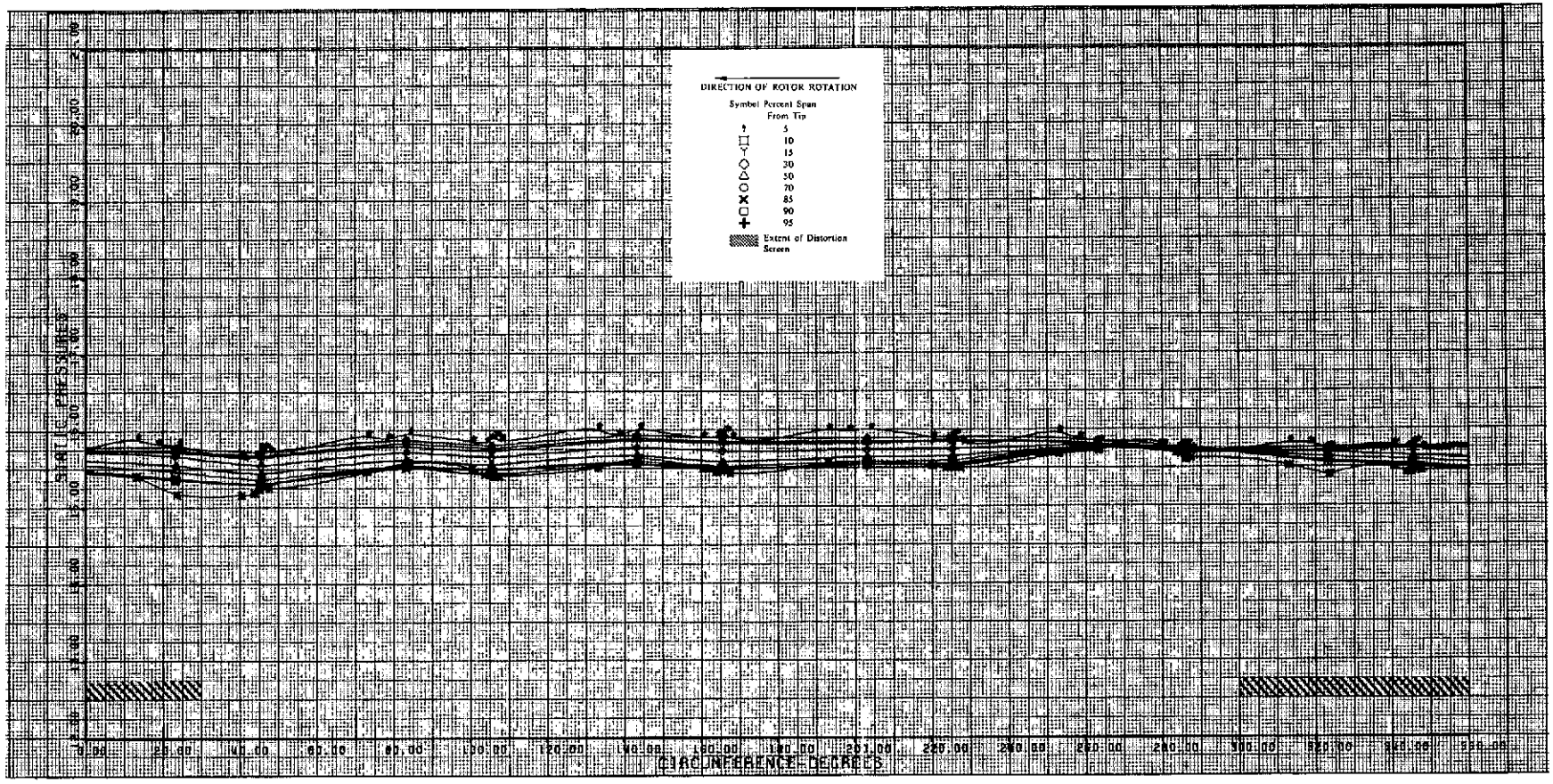


Figure 41f. Stator Inlet Static Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97782

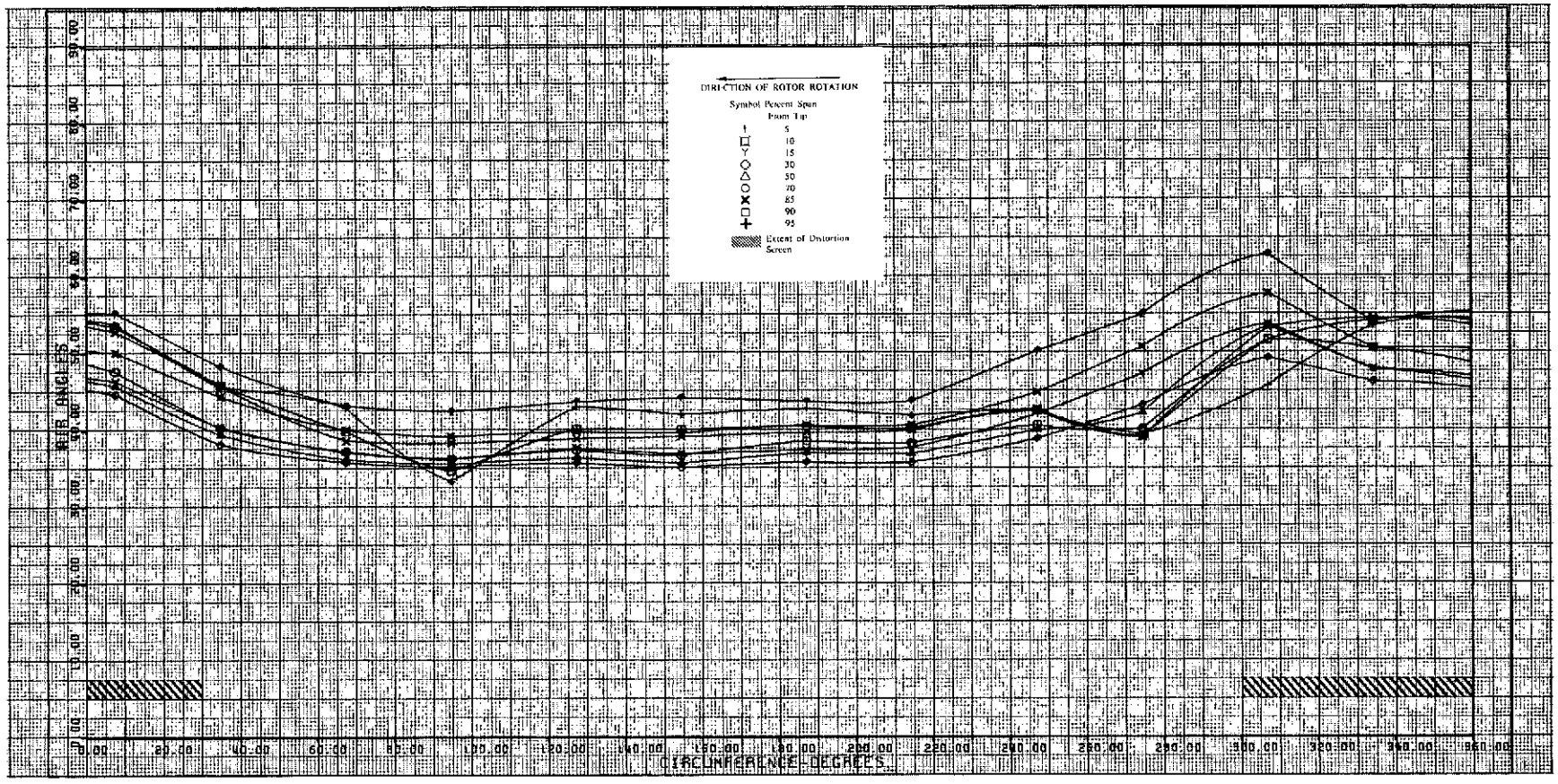


Figure 41g. Stator Inlet Air Angle vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion DF 97783

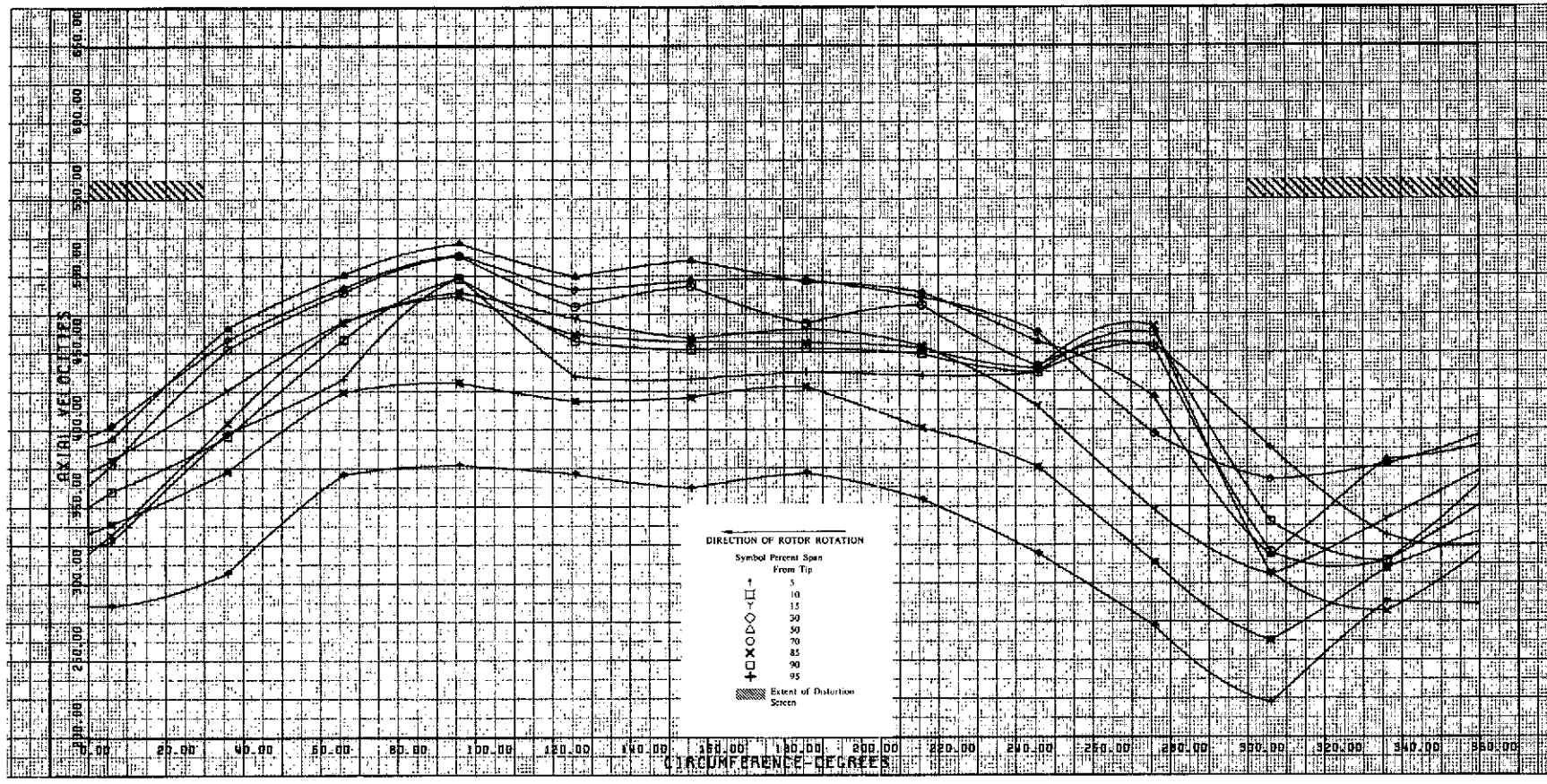


Figure 41h. Stator Inlet Axial Velocity vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97784

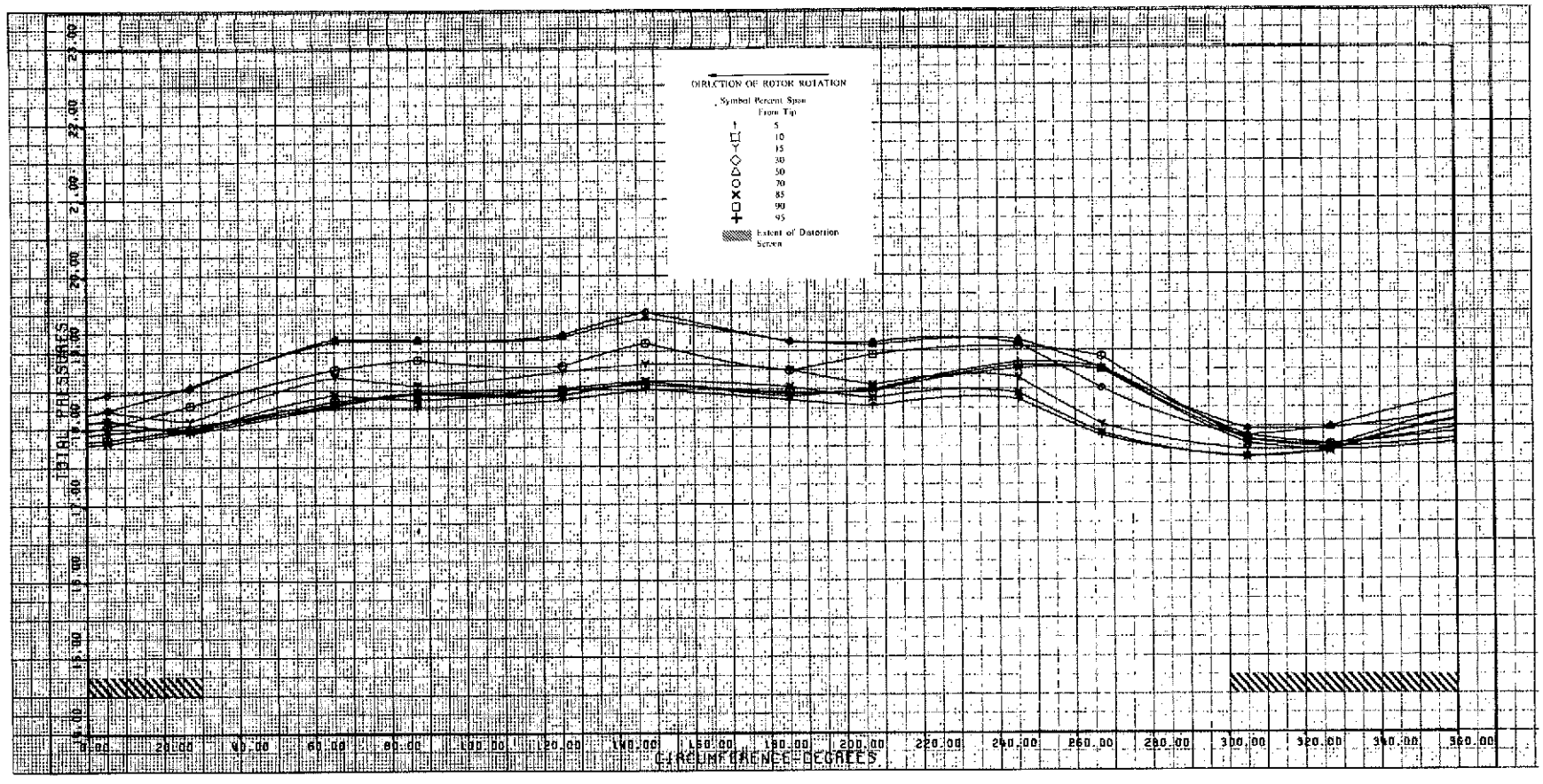


Figure 41i. Stator Exit Total Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97785

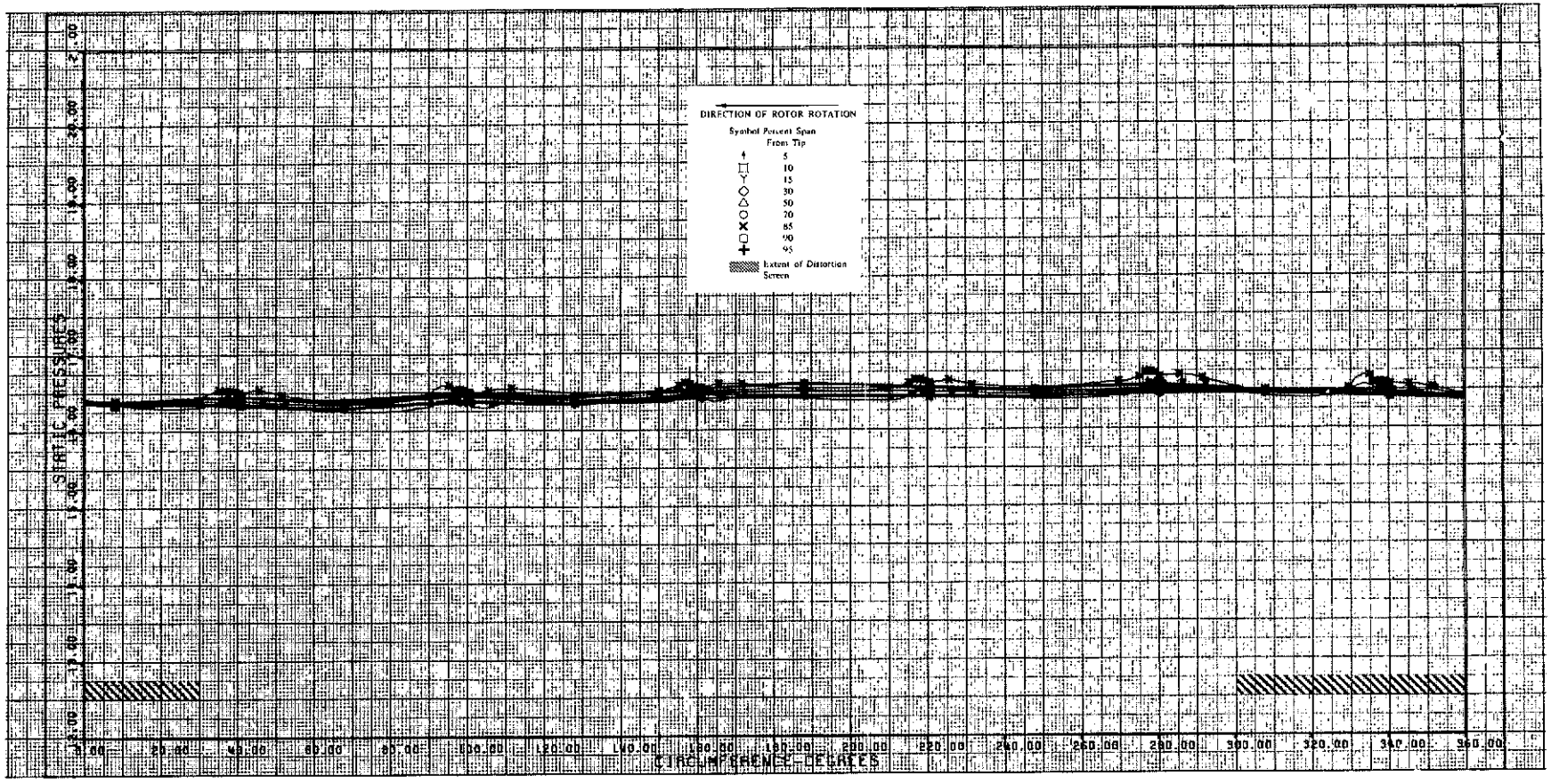


Figure 41j. Stator Exit Static Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97786

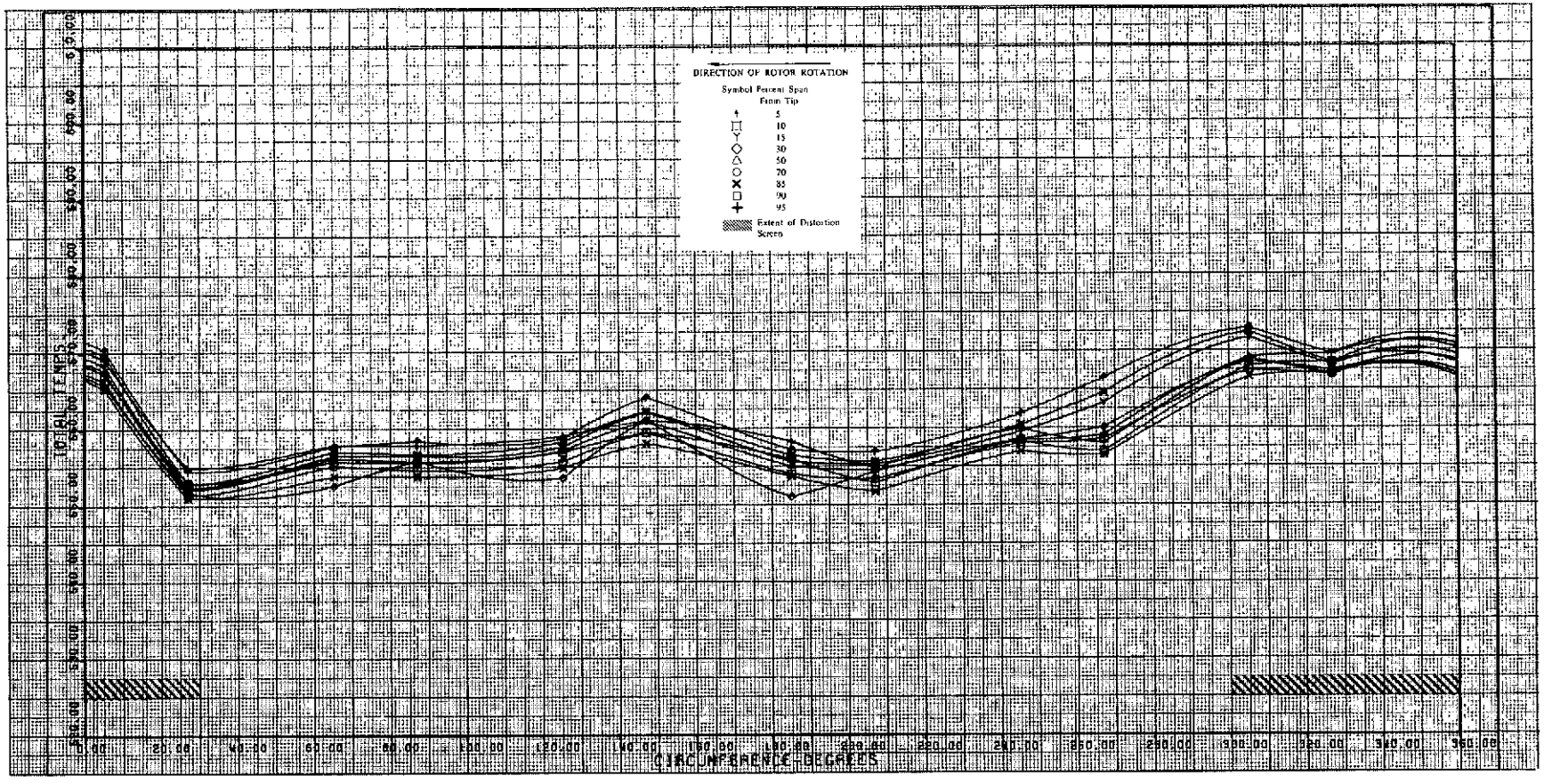


Figure 41k. Stator Exit Total Temperature vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97787

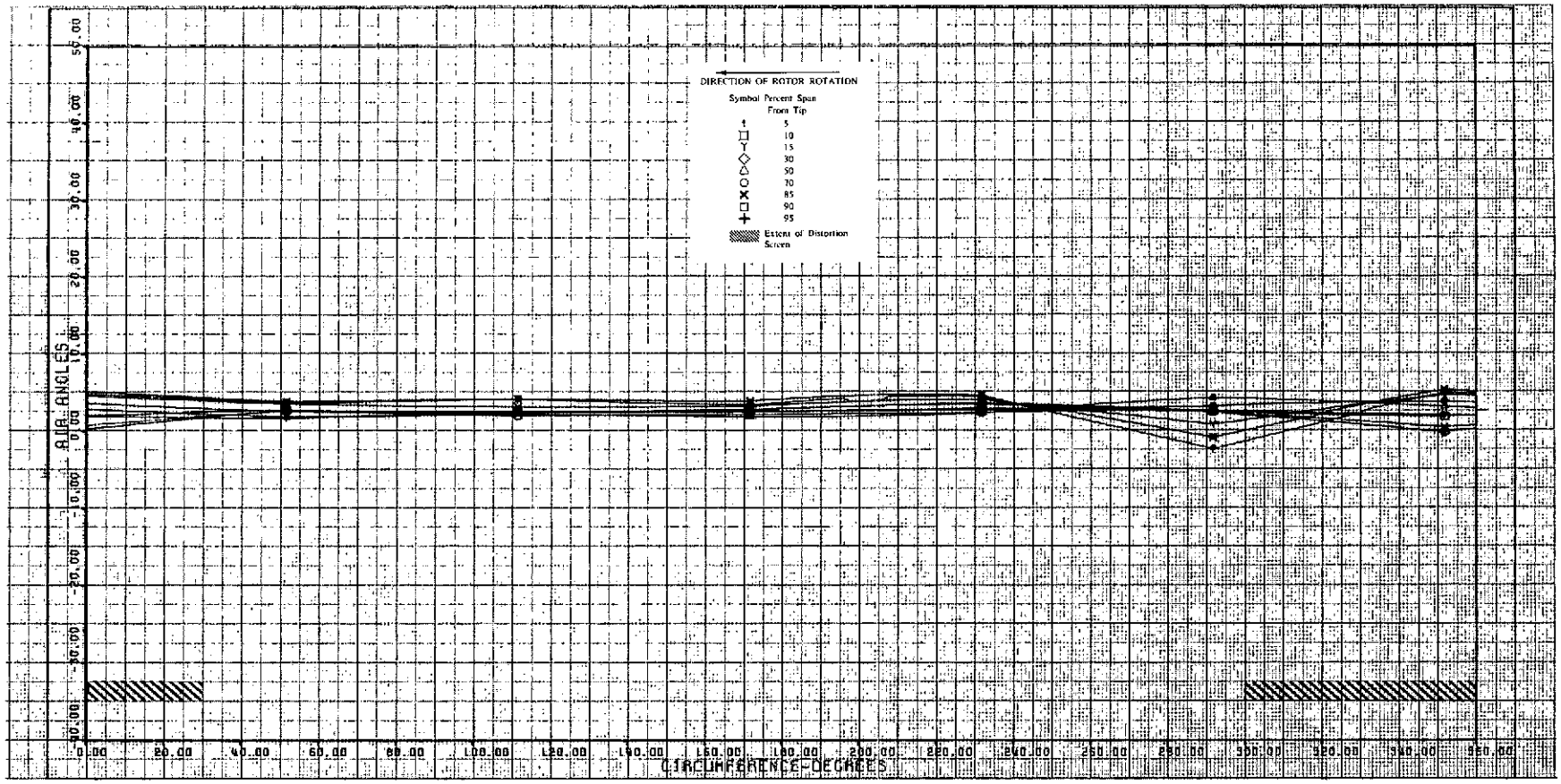


Figure 411. Stator Exit Air Angle vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97788

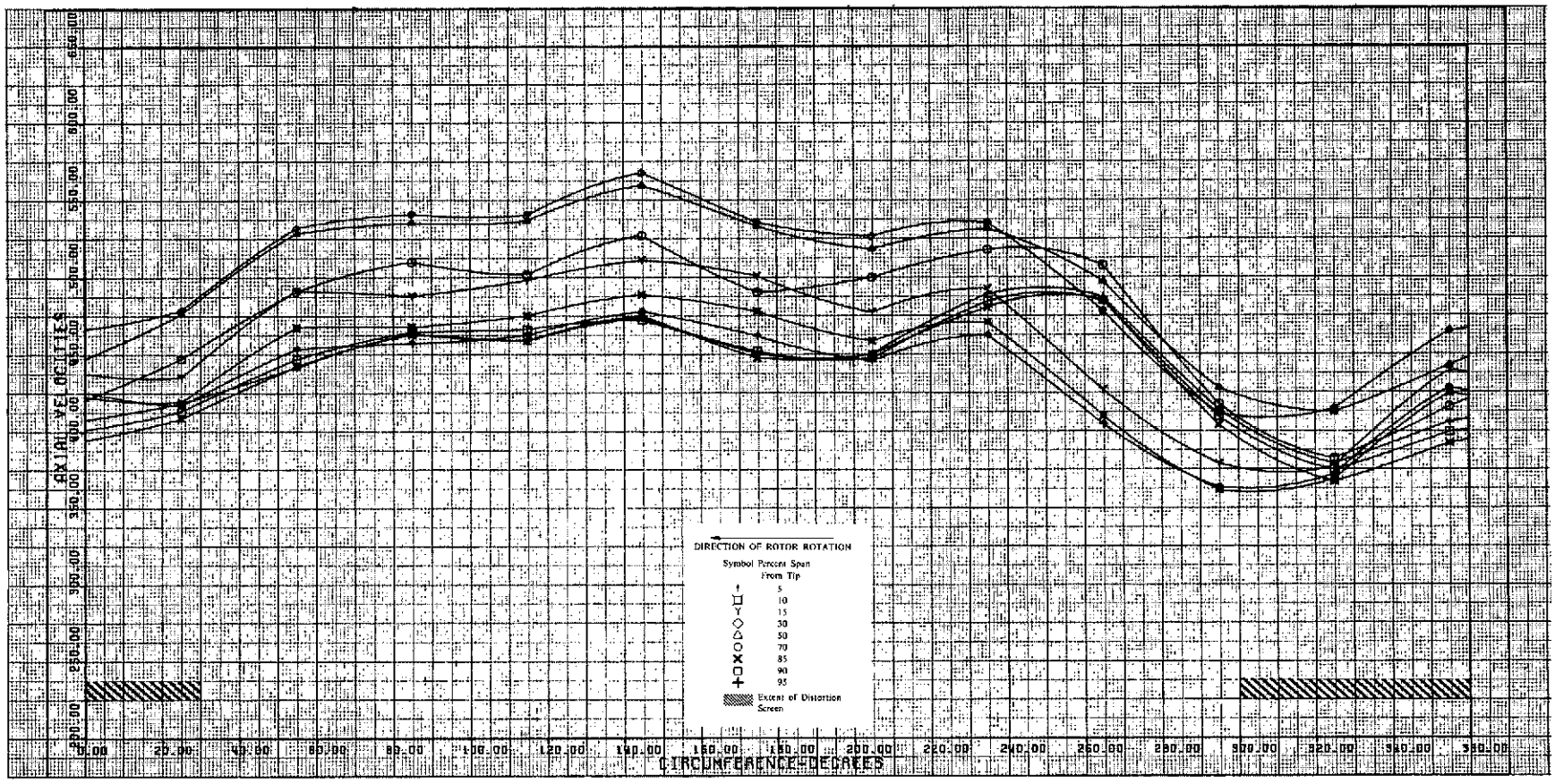


Figure 41m. Stator Exit Axial Velocity vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 101.60 lb/sec; Circumferential Distortion

DF 97819

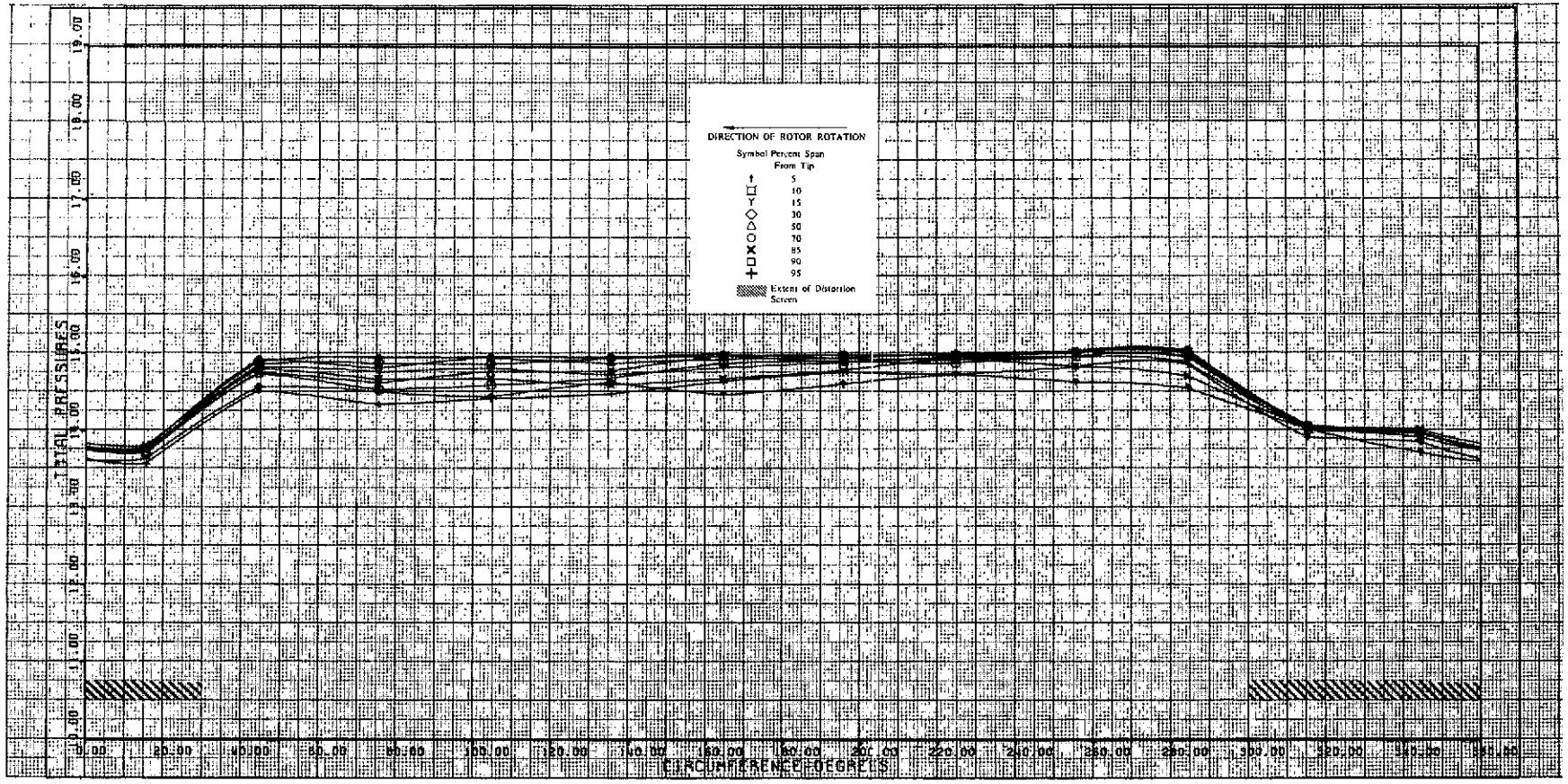


Figure 42a. Rotor Inlet Total Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97820

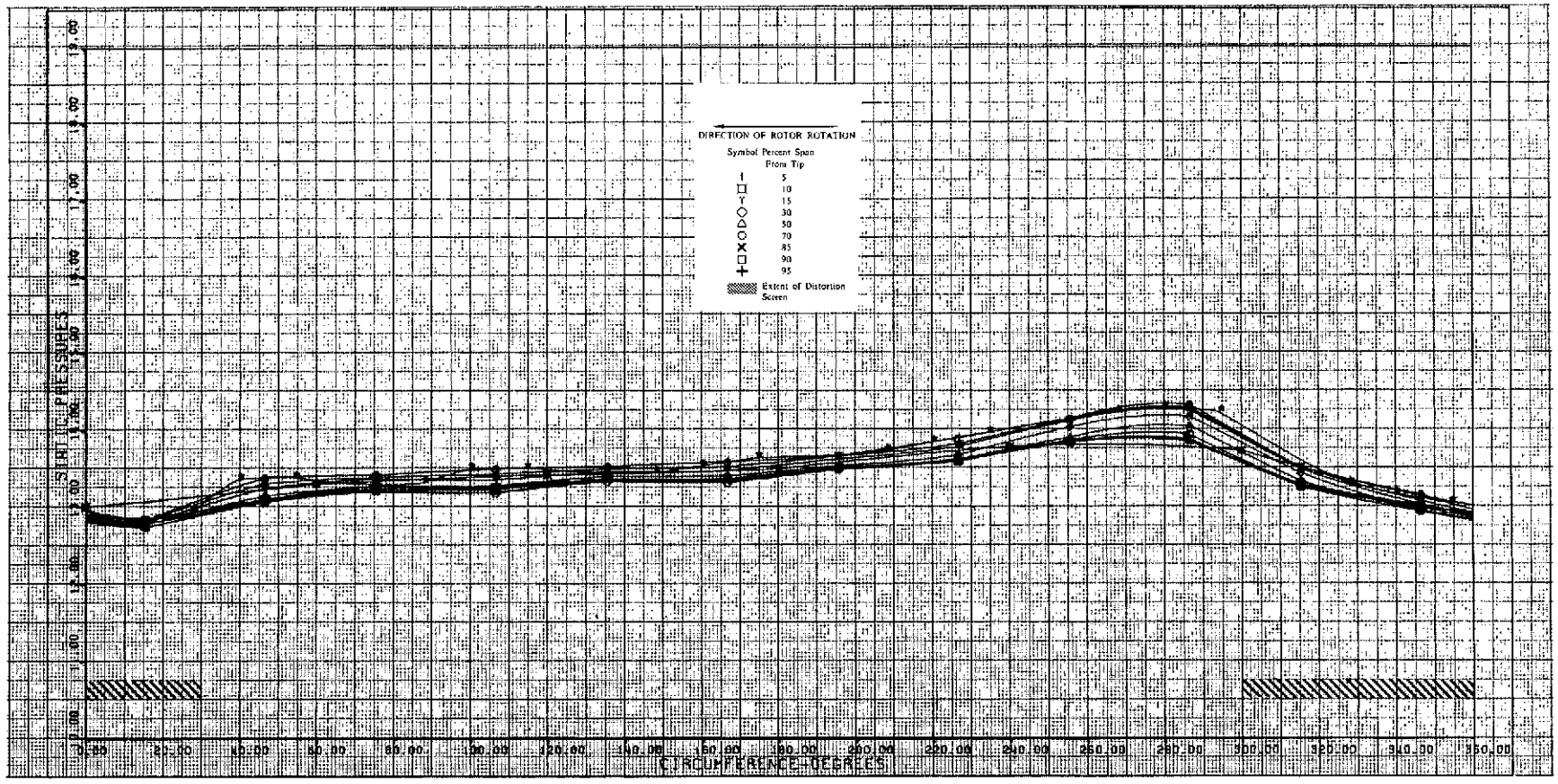


Figure 42b. Rotor Inlet Static Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97821

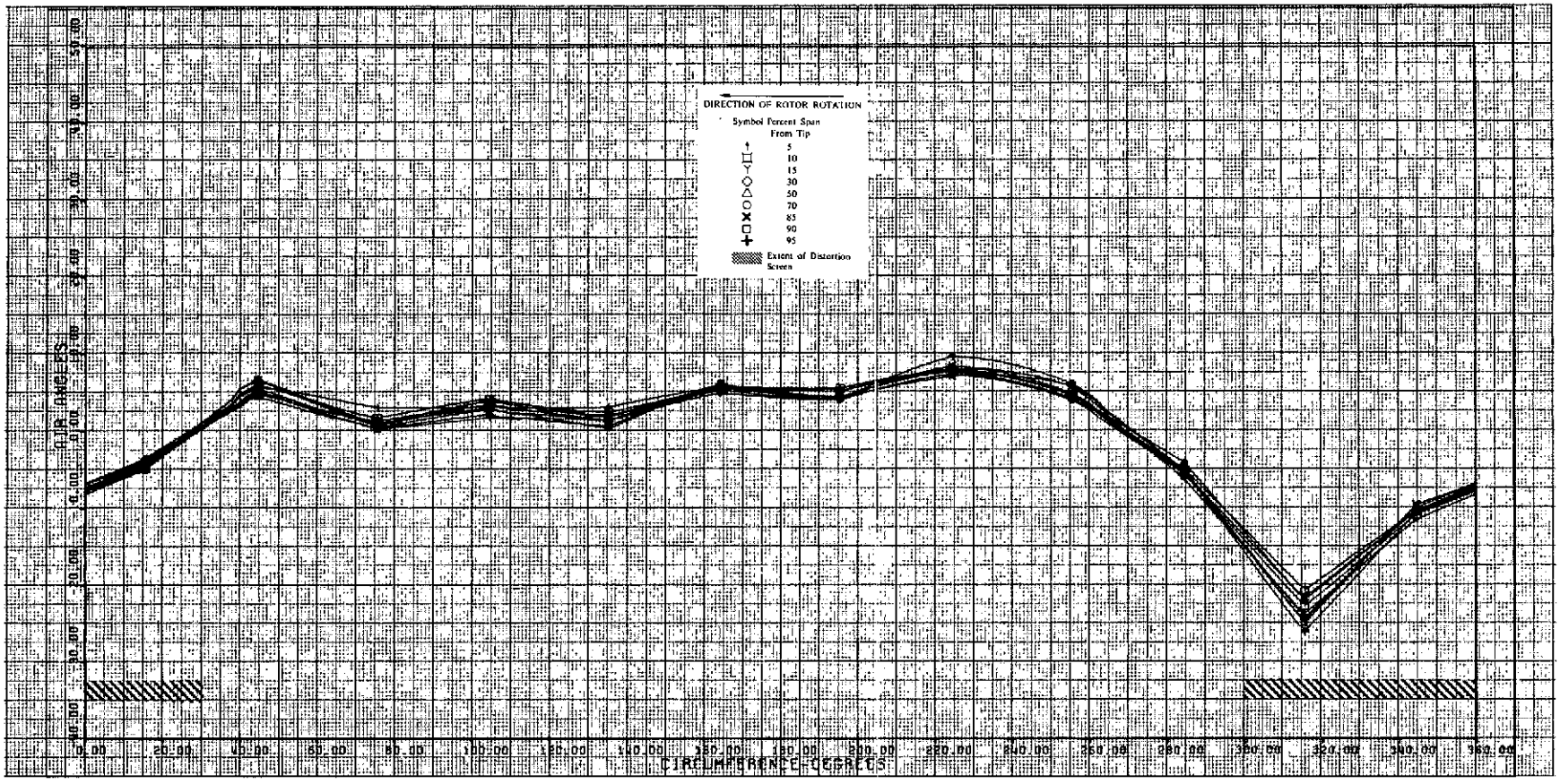


Figure 42c. Rotor Inlet Air Angle vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97822

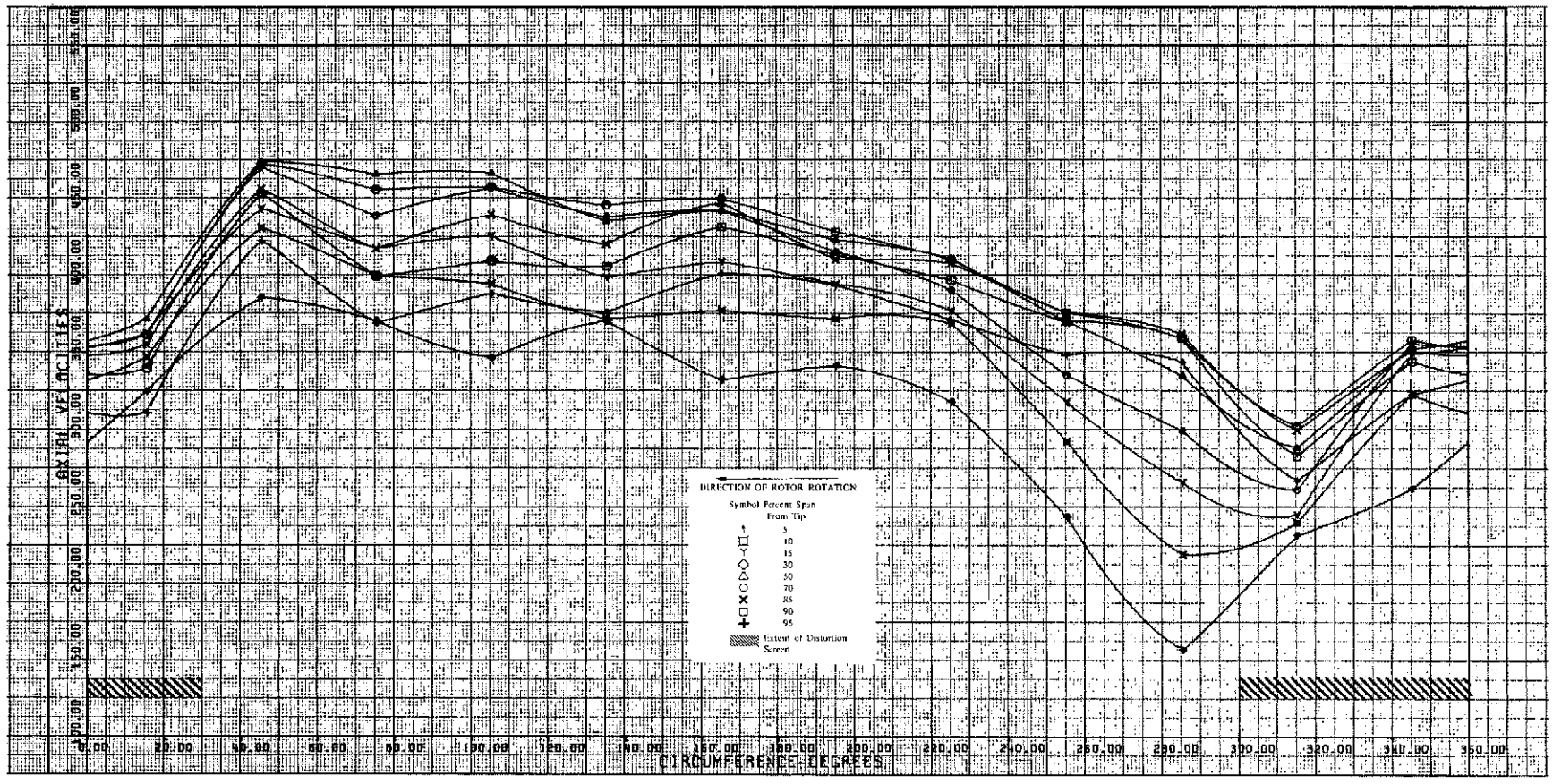


Figure 42d. Rotor Inlet Axial Velocity vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97823

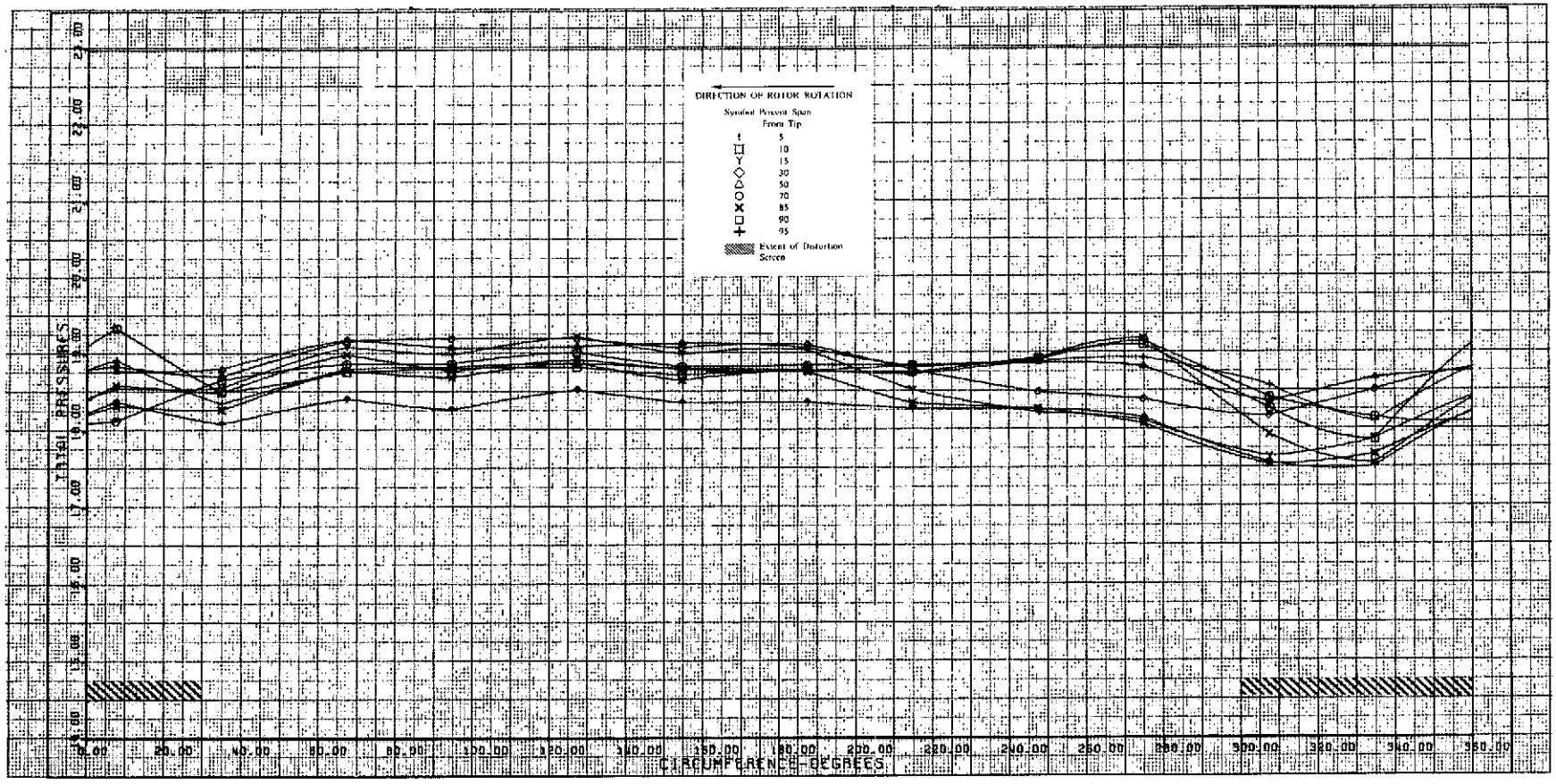


Figure 42e. Stator Inlet Total Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97824

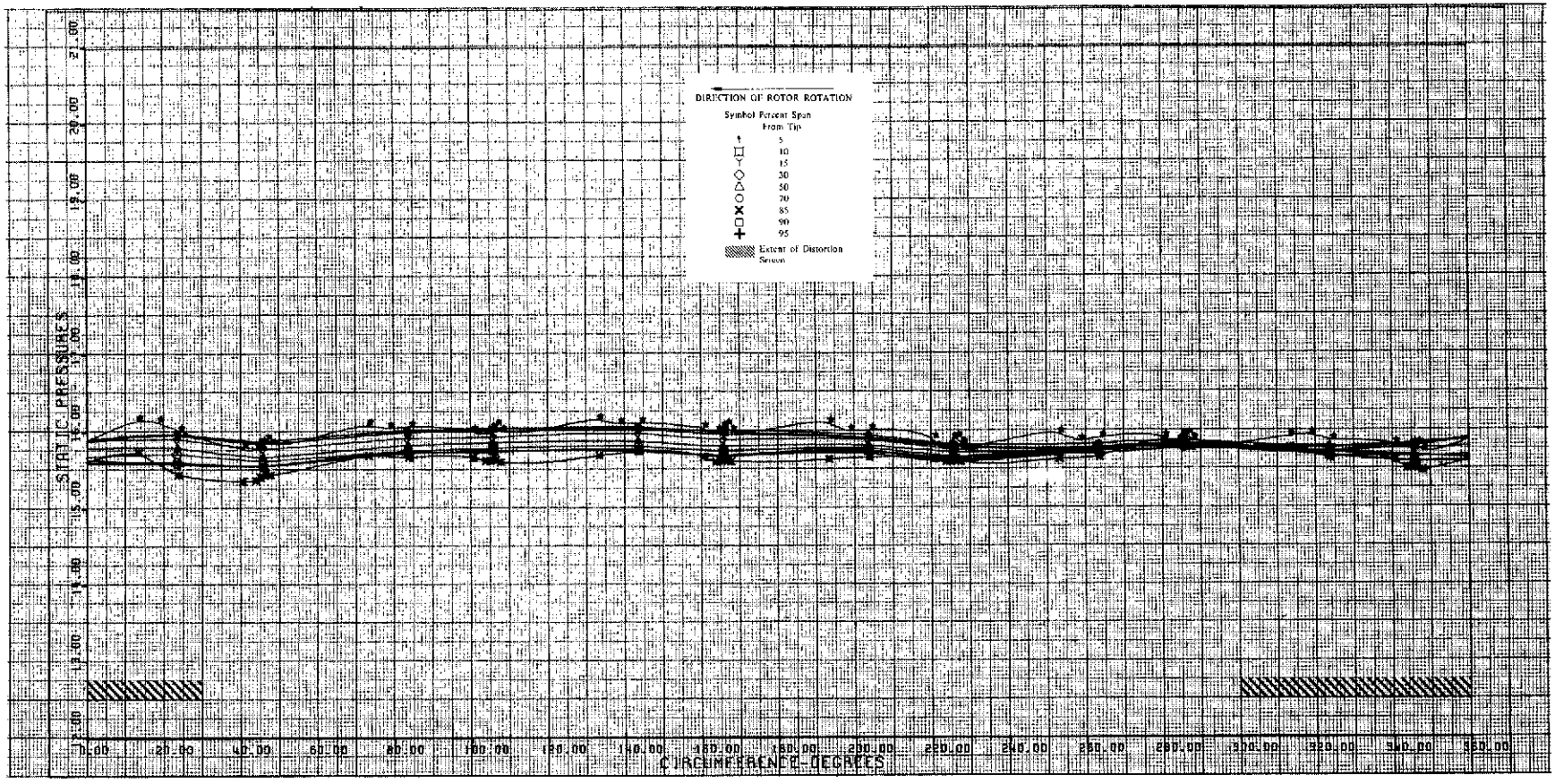


Figure 42f. Stator Inlet Static Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97825

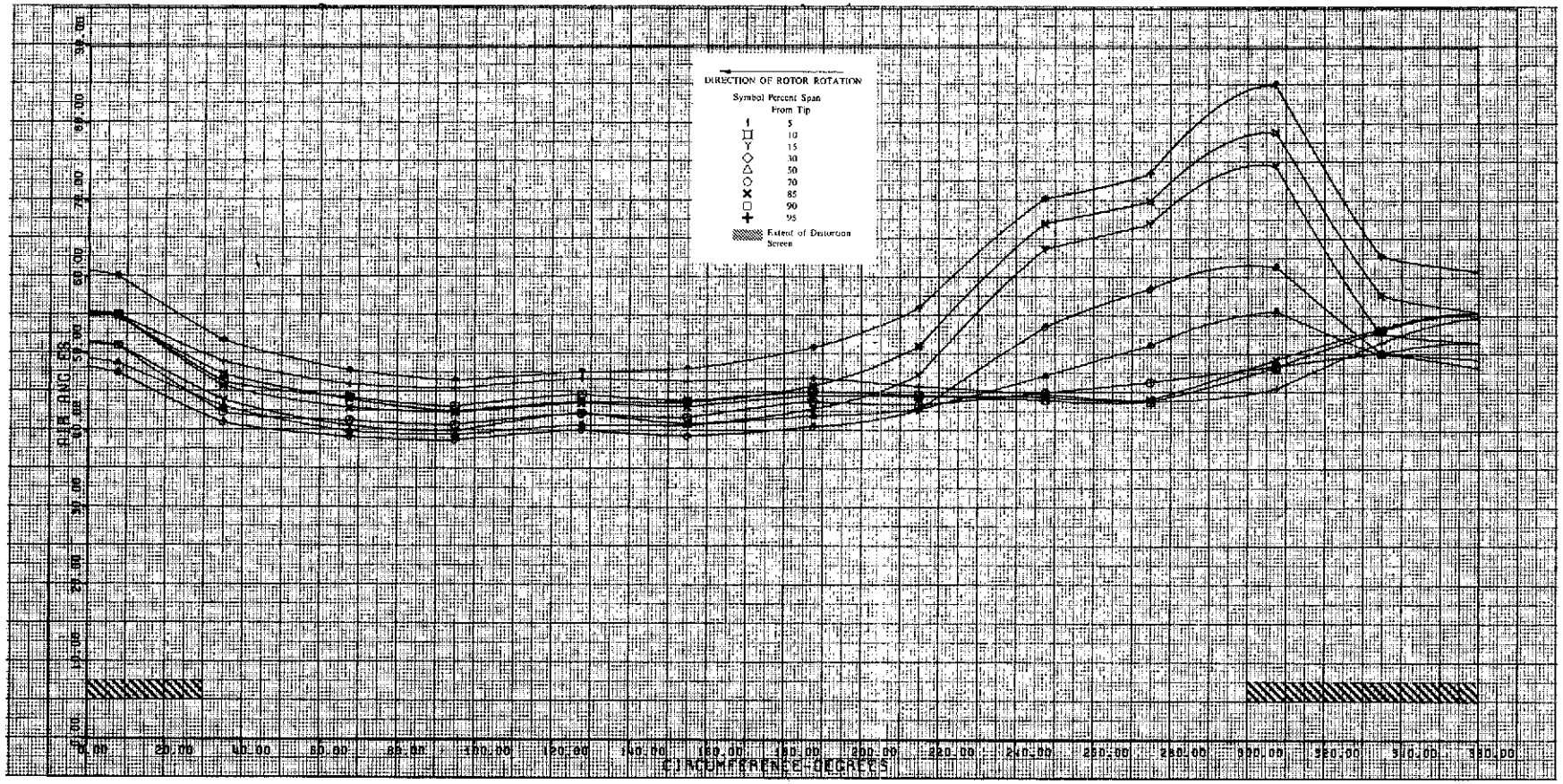


Figure 42g. Stator Inlet Air Angle vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion DF 97826

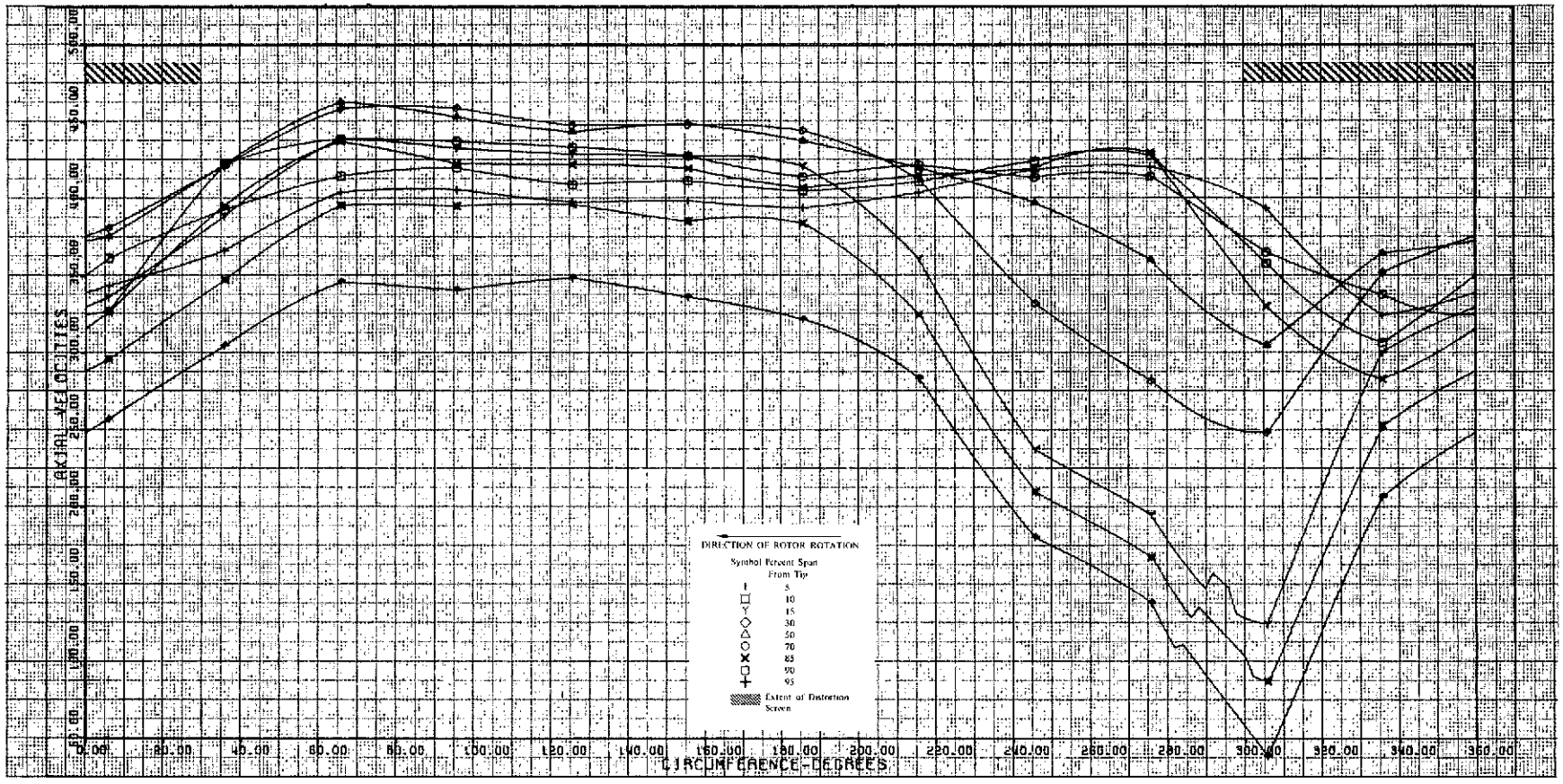


Figure 42h. Stator Inlet Axial Velocity vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97827

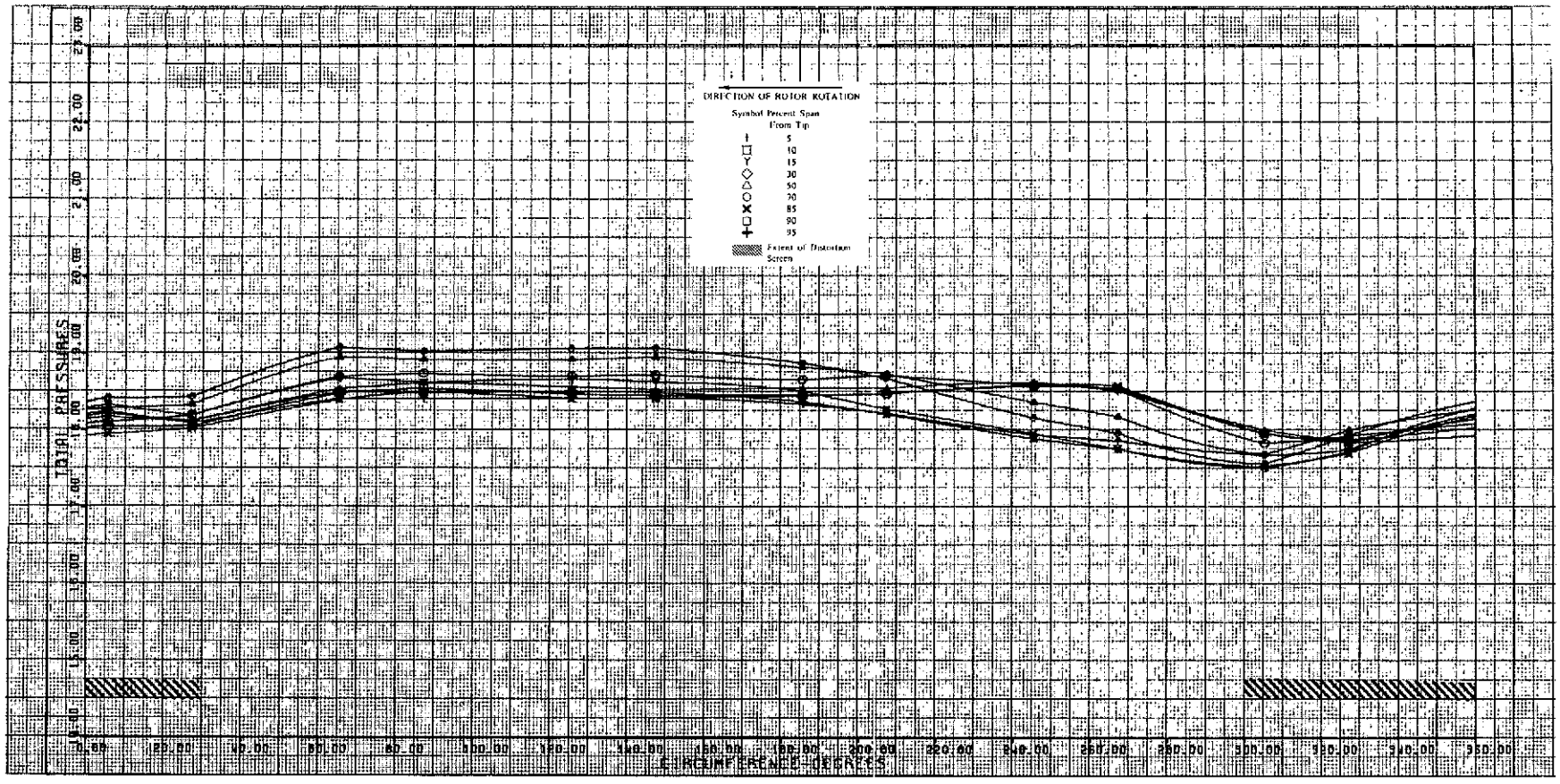


Figure 42i. Stator Exit Total Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97828

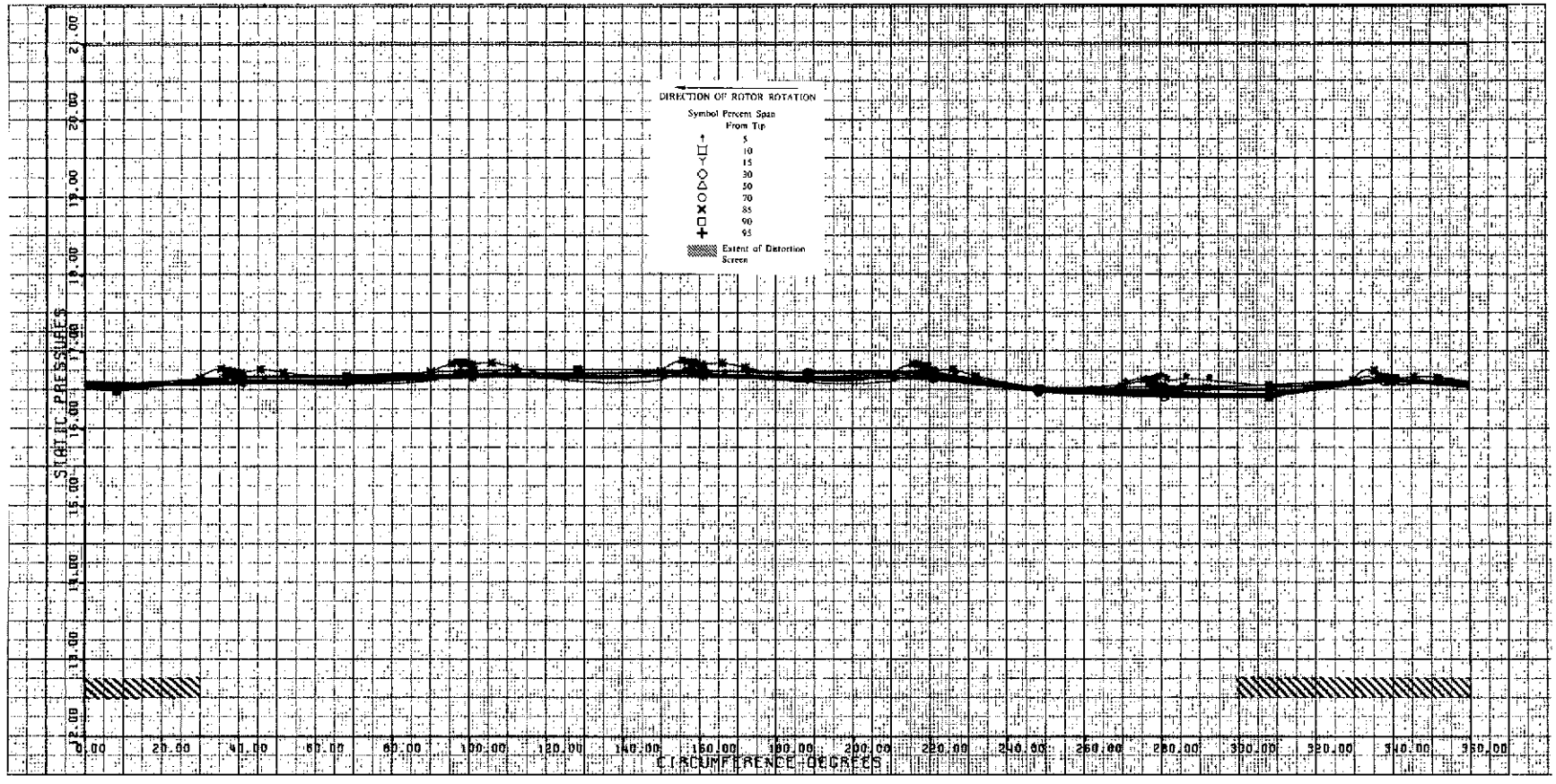


Figure 42j. Stator Exit Static Pressure vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion DF 97829

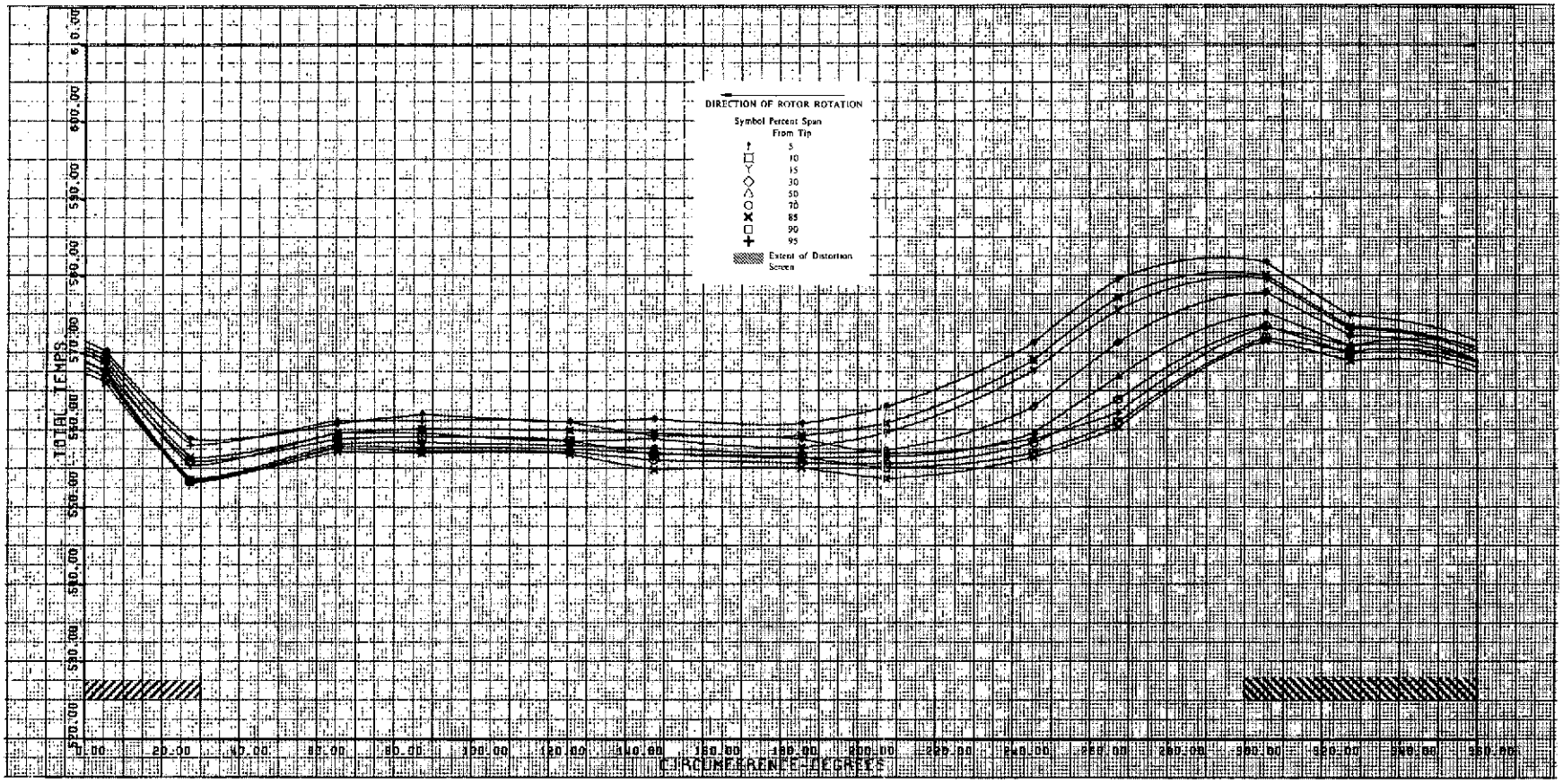


Figure 42k. Stator Exit Total Temperature vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97830

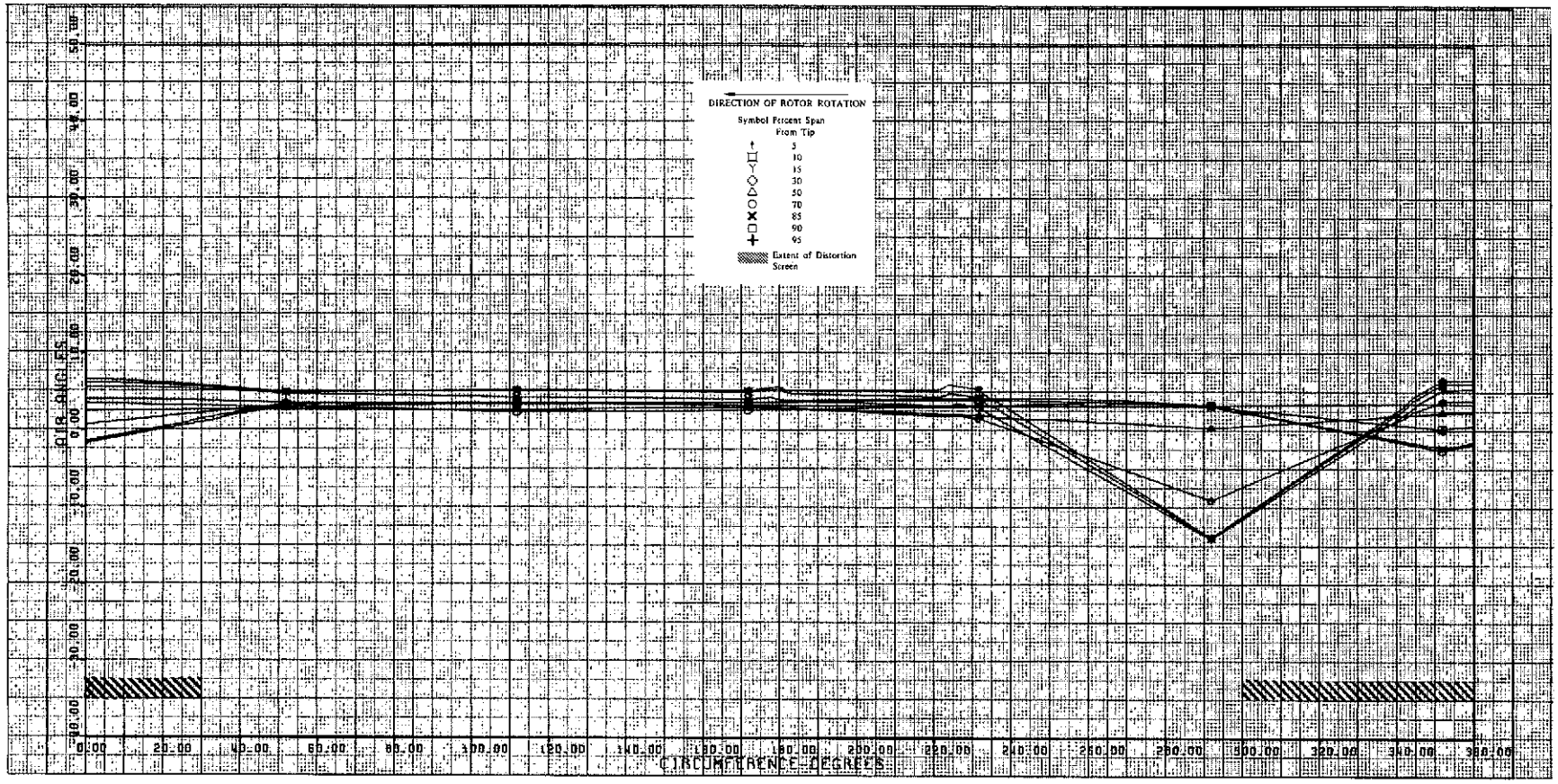


Figure 421. Stator Exit Air Angle vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97831

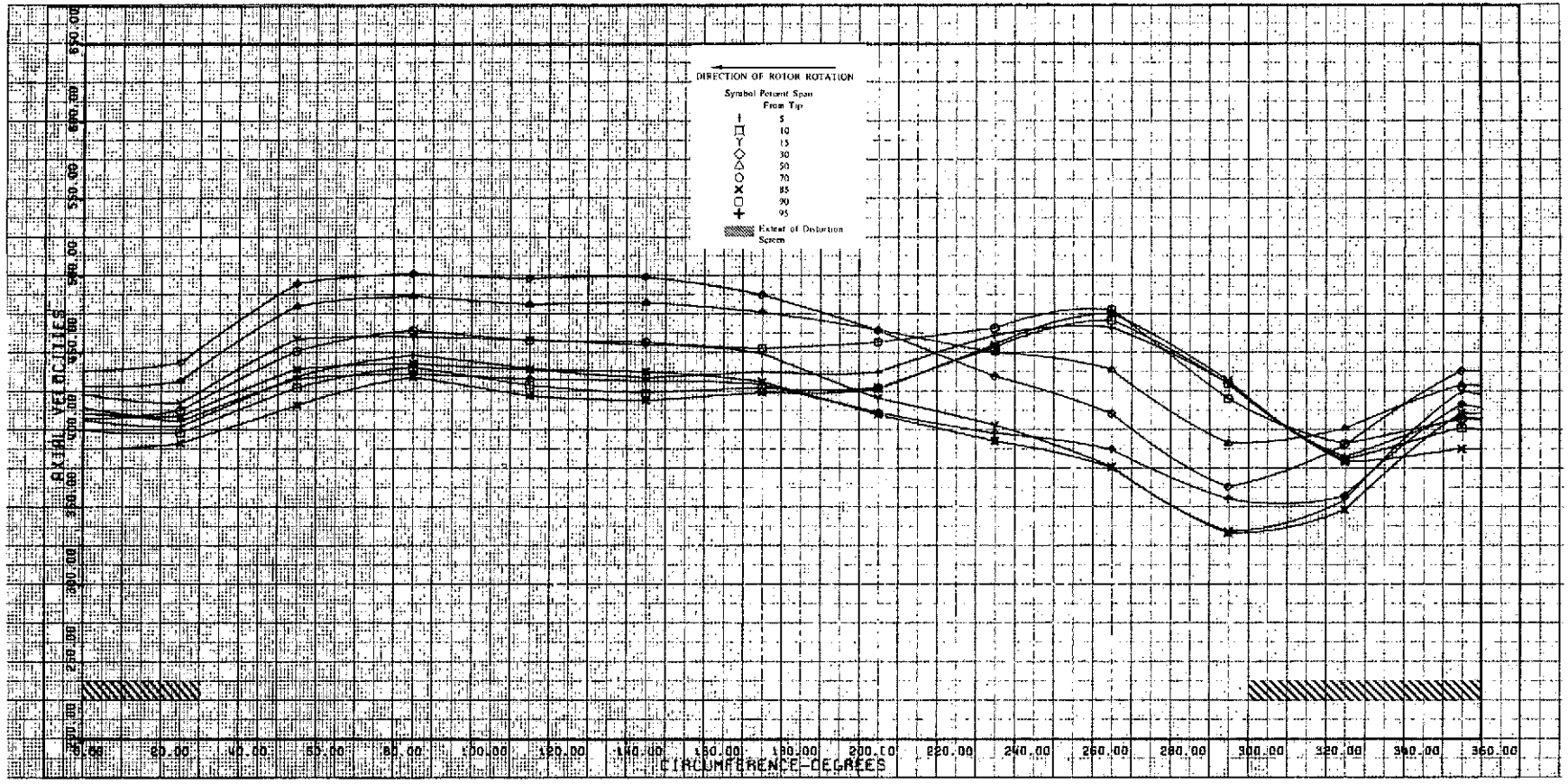


Figure 42m. Stator Exit Axial Velocity vs Circumferential Location; 100% Design Equivalent Rotor Speed; Equivalent Weight Flow = 90.59 lb/sec; Circumferential Distortion

DF 97832

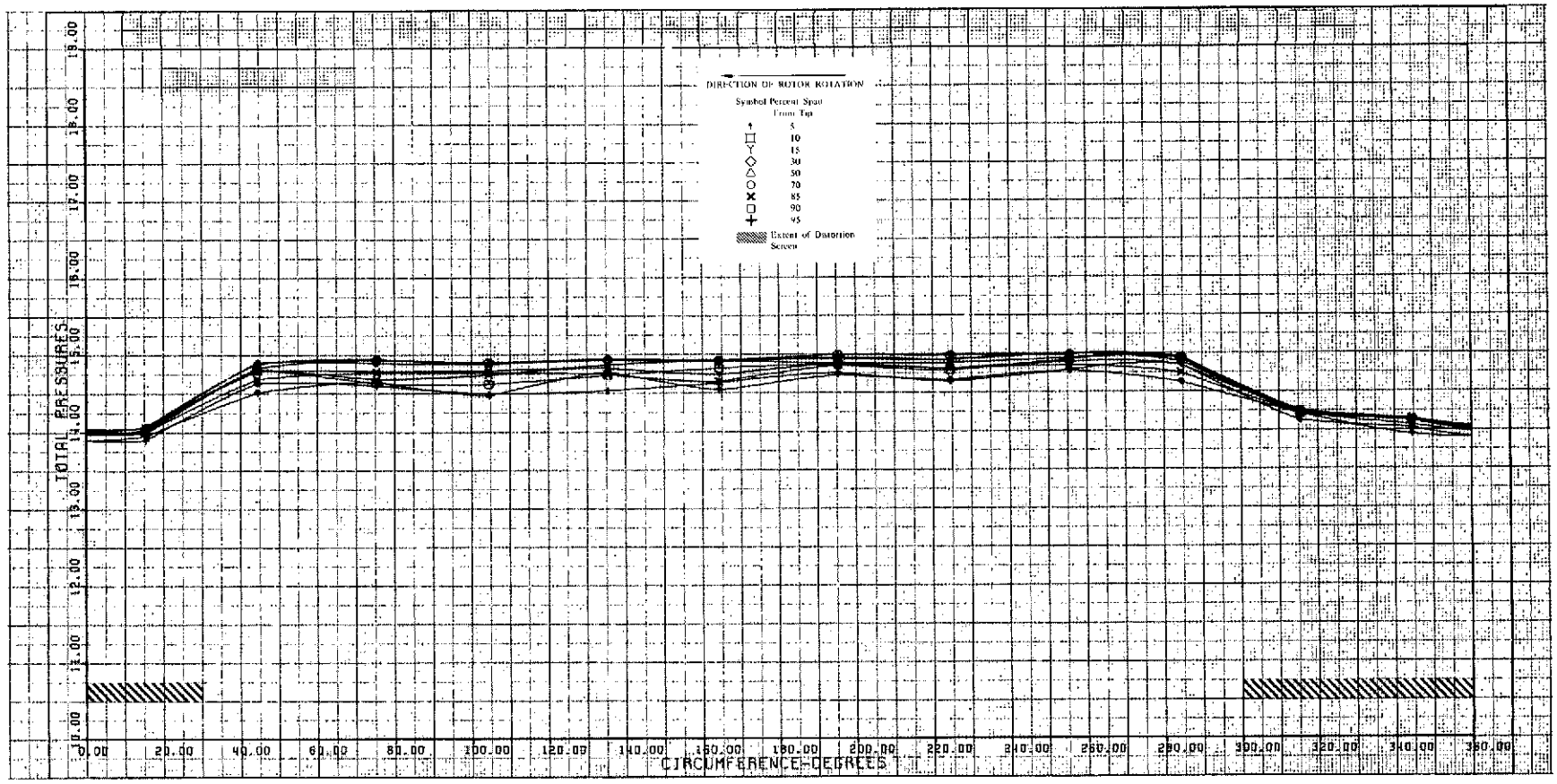


Figure 43a. Rotor Inlet Total Pressure vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97833

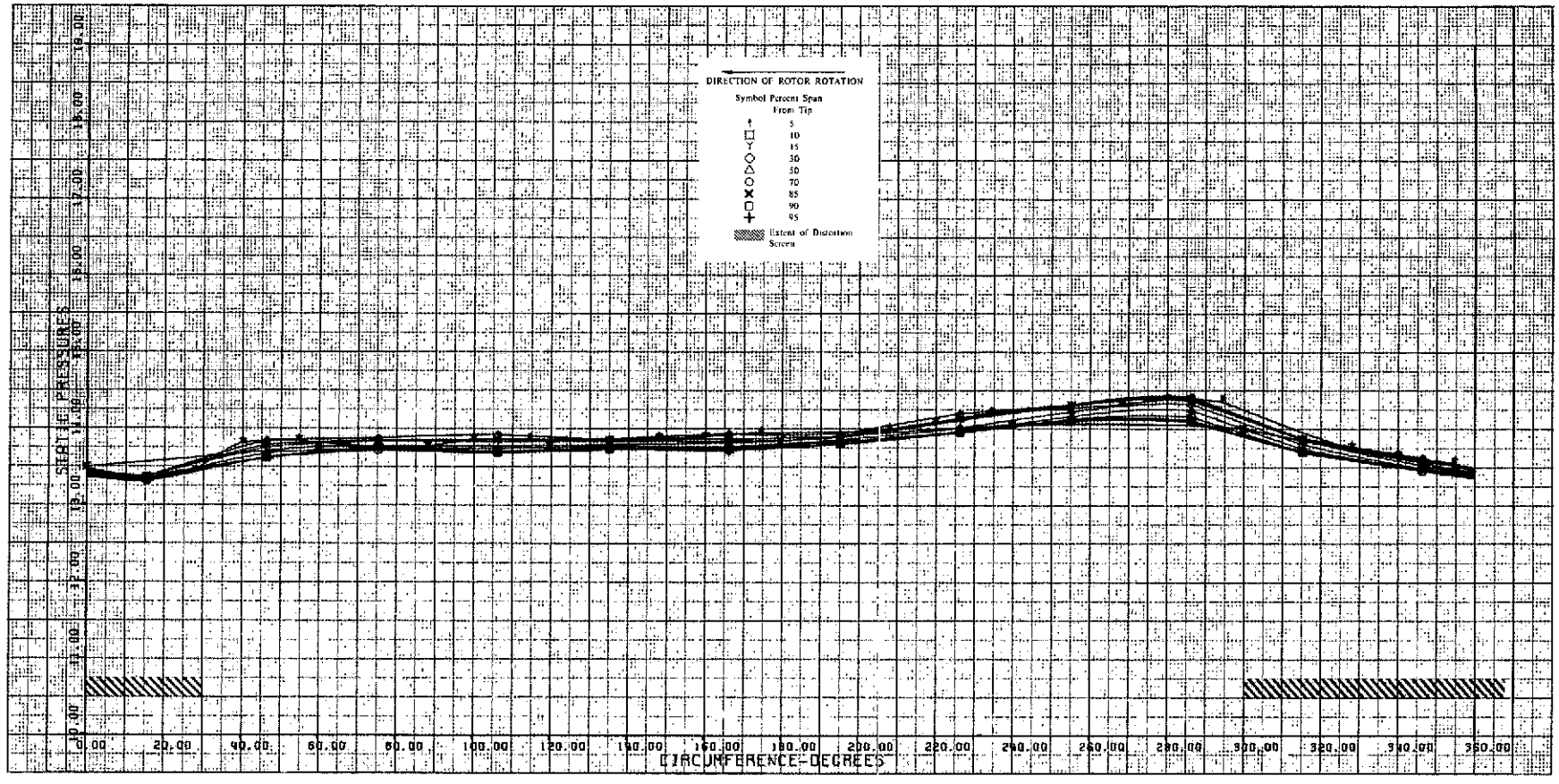


Figure 43b. Rotor Inlet Static Pressure vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97834

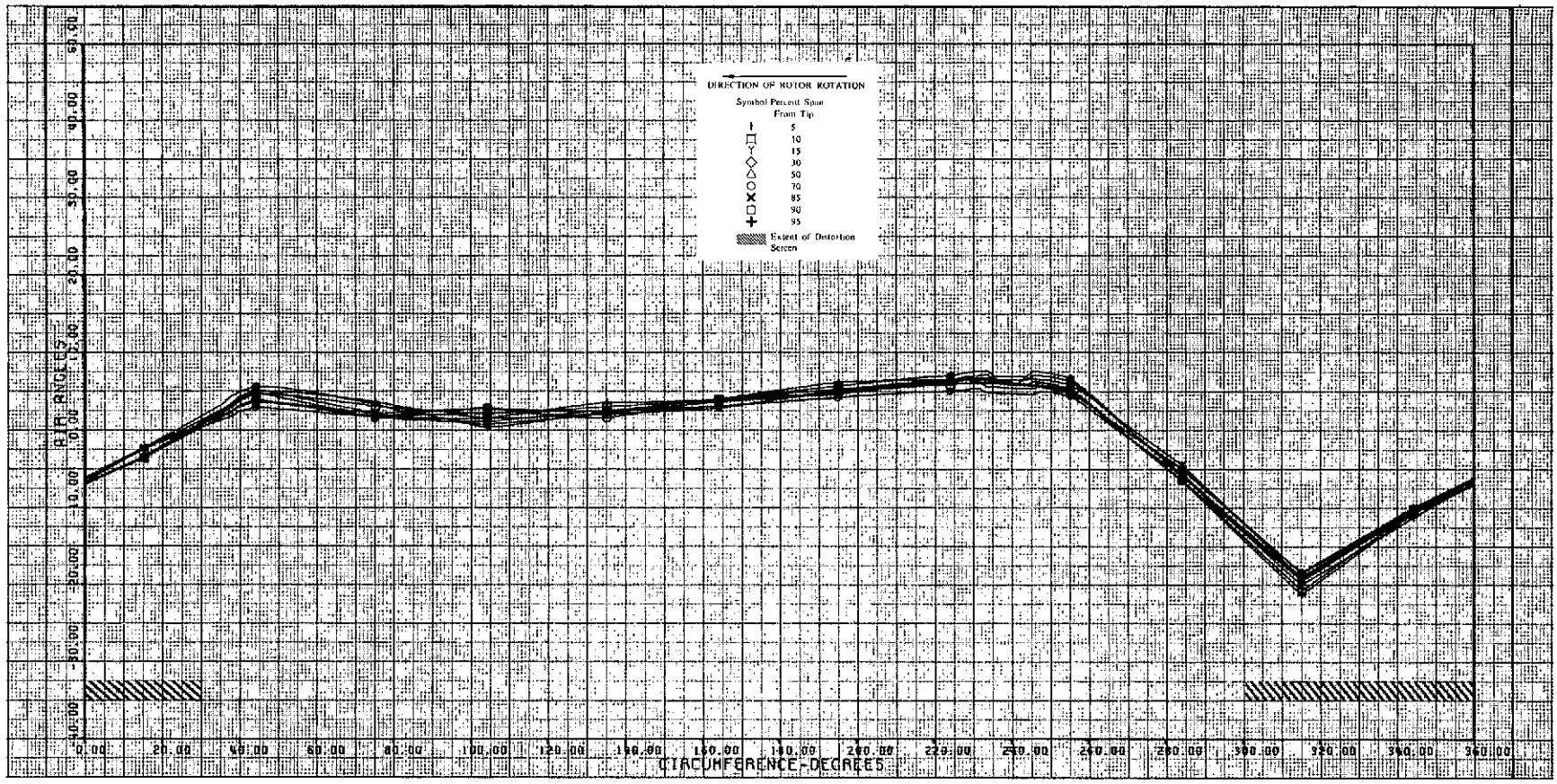


Figure 43c. Rotor Inlet Air Angle vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97835

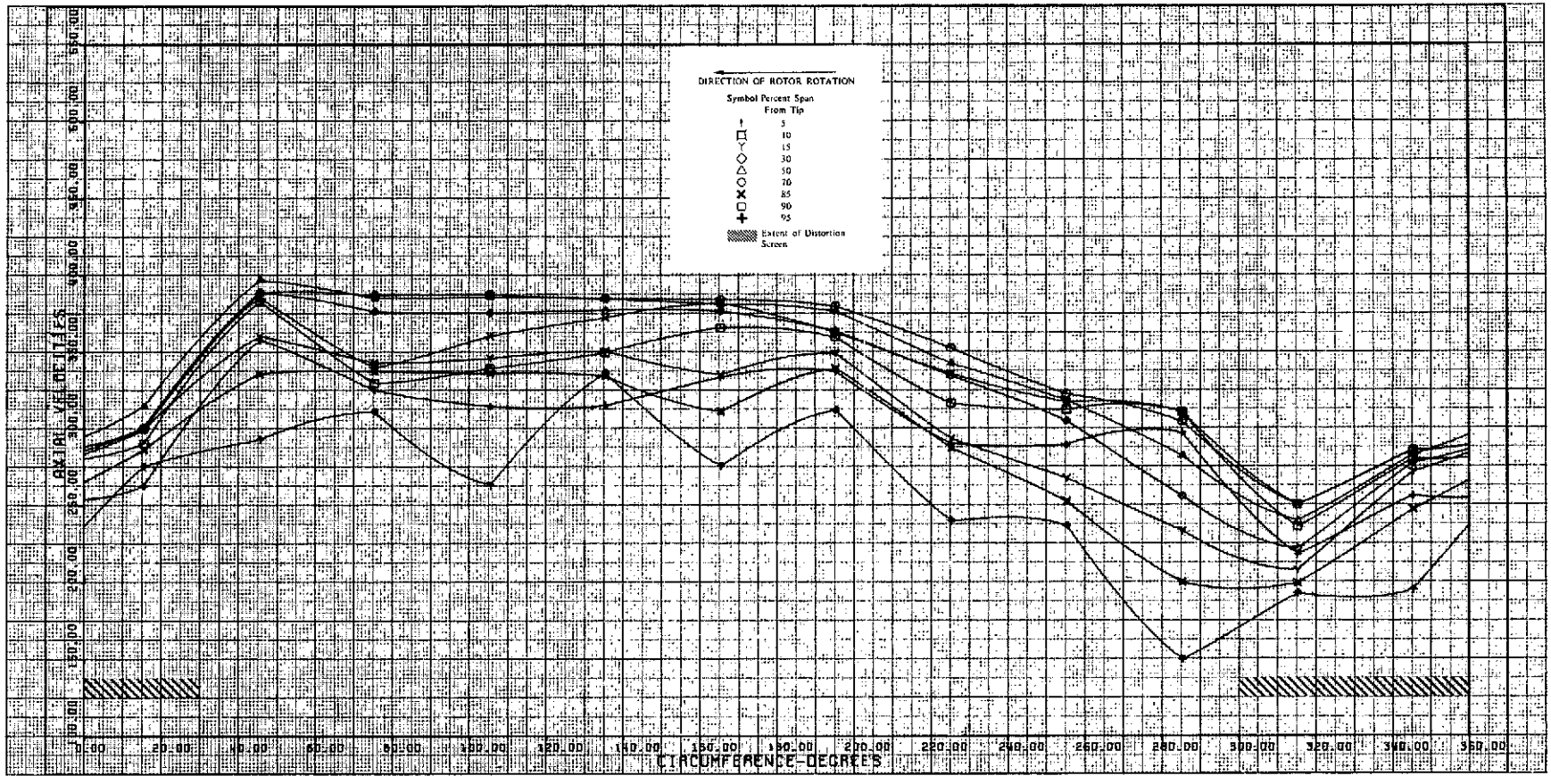


Figure 43d. Rotor Inlet Axial Velocity vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97836

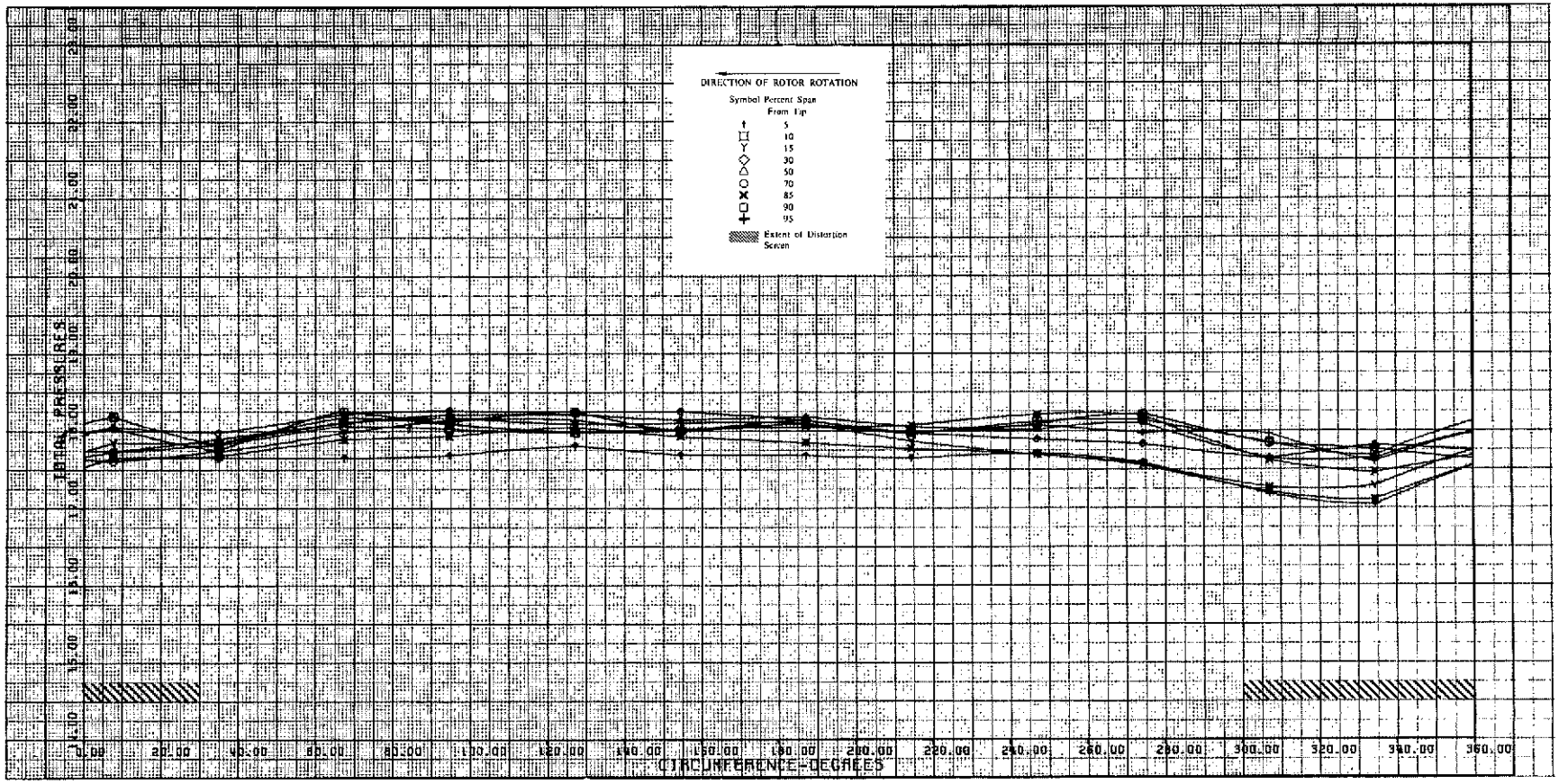


Figure 43e. Stator Inlet Total Pressure vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97837

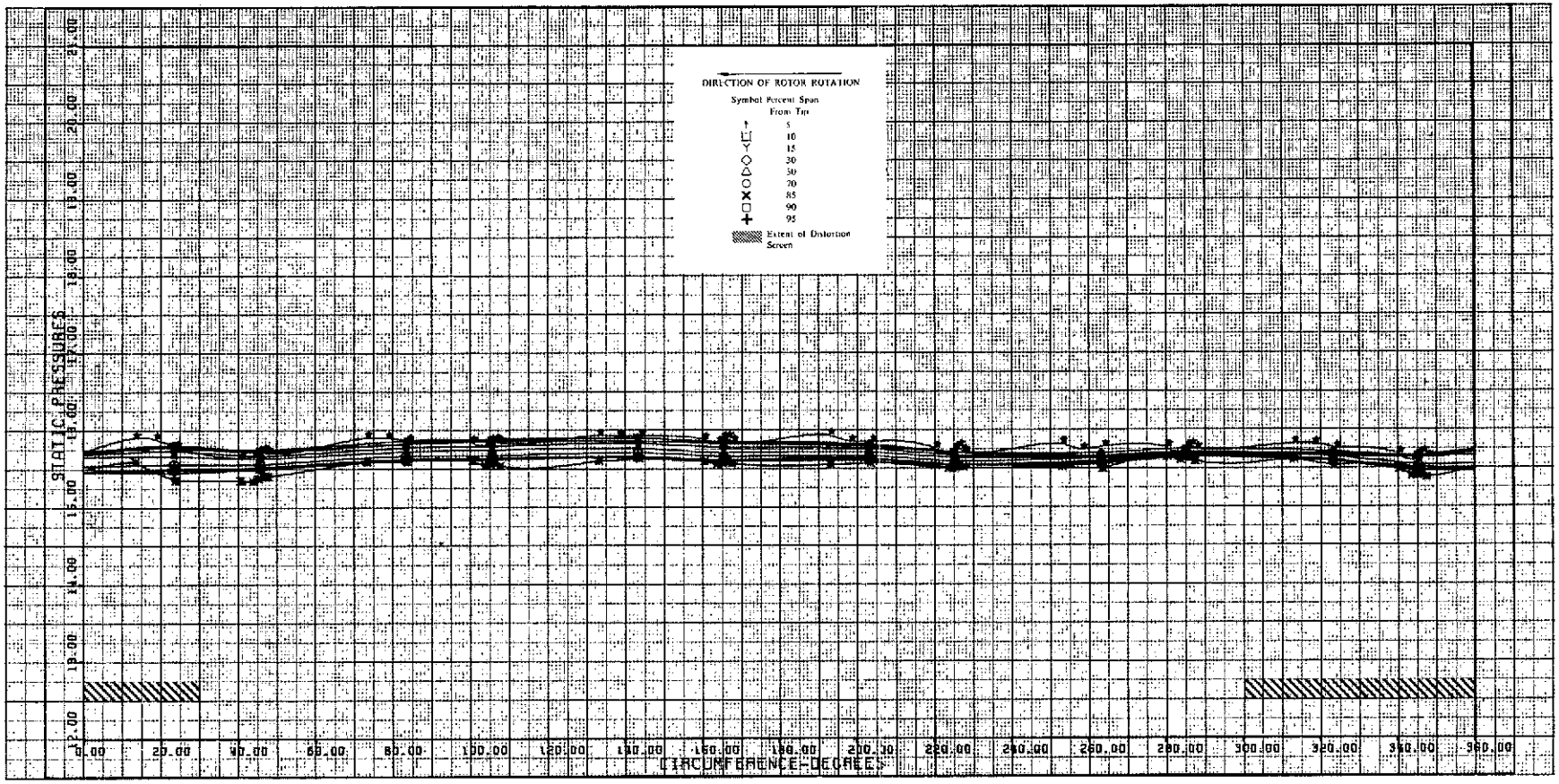


Figure 43f. Stator Inlet Static Pressure vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97838

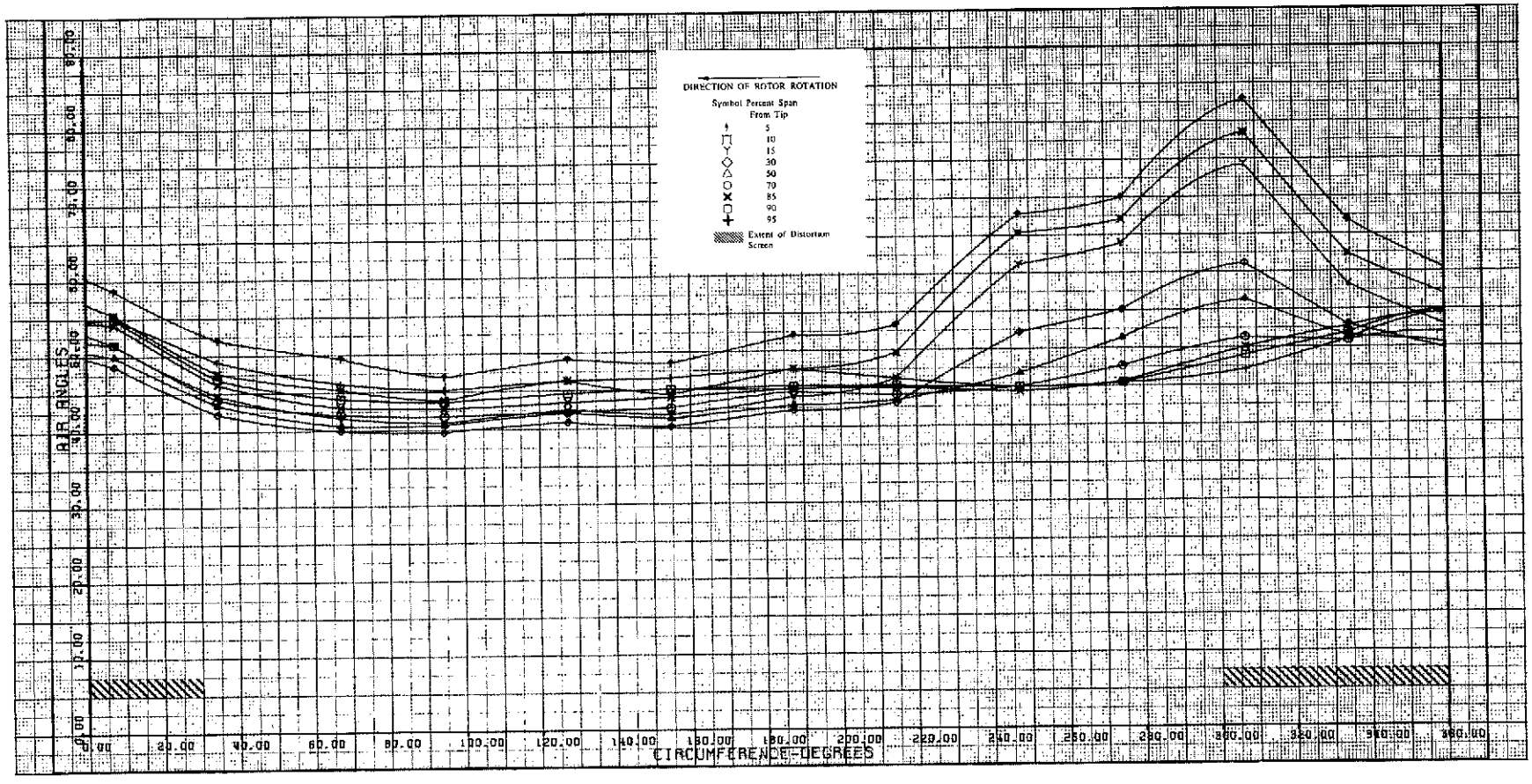


Figure 43g. Stator Inlet Air Angle vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97839

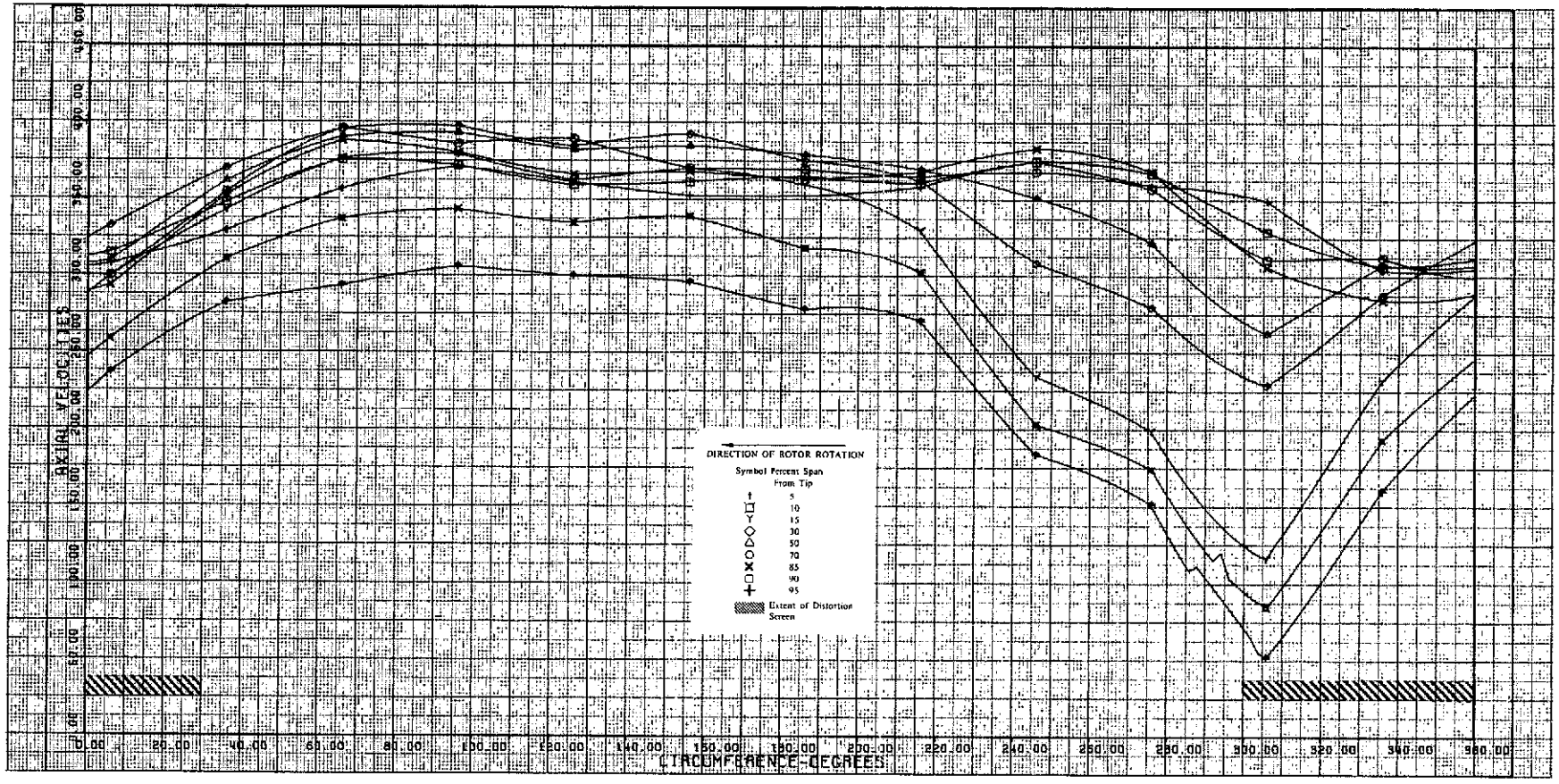


Figure 43h. Stator Inlet Axial Velocity vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97840

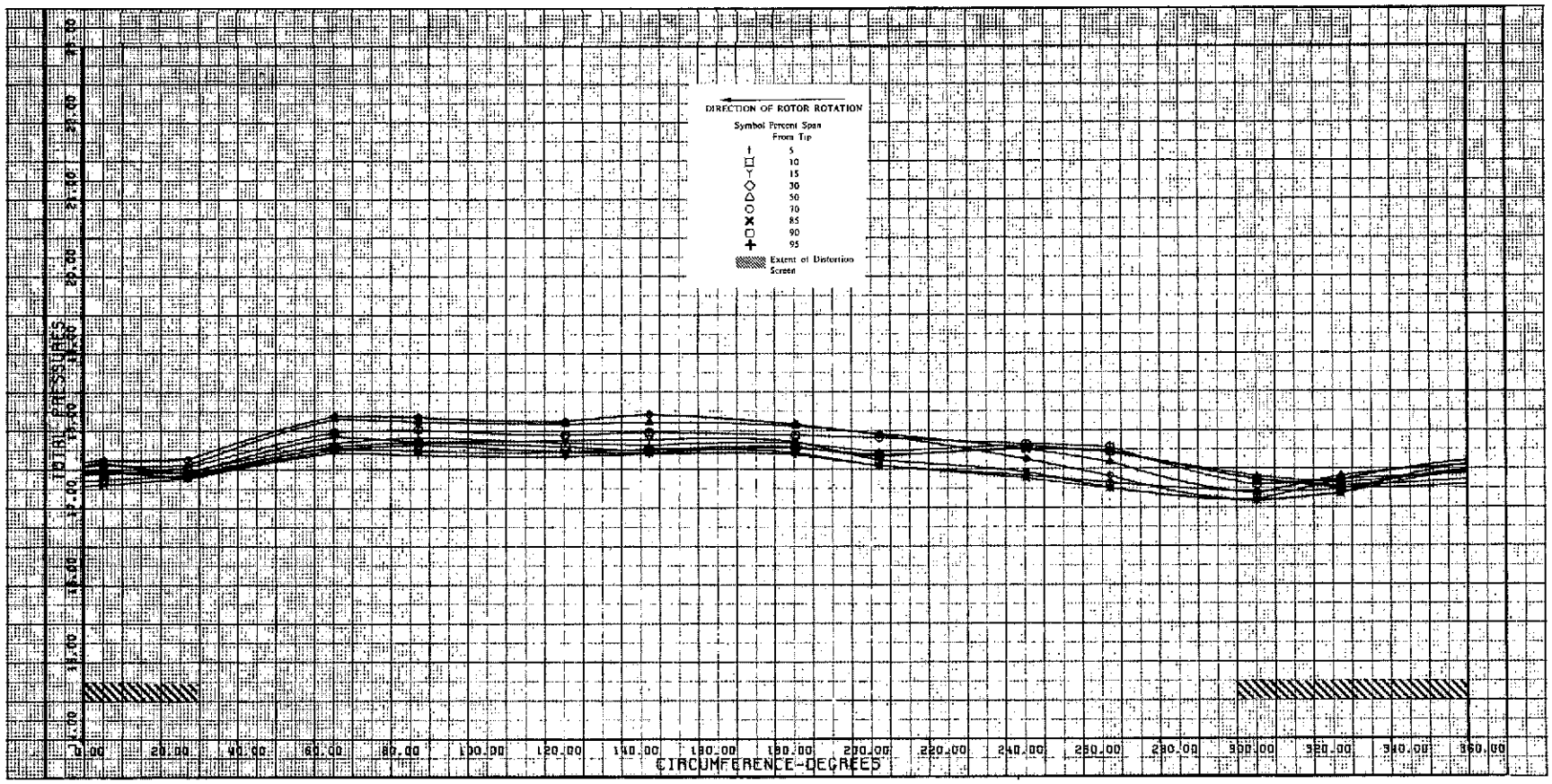


Figure 431. Stator Exit Total Pressure vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97841

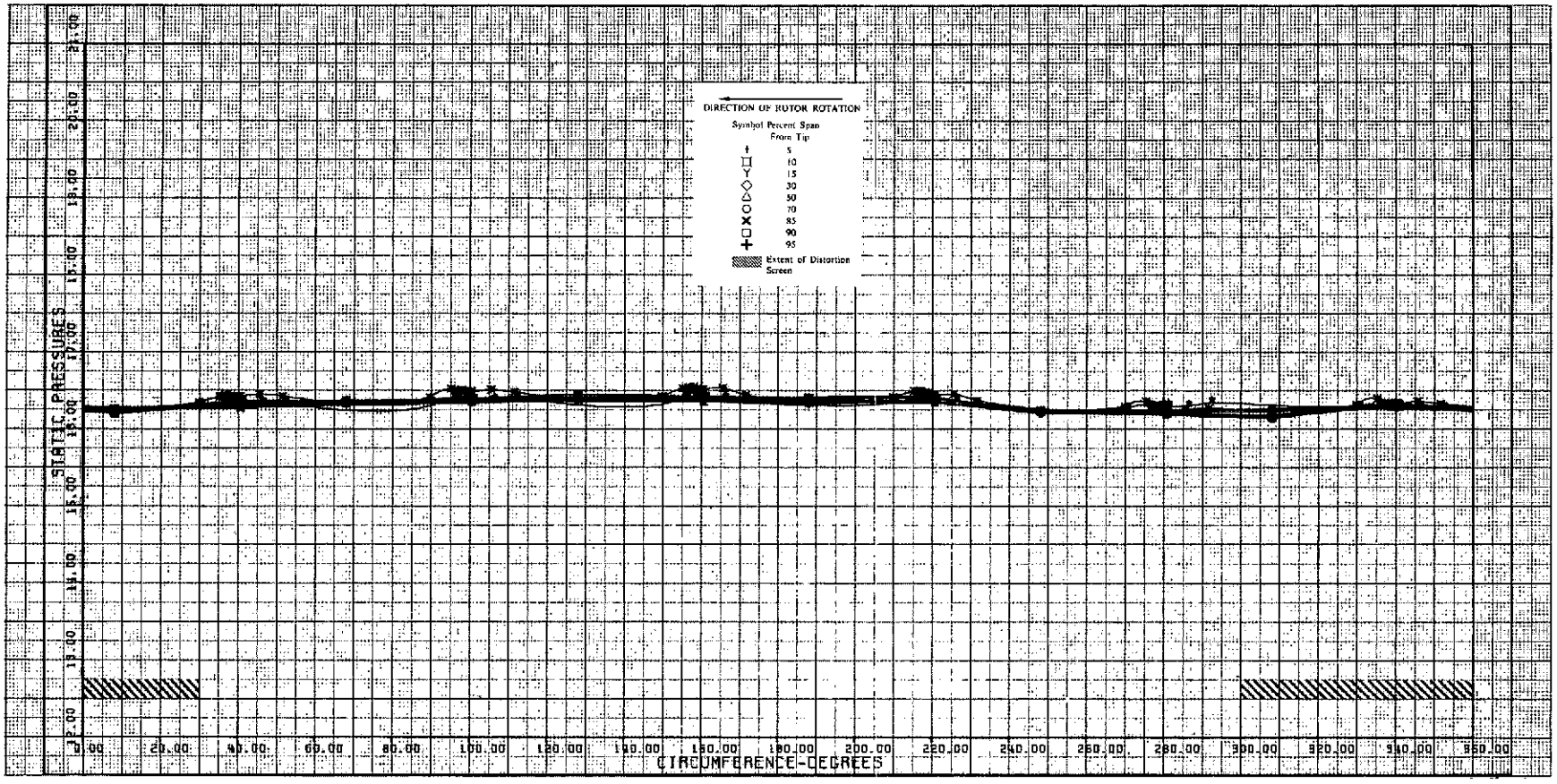


Figure 43j. Stator Exit Static Pressure vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97842

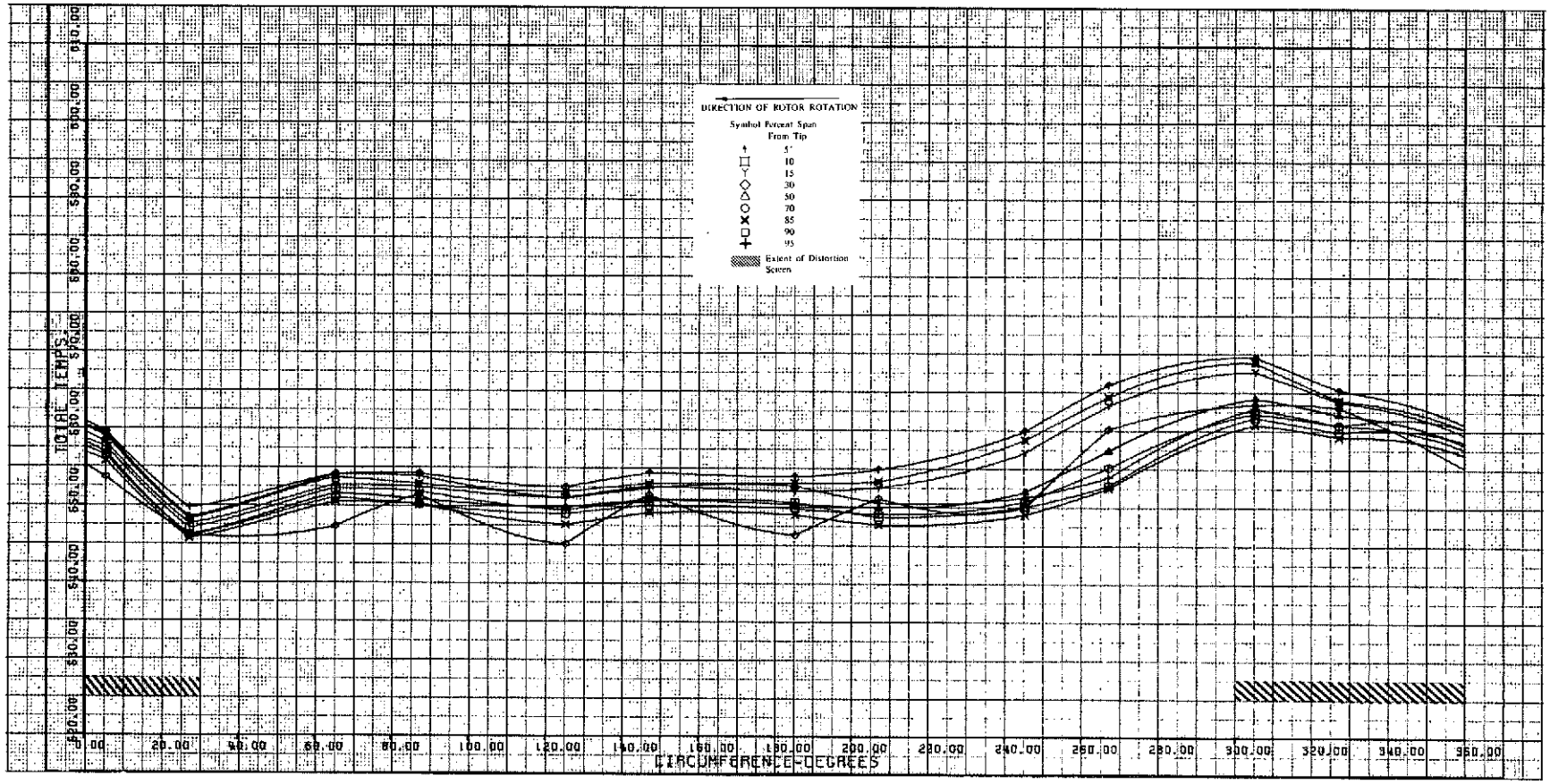


Figure 43k. Stator Exit Total Temperature vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97843

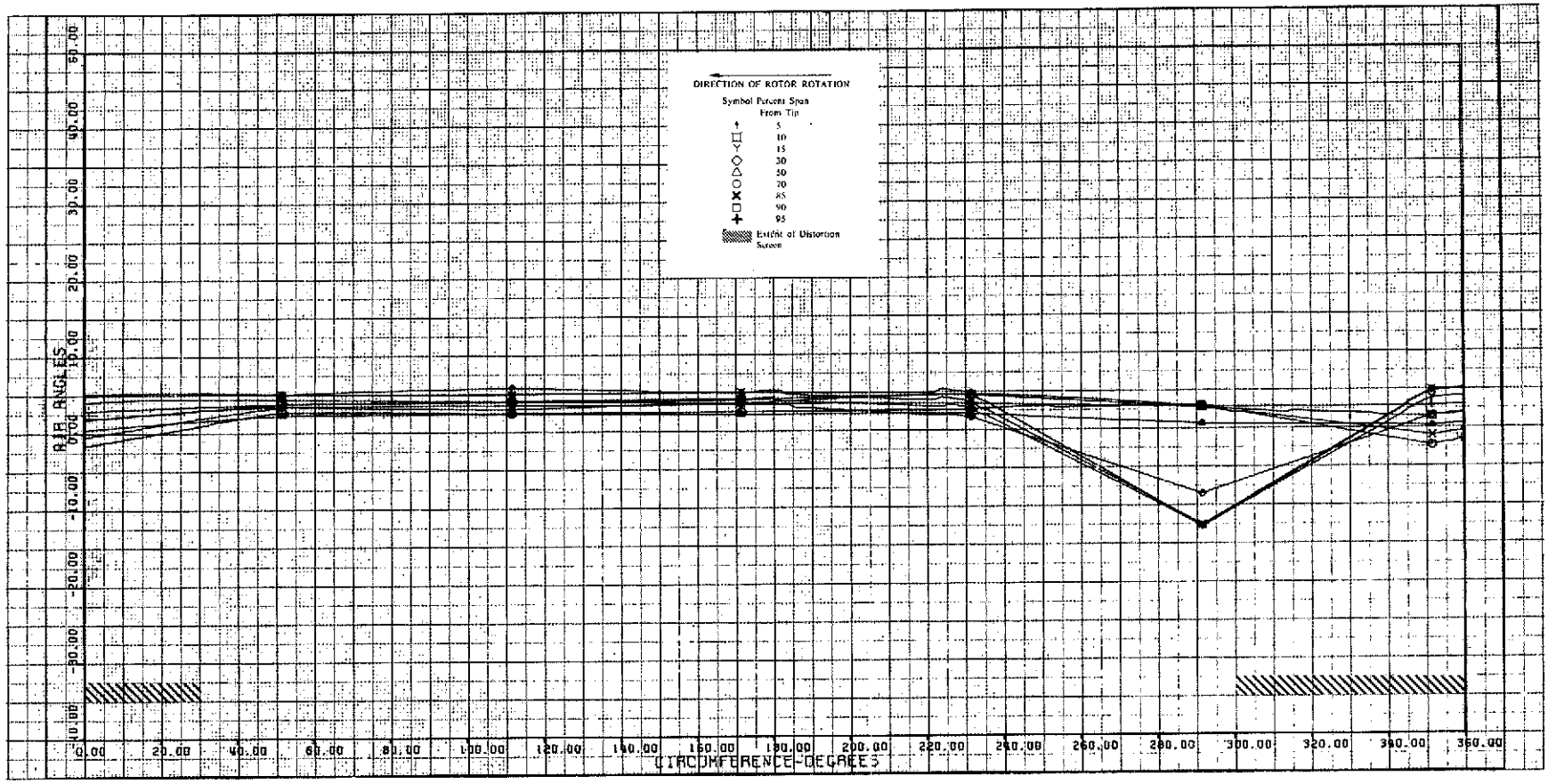


Figure 431. Stator Exit Air Angle vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97844

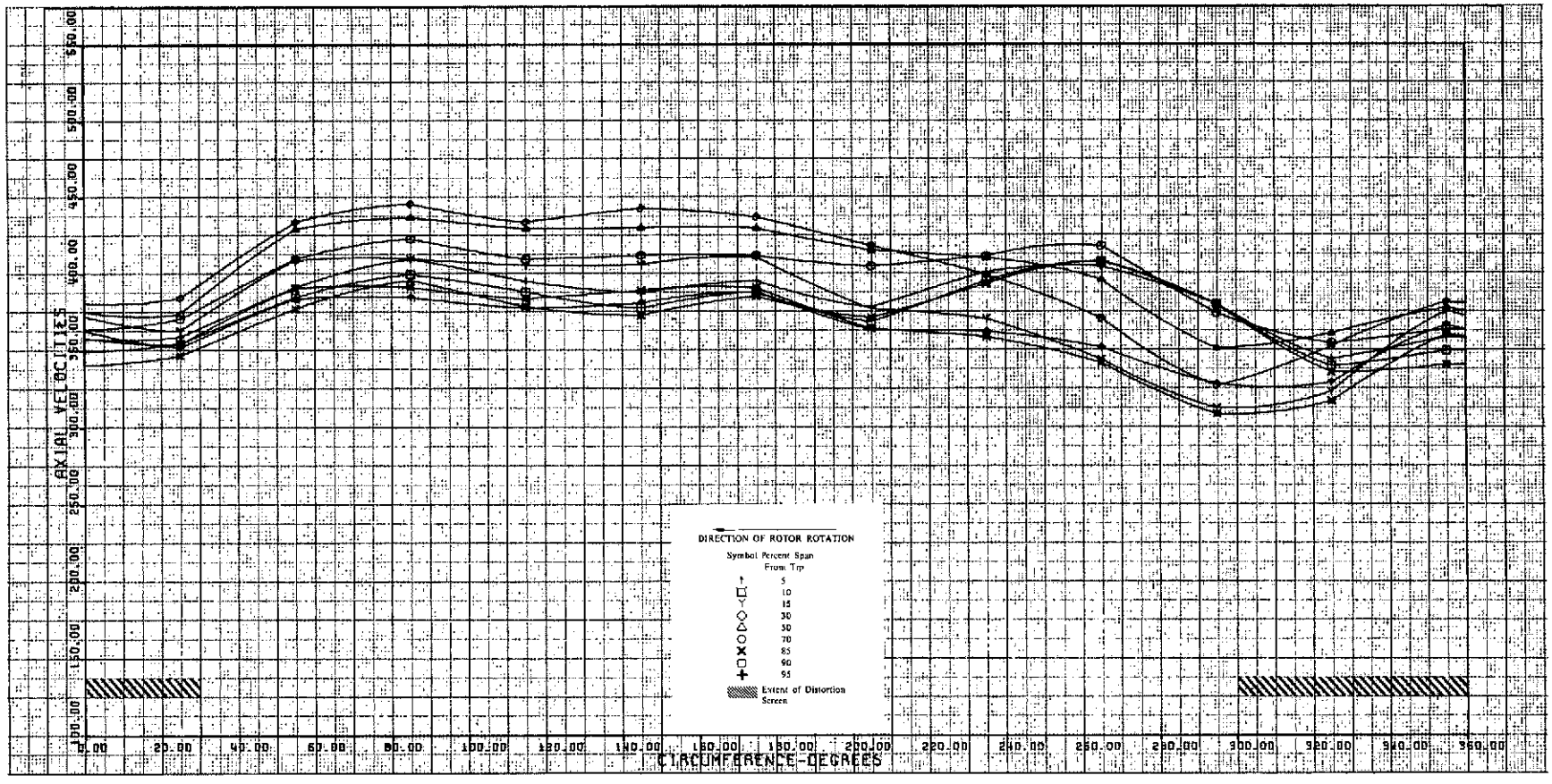


Figure 43m. Stator Exit Axial Velocity vs Circumferential Location; 90% Design Equivalent Rotor Speed; Equivalent Weight Flow = 79.78 lb/sec; Circumferential Distortion

DF 97845

APPENDIX A
TABULATED OVERALL AND BLADE ELEMENT PERFORMANCE AND FLOW DISTRIBUTION DATA

Rotor D and Stage D overall performance with a uniform inlet, hub radial distortion, tip radial distortion, and circumferential distortion of the inlet flow is tabulated in tables A-1, A-4, and A-7, respectively. Rotor D and Stator D blade element performance and flow distribution data for uniform inlet, hub radial distortion of the inlet flow and tip radial distortion of the inlet flow is presented in tables A-3, A-5, and A-6, respectively. The flow distribution data with circumferential distortion of the inlet flow are given in table A-8 for circumferential increments of 30 deg around the compressor annulus. Table A-2 is presented to illustrate the small differences at the near-design point between values calculated from the data at the instrumentation stations and the values calculated from the data that have been translated to the blade row leading and trailing edges.

The blade element performance and flow distribution data with uniform inlet flow and radial distortion of the inlet flow are arranged in order of decreasing rotor speed and decreasing flow at each rotor speed. The flow distribution data with circumferential distortion of the inlet flow are given at the instrumentation station planes and are arranged for a given equivalent rotor speed flow combination in order of increasing circumferential position. The circumferential positions of the data at each instrumentation station is noted at the top of each data sheet. These positions were selected so that they would correspond as close as possible to the locations of the 20 deg wedge probes relative to the distortion screen and provide data at increments of 30 deg around the compressor annulus.

NOMENCLATURE USED FOR OVERALL PERFORMANCE TABULATION

Mass-Averaged Rotor Inlet Total Pressure	$\overline{P}_1$
Mass-Averaged Stator Inlet Total Pressure	$\overline{P}_2$
Mass-Averaged Stator Exit Total Pressure	$\overline{P}_{2A}$
Adiabatic Efficiency*	η_{ad}
Polytropic Efficiency*	η_p

NOMENCLATURE USED FOR BLADE ELEMENT AND DISTORTION DATA TABULATION

Exit Percent Span from Tip	PCT SPAN
Exit Diameter	DIA
Absolute Flow Angle	BETA
Relative Flow Angle	BETA (PR)
Absolute Velocity	V
Axial Velocity	VZ
Absolute Tangential Velocity	V-THETA
Relative Tangential Velocity	V-THETA PR
Rotor Speed	U
Absolute Mach Number	M
Relative Mach Number	M (PR)
Relative Turning Angle	TURN (PR)
Loss Coefficient ($\overline{\omega}$)**	UUBAR
Loss Parameter**	LOSS PARA
Diffusion Factor**	DFAC
Polytropic Efficiency**	EFFP
Adiabatic Efficiency**	EFF
Incidence**	INCID
Deviation**	DEVM
Total Pressure	P
Total Temperature	T
Stator Exit Average Freestream Total Pressure from Wake Rakes	P2 FS
Loss Coefficient Based on P2FS ($\overline{\omega}_{fs}$)	UUBAR FS
Loss Parameter Based on UUBAR FS	LOSS PARA FS

*Efficiencies calculated from mass-averaged values of total pressure and total temperature.

**Denotes variables excluded from circumferential distortion data.

Where applicable the appropriate instrumentation station is noted.

Table A-1. Overall Performance - Stage D
Uniform Inlet

Equivalent Weight Flow, lb/sec	ROTOR			STAGE		
	$\overline{P}_2/\overline{P}_1$	η_{ad}	η_p	$\overline{P}_{2A}/\overline{P}_1$	η_{ad}	η_p
	110% Design Equivalent Rotor Speed					
123.41	1.2185	0.7293	0.7368	1.1947	0.6539	0.6625
116.07	1.3400	0.8855	0.8901	1.3226	0.8436	0.8496
109.67	1.3540	0.8800	0.8850	1.3397	0.8470	0.8532
102.55	1.3637	0.8774	0.8827	1.3414	0.8279	0.8349
97.18	1.3671	0.8378	0.8449	1.3477	0.7948	0.8033
	100% Design Equivalent Rotor Speed					
120.02	1.1958	0.7570	0.7631	1.1742	0.6774	0.6846
110.18	1.2782	0.8892	0.8929	1.2645	0.8481	0.8531
102.67	1.2830	0.9008	0.9043	1.2692	0.8595	0.8641
95.36	1.2928	0.8740	0.8785	1.2741	0.8222	0.8282
88.32	1.3012	0.8545	0.8598	1.2784	0.7943	0.8013
	90% Design Equivalent Rotor Speed					
113.67	1.1697	0.8117	0.8159	1.1566	0.7516	0.7567
103.01	1.2170	0.8975	0.9004	1.2055	0.8532	0.8562
91.28	1.2244	0.8745	0.8781	1.2154	0.8410	0.8454
85.21	1.2294	0.8908	0.8940	1.2174	0.8278	0.8325
76.85	1.2334	0.8310	0.8360	1.2190	0.7823	0.7883
	70% Design Equivalent Rotor Speed					
92.54	1.1095	0.8597	0.8617	1.1005	0.7909	0.7938
82.65	1.1238	0.8952	0.8969	1.1173	0.8490	0.8514
71.87	1.1303	0.8675	0.8698	1.1255	0.8358	0.8386
65.46	1.1378	0.8619	0.8644	1.1312	0.8213	0.8244
58.62	1.1391	0.8303	0.8334	1.1287	0.7700	0.7739
	50% Design Equivalent Rotor Speed					
66.42	1.0530	0.7785	0.7802	1.0496	0.7292	0.7310
59.41	1.0603	0.8370	0.8384	1.0579	0.8036	0.8052
51.12	1.0647	0.8367	0.8382	1.0618	0.7992	0.8009
46.51	1.0650	0.8178	0.8195	1.0632	0.7953	0.7971
40.70	1.0672	0.7818	0.7838	1.0636	0.7399	0.7422

Table A-2. Blade Element Performance
Stage D, Rotor D - Stator D
Calculations Using Untranslated Values
Percent Equivalent Rotor Speed = 100.56 Equivalent Rotor Speed = 4233.41 Equivalent Weight Flow = 110.18
Uniform Inlet

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.118	33.520	33.947	35.279	37.080	38.872	40.221	40.631	40.975	DIA
STATION 0	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
STATION 1	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	437.82	437.82	437.82	437.82	437.82	437.82	437.82	437.82	437.82	V 0
	V 1	461.00	501.51	506.29	504.38	500.00	489.76	471.30	446.99	402.62	V 1
	VZ 0	437.82	437.82	437.82	437.81	437.79	437.75	437.72	437.71	437.70	VZ 0
	VZ 1	461.00	501.50	508.29	504.38	499.98	489.70	471.21	446.92	402.78	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3983	0.3983	0.3983	0.3983	0.3983	0.3983	0.3983	0.3983	0.3983	M 0
	M 1	0.4201	0.4585	0.4650	0.4613	0.4571	0.4474	0.4299	0.4069	0.3656	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4554	0.2635	0.2471	0.3115	0.3082	0.3121	0.3509	0.4494	0.6255	UUBAR
	DFAC	-0.053	-0.145	-0.161	-0.152	-0.142	-0.119	-0.076	-0.021	0.060	DFAC
	EFFP	0.2002	0.5573	0.5997	0.5269	0.5114	0.4603	0.3232	0.0898	-0.3403	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.227	15.227	15.227	15.227	15.227	15.227	15.227	15.227	15.227	P 0
	P 1	14.508	14.811	14.837	14.735	14.741	14.734	14.673	14.518	14.240	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.96	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
STATION 2	BETA 2	42.980	40.450	39.440	37.700	36.380	35.550	37.500	40.820	45.090	BETA 2
	BETA(PR) 1	52.999	50.994	50.972	52.261	53.872	55.706	57.616	59.227	61.986	BETA(PR) 1
	BETA(PR) 2	25.833	26.741	27.405	29.119	31.237	34.469	38.489	41.557	47.461	BETA(PR) 2
	V 1	461.00	501.51	508.29	504.38	500.00	489.76	471.30	446.99	402.62	V 1
	V 2	592.61	601.61	606.43	617.08	626.90	620.17	587.97	555.61	502.75	V 2
	VZ 1	461.00	501.50	508.29	504.38	499.98	489.70	471.21	446.92	402.78	VZ 1
	VZ 2	433.54	457.80	468.34	488.23	504.48	503.87	465.45	419.55	354.24	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	404.00	390.31	385.24	377.34	371.67	360.07	357.15	362.40	355.36	V-THETA 2
	V(PR) 1	706.0	796.8	807.2	824.1	848.0	869.2	879.6	873.5	857.4	V(PR) 1
	V(PR) 2	481.7	512.6	527.5	558.9	590.3	612.0	595.9	561.9	524.4	V(PR) 2
	VTHETA PR1	-611.7	-619.2	-627.1	-651.7	-684.9	-718.0	-743.0	-750.5	-756.9	VTHETA PR1
	VTHETA PR2	-209.9	-230.7	-242.8	-272.0	-306.0	-345.9	-370.1	-371.9	-386.1	VTHETA PR2
	U 1	611.75	619.17	627.06	651.66	684.93	718.03	742.95	750.52	756.86	U 1
	U 2	613.89	620.96	628.06	649.30	677.63	705.97	727.25	734.32	741.42	U 2
	M 1	0.4201	0.4585	0.4650	0.4613	0.4571	0.4474	0.4299	0.4069	0.3656	M 1
	M 2	0.5233	0.5329	0.5383	0.5482	0.5569	0.5505	0.5199	0.4897	0.4407	M 2
	M(PR) 1	0.6981	0.7285	0.7385	0.7536	0.7753	0.7939	0.8025	0.7953	0.7782	M(PR) 1
	M(PR) 2	0.4253	0.4541	0.4682	0.4965	0.5244	0.5433	0.5270	0.4952	0.4661	M(PR) 2
	TURN(PR)	27.166	24.254	23.567	23.143	22.652	21.290	19.218	17.775	14.625	TURN(PR)
	UUBAR	0.0962	0.1185	0.1083	0.0641	0.0492	0.0463	0.0960	0.1356	0.1570	UUBAR
	LOSS PARA	0.0251	0.0310	0.0285	0.0172	0.0135	0.0134	0.0261	0.0356	0.0376	LOSS PARA
	DFAC	0.5242	0.5005	0.4883	0.4624	0.4443	0.4340	0.4621	0.5007	0.5341	DFAC
	EFFP	0.8407	0.8327	0.8757	0.9328	0.9532	0.9591	0.8977	0.8615	0.8089	EFFP
	EFF	0.8362	0.8273	0.8716	0.9304	0.9515	0.9576	0.8941	0.8568	0.8025	EFF
	INCID	0.573	0.084	0.397	0.220	-0.099	-0.184	-0.906	-2.906	-6.562	INCID
	DEVM	10.664	12.582	12.772	10.477	8.023	6.905	6.860	6.412	11.474	DEVM
	P 1	14.508	14.811	14.837	14.735	14.741	14.734	14.673	14.518	14.240	P 1
	P 2	18.455	18.569	18.642	18.818	19.036	19.067	18.766	18.435	17.927	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	562.900	560.550	558.810	559.050	560.020	560.100	560.950	561.460	562.650	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	42.980	40.450	39.440	37.700	36.380	35.550	37.500	40.820	45.090	BETA 2
STATION 2A	BETA 2A	2.050	2.850	2.900	2.500	2.260	2.970	3.690	4.340	5.950	BETA 2A
	V 2	592.61	601.61	606.43	617.08	626.90	620.17	587.97	555.61	502.75	V 2
	V 2A	458.38	462.30	466.08	512.78	539.23	548.37	503.25	482.55	468.93	V 2A
	VZ 2	433.54	457.80	468.34	488.23	504.48	503.87	465.45	419.55	354.24	VZ 2
	VZ 2A	456.09	461.72	465.46	512.24	538.69	547.43	501.96	480.89	467.48	VZ 2A
	V-THETA 2	404.00	390.31	385.24	377.34	371.67	360.07	357.15	362.40	355.36	V-THETA 2
	V-THETA 2A	16.40	22.99	23.58	22.36	21.26	28.40	32.37	36.50	32.26	V-THETA 2A
	M 2	0.5233	0.5329	0.5383	0.5482	0.5569	0.5505	0.5199	0.4897	0.4407	M 2
	M 2A	0.4004	0.4048	0.4089	0.4513	0.4752	0.4836	0.4416	0.4226	0.4100	M 2A
	TURN(PR)	40.929	37.599	36.540	35.198	34.101	32.524	33.716	36.374	41.030	TURN(PR)
	UUBAR	0.0709	0.0568	0.1087	0.0313	0.0229	0.0166	0.0837	0.0485	-0.1111	UUBAR
	LOSS PARA	0.0239	0.0329	0.0374	0.0111	0.0085	0.0064	0.0331	0.0193	-0.0447	LOSS PARA
	DFAC	0.4469	0.4396	0.4370	0.3740	0.3477	0.3230	0.3645	0.3679	0.3285	DFAC
	EFFP	0.6405	0.7866	0.7606	0.9101	0.9221	0.9326	0.7177	0.8211	1.7616	EFFP
	INCID	-7.188	-2.938	-0.849	-0.326	-0.327	-0.340	-1.254	-2.407	-14.167	INCID
	DEVM	10.882	14.162	14.210	13.475	13.272	14.635	16.129	17.018	8.601	DEVM
	P 2	18.455	18.569	18.642	18.818	19.036	19.067	18.766	18.435	17.927	P 2
	P 2A	18.233	18.253	18.279	18.709	18.953	19.008	18.502	18.300	18.178	P 2A
	T 2	562.900	560.550	558.810	559.050	560.020	560.100	560.950	561.460	562.650	T 2
	T 2A	562.900	560.550	558.810	559.050	560.020	560.100	560.950	561.460	562.650	T 2A
	UUBAR FS	0.0695	0.0811	0.0834	0.0444	0.0355	0.0323	0.1295	0.1382	0.1445	UUBAR FS
	P2 FS	18.451	18.513	18.549	18.865	19.083	19.124	18.932	18.725	18.596	P2 FS
	LOSS PARA FS	0.0234	0.0275	0.0287	0.0157	0.0131	0.0124	0.0512	0.0552	0.0581	LOSS PARA FS

Table A-3. Blade Element Performance
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 109.68 Equivalent Rotor Speed = 4617.58 Equivalent Weight Flow = 123.41
Uniform Inlet

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	491.30	491.30	491.30	491.30	491.30	491.30	491.30	491.30	491.30	V 0
	V 1	546.89	559.06	550.09	537.78	529.77	528.53	519.64	497.35	467.65	V 1
	VZ 0	491.30	491.30	491.30	491.29	491.26	491.22	491.18	491.17	491.17	VZ 0
	VZ 1	546.88	559.06	550.09	537.77	529.73	528.45	519.51	497.22	467.73	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4488	0.4486	0.4488	0.4488	0.4488	0.4488	0.4488	0.4488	0.4488	M 0
	M 1	0.5020	0.5138	0.5051	0.4933	0.4856	0.4844	0.4759	0.4546	0.4266	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.5134	0.3342	0.3131	0.3553	0.3790	0.3922	0.4501	0.5529	0.6768	UUBAR
	DFAC	-0.113	-0.138	-0.120	-0.095	-0.078	-0.076	-0.058	-0.012	0.048	DFAC
	EFFP	0.3306	0.4867	0.4656	0.3740	0.3145	0.2998	0.2189	0.0451	-0.1674	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.510	15.510	15.510	15.510	15.510	15.510	15.510	15.510	15.510	P 0
	P 1	14.462	14.841	14.883	14.799	14.751	14.725	14.609	14.403	14.155	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	516.700	516.700	518.700	518.700	518.700	518.700	518.700	516.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	35.749	32.673	32.270	31.288	29.149	26.566	26.780	29.503	34.061	BETA 2
	BETA(PR) 1	50.587	48.514	48.586	50.283	52.470	53.902	55.134	56.539	58.315	BETA(PR) 1
	BETA(PR) 2	25.509	24.826	25.204	29.328	32.226	35.701	40.359	47.191	56.614	BETA(PR) 2
	V 1	546.41	597.23	603.17	590.12	573.95	572.54	567.35	543.91	511.93	V 1
	V 2	689.30	729.01	735.29	708.86	713.06	706.13	658.26	561.36	446.56	V 2
	VZ 1	546.30	597.09	603.10	590.08	573.24	570.22	563.61	540.04	508.59	VZ 1
	VZ 2	559.40	613.62	621.70	605.77	622.47	632.38	586.13	487.24	369.04	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	402.70	393.53	392.57	368.14	347.16	316.20	295.82	275.70	249.49	V-THETA 2
	V(PR) 1	863.7	901.5	911.8	923.5	941.4	969.2	988.1	981.6	970.1	V(PR) 1
	V(PR) 2	619.9	676.1	687.1	694.9	736.1	779.7	770.7	718.2	671.4	V(PR) 2
	VTHETA PR1	-667.2	-675.2	-683.8	-710.3	-746.3	-782.0	-808.9	-817.1	-824.0	VTHETA PR1
	VTHETA PR2	-266.9	-283.9	-292.6	-340.3	-392.4	-454.4	-498.1	-526.0	-560.0	VTHETA PR2
	U 1	667.21	675.23	683.75	710.33	746.26	782.03	808.93	817.12	823.97	U 1
	U 2	669.63	677.40	685.17	708.48	739.55	770.63	793.93	801.70	809.47	U 2
	M 1	0.5035	0.5509	0.5567	0.5440	0.5282	0.5269	0.5218	0.4992	0.4685	M 1
	M 2	0.6147	0.6537	0.6607	0.6345	0.6388	0.6351	0.5880	0.4971	0.3917	M 2
	M(PR) 1	0.7929	0.8316	0.8416	0.8513	0.8665	0.8919	0.9088	0.9008	0.8877	M(PR) 1
	M(PR) 2	0.5526	0.6063	0.6175	0.6220	0.6594	0.6993	0.6884	0.6360	0.5889	M(PR) 2
	TURN(PR)	25.074	23.684	23.380	20.954	20.225	18.144	14.689	9.262	1.628	TURN(PR)
	UUBAR	0.2246	0.1893	0.1837	0.2045	0.1682	0.1320	0.1800	0.2570	0.3059	UUBAR
	LOSS PARA	0.0587	0.0504	0.0493	0.0549	0.0458	0.0360	0.0476	0.0612	0.0596	LOSS PARA
	DFAC	0.4176	0.3762	0.3743	0.3701	0.3363	0.3044	0.3230	0.3659	0.3582	DFAC
	EFFP	0.7399	0.7730	0.8118	0.7293	0.7648	0.7930	0.6949	0.5125	0.3507	EFFP
	EFF	0.7320	0.7660	0.8058	0.7215	0.7578	0.7866	0.6872	0.5036	0.3425	EFF
	INCID	-1.644	-2.402	-1.992	-1.760	-1.533	-2.096	-3.563	-5.778	-9.852	INCID
	DEVM	10.360	10.666	10.570	10.688	9.015	8.140	8.734	14.052	20.645	DEVM
	P 1	14.462	14.841	14.883	14.799	14.751	14.725	14.609	14.403	14.155	P 1
	P 2	17.891	18.419	18.535	18.092	18.187	18.134	17.416	16.361	15.464	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	562.620	561.810	560.350	561.180	560.900	559.120	557.580	556.900	557.450	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	36.040	32.449	31.570	31.326	28.672	26.449	27.372	30.413	35.457	BETA 2
STATOR-T.E.	BETA 2A	1.600	2.700	2.700	0.750	0.500	1.701	1.901	-0.100	-4.201	BETA 2A
	V 2	664.58	733.72	750.23	708.88	725.04	712.11	645.87	546.75	431.84	V 2
	V 2A	590.48	623.04	644.06	673.61	684.20	662.36	605.68	566.55	542.87	V 2A
	VZ 2	553.55	619.15	639.16	605.44	635.81	636.94	572.77	470.66	351.27	VZ 2
	VZ 2A	590.25	622.33	643.31	673.46	683.94	681.65	604.86	566.05	540.64	VZ 2A
	V-THETA 2	402.76	393.66	392.76	368.49	347.69	316.85	296.54	276.40	250.16	V-THETA 2
	V-THETA 2A	16.49	29.35	30.34	8.82	5.97	20.24	20.07	-0.99	-39.73	V-THETA 2A
	M 2	0.6102	0.6583	0.6754	0.6345	0.6504	0.6389	0.5762	0.4836	0.3784	M 2
	M 2A	0.5214	0.5523	0.5730	0.6006	0.6105	0.6102	0.5382	0.5019	0.4797	M 2A
	TURN(PR)	34.439	29.748	28.669	30.570	28.156	24.720	25.432	30.466	39.597	TURN(PR)
	UUBAR	0.1632	0.1930	0.1568	-0.0025	-0.0023	0.0097	0.1023	-0.1091	-0.6238	UUBAR
	LOSS PARA	0.0617	0.0656	0.0539	-0.0009	-0.0009	0.0037	0.0405	-0.0437	-0.2510	LOSS PARA
	DFAC	0.3276	0.3200	0.3080	0.2304	0.2314	0.2030	0.2329	0.1678	0.0148	DFAC
	EFFP	0.3712	0.4027	0.4919	1.0214	1.0181	0.9000	0.2539	-0.3234	0.0276	EFFP
	INCID	-14.127	-10.939	-8.720	-6.704	-8.031	-9.413	-11.327	-12.753	-23.745	INCID
	DEVM	16.432	14.012	14.010	11.725	11.512	13.366	14.340	12.580	0.657	DEVM
	P 2	17.891	18.419	18.535	18.092	18.187	18.134	17.416	16.361	15.464	P 2
	P 2A	17.163	17.522	17.770	18.103	18.198	18.092	17.058	16.625	16.371	P 2A
	T 2	562.820	561.810	560.350	561.180	560.900	559.120	557.580	556.900	557.450	T 2
	T 2A	562.820	561.810	560.350	561.180	560.900	559.120	557.580	556.900	557.450	T 2A
	UUBAR FS	0.1682	0.1302	0.1009	0.0449	0.0354	0.0472	0.2189	0.2640	0.2675	UUBAR FS
	P2 FS	17.819	18.083	18.231	18.305	18.363	18.305	17.941	17.587	17.233	P2 FS
	LOSS PARA FS	0.0566	0.0442	0.0346	0.0161	0.0138	0.0180	0.0866	0.1057	0.1076	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 109.78 Equivalent Rotor Speed = 4621.54 Equivalent Weight Flow = 116.07
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	464.12	464.12	464.12	464.12	464.12	464.12	464.12	464.12	464.12	V 0
	V 1	501.01	504.39	497.16	493.40	489.48	490.99	482.93	467.00	437.37	V 1
	VZ 0	464.12	464.12	464.12	464.11	464.09	464.04	464.00	463.99	464.00	VZ 0
	VZ 1	501.01	504.39	497.16	493.39	489.45	490.91	482.81	466.88	437.25	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4231	0.4231	0.4231	0.4231	0.4231	0.4231	0.4231	0.4231	0.4231	M 0
	M 1	0.4581	0.4613	0.4544	0.4508	0.4471	0.4485	0.4409	0.4258	0.3979	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4166	0.2550	0.2432	0.2844	0.3020	0.3226	0.3725	0.4518	0.5928	UUBAR
	DFAC	-0.079	-0.087	-0.071	-0.063	-0.055	-0.058	-0.041	-0.006	0.058	DFAC
	EFFP	0.2958	0.4315	0.3933	0.3280	0.2836	0.2821	0.1904	0.0282	-0.2450	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.280	15.280	15.280	15.280	15.280	15.280	15.280	15.280	15.280	P 0
	P 1	14.542	14.828	14.849	14.776	14.745	14.709	14.620	14.480	14.230	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -I.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	45.750	43.567	42.758	40.385	38.924	37.879	39.628	43.042	46.953	BETA 2
	BETA(PR) 1	53.056	51.573	51.641	52.858	54.767	56.010	57.200	58.284	60.108	BETA(PR) 1
	BETA(PR) 2	26.568	28.184	29.199	31.184	32.650	35.720	39.289	42.536	46.845	BETA(PR) 2
	V 1	502.28	536.26	541.66	538.52	528.18	529.89	525.22	509.03	477.18	V 1
	V 2	629.18	629.20	629.59	639.44	657.14	653.55	627.90	594.13	556.28	V 2
	VZ 1	502.18	536.15	541.60	538.49	527.53	527.74	521.76	505.41	474.07	VZ 1
	VZ 2	439.02	455.73	462.26	487.05	511.06	515.22	482.68	433.39	379.08	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	450.67	433.79	427.42	414.30	412.73	400.78	399.71	404.73	405.85	V-THETA 2
	V(PR) 1	835.6	862.7	872.8	891.9	914.8	945.2	965.1	963.3	952.6	V(PR) 1
	V(PR) 2	490.9	517.1	529.6	569.3	607.2	635.4	624.9	589.3	555.2	V(PR) 2
	VTHETA PR1	-667.8	-675.8	-664.3	-710.9	-746.9	-782.7	-809.6	-817.8	-824.7	VTHETA PR1
	VTHETA PR2	-219.5	-244.2	-256.3	-294.8	-327.5	-370.5	-394.9	-397.7	-404.3	VTHETA PR2
	U 1	667.78	675.81	684.34	710.94	746.90	782.70	809.63	817.82	824.68	U 1
	U 2	670.20	677.96	685.76	709.08	740.19	771.29	794.61	802.39	810.17	U 2
	M 1	0.4593	0.4918	0.4970	0.4940	0.4840	0.4857	0.4812	0.4657	0.4354	M 1
	M 2	0.5531	0.5545	0.5556	0.5649	0.5811	0.5774	0.5527	0.5210	0.4853	M 2
	M(PR) 1	0.7641	0.7912	0.8008	0.8181	0.8383	0.8663	0.8842	0.8813	0.8694	M(PR) 1
	M(PR) 2	0.4315	0.4556	0.4673	0.5029	0.5370	0.5614	0.5501	0.5168	0.4843	M(PR) 2
	TURN(PR)	26.484	23.385	22.440	21.674	22.099	20.235	17.830	15.665	13.203	TURN(PR)
	UUBAR	0.1141	0.1333	0.1241	0.0869	0.0614	0.0548	0.1008	0.1454	0.1687	UUBAR
	LOSS PARA	0.0296	0.0345	0.0322	0.0229	0.0166	0.0150	0.0271	0.0376	0.0409	LOSS PARA
	DFAC	0.5690	0.5484	0.5388	0.5044	0.4808	0.4693	0.4949	0.5341	0.5669	DFAC
	EFFP	0.8455	0.8347	0.8632	0.9055	0.9560	0.9626	0.9065	0.8600	0.8168	EFFP
	EFF	0.8391	0.8282	0.8578	0.9016	0.9540	0.9609	0.9024	0.8542	0.8093	EFF
	INCID	0.625	0.657	1.063	0.816	0.764	0.015	-1.491	-4.028	-8.055	INCID
	DEVM	11.419	14.024	14.565	12.543	9.438	8.159	7.665	9.400	10.866	DEVM
	P 1	14.542	14.828	14.849	14.776	14.745	14.709	14.620	14.480	14.230	P 1
	P 2	19.362	19.414	19.471	19.627	19.991	20.043	19.700	19.289	18.873	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	571.380	568.820	567.380	567.310	568.100	568.600	569.820	570.550	572.550	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	46.123	43.515	41.935	40.438	38.317	37.728	40.558	44.617	49.441	BETA 2
STATOR-T.E.	BETA 2A	2.740	3.000	3.100	3.150	2.700	3.401	4.502	4.842	4.962	BETA 2A
	V 2	625.31	632.55	639.91	639.44	666.97	656.83	616.84	578.25	536.09	V 2
	V 2A	469.03	468.62	468.96	509.16	544.06	559.63	509.98	490.88	478.88	V 2A
	VZ 2	435.40	460.23	476.01	486.62	523.09	519.10	466.17	411.22	348.27	VZ 2
	VZ 2A	468.49	467.97	468.25	508.31	543.28	558.32	507.99	488.70	476.56	VZ 2A
	V-THETA 2	450.74	433.93	427.63	414.69	413.36	401.61	400.67	405.76	406.93	V-THETA 2
	V-THETA 2A	22.42	24.52	25.36	27.98	25.62	33.18	40.00	41.39	41.37	V-THETA 2A
	M 2	0.5495	0.5576	0.5653	0.5649	0.5904	0.5805	0.5424	0.5063	0.4669	M 2
	M 2A	0.4068	0.4074	0.4083	0.4446	0.4761	0.4901	0.4443	0.4268	0.4152	M 2A
	TURN(PR)	43.383	40.314	38.834	37.281	35.599	34.294	36.010	39.726	44.426	TURN(PR)
	UUBAR	0.0695	0.0900	0.1041	0.0422	0.0446	0.0241	0.0960	0.0386	-0.0755	UUBAR
	LOSS PARA	0.0234	0.0306	0.0358	0.0150	0.0165	0.0093	0.0379	0.0154	-0.0303	LOSS PARA
	DFAC	0.4807	0.4797	0.4838	0.4192	0.4003	0.3651	0.4064	0.4048	0.3837	DFAC
	EFFP	0.8576	0.8215	0.7991	0.8979	0.8835	0.9229	0.7279	0.8751	1.3394	EFFP
	INCID	-4.044	-0.073	1.645	2.407	1.611	1.860	1.850	1.445	-9.763	INCID
	DEVM	11.572	14.312	14.410	14.125	13.711	15.065	16.939	17.517	9.810	DEVM
	P 2	19.362	19.414	19.471	19.627	19.991	20.043	19.700	19.289	18.873	P 2
	P 2A	19.113	19.081	19.076	19.466	19.804	19.944	19.357	19.170	19.071	P 2A
	T 2	571.380	568.820	567.380	567.310	568.100	568.600	569.820	570.550	572.550	T 2
	T 2A	571.380	568.820	567.380	567.310	568.100	568.600	569.820	570.550	572.550	T 2A
	UUBAR FS	0.0727	0.0830	0.0872	0.0531	0.0463	0.0359	0.1396	0.1416	0.1279	UUBAR FS
	P2 FS	19.375	19.385	19.401	19.671	19.999	20.092	19.863	19.684	19.484	P2 FS
	LOSS PARA FS	0.0244	0.0282	0.0300	0.0189	0.0171	0.0138	0.0535	0.0564	0.0513	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 109.90 Equivalent Rotor Speed = 4626.64 Equivalent Weight Flow = 109.67
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	435.43	435.43	435.43	435.43	435.43	435.43	435.43	435.43	435.43	V 0
	V 1	467.94	478.78	475.70	478.94	458.43	460.25	442.46	423.17	396.28	V 1
	VZ 0	435.43	435.43	435.43	435.43	435.40	435.36	435.32	435.32	435.32	VZ 0
	VZ 1	467.94	478.78	475.70	478.94	458.39	460.17	442.35	423.05	396.17	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3961	0.3961	0.3961	0.3961	0.3961	0.3961	0.3961	0.3961	0.3961	M 0
	M 1	0.4267	0.4370	0.4340	0.4371	0.4177	0.4194	0.4027	0.3846	0.3595	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4110	0.2649	0.2649	0.3154	0.2915	0.3015	0.3898	0.4808	0.6069	UUBAR
	DFAC	-0.075	-0.100	-0.092	-0.100	-0.053	-0.057	-0.016	0.028	0.090	DFAC
	EFFP	0.2836	0.4555	0.4363	0.4130	0.2821	0.2912	0.0806	-0.1372	-0.4143	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.218	15.218	15.218	15.218	15.218	15.218	15.216	15.218	15.218	P 0
	P 1	14.577	14.805	14.805	14.726	14.764	14.748	14.610	14.469	14.272	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	46.001	46.094	45.279	43.232	41.984	40.622	42.286	45.366	49.218	BETA 2
	BETA(PR) 1	54.949	53.100	52.963	53.749	56.619	57.806	59.564	60.873	62.569	BETA(PR) 1
	BETA(PR) 2	24.935	27.492	28.723	31.061	34.202	36.645	40.618	44.538	48.166	BETA(PR) 2
	V 1	469.09	508.09	517.01	521.91	493.29	495.32	479.37	459.47	430.96	V 1
	V 2	636.44	627.69	626.31	631.68	631.31	635.86	609.58	573.58	546.31	V 2
	VZ 1	469.00	507.96	516.95	521.86	492.68	493.32	476.22	456.20	428.15	VZ 1
	VZ 2	425.84	435.27	440.70	460.23	469.12	482.08	450.36	402.27	356.29	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	472.96	452.22	445.01	432.67	422.16	413.52	409.41	407.44	413.04	V-THETA 2
	V(PR) 1	616.7	846.1	858.3	882.6	895.8	927.0	941.7	938.8	931.3	V(PR) 1
	V(PR) 2	469.6	490.7	502.6	537.3	567.4	601.6	594.2	565.4	535.0	V(PR) 2
	VTHETA PR1	-668.5	-676.6	-685.1	-711.7	-747.7	-783.6	-810.5	-818.7	-825.6	VTHETA PR1
	VTHETA PR2	-198.0	-226.5	-241.5	-277.2	-318.8	-358.6	-386.1	-395.8	-398.0	VTHETA PR2
	U 1	668.52	676.56	685.10	711.72	747.72	783.56	810.52	818.72	825.59	U 1
	U 2	670.94	678.73	686.51	709.87	741.00	772.14	795.49	803.28	811.06	U 2
	M 1	0.4278	0.4648	0.4733	0.4780	0.4507	0.4527	0.4375	0.4187	0.3919	M 1
	M 2	0.5586	0.5518	0.5514	0.5565	0.5558	0.5598	0.5346	0.5007	0.4750	M 2
	M(PR) 1	0.7448	0.7740	0.7858	0.8084	0.8185	0.8471	0.8594	0.8555	0.8469	M(PR) 1
	M(PR) 2	0.4122	0.4314	0.4425	0.4733	0.4996	0.5297	0.5211	0.4936	0.4652	M(PR) 2
	TURN(PR)	30.009	25.603	24.238	22.687	22.400	21.109	18.872	16.263	14.371	TURN(PR)
	UUBAR	0.0931	0.1120	0.1012	0.0751	0.0828	0.0747	0.1082	0.1436	0.1687	UUBAR
	LOSS PARA	0.0244	0.0291	0.0263	0.0196	0.0220	0.0202	0.0285	0.0359	0.0399	LOSS PARA
	DFAC	0.5930	0.5770	0.5686	0.5419	0.5176	0.5000	0.5186	0.5485	0.5812	DFAC
	EFFP	0.8771	0.8637	0.8957	0.9270	0.9234	0.9396	0.8912	0.8344	0.8036	EFFP
	EFF	0.8716	0.8580	0.8913	0.9238	0.9200	0.9369	0.8864	0.8274	0.7954	EFF
	INCID	2.517	2.183	2.385	1.706	2.017	1.814	0.879	-1.436	-3.564	INCID
	DEVM	9.766	15.332	14.089	12.420	10.991	9.084	8.993	11.399	12.190	DEVM
	P 1	14.577	14.805	14.805	14.726	14.764	14.748	14.610	14.469	14.272	P 1
	P 2	19.875	19.813	19.844	19.927	20.025	20.165	19.823	19.388	19.098	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	573.810	571.180	569.500	569.370	570.000	570.460	572.000	573.380	575.300	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.846	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	48.409	45.799	44.388	43.290	41.341	40.465	43.287	47.036	51.897	BETA 2
STATOR-T.E.	BETA 2A	2.940	3.300	3.150	3.280	2.451	3.551	4.701	5.232	6.002	BETA 2A
	V 2	632.49	631.02	636.51	631.68	640.33	638.95	599.11	558.66	526.70	V 2
	V 2A	470.25	459.32	451.86	484.84	519.36	533.65	493.32	476.88	467.65	V 2A
	VZ 2	419.85	439.93	454.85	459.74	480.57	485.76	435.71	380.43	324.75	VZ 2
	VZ 2A	469.62	458.55	451.16	483.98	518.71	532.32	491.26	474.48	464.66	VZ 2A
	V-THETA 2	473.04	452.37	445.23	433.08	422.80	414.37	410.40	408.47	414.14	V-THETA 2
	V-THETA 2A	24.12	26.44	24.83	27.74	22.20	33.03	40.40	43.44	46.85	V-THETA 2A
	M 2	0.5550	0.5549	0.5610	0.5565	0.5643	0.5627	0.5249	0.4871	0.4572	M 2
	M 2A	0.4070	0.3982	0.3921	0.4218	0.4528	0.4656	0.4284	0.4131	0.4042	M 2A
	TURN(PR)	45.469	42.498	41.236	40.003	38.872	36.881	38.540	41.756	45.844	TURN(PR)
	UUBAR	0.0925	0.0997	0.1167	0.0575	0.0240	0.0239	0.0641	-0.0196	-0.1056	UUBAR
	LOSS PARA	0.0311	0.0339	0.0401	0.0204	0.0089	0.0092	0.0253	-0.0078	-0.0424	LOSS PARA
	DFAC	0.4957	0.5021	0.5177	0.4610	0.4214	0.3958	0.4229	0.4095	0.3939	DFAC
	EFFP	0.8149	0.8099	0.7890	0.8752	0.9381	0.9302	0.8208	1.0655	1.4541	EFFP
	INCID	-1.758	2.411	4.097	5.259	4.635	4.597	4.579	3.864	-7.305	INCID
	DEVM	11.772	14.612	14.460	14.255	13.462	15.215	17.139	17.907	18.650	DEVM
	P 2	19.875	19.813	19.844	19.927	20.025	20.165	19.823	19.388	19.098	P 2
	P 2A	19.528	19.440	19.398	19.709	19.932	20.072	19.606	19.445	19.367	P 2A
	T 2	573.810	571.180	569.500	569.370	570.000	570.460	572.000	573.380	575.300	T 2
	T 2A	573.810	571.180	569.500	569.370	570.000	570.460	572.000	573.380	575.300	T 2A
	UUBAR FS	0.0488	0.1072	0.1035	0.0889	0.0722	0.0443	0.1218	0.1242	0.1156	UUBAR FS
	P2 FS	19.860	19.844	19.787	20.056	20.227	20.248	20.046	19.865	19.735	P2 FS
	LOSS PARA FS	0.0298	0.0364	0.0355	0.0315	0.0267	0.0170	0.0480	0.0464	0.0464	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 109.60 Equivalent Rotor Speed = 4614.29 Equivalent Weight Flow = 102.55
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	405.14	405.14	405.14	405.14	405.14	405.14	405.14	405.14	405.14	V 0
	V 1	423.38	441.04	437.03	432.67	429.15	427.59	410.68	396.29	352.18	V 1
	VZ 0	405.14	405.14	405.14	405.14	405.11	405.06	405.04	405.04	405.04	VZ 0
	VZ 1	423.38	441.04	437.03	432.67	429.11	427.52	409.98	396.18	352.09	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3678	0.3678	0.3678	0.3678	0.3678	0.3678	0.3678	0.3678	0.3678	M 0
	M 1	0.3848	0.4013	0.3976	0.3935	0.3902	0.3887	0.3724	0.3595	0.3186	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	DUBAR	0.4418	0.2511	0.2335	0.2762	0.2930	0.2945	0.3678	0.4342	0.6402	DUBAR
	DFAC	-0.045	-0.069	-0.079	-0.068	-0.059	-0.055	-0.012	0.022	0.131	DFAC
	EFFP	0.1783	0.4368	0.4245	0.3482	0.3040	0.2885	0.0651	-0.1155	-0.6453	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.129	15.129	15.129	15.129	15.129	15.129	15.129	15.129	15.129	P 0
	P 1	14.533	14.791	14.814	14.757	14.734	14.732	14.633	14.543	14.265	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.184	36.706	38.246	39.405	39.791	40.176	DIA
ROTOR-L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR-T.E.	BETA 2	50.001	48.801	48.153	46.099	44.812	43.858	46.091	49.681	55.841	BETA 2
	BETA(PR) 1	57.529	55.321	55.287	56.526	58.318	59.668	61.425	62.425	65.262	BETA(PR) 1
	BETA(PR) 2	23.886	27.163	26.602	31.160	34.676	37.769	42.735	45.754	49.278	BETA(PR) 2
	V 1	424.37	466.96	473.40	469.50	460.81	459.09	443.19	429.46	381.87	V 1
	V 2	636.88	620.61	617.57	621.14	616.43	615.92	563.76	562.35	542.53	V 2
	VZ 1	424.29	466.86	473.34	469.47	460.24	457.23	440.28	426.42	379.58	VZ 1
	VZ 2	409.36	408.90	412.00	430.70	437.16	443.66	404.22	383.32	319.71	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	487.87	467.10	460.03	447.55	434.32	426.32	419.90	428.12	437.48	V-THETA 2
	V(PR) 1	790.3	820.6	831.2	851.0	876.6	906.3	921.9	922.6	907.6	V(PR) 1
	V(PR) 2	447.7	459.6	469.3	503.3	533.1	561.9	551.3	521.6	490.6	V(PR) 2
	VTHETA PR1	-666.7	-674.6	-683.3	-709.8	-745.7	-781.5	-808.4	-816.5	-823.4	VTHETA PR1
	VTHETA PR2	-181.3	-209.8	-224.6	-260.4	-304.7	-343.8	-373.5	-373.0	-371.4	VTHETA PR2
	U 1	666.73	674.75	683.27	709.82	745.73	781.47	808.36	816.54	823.39	U 1
	U 2	669.15	676.92	684.68	707.97	739.02	770.08	793.37	801.13	808.89	U 2
	M 1	0.3857	0.4258	0.4319	0.4282	0.4200	0.4183	0.4034	0.3905	0.3461	M 1
	M 2	0.5562	0.5447	0.5428	0.5462	0.5415	0.5407	0.5098	0.4895	0.4706	M 2
	M(PR) 1	0.7183	0.7482	0.7583	0.7761	0.7969	0.8259	0.8390	0.8389	0.8220	M(PR) 1
	M(PR) 2	0.3924	0.4033	0.4125	0.4426	0.4683	0.4934	0.4815	0.4541	0.4256	M(PR) 2
	TURN(PR)	33.640	26.153	26.683	25.359	23.427	21.852	16.623	16.606	15.942	TURN(PR)
	DUBAR	0.0660	0.1110	0.1060	0.0857	0.0819	0.0889	0.1357	0.1787	0.1925	DUBAR
	LOSS PARA	0.0180	0.0290	0.0276	0.0226	0.0216	0.0236	0.0346	0.0437	0.0445	LOSS PARA
	DFAC	0.6126	0.6071	0.5999	0.5702	0.5507	0.5370	0.5586	0.5956	0.6285	DFAC
	EFFP	0.9027	0.8765	0.9111	0.9349	0.9375	0.9374	0.8572	0.8146	0.8691	EFFP
	EFF	0.8980	0.8710	0.9072	0.9319	0.9346	0.9345	0.8510	0.8069	0.8006	EFF
	INCID	5.098	4.405	4.709	4.477	4.318	3.680	2.747	0.126	-2.881	INCID
	DEVM	8.736	13.004	13.968	12.519	11.664	10.207	11.110	12.615	13.302	DEVM
	P 1	14.535	14.791	14.814	14.757	14.734	14.732	14.633	14.543	14.265	P 1
	P 2	20.181	20.026	20.057	20.129	20.181	20.242	19.820	19.560	19.334	P 2
	T 1	516.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	575.500	572.560	570.400	570.330	570.890	571.450	575.900	575.500	577.500	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	50.438	48.461	47.162	46.162	44.120	43.692	47.210	51.618	57.034	BETA 2
STATOR-T.E.	BETA 2A	3.000	3.700	3.260	2.090	3.501	4.651	5.161	5.752	5.752	BETA 2A
	V 2	632.94	624.07	627.49	621.14	625.04	618.83	574.05	547.95	523.15	V 2
	V 2A	461.29	449.41	443.40	470.11	480.15	486.39	449.31	437.50	434.82	V 2A
	VZ 2	403.12	413.67	426.47	430.17	448.55	447.16	389.64	339.99	284.49	VZ 2
	VZ 2A	460.66	448.44	442.61	469.29	479.67	485.20	447.47	435.34	432.18	VZ 2A
	V-THETA 2	487.95	467.26	460.26	447.97	434.99	427.14	420.92	429.21	438.64	V-THETA 2
	V-THETA 2A	24.14	29.00	26.14	26.65	17.51	29.68	36.40	39.34	43.53	V-THETA 2A
	M 2	0.5545	0.5478	0.5521	0.5462	0.5495	0.5435	0.5009	0.4764	0.4531	M 2
	M 2A	0.3984	0.3889	0.3843	0.4062	0.4170	0.4224	0.3883	0.3773	0.3742	M 2A
	TURN(PR)	47.438	44.780	43.601	42.905	42.012	40.157	42.512	46.408	51.234	TURN(PR)
	DUBAR	0.1096	0.1073	0.1317	0.0876	0.0811	0.0906	0.0940	0.0463	-0.0292	DUBAR
	LOSS PARA	0.0369	0.0364	0.0453	0.0311	0.0360	0.0348	0.0371	0.0192	-0.0117	LOSS PARA
	DFAC	0.5181	0.5191	0.5218	0.4847	0.4800	0.4627	0.4844	0.4886	0.4756	DFAC
	EFFP	0.7901	0.7994	0.7629	0.8156	0.8228	0.7874	0.7787	0.6779	1.0667	EFFP
	INCID	0.271	5.693	6.691	6.131	7.414	7.823	8.502	8.445	-2.166	INCID
	DEVM	11.832	15.012	14.690	14.425	13.102	15.165	17.088	17.837	10.599	DEVM
	P 2	20.181	20.026	20.057	20.129	20.181	20.242	19.820	19.560	19.334	P 2
	P 2A	19.764	19.630	19.563	19.805	19.677	19.969	19.527	19.414	19.406	P 2A
	T 2	575.500	572.560	570.400	570.330	570.890	571.450	575.900	575.500	577.500	T 2
	T 2A	575.500	572.560	570.400	570.330	570.890	571.450	575.900	575.500	577.500	T 2A
	DUBAR FS	0.0941	0.1199	0.1102	0.1020	0.1062	0.0985	0.1358	0.1309	0.1111	DUBAR FS
	P2 FS	20.115	20.079	19.966	20.187	20.285	20.275	19.971	19.827	19.734	P2 FS
	LOSS PARA FS	0.0316	0.0407	0.0379	0.0361	0.0392	0.0378	0.0536	0.0520	0.0445	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D – Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 110.20 Equivalent Rotor Speed = 4639.37 Equivalent Weight Flow = 97.18
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	5.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	382.12	382.12	382.12	382.12	382.12	382.12	382.12	382.12	382.12	V 0
	V 1	407.75	422.96	422.70	415.83	406.19	401.73	361.33	364.05	331.12	V 1
	VZ 0	382.12	382.12	382.12	382.11	382.09	382.06	382.02	382.02	382.02	VZ 0
	VZ 1	407.75	422.96	422.70	415.83	406.16	401.66	361.24	363.96	331.03	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3463	0.3463	0.3463	0.3463	0.3463	0.3463	0.3463	0.3463	0.3463	M 0
	M 1	0.3702	0.3844	0.3842	0.3777	0.3687	0.3646	0.3456	0.3296	0.2992	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4436	0.2769	0.2427	0.2803	0.3026	0.2940	0.3838	0.4607	0.6188	UUBAR
	DFAC	-0.067	-0.107	-0.106	-0.086	-0.063	-0.051	0.002	0.047	0.133	DFAC
	EFFP	0.2446	0.4595	0.4911	0.4072	0.3094	0.2720	-0.0115	-0.2613	-0.7029	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.089	15.089	15.089	15.089	15.089	15.089	15.089	15.089	15.089	P 0
	P 1	14.556	14.756	14.797	14.752	14.725	14.735	14.628	14.535	14.345	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	516.700	516.700	516.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	50.660	49.583	49.086	47.290	46.789	46.259	50.791	53.790	56.107	BETA 2
	BETA(PR) 1	58.636	56.604	56.350	57.732	59.881	61.371	63.304	64.539	66.715	BETA(PR) 1
	BETA(PR) 2	24.268	27.323	27.920	29.608	33.867	40.590	44.596	46.391	49.453	BETA(PR) 2
	V 1	408.69	447.37	457.35	450.63	435.50	430.65	411.40	393.70	358.61	V 1
	V 2	635.21	620.82	624.27	635.43	607.29	589.40	571.25	547.89	535.69	V 2
	VZ 1	406.61	447.27	457.30	450.60	434.96	428.91	408.69	390.96	356.27	VZ 1
	VZ 2	402.66	402.49	408.85	431.00	415.69	407.13	360.65	343.26	292.98	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	491.25	472.65	471.75	466.90	442.49	425.43	442.05	441.51	470.62	V-THETA 2
	V(PR) 1	765.1	812.6	825.3	844.0	867.1	896.0	910.9	910.5	902.2	V(PR) 1
	V(PR) 2	441.7	453.1	462.7	495.7	513.2	536.7	507.3	487.6	451.4	V(PR) 2
	VTHETA PR1	-670.4	-678.4	-687.0	-713.7	-749.8	-785.7	-812.7	-821.0	-827.4	VTHETA PR1
	VTHETA PR2	-181.5	-207.9	-216.7	-244.9	-300.5	-348.6	-355.6	-364.0	-342.5	VTHETA PR2
	U 1	670.36	678.42	686.98	713.66	749.78	785.72	812.75	820.98	827.86	U 1
	U 2	672.79	680.60	688.40	711.62	743.04	774.26	797.88	805.49	813.29	U 2
	M 1	0.3711	0.4073	0.4167	0.4104	0.3961	0.3916	0.3736	0.3571	0.3246	M 1
	M 2	0.5555	0.5436	0.5479	0.5581	0.5315	0.5145	0.4965	0.4745	0.4802	M 2
	M(PR) 1	0.7128	0.7399	0.7519	0.7686	0.7887	0.8147	0.8272	0.8259	0.8166	M(PR) 1
	M(PR) 2	0.3863	0.3967	0.4061	0.4354	0.4491	0.4686	0.4409	0.4223	0.3905	M(PR) 2
	TURN(PR)	34.365	29.276	28.428	28.124	24.000	20.738	18.647	16.091	17.227	TURN(PR)
	UUBAR	0.0755	0.1067	0.1048	0.0821	0.1030	0.1287	0.2081	0.2398	0.2711	UUBAR
	LOSS PARA	0.0199	0.0278	0.0275	0.0220	0.0269	0.0329	0.0514	0.0558	0.0624	LOSS PARA
	DFAC	0.6190	0.6133	0.6092	0.5826	0.5718	0.5595	0.6099	0.6329	0.6629	DFAC
	EFFP	0.8749	0.8621	0.9058	0.9409	0.8899	0.8453	0.7795	0.7355	0.7560	EFFP
	EFF	0.8689	0.8559	0.9016	0.9361	0.8849	0.8385	0.7701	0.7240	0.7453	EFF
	INCID	6.265	5.668	5.772	5.650	5.882	5.386	4.633	2.251	-1.421	INCID
	DEVM	9.118	13.164	13.286	10.967	12.655	13.027	12.972	15.253	13.477	DEVM
	P 1	14.556	14.756	14.797	14.752	14.725	14.735	14.628	14.535	14.345	P 1
	P 2	20.250	20.126	20.250	20.476	20.188	19.963	19.664	19.356	19.426	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	577.750	574.900	572.650	573.000	574.000	574.950	576.120	579.750	581.700	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	51.107	49.255	48.075	47.355	46.061	46.090	52.100	56.024	61.970	BETA 2
STATOR-T.E.	BETA 2A	3.060	4.030	3.410	3.020	2.060	2.040	3.461	5.121	6.082	BETA 2A
	V 2	631.29	624.07	634.36	635.43	615.65	592.08	561.93	534.07	535.05	V 2
	V 2A	478.98	462.68	452.83	470.94	472.26	474.18	441.24	433.71	434.09	V 2A
	VZ 2	396.37	407.32	423.85	430.42	427.06	410.36	344.96	296.29	251.33	VZ 2
	VZ 2A	478.30	461.52	452.00	470.22	471.82	473.60	440.07	431.60	431.19	VZ 2A
	V-THETA 2	491.34	472.80	471.96	467.35	443.17	426.30	443.12	442.63	472.07	V-THETA 2
	V-THETA 2A	25.57	32.51	26.93	24.81	16.97	16.87	26.61	38.66	45.94	V-THETA 2A
	M 2	0.5518	0.5466	0.5573	0.5581	0.5392	0.5170	0.4880	0.4620	0.4621	M 2
	M 2A	0.4134	0.3999	0.3919	0.4080	0.4068	0.4101	0.3797	0.3725	0.3722	M 2A
	TURN(PR)	48.046	45.224	44.664	44.329	43.982	44.015	46.594	50.868	55.845	TURN(PR)
	UUBAR	0.0692	0.0791	0.1227	0.1360	0.0776	0.0339	0.0382	-0.0471	-0.0229	UUBAR
	LOSS PARA	0.0233	0.0269	0.0421	0.0483	0.0267	0.0131	0.0151	-0.0188	-0.0092	LOSS PARA
	DFAC	0.4899	0.4990	0.5279	0.5069	0.4901	0.4667	0.5102	0.4924	0.5122	DFAC
	EFFP	0.8542	0.8424	0.7753	0.7290	0.8304	0.9147	0.9090	1.1266	1.0614	EFFP
	INCID	0.939	5.867	7.785	9.324	9.335	10.221	13.394	12.656	2.775	INCID
	DEVM	11.892	15.342	14.720	13.995	13.072	13.705	15.699	17.797	10.929	DEVM
	P 2	20.250	20.126	20.250	20.476	20.188	19.983	19.664	19.356	19.426	P 2
	P 2A	19.988	19.834	19.777	19.945	19.907	19.670	19.551	19.480	19.489	P 2A
	T 2	577.750	574.900	572.650	573.000	574.000	574.950	576.120	579.750	581.700	T 2
	T 2A	577.750	574.900	572.650	573.000	574.000	574.950	576.120	579.750	581.700	T 2A
	UUBAR FS	0.0931	0.1199	0.1233	0.1096	0.1459	0.1522	0.1433	0.1358	0.1270	UUBAR FS
	P2 FS	20.350	20.298	20.252	20.360	20.478	20.447	20.026	19.913	19.882	P2 FS
	LOSS PARA FS	0.0313	0.0408	0.0423	0.0389	0.0539	0.0588	0.0566	0.0542	0.0510	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 100.53 Equivalent Rotor Speed = 4232.16 Equivalent Weight Flow = 120.02
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	477.92	477.92	477.92	477.92	477.92	477.92	477.92	477.92	477.92	V 0
	V 1	520.97	536.98	530.49	521.77	509.88	507.02	491.20	476.84	449.46	V 1
	VZ 0	477.92	477.92	477.92	477.91	477.88	477.84	477.80	477.79	477.79	VZ 0
	VZ 1	520.97	536.97	530.49	521.76	509.84	506.94	491.08	476.71	449.34	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4361	0.4361	0.4361	0.4361	0.4361	0.4361	0.4361	0.4361	0.4361	M 0
	M 1	0.4771	0.4925	0.4863	0.4779	0.4665	0.4638	0.4487	0.4351	0.4093	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	DUBAR	0.3189	0.3189	0.2883	0.3189	0.3578	0.3623	0.4439	0.5189	0.6467	DUBAR
	DFAC	-0.090	-0.124	-0.110	-0.092	-0.067	-0.061	-0.028	0.002	0.060	DFAC
	EFFP	0.2770	0.4684	0.4633	0.3916	0.2916	0.2689	0.1184	-0.0092	-0.2286	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.423	15.423	15.423	15.423	15.423	15.423	15.423	15.423	15.423	P 0
	P 1	14.443	14.821	14.678	14.821	14.747	14.737	14.584	14.443	14.201	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.485	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	34.500	31.609	30.635	29.980	29.307	26.919	26.506	28.619	32.586	BETA 2
	BETA(PR) 1	49.506	47.238	47.212	48.735	51.168	52.712	54.383	55.402	57.147	BETA(PR) 1
	BETA(PR) 2	27.214	25.928	25.433	26.606	31.797	34.723	39.566	44.959	51.098	BETA(PR) 2
	V 1	542.27	572.44	560.15	571.27	551.24	548.00	534.65	520.31	490.87	V 1
	V 2	619.64	661.81	683.56	695.48	660.24	660.72	615.29	543.00	469.95	V 2
	VZ 1	522.17	572.21	560.08	571.24	550.56	545.76	531.13	516.61	487.67	VZ 1
	VZ 2	510.61	563.60	568.15	602.36	577.17	566.21	549.18	474.44	394.97	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	351.67	396.85	348.29	347.60	320.01	298.66	273.86	261.02	252.46	V-THETA 2
	V(PR) 1	804.2	843.0	854.0	866.1	878.5	902.2	914.1	911.9	900.7	V(PR) 1
	V(PR) 2	574.4	626.7	651.3	673.7	679.4	716.6	713.8	671.7	629.8	V(PR) 2
	VTHETA PR1	-611.5	-618.4	-626.7	-651.0	-664.0	-716.6	-741.4	-746.9	-755.2	VTHETA PR1
	VTHETA PR2	-262.7	-274.0	-279.7	-301.7	-357.8	-407.0	-453.6	-473.8	-489.4	VTHETA PR2
	U 1	611.62	648.87	626.68	651.04	683.97	716.75	741.41	748.92	755.20	U 1
	U 2	613.74	620.86	627.98	649.34	677.82	706.30	727.66	734.79	741.91	U 2
	M 1	0.4784	0.5266	0.5343	0.5256	0.5062	0.5031	0.4903	0.4765	0.4484	M 1
	M 2	0.5516	0.5923	0.6143	0.6255	0.5914	0.5924	0.5496	0.4820	0.4145	M 2
	M(PR) 1	0.7366	0.7756	0.7864	0.7969	0.8067	0.8263	0.8382	0.8351	0.8228	M(PR) 1
	M(PR) 2	0.5113	0.5609	0.5853	0.6055	0.6085	0.6425	0.6376	0.5962	0.5555	M(PR) 2
	TURN(PR)	22.289	21.306	21.776	22.127	19.352	17.930	14.729	10.554	5.979	TURN(PR)
	DUBAR	0.1675	0.1692	0.1369	0.1225	0.1481	0.1221	0.1437	0.2090	0.2516	DUBAR
	LOSS PARA	0.0463	0.0446	0.0267	0.0337	0.0405	0.0338	0.0385	0.0519	0.0560	LOSS PARA
	DFAC	0.4124	0.3775	0.3586	0.3455	0.3434	0.3164	0.3222	0.3629	0.3992	DFAC
	EFFP	0.7014	0.7288	0.8232	0.8581	0.7711	0.7977	0.7222	0.5784	0.4635	EFFP
	EFF	0.6939	0.7219	0.8163	0.8539	0.7681	0.7914	0.7156	0.5708	0.4754	EFF
	INCID	-2.925	-3.676	-3.367	-3.307	-2.856	-3.287	-4.315	-6.915	-11.024	INCID
	DEVM	12.064	11.768	10.799	7.987	8.585	7.162	7.942	11.820	15.123	DEVM
	P 1	14.443	14.821	14.678	14.821	14.747	14.737	14.584	14.443	14.201	P 1
	P 2	17.214	17.686	18.001	18.137	17.697	17.707	17.151	16.427	15.639	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	557.140	555.920	554.160	554.780	554.950	553.960	553.050	552.740	553.250	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	34.749	31.420	30.042	30.025	28.560	26.813	27.052	29.684	33.931	BETA 2
STATOR-T.E.	BETA 2A	2.300	2.150	1.900	0.620	0.600	1.550	2.161	1.000	-2.601	BETA 2A
	V 2	616.04	665.58	696.68	695.46	670.31	664.13	604.50	529.18	454.12	V 2
	V 2A	561.60	610.73	616.27	646.86	643.46	649.51	588.03	553.18	525.77	V 2A
	VZ 2	508.17	567.98	602.54	602.04	588.33	592.14	537.61	459.08	376.25	VZ 2
	VZ 2A	561.15	600.25	617.90	646.76	643.18	648.69	587.13	552.60	524.67	VZ 2A
	V-THETA 2	351.15	346.97	346.46	347.93	320.50	299.27	274.55	261.69	253.13	V-THETA 2
	V-THETA 2A	22.54	23.56	20.50	7.00	6.74	17.56	22.15	9.65	-23.45	V-THETA 2A
	M 2	0.5482	0.5960	0.6264	0.6255	0.6011	0.5957	0.5394	0.4691	0.4001	M 2
	M 2A	0.4972	0.5344	0.5518	0.5767	0.5753	0.5817	0.5239	0.4914	0.4658	M 2A
	TURN(PR)	32.449	29.169	28.140	29.399	27.964	25.234	24.853	26.638	30.474	TURN(PR)
	DUBAR	0.0484	0.0490	0.1154	0.0752	-0.0066	-0.0053	0.0607	-0.0617	-0.3052	DUBAR
	LOSS PARA	0.0531	0.0538	0.0397	0.0267	-0.0024	-0.0020	0.0240	-0.0327	-0.1230	LOSS PARA
	DFAC	0.2661	0.2630	0.2742	0.2444	0.2140	0.1862	0.1937	0.1463	0.0894	DFAC
	EFFP	0.4812	0.5336	0.5272	0.5217	1.0719	1.1044	-0.0024	0.2060	0.1820	EFFP
	INCID	-15.418	-11.968	-10.249	-8.005	-8.123	-9.049	-11.646	-13.481	-25.269	INCID
	DEVM	11.132	10.562	10.210	11.595	11.612	13.215	14.600	13.679	2.256	DEVM
	P 2	17.214	17.686	18.001	18.137	17.697	17.707	17.151	16.427	15.639	P 2
	P 2A	16.901	17.312	17.518	17.621	17.722	17.727	16.984	16.614	16.344	P 2A
	T 2	557.140	555.920	554.160	554.780	554.950	553.960	553.050	552.740	553.250	T 2
	T 2A	557.140	555.920	554.160	554.780	554.950	553.960	553.050	552.740	553.250	T 2A
	DUBAR FS	0.1424	0.0955	0.0799	0.0320	0.0321	0.0378	0.1533	0.2120	0.2300	DUBAR FS
	P2 FS	17.377	17.671	17.839	17.949	17.849	17.875	17.613	17.283	16.988	P2 FS
	LOSS PARA FS	0.0479	0.0325	0.0275	0.0113	0.0116	0.0142	0.0726	0.0848	0.0927	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D – Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 100.56 Equivalent Rotor Speed = 4233.41 Equivalent Weight Flow = 110.18
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.015	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	437.84	437.84	437.84	437.84	437.84	437.84	437.84	437.84	437.84	V 0
	V 1	467.56	483.07	477.92	469.38	464.41	463.85	459.04	440.20	406.61	V 1
	VZ 0	437.83	437.83	437.84	437.83	437.80	437.76	437.73	437.72	437.72	VZ 0
	VZ 1	467.56	483.07	477.92	469.38	464.38	463.78	458.93	440.08	406.56	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3983	0.3983	0.3983	0.3983	0.3983	0.3983	0.3983	0.3983	0.3983	M 0
	M 1	0.4263	0.4410	0.4361	0.4281	0.4234	0.4228	0.4183	0.4006	0.3695	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4553	0.2635	0.2470	0.3114	0.3081	0.3121	0.3509	0.4494	0.6255	UUBAR
	DFAC	-0.066	-0.103	-0.092	-0.072	-0.061	-0.059	-0.048	-0.005	0.065	DFAC
	EFFP	0.2444	0.4667	0.4514	0.3364	0.3003	0.2929	0.2296	0.0245	-0.3685	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.227	15.227	15.227	15.227	15.227	15.227	15.227	15.227	15.227	P 0
	P 1	14.508	14.611	14.637	14.735	14.741	14.734	14.673	14.516	14.240	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR-L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR-T.E.	BETA 2	42.976	46.524	49.662	57.684	66.489	75.444	86.997	90.067	94.056	BETA 2
	BETA(PR) 1	52.545	50.366	50.549	51.882	53.875	55.252	56.292	57.610	60.161	BETA(PR) 1
	BETA(PR) 2	25.839	26.816	27.612	29.147	31.403	34.448	38.078	40.926	46.557	BETA(PR) 2
	V 1	468.70	512.86	519.59	511.00	499.98	499.36	498.03	476.64	435.80	V 1
	V 2	592.61	600.64	603.49	617.06	624.88	621.25	594.20	563.42	511.47	V 2
	VZ 1	468.61	512.74	519.53	510.97	499.37	497.34	494.75	475.23	432.96	VZ 1
	VZ 2	433.55	456.55	464.57	488.33	502.19	505.47	473.59	430.15	366.89	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	403.97	390.26	385.17	377.21	371.45	369.79	356.85	362.05	355.61	V-THETA 2
	V(PR) 1	770.6	803.9	814.2	827.6	847.4	873.7	893.3	889.0	872.1	V(PR) 1
	V(PR) 2	681.7	711.6	724.3	759.1	788.6	813.6	802.8	776.5	734.3	V(PR) 2
	VTHETA PR1	-611.7	-619.1	-626.9	-651.2	-684.2	-717.6	-741.6	-749.1	-755.4	VTHETA PR1
	VTHETA PR2	-209.9	-230.8	-243.0	-272.3	-306.6	-346.7	-371.0	-373.0	-387.1	VTHETA PR2
	U 1	611.70	619.05	626.87	651.23	684.17	716.96	741.63	749.14	755.42	U 1
	U 2	613.92	621.04	628.16	649.53	678.02	706.51	727.88	735.00	742.12	U 2
	M 1	0.4274	0.4694	0.4758	0.4676	0.4571	0.4565	0.4552	0.4368	0.3964	M 1
	M 2	0.5233	0.5320	0.5395	0.5481	0.5550	0.5515	0.5257	0.4969	0.4486	M 2
	M(PR) 1	0.7027	0.7357	0.7456	0.7575	0.7747	0.7987	0.8166	0.8115	0.7953	M(PR) 1
	M(PR) 2	0.4254	0.4531	0.4652	0.4967	0.5226	0.5449	0.5334	0.5031	0.4686	M(PR) 2
	TURN(PR)	26.703	23.545	22.735	22.734	22.454	20.747	18.129	16.600	15.585	TURN(PR)
	UUBAR	0.0952	0.1167	0.1066	0.0636	0.0493	0.0479	0.0937	0.1318	0.1527	UUBAR
	LOSS PARA	0.0248	0.0306	0.0281	0.0171	0.0135	0.0133	0.0256	0.0349	0.0372	LOSS PARA
	DFAC	0.5270	0.5062	0.4967	0.4645	0.4459	0.4350	0.4625	0.4997	0.5262	DFAC
	EFFP	0.8407	0.8327	0.8757	0.9328	0.9532	0.9591	0.8977	0.8615	0.8669	EFFP
	EFF	0.8352	0.8273	0.8716	0.9304	0.9515	0.9576	0.8941	0.8581	0.8615	EFF
	INCID	0.114	-0.550	-0.229	-0.161	-0.228	-0.744	-2.402	-4.704	-7.961	INCID
	DEVM	10.689	12.657	12.978	10.506	8.192	6.888	6.455	7.768	10.560	DEVM
	P 1	14.508	14.611	14.637	14.735	14.741	14.734	14.673	14.516	14.240	P 1
	P 2	18.455	18.569	18.642	18.816	19.036	19.067	18.766	18.435	17.927	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	562.900	560.550	558.810	559.050	560.020	560.100	560.950	561.460	562.050	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.267	33.564	33.921	34.992	36.420	37.846	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	43.302	46.288	48.947	57.732	65.961	75.313	87.809	91.457	96.196	BETA 2
STATOR-T.E.	BETA 2A	2.050	2.850	2.900	2.500	2.260	2.971	3.692	4.341	3.951	BETA 2A
	V 2	589.11	603.74	613.07	617.06	633.79	624.23	584.13	548.83	495.69	V 2
	V 2A	458.40	462.31	466.09	512.75	539.23	546.37	503.20	466.55	408.94	V 2A
	VZ 2	426.72	460.52	476.74	487.95	512.77	508.95	460.99	410.89	341.29	VZ 2
	VZ 2A	456.10	461.73	465.47	512.19	538.63	547.31	501.75	460.74	407.34	VZ 2A
	V-THETA 2	404.04	390.39	385.56	377.57	372.02	360.53	357.69	362.97	355.45	V-THETA 2
	V-THETA 2A	16.40	22.99	23.56	22.36	21.26	28.40	32.37	36.56	32.68	V-THETA 2A
	M 2	0.5200	0.5349	0.5445	0.5481	0.5634	0.5543	0.5163	0.4834	0.4354	M 2
	M 2A	0.4004	0.4046	0.4089	0.4513	0.4752	0.4836	0.4416	0.4226	0.4100	M 2A
	TURN(PR)	41.252	37.437	36.045	35.226	33.663	32.310	34.072	37.066	42.190	TURN(PR)
	UUBAR	0.0717	0.0962	0.1065	0.0313	0.0225	0.0164	0.0847	0.0495	-0.1150	UUBAR
	LOSS PARA	0.0241	0.0327	0.0366	0.0111	0.0083	0.0063	0.0335	0.0197	-0.0465	LOSS PARA
	DFAC	0.4436	0.4416	0.4431	0.3741	0.3549	0.3275	0.3606	0.3603	0.3104	DFAC
	EFFP	0.6357	0.7503	0.7729	0.9101	0.9263	0.9364	0.7033	0.6014	2.0751	EFFP
	INCID	-0.865	-3.100	-1.344	-0.298	-0.744	-0.554	-0.896	-1.716	-13.606	INCID
	DEVM	10.882	14.162	14.210	13.475	13.272	14.635	16.130	17.616	6.801	DEVM
	P 2	18.455	18.569	18.642	18.818	19.036	19.067	18.766	18.435	17.927	P 2
	P 2A	18.233	18.253	18.279	18.709	18.953	19.008	18.502	18.300	18.178	P 2A
	T 2	562.900	560.550	558.810	559.050	560.020	560.100	560.950	561.460	562.050	T 2
	T 2A	562.900	560.550	558.810	559.050	560.020	560.100	560.950	561.460	562.050	T 2A
	UUBAR FS	0.0703	0.0805	0.0817	0.0444	0.0348	0.0319	0.1311	0.1412	0.1484	UUBAR FS
	P2 FS	18.451	18.513	18.549	18.865	19.083	19.124	18.932	18.725	18.596	P2 FS
	LOSS PARA FS	0.0236	0.0273	0.0280	0.0157	0.0128	0.0122	0.0518	0.0562	0.0597	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 100.16 Equivalent Rotor Speed = 4216.70 Equivalent Weight Flow = 102.67
Uniform Inlet

INLET

PCT SPAN	96.80	92.80	86.96	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
DIA	33.422	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.065	DIA
BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
V 0	406.18	406.18	406.18	406.18	406.18	406.18	406.18	406.18	406.18	V 0
V 1	422.48	435.94	433.91	426.43	426.01	426.81	412.60	400.64	372.66	V 1
VZ 0	406.18	406.18	406.18	406.18	406.15	406.12	406.08	406.07	406.08	VZ 0
VZ 1	422.47	435.94	433.91	426.42	425.98	426.74	412.44	400.53	372.59	VZ 1
V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
M 0	0.3687	0.3687	0.3687	0.3687	0.3687	0.3687	0.3687	0.3687	0.3687	M 0
M 1	0.3839	0.3960	0.3947	0.3876	0.3873	0.3880	0.3747	0.3636	0.3376	M 1
TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
UUBAR	0.4356	0.2627	0.2308	0.2764	0.2817	0.2625	0.3523	0.4207	0.5573	UUBAR
DFAC	-0.040	-0.075	-0.068	-0.050	-0.049	-0.051	-0.016	0.014	0.082	DFAC
EFFP	0.1636	0.3780	0.5916	0.2795	0.2715	0.2791	0.0862	-0.0720	-0.4147	EFFP
INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
P 0	15.118	15.118	15.118	15.118	15.118	15.118	15.118	15.118	15.118	P 0
P 1	14.526	14.762	14.805	14.744	14.737	14.735	14.641	14.548	14.363	P 1
T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1

ROTOR D

PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
DIA	33.236	33.621	34.007	35.184	36.706	38.246	39.405	39.791	40.176	DIA
BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
BETA 2	45.847	44.180	43.189	41.301	39.914	38.882	40.347	42.366	45.709	BETA 2
BETA(PR) 1	55.205	53.198	53.040	54.513	56.166	57.419	59.046	59.976	61.885	BETA(PR) 1
BETA(PR) 2	25.915	27.777	29.567	31.129	33.554	36.318	39.191	41.861	46.665	BETA(PR) 2
V 1	423.46	461.43	469.90	462.44	457.35	458.23	445.99	434.32	404.66	V 1
V 2	579.42	579.63	580.84	580.92	587.29	587.18	572.49	549.10	508.60	V 2
VZ 1	423.38	461.32	469.84	462.46	456.79	456.38	443.05	431.23	402.02	VZ 1
VZ 2	483.59	412.06	413.46	436.41	450.30	456.54	435.49	404.90	354.54	VZ 2
V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
V-THETA 2	415.49	401.15	389.99	383.41	376.69	368.14	369.94	369.31	363.43	V-THETA 2
V(PR) 1	742.0	776.1	781.5	796.7	820.7	846.5	862.9	883.4	854.4	V(PR) 1
V(PR) 2	448.5	466.6	477.7	509.8	540.6	567.3	563.0	544.7	517.5	V(PR) 2
VTHETA PR1	-609.3	-610.6	-624.4	-648.7	-681.5	-714.1	-738.7	-746.2	-752.4	VTHETA PR1
VTHETA PR2	-196.0	-217.4	-235.7	-264.6	-298.7	-335.6	-355.1	-362.8	-375.6	VTHETA PR2
U 1	609.2	616.61	624.39	648.66	681.47	714.13	738.70	746.18	752.44	U 1
U 2	611.56	618.59	625.68	646.97	675.35	703.72	725.01	732.10	739.20	U 2
W 1	0.3849	0.4205	0.4265	0.4215	0.4167	0.4175	0.4060	0.3950	0.3673	M 1
W 2	0.5107	0.5065	0.5040	0.5142	0.5200	0.5195	0.5054	0.4833	0.4457	M 2
M(PR) 1	0.6744	0.7019	0.7127	0.7261	0.7478	0.7731	0.7855	0.7653	0.7755	M(PR) 1
M(PR) 2	0.3955	0.4122	0.4225	0.4513	0.4786	0.5020	0.4970	0.4795	0.4535	M(PR) 2
TURN(PR)	29.267	25.416	23.471	23.383	22.595	21.049	19.779	18.040	15.166	TURN(PR)
UUBAR	0.0764	0.1103	0.1089	0.0787	0.0617	0.0628	0.0963	0.1236	0.1450	UUBAR
LOSS PARA	0.0194	0.0286	0.0261	0.0207	0.0165	0.0170	0.0259	0.0323	0.0352	LOSS PARA
DFAC	0.5580	0.5472	0.5371	0.5079	0.4885	0.4762	0.4956	0.5176	0.5436	DFAC
EFFP	0.6846	0.6870	0.8854	0.9291	0.9620	0.9593	0.9272	0.8807	0.8296	EFFP
EFF	0.5797	0.8625	0.8815	0.9266	0.9606	0.9578	0.9245	0.8764	0.8239	EFF
INCID	2.774	2.281	2.461	2.476	2.165	1.426	0.360	-0.331	-0.271	INCID
DEVM	10.765	10.618	14.955	12.488	10.342	8.756	7.567	6.722	10.686	DEVM
P 1	14.526	14.762	14.805	14.744	14.737	14.735	14.641	14.548	14.363	P 1
P 2	18.725	18.705	18.674	18.828	19.024	19.086	18.911	18.653	18.262	P 2
T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
T 2	563.050	560.780	559.050	559.210	559.570	560.240	561.260	562.260	563.420	T 2

STATOR D

PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
DIA	33.267	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
BETA 2	46.200	43.942	42.417	41.355	39.351	36.746	41.245	43.835	47.576	BETA 2
BETA 2A	3.200	3.750	3.750	2.640	2.520	3.571	4.771	5.051	5.241	BETA 2A
V 2	575.77	578.50	578.48	580.92	595.23	589.87	563.05	535.11	490.96	V 2
V 2A	441.08	435.68	434.24	465.99	483.98	498.37	457.94	441.26	431.10	V 2A
VZ 2	396.51	416.66	427.05	436.00	460.09	459.70	422.94	385.61	328.38	VZ 2
VZ 2A	440.39	434.73	436.30	465.43	483.35	497.11	455.99	439.16	428.85	VZ 2A
V-THETA 2	415.56	401.29	390.19	383.77	377.27	368.90	370.84	370.25	364.39	V-THETA 2
V-THETA 2A	24.62	28.49	28.40	21.46	21.28	31.02	38.06	38.82	39.34	V-THETA 2A
M 2	0.5076	0.5112	0.5120	0.5142	0.5274	0.5220	0.4986	0.4704	0.4297	M 2
M 2A	0.3846	0.3807	0.3800	0.4066	0.4246	0.4377	0.4006	0.3852	0.3757	M 2A
TURN(PR)	43.000	40.171	38.666	38.708	36.813	35.142	36.427	38.735	42.680	TURN(PR)
UUBAR	0.0624	0.0744	0.0686	0.0321	0.0486	0.0363	0.1200	0.0918	-0.0331	UUBAR
LOSS PARA	0.0210	0.0253	0.0236	0.0114	0.0180	0.0139	0.0474	0.0366	-0.0133	LOSS PARA
DFAC	0.4627	0.4665	0.4649	0.4200	0.4091	0.3769	0.4224	0.4248	0.3909	DFAC
EFFP	0.8629	0.8438	0.8573	0.9167	0.8712	0.8862	0.6760	0.7361	1.1338	EFFP
INCID	-3.967	0.534	2.126	3.324	2.645	2.678	2.537	0.663	-11.229	INCID
DEVM	14.032	15.062	15.060	13.615	13.532	15.235	17.209	17.727	10.090	DEVM
P 2	18.725	18.705	18.674	18.828	19.024	19.086	18.911	18.653	18.262	P 2
P 2A	18.557	18.477	18.464	18.729	18.864	18.966	18.559	18.413	18.334	P 2A
T 2	563.050	560.780	559.050	559.210	559.570	560.240	561.260	562.260	563.420	T 2
T 2A	563.050	560.780	559.050	559.210	559.570	560.240	561.260	562.260	563.420	T 2A
UUBAR FS	0.0772	0.0906	0.0922	0.0561	0.0508	0.0355	0.1159	0.1364	0.1372	UUBAR FS
P2 FS	18.774	18.758	18.753	18.907	19.031	19.082	18.897	18.769	18.691	P2 FS
LOSS PARA FS	0.0260	0.0308	0.0317	0.0199	0.0188	0.0136	0.0458	0.0343	0.0351	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 100.06 Equivalent Rotor Speed = 4212.51 Equivalent Weight Flow = 95.36
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	375.24	375.24	375.24	375.24	375.24	375.24	375.24	375.24	375.24	V 0
	V 1	386.54	400.37	399.71	394.29	394.81	392.60	380.93	371.86	349.16	V 1
	VZ 0	375.24	375.24	375.24	375.24	375.22	375.18	375.15	375.14	375.15	VZ 0
	VZ 1	386.54	400.37	399.71	394.26	394.78	392.54	380.84	371.76	349.06	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3400	0.3400	0.3400	0.3400	0.3400	0.3400	0.3400	0.3400	0.3400	M 0
	M 1	0.3504	0.3633	0.3627	0.3576	0.3581	0.3561	0.3452	0.3368	0.3158	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4374	0.2578	0.2142	0.2656	0.2691	0.2736	0.3400	0.3931	0.5082	UUBAR
	DFAC	-0.030	-0.067	-0.065	-0.051	-0.052	-0.046	-0.015	0.009	0.070	DFAC
	EFFP	0.1264	0.3592	0.3964	0.2900	0.2930	0.2651	0.0854	-0.0498	-0.3739	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.042	15.042	15.042	15.042	15.042	15.042	15.042	15.042	15.042	P 0
	P 1	14.536	14.744	14.794	14.735	14.731	14.726	14.649	14.587	14.454	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	48.497	47.106	46.300	44.626	43.598	42.267	43.683	47.106	50.329	BETA 2
	BETA(PR) 1	57.529	55.526	55.310	56.639	58.174	59.577	61.048	61.814	63.422	BETA(PR) 1
	BETA(PR) 2	25.197	26.821	30.538	32.161	34.509	34.864	39.866	44.597	48.902	BETA(PR) 2
	V 1	387.42	423.06	431.81	426.67	423.06	420.65	410.96	402.34	378.53	V 1
	V 2	575.95	558.20	552.90	562.04	568.33	592.14	560.19	521.88	492.51	V 2
	VZ 1	387.34	422.96	431.76	426.65	422.54	418.95	408.25	399.47	376.06	VZ 1
	VZ 2	381.65	379.92	381.98	399.99	411.45	437.73	403.08	354.62	313.95	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	431.33	408.93	399.72	394.83	391.80	397.64	387.66	381.70	378.55	V-THETA 2
	V(PR) 1	721.5	747.3	758.7	775.9	801.5	828.2	844.7	847.1	841.6	V(PR) 1
	V(PR) 2	421.6	433.7	443.5	472.5	499.5	534.3	526.2	498.9	478.3	V(PR) 2
	VTHETA PR1	-608.7	-616.0	-623.8	-648.0	-680.8	-713.4	-738.0	-745.4	-751.7	VTHETA PR1
	VTHETA PR2	-179.6	-209.0	-225.3	-251.5	-282.9	-305.2	-336.6	-349.7	-359.9	VTHETA PR2
	U 1	608.68	616.00	623.77	648.01	680.79	713.42	737.97	745.44	751.69	U 1
	U 2	610.89	617.97	625.06	646.32	674.68	703.02	724.29	731.38	738.46	U 2
	M 1	0.3513	0.3845	0.3927	0.3879	0.3845	0.3822	0.3732	0.3651	0.3430	M 1
	M 2	0.5066	0.4912	0.4872	0.4957	0.5011	0.5231	0.4926	0.4569	0.4296	M 2
	M(PR) 1	0.6542	0.6792	0.6899	0.7053	0.7285	0.7526	0.7670	0.7688	0.7626	M(PR) 1
	M(PR) 2	0.3710	0.3816	0.3908	0.4167	0.4404	0.4720	0.4626	0.4368	0.4173	M(PR) 2
	TURN(PR)	32.329	26.701	24.770	24.478	23.649	24.644	21.113	17.149	14.471	TURN(PR)
	UUBAR	0.0765	0.1149	0.1160	0.0913	0.0884	0.0778	0.1229	0.1686	0.1904	UUBAR
	LOSS PARA	0.0200	0.0295	0.0297	0.0238	0.0235	0.0215	0.0327	0.0421	0.0443	LOSS PARA
	DFAC	0.5889	0.5604	0.5720	0.5474	0.5335	0.5152	0.5349	0.5675	0.5896	DFAC
	EFFP	0.8762	0.8376	0.8567	0.9040	0.9162	0.9735	0.8845	0.8057	0.7605	EFFP
	EFF	0.8714	0.8319	0.8539	0.9005	0.9152	0.9724	0.8802	0.7969	0.7521	EFF
	INCID	5.098	4.609	4.732	4.597	4.173	3.589	2.369	-0.486	-4.728	INCID
	DEVM	10.047	14.661	15.904	13.520	11.297	7.324	6.242	11.458	12.926	DEVM
	P 1	14.536	14.744	14.794	14.735	14.731	14.726	14.649	14.587	14.454	P 1
	P 2	18.936	18.774	18.764	18.907	19.071	19.409	19.020	18.611	18.324	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	565.410	563.270	561.390	561.230	562.100	562.490	564.350	565.490	567.060	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	48.883	46.827	45.460	44.688	42.974	42.115	44.891	48.807	52.986	BETA 2
STATOR-T.E.	BETA 2A	3.760	4.210	3.750	3.120	2.460	3.301	4.131	5.402	5.702	BETA 2A
	V 2	572.63	560.92	561.09	562.04	575.85	594.87	551.10	508.96	475.68	V 2
	V 2A	427.92	417.95	413.92	441.65	453.09	461.34	421.79	407.11	400.28	V 2A
	VZ 2	376.56	383.78	393.54	399.53	421.17	440.97	390.08	334.93	286.14	VZ 2
	VZ 2A	427.00	416.81	413.01	440.93	452.52	460.30	420.36	404.95	397.88	VZ 2A
	V-THETA 2	431.40	409.07	399.92	395.20	392.40	398.66	388.60	382.67	379.55	V-THETA 2
	V-THETA 2A	28.06	30.66	27.07	24.03	19.44	26.55	30.36	38.29	39.75	V-THETA 2A
	M 2	0.5036	0.4937	0.4948	0.4957	0.5081	0.5256	0.4842	0.4452	0.4144	M 2
	M 2A	0.3722	0.3640	0.3610	0.3859	0.3959	0.4032	0.3670	0.3536	0.3470	M 2A
	TURN(PR)	45.123	42.616	41.708	41.562	40.496	38.780	40.714	43.357	47.235	TURN(PR)
	UUBAR	0.0700	0.0487	0.0591	0.0361	0.0605	0.1411	0.1536	0.0592	-0.0476	UUBAR
	LOSS PARA	0.0235	0.0165	0.0203	0.0128	0.0224	0.0543	0.0607	0.0236	-0.0191	LOSS PARA
	DFAC	0.4900	0.4847	0.4913	0.4494	0.4538	0.4666	0.4938	0.4726	0.4487	DFAC
	EFFP	0.8555	0.9001	0.8815	0.9142	0.8560	0.6786	0.6580	0.8476	1.1517	EFFP
	INCID	-1.284	3.439	5.169	6.857	6.268	6.246	6.183	5.635	-6.215	INCID
	DEVM	12.592	15.522	15.060	14.095	13.471	14.965	16.568	16.077	10.550	DEVM
	P 2	18.936	18.774	18.764	18.907	19.071	19.409	19.020	18.611	18.324	P 2
	P 2A	18.725	18.634	18.593	18.802	18.885	18.939	18.587	18.470	18.421	P 2A
	T 2	565.410	563.270	561.390	561.230	562.100	562.490	564.350	565.490	567.060	T 2
	T 2A	565.410	563.270	561.390	561.230	562.100	562.490	564.350	565.490	567.060	T 2A
	UUBAR FS	0.0880	0.1046	0.1157	0.0798	0.0760	0.0652	0.1102	0.1272	0.1215	UUBAR FS
	PZ FS	18.995	18.954	18.949	19.046	19.123	19.138	18.882	18.795	18.718	PZ FS
	LOSS PARA FS	0.0295	0.0354	0.0397	0.0283	0.0281	0.0250	0.0435	0.0506	0.0488	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 100.09 Equivalent Rotor Speed = 4213.61 Equivalent Weight Flow = 88.32
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	346.20	346.20	346.20	346.20	346.20	346.20	346.20	346.20	346.20	V 0
	V 1	357.52	374.91	370.88	367.53	363.00	361.71	347.07	339.28	328.73	V 1
	VZ 0	346.20	346.20	346.20	346.20	346.18	346.15	346.12	346.11	346.11	VZ 0
	VZ 1	357.52	374.91	370.88	367.53	362.97	361.65	346.98	339.18	328.65	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3131	0.3131	0.3131	0.3131	0.3131	0.3131	0.3131	0.3131	0.3131	M 0
	M 1	0.3236	0.3397	0.3359	0.3328	0.3286	0.3274	0.3139	0.3067	0.2970	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4464	0.2527	0.2268	0.2569	0.2631	0.2651	0.3252	0.3687	0.4392	UUBAR
	DFAC	-0.033	-0.083	-0.071	-0.062	-0.049	-0.045	-0.002	0.020	0.050	DFAC
	EFFP	0.1329	0.4148	0.4033	0.3389	0.2813	0.2635	0.0155	-0.1247	-0.2993	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.980	14.980	14.980	14.980	14.980	14.980	14.980	14.980	14.980	P 0
	P 1	14.541	14.732	14.757	14.728	14.721	14.719	14.660	14.618	14.548	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	50.596	49.304	48.731	47.526	47.246	46.550	50.338	53.661	57.508	BETA 2
	BETA(PR) 1	59.527	57.298	57.344	58.513	60.339	61.633	63.303	63.993	64.610	BETA(PR) 1
	BETA(PR) 2	23.951	27.444	30.607	30.195	32.099	37.260	43.778	46.253	47.755	BETA(PR) 2
	V 1	358.32	395.68	399.93	397.03	388.28	386.88	373.67	366.39	355.98	V 1
	V 2	579.39	563.60	547.58	571.87	581.88	563.48	525.14	514.21	515.30	V 2
	VZ 1	358.25	395.59	399.88	397.00	387.80	385.31	371.21	363.78	353.66	VZ 1
	VZ 2	367.78	367.48	361.18	366.15	394.90	387.17	334.73	304.17	276.52	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	447.66	427.29	411.57	421.80	427.14	408.69	403.73	413.79	434.19	V-THETA 2
	V(PR) 1	706.5	732.3	741.1	760.1	783.9	811.7	827.4	830.6	831.9	V(PR) 1
	V(PR) 2	402.5	414.1	419.7	446.8	466.4	487.1	464.4	440.7	412.0	V(PR) 2
	VTHETA PR1	-608.8	-616.2	-623.9	-648.2	-681.0	-713.6	-738.2	-745.6	-751.9	VTHETA PR1
	VTHETA PR2	-163.4	-190.8	-213.7	-224.7	-247.7	-294.5	-320.7	-317.6	-304.5	VTHETA PR2
	U 1	608.84	616.16	623.94	648.16	680.97	713.61	736.16	745.64	751.89	U 1
	U 2	611.05	618.14	625.23	646.49	674.85	703.21	724.48	731.57	738.65	U 2
	M 1	0.5245	0.3589	0.3629	0.3602	0.3521	0.3508	0.3385	0.3318	0.3221	M 1
	M 2	0.5094	0.4958	0.4818	0.5041	0.5129	0.4953	0.4590	0.4485	0.4486	M 2
	M(PR) 1	0.6394	0.6643	0.6725	0.6896	0.7108	0.7360	0.7495	0.7523	0.7528	M(PR) 1
	M(PR) 2	0.3538	0.3643	0.3692	0.3938	0.4111	0.4281	0.4059	0.3843	0.3588	M(PR) 2
	TURN(PR)	35.573	29.850	26.735	28.318	28.226	24.330	19.466	17.661	17.014	TURN(PR)
	UUBAR	0.0786	0.1173	0.1215	0.1058	0.1074	0.1258	0.2076	0.2525	0.2921	UUBAR
	LOSS PARA	0.0248	0.0305	0.0310	0.0281	0.0293	0.0337	0.0520	0.0612	0.0696	LOSS PARA
	DFAC	0.6142	0.6059	0.5988	0.5827	0.5797	0.5681	0.6065	0.6426	0.6680	DFAC
	EFFP	0.8962	0.8646	0.8647	0.9276	0.9549	0.9026	0.7810	0.7439	0.7350	EFFP
	EFF	0.8921	0.8597	0.8599	0.9248	0.9531	0.8986	0.7732	0.7356	0.7256	EFF
	INCID	7.098	6.362	6.766	6.471	6.340	5.649	4.634	4.761	5.235	INCID
	DEVM	8.801	13.285	15.973	11.554	8.867	9.698	12.152	13.114	11.776	DEVM
	P 1	14.541	14.732	14.757	14.728	14.721	14.719	14.660	14.618	14.548	P 1
	P 2	19.146	18.993	18.861	19.167	19.452	19.279	18.759	18.606	18.606	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	566.250	564.130	562.500	562.730	563.800	564.950	567.650	569.060	570.750	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	51.014	46.996	47.824	47.592	46.528	46.361	51.575	55.637	61.128	BETA 2
STATOR-T.E.	BETA 2A	3.750	4.590	4.250	3.090	2.690	2.900	3.401	4.952	5.572	BETA 2A
	V 2	576.04	566.40	555.65	571.87	589.67	566.04	516.94	501.65	497.38	V 2
	V 2A	431.34	420.84	414.13	428.61	435.51	435.54	399.85	390.71	389.40	V 2A
	VZ 2	362.40	371.61	373.06	385.63	405.57	390.26	321.05	281.53	240.05	VZ 2
	VZ 2A	430.41	419.48	412.97	427.93	434.89	434.72	398.82	388.91	387.15	VZ 2A
	V-THETA 2	447.76	427.43	411.77	422.20	427.60	409.55	404.71	414.84	435.35	V-THETA 2
	V-THETA 2A	28.21	33.67	30.69	23.10	20.43	22.03	23.76	33.69	37.77	V-THETA 2A
	M 2	0.5063	0.4984	0.4892	0.5041	0.5201	0.4977	0.4515	0.4371	0.4326	M 2
	M 2A	0.3749	0.3663	0.3608	0.3737	0.3795	0.3791	0.3464	0.3379	0.3362	M 2A
	TURN(PR)	47.264	44.406	43.572	44.495	43.620	43.446	48.128	50.840	55.512	TURN(PR)
	UUBAR	0.0809	0.0677	0.0397	0.1067	0.1677	0.1281	0.0620	0.0330	0.0341	UUBAR
	LOSS PARA	0.0272	0.0230	0.0136	0.0379	0.0620	0.0493	0.0245	0.0131	0.0157	LOSS PARA
	DFAC	0.4966	0.4939	0.4910	0.4991	0.5181	0.4955	0.5203	0.5270	0.5417	DFAC
	EFFP	0.8323	0.8620	0.9183	0.7776	0.6630	0.7124	0.8570	0.9222	0.9182	EFFP
	INCID	0.847	5.668	7.533	9.561	9.822	10.512	12.868	12.666	1.933	INCID
	DEVM	12.582	15.901	15.560	14.064	13.701	14.565	15.839	17.627	10.420	DEVM
	P 2	19.146	18.993	18.861	19.187	19.452	19.279	18.759	18.606	18.606	P 2
	P 2A	18.697	18.792	18.747	18.861	18.902	18.894	18.607	18.530	18.529	P 2A
	T 2	566.250	564.130	562.500	562.730	563.800	564.950	567.650	569.060	570.750	T 2
	T 2A	566.250	564.130	562.500	562.730	563.800	564.950	567.650	569.060	570.750	T 2A
	UUBAR FS	0.0933	0.1094	0.1147	0.1329	0.1330	0.1087	0.1087	0.1197	0.1149	UUBAR FS
	P2 FS	19.187	19.131	19.101	19.279	19.320	19.213	18.887	18.831	18.810	P2 FS
	LOSS PARA FS	0.0313	0.0371	0.0392	0.0472	0.0491	0.0418	0.0429	0.0475	0.0461	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 90.72 Equivalent Rotor Speed = 3819.18 Equivalent Weight Flow = 113.67
Uniform Inlet

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	452.47	452.47	452.47	452.47	452.47	452.47	452.47	452.47	452.47	V 0
	V 1	491.83	500.19	493.39	485.63	479.52	480.81	474.16	466.26	434.84	V 1
	VZ 0	452.47	452.47	452.47	452.46	452.43	452.39	452.35	452.34	452.35	VZ 0
	VZ 1	491.82	500.19	493.39	485.62	479.49	480.73	474.04	466.13	434.72	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4121	0.4121	0.4121	0.4121	0.4121	0.4121	0.4121	0.4121	0.4121	M 0
	M 1	0.4493	0.4573	0.4508	0.4434	0.4377	0.4389	0.4326	0.4251	0.3955	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4497	0.2794	0.2622	0.3183	0.3226	0.3288	0.3639	0.4121	0.5515	UUBAR
	DFAC	-0.087	-0.105	-0.090	-0.073	-0.060	-0.063	-0.048	-0.030	0.039	DFAC
	EFFP	0.2984	0.4584	0.4344	0.3362	0.2881	0.2941	0.2219	0.1366	-0.1690	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.278	15.278	15.278	15.278	15.278	15.278	15.278	15.278	15.278	P 0
	P 1	14.520	14.807	14.836	14.742	14.734	14.724	14.665	14.584	14.349	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	33.619	30.602	29.467	28.502	27.700	26.086	25.993	28.770	31.920	BETA 2
	BETA(PR) 1	48.226	46.416	46.471	47.968	50.091	51.401	52.587	53.256	55.339	BETA(PR) 1
	BETA(PR) 2	26.992	26.365	26.312	26.478	29.680	33.309	39.162	43.857	50.662	BETA(PR) 2
	V 1	493.06	531.66	537.28	529.61	516.88	518.43	515.17	508.18	474.31	V 1
	V 2	566.44	598.82	614.37	640.49	631.25	619.86	562.56	502.37	429.08	V 2
	VZ 1	492.96	531.54	537.22	529.58	516.24	516.33	511.78	504.56	471.22	VZ 1
	VZ 2	471.67	515.39	534.88	562.84	558.65	555.84	504.33	439.15	363.26	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	313.60	304.82	302.21	305.63	293.30	272.13	245.90	241.12	226.29	V-THETA 2
	V(PR) 1	740.0	771.1	780.1	791.0	805.1	828.9	844.4	845.6	830.3	V(PR) 1
	V(PR) 2	529.4	575.3	596.7	628.8	643.3	666.0	651.7	610.2	573.9	V(PR) 2
	VTHETA PR1	-551.8	-558.5	-565.5	-587.5	-617.2	-646.6	-669.1	-675.8	-661.5	VTHETA PR1
	VTHETA PR2	-240.2	-255.5	-264.5	-280.3	-318.4	-365.2	-410.8	-422.0	-443.2	VTHETA PR2
	U 1	551.84	558.48	565.53	587.51	617.23	646.81	669.06	675.84	681.50	U 1
	U 2	553.85	560.27	566.70	585.98	611.68	637.38	656.66	663.09	669.51	U 2
	M 1	0.4505	0.4874	0.4928	0.4854	0.4732	0.4747	0.4716	0.4649	0.4327	M 1
	M 2	0.5047	0.5360	0.5516	0.5763	0.5673	0.5571	0.5033	0.4472	0.3798	M 2
	M(PR) 1	0.6762	0.7069	0.7155	0.7250	0.7371	0.7590	0.7730	0.7736	0.7575	M(PR) 1
	M(PR) 2	0.4717	0.5149	0.5358	0.5658	0.5781	0.5985	0.5830	0.5432	0.5079	M(PR) 2
	TURN(PR)	21.229	20.046	20.156	21.490	20.392	18.029	13.334	9.305	4.602	TURN(PR)
	UUBAR	0.1648	0.1450	0.1133	0.0651	0.0757	0.0726	0.1305	0.2018	0.2357	UUBAR
	LOSS PARA	0.0425	0.0381	0.0302	0.0179	0.0212	0.0204	0.0351	0.0510	0.0529	LOSS PARA
	DFAC	0.4076	0.3701	0.3502	0.3238	0.3177	0.3062	0.3284	0.3774	0.4045	DFAC
	EFFP	0.6906	0.7224	0.8110	0.9117	0.8872	0.8870	0.7334	0.5914	0.4819	EFFP
	EFF	0.6841	0.7167	0.8069	0.9094	0.8844	0.8843	0.7283	0.5852	0.4754	EFF
	INCID	-4.206	-4.500	-4.108	-4.074	-3.912	-4.600	-6.115	-9.069	-12.637	INCID
	DEVM	11.843	12.205	11.678	7.837	6.469	5.750	7.538	10.718	14.687	DEVM
	P 1	14.520	14.807	14.836	14.742	14.734	14.724	14.665	14.584	14.349	P 1
	P 2	16.791	17.113	17.306	17.581	17.510	17.385	16.750	16.220	15.674	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	550.840	549.260	547.610	548.140	548.350	547.210	546.280	546.050	546.600	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	33.847	30.437	28.965	28.537	27.317	25.992	26.495	29.598	33.190	BETA 2
STATOR-T.E.	BETA 2A	1.650	1.630	1.410	0.360	0.270	1.280	1.681	0.430	-3.241	BETA 2A
	V 2	563.13	601.92	624.37	640.49	640.43	622.86	553.31	490.12	415.08	V 2
	V 2A	511.55	544.32	564.55	618.58	620.46	612.60	549.75	515.73	488.42	V 2A
	VZ 2	467.70	518.96	546.25	562.57	568.71	559.29	494.50	425.56	346.86	VZ 2
	VZ 2A	511.33	544.09	564.35	618.48	620.24	612.09	549.06	515.26	487.12	VZ 2A
	V-THETA 2	313.65	304.92	302.36	305.92	293.75	272.69	246.49	241.73	226.89	V-THETA 2
	V-THETA 2A	14.73	15.48	13.89	3.89	2.92	13.68	16.11	3.87	-27.58	V-THETA 2A
	M 2	0.5016	0.5389	0.5612	0.5763	0.5761	0.5599	0.4946	0.4359	0.3670	M 2
	M 2A	0.4537	0.4848	0.5045	0.5553	0.5570	0.5501	0.4913	0.4596	0.4341	M 2A
	TURN(PR)	32.197	28.807	27.554	28.171	27.031	24.684	24.776	29.122	36.373	TURN(PR)
	UUBAR	0.1031	0.0898	0.0802	-0.0091	-0.0153	-0.0003	0.0375	-0.0555	-0.2890	UUBAR
	LOSS PARA	0.0347	0.0306	0.0276	-0.0032	-0.0057	-0.0001	0.0149	-0.0222	-0.1164	LOSS PARA
	DFAC	0.2705	0.2595	0.2550	0.2021	0.1999	0.1774	0.1724	0.1430	0.0717	DFAC
	EFFP	0.4644	0.5596	0.6109	1.1176	1.2164	1.0088	-1.6362	0.5263	0.3046	EFFP
	INCID	-16.320	-12.950	-11.325	-9.493	-9.384	-9.869	-12.203	-13.567	-26.010	INCID
	DEVM	10.482	12.942	12.720	11.335	11.282	12.946	14.120	13.110	1.616	DEVM
	P 2	16.791	17.113	17.306	17.581	17.510	17.385	16.750	16.220	15.674	P 2
	P 2A	16.517	16.838	17.038	17.613	17.564	17.386	16.654	16.330	16.077	P 2A
	T 2	550.840	549.260	547.610	548.140	548.350	547.210	546.280	546.050	546.600	T 2
	T 2A	550.840	549.260	547.610	548.140	548.350	547.210	546.280	546.050	546.600	T 2A
	UUBAR FS	0.1562	0.0927	0.0902	0.0389	0.0272	0.0622	0.1999	0.2376	0.2353	UUBAR FS
	P2 FS	16.957	17.123	17.341	17.757	17.664	17.607	17.274	16.983	16.629	P2 FS
	LOSS PARA FS	0.0525	0.0316	0.0310	0.0137	0.0101	0.0207	0.0794	0.0950	0.0947	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 90.27 Equivalent Rotor Speed = 3800.48 Equivalent Weight Flow = 103.01
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	407.27	407.27	407.27	407.27	407.27	407.27	407.27	407.27	407.27	V 0
	V 1	427.80	437.64	434.89	428.74	425.61	421.81	417.38	395.85	359.67	V 1
	VZ 0	407.27	407.27	407.27	407.26	407.24	407.20	407.17	407.16	407.16	VZ 0
	VZ 1	427.80	437.64	434.89	428.73	425.58	421.74	417.26	395.74	359.58	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3697	0.3697	0.3697	0.3697	0.3697	0.3697	0.3697	0.3697	0.3697	M 0
	M 1	0.3889	0.3982	0.3956	0.3898	0.3869	0.3833	0.3792	0.3591	0.3256	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4366	0.2750	0.2448	0.2901	0.3007	0.2901	0.3301	0.4412	0.6225	UUBAR
	DFAC	-0.050	-0.075	-0.068	-0.053	-0.045	-0.036	-0.025	0.028	0.117	DFAC
	EFFP	0.1980	0.3717	0.3762	0.2814	0.2432	0.2082	0.1375	-0.1499	-0.5719	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.134	15.134	15.134	15.134	15.134	15.134	15.134	15.134	15.134	P 0
	P 1	14.539	14.759	14.801	14.739	14.724	14.739	14.684	14.533	14.286	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	41.096	38.464	37.492	35.734	34.844	33.603	34.810	37.366	40.716	BETA 2
	BETA(PR) 1	52.020	50.191	50.076	51.499	53.388	54.989	56.043	57.653	60.248	BETA(PR) 1
	BETA(PR) 2	25.459	26.429	27.698	27.763	30.316	34.056	37.847	40.398	46.656	BETA(PR) 2
	V 1	428.81	463.26	471.00	465.09	456.91	452.70	451.32	428.99	390.17	V 1
	V 2	542.42	551.38	550.09	576.58	579.25	568.89	541.76	515.36	456.94	V 2
	VZ 1	428.72	463.17	470.94	465.06	456.34	450.87	448.35	425.93	387.63	VZ 1
	VZ 2	408.74	431.72	436.45	468.02	475.21	473.18	443.84	408.66	345.63	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	356.54	342.95	334.80	336.73	330.82	314.42	308.59	312.06	297.45	V-THETA 2
	V(PR) 1	696.7	723.5	733.9	747.1	765.5	786.9	804.3	797.7	782.4	V(PR) 1
	V(PR) 2	452.7	482.1	493.0	528.9	550.7	571.9	563.2	537.7	506.3	V(PR) 2
	VTHETA PR1	-549.1	-555.7	-562.6	-584.6	-614.2	-643.6	-665.6	-672.5	-676.2	VTHETA PR1
	VTHETA PR2	-194.6	-214.6	-229.1	-246.4	-277.9	-319.8	-344.9	-347.8	-368.6	VTHETA PR2
	U 1	549.14	555.75	562.76	584.63	614.21	643.64	665.79	672.53	678.17	U 1
	U 2	551.14	557.53	563.92	583.11	608.69	634.26	653.44	659.84	666.23	U 2
	M 1	0.3899	0.4223	0.4296	0.4240	0.4163	0.4123	0.4110	0.3900	0.3538	M 1
	M 2	0.4809	0.4902	0.4697	0.5143	0.5164	0.5067	0.4813	0.4568	0.4029	M 2
	M(PR) 1	0.6335	0.6595	0.6693	0.6811	0.6974	0.7167	0.7325	0.7253	0.7095	M(PR) 1
	M(PR) 2	0.4013	0.4286	0.4368	0.4718	0.4910	0.5094	0.5003	0.4766	0.4464	M(PR) 2
	TURN(PR)	26.556	23.758	22.375	23.735	23.053	20.875	18.111	17.171	13.332	TURN(PR)
	UUBAR	0.0946	0.1051	0.1016	0.0492	0.0382	0.0405	0.0829	0.1124	0.1275	UUBAR
	LOSS PARA	0.0247	0.0276	0.0267	0.0134	0.0106	0.0113	0.0227	0.0300	0.0309	LOSS PARA
	DFAC	0.4987	0.4729	0.4639	0.4305	0.4191	0.4066	0.4317	0.4618	0.4864	DFAC
	EFFP	0.8301	0.8368	0.8668	0.9560	0.9723	0.9580	0.8986	0.8771	0.8024	EFFP
	EFF	0.8254	0.8326	0.8633	0.9547	0.9715	0.9568	0.8957	0.8736	0.7974	EFF
	INCID	-0.411	-0.725	-0.502	-0.544	-0.615	-1.007	-2.651	-4.662	-7.913	INCID
	DEVM	10.309	12.269	13.065	9.123	7.105	6.496	6.224	7.260	10.879	DEVM
	P 1	14.539	14.759	14.801	14.739	14.724	14.739	14.684	14.533	14.286	P 1
	P 2	17.602	17.695	17.705	18.014	18.138	18.097	17.829	17.571	17.077	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	553.980	551.840	550.260	550.760	551.470	551.440	551.710	551.790	552.730	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	41.365	38.258	36.867	35.779	34.378	33.492	35.521	38.550	42.528	BETA 2
STATOR-T.E.	BETA 2A	2.050	2.360	2.250	1.540	1.350	2.001	2.851	3.101	2.001	BETA 2A
	V 2	539.39	554.06	558.33	576.58	587.04	571.45	533.03	502.60	441.72	V 2
	V 2A	433.63	440.83	444.08	490.54	509.88	514.62	467.65	445.11	433.57	V 2A
	VZ 2	404.69	435.06	446.66	467.70	484.29	476.15	433.34	392.61	325.16	VZ 2
	VZ 2A	433.55	440.45	443.72	490.29	509.57	514.00	466.69	444.07	432.85	VZ 2A
	V-THETA 2	356.60	343.07	334.96	337.05	331.32	315.06	309.33	312.86	298.24	V-THETA 2
	V-THETA 2A	15.52	18.15	17.43	13.18	12.01	17.95	23.24	24.06	15.12	V-THETA 2A
	M 2	0.4781	0.4927	0.4974	0.5143	0.5237	0.5091	0.4732	0.4450	0.3890	M 2
	M 2A	0.3814	0.3885	0.3921	0.4344	0.4519	0.4563	0.4130	0.3925	0.3816	M 2A
	TURN(PR)	39.335	35.897	34.616	34.232	33.010	31.459	32.625	35.400	40.470	TURN(PR)
	UUBAR	0.0683	0.0830	0.0763	0.0384	0.0236	0.0074	0.0939	0.0756	-0.1333	UUBAR
	LOSS PARA	0.0230	0.0282	0.0262	0.0137	0.0088	0.0026	0.0372	0.0302	-0.0537	LOSS PARA
	DFAC	0.4088	0.4042	0.4006	0.3493	0.3335	0.3007	0.3366	0.3457	0.2786	DFAC
	EFFP	0.6227	0.7934	0.8107	0.8746	0.9138	0.9650	0.6258	0.6755	4.3941	EFFP
	INCID	-8.782	-5.130	-3.424	-2.252	-2.327	-2.374	-3.184	-4.621	-16.677	INCID
	DEVM	10.882	13.672	13.560	12.515	12.362	13.665	15.290	15.778	6.653	DEVM
	P 2	17.602	17.695	17.705	18.014	18.138	18.097	17.829	17.571	17.077	P 2
	P 2A	17.428	17.470	17.495	17.900	18.065	18.075	17.591	17.402	17.302	P 2A
	T 2	553.980	551.840	550.260	550.760	551.470	551.440	551.710	551.790	552.730	T 2
	T 2A	553.980	551.840	550.260	550.760	551.470	551.440	551.710	551.790	552.730	T 2A
	UUBAR FS	0.0353	0.0473	0.0867	0.0335	0.0253	0.0229	0.1411	0.1765	0.1865	UUBAR FS
	P2 FS	17.515	17.649	17.736	17.999	18.143	18.143	17.968	17.644	17.741	P2 FS
	LOSS PARA FS	0.0119	0.0228	0.0297	0.0119	0.0094	0.0066	0.0559	0.0705	0.0791	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 90.45 Equivalent Rotor Speed = 3807.96 Equivalent Weight Flow = 91.28
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	358.01	358.01	358.01	358.01	358.01	358.01	358.01	358.01	358.01	V 0
	V 1	367.84	386.12	384.78	376.51	375.73	375.04	359.97	351.18	314.65	V 1
	VZ 0	358.01	358.01	358.01	358.01	357.99	357.95	357.92	357.92	357.92	VZ 0
	VZ 1	367.84	386.12	384.78	376.51	375.70	374.98	359.88	351.09	314.56	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3240	0.3240	0.3240	0.3240	0.3240	0.3240	0.3240	0.3240	0.3240	M 0
	M 1	0.3331	0.3501	0.3488	0.3411	0.3404	0.3398	0.3258	0.3177	0.2841	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4492	0.2513	0.2231	0.2746	0.2746	0.2823	0.3531	0.4016	0.5976	UUBAR
	DFAC	-0.027	-0.079	-0.075	-0.052	-0.049	-0.048	-0.005	0.019	0.121	DFAC
	EFFP	0.1133	0.4031	0.4198	0.2863	0.2773	0.2638	0.0311	-0.1076	-0.6383	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.021	15.021	15.021	15.021	15.021	15.021	15.021	15.021	15.021	P 0
	P 1	14.547	14.756	14.786	14.731	14.731	14.723	14.649	14.598	14.391	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.766	38.246	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	45.396	43.775	42.675	41.631	40.255	38.988	42.293	43.428	46.809	BETA 2
	BETA(PR) 1	56.182	55.793	55.631	55.211	56.868	58.205	59.991	60.787	63.536	BETA(PR) 1
	BETA(PR) 2	25.742	27.224	28.603	31.117	34.782	36.892	39.053	41.826	47.428	BETA(PR) 2
	V 1	368.67	407.75	415.29	406.99	402.16	401.41	387.63	379.50	340.48	V 1
	V 2	525.66	525.39	523.19	523.77	518.67	524.72	515.21	495.30	453.60	V 2
	VZ 1	368.60	407.66	415.24	406.96	401.67	399.79	385.28	376.80	338.26	VZ 1
	VZ 2	369.09	379.35	383.40	391.47	395.70	407.37	380.43	359.03	309.94	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	374.26	363.47	355.97	347.95	335.05	329.74	346.08	359.64	330.15	V-THETA 2
	V(PR) 1	662.3	690.2	700.3	713.3	735.2	759.6	771.6	773.4	760.0	V(PR) 1
	V(PR) 2	409.8	426.6	436.7	457.3	482.0	510.0	490.9	462.8	458.9	V(PR) 2
	VTHETA PR1	-550.2	-556.8	-563.9	-585.8	-615.4	-644.9	-667.1	-673.9	-679.5	VTHETA PR1
	VTHETA PR2	-178.0	-195.2	-209.1	-236.3	-274.8	-305.8	-308.6	-321.3	-337.4	VTHETA PR2
	U 1	550.22	556.84	563.87	585.78	615.41	644.91	667.10	673.85	679.50	U 1
	U 2	552.22	558.63	565.03	584.26	609.88	635.51	654.73	661.14	667.54	U 2
	M 1	0.3339	0.3702	0.3772	0.3695	0.3650	0.3643	0.3516	0.3439	0.3078	M 1
	M 2	0.4646	0.4652	0.4639	0.4643	0.4595	0.4649	0.4557	0.4371	0.3987	M 2
	M(PR) 1	0.5998	0.6266	0.6361	0.6475	0.6672	0.6894	0.6996	0.7008	0.6872	M(PR) 1
	M(PR) 2	0.3622	0.3776	0.3872	0.4054	0.4270	0.4516	0.4342	0.4261	0.4034	M(PR) 2
	TURN(PR)	30.437	26.564	25.026	24.094	22.069	21.262	20.865	18.890	16.060	TURN(PR)
	UUBAR	0.0658	0.1009	0.0965	0.0812	0.0769	0.0661	0.1284	0.1460	0.1581	UUBAR
	LOSS PARA	0.0172	0.0263	0.0251	0.0214	0.0203	0.0183	0.0346	0.0387	0.0379	LOSS PARA
	DFAC	0.5453	0.5366	0.5275	0.5088	0.4905	0.4736	0.5181	0.5284	0.5487	DFAC
	EFFP	0.8734	0.8620	0.8938	0.9123	0.9114	0.9295	0.9067	0.8956	0.8082	EFFP
	EFF	0.8696	0.8581	0.8908	0.9097	0.9088	0.9273	0.9039	0.8917	0.8026	EFF
	INCID	3.751	2.877	3.053	3.168	2.867	2.214	1.306	-1.516	-4.614	INCID
	DEVM	10.592	13.064	13.969	12.476	11.571	9.330	7.429	8.687	11.451	DEVM
	P 1	14.547	14.756	14.786	14.731	14.731	14.723	14.649	14.598	14.391	P 1
	P 2	17.950	17.971	17.981	18.012	18.032	18.145	18.053	17.848	17.490	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	555.620	553.720	552.180	552.410	552.640	553.110	554.000	554.710	555.730	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	45.727	43.535	42.150	41.686	39.734	38.866	43.207	44.878	49.069	BETA 2
STATOR-T.E.	BETA 2A	3.360	3.840	3.600	2.540	2.140	3.441	4.922	5.152	5.302	BETA 2A
	V 2	522.76	527.87	530.73	523.77	525.15	526.96	507.19	483.31	438.55	V 2
	V 2A	402.91	396.64	396.68	426.55	439.86	451.30	413.49	398.24	390.02	V 2A
	VZ 2	364.94	382.67	393.46	391.10	403.69	409.99	369.34	342.16	287.06	VZ 2
	VZ 2A	402.21	395.74	395.88	426.07	439.41	450.22	411.63	396.26	387.94	VZ 2A
	V-THETA 2	374.32	363.59	356.15	348.28	335.56	330.41	346.92	340.71	331.03	V-THETA 2
	V-THETA 2A	23.61	26.56	24.91	18.90	16.42	27.07	35.44	35.73	36.00	V-THETA 2A
	M 2	0.4620	0.4675	0.4708	0.4643	0.4655	0.4669	0.4483	0.4261	0.3851	M 2
	M 2A	0.3530	0.3480	0.3485	0.3754	0.3874	0.3976	0.3631	0.3491	0.3414	M 2A
	TURN(PR)	42.367	39.694	38.549	39.140	37.576	35.392	38.239	39.678	43.714	TURN(PR)
	UUBAR	0.0686	0.0990	0.1021	0.0314	0.0049	0.0195	0.1274	0.0986	-0.0559	UUBAR
	LOSS PARA	0.0231	0.0336	0.0351	0.0112	0.0018	0.0075	0.0503	0.0393	-0.0225	LOSS PARA
	DFAC	0.4553	0.4661	0.4677	0.4096	0.3882	0.3664	0.4296	0.4301	0.3839	DFAC
	EFFP	0.8440	0.7900	0.7864	0.9143	0.9849	0.9331	0.6468	0.7133	1.2505	EFFP
	INCID	-4.440	0.147	1.860	3.655	3.028	2.998	4.499	1.706	-10.135	INCID
	DEVM	12.192	15.152	14.910	13.515	13.151	15.105	17.359	17.627	10.150	DEVM
	P 2	17.950	17.971	17.981	18.012	18.032	18.145	18.053	17.848	17.490	P 2
	P 2A	17.783	17.724	17.722	17.934	18.020	18.096	17.756	17.642	17.586	P 2A
	T 2	555.620	553.720	552.180	552.410	552.640	553.110	554.000	554.710	555.730	T 2
	T 2A	555.620	553.720	552.180	552.410	552.640	553.110	554.000	554.710	555.730	T 2A
	UUBAR FS	0.0766	0.0935	0.1044	0.0665	0.0369	0.0430	0.1260	0.1367	0.1277	UUBAR FS
	P2 FS	17.971	17.956	17.987	18.104	18.114	18.206	18.048	17.941	17.849	P2 FS
	LOSS PARA FS	0.0257	0.0317	0.0359	0.0237	0.0135	0.0165	0.0497	0.0545	0.0514	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 89.98 Equivalent Rotor Speed = 3788.04 Equivalent Weight Flow = 85.21
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	333.14	333.14	333.14	333.14	333.14	333.14	333.14	333.14	333.14	V 0
	V 1	344.05	357.94	357.09	350.56	346.80	346.62	334.99	323.42	294.66	V 1
	VZ 0	333.14	333.14	333.14	333.13	333.11	333.08	333.05	333.05	333.05	VZ 0
	VZ 1	344.05	357.94	357.09	350.56	346.77	346.56	334.91	323.33	294.76	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3011	0.3011	0.3011	0.3011	0.3011	0.3011	0.3011	0.3011	0.3011	M 0
	M 1	0.3111	0.3240	0.3232	0.3171	0.3137	0.3135	0.3028	0.2921	0.2660	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4265	0.2468	0.2133	0.2635	0.2646	0.2613	0.3193	0.3897	0.5572	UUBAR
	DFAC	-0.033	-0.074	-0.072	-0.052	-0.041	-0.040	-0.006	0.029	0.115	DFAC
	EFFP	0.1363	0.3930	0.4197	0.2964	0.2463	0.2461	0.0347	-0.1789	-0.6585	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.962	14.962	14.962	14.962	14.962	14.962	14.962	14.962	14.962	P 0
	P 1	14.573	14.737	14.767	14.721	14.720	14.724	14.671	14.606	14.454	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L..	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T..	BETA 2	47.999	46.483	45.949	44.282	43.268	42.376	44.409	47.086	50.504	BETA 2
	BETA(PR) 1	57.796	55.730	55.556	57.008	58.838	60.096	61.649	62.665	64.894	BETA(PR) 1
	BETA(PR) 2	24.848	27.193	29.296	31.488	35.366	36.805	40.890	43.518	47.278	BETA(PR) 2
	V 1	344.81	377.52	384.75	378.32	370.66	370.46	360.45	348.98	318.81	V 1
	V 2	521.70	515.07	506.92	511.32	504.80	515.89	494.65	477.75	455.36	V 2
	VZ 1	344.74	377.43	384.70	378.30	370.20	368.94	358.07	346.49	316.73	VZ 1
	VZ 2	349.06	354.65	352.45	366.05	367.46	380.70	352.92	324.75	289.20	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	387.68	373.50	364.33	356.99	345.89	347.33	345.71	349.30	350.86	V-THETA 2
	V(PR) 1	646.9	670.3	680.2	694.8	715.7	740.8	755.2	755.7	747.4	V(PR) 1
	V(PR) 2	384.7	391.7	404.2	429.3	450.8	476.1	467.7	448.7	427.0	V(PR) 2
	VTHETA PR1	-547.3	-553.9	-560.9	-582.7	-612.2	-641.5	-663.6	-670.3	-675.9	VTHETA PR1
	VTHETA PR2	-161.7	-182.2	-197.8	-224.2	-260.8	-284.9	-305.6	-308.4	-313.2	VTHETA PR2
	U 1	547.35	553.93	560.92	582.72	612.20	641.54	663.61	670.33	675.95	U 1
	U 2	549.33	555.71	562.08	581.20	606.69	632.16	651.30	657.68	664.05	U 2
	M 1	0.3116	0.3421	0.3488	0.3426	0.3357	0.3355	0.3263	0.3157	0.2879	M 1
	M 2	0.4607	0.4555	0.4486	0.4526	0.4464	0.4564	0.4365	0.4206	0.3998	M 2
	M(PR) 1	0.5850	0.6074	0.6166	0.6296	0.6482	0.6710	0.6836	0.6836	0.6749	M(PR) 1
	M(PR) 2	0.3397	0.3526	0.3577	0.3799	0.3987	0.4212	0.4125	0.3950	0.3744	M(PR) 2
	TURN(PR)	32.944	28.534	26.258	25.520	23.457	23.244	20.693	19.083	17.573	TURN(PR)
	UUBAR	0.0733	0.1040	0.1079	0.0865	0.0895	0.0878	0.1352	0.1727	0.1900	UUBAR
	LOSS PARA	0.0193	0.0271	0.0279	0.0227	0.0235	0.0237	0.0355	0.0439	0.0457	LOSS PARA
	DFAC	0.5792	0.5689	0.5650	0.5400	0.5251	0.5139	0.5381	0.5668	0.5935	DFAC
	EFFP	0.8813	0.8738	0.8914	0.9164	0.9112	0.9378	0.8660	0.8295	0.8031	EFFP
	EFF	0.8776	0.8701	0.8883	0.9139	0.9086	0.9358	0.8640	0.8246	0.7974	EFF
	INCID	5.365	4.814	4.978	4.966	4.838	4.106	2.972	0.369	-3.251	INCID
	DEVM	9.698	13.033	14.662	12.847	12.154	9.243	9.265	10.379	11.302	DEVM
	P 1	14.573	14.737	14.767	14.721	14.720	14.724	14.671	14.606	14.454	P 1
	P 2	18.084	18.043	18.002	18.073	18.084	18.257	18.043	17.860	17.666	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	556.300	554.190	552.700	552.960	553.270	553.830	555.260	555.900	557.090	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L..	BETA 2	46.358	46.225	45.457	44.341	42.698	42.243	45.376	48.720	53.105	BETA 2
STATOR-T..	BETA 2A	3.750	3.940	3.690	2.580	2.350	3.600	4.741	5.252	5.842	BETA 2A
	V 2	518.66	517.47	514.10	511.32	511.02	518.07	487.32	466.37	440.24	V 2
	V 2A	386.63	377.79	374.28	404.66	416.62	420.87	388.50	374.95	366.53	V 2A
	VZ 2	344.77	358.01	362.51	365.64	375.43	383.27	342.02	307.43	266.10	VZ 2
	VZ 2A	385.60	376.89	373.49	404.20	416.13	419.80	386.86	373.04	364.25	VZ 2A
	V-THETA 2	387.75	373.63	364.51	357.33	346.41	348.05	346.54	350.19	351.81	V-THETA 2
	V-THETA 2A	25.29	25.96	24.09	18.21	17.08	26.41	32.09	34.29	37.27	V-THETA 2A
	M 2	0.4581	0.4577	0.4552	0.4526	0.4522	0.4584	0.4296	0.4102	0.3861	M 2
	M 2A	0.3382	0.3309	0.3282	0.3555	0.3661	0.3698	0.3402	0.3279	0.3200	M 2A
	TURN(PR)	44.607	42.282	41.465	41.754	40.330	38.609	40.589	43.420	47.213	TURN(PR)
	UUBAR	0.0811	0.0983	0.0961	0.0438	0.0262	0.0844	0.1217	0.0902	0.0124	UUBAR
	LOSS PARA	0.0273	0.0334	0.0330	0.0156	0.0097	0.0324	0.0481	0.0359	0.0050	LOSS PARA
	DFAC	0.4902	0.4989	0.5002	0.4448	0.4242	0.4279	0.4601	0.4688	0.4576	DFAC
	EFFP	0.8312	0.8049	0.8103	0.8916	0.9278	0.7708	0.6876	0.7607	0.9620	EFFP
	INCID	-1.810	2.835	4.866	6.310	5.992	6.374	6.668	5.548	-0.097	INCID
	DEVM	12.582	15.252	15.000	13.555	13.361	15.264	17.179	17.927	10.690	DEVM
	P 2	16.064	18.043	18.002	18.073	18.084	18.257	18.043	17.860	17.666	P 2
	P 2A	17.887	17.606	17.773	17.970	18.022	18.050	17.781	17.683	17.665	P 2A
	T 2	556.300	554.190	552.700	552.960	553.270	553.830	555.260	555.900	557.090	T 2
	T 2A	556.300	554.190	552.700	552.960	553.270	553.830	555.260	555.900	557.090	T 2A
	UUBAR FS	0.0776	0.1042	0.0965	0.0834	0.0723	0.0732	0.1096	0.1165	0.1076	UUBAR FS
	P2 FS	18.074	18.059	18.003	18.176	18.201	18.227	18.013	17.921	17.850	P2 FS
	LOSS PARA FS	0.0261	0.0354	0.0331	0.0297	0.0267	0.0291	0.0433	0.0471	0.0433	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D – Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 90.17 Equivalent Rotor Speed = 3796.33 Equivalent Weight Flow = 76.85
Uniform Inlet

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.065	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	298.70	298.70	298.70	298.70	298.70	298.70	298.70	298.70	298.70	V 0
	V 1	313.71	323.80	320.27	313.11	309.71	308.14	298.97	281.44	254.61	V 1
	VZ 0	298.70	298.70	298.70	298.69	298.68	298.65	298.62	298.62	298.62	VZ 0
	VZ 1	313.71	323.80	320.26	313.11	309.68	308.09	298.89	281.36	254.54	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2695	0.2695	0.2695	0.2695	0.2695	0.2695	0.2695	0.2695	0.2695	M 0
	M 1	0.2832	0.2925	0.2892	0.2827	0.2796	0.2781	0.2697	0.2537	0.2292	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4093	0.2462	0.2240	0.2572	0.2711	0.2766	0.3333	0.4287	0.5622	UUBAR
	DFAC	-0.050	-0.084	-0.072	-0.048	-0.037	-0.032	-0.001	0.058	0.148	DFAC
	EFFP	0.2049	0.4225	0.4072	0.2831	0.2213	0.1923	0.0058	-0.3648	-0.9124	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.914	14.914	14.914	14.914	14.914	14.914	14.914	14.914	14.914	P 0
	P 1	14.614	14.733	14.750	14.725	14.715	14.711	14.669	14.599	14.487	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	50.600	49.706	49.583	48.721	48.160	47.867	50.810	53.834	57.112	BETA 2
	BETA(PR) 1	60.186	58.438	58.507	59.994	61.718	63.007	64.369	65.867	68.049	BETA(PR) 1
	BETA(PR) 2	24.680	28.477	29.106	31.492	38.298	38.292	40.547	44.927	48.528	BETA(PR) 2
	V 1	314.39	341.10	344.43	337.27	330.52	328.83	321.20	303.13	274.81	V 1
	V 2	515.93	500.16	501.93	504.02	478.21	498.82	496.78	472.77	456.16	V 2
	VZ 1	314.33	341.02	344.39	337.25	330.11	327.50	319.09	300.97	273.02	VZ 1
	VZ 2	327.47	323.45	325.42	332.52	318.91	334.34	313.51	278.64	248.52	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	398.66	381.48	382.14	378.77	356.18	369.59	384.53	381.19	384.33	V-THETA 2
	V(PR) 1	632.3	651.6	659.3	674.4	696.9	722.1	738.6	737.0	731.0	V(PR) 1
	V(PR) 2	361.0	368.0	372.5	390.0	406.5	426.5	413.4	394.3	375.9	V(PR) 2
	VTHETA PR1	-548.5	-555.1	-562.1	-584.0	-613.5	-642.9	-665.1	-671.8	-677.4	VTHETA PR1
	VTHETA PR2	-151.9	-175.4	-181.2	-203.7	-251.8	-264.0	-268.2	-277.9	-281.2	VTHETA PR2
	U 1	548.54	555.14	562.15	583.99	613.53	642.94	665.06	671.79	677.43	U 1
	U 2	550.53	556.92	563.31	582.47	608.02	633.57	652.73	659.12	665.50	U 2
	M 1	0.2839	0.3084	0.3115	0.3049	0.2987	0.2971	0.2901	0.2735	0.2477	M 1
	M 2	0.4551	0.4414	0.4434	0.4453	0.4214	0.4396	0.4368	0.4146	0.4009	M 2
	M(PR) 1	0.5708	0.5891	0.5962	0.6096	0.6298	0.6525	0.6671	0.6651	0.6588	M(PR) 1
	M(PR) 2	0.3184	0.3248	0.3290	0.3445	0.3582	0.3759	0.3634	0.3457	0.3288	M(PR) 2
	TURN(PR)	35.302	29.957	29.399	28.502	23.406	24.675	23.766	20.890	19.492	TURN(PR)
	UUBAR	0.1041	0.1342	0.1352	0.1257	0.1370	0.1474	0.2081	0.2394	0.2548	UUBAR
	LOSS PARA	0.0274	0.0346	0.0351	0.0330	0.0346	0.0389	0.0549	0.0594	0.0598	LOSS PARA
	DFAC	0.6120	0.6072	0.6073	0.5943	0.5805	0.5803	0.6194	0.6447	0.6704	DFAC
	EFFP	0.8696	0.8527	0.8801	0.9101	0.8537	0.8772	0.8257	0.7784	0.7604	EFFP
	EFF	0.8655	0.8484	0.8766	0.9074	0.8494	0.8734	0.8203	0.7718	0.7532	EFF
	INCID	7.755	7.522	7.929	7.952	7.719	7.026	5.702	3.585	-0.081	INCID
	DEVM	9.731	14.317	14.472	12.851	15.086	10.730	8.922	11.788	12.552	DEVM
	P 1	14.614	14.733	14.750	14.725	14.715	14.711	14.669	14.599	14.487	P 1
	P 2	18.158	18.036	18.097	18.188	18.016	18.259	18.198	17.965	17.853	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	557.060	555.070	554.310	554.260	555.050	556.520	558.870	559.740	561.070	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	50.991	49.419	48.690	48.789	47.507	47.715	52.039	55.938	60.510	BETA 2
STATOR-T.E.	BETA 2A	3.780	4.130	4.020	3.360	2.330	2.291	3.321	4.661	6.022	BETA 2A
	V 2	513.14	502.46	509.00	504.02	483.93	500.89	489.22	461.58	442.93	V 2
	V 2A	381.55	369.86	366.55	381.96	384.64	391.63	364.22	354.85	354.77	V 2A
	VZ 2	322.99	326.86	336.00	332.03	326.79	336.82	300.73	258.38	217.93	VZ 2
	VZ 2A	380.71	368.89	365.63	381.25	384.19	391.09	363.31	353.37	352.44	VZ 2A
	V-THETA 2	398.73	381.60	382.32	379.13	356.72	370.35	385.46	382.16	385.35	V-THETA 2
	V-THETA 2A	25.15	26.64	25.69	22.38	15.63	15.64	21.08	28.81	37.18	V-THETA 2A
	M 2	0.4525	0.4435	0.4499	0.4453	0.4266	0.4415	0.4299	0.4044	0.3871	M 2
	M 2A	0.3334	0.3236	0.3208	0.3347	0.3368	0.3426	0.3174	0.3089	0.3084	M 2A
	TURN(PR)	47.211	45.288	44.668	45.423	45.159	45.390	48.672	51.231	54.443	TURN(PR)
	UUBAR	0.0755	0.0650	0.0969	0.1044	0.0273	0.1096	0.1623	0.1151	0.0608	UUBAR
	LOSS PARA	0.0254	0.0221	0.0333	0.0370	0.0101	0.0422	0.0722	0.0459	0.0244	LOSS PARA
	DFAC	0.5018	0.5046	0.5213	0.4943	0.4671	0.4922	0.5524	0.5394	0.5183	DFAC
	EFFP	0.8434	0.8681	0.8128	0.7718	0.9310	0.7374	0.6155	0.7348	0.8399	EFFP
	INCID	0.824	6.031	6.399	10.758	10.801	11.846	13.333	12.769	1.313	INCID
	DEVM	12.612	15.442	15.330	14.335	13.341	13.955	15.759	17.337	10.869	DEVM
	P 2	18.158	18.036	18.097	18.188	18.016	18.259	18.198	17.965	17.853	P 2
	P 2A	17.978	17.888	17.870	17.947	17.958	18.009	17.803	17.745	17.747	P 2A
	T 2	557.060	555.070	554.310	554.260	555.050	556.520	558.870	559.740	561.070	T 2
	T 2A	557.060	555.070	554.310	554.260	555.050	556.520	558.870	559.740	561.070	T 2A
	UUBAR FS	0.1062	0.1273	0.1197	0.1198	0.1296	0.1510	0.1706	0.1742	0.1691	UUBAR FS
	P2 FS	18.239	18.198	18.158	18.229	18.264	18.371	18.168	18.102	18.082	P2 FS
	LOSS PARA FS	0.0357	0.0433	0.0411	0.0424	0.0479	0.0581	0.0675	0.0695	0.0679	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 69.80 Equivalent Rotor Speed = 2938.61 Equivalent Weight Flow = 92.54
Uniform Inlet

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	363.13	363.13	363.13	363.13	363.13	363.13	363.13	363.13	363.13	V 0
	V 1	378.92	395.70	392.71	386.20	378.89	377.58	366.30	341.24	315.61	V 1
	VZ 0	363.13	363.13	363.13	363.13	363.11	363.07	363.04	363.03	363.04	VZ 0
	VZ 1	378.92	395.70	392.71	386.19	378.86	377.52	366.21	341.15	315.53	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3288	0.3288	0.3288	0.3288	0.3288	0.3288	0.3288	0.3288	0.3288	M 0
	M 1	0.3434	0.3590	0.3562	0.3501	0.3433	0.3421	0.3317	0.3085	0.2850	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4464	0.2491	0.2303	0.2680	0.2680	0.2775	0.3435	0.4879	0.6266	UUBAR
	DFAC	-0.043	-0.090	-0.081	-0.064	-0.043	-0.040	-0.009	0.060	0.131	DFAC
	EFFP	0.1706	0.4393	0.4341	0.3372	0.2558	0.2331	0.0502	-0.3275	-0.6642	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.028	15.028	15.028	15.028	15.028	15.028	15.028	15.028	15.028	P 0
	P 1	14.545	14.758	14.779	14.738	14.738	14.728	14.656	14.500	14.349	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	516.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	32.848	29.943	29.235	28.169	27.063	25.254	24.618	26.395	29.951	BETA 2
	BETA(PR) 1	48.195	45.796	45.742	47.263	49.533	51.029	52.698	54.866	57.094	BETA(PR) 1
	BETA(PR) 2	23.948	24.453	24.057	24.796	28.698	32.731	36.906	41.683	51.185	BETA(PR) 2
	V 1	379.76	418.03	424.06	417.70	405.65	404.22	394.80	368.55	341.54	V 1
	V 2	465.49	482.68	496.67	512.76	499.61	487.33	460.85	431.92	327.67	V 2
	VZ 1	379.71	417.93	424.01	417.68	405.15	402.59	392.20	365.93	339.31	VZ 1
	VZ 2	391.04	418.23	433.39	452.01	444.70	440.05	417.84	367.91	283.15	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	252.47	240.91	242.57	242.05	227.20	207.58	191.46	182.60	163.16	V-THETA 2
	V(PR) 1	569.7	599.5	607.6	615.5	624.6	641.2	648.8	637.4	625.8	V(PR) 1
	V(PR) 2	427.9	459.5	474.6	497.9	507.2	523.6	523.6	493.6	452.4	V(PR) 2
	VTHETA PR1	-424.6	-429.7	-435.1	-452.0	-474.9	-497.7	-514.8	-520.0	-524.4	VTHETA PR1
	VTHETA PR2	-173.7	-190.2	-193.5	-208.8	-243.4	-282.8	-313.6	-327.6	-352.0	VTHETA PR2
	U 1	424.61	429.71	435.14	452.05	474.92	497.68	514.80	520.01	524.37	U 1
	U 2	426.15	431.09	436.04	450.87	470.65	490.42	505.26	510.20	515.14	U 2
	M 1	0.3442	0.3798	0.3854	0.3795	0.3682	0.3669	0.3581	0.3338	0.3088	M 1
	M 2	0.4159	0.4325	0.4461	0.4608	0.4486	0.4375	0.4131	0.3680	0.2912	M 2
	M(PR) 1	0.5163	0.5447	0.5522	0.5592	0.5670	0.5820	0.5885	0.5772	0.5658	M(PR) 1
	M(PR) 2	0.3824	0.4117	0.4263	0.4475	0.4554	0.4702	0.4693	0.4410	0.4020	M(PR) 2
	TURN(PR)	24.243	21.338	21.683	22.466	20.814	18.236	15.698	13.093	5.837	TURN(PR)
	UUBAR	0.0916	0.0995	0.0709	0.0289	0.0381	0.0332	0.0445	0.0840	0.1470	UUBAR
	LOSS PARA	0.0242	0.0266	0.0192	0.0081	0.0108	0.0094	0.0124	0.0220	0.0326	LOSS PARA
	DFAC	0.3775	0.3516	0.3375	0.3118	0.3045	0.2911	0.2943	0.3250	0.3687	DFAC
	EFFP	0.7614	0.7667	0.8785	0.9405	0.9093	0.9125	0.8662	0.7667	0.5631	EFFP
	EFF	0.7578	0.7634	0.8767	0.9395	0.9079	0.9112	0.8643	0.7638	0.5591	EFF
	INCID	-4.236	-5.120	-4.836	-4.780	-4.471	-4.971	-6.003	-7.455	-11.077	INCID
	DEVM	8.799	10.293	9.423	6.155	5.488	5.172	5.284	8.345	15.211	DEVM
	P 1	14.545	14.758	14.779	14.738	14.738	14.728	14.656	14.500	14.349	P 1
	P 2	16.129	16.252	16.390	16.533	16.461	16.369	16.160	15.802	15.301	P 2
	T 1	516.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	539.220	537.670	536.450	537.130	537.040	536.150	535.680	535.590	535.870	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	33.046	29.804	28.806	28.203	26.753	25.186	25.046	27.094	31.052	BETA 2
STATOR-T.E.	BETA 2A	1.450	1.300	1.010	0.100	-0.700	0.500	1.500	0.400	-3.251	BETA 2A
	V 2	463.07	484.87	503.69	512.76	505.78	489.29	454.00	402.52	317.63	V 2
	V 2A	418.40	445.18	458.32	496.21	493.03	487.13	441.78	416.10	398.18	V 2A
	VZ 2	388.16	420.73	441.34	451.79	451.40	442.32	410.73	357.82	271.70	VZ 2
	VZ 2A	418.27	445.05	458.23	496.14	492.83	486.82	441.27	415.72	397.12	VZ 2A
	V-THETA 2	252.52	240.99	242.69	242.28	227.55	208.01	191.92	183.06	163.59	V-THETA 2
	V-THETA 2A	10.59	10.10	8.08	0.87	-6.02	4.25	11.56	2.90	-22.56	V-THETA 2A
	M 2	0.4137	0.4345	0.4526	0.4608	0.4543	0.4393	0.4067	0.3594	0.2821	M 2
	M 2A	0.3726	0.3978	0.4104	0.4453	0.4424	0.4373	0.3954	0.3718	0.3553	M 2A
	TURN(PR)	31.596	28.503	27.794	28.097	27.437	24.659	23.508	26.651	34.247	TURN(PR)
	UUBAR	0.1090	0.0631	0.0761	-0.0005	-0.0132	-0.0075	0.1046	0.0030	-0.4450	UUBAR
	LOSS PARA	0.0367	0.0215	0.0262	-0.0002	-0.0049	-0.0029	0.0415	0.0012	-0.1792	LOSS PARA
	DFAC	0.2725	0.2441	0.2506	0.1999	0.1967	0.1655	0.1853	0.1463	-0.0162	DFAC
	EFFP	0.4444	0.6276	0.5919	1.0064	1.2422	1.7871	-0.8441	1.0419	0.2606	EFFP
	INCID	-17.122	-13.584	-11.485	-9.827	-9.950	-10.675	-13.651	-16.068	-28.145	INCID
	DEVM	10.282	12.612	12.320	11.075	10.312	12.166	13.940	13.080	1.606	DEVM
	P 2	16.129	16.252	16.390	16.533	16.461	16.369	16.160	15.802	15.301	P 2
	P 2A	15.934	16.127	16.226	16.534	16.490	16.385	15.978	15.798	15.667	P 2A
	T 2	539.220	537.670	536.450	537.130	537.040	536.150	535.680	535.590	535.870	T 2
	T 2A	539.220	537.670	536.450	537.130	537.040	536.150	535.680	535.590	535.870	T 2A
	UUBAR FS	0.1400	0.0929	0.1579	0.0256	0.0252	0.0353	0.1917	0.2429	0.2391	UUBAR FS
	P2 FS	16.194	16.316	16.598	16.593	16.547	16.460	16.347	16.229	16.040	P2 FS
	LOSS PARA FS	0.0471	0.0316	0.0543	0.0102	0.0093	0.0136	0.0760	0.0971	0.0963	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 70.10 Equivalent Rotor Speed = 2951.37 Equivalent Weight Flow = 82.65
Uniform Inlet

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	322.90	322.90	322.90	322.90	322.90	322.90	322.90	322.90	322.90	V 0
	V 1	340.66	345.72	338.74	328.50	323.69	329.61	317.58	304.15	282.01	V 1
	VZ 0	322.90	322.90	322.90	322.90	322.68	322.85	322.82	322.82	322.82	VZ 0
	VZ 1	340.66	345.71	338.74	328.49	323.67	329.55	317.50	304.07	281.94	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2917	0.2917	0.2917	0.2917	0.2917	0.2917	0.2917	0.2917	0.2917	M 0
	M 1	0.3080	0.3127	0.3062	0.2968	0.2924	0.2978	0.2868	0.2745	0.2542	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.3703	0.2386	0.2208	0.2243	0.2386	0.2600	0.3478	0.4309	0.5721	UUBAR
	DFAC	-0.055	-0.071	-0.049	-0.017	-0.002	-0.021	0.016	0.058	0.127	DFAC
	EFFP	0.2389	0.3877	0.3197	0.1385	0.0206	0.1425	-0.1069	-0.3665	-0.7322	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.936	14.936	14.936	14.936	14.936	14.936	14.936	14.936	14.936	P 0
	P 1	14.619	14.732	14.747	14.744	14.732	14.714	14.638	14.567	14.446	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	39.175	36.812	35.971	34.334	33.383	32.314	32.904	35.259	36.451	BETA 2
	BETA(PR) 1	51.325	49.826	50.164	52.050	54.107	54.954	56.735	58.060	60.108	BETA(PR) 1
	BETA(PR) 2	24.708	25.953	26.800	28.283	31.144	33.865	37.054	40.150	48.693	BETA(PR) 2
	V 1	341.41	364.46	364.62	354.10	345.61	352.01	341.43	327.93	304.72	V 1
	V 2	433.05	437.87	439.62	449.10	448.31	447.70	432.07	405.69	342.69	V 2
	VZ 1	341.34	364.38	364.58	354.08	345.18	350.59	339.18	325.60	302.74	VZ 1
	VZ 2	335.69	350.54	355.78	370.85	374.19	377.84	361.93	330.47	267.79	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	273.54	262.35	258.21	253.29	246.57	238.99	234.18	233.64	212.63	V-THETA 2
	V(PR) 1	546.3	564.9	569.2	575.8	589.0	611.4	619.6	616.7	608.5	V(PR) 1
	V(PR) 2	369.5	389.9	398.6	421.1	437.4	455.7	454.5	433.3	406.3	V(PR) 2
	VTHETA PR1	-426.5	-431.6	-437.0	-454.0	-477.0	-499.8	-517.0	-522.3	-526.7	VTHETA PR1
	VTHETA PR2	-154.5	-170.6	-179.7	-199.5	-226.1	-253.6	-273.3	-278.8	-304.7	VTHETA PR2
	U 1	426.45	431.58	437.03	454.01	476.98	499.84	517.04	522.27	526.65	U 1
	U 2	428.00	432.97	437.93	452.83	472.69	492.55	507.45	512.42	517.38	U 2
	M 1	0.3087	0.3300	0.3301	0.3204	0.3126	0.3185	0.3087	0.2963	0.2750	M 1
	M 2	0.3858	0.3909	0.3929	0.4015	0.4006	0.4000	0.3856	0.3614	0.3040	M 2
	M(PR) 1	0.4939	0.5114	0.5153	0.5210	0.5327	0.5531	0.5602	0.5572	0.5491	M(PR) 1
	M(PR) 2	0.3293	0.3481	0.3562	0.3765	0.3908	0.4071	0.4056	0.3860	0.3605	M(PR) 2
	TURN(PR)	26.614	23.868	23.362	23.766	22.945	21.031	19.596	17.827	11.354	TURN(PR)
	UUBAR	0.0885	0.0922	0.0830	0.0544	0.0450	0.0389	0.0525	0.0935	0.1232	UUBAR
	LOSS PARA	0.0233	0.0243	0.0220	0.0147	0.0124	0.0109	0.0145	0.0250	0.0288	LOSS PARA
	DFAC	0.4688	0.4462	0.4345	0.4038	0.3916	0.3852	0.3965	0.4290	0.4549	DFAC
	EFFP	0.8267	0.8563	0.9058	0.9383	0.9477	0.9608	0.9495	0.8913	0.7493	EFFP
	EFF	0.8239	0.8541	0.9043	0.9372	0.9468	0.9601	0.9487	0.8895	0.7458	EFF
	INCID	-1.106	-1.090	-0.414	0.007	0.105	-1.042	-1.958	-4.253	-8.054	INCID
	DEVM	9.558	11.793	12.166	9.642	7.933	6.305	5.432	7.013	12.717	DEVM
	P 1	14.619	14.732	14.747	14.744	14.732	14.714	14.638	14.567	14.446	P 1
	P 2	16.406	16.447	16.477	16.579	16.620	16.630	16.518	16.325	15.939	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	539.790	538.110	537.170	537.560	537.900	537.930	537.900	537.990	538.510	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	39.418	36.639	35.447	34.376	33.006	32.226	33.501	36.258	39.996	BETA 2
STATOR-T.E.	BETA 2A	2.210	2.060	1.880	0.690	0.520	1.360	2.811	1.921	-0.060	BETA 2A
	V 2	430.87	439.77	445.48	449.10	453.56	449.49	425.82	396.53	332.11	V 2
	V 2A	354.46	362.06	366.77	401.34	412.96	413.44	378.74	359.02	350.09	V 2A
	VZ 2	332.86	352.87	362.90	370.60	380.18	379.90	354.65	319.35	254.11	VZ 2
	VZ 2A	354.19	361.82	366.56	401.26	412.80	413.08	377.97	356.50	349.72	VZ 2A
	V-THETA 2	273.59	262.44	258.34	253.53	246.95	239.48	234.75	234.23	213.20	V-THETA 2
	V-THETA 2A	13.67	13.01	12.03	4.83	3.75	9.81	18.56	12.02	-0.37	V-THETA 2A
	M 2	0.3838	0.3926	0.3983	0.4015	0.4054	0.4017	0.3799	0.3531	0.2965	M 2
	M 2A	0.3143	0.3217	0.3262	0.3576	0.3681	0.3685	0.3369	0.3189	0.3107	M 2A
	TURN(PR)	37.208	34.578	33.565	33.680	32.469	30.834	30.646	34.288	39.998	TURN(PR)
	UUBAR	0.0865	0.0821	0.0828	0.0052	-0.0034	0.0168	0.1169	0.0784	-0.2348	UUBAR
	LOSS PARA	0.0291	0.0279	0.0285	0.0019	-0.0013	0.0065	0.0463	0.0314	-0.0947	LOSS PARA
	DFAC	0.3806	0.3699	0.3672	0.3035	0.2887	0.2779	0.3130	0.3201	0.2067	DFAC
	EFFP	0.7469	0.7596	0.7581	0.9757	1.0186	0.8978	0.4707	0.5860	-1.0150	EFFP
	INCID	-10.749	-6.749	-4.844	-3.654	-3.699	-3.639	-5.203	-6.912	-19.207	INCID
	DEVM	11.042	13.372	13.190	11.665	11.532	13.025	15.250	14.599	4.794	DEVM
	P 2	16.406	16.447	16.477	16.579	16.620	16.630	16.518	16.325	15.939	P 2
	P 2A	16.269	16.311	16.336	16.570	16.626	16.600	16.335	16.219	16.157	P 2A
	T 2	539.790	538.110	537.170	537.560	537.900	537.930	537.900	537.990	538.510	T 2
	T 2A	539.790	538.110	537.170	537.560	537.900	537.930	537.900	537.990	538.510	T 2A
	UUBAR FS	0.0576	0.0630	0.0729	0.0234	0.0307	0.0322	0.1430	0.1577	0.2026	UUBAR FS
	P2 FS	16.357	16.413	16.459	16.611	16.682	16.657	16.505	16.525	16.449	P2 FS
	LOSS PARA FS	0.0193	0.0214	0.0251	0.0085	0.0117	0.0124	0.0566	0.0792	0.0817	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 69.75 Equivalent Rotor Speed = 2936.49 Equivalent Weight Flow = 71.87
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	36.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	278.95	278.95	278.95	278.95	278.95	278.95	278.95	278.95	278.95	V 0
	V 1	287.02	290.94	289.16	289.38	287.95	286.66	275.30	264.45	242.60	V 1
	VZ 0	278.95	278.95	278.95	278.94	278.93	278.90	278.88	278.87	278.87	VZ 0
	VZ 1	287.02	290.94	289.16	289.38	287.93	286.62	275.23	264.38	242.53	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2514	0.2514	0.2514	0.2514	0.2514	0.2514	0.2514	0.2514	0.2514	M 0
	M 1	0.2588	0.2624	0.2608	0.2610	0.2596	0.2585	0.2481	0.2382	0.2183	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.3749	0.2341	0.2104	0.2373	0.2531	0.2579	0.3464	0.4192	0.5616	UUBAR
	DFAC	-0.029	-0.043	-0.037	-0.037	-0.032	-0.028	0.013	0.052	0.130	DFAC
	EFFP	0.1377	0.2774	0.2662	0.2474	0.2096	0.1818	-0.0830	-0.3264	-0.7864	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.878	14.878	14.878	14.878	14.878	14.878	14.878	14.878	14.878	P 0
	P 1	14.638	14.728	14.743	14.726	14.716	14.713	14.656	14.609	14.518	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	44.497	42.473	42.015	40.705	39.334	38.182	39.318	41.502	44.841	BETA 2
	BETA(PR) 1	55.872	54.516	54.467	55.418	57.131	58.529	60.292	61.460	63.607	BETA(PR) 1
	BETA(PR) 2	25.365	28.073	28.334	30.359	32.875	36.051	39.203	41.295	45.553	BETA(PR) 2
	V 1	287.63	306.18	310.58	311.43	307.03	305.65	295.47	284.64	261.74	V 1
	V 2	409.86	403.13	407.25	411.02	414.98	412.21	400.01	386.88	361.12	V 2
	VZ 1	287.57	306.11	310.54	311.41	306.65	304.41	293.53	282.61	260.03	VZ 1
	VZ 2	292.34	297.34	302.57	311.57	320.86	323.63	308.86	289.16	255.60	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	287.25	272.20	272.58	268.05	262.94	254.50	252.96	255.85	254.19	V-THETA 2
	V(PR) 1	512.6	527.4	534.3	548.7	565.2	583.7	593.2	592.5	585.7	V(PR) 1
	V(PR) 2	323.5	337.0	343.8	361.1	382.2	400.8	399.4	385.6	365.7	V(PR) 2
	VTHETA PR1	-424.3	-429.4	-434.8	-451.7	-474.6	-497.3	-514.4	-519.6	-524.0	VTHETA PR1
	VTHETA PR2	-138.6	-158.6	-163.1	-182.5	-207.4	-235.6	-251.9	-254.0	-260.6	VTHETA PR2
	U 1	424.30	429.40	434.82	451.72	474.57	497.32	514.43	519.64	524.00	U 1
	U 2	425.84	430.78	435.72	450.55	470.31	490.07	504.89	509.83	514.77	U 2
	M 1	0.2594	0.2763	0.2804	0.2811	0.2771	0.2758	0.2665	0.2566	0.2357	M 1
	M 2	0.3641	0.3585	0.3626	0.3660	0.3695	0.3669	0.3556	0.3435	0.3199	M 2
	M(PR) 1	0.4622	0.4760	0.4824	0.4953	0.5101	0.5268	0.5351	0.5342	0.5275	M(PR) 1
	M(PR) 2	0.2874	0.2997	0.3061	0.3215	0.3403	0.3568	0.3550	0.3424	0.3240	M(PR) 2
	TURN(PR)	30.503	26.438	26.131	25.058	24.240	22.428	21.016	20.094	18.007	TURN(PR)
	UUBAR	0.0845	0.1020	0.0973	0.0796	0.0644	0.0626	0.0809	0.1136	0.1424	UUBAR
	LOSS PARA	0.0221	0.0264	0.0254	0.0211	0.0174	0.0170	0.0218	0.0299	0.0353	LOSS PARA
	DFAC	0.5314	0.5126	0.5083	0.4920	0.4730	0.4590	0.4735	0.4991	0.5281	DFAC
	EFFP	0.8254	0.8259	0.8837	0.9041	0.9267	0.9265	0.8959	0.8628	0.8069	EFFP
	EFF	0.8224	0.8231	0.8817	0.9024	0.9254	0.9251	0.8940	0.8604	0.8036	EFF
	INCID	3.441	3.600	3.889	3.375	3.130	2.539	1.609	-0.841	-4.542	INCID
	DEVM	10.216	13.913	13.700	11.718	9.663	8.490	7.579	8.157	9.576	DEVM
	P 1	14.638	14.728	14.743	14.726	14.716	14.713	14.656	14.609	14.518	P 1
	P 2	16.554	16.514	16.564	16.615	16.686	16.696	16.625	16.524	16.352	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	541.270	539.650	538.610	538.870	539.190	539.330	539.980	540.290	541.010	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	44.785	42.268	41.378	40.758	38.882	38.081	40.065	42.769	46.819	BETA 2
STATOR-T.E.	BETA 2A	3.700	3.750	3.300	2.320	2.060	3.271	4.661	4.851	4.942	BETA 2A
	V 2	407.83	404.84	412.58	411.02	419.70	413.80	394.36	378.25	349.85	V 2
	V 2A	327.89	322.61	322.68	345.46	353.53	361.92	333.68	319.22	312.99	V 2A
	VZ 2	289.46	299.58	309.57	311.29	326.58	325.46	301.50	277.48	239.17	VZ 2
	VZ 2A	327.20	321.91	322.13	345.13	353.16	361.11	332.31	317.79	311.50	VZ 2A
	V-THETA 2	287.30	272.29	272.71	268.30	263.34	255.02	253.57	256.50	254.86	V-THETA 2
	V-THETA 2A	21.16	21.10	18.57	13.98	12.70	20.64	27.09	26.97	26.93	V-THETA 2A
	M 2	0.3623	0.3601	0.3675	0.3660	0.3738	0.3684	0.3504	0.3357	0.3098	M 2
	M 2A	0.2899	0.2856	0.2859	0.3064	0.3136	0.3212	0.2955	0.2824	0.2766	M 2A
	TURN(PR)	41.085	38.518	38.077	38.432	36.803	34.778	35.359	37.849	41.823	TURN(PR)
	UUBAR	0.0430	0.0372	0.0714	0.0152	0.0310	0.0129	0.1032	0.0906	-0.0202	UUBAR
	LOSS PARA	0.0145	0.0126	0.0245	0.0054	0.0115	0.0050	0.0408	0.0361	-0.0081	LOSS PARA
	DFAC	0.4159	0.4145	0.4302	0.3799	0.3796	0.3447	0.3829	0.4004	0.3700	DFAC
	EFFP	0.8844	0.9032	0.8254	0.9511	0.8991	0.9483	0.6532	0.6984	1.0972	EFFP
	INCID	-5.382	-1.119	1.087	2.728	2.176	2.213	1.358	-0.423	-12.386	INCID
	DEVM	12.532	15.062	14.610	13.295	13.072	14.935	17.098	17.527	9.791	DEVM
	P 2	16.554	16.514	16.564	16.615	16.686	16.696	16.625	16.524	16.352	P 2
	P 2A	16.493	16.461	16.459	16.593	16.638	16.677	16.486	16.412	16.373	P 2A
	T 2	541.270	539.650	538.610	538.870	539.190	539.330	539.980	540.290	541.010	T 2
	T 2A	541.270	539.650	538.610	538.870	539.190	539.330	539.980	540.290	541.010	T 2A
	UUBAR FS	0.0838	0.0844	0.0913	0.0426	0.0292	0.0368	0.1140	0.1407	0.1526	UUBAR FS
	P2 FS	16.586	16.586	16.596	16.657	16.682	16.733	16.642	16.596	16.566	P2 FS
	LOSS PARA FS	0.0215	0.0286	0.0313	0.0151	0.0108	0.0142	0.0450	0.0560	0.0612	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 70.18 Equivalent Rotor Speed = 2954.55 Equivalent Weight Flow 65.46
Uniform Inlet

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	26.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	253.22	253.22	253.22	253.22	253.22	253.22	253.22	253.22	253.22	V 0
	V 1	263.73	268.75	267.00	264.12	263.02	260.29	253.35	239.84	219.31	V 1
	VZ 0	253.22	253.22	253.22	253.21	253.20	253.18	253.15	253.15	253.15	VZ 0
	VZ 1	263.72	268.75	267.00	264.11	263.00	260.25	253.29	239.78	219.25	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2280	0.2280	0.2280	0.2280	0.2280	0.2280	0.2280	0.2280	0.2280	M 0
	M 1	0.2375	0.2421	0.2405	0.2379	0.2369	0.2344	0.2281	0.2158	0.1972	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.3791	0.2374	0.2125	0.2470	0.2585	0.2700	0.3083	0.4021	0.5648	UUBAR
	DFAC	-0.041	-0.061	-0.054	-0.043	-0.039	-0.028	-0.001	0.053	0.134	DFAC
	EFFP	0.1652	0.3520	0.3492	0.2662	0.2373	0.1762	0.0033	-0.3508	-0.8108	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.647	14.647	14.847	14.847	14.847	14.847	14.847	14.847	14.847	P 0
	P 1	14.647	14.722	14.735	14.717	14.711	14.705	14.684	14.635	14.549	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	48.170	46.792	46.436	44.688	44.014	42.889	45.225	47.738	51.107	BETA 2
	BETA(PR) 1	58.245	56.812	56.781	58.008	59.624	61.105	62.459	63.903	65.986	BETA(PR) 1
	BETA(PR) 2	23.354	28.410	26.873	30.234	33.738	37.157	39.994	44.142	47.605	BETA(PR) 2
	V 1	264.28	282.66	286.53	283.93	280.22	277.29	271.70	257.94	236.43	V 1
	V 2	414.75	394.33	396.89	405.63	402.80	399.41	391.17	366.92	353.79	V 2
	VZ 1	264.23	282.60	286.50	283.92	279.88	276.17	269.91	256.10	234.89	VZ 1
	VZ 2	276.60	269.97	273.52	288.38	289.59	292.33	275.07	247.70	221.82	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	309.03	287.40	287.58	285.25	279.79	271.54	277.23	272.58	274.97	V-THETA 2
	V(PR) 1	502.1	516.3	523.0	535.9	553.6	572.1	584.6	583.0	577.8	V(PR) 1
	V(PR) 2	301.3	306.9	312.4	333.8	348.4	367.3	359.7	345.8	329.5	V(PR) 2
	VTHETA PR1	-426.9	-432.0	-437.5	-454.5	-477.5	-500.4	-517.6	-522.8	-527.2	VTHETA PR1
	VTHETA PR2	-119.4	-146.0	-150.8	-168.1	-193.4	-221.5	-230.8	-240.4	-243.0	VTHETA PR2
	U 1	426.91	432.05	437.50	454.50	477.49	500.38	517.59	522.83	527.22	U 1
	U 2	428.46	433.43	438.40	453.32	473.20	493.08	508.00	512.97	517.94	U 2
	M 1	0.2381	0.2546	0.2584	0.2560	0.2526	0.2499	0.2448	0.2323	0.2127	M 1
	M 2	0.3663	0.3502	0.3529	0.3607	0.3580	0.3547	0.3469	0.3266	0.3127	M 2
	M(PR) 1	0.4523	0.4654	0.4715	0.4831	0.4990	0.5156	0.5267	0.5250	0.5199	M(PR) 1
	M(PR) 2	0.2676	0.2726	0.2777	0.2968	0.3096	0.3262	0.3191	0.3062	0.2913	M(PR) 2
	TURN(PR)	34.887	28.398	27.906	27.773	25.871	23.904	22.401	19.702	16.343	TURN(PR)
	UUBAR	0.0844	0.1139	0.1115	0.0837	0.0915	0.0904	0.1412	0.1713	0.1885	UUBAR
	LOSS PARA	0.0224	0.0294	0.0290	0.0223	0.0245	0.0242	0.0376	0.0431	0.0450	LOSS PARA
	DFAC	0.5785	0.5690	0.5662	0.5407	0.5327	0.5165	0.5477	0.5692	0.5968	DFAC
	EFFP	0.8783	0.8411	0.8956	0.9242	0.9163	0.9049	0.8551	0.7996	0.7757	EFFP
	EFF	0.8759	0.8383	0.8938	0.9228	0.9147	0.9031	0.8524	0.7966	0.7717	EFF
	INCID	5.814	5.896	6.203	5.966	5.624	5.119	3.785	1.612	-2.154	INCID
	DEVM	8.205	14.250	14.239	11.593	10.526	9.595	8.370	11.003	11.628	DEVM
	P 1	14.647	14.722	14.735	14.717	14.711	14.705	14.684	14.635	14.549	P 1
	P 2	16.755	16.620	16.663	16.758	16.773	16.781	16.722	16.562	16.470	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	541.690	540.520	539.450	539.950	540.360	540.790	541.720	542.140	542.940	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	48.499	46.556	45.705	44.748	43.485	42.775	46.151	49.291	53.597	BETA 2
STATOR-T.E.	BETA 2A	4.590	4.530	3.210	2.860	2.450	3.291	4.511	5.312	6.722	BETA 2A
	V 2	412.69	395.96	402.00	405.63	407.34	400.93	385.68	360.79	342.80	V 2
	V 2A	306.56	299.76	295.90	321.26	328.60	335.03	307.77	295.21	292.93	V 2A
	VZ 2	273.46	272.29	280.72	288.05	295.44	294.10	286.96	235.13	203.29	VZ 2
	VZ 2A	307.57	298.81	295.42	320.81	328.19	334.28	306.57	293.69	290.61	VZ 2A
	V-THETA 2	309.08	287.50	287.72	285.52	280.22	272.10	277.91	273.27	275.70	V-THETA 2
	V-THETA 2A	24.69	23.67	16.57	16.03	14.04	19.22	24.19	27.30	34.25	V-THETA 2A
	M 2	0.3665	0.3517	0.3576	0.3607	0.3621	0.3561	0.3420	0.3193	0.3028	M 2
	M 2A	0.2724	0.2649	0.2617	0.2843	0.2908	0.2965	0.2717	0.2604	0.2582	M 2A
	TURN(PR)	43.909	42.025	42.494	41.881	41.017	39.450	41.593	43.931	46.825	TURN(PR)
	UUBAR	0.0987	0.0445	0.0860	0.0645	0.0515	0.0423	0.1205	0.0537	-0.0189	UUBAR
	LOSS PARA	0.0331	0.0151	0.0296	0.0229	0.0190	0.0163	0.0476	0.0214	-0.0076	LOSS PARA
	DFAC	0.4845	0.4700	0.4964	0.4446	0.4361	0.4085	0.4643	0.4563	0.4316	DFAC
	EFFP	0.7869	0.9007	0.8208	0.8354	0.8600	0.8668	0.6821	0.8440	1.0676	EFFP
	INCID	-1.668	3.168	5.415	6.717	6.779	6.906	7.443	6.119	-5.604	INCID
	DEVM	13.422	15.842	14.520	13.834	13.461	14.955	16.949	17.987	11.569	DEVM
	P 2	16.755	16.620	16.663	16.758	16.773	16.781	16.722	16.562	16.470	P 2
	P 2A	16.608	16.560	16.542	16.665	16.698	16.721	16.566	16.501	16.489	P 2A
	T 2	541.890	540.520	539.450	539.950	540.360	540.790	541.720	542.140	542.940	T 2
	T 2A	541.890	540.520	539.450	539.950	540.360	540.790	541.720	542.140	542.940	T 2A
	UUBAR FS	0.0839	0.1097	0.0968	0.0697	0.0697	0.0661	0.1325	0.1470	0.1348	UUBAR FS
	P2 FS	16.730	16.720	16.680	16.765	16.801	16.816	16.740	16.685	16.649	P2 FS
	LOSS PARA FS	0.0281	0.0372	0.0333	0.0247	0.0257	0.0254	0.0523	0.0585	0.0541	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 70.40 Equivalent Rotor Speed = 2964.03 Equivalent Weight Flow = 58.15
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.569	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	224.22	224.22	224.22	224.22	224.22	224.22	224.22	224.22	224.22	V 0
	V 1	232.46	241.34	239.25	231.73	229.91	231.99	225.07	213.35	186.11	V 1
	VZ 0	224.22	224.22	224.22	224.21	224.20	224.18	224.16	224.16	224.16	VZ 0
	VZ 1	232.46	241.34	239.25	231.73	229.89	231.95	225.02	213.30	188.06	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2016	0.2016	0.2016	0.2016	0.2016	0.2016	0.2016	0.2016	0.2016	M 0
	M 1	0.2091	0.2172	0.2153	0.2085	0.2068	0.2087	0.2024	0.1918	0.1690	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.3872	0.2366	0.2143	0.2241	0.2386	0.2484	0.3044	0.3896	0.5844	UUBAR
	DFAC	-0.037	-0.076	-0.067	-0.034	-0.025	-0.035	-0.004	0.048	0.161	DFAC
	EFFP	0.1641	0.4032	0.3965	0.2362	0.1796	0.2239	0.0248	-0.3257	-1.0454	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.808	14.808	14.808	14.808	14.808	14.808	14.808	14.808	14.808	P 0
	P 1	14.647	14.709	14.719	14.715	14.709	14.705	14.682	14.646	14.566	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR-L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR-T.E.	BETA 2	50.938	50.402	50.057	49.633	49.565	49.498	51.940	54.742	57.379	BETA 2
	BETA(PR) 1	61.463	59.666	59.699	61.377	62.968	63.898	65.232	66.540	69.163	BETA(PR) 1
	BETA(PR) 2	23.060	26.606	29.410	34.196	34.659	37.896	42.693	45.050	46.776	BETA(PR) 2
	V 1	232.95	253.68	256.51	248.85	244.71	246.94	241.17	229.27	202.62	V 1
	V 2	411.45	397.97	389.33	378.35	392.57	391.06	376.27	369.39	367.38	V 2
	VZ 1	232.90	253.62	256.46	248.84	244.41	245.94	239.58	227.63	201.30	VZ 1
	VZ 2	259.27	253.66	248.39	245.05	254.55	253.79	231.68	212.98	197.84	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	319.47	306.64	299.79	288.26	298.73	297.13	295.89	301.26	309.10	V-THETA 2
	V(PR) 1	467.5	502.2	508.4	519.4	537.9	559.4	572.5	572.4	566.4	V(PR) 1
	V(PR) 2	281.8	284.2	285.1	296.3	309.6	322.0	315.6	302.0	289.4	V(PR) 2
	VTHETA PR1	-428.3	-433.4	-438.9	-456.0	-479.0	-502.0	-519.3	-524.5	-528.9	VTHETA PR1
	VTHETA PR2	-110.4	-126.2	-140.0	-166.5	-176.0	-197.5	-213.7	-213.4	-210.5	VTHETA PR2
	U 1	428.28	433.43	438.90	455.96	479.02	501.98	519.25	524.51	526.91	U 1
	U 2	429.84	434.82	439.81	454.77	474.72	494.67	509.63	514.61	519.60	U 2
	M 1	0.2096	0.2284	0.2310	0.2240	0.2202	0.2223	0.2170	0.2062	0.1821	M 1
	M 2	0.3653	0.3535	0.3459	0.3357	0.3484	0.3467	0.3329	0.3265	0.3244	M 2
	M(PR) 1	0.4386	0.4522	0.4578	0.4676	0.4841	0.5035	0.5152	0.5149	0.5090	M(PR) 1
	M(PR) 2	0.2502	0.2524	0.2533	0.2628	0.2747	0.2854	0.2794	0.2669	0.2555	M(PR) 2
	TURN(PR)	36.400	32.854	30.268	27.181	28.296	25.965	22.467	21.442	22.365	TURN(PR)
	UUBAR	0.1039	0.1319	0.1411	0.1501	0.1569	0.1652	0.2183	0.2504	0.2605	UUBAR
	LOSS PARA	0.0277	0.0345	0.0365	0.0382	0.0416	0.0438	0.0557	0.0620	0.0632	LOSS PARA
	DFAC	0.6121	0.6134	0.6144	0.6002	0.6025	0.6018	0.6262	0.6552	0.6807	DFAC
	EFFP	0.8966	0.8879	0.9007	0.8487	0.8903	0.8831	0.7867	0.7603	0.7713	EFFP
	EFF	0.8946	0.8858	0.8989	0.8460	0.8882	0.8805	0.7828	0.7559	0.7669	EFF
	INCID	9.032	8.751	9.121	9.355	8.971	7.919	6.569	4.261	1.038	INCID
	DEVM	7.910	12.649	14.776	15.555	11.447	10.333	11.067	11.911	10.799	DEVM
	P 1	14.647	14.709	14.719	14.715	14.709	14.705	14.682	14.646	14.566	P 1
	P 2	16.814	16.738	16.696	16.643	16.789	16.824	16.693	16.637	16.631	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	542.010	540.730	539.860	540.650	541.190	542.340	543.460	544.140	544.810	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	51.309	50.134	49.525	49.703	48.930	49.362	53.121	56.774	60.613	BETA 2
STATOR-T.E.	BETA 2A	4.560	4.570	4.100	2.670	2.220	2.031	3.541	4.732	6.072	BETA 2A
	V 2	409.37	399.65	394.31	378.35	396.96	392.57	371.04	361.26	355.87	V 2
	V 2A	288.34	278.43	275.65	297.71	296.73	295.92	272.33	266.62	270.80	V 2A
	VZ 2	255.90	256.17	255.95	244.67	260.72	255.53	222.53	197.83	174.54	VZ 2
	VZ 2A	287.43	277.54	274.93	297.34	296.41	295.56	271.59	265.48	269.00	VZ 2A
	V-THETA 2	319.52	306.75	299.94	288.54	299.19	297.74	296.61	302.03	309.92	V-THETA 2
	V-THETA 2A	22.92	22.18	19.71	13.87	11.49	10.48	16.81	21.97	28.62	V-THETA 2A
	M 2	0.3634	0.3550	0.3504	0.3357	0.3524	0.3480	0.3282	0.3191	0.3141	M 2
	M 2A	0.2543	0.2457	0.2434	0.2630	0.2620	0.2610	0.2397	0.2344	0.2380	M 2A
	TURN(PR)	46.749	45.563	45.423	47.026	46.692	47.298	49.534	51.998	54.496	TURN(PR)
	UUBAR	0.1361	0.1299	0.1171	0.0218	0.1291	0.1476	0.1537	0.1360	0.1210	UUBAR
	LOSS PARA	0.0457	0.0441	0.0402	0.0077	0.0478	0.0568	0.0608	0.0542	0.0486	LOSS PARA
	DFAC	0.5398	0.5459	0.5459	0.4717	0.5218	0.5293	0.5666	0.5740	0.5600	DFAC
	EFFP	0.7420	0.7584	0.7807	0.9453	0.7200	0.6724	0.6790	0.7118	0.7226	EFFP
	INCID	1.142	6.746	9.234	11.672	12.224	13.494	14.415	13.606	1.417	INCID
	DEVM	13.392	15.682	15.410	13.645	13.232	13.695	15.979	17.407	10.920	DEVM
	P 2	16.814	16.738	16.696	16.643	16.789	16.824	16.693	16.637	16.631	P 2
	P 2A	16.614	16.557	16.537	16.615	16.610	16.625	16.509	16.482	16.498	P 2A
	T 2	542.010	540.730	539.860	540.650	541.190	542.340	543.460	544.140	544.810	T 2
	T 2A	542.010	540.730	539.860	540.650	541.190	542.340	543.460	544.140	544.810	T 2A
	UUBAR FS	0.1053	0.1295	0.1276	0.0981	0.1447	0.1563	0.1529	0.1555	0.1528	UUBAR FS
	P2 FS	16.763	16.737	16.712	16.747	16.813	16.838	16.692	16.662	16.672	P2 FS
	LOSS PARA FS	0.0353	0.0439	0.0438	0.0346	0.0535	0.0601	0.0605	0.0619	0.0613	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 49.38 Equivalent Rotor Speed = 2078.86 Equivalent Weight Flow = 66.42
Uniform Inlet

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	257.13	257.13	257.13	257.13	257.13	257.13	257.13	257.13	257.13	V 0
	V 1	268.28	272.95	271.63	267.37	265.27	263.68	252.24	248.79	239.77	V 1
	VZ 0	257.13	257.13	257.13	257.13	257.11	257.09	257.06	257.06	257.06	VZ 0
	VZ 1	268.28	272.95	271.63	267.36	265.26	263.64	252.18	248.73	239.71	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2315	0.2315	0.2315	0.2315	0.2315	0.2315	0.2315	0.2315	0.2315	M 0
	M 1	0.2417	0.2459	0.2448	0.2409	0.2390	0.2375	0.2271	0.2240	0.2158	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.4012	0.2433	0.2099	0.2229	0.2415	0.2415	0.3158	0.3752	0.4402	UUBAR
	DFAC	-0.043	-0.062	-0.056	-0.040	-0.032	-0.025	0.019	0.032	0.068	DFAC
	EFFP	0.1835	0.3468	0.3606	0.2709	0.2135	0.1786	-0.1383	-0.2093	-0.4306	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.840	14.840	14.840	14.840	14.840	14.840	14.840	14.840	14.840	P 0
	P 1	14.622	14.706	14.726	14.719	14.709	14.709	14.669	14.636	14.601	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	32.496	30.918	29.805	28.437	27.361	25.646	24.995	26.156	26.654	BETA 2
	BETA(PR) 1	48.177	46.643	46.559	48.050	49.962	51.526	53.577	54.158	55.288	BETA(PR) 1
	BETA(PR) 2	24.044	23.643	23.991	25.508	28.686	32.767	37.472	40.471	51.867	BETA(PR) 2
	V 1	268.65	287.11	291.55	287.46	282.64	280.93	270.51	267.64	258.67	V 1
	V 2	330.03	342.92	349.25	356.09	352.29	343.02	320.76	299.99	228.78	V 2
	VZ 1	268.80	287.04	291.52	287.44	282.29	279.79	268.73	265.74	256.98	VZ 1
	VZ 2	278.34	294.17	303.03	313.12	312.74	308.74	289.95	268.49	200.21	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	177.30	176.19	173.61	169.56	161.84	148.23	135.17	131.86	109.40	V-THETA 2
	V(PR) 1	403.1	416.1	424.0	430.0	439.0	450.4	453.7	454.9	452.2	V(PR) 1
	V(PR) 2	304.8	321.1	331.7	346.9	356.7	367.7	366.1	353.7	324.7	V(PR) 2
	VTHETA PR1	-300.4	-304.0	-307.8	-319.8	-336.0	-352.1	-364.2	-367.9	-371.0	VTHETA PR1
	VTHETA PR2	-124.2	-128.8	-134.9	-149.4	-171.1	-198.7	-222.3	-229.1	-255.0	VTHETA PR2
	U 1	300.38	304.00	307.83	319.80	335.97	352.08	364.19	367.88	370.96	U 1
	U 2	301.47	304.97	308.47	318.96	332.95	346.94	357.44	360.94	364.43	U 2
	M 1	0.2422	0.2589	0.2629	0.2592	0.2548	0.2532	0.2437	0.2411	0.2329	M 1
	M 2	0.2950	0.3070	0.3131	0.3192	0.3157	0.3074	0.2871	0.2683	0.2039	M 2
	M(PR) 1	0.3632	0.3770	0.3824	0.3877	0.3958	0.4060	0.4087	0.4098	0.4073	M(PR) 1
	M(PR) 2	0.2724	0.2876	0.2973	0.3110	0.3196	0.3294	0.3277	0.3163	0.2894	M(PR) 2
	TURN(PR)	24.129	22.995	22.566	22.541	21.256	18.697	16.014	13.594	3.345	TURN(PR)
	UUBAR	0.0906	0.0960	0.0727	0.0384	0.0389	0.0410	0.0533	0.0904	0.1706	UUBAR
	LOSS PARA	0.0240	0.0258	0.0197	0.0107	0.0110	0.0116	0.0147	0.0241	0.0373	LOSS PARA
	DFAC	0.3715	0.3557	0.3394	0.3143	0.3058	0.2936	0.2955	0.3232	0.3670	DFAC
	EFFP	0.6805	0.7505	0.8417	0.8605	0.8542	0.8405	0.7869	0.7112	0.4121	EFFP
	EFF	0.6782	0.7487	0.8405	0.8594	0.8530	0.8393	0.7854	0.7094	0.4099	EFF
	INCID	-4.295	-4.273	-4.019	-3.993	-4.041	-4.474	-5.122	-6.166	-12.867	INCID
	DEVM	8.894	9.484	9.357	6.867	5.475	5.268	5.850	7.333	15.892	DEVM
	P 1	14.622	14.708	14.726	14.719	14.709	14.709	14.669	14.636	14.601	P 1
	P 2	15.396	15.475	15.522	15.574	15.556	15.508	15.391	15.282	14.986	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	530.050	528.830	528.050	528.510	528.510	528.110	527.830	527.770	528.140	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	32.673	30.790	29.421	28.471	27.089	25.586	25.392	26.800	29.653	BETA 2
STATOR-T.E.	BETA 2A	1.310	1.300	1.080	0.040	-0.810	0.510	1.671	0.990	-2.801	BETA 2A
	V 2	326.48	344.31	353.61	356.09	356.13	344.29	316.45	293.62	222.06	V 2
	V 2A	298.67	313.36	322.73	347.80	347.54	343.21	307.23	291.16	284.09	V 2A
	VZ 2	276.50	295.76	307.99	312.97	316.90	310.21	285.47	261.69	192.68	VZ 2
	VZ 2A	296.54	313.27	322.66	347.75	347.39	342.99	306.85	290.86	283.45	VZ 2A
	V-THETA 2	177.33	176.24	173.69	169.72	162.09	148.53	135.50	132.19	109.69	V-THETA 2
	V-THETA 2A	6.83	7.11	6.08	0.24	-4.91	3.05	8.95	5.03	-13.87	V-THETA 2A
	M 2	0.2935	0.3083	0.3170	0.3192	0.3192	0.3085	0.2832	0.2625	0.1979	M 2
	M 2A	0.2665	0.2801	0.2889	0.3116	0.3114	0.3075	0.2748	0.2603	0.2538	M 2A
	TURN(PR)	31.363	29.469	28.340	28.425	27.883	25.048	23.684	25.768	32.399	TURN(PR)
	UUBAR	0.0768	0.0747	0.0677	-0.0181	-0.0124	-0.0061	0.0993	0.0692	-0.5105	UUBAR
	LOSS PARA	0.0259	0.0254	0.0233	-0.0064	-0.0046	-0.0024	0.0393	0.0277	-0.2057	LOSS PARA
	DFAC	0.2657	0.2573	0.2507	0.1928	0.1983	0.1666	0.1885	0.1826	-0.0539	DFAC
	EFFP	0.5715	0.5815	0.6108	1.3752	1.2483	1.9486	-0.6739	-3.0287	0.2194	EFFP
	INCID	-17.494	-12.598	-10.869	-9.559	-9.614	-10.275	-13.305	-16.362	-29.544	INCID
	DEVM	10.142	12.612	12.390	11.015	10.202	12.176	14.110	13.670	2.056	DEVM
	P 2	15.396	15.475	15.522	15.574	15.556	15.508	15.391	15.282	14.986	P 2
	P 2A	15.327	15.401	15.451	15.593	15.569	15.514	15.308	15.232	15.192	P 2A
	T 2	530.050	528.830	528.050	528.510	528.510	528.110	527.830	527.770	528.140	T 2
	T 2A	530.050	528.830	528.050	528.510	528.510	528.110	527.830	527.770	528.140	T 2A
	UUBAR FS	0.1039	0.0964	0.0784	0.0284	0.0186	0.0338	0.1848	0.2319	0.2281	UUBAR FS
	P2 FS	15.422	15.498	15.533	15.624	15.589	15.548	15.478	15.432	15.372	P2 FS
	LOSS PARA FS	0.0350	0.0327	0.0269	0.0100	0.0069	0.0133	0.0731	0.0928	0.0919	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 49.47 Equivalent Rotor Speed = 2082.73 Equivalent Weight Flow = 59.41
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.065	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	229.28	229.28	229.28	229.28	229.28	229.28	229.28	229.28	229.28	V 0
	V 1	234.37	237.92	235.94	232.51	232.38	231.76	223.83	217.34	198.03	V 1
	VZ 0	229.28	229.28	229.28	229.28	229.27	229.24	229.22	229.22	229.22	VZ 0
	VZ 1	234.37	237.92	235.94	232.50	232.36	231.72	223.78	217.29	197.98	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2062	0.2062	0.2062	0.2062	0.2062	0.2062	0.2062	0.2062	0.2062	M 0
	M 1	0.2109	0.2141	0.2123	0.2092	0.2090	0.2085	0.2013	0.1954	0.1779	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.2681	0.2283	0.2027	0.2306	0.2563	0.2425	0.3168	0.3867	0.5521	UUBAR
	DFAC	-0.022	-0.038	-0.029	-0.014	-0.013	-0.011	0.024	0.052	0.136	DFAC
	EFFP	0.1099	0.2539	0.2278	0.1102	0.0967	0.0831	-0.1773	-0.3621	-0.8685	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.814	14.814	14.814	14.814	14.814	14.814	14.814	14.814	14.814	P 0
	P 1	14.655	14.715	14.726	14.714	14.703	14.709	14.677	14.647	14.575	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	56.348	56.549	55.421	53.902	51.867	51.738	53.546	56.401	60.301	BETA 2
	BETA(PR) 1	52.036	50.619	50.646	52.071	55.723	55.140	56.856	57.819	60.301	BETA(PR) 1
	BETA(PR) 2	25.280	25.661	26.329	27.471	29.710	33.670	37.417	40.847	50.742	BETA(PR) 2
	V 1	234.86	250.06	252.94	249.69	247.35	246.69	239.83	233.58	213.36	V 1
	V 2	304.84	310.25	314.41	324.22	325.99	318.25	305.05	284.72	231.87	V 2
	VZ 1	234.86	250.00	252.91	249.67	247.05	245.70	238.25	231.92	211.97	VZ 1
	VZ 2	239.06	249.21	256.18	269.10	273.42	269.90	258.83	236.70	186.19	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	169.13	184.73	182.27	180.84	177.72	167.78	160.09	156.94	137.28	V-THETA 2
	V(PR) 1	381.7	394.1	398.9	406.2	417.7	430.4	436.6	436.3	426.5	V(PR) 1
	V(PR) 2	264.4	277.0	285.8	302.6	314.6	324.7	326.5	313.6	294.7	V(PR) 2
	VTHETA PR1	-300.9	-304.6	-308.4	-320.4	-336.6	-352.7	-364.9	-368.6	-371.6	VTHETA PR1
	VTHETA PR2	-112.9	-120.8	-126.8	-136.7	-155.9	-179.8	-198.0	-204.7	-227.8	VTHETA PR2
	U 1	300.94	304.56	308.40	320.39	336.60	352.73	364.86	368.56	371.65	U 1
	U 2	304.05	305.54	309.04	319.55	333.57	347.59	358.10	361.60	365.11	U 2
	M 1	0.2119	0.2251	0.2277	0.2248	0.2226	0.2220	0.2158	0.2101	0.1918	M 1
	M 2	0.2722	0.2774	0.2814	0.2900	0.2916	0.2845	0.2726	0.2541	0.2064	M 2
	MI(PR) 1	0.3434	0.3547	0.3591	0.3657	0.3760	0.3874	0.3929	0.3926	0.3852	MI(PR) 1
	MI(PR) 2	0.2364	0.2476	0.2558	0.2708	0.2814	0.2904	0.2918	0.2799	0.2623	MI(PR) 2
	TURN(PR)	26.752	24.753	24.315	24.800	23.993	21.413	19.355	16.889	9.498	TURN(PR)
	UUBAR	0.0895	0.1006	0.0832	0.0446	0.0340	0.0445	0.0524	0.0873	0.1137	UUBAR
	LOSS PARA	0.0234	0.0266	0.0221	0.0122	0.0095	0.0125	0.0144	0.0232	0.0255	LOSS PARA
	DFAC	0.4516	0.4349	0.4192	0.3915	0.3832	0.3757	0.3782	0.4063	0.4249	DFAC
	EFFP	0.7764	0.8237	0.9063	0.8864	0.9158	0.8800	0.8492	0.7863	0.6231	EFFP
	EFF	0.7766	0.8224	0.9056	0.8854	0.9150	0.8790	0.8479	0.7847	0.6207	EFF
	INCID	-0.396	-0.297	0.068	0.047	-0.260	-0.656	-1.656	-4.494	-7.860	INCID
	DEVM	10.131	11.702	11.695	8.830	6.500	6.111	5.794	7.710	14.767	DEVM
	P 1	14.655	14.715	14.726	14.714	14.703	14.709	14.677	14.647	14.575	P 1
	P 2	15.566	15.538	15.568	15.629	15.656	15.626	15.561	15.464	15.242	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	529.570	528.580	527.670	528.890	528.960	528.990	529.010	529.040	529.460	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	36.566	36.393	34.962	33.944	32.716	31.793	32.267	34.419	37.763	BETA 2
STATOR-T.E.	BETA 2A	1.980	2.010	1.460	0.950	0.170	1.090	2.111	1.991	0.020	BETA 2A
	V 2	308.40	311.47	318.25	314.22	329.48	319.41	300.98	278.72	225.05	V 2
	V 2A	261.97	265.05	269.10	295.85	299.87	301.87	273.63	259.31	255.53	V 2A
	VZ 2	257.25	260.72	260.81	268.92	277.08	271.24	254.18	229.63	177.69	VZ 2
	VZ 2A	261.81	264.88	269.00	295.77	299.77	301.64	273.22	258.93	255.26	VZ 2A
	V-THETA 2	189.16	184.80	182.36	181.01	177.99	168.13	160.48	157.34	137.64	V-THETA 2
	V-THETA 2A	9.65	9.30	6.86	4.90	0.89	5.74	10.07	9.00	0.09	V-THETA 2A
	M 2	0.2709	0.2785	0.2849	0.2900	0.2948	0.2856	0.2689	0.2487	0.2003	M 2
	M 2A	0.2365	0.2365	0.2403	0.2643	0.2679	0.2697	0.2441	0.2312	0.2277	M 2A
	TURN(PR)	36.585	34.382	33.500	32.988	32.528	30.671	30.112	32.380	37.685	TURN(PR)
	UUBAR	0.0001	0.0470	0.0686	-0.0102	0.0110	-0.0012	0.0992	0.0619	-0.3931	UUBAR
	LOSS PARA	0.0101	0.0160	0.0236	-0.0036	0.0041	-0.0005	0.0393	0.0248	-0.1586	LOSS PARA
	DFAC	0.3366	0.3410	0.3445	0.2609	0.2895	0.2516	0.2901	0.2838	0.1125	DFAC
	EFFP	0.8854	0.8349	0.7670	1.0592	0.9382	1.0107	0.4444	0.5512	-0.3271	EFFP
	INCID	-11.602	-6.995	-5.329	-4.086	-3.989	-4.072	-6.437	-8.750	-21.440	INCID
	DEVM	10.812	13.322	12.770	11.925	11.182	12.756	14.550	14.669	4.874	DEVM
	P 2	15.506	15.538	15.568	15.629	15.656	15.626	15.561	15.464	15.242	P 2
	P 2A	15.483	15.499	15.509	15.639	15.646	15.627	15.485	15.424	15.408	P 2A
	T 2	529.570	528.580	527.670	528.890	528.960	528.990	529.010	529.040	529.460	T 2
	T 2A	529.570	528.580	527.670	528.890	528.960	528.990	529.010	529.040	529.460	T 2A
	UUBAR FS	0.0688	0.0655	0.0697	0.0221	0.0144	0.0195	0.1980	0.2122	0.1987	UUBAR FS
	P2 FS	15.538	15.553	15.568	15.659	15.659	15.644	15.613	15.588	15.553	P2 FS
	LOSS PARA FS	0.0231	0.0223	0.0239	0.0078	0.0053	0.0081	0.0626	0.0850	0.0801	LOSS PARA FS

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Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 49.76 Equivalent Rotor Speed = 2094.84 Equivalent Weight Flow = 51.12
Uniform Inlet

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	196.64	196.64	196.64	196.64	196.64	196.64	196.64	196.64	196.64	V 0
	V 1	202.18	208.18	207.48	203.33	201.89	202.37	195.48	190.23	172.28	V 1
	VZ 0	196.64	196.64	196.64	196.63	196.62	196.60	196.59	196.58	196.59	VZ 0
	VZ 1	202.18	208.18	207.48	203.33	201.87	202.34	195.43	190.18	172.23	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.1767	0.1767	0.1767	0.1767	0.1767	0.1767	0.1767	0.1767	0.1767	M 0
	M 1	0.1817	0.1871	0.1865	0.1827	0.1814	0.1819	0.1756	0.1709	0.1547	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.3853	0.2337	0.1959	0.2401	0.2495	0.2432	0.2969	0.3569	0.5401	UUBAR
	DFAC	-0.028	-0.059	-0.055	-0.034	-0.027	-0.029	0.006	0.033	0.124	DFAC
	EFFP	0.1499	0.3428	0.3688	0.2257	0.1793	0.1973	-0.0423	-0.2223	-0.7658	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.782	14.782	14.782	14.782	14.782	14.782	14.782	14.782	14.782	P 0
	P 1	14.659	14.707	14.719	14.705	14.702	14.704	14.687	14.668	14.610	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR 0	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.465	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	45.798	42.549	41.840	40.481	39.401	38.111	38.271	40.493	43.339	BETA 2
	BETA(PR) 1	56.210	54.466	54.382	55.902	57.646	58.856	60.466	61.314	63.757	BETA(PR) 1
	BETA(PR) 2	25.362	26.463	29.442	29.918	32.868	36.287	39.339	41.705	47.508	BETA(PR) 2
	V 1	202.60	218.67	222.25	218.17	214.74	215.26	209.29	204.29	185.50	V 1
	V 2	295.74	285.72	285.82	295.72	295.86	292.94	285.78	274.64	248.56	V 2
	VZ 1	202.56	218.62	222.23	218.16	214.47	214.39	207.92	202.84	184.29	VZ 1
	VZ 2	212.01	210.48	212.93	224.93	228.54	230.21	223.91	208.43	180.43	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	263.29	193.20	190.65	191.98	187.73	180.58	176.65	177.97	170.27	V-THETA 2
	V(PR) 1	364.2	376.4	381.6	389.2	400.9	415.0	422.5	423.3	417.3	V(PR) 1
	V(PR) 2	234.6	239.4	244.5	259.5	272.3	286.0	290.1	279.7	267.6	V(PR) 2
	VTHETA PR1	-302.7	-306.3	-310.2	-322.3	-338.6	-354.8	-367.0	-370.7	-373.8	VTHETA PR1
	VTHETA PR2	-100.5	-114.1	-120.2	-129.4	-147.8	-169.0	-183.5	-185.7	-197.0	VTHETA PR2
	U 1	302.69	306.33	310.20	322.25	338.55	354.78	366.98	370.70	373.81	U 1
	U 2	303.79	307.31	310.84	321.41	335.51	349.61	360.18	363.71	367.23	U 2
	M 1	0.1821	0.1966	0.1999	0.1962	0.1931	0.1935	0.1881	0.1836	0.1666	M 1
	M 2	0.2620	0.2550	0.2553	0.2640	0.2641	0.2614	0.2549	0.2448	0.2212	M 2
	M(PR) 1	0.3273	0.3384	0.3432	0.3499	0.3604	0.3731	0.3797	0.3804	0.3748	M(PR) 1
	M(PR) 2	0.2093	0.2137	0.2184	0.2317	0.2431	0.2552	0.2587	0.2493	0.2381	M(PR) 2
	TURN(PR)	30.644	26.018	24.937	25.963	24.741	22.519	21.056	19.538	16.202	TURN(PR)
	UUBAR	0.0867	0.1019	0.1016	0.0757	0.0707	0.0694	0.0802	0.1131	0.1248	UUBAR
	LOSS PARA	0.0175	0.0263	0.0263	0.0202	0.0191	0.0188	0.0215	0.0296	0.0299	LOSS PARA
	DFAC	0.5176	0.5146	0.5077	0.4847	0.4710	0.4562	0.4572	0.4851	0.5021	DFAC
	EFFP	0.8557	0.8345	0.8455	0.8771	0.8939	0.8671	0.8410	0.7936	0.7284	EFFP
	EFF	0.8342	0.8331	0.8845	0.8760	0.8929	0.8659	0.8396	0.7918	0.7261	EFF
	INCID	3.779	3.570	3.864	3.866	3.645	2.866	1.705	-0.980	-4.392	INCID
	DEVM	16.213	14.304	14.608	11.277	9.677	8.726	7.715	8.567	11.531	DEVM
	P 1	14.659	14.707	14.719	14.705	14.702	14.704	14.687	14.668	14.610	P 1
	P 2	15.626	15.589	15.597	15.653	15.673	15.673	15.644	15.592	15.481	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	526.150	529.150	528.490	529.360	529.410	529.720	529.940	530.240	530.620	T 2
STATOR 0	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	44.060	42.359	41.259	40.534	38.984	38.024	38.947	41.625	45.113	BETA 2
STATOR-T.E.	BETA 2A	3.120	3.170	3.200	2.080	1.950	2.831	4.061	4.151	4.131	BETA 2A
	V 2	296.38	286.85	289.26	295.72	298.98	293.99	282.00	268.89	241.21	V 2
	V 2A	235.56	232.09	230.93	250.73	257.43	262.19	243.73	233.07	228.84	V 2A
	VZ 2	210.11	211.96	217.44	224.72	232.31	231.41	219.09	200.78	170.05	VZ 2
	VZ 2A	235.20	231.73	230.56	250.53	257.19	261.72	242.93	232.25	228.00	VZ 2A
	V-THETA 2	203.33	193.27	190.75	192.16	188.02	180.95	177.08	178.42	170.72	V-THETA 2
	V-THETA 2A	12.82	12.83	12.89	9.10	8.76	12.94	17.25	16.86	16.47	V-THETA 2A
	M 2	0.2608	0.2560	0.2584	0.2640	0.2670	0.2624	0.2515	0.2396	0.2146	M 2
	M 2A	0.2096	0.2067	0.2058	0.2234	0.2294	0.2337	0.2170	0.2074	0.2035	M 2A
	TURN(PR)	40.940	39.188	38.057	38.447	37.016	35.160	34.841	37.424	40.926	TURN(PR)
	UUBAR	0.0655	0.0333	0.0498	0.0258	0.0266	0.0028	0.0897	0.0890	-0.0823	UUBAR
	LOSS PARA	0.0220	0.0113	0.0171	0.0092	0.0098	0.0011	0.0354	0.0355	-0.0331	LOSS PARA
	DFAC	0.4139	0.4052	0.4135	0.3726	0.3618	0.3294	0.3617	0.3751	0.3110	DFAC
	EFFP	0.8183	0.9061	0.8663	0.9107	0.9003	0.9871	0.6544	0.6502	1.8061	EFFP
	INCID	-6.107	-1.029	0.968	2.503	2.279	2.156	0.241	-1.547	-14.092	INCID
	DEVM	11.952	14.482	14.510	13.055	12.962	14.495	16.499	16.828	8.981	DEVM
	P 2	15.626	15.589	15.597	15.653	15.673	15.673	15.644	15.592	15.481	P 2
	P 2A	15.578	15.566	15.562	15.634	15.653	15.671	15.583	15.538	15.521	P 2A
	T 2	530.150	529.150	528.490	529.360	529.410	529.720	529.940	530.240	530.620	T 2
	T 2A	530.150	529.150	528.490	529.360	529.410	529.720	529.940	530.240	530.620	T 2A
	UUBAR FS	0.0779	0.0971	0.0957	0.0455	0.0397	0.0364	0.1160	0.1777	0.1483	UUBAR FS
	P2 FS	15.638	15.638	15.633	15.668	15.683	15.698	15.663	15.658	15.613	P2 FS
	LOSS PARA FS	0.0261	0.0329	0.0328	0.0162	0.0146	0.0143	0.0458	0.0709	0.0596	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 49.75 Equivalent Rotor Speed = 2094.55 Equivalent Weight Flow = 46.51
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	35.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	178.58	178.58	178.58	178.58	178.58	178.58	178.58	178.58	178.58	V 0
	V 1	184.28	189.06	187.10	185.48	184.56	183.86	177.95	169.73	156.82	V 1
	VZ 0	178.58	178.58	178.58	178.58	178.57	178.55	178.53	178.53	178.53	VZ 0
	VZ 1	184.28	189.06	187.10	185.48	184.54	183.83	177.90	169.69	156.78	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.1604	0.1604	0.1604	0.1604	0.1604	0.1604	0.1604	0.1604	0.1604	M 0
	M 1	0.1655	0.1698	0.1681	0.1666	0.1658	0.1651	0.1598	0.1524	0.1407	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.3786	0.2257	0.2066	0.2295	0.2333	0.2218	0.2830	0.3710	0.5239	UUBAR
	DFAC	-0.032	-0.059	-0.048	-0.039	-0.033	-0.030	0.004	0.050	0.122	DFAC
	EFFP	0.1465	0.4505	0.5228	0.2568	0.2274	0.2141	-0.0263	-0.3567	-0.7843	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.763	14.763	14.763	14.763	14.763	14.763	14.763	14.763	14.763	P 0
	P 1	14.664	14.704	14.709	14.703	14.702	14.705	14.689	14.666	14.625	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	35.238	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	47.327	46.417	46.280	44.978	43.984	42.884	43.244	44.690	47.892	BETA 2
	BETA(PR) 1	58.616	57.056	57.145	58.309	59.930	61.234	62.724	63.985	65.835	BETA(PR) 1
	BETA(PR) 2	29.016	28.536	28.798	31.231	35.330	37.819	40.962	43.647	48.464	BETA(PR) 2
	V 1	184.66	198.53	200.32	198.94	196.23	195.49	190.44	182.20	168.80	V 1
	V 2	288.38	279.54	281.90	282.96	278.60	280.10	273.82	265.73	245.37	V 2
	VZ 1	184.62	198.48	200.30	198.93	195.99	194.70	189.19	180.90	167.70	VZ 1
	VZ 2	195.86	192.71	194.90	200.16	200.40	205.02	199.12	187.15	164.27	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	212.39	202.48	203.66	200.00	193.42	190.42	187.27	185.14	181.75	V-THETA 2
	V(PR) 1	354.5	365.0	369.2	378.7	391.3	405.0	413.4	413.0	410.1	V(PR) 1
	V(PR) 2	216.1	219.4	222.4	234.1	245.7	259.9	264.2	259.1	248.1	V(PR) 2
	VTHETA PR1	-302.6	-306.3	-310.1	-322.2	-338.5	-354.7	-366.9	-370.6	-373.8	VTHETA PR1
	VTHETA PR2	-91.4	-104.6	-107.1	-121.4	-142.0	-159.1	-172.9	-178.5	-185.4	VTHETA PR2
	U 1	302.65	306.29	310.15	322.21	338.51	354.73	366.93	370.65	373.76	U 1
	U 2	303.75	307.27	310.79	321.37	335.46	349.56	360.13	363.66	367.18	U 2
	M 1	0.1659	0.1784	0.1800	0.1788	0.1763	0.1756	0.1711	0.1636	0.1515	M 1
	M 2	0.2576	0.2494	0.2517	0.2524	0.2484	0.2497	0.2439	0.2348	0.2182	M 2
	M(PR) 1	0.3184	0.3580	0.3316	0.3403	0.3515	0.3639	0.3714	0.3709	0.3682	M(PR) 1
	M(PR) 2	0.1927	0.1957	0.1986	0.2086	0.2191	0.2317	0.2353	0.2307	0.2207	M(PR) 2
	TURN(PR)	33.600	28.516	28.346	27.078	24.585	23.376	21.700	20.279	17.332	TURN(PR)
	UUBAR	0.0853	0.1184	0.1177	0.1048	0.1112	0.1084	0.1224	0.1385	0.1585	UUBAR
	LOSS PARA	0.0224	0.0305	0.0306	0.0276	0.0292	0.0288	0.0321	0.0351	0.0372	LOSS PARA
	DFAC	0.5644	0.5620	0.5616	0.5441	0.5304	0.5154	0.5168	0.5283	0.5506	DFAC
	EFFP	0.8512	0.8494	0.9180	0.8807	0.8512	0.8482	0.8067	0.7626	0.7188	EFFP
	EFF	0.8498	0.8481	0.9173	0.8796	0.8498	0.8469	0.8050	0.7605	0.7164	EFF
	INCID	6.165	6.140	6.567	6.267	5.930	5.254	4.051	1.694	-2.305	INCID
	DEVM	9.865	14.376	14.164	12.590	12.118	10.257	9.337	10.508	12.487	DEVM
	P 1	14.664	14.704	14.709	14.703	14.702	14.705	14.689	14.666	14.625	P 1
	P 2	15.662	15.623	15.645	15.664	15.657	15.683	15.655	15.606	15.528	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	530.300	529.390	528.760	529.470	529.780	530.080	530.540	530.920	531.190	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	35.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	47.624	46.201	45.563	45.039	43.500	42.785	44.055	46.007	49.988	BETA 2
STATOR-T.L.	BETA 2A	4.160	4.150	3.950	3.410	3.110	2.871	3.801	4.892	6.092	BETA 2A
	V 2	287.56	280.64	285.28	282.96	281.51	281.10	270.22	258.23	238.13	V 2
	V 2A	221.53	216.35	214.32	232.16	240.19	243.62	223.61	213.80	210.52	V 2A
	VZ 2	195.81	194.24	199.65	199.92	204.13	206.16	194.03	179.20	152.97	VZ 2
	VZ 2A	220.95	215.77	213.80	231.72	239.75	243.17	222.94	212.84	209.11	VZ 2A
	V-THETA 2	212.43	202.55	203.76	200.19	193.71	190.81	187.72	185.61	182.23	V-THETA 2
	V-THETA 2A	16.07	15.66	14.76	13.81	13.03	12.19	14.81	18.21	22.32	V-THETA 2A
	M 2	0.2564	0.2504	0.2547	0.2524	0.2511	0.2506	0.2407	0.2298	0.2117	M 2
	M 2A	0.1970	0.1925	0.1908	0.2067	0.2138	0.2169	0.1988	0.1900	0.1870	M 2A
	TURN(PR)	43.464	42.050	41.632	41.622	40.372	39.880	40.206	41.066	43.843	TURN(PR)
	UUBAR	0.0660	0.0497	0.0873	0.0237	-0.0135	0.0090	0.0942	0.0785	-0.0568	UUBAR
	LOSS PARA	0.0222	0.0169	0.0300	0.0084	-0.0050	0.0035	0.0372	0.0313	-0.0228	LOSS PARA
	DFAC	0.4597	0.4560	0.4771	0.4141	0.3853	0.3793	0.4276	0.4331	0.3888	DFAC
	EFFP	0.8416	0.8804	0.8044	0.9296	1.0485	0.9652	0.7078	0.7555	1.2552	EFFP
	INCID	-2.543	2.813	5.193	7.608	6.794	6.916	5.347	2.834	-9.216	INCID
	DEVM	1.992	15.462	15.260	14.385	14.121	14.535	16.239	17.567	10.940	DEVM
	P 2	15.662	15.623	15.645	15.664	15.657	15.683	15.655	15.606	15.528	P 2
	P 2A	15.616	15.590	15.585	15.648	15.666	15.677	15.597	15.562	15.555	P 2A
	T 2	530.300	529.390	528.760	529.470	529.780	530.080	530.540	530.920	531.190	T 2
	T 2A	530.300	529.390	528.760	529.470	529.780	530.080	530.540	530.920	531.190	T 2A
	UUBAR FS	0.0865	0.1095	0.1224	0.0767	0.0582	0.0650	0.1193	0.1199	0.1260	UUBAR FS
	P2 FS	15.677	15.667	15.672	15.703	15.708	15.723	15.672	15.632	15.627	P2 FS
	LOSS PARA FS	0.0291	0.0372	0.0420	0.0272	0.0215	0.0252	0.0471	0.0478	0.0505	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 49.50 Equivalent Rotor Speed = 2084.12 Equivalent Weight Flow = 40.70
Uniform Inlet

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	26.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	155.93	155.93	155.93	155.93	155.93	155.93	155.93	155.93	155.93	V 0
	V 1	163.80	169.94	169.89	165.81	160.63	161.70	154.85	145.26	128.49	V 1
	VZ 0	155.93	155.93	155.93	155.93	155.92	155.91	155.90	155.89	155.89	VZ 0
	VZ 1	163.80	169.94	169.89	165.81	160.82	161.67	154.81	145.23	128.45	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.1399	0.1399	0.1399	0.1399	0.1399	0.1399	0.1399	0.1399	0.1399	M 0
	M 1	0.1470	0.1526	0.1525	0.1488	0.1444	0.1451	0.1390	0.1303	0.1152	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.3756	0.2204	0.2003	0.2204	0.2204	0.2404	0.2755	0.3906	0.5910	UUBAR
	DFAC	-0.050	-0.090	-0.089	-0.063	-0.031	-0.037	0.007	0.068	0.176	DFAC
	EFFP	0.2166	0.4618	0.4839	0.3734	0.2249	0.2389	-0.0544	-0.5169	-1.2025	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.754	14.754	14.754	14.754	14.754	14.754	14.754	14.754	14.754	P 0
	P 1	14.679	14.710	14.714	14.710	14.710	14.706	14.699	14.676	14.636	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	516.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	50.507	50.477	50.361	50.084	50.107	49.685	50.808	52.964	54.997	BETA 2
	BETA(PR) 1	61.413	59.664	59.497	60.995	63.121	64.131	65.739	67.238	69.733	BETA(PR) 1
	BETA(PR) 2	22.650	28.700	29.863	30.973	35.144	39.402	44.347	45.636	45.213	BETA(PR) 2
	V 1	164.13	176.39	181.83	177.76	170.93	171.85	165.65	155.85	138.23	V 1
	V 2	291.44	273.05	272.14	277.55	273.95	269.02	257.63	256.22	261.83	V 2
	VZ 1	164.10	176.35	181.80	177.75	170.72	171.16	164.56	154.75	137.32	VZ 1
	VZ 2	165.34	173.76	173.61	176.09	175.66	173.91	162.59	154.12	150.01	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	224.89	210.61	209.57	212.87	210.14	204.96	199.41	204.26	214.22	V-THETA 2
	V(PR) 1	343.0	353.1	358.2	366.6	377.7	392.6	400.9	400.4	396.8	V(PR) 1
	V(PR) 2	200.6	196.1	200.2	207.7	214.9	225.3	227.7	220.8	213.3	V(PR) 2
	VTHETA PR1	-301.1	-304.8	-308.6	-320.6	-336.8	-353.0	-365.1	-368.8	-371.9	VTHETA PR1
	VTHETA PR2	-77.3	-95.1	-99.7	-106.9	-123.7	-142.9	-158.9	-157.6	-151.1	VTHETA PR2
	U 1	301.14	304.76	308.61	320.60	336.82	352.96	365.11	368.80	371.90	U 1
	U 2	302.43	305.74	309.25	319.77	333.79	347.82	358.34	361.84	365.35	U 2
	M 1	0.1473	0.1602	0.1633	0.1596	0.1535	0.1543	0.1487	0.1399	0.1240	M 1
	M 2	0.2598	0.2434	0.2427	0.2474	0.2441	0.2395	0.2291	0.2277	0.2327	M 2
	M(PR) 1	0.3079	0.3171	0.3217	0.3292	0.3391	0.3525	0.3599	0.3593	0.3559	M(PR) 1
	M(PR) 2	0.1796	0.1766	0.1785	0.1851	0.1915	0.2006	0.2025	0.1963	0.1896	M(PR) 2
	TURN(PR)	38.760	30.960	29.632	30.021	27.965	24.692	21.343	21.559	24.500	TURN(PR)
	UUBAR	0.1019	0.1377	0.1365	0.1408	0.1640	0.1701	0.2012	0.2249	0.2377	UUBAR
	LOSS PARA	0.0272	0.0354	0.0352	0.0371	0.0432	0.0442	0.0499	0.0551	0.0593	LOSS PARA
	DFAC	0.6047	0.6142	0.6150	0.6118	0.6094	0.6004	0.6030	0.6257	0.6519	DFAC
	EFFP	0.8554	0.8224	0.8706	0.8527	0.8332	0.7827	0.7066	0.6965	0.7207	EFFP
	EFF	0.8539	0.8209	0.8694	0.8514	0.8316	0.7806	0.7040	0.6938	0.7180	EFF
	INCID	6.966	6.746	6.949	8.952	9.124	8.152	7.078	4.962	1.611	INCID
	DEVM	7.500	14.540	15.229	12.332	11.932	11.839	12.721	12.497	9.236	DEVM
	P 1	14.679	14.710	14.714	14.710	14.710	14.706	14.699	14.676	14.636	P 1
	P 2	15.727	15.655	15.664	15.704	15.702	15.694	15.638	15.624	15.644	P 2
	T 1	516.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	530.790	530.040	529.460	530.190	530.440	531.160	531.850	532.190	532.580	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	50.639	50.228	49.585	50.155	49.510	49.565	51.877	54.758	57.774	BETA 2
STATOR-T.E.	BETA 2A	4.700	4.700	4.510	3.290	2.920	2.761	2.671	4.121	5.262	BETA 2A
	V 2	290.09	274.11	275.39	277.55	276.81	269.97	254.27	250.89	254.05	V 2
	V 2A	211.99	202.58	202.47	208.88	210.64	214.30	200.99	192.36	194.83	V 2A
	VZ 2	183.19	175.36	178.54	177.81	179.69	175.01	156.87	144.68	135.39	VZ 2
	VZ 2A	211.27	201.90	201.84	208.50	210.30	213.93	200.61	191.69	193.80	VZ 2A
	V-THETA 2	224.93	210.66	209.67	213.08	210.46	205.36	199.89	204.78	214.78	V-THETA 2
	V-THETA 2A	17.37	16.60	15.92	11.99	10.73	10.32	9.36	13.81	17.92	V-THETA 2A
	M 2	0.2586	0.2443	0.2456	0.2474	0.2467	0.2403	0.2261	0.2230	0.2257	M 2
	M 2A	0.1884	0.1801	0.1801	0.1857	0.1872	0.1904	0.1764	0.1706	0.1727	M 2A
	TURN(PR)	46.139	45.526	45.073	46.859	46.571	46.771	49.159	50.590	52.444	TURN(PR)
	UUBAR	0.1082	0.0583	0.0717	0.1089	0.1111	0.0715	0.0716	0.0831	0.0958	UUBAR
	LOSS PARA	0.0363	0.0198	0.0246	0.0386	0.0411	0.0275	0.0284	0.0332	0.0385	LOSS PARA
	DFAC	0.5103	0.5022	0.5072	0.5055	0.5072	0.4858	0.5082	0.5397	0.5478	DFAC
	EFFP	0.7734	0.8744	0.8475	0.7545	0.7420	0.8111	0.8130	0.8021	0.7720	EFFP
	INCID	0.672	6.840	9.294	12.125	12.804	13.697	13.170	11.588	-1.425	INCID
	DEVM	13.532	16.012	15.820	14.265	13.931	14.425	15.110	16.798	10.130	DEVM
	P 2	15.727	15.655	15.664	15.704	15.702	15.694	15.638	15.624	15.644	P 2
	P 2A	15.650	15.618	15.618	15.633	15.630	15.650	15.599	15.579	15.592	P 2A
	T 2	530.790	530.040	529.460	530.190	530.440	531.160	531.850	532.190	532.580	T 2
	T 2A	530.790	530.040	529.460	530.190	530.440	531.160	531.850	532.190	532.580	T 2A
	UUBAR FS	0.0828	0.1105	0.1041	0.1331	0.1506	0.1324	0.1337	0.1462	0.1476	UUBAR FS
	P2 FS	15.707	15.692	15.687	15.722	15.732	15.737	15.677	15.662	15.677	P2 FS
	LOSS PARA FS	0.0277	0.0375	0.0357	0.0471	0.0557	0.0509	0.0530	0.0584	0.0593	LOSS PARA FS

Table A-4. Overall Performance - Stage D, Radial Distortion

Equivalent Weight Flow, lb/sec	ROTOR $\overline{P}_2/\overline{P}_1$	ROTOR η_{ad}	ROTOR η_p	STAGE $\overline{P}_{2A}/\overline{P}_1$	STAGE η_{ad}	STAGE η_p
			Hub Radial Distortion			
			100% Design Equivalent Rotor Speed			
114.76	1.2493	0.8863	0.8899	1.2355	0.8399	0.8446
97.44	1.2603	0.8838	0.8875	1.2444	0.8329	0.8380
84.40	1.2538	0.8045	0.8107	1.2299	0.7331	0.7408
			90% Design Equivalent Rotor Speed			
102.52	1.1875	0.8944	0.8970	1.1769	0.8459	0.8494
88.60	1.2135	0.8964	0.8992	1.2011	0.8467	0.8506
76.35	1.2026	0.8103	0.8152	1.1858	0.7464	0.7525
			70% Design Equivalent Rotor Speed			
82.96	1.1180	0.8925	0.8942	1.1109	0.8397	0.8421
71.46	1.1292	0.8854	0.8874	1.1234	0.8461	0.8487
59.11	1.1272	0.8143	0.8175	1.1190	0.7629	0.7667
			Tip Radial Distortion			
			100% Design Equivalent Rotor Speed			
115.11	1.2430	0.8520	0.8565	1.2183	0.7704	0.7767
106.05	1.2585	0.8792	0.8831	1.2382	0.8143	0.8199
99.09	1.2739	0.8653	0.8698	1.2556	0.8112	0.8172
			90% Design Equivalent Rotor Speed			
105.62	1.1862	0.8559	0.8594	1.1724	0.7954	0.7999
97.85	1.2089	0.9122	0.9146	1.1955	0.8566	0.8602
90.04	1.2207	0.8776	0.8810	1.2079	0.8292	0.8337
			70% Design Equivalent Rotor Speed			
85.36	1.1212	0.8996	0.9012	1.1132	0.8415	0.8439
80.21	1.1301	0.9106	0.9121	1.1217	0.8534	0.8558
72.74	1.1331	0.8871	0.8891	1.1266	0.8444	0.8470

Table A-5. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 99.96 Equivalent Rotor Speed = 4208.22 Equivalent Weight Flow = 114.76
Hub Radial Distortion

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	416.36	416.36	416.36	416.36	416.36	416.36	416.36	416.36	416.36	V 0
	V 1	286.83	297.86	301.94	304.24	469.37	557.87	534.08	508.51	465.26	V 1
	VZ 0	416.36	416.36	416.36	416.35	416.33	416.29	416.25	416.25	416.25	VZ 0
	VZ 1	286.83	297.86	301.94	304.24	469.34	557.77	533.94	508.37	465.14	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3782	0.3782	0.3782	0.3782	0.3782	0.3782	0.3782	0.3782	0.3782	M 0
	M 1	0.2586	0.2687	0.2724	0.2746	0.4280	0.5126	0.4897	0.4652	0.4247	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	2.2469	2.1673	2.1275	2.1311	1.2697	0.5458	0.7051	0.8786	1.1394	UUBAR
	DFAC	0.311	0.285	0.275	0.269	-0.127	-0.340	-0.283	-0.221	-0.117	DFAC
	EFFP	-0.2822	-0.2706	-0.2679	-0.2616	0.1764	0.6046	0.4875	0.3651	0.1607	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	16.551	16.551	16.551	16.551	16.551	16.551	16.551	16.551	16.551	P 0
	P 1	13.054	13.178	13.240	13.235	14.575	15.701	15.454	15.185	14.778	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	45.797	43.580	42.636	38.782	29.991	27.514	29.211	31.654	34.253	BETA 2
	BETA(PR) 1	64.703	63.004	62.495	63.158	53.410	49.719	51.790	53.411	56.045	BETA(PR) 1
	BETA(PR) 2	24.567	26.876	29.164	32.473	32.282	32.158	37.645	41.449	44.695	BETA(PR) 2
	V 1	287.44	313.56	324.49	327.62	505.54	606.45	584.18	556.80	508.96	V 1
	V 2	589.31	584.35	574.00	575.23	644.00	689.90	624.60	573.64	533.42	V 2
	VZ 1	267.39	313.49	324.46	327.60	504.91	603.99	580.34	552.83	505.64	VZ 1
	VZ 2	410.85	423.30	422.27	448.40	557.53	610.93	543.82	487.20	439.82	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	422.45	402.82	388.78	360.30	321.78	318.22	304.07	300.30	299.49	V-THETA 2
	V(PR) 1	672.6	690.7	702.6	725.5	647.4	935.8	940.6	929.8	907.2	V(PR) 1
	V(PR) 2	451.6	474.6	483.6	531.5	659.7	722.6	688.2	651.3	622.0	V(PR) 2
	VTHETA PR1	-606.1	-615.4	-623.1	-647.4	-680.1	-712.7	-737.2	-744.7	-750.9	VTHETA PR1
	VTHETA PR2	-187.8	-214.5	-235.6	-285.4	-352.2	-384.1	-419.5	-430.3	-438.2	VTHETA PR2
	U 1	608.06	615.37	623.14	647.35	680.10	712.70	737.22	744.68	750.93	U 1
	U 2	610.27	617.35	624.43	645.67	673.99	702.31	723.55	730.63	737.71	U 2
	M 1	0.2592	0.2831	0.2931	0.2960	0.4624	0.5600	0.5362	0.5116	0.4656	M 1
	M 2	0.5204	0.5168	0.5080	0.5096	0.5751	0.6191	0.5575	0.5096	0.4719	M 2
	M(PR) 1	0.6065	0.6235	0.6347	0.6555	0.7751	0.8641	0.8666	0.8544	0.8306	M(PR) 1
	M(PR) 2	0.3996	0.4197	0.4280	0.4710	0.5892	0.6485	0.6141	0.5784	0.5505	M(PR) 2
	TURN(PR)	40.133	36.125	33.329	30.684	21.109	17.498	14.051	11.866	11.079	TURN(PR)
	UUBAR	-0.0875	-0.0748	-0.0593	-0.1193	-0.0229	0.0717	0.1306	0.1640	0.1624	UUBAR
	LOSS PARA	-0.0231	-0.0196	-0.0154	-0.0310	-0.0062	0.0204	0.0359	0.0431	0.0408	LOSS PARA
	DFAC	0.5106	0.4842	0.4762	0.4200	0.3432	0.3413	0.3795	0.4117	0.4302	DFAC
	EFFP	1.0472	1.0534	1.0624	1.1163	0.9923	0.8734	0.7833	0.7306	0.7471	EFFP
	EFF	1.0495	1.0556	1.0649	1.1211	0.9920	0.8695	0.7774	0.7242	0.7407	EFF
	INCID	12.273	12.089	11.917	11.116	-0.593	-6.282	-6.915	-8.914	-12.178	INCID
	DEVM	9.417	12.716	14.530	13.632	9.071	4.599	6.022	8.511	8.948	DEVM
	P 2	17.571	17.537	17.458	17.537	18.585	19.452	18.619	18.055	17.661	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	562.500	560.500	558.750	557.450	556.300	556.350	555.180	555.050	555.290	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.634	DIA
STATOR-L.E.	BETA 2	46.155	43.324	41.874	36.832	29.557	27.397	29.632	32.660	35.777	BETA 2
STATOR-T.E.	BETA 2A	2.800	3.100	2.900	1.550	0.710	2.001	1.851	0.900	-2.001	BETA 2A
	V 2	585.65	587.30	582.75	575.23	653.62	693.65	613.53	558.74	514.33	V 2
	V 2A	456.13	450.84	443.93	486.01	587.48	650.55	577.08	541.55	515.41	V 2A
	VZ 2	405.83	427.25	433.91	448.03	568.28	615.24	531.53	469.77	416.71	VZ 2
	VZ 2A	455.58	450.17	443.34	485.77	587.24	649.77	576.91	541.00	514.34	VZ 2A
	V-THETA 2	422.52	402.95	388.97	360.64	322.27	316.87	304.84	301.13	300.28	V-THETA 2
	V-THETA 2A	22.28	24.38	22.46	13.14	7.28	22.70	18.64	8.50	-23.56	V-THETA 2A
	M 2	0.5172	0.5195	0.5161	0.5096	0.5843	0.6227	0.5468	0.4955	0.4545	M 2
	M 2A	0.3985	0.3945	0.3889	0.4275	0.5216	0.5813	0.5131	0.4796	0.4555	M 2A
	TURN(PR)	43.354	40.223	38.973	37.275	28.831	25.369	27.940	31.712	34.319	TURN(PR)
	UUBAR	0.1000	0.1032	0.0971	0.0119	0.0059	0.0302	0.0756	0.0404	0.0024	UUBAR
	LOSS PARA	0.0336	0.0351	0.0334	0.0042	0.0022	0.0116	0.0306	0.0162	0.0010	LOSS PARA
	DFAC	0.4516	0.4520	0.4550	0.3702	0.2802	0.2274	0.2443	0.2415	0.2529	DFAC
	EFFP	0.7697	0.7721	0.7899	0.9627	0.9734	0.7856	0.4079	0.3979	1.5262	EFFP
	INCID	-4.013	-5.064	1.583	0.801	-7.146	-8.465	-8.869	-10.507	-23.425	INCID
	DEVM	11.632	14.412	14.210	12.525	11.722	13.665	14.290	13.580	2.256	DEVM
	P 2	17.571	17.537	17.458	17.537	18.585	19.452	18.619	18.055	17.661	P 2
	P 2A	17.278	17.233	17.177	17.503	18.562	19.317	18.360	17.945	17.650	P 2A
	T 2	562.500	560.500	558.750	557.450	556.300	556.350	555.180	555.050	555.290	T 2
	T 2A	562.500	560.500	558.750	557.450	556.300	556.350	555.180	555.050	555.290	T 2A
	UUBAR FS	0.0508	0.0840	0.0792	0.0585	0.0397	0.0433	0.1864	0.2336	0.2293	UUBAR FS
	P2 FS	17.419	17.475	17.402	17.678	18.719	19.513	19.085	18.759	18.348	P2 FS
	LOSS PARA FS	0.0170	0.0285	0.0272	0.0206	0.0148	0.0166	0.0739	0.0936	0.0955	LOSS PARA FS

Table A-5. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 100.05 Equivalent Rotor Speed = 4212.04 Equivalent Weight Flow = 97.44
Hub Radial Distortion

INLET	PCT SPAN	96.60	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.065	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	364.71	364.71	364.71	364.71	364.71	364.71	364.71	364.71	364.71	V 0
	V 1	313.84	316.14	316.42	313.89	400.92	481.64	469.55	467.74	413.83	V 1
	VZ 0	364.71	364.71	364.71	364.71	364.69	364.65	364.62	364.61	364.62	VZ 0
	VZ 1	313.83	316.14	316.42	313.88	400.89	481.56	469.43	467.61	413.72	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3302	0.3302	0.3302	0.3302	0.3302	0.3302	0.3302	0.3302	0.3302	M 0
	M 1	0.2833	0.2855	0.2857	0.2834	0.3638	0.4397	0.4282	0.4265	0.3759	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	1.6320	1.5384	1.5197	1.5665	1.0612	0.3874	0.4810	0.4810	0.8553	UUBAR
	DFAC	0.139	0.133	0.132	0.139	-0.099	-0.321	-0.287	-0.283	-0.135	DFAC
	EFFP	-0.1653	-0.1898	-0.1915	-0.1950	0.1656	0.6670	0.5867	0.5819	0.2553	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.760	15.760	15.760	15.760	15.760	15.760	15.760	15.760	15.760	P 0
	P 1	13.890	13.997	14.018	13.965	14.544	15.316	15.209	15.209	14.780	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR-L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR-T.E.	BETA 2	52.996	53.104	52.618	48.275	40.309	32.305	32.376	34.384	37.561	BETA 2
	BETA(PR) 1	62.676	61.612	61.396	62.445	57.766	54.052	55.529	55.816	59.222	BETA(PR) 1
	BETA(PR) 2	25.190	29.077	31.858	32.651	36.951	36.562	38.242	39.495	44.954	BETA(PR) 2
	V 1	314.52	332.95	340.23	338.11	429.76	519.38	509.93	509.87	450.59	V 1
	V 2	564.70	545.11	533.33	551.03	552.90	606.89	604.39	588.86	526.15	V 2
	VZ 1	314.46	332.87	340.19	338.09	429.23	517.28	506.58	506.25	447.66	VZ 1
	VZ 2	339.87	327.25	323.79	366.74	421.48	512.23	509.30	484.75	417.73	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	450.96	435.93	423.78	411.26	357.55	323.89	322.83	331.74	321.24	V-THETA 2
	V(PR) 1	665.1	700.2	710.5	730.9	805.6	882.4	896.9	903.1	876.3	V(PR) 1
	V(PR) 2	375.6	374.5	381.2	435.6	527.6	638.0	649.7	629.6	591.4	V(PR) 2
	VTHETA PR1	-606.6	-615.9	-623.7	-647.9	-680.7	-713.3	-737.9	-745.4	-751.6	VTHETA PR1
	VTHETA PR2	-159.9	-181.0	-201.2	-235.0	-317.0	-379.1	-401.4	-399.6	-417.1	VTHETA PR2
	U 1	606.61	615.95	623.70	647.94	680.72	713.34	737.89	745.36	751.61	U 1
	U 2	610.62	617.91	624.99	646.25	674.60	702.95	724.21	731.29	738.38	U 2
	M 1	0.2846	0.3009	0.3076	0.3057	0.3908	0.4756	0.4666	0.4665	0.4105	M 1
	M 2	0.4961	0.4787	0.4686	0.4856	0.4868	0.5409	0.5379	0.5230	0.4662	M 2
	M(PR) 1	0.6165	0.6326	0.6424	0.6607	0.7320	0.8080	0.8207	0.8263	0.7980	M(PR) 1
	M(PR) 2	0.3300	0.3289	0.3350	0.3839	0.4665	0.5686	0.5783	0.5592	0.5220	M(PR) 2
	TURN(PR)	37.482	32.531	29.530	29.793	20.799	17.493	17.201	16.231	14.200	TURN(PR)
	UUBAR	0.1240	0.1619	0.1672	0.0969	0.1120	0.0764	0.0656	0.1133	0.1205	UUBAR
	LOSS PARA	0.0325	0.0415	0.0422	0.0251	0.0288	0.0206	0.0179	0.0307	0.0302	LOSS PARA
	DFAC	0.6427	0.6481	0.6407	0.5769	0.4870	0.3995	0.3994	0.4304	0.4538	DFAC
	EFFP	0.8818	0.8514	0.8569	0.9538	0.8901	0.9371	0.9498	0.8960	0.8501	EFFP
	EFF	0.8772	0.8461	0.8518	0.9521	0.8865	0.9351	0.9481	0.8927	0.8455	EFF
	INCID	10.245	10.696	10.812	10.402	3.765	-1.945	-3.166	-6.504	-6.943	INCID
	DEVM	10.041	14.917	17.224	14.010	13.739	8.941	6.618	6.358	6.962	DEVM
	P 1	13.890	13.997	14.018	13.965	14.544	15.316	15.209	15.209	14.780	P 1
	P 2	18.155	17.992	17.896	18.143	18.244	19.076	19.124	18.952	18.309	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	565.700	564.300	562.700	561.000	557.850	554.600	555.700	556.400	557.400	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	53.444	52.766	51.993	48.342	39.765	32.191	33.059	35.525	39.281	BETA 2
STATOR-T.E.	BETA 2A	3.930	4.440	4.050	3.100	2.000	2.381	3.081	3.601	4.101	BETA 2A
	V 2	561.50	547.72	541.08	551.03	560.06	609.76	593.97	573.08	509.37	V 2
	V 2A	393.65	383.52	380.52	413.94	454.84	534.19	511.56	487.00	469.02	V 2A
	VZ 2	334.44	331.41	336.13	366.22	430.33	515.56	497.20	465.83	393.79	VZ 2
	VZ 2A	392.71	382.36	379.56	413.27	454.41	533.42	510.41	485.61	467.33	VZ 2A
	V-THETA 2	451.03	436.08	423.99	411.65	358.10	324.55	323.61	332.58	322.09	V-THETA 2
	V-THETA 2A	26.98	29.69	26.87	22.36	15.87	22.18	27.47	30.56	33.53	V-THETA 2A
	M 2	0.4932	0.4811	0.4757	0.4856	0.4954	0.5436	0.5261	0.5083	0.4469	M 2
	M 2A	0.3415	0.3330	0.3308	0.3611	0.3991	0.4730	0.4516	0.4268	0.4121	M 2A
	TURN(PR)	49.513	48.325	47.542	45.236	37.747	29.779	29.934	31.876	35.125	TURN(PR)
	UUBAR	0.1408	0.1180	0.0885	0.0952	0.0133	0.0293	0.1232	0.1578	0.0645	UUBAR
	LOSS PARA	0.0473	0.0401	0.0304	0.0338	0.0049	0.0113	0.0467	0.0629	0.0018	LOSS PARA
	DFAC	0.5534	0.5526	0.5497	0.5004	0.4149	0.3159	0.3375	0.3624	0.3093	DFAC
	EFFP	0.7451	0.7864	0.8384	0.7993	0.9645	0.8879	0.5697	0.4629	0.9727	EFFP
	INCID	3.276	9.378	11.303	10.312	3.060	-3.674	-5.645	-7.645	-19.923	INCID
	DEVM	12.762	14.752	15.360	14.075	13.012	14.045	15.520	16.278	8.951	DEVM
	P 2	18.155	17.992	17.896	18.143	18.244	19.076	19.124	18.952	18.309	P 2
	P 2A	17.762	17.681	17.668	17.885	18.207	18.974	18.716	18.473	18.298	P 2A
	T 2	565.700	564.300	562.700	561.000	557.850	554.600	555.700	556.400	557.400	T 2
	T 2A	565.700	564.300	562.700	561.000	557.850	554.600	555.700	556.400	557.400	T 2A
	UUBAR FS	0.1068	0.1380	0.1275	0.0995	0.0655	0.0417	0.1267	0.1580	0.1754	UUBAR FS
	P2 FS	18.047	18.053	18.010	18.155	18.401	19.120	19.136	18.954	18.798	P2 FS
	LOSS PARA FS	0.0358	0.0469	0.0438	0.0353	0.0241	0.0160	0.0500	0.0630	0.0701	LOSS PARA FS

Table A-5. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 100.56 Equivalent Rotor Speed = 4233.69 Equivalent Weight Flow = 84.40
Hub Radial Distortion

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.065	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	319.06	319.06	319.06	319.06	319.06	319.06	319.06	319.06	319.06	V 0
	V 1	260.78	265.34	265.31	274.71	364.87	422.05	412.53	393.27	361.16	V 1
	VZ 0	319.06	319.06	319.06	319.06	319.04	319.01	318.98	318.98	318.98	VZ 0
	VZ 1	260.78	265.33	265.31	274.71	364.84	421.98	412.43	393.16	361.07	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2881	0.2881	0.2881	0.2881	0.2881	0.2881	0.2881	0.2881	0.2881	M 0
	M 1	0.2349	0.2390	0.2390	0.2476	0.3304	0.3835	0.3747	0.3567	0.3269	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	1.6305	1.5431	1.5418	1.4847	0.8371	0.2928	0.4459	0.5601	0.7625	UUBAR
	DFAC	0.183	0.168	0.168	0.139	-0.144	-0.323	-0.293	-0.235	-0.132	DFAC
	EFFP	-0.2515	-0.2466	-0.2470	-0.2089	0.2718	0.7261	0.6081	0.4873	0.2677	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.415	15.415	15.415	15.415	15.415	15.415	15.415	15.415	15.415	P 0
	P 1	14.007	14.082	14.083	14.133	14.692	15.162	15.030	14.931	14.739	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	57.695	58.231	58.189	54.969	48.241	39.082	36.210	37.525	40.578	BETA 2
	BETA(PR) 1	66.872	65.742	65.578	65.601	60.328	57.822	59.152	60.546	62.739	BETA(PR) 1
	BETA(PR) 2	26.910	29.468	32.644	32.283	38.458	37.815	38.226	40.738	46.024	BETA(PR) 2
	V 1	261.33	279.05	284.71	295.44	390.31	452.97	445.92	426.11	391.83	V 1
	V 2	549.92	541.18	529.03	549.80	532.00	573.77	594.86	570.14	517.31	V 2
	VZ 1	261.28	278.99	284.67	295.42	389.83	451.14	442.98	423.68	389.27	VZ 1
	VZ 2	293.69	284.93	278.86	315.60	354.22	444.86	478.96	451.15	392.10	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	464.79	460.09	449.56	450.19	396.74	361.30	350.67	346.49	335.80	V-THETA 2
	V(PR) 1	665.2	679.1	688.5	715.2	787.7	848.1	865.4	861.9	851.0	V(PR) 1
	V(PR) 2	329.6	327.3	331.2	373.3	452.5	563.8	610.9	596.6	565.7	V(PR) 2
	VTHETA PR1	-611.7	-619.1	-626.9	-651.3	-684.2	-717.0	-741.7	-749.2	-755.5	VTHETA PR1
	VTHETA PR2	-149.2	-161.0	-178.6	-199.4	-281.3	-345.3	-377.3	-388.6	-406.4	VTHETA PR2
	U 1	611.74	619.09	626.91	651.27	684.22	717.01	741.68	749.19	755.47	U 1
	U 2	613.96	621.08	628.21	649.57	678.07	706.56	727.93	735.05	742.17	U 2
	M 1	0.2354	0.2515	0.2567	0.2665	0.3540	0.4126	0.4059	0.3873	0.3554	M 1
	M 2	0.4812	0.4739	0.4636	0.4829	0.4679	0.5082	0.5272	0.5043	0.4652	M 2
	M(PR) 1	0.5991	0.6121	0.6208	0.6451	0.7143	0.7725	0.7878	0.7835	0.7716	M(PR) 1
	M(PR) 2	0.2884	0.2866	0.2901	0.3279	0.3980	0.4994	0.5414	0.5277	0.4977	M(PR) 2
	TURN(PR)	39.960	36.271	32.932	33.317	21.856	19.956	20.849	19.734	16.664	TURN(PR)
	UUBAR	0.2220	0.2571	0.2569	0.2326	0.2594	0.1854	0.1142	0.1373	0.1705	UUBAR
	LOSS PARA	0.0573	0.0657	0.0642	0.0605	0.0654	0.0493	0.0312	0.0365	0.0419	LOSS PARA
	DFAC	0.7073	0.7171	0.7131	0.6714	0.5870	0.4775	0.4334	0.4474	0.4739	DFAC
	EFFP	0.8011	0.7954	0.8025	0.8630	0.7635	0.8376	0.8957	0.8700	0.7932	EFFP
	EFF	0.7936	0.7881	0.7956	0.8580	0.7563	0.8326	0.8922	0.8657	0.7869	EFF
	INCID	14.442	14.827	15.000	13.558	6.328	1.830	0.466	-1.759	-5.419	INCID
	DEVM	11.761	15.308	18.010	13.642	15.245	10.253	6.603	7.600	10.047	DEVM
	P 1	14.007	14.082	14.083	14.133	14.692	15.162	15.030	14.931	14.739	P 1
	P 2	18.117	18.044	17.960	18.253	18.159	18.757	19.030	18.746	18.211	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	566.550	567.000	565.600	564.550	561.500	557.750	559.250	558.950	559.770	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	58.220	57.814	56.945	55.053	47.548	38.949	37.000	38.781	42.481	BETA 2
STATOR-T.E.	BETA 2A	1.800	1.800	1.700	0.800	1.400	3.401	4.751	5.142	5.302	BETA 2A
	V 2	546.86	543.82	536.66	549.80	538.68	576.36	584.76	555.23	499.12	V 2
	V 2A	373.83	363.99	360.92	390.57	430.25	483.16	477.20	455.47	442.85	V 2A
	VZ 2	288.00	289.68	292.71	314.92	363.48	447.90	466.49	432.34	367.69	VZ 2
	VZ 2A	373.64	363.80	360.75	390.48	429.98	482.02	475.18	453.24	440.49	VZ 2A
	V-THETA 2	464.87	460.24	449.79	450.62	397.35	362.04	351.52	347.37	336.70	V-THETA 2
	V-THETA 2A	11.74	11.43	10.71	5.45	10.51	28.64	39.50	40.76	40.88	V-THETA 2A
	M 2	0.4784	0.4763	0.4704	0.4829	0.4740	0.5107	0.5178	0.4905	0.4385	M 2
	M 2A	0.3231	0.3149	0.3126	0.3392	0.3756	0.4248	0.4188	0.3992	0.3875	M 2A
	TURN(PR)	56.420	56.013	55.243	54.246	46.130	35.515	32.204	33.591	37.126	TURN(PR)
	UUBAR	0.1669	0.1790	0.1661	0.1956	0.0648	0.0957	0.2003	0.1860	0.0372	UUBAR
	LOSS PARA	0.0562	0.0609	0.0572	0.0695	0.0240	0.0368	0.0791	0.0741	0.0150	LOSS PARA
	DFAC	0.5956	0.6119	0.6094	0.5779	0.4681	0.3856	0.3967	0.4021	0.3535	DFAC
	EFFP	0.7095	0.6987	0.7179	0.6338	0.8357	0.7080	0.4522	0.4765	0.8381	EFFP
	INCID	8.053	14.426	16.654	17.022	10.842	3.081	-1.707	-4.391	-16.723	INCID
	DEVM	10.632	13.112	13.010	11.775	12.412	15.065	17.189	17.817	10.150	DEVM
	P 2	18.117	18.044	17.960	18.253	18.159	18.757	19.030	18.746	18.211	P 2
	P 2A	17.679	17.579	17.540	17.727	17.991	18.464	18.393	18.218	18.128	P 2A
	T 2	566.550	567.000	565.600	564.550	561.500	557.750	559.250	558.950	559.770	T 2
	T 2A	566.550	567.000	565.600	564.550	561.500	557.750	559.250	558.950	559.770	T 2A
	UUBAR FS	0.1546	0.1771	0.1959	0.2181	0.1719	0.0877	0.1312	0.1671	0.1851	UUBAR FS
	P2 FS	18.079	18.037	18.053	18.320	18.493	18.729	18.777	18.682	18.614	P2 FS
	LOSS PARA FS	0.0520	0.0602	0.0674	0.0764	0.0636	0.0337	0.0518	0.0665	0.0758	LOSS PARA FS

Table A-5. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 89.86 Equivalent Rotor Speed = 3783.29 Equivalent Weight Flow = 102.52
Hub Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	381.48	381.48	381.48	381.48	381.48	381.48	381.48	381.48	381.46	V 0
	V 1	327.36	338.10	334.57	325.22	415.91	494.48	496.93	469.68	430.91	V 1
	VZ 0	381.48	381.48	381.48	381.47	381.45	381.42	381.38	381.38	381.38	VZ 0
	VZ 1	327.36	338.10	334.57	325.21	415.88	494.39	496.80	469.56	430.80	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3457	0.3457	0.3457	0.3457	0.3457	0.3457	0.3457	0.3457	0.3457	M 0
	M 1	0.2958	0.3057	0.3024	0.2938	0.3778	0.4518	0.4542	0.4283	0.3918	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	1.7784	1.6670	1.6584	1.6584	1.1439	0.4065	0.4665	0.6637	0.9038	UUBAR
	DFAC	0.142	0.114	0.123	0.147	-0.090	-0.296	-0.303	-0.231	-0.130	DFAC
	EFFP	-0.1689	-0.1444	-0.1580	-0.1926	0.1425	0.6363	0.6092	0.4453	0.2373	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.947	15.947	15.947	15.947	15.947	15.947	15.947	15.947	15.947	P 0
	P 1	15.696	13.837	13.848	13.848	14.499	15.433	15.357	15.107	14.803	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	44.498	42.873	41.817	38.184	29.676	25.628	26.471	29.032	32.445	BETA 2
	BETA(PR) 1	59.035	57.221	57.273	58.942	53.913	50.316	50.952	52.785	55.338	BETA(PR) 1
	BETA(PR) 2	25.281	27.109	29.060	32.873	32.902	34.047	37.557	41.292	47.394	BETA(PR) 2
	V 1	328.08	356.33	360.06	350.51	446.20	533.81	541.20	512.09	469.86	V 1
	V 2	528.70	525.82	519.38	515.45	573.40	607.05	575.10	525.58	457.28	V 2
	VZ 1	328.01	356.25	360.02	350.49	445.65	531.65	537.64	508.65	466.80	VZ 1
	VZ 2	377.10	385.34	387.07	405.15	497.97	546.46	513.47	458.26	384.93	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	370.55	357.74	346.29	318.64	283.76	262.14	255.68	254.36	244.70	V-THETA 2
	V(PR) 1	637.6	658.1	665.9	679.4	756.9	834.0	855.7	842.9	822.5	V(PR) 1
	V(PR) 2	417.1	432.9	442.8	482.4	593.3	660.4	649.0	611.2	569.5	V(PR) 2
	VTHETA PR1	-546.7	-553.2	-560.2	-582.0	-611.4	-640.7	-662.8	-669.5	-675.1	VTHETA PR1
	VTHETA PR2	-178.1	-197.3	-215.1	-261.8	-322.2	-369.2	-394.8	-402.5	-418.5	VTHETA PR2
	U 1	546.66	553.23	560.22	581.99	611.43	640.73	662.78	669.49	675.10	U 1
	U 2	548.64	555.01	561.37	580.47	605.93	631.39	650.49	656.85	663.22	U 2
	M 1	0.2964	0.3225	0.3259	0.3171	0.4062	0.4894	0.4966	0.4686	0.4285	M 1
	M 2	0.4680	0.4662	0.4611	0.4582	0.5131	0.5455	0.5154	0.4692	0.4059	M 2
	M(PR) 1	0.5760	0.5955	0.6028	0.6146	0.6891	0.7647	0.7851	0.7714	0.7501	M(PR) 1
	M(PR) 2	0.3691	0.3838	0.3931	0.4288	0.5309	0.5934	0.5817	0.5456	0.5055	M(PR) 2
	TURN(PR)	33.751	30.107	28.211	26.069	20.993	16.206	13.300	11.398	7.870	TURN(PR)
	UUBAR	0.0635	0.0879	0.0789	0.0181	-0.0175	0.0515	0.0897	0.1367	0.1744	UUBAR
	LOSS PARA	0.0166	0.0229	0.0205	0.0047	-0.0047	0.0144	0.0247	0.0360	0.0418	LOSS PARA
	DFAC	0.5145	0.5018	0.4896	0.4341	0.3363	0.3131	0.3442	0.3797	0.4120	DFAC
	EFFP	0.8922	0.8966	0.9369	1.0032	1.0331	0.9138	0.8530	0.7871	0.6846	EFFP
	EFF	0.8890	0.8936	0.9352	1.0033	1.0340	0.9118	0.8498	0.7829	0.6791	EFF
	INCID	6.604	6.305	6.695	6.900	-0.090	-5.686	-7.753	-9.541	-12.838	INCID
	DEVM	10.131	12.949	14.426	14.232	9.690	6.487	5.934	8.154	11.417	DEVM
	P 1	13.696	13.837	13.848	13.848	14.499	15.433	15.357	15.107	14.803	P 1
	P 2	16.865	16.654	16.822	16.876	17.581	18.189	17.864	17.321	16.713	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	554.450	552.350	550.400	548.750	547.100	546.050	545.650	545.100	545.650	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	44.818	42.640	41.120	38.233	29.296	25.538	26.992	29.893	33.771	BETA 2
STATOR-T.E.	BETA 2A	3.300	3.300	3.250	1.800	0.340	1.450	2.351	0.900	-2.001	BETA 2A
	V 2	525.80	528.30	526.84	515.45	581.08	609.94	565.49	512.39	442.01	V 2
	V 2A	423.66	417.27	410.00	439.53	527.38	586.95	526.24	490.37	466.03	V 2A
	VZ 2	372.98	388.63	396.87	404.83	506.50	549.79	503.19	443.60	366.90	VZ 2
	VZ 2A	422.95	416.57	409.32	439.25	527.19	586.41	525.37	489.87	465.25	VZ 2A
	V-THETA 2	370.61	357.86	346.46	318.94	284.19	262.68	256.30	255.00	245.35	V-THETA 2
	V-THETA 2A	24.38	24.02	23.24	13.80	3.13	14.85	21.57	7.70	-16.25	V-THETA 2A
	M 2	0.4653	0.4685	0.4680	0.4582	0.5203	0.5482	0.5063	0.4569	0.3919	M 2
	M 2A	0.3721	0.3670	0.3611	0.3885	0.4700	0.5264	0.4696	0.4365	0.4139	M 2A
	TURN(PR)	41.518	39.339	37.869	36.426	28.940	24.061	24.603	28.947	35.715	TURN(PR)
	UUBAR	0.0840	0.1015	0.1111	0.0336	0.0073	-0.0032	0.1287	0.0705	-0.1293	UUBAR
	LOSS PARA	0.0283	0.0345	0.0382	0.0119	0.0027	-0.0012	0.0510	0.0282	-0.0521	LOSS PARA
	DFAC	0.4161	0.4255	0.4332	0.3581	0.2721	0.1950	0.2349	0.2372	0.1856	DFAC
	EFFP	0.7792	0.7511	0.7397	0.8868	0.9628	1.0385	0.1290	0.2305	-0.0735	EFFP
	INCID	-5.350	-0.748	0.830	0.202	-7.407	-10.323	-11.706	-13.272	-25.429	INCID
	DEVM	12.132	14.612	14.560	12.775	11.352	13.116	14.790	13.580	2.855	DEVM
	P 2	16.865	16.854	16.822	16.876	17.581	18.189	17.864	17.321	16.713	P 2
	P 2A	16.670	16.615	16.561	16.600	17.560	18.200	17.495	17.158	16.930	P 2A
	T 2	554.450	552.350	550.400	548.750	547.100	546.050	545.650	545.100	545.650	T 2
	T 2A	554.450	552.350	550.400	548.750	547.100	546.050	545.650	545.100	545.650	T 2A
	UUBAR FS	0.0625	0.0958	0.0775	0.0654	0.0426	0.0329	0.1829	0.2193	0.2575	UUBAR FS
	P2 FS	16.812	16.839	16.736	16.953	17.690	18.314	18.054	17.761	17.587	P2 FS
	LOSS PARA FS	0.0210	0.0325	0.0266	0.0231	0.0157	0.0123	0.0724	0.0877	0.1037	LOSS PARA FS

Table A-5. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 90.37 Equivalent Rotor Speed = 3804.45 Equivalent Weight Flow = 88.60
Hub Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	26.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.157	38.954	40.321	40.727	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	333.31	333.31	333.31	333.31	333.31	333.31	333.31	333.31	333.31	V 0
	V 1	277.23	280.03	282.36	279.51	356.15	432.88	420.65	405.14	376.37	V 1
	VZ 0	333.31	333.31	333.31	333.30	333.28	333.25	333.22	333.22	333.22	VZ 0
	VZ 1	277.23	280.03	282.36	279.50	356.13	432.80	420.55	405.03	376.17	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3012	0.3012	0.3012	0.3012	0.3012	0.3012	0.3012	0.3012	0.3012	M 0
	M 1	0.2499	0.2524	0.2545	0.2519	0.3223	0.3937	0.3822	0.3659	0.3386	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	1.5996	1.5271	1.4880	1.5271	1.0195	0.3726	0.4618	0.5957	0.8026	UUBAR
	DFAC	0.166	0.160	0.153	0.161	-0.069	-0.299	-0.262	-0.210	-0.110	DFAC
	EFFP	-0.2347	-0.2354	-0.2314	-0.2380	0.1231	0.6562	0.5699	0.4437	0.2443	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.550	15.550	15.550	15.550	15.550	15.550	15.550	15.550	15.550	P 0
	P 1	14.033	14.102	14.139	14.102	14.583	15.197	15.112	14.985	14.789	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	548.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	52.400	52.607	52.397	47.979	39.603	32.500	32.591	34.716	37.559	BETA 2
	BETA(PR) 1	63.193	62.161	61.714	62.811	58.258	54.296	55.857	57.195	59.319	BETA(PR) 1
	BETA(PR) 2	24.439	26.384	32.336	30.251	36.573	35.684	37.867	40.140	45.574	BETA(PR) 2
	V 1	277.82	294.61	303.20	300.65	380.83	464.94	454.97	437.06	405.42	V 1
	V 2	515.85	497.16	479.00	515.07	504.12	554.07	549.23	514.39	471.53	V 2
	VZ 1	277.76	294.54	303.16	300.63	380.36	463.06	451.98	433.95	402.78	VZ 1
	VZ 2	314.74	301.91	292.27	344.79	386.28	466.61	461.66	429.98	372.76	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	408.69	394.98	379.49	382.63	321.25	297.35	295.15	297.93	287.09	V-THETA 2
	V(PR) 1	615.9	629.5	639.8	656.0	723.2	794.5	807.0	802.7	790.7	V(PR) 1
	V(PR) 2	345.7	343.2	345.9	399.1	483.7	576.7	586.0	563.6	533.2	V(PR) 2
	VTHETA PR1	-549.7	-556.3	-563.3	-585.2	-614.8	-644.3	-666.5	-673.2	-678.9	VTHETA PR1
	VTHETA PR2	-143.0	-163.1	-185.0	-201.1	-288.1	-337.6	-359.0	-361.8	-379.9	VTHETA PR2
	U 1	549.72	556.33	563.35	585.24	614.85	644.32	666.48	673.23	676.86	U 1
	U 2	551.71	558.11	564.51	583.72	609.32	634.92	654.43	660.53	666.63	U 2
	M 1	0.2504	0.2657	0.2736	0.2713	0.3451	0.4239	0.4145	0.3976	0.3680	M 1
	M 2	0.4551	0.4385	0.4224	0.4559	0.4469	0.4939	0.4893	0.4602	0.4171	M 2
	M(PR) 1	0.5551	0.5678	0.5773	0.5936	0.6555	0.7243	0.7351	0.7302	0.7176	M(PR) 1
	M(PR) 2	0.3050	0.3027	0.3051	0.3533	0.4267	0.5140	0.5220	0.5011	0.4716	M(PR) 2
	TURN(PR)	38.752	33.714	29.376	32.559	21.670	18.355	17.904	16.970	13.715	TURN(PR)
	UUBAR	0.1163	0.1463	0.1568	0.0867	0.0875	0.0692	0.0640	0.0934	0.1224	UUBAR
	LOSS PARA	0.0307	0.0378	0.0398	0.0230	0.0226	0.0189	0.0175	0.0250	0.0304	LOSS PARA
	DFAC	0.6312	0.6392	0.6356	0.5721	0.4736	0.3992	0.3998	0.4267	0.4532	DFAC
	EFFP	0.8947	0.8757	0.8637	0.9937	0.9102	0.9212	0.9445	0.9243	0.8829	EFFP
	EFF	0.8913	0.8719	0.8598	0.9935	0.9077	0.9191	0.9450	0.9223	0.8828	EFF
	INCID	10.763	11.486	11.156	10.769	4.258	-1.701	-2.846	-3.121	-3.043	INCID
	DEVM	9.289	14.224	17.702	11.610	13.361	8.323	6.243	7.005	9.505	DEVM
	P 1	14.033	14.102	14.139	14.102	14.583	15.197	15.112	14.985	14.789	P 1
	P 2	17.525	17.396	17.271	17.641	17.652	18.287	18.287	18.044	17.567	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	556.850	555.500	554.200	553.200	550.750	549.350	549.500	549.350	550.250	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	52.817	52.290	51.437	48.045	39.102	32.404	33.245	35.798	39.434	BETA 2
STATOR-T.E.	BETA 2A	4.350	4.350	4.030	3.500	1.750	2.401	3.161	3.501	3.401	BETA 2A
	V 2	513.05	499.44	485.58	515.07	510.33	556.52	540.35	511.27	455.61	V 2
	V 2A	365.13	357.13	353.17	386.99	417.97	488.28	463.74	438.93	424.01	V 2A
	VZ 2	510.07	305.49	302.69	344.31	395.87	469.45	451.36	414.17	352.46	VZ 2
	VZ 2A	364.08	356.09	352.28	386.21	417.63	487.57	462.66	437.73	422.82	VZ 2A
	V-THETA 2	408.76	395.11	379.68	383.00	321.74	297.96	295.87	298.69	287.61	V-THETA 2
	V-THETA 2A	27.69	27.09	24.82	23.62	12.76	20.44	25.55	26.78	25.13	V-THETA 2A
	M 2	0.4525	0.4406	0.4284	0.4559	0.4526	0.4961	0.4810	0.4541	0.4026	M 2
	M 2A	0.3188	0.3121	0.3089	0.3395	0.3682	0.4329	0.4103	0.3877	0.3739	M 2A
	TURN(PR)	48.467	47.939	47.406	44.539	37.334	29.972	30.041	32.249	35.779	TURN(PR)
	UUBAR	0.1244	0.0999	0.0569	0.1174	0.0343	0.0393	0.1336	0.1356	-0.0143	UUBAR
	LOSS PARA	0.0418	0.0339	0.0195	0.0416	0.0127	0.0151	0.0529	0.0542	-0.0057	LOSS PARA
	DFAC	0.5386	0.5360	0.5245	0.4972	0.4059	0.3156	0.3412	0.3556	0.3025	DFAC
	EFFP	0.7653	0.8093	0.8873	0.7497	0.9039	0.8455	0.5342	0.5216	1.0994	EFFP
	INCID	2.650	8.902	11.146	10.014	2.396	-3.462	-5.459	-7.372	-19.969	INCID
	DEVM	13.182	15.662	15.340	14.475	12.762	14.065	15.599	16.178	8.251	DEVM
	P 2	17.525	17.398	17.271	17.641	17.652	18.287	18.287	18.044	17.567	P 2
	P 2A	17.239	17.181	17.155	17.366	17.573	18.176	17.929	17.721	17.594	P 2A
	T 2	556.850	555.500	554.200	553.200	550.750	549.350	549.500	549.350	550.250	T 2
	T 2A	556.850	555.500	554.200	553.200	550.750	549.350	549.500	549.350	550.250	T 2A
	UUBAR FS	0.0913	0.1153	0.1331	0.1117	0.0684	0.0303	0.1321	0.1812	0.2108	UUBAR FS
	P2 FS	17.441	17.435	17.451	17.626	17.737	18.261	18.282	18.176	18.097	P2 FS
	LOSS PARA FS	0.0306	0.0391	0.0456	0.0395	0.0253	0.0116	0.0523	0.0724	0.0840	LOSS PARA FS

Table A-5. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 90.38 Equivalent Rotor Speed = 3805.08 Equivalent Weight Flow = 76.35
Hub Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	289.27	289.27	289.27	289.27	289.27	289.27	289.27	289.27	289.27	V 0
	V 1	229.49	239.38	239.97	242.92	319.20	375.65	366.89	351.21	319.65	V 1
	VZ 0	289.27	289.27	289.27	289.27	289.25	289.22	289.20	289.19	289.19	VZ 0
	VZ 1	229.49	239.38	239.97	242.92	319.17	375.59	366.80	351.12	319.56	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2609	0.2609	0.2609	0.2609	0.2609	0.2609	0.2609	0.2609	0.2609	M 0
	M 1	0.2064	0.2154	0.2159	0.2186	0.2883	0.3403	0.3322	0.3177	0.2867	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	1.5892	1.4906	1.4640	1.4199	0.8528	0.3226	0.3918	0.5288	0.7865	UUBAR
	DFAC	0.207	0.172	0.170	0.160	-0.103	-0.299	-0.268	-0.214	-0.105	DFAC
	EFFP	-0.3002	-0.2657	-0.2684	-0.2602	0.2052	0.6863	0.6144	0.4781	0.2216	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.272	15.272	15.272	15.272	15.272	15.272	15.272	15.272	15.272	P 0
	P 1	14.151	14.220	14.239	14.270	14.670	15.044	14.996	14.699	14.717	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	56.995	57.414	57.556	54.270	47.829	38.890	36.343	37.860	40.519	BETA 2
	BETA(PR) 1	67.306	65.673	65.459	65.973	61.039	58.143	59.488	60.767	63.151	BETA(PR) 1
	BETA(PR) 2	27.421	30.443	33.376	32.291	38.389	38.180	39.271	41.070	46.513	BETA(PR) 2
	V 1	229.97	251.60	257.29	260.96	340.74	402.08	395.44	379.53	345.97	V 1
	V 2	492.15	481.59	471.56	494.42	478.84	512.77	523.98	508.65	460.62	V 2
	VZ 1	229.92	251.54	257.26	260.94	340.32	400.45	392.84	376.83	343.72	VZ 1
	VZ 2	268.06	259.37	252.97	288.72	321.39	398.65	421.17	400.69	349.43	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	412.72	405.77	397.95	401.35	354.80	321.55	309.87	311.47	298.64	V-THETA 2
	V(PR) 1	596.0	610.7	619.4	640.9	703.0	759.6	775.1	772.9	762.1	V(PR) 1
	V(PR) 2	302.0	300.9	302.9	341.6	410.2	507.7	545.1	532.6	508.6	V(PR) 2
	VTHETA PR1	-549.8	-556.4	-563.4	-585.3	-614.9	-644.4	-666.6	-673.3	-679.0	VTHETA PR1
	VTHETA PR2	-139.1	-152.4	-166.7	-182.5	-254.6	-313.5	-344.4	-349.2	-368.4	VTHETA PR2
	U 1	549.81	556.42	563.44	585.34	614.95	644.42	666.59	673.34	678.99	U 1
	U 2	551.80	558.21	564.61	583.81	609.42	635.03	654.23	660.64	667.04	U 2
	M 1	0.2069	0.2265	0.2317	0.2350	0.3081	0.3649	0.3587	0.3439	0.3129	M 1
	M 2	0.4326	0.4236	0.4148	0.4361	0.4227	0.4548	0.4650	0.4510	0.4067	M 2
	M(PR) 1	0.5361	0.5498	0.5576	0.5772	0.6357	0.6893	0.7031	0.7005	0.6892	M(PR) 1
	M(PR) 2	0.2655	0.2646	0.2665	0.3013	0.3621	0.4503	0.4838	0.4722	0.4491	M(PR) 2
	TURN(PR)	39.882	35.227	32.081	33.681	22.637	19.913	20.142	19.625	16.588	TURN(PR)
	UUBAR	0.2077	0.2400	0.2480	0.2238	0.2326	0.1668	0.1194	0.1365	0.1573	UUBAR
	LOSS PARA	0.0534	0.0607	0.0615	0.0582	0.0587	0.0441	0.0321	0.0361	0.0383	LOSS PARA
	DFAC	0.6942	0.7025	0.7019	0.6595	0.5783	0.4729	0.4342	0.4510	0.4702	DFAC
	EFFP	0.8029	0.7978	0.7984	0.8728	0.7929	0.8320	0.8752	0.8754	0.8049	EFFP
	EFF	0.7970	0.7920	0.7928	0.8690	0.7876	0.8278	0.8718	0.8721	0.8001	EFF
	INCID	14.876	14.758	14.882	13.931	7.040	2.151	0.803	-1.537	-5.001	INCID
	DEVM	12.272	16.283	18.742	13.651	15.176	10.617	7.647	7.932	10.536	DEVM
	P 1	14.151	14.220	14.239	14.270	14.670	15.044	14.996	14.899	14.717	P 1
	P 2	17.440	17.367	17.310	17.565	17.523	17.929	18.064	17.918	17.492	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	556.750	557.200	556.250	555.200	553.000	550.900	551.200	550.900	551.500	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	57.479	57.043	56.407	54.351	47.182	38.771	37.081	39.059	42.324	BETA 2
STATOR-T.E.	BETA 2A	2.340	2.400	2.270	1.690	1.900	3.311	4.891	5.102	4.982	BETA 2A
	V 2	489.56	483.76	477.98	494.42	484.58	514.94	515.74	496.13	445.22	V 2
	V 2A	341.67	328.38	325.26	356.94	383.65	433.00	423.88	405.81	392.18	V 2A
	VZ 2	263.19	263.17	264.45	288.13	329.25	401.17	410.99	384.81	328.80	VZ 2
	VZ 2A	341.38	328.08	324.99	356.73	383.31	432.02	422.00	403.84	390.26	VZ 2A
	V-THETA 2	412.79	405.91	398.15	401.73	355.34	322.21	310.62	312.26	299.44	V-THETA 2
	V-THETA 2A	13.95	13.75	12.88	10.53	12.72	24.99	36.11	36.05	34.02	V-THETA 2A
	M 2	0.4302	0.4256	0.4207	0.4361	0.4280	0.4568	0.4574	0.4394	0.3927	M 2
	M 2A	0.2975	0.2861	0.2836	0.3120	0.3366	0.3818	0.3734	0.3572	0.3447	M 2A
	TURN(PR)	55.139	54.642	54.136	52.655	45.264	35.427	32.146	33.909	37.289	TURN(PR)
	UUBAR	0.1347	0.1482	0.1388	0.1691	0.0752	0.0826	0.1679	0.1775	0.0295	UUBAR
	LOSS PARA	0.0453	0.0504	0.0477	0.0601	0.0278	0.0318	0.0663	0.0707	0.0118	LOSS PARA
	DFAC	0.5766	0.5974	0.5973	0.5598	0.4710	0.3826	0.3904	0.4063	0.3613	DFAC
	EFFP	0.7536	0.7414	0.7566	0.6688	0.8120	0.7396	0.5192	0.4986	0.8766	EFFP
	INCID	7.312	13.655	16.117	16.321	10.476	2.903	-1.625	-4.113	-16.880	INCID
	DEVM	11.172	13.712	13.580	12.665	12.912	14.975	17.328	17.777	9.830	DEVM
	P 2	17.440	17.367	17.310	17.565	17.523	17.929	18.064	17.918	17.492	P 2
	P 2A	17.160	17.066	17.035	17.201	17.367	17.731	17.658	17.523	17.440	P 2A
	T 2	556.750	557.200	556.250	555.200	553.000	550.900	551.200	550.900	551.500	T 2
	T 2A	556.750	557.200	556.250	555.200	553.000	550.900	551.200	550.900	551.500	T 2A
	UUBAR FS	0.1406	0.1793	0.2012	0.1788	0.1397	0.0641	0.1224	0.1598	0.1708	UUBAR FS
	P2 FS	17.455	17.444	17.465	17.590	17.678	17.881	17.938	17.870	17.792	P2 FS
	LOSS PARA FS	0.0473	0.0610	0.0691	0.0635	0.0516	0.0246	0.0483	0.0636	0.0683	LOSS PARA FS

Table A-5. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 71.15 Equivalent Rotor Speed = 2995.46 Equivalent Weight Flow = 82.96
Hub Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	312.82	312.82	312.82	312.82	312.82	312.82	312.82	312.82	312.82	V 0
	V 1	259.69	262.99	263.37	260.03	337.44	397.52	392.41	391.01	334.40	V 1
	VZ 0	312.82	312.82	312.82	312.81	312.80	312.77	312.74	312.73	312.74	VZ 0
	VZ 1	259.69	262.99	263.37	260.03	337.41	397.45	392.31	390.90	334.32	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2824	0.2824	0.2824	0.2824	0.2824	0.2824	0.2824	0.2824	0.2824	M 0
	M 1	0.2339	0.2369	0.2372	0.2342	0.3050	0.3607	0.3559	0.3546	0.3022	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	1.5901	1.5207	1.5017	1.5270	0.9713	0.3625	0.3966	0.4092	0.8450	UUBAR
	DFAC	0.170	0.159	0.158	0.169	-0.079	-0.271	-0.254	-0.250	-0.069	DFAC
	EFFP	-0.2396	-0.2361	-0.2379	-0.2507	0.1454	0.6362	0.5983	0.5858	0.1462	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.427	15.427	15.427	15.427	15.427	15.427	15.427	15.427	15.427	P 0
	P 1	14.105	14.163	14.178	14.157	14.619	15.125	15.097	15.087	14.724	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	43.993	42.059	41.188	37.580	29.464	25.337	25.219	26.902	30.434	BETA 2
	BETA(PR) 1	58.988	57.737	57.501	58.762	53.360	50.091	51.271	51.570	56.049	BETA(PR) 1
	BETA(PR) 2	24.116	26.594	28.079	30.499	31.692	33.320	37.014	39.946	48.801	BETA(PR) 2
	V 1	260.24	276.57	282.60	279.50	360.50	426.03	423.64	423.60	362.23	V 1
	V 2	427.30	421.90	419.33	426.88	466.24	489.90	466.01	434.88	353.01	V 2
	VZ 1	260.19	276.51	282.57	279.48	360.05	424.31	420.85	420.58	359.87	VZ 1
	VZ 2	307.40	313.23	315.56	338.30	405.75	442.06	420.47	386.71	303.56	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	296.78	282.62	276.13	260.33	229.23	209.31	198.03	196.20	178.34	V-THETA 2
	V(PR) 1	505.0	518.0	525.9	538.9	603.6	662.5	674.4	678.5	645.7	V(PR) 1
	V(PR) 2	336.8	350.3	357.7	392.6	477.1	529.7	527.7	505.5	461.6	V(PR) 2
	VTHETA PR1	-432.8	-438.0	-443.6	-460.8	-484.1	-507.3	-524.8	-530.1	-534.5	VTHETA PR1
	VTHETA PR2	-137.6	-156.8	-168.3	-199.3	-250.5	-290.6	-317.0	-323.9	-346.8	VTHETA PR2
	U 1	432.82	438.03	443.56	460.79	484.10	507.31	524.76	530.07	534.52	U 1
	U 2	434.39	439.43	444.47	459.59	479.75	499.91	515.03	520.07	525.11	U 2
	M 1	0.2344	0.2493	0.2548	0.2519	0.3263	0.3873	0.3850	0.3850	0.3279	M 1
	M 2	0.3797	0.3754	0.3736	0.3809	0.4175	0.4398	0.4177	0.3891	0.3141	M 2
	M(PR) 1	0.4548	0.4669	0.4741	0.4858	0.5464	0.6022	0.6130	0.6167	0.5845	M(PR) 1
	M(PR) 2	0.2993	0.3117	0.3186	0.3503	0.4272	0.4756	0.4730	0.4523	0.4107	M(PR) 2
	TURN(PR)	34.869	31.139	29.420	28.263	21.649	16.709	14.162	11.526	7.175	TURN(PR)
	UUBAR	0.0835	0.0870	0.0772	0.0070	-0.0130	0.0376	0.0596	0.1189	0.1358	UUBAR
	LOSS PARA	0.0221	0.0228	0.0202	0.0019	-0.0036	0.0106	0.0165	0.0320	0.0317	LOSS PARA
	DFAC	0.5036	0.4840	0.4760	0.4199	0.3314	0.3058	0.3186	0.3555	0.3621	DFAC
	EFFP	0.8459	0.8686	0.9239	1.0311	1.0119	0.9194	0.8665	0.7671	0.6584	EFFP
	EFF	0.8431	0.8663	0.9225	1.0317	1.0121	0.9182	0.8646	0.7643	0.6548	EFF
	INCID	6.557	6.822	6.923	6.720	-0.643	-6.910	-7.423	-10.758	-12.125	INCID
	DEVM	8.967	12.434	13.445	11.858	8.481	5.760	5.391	6.808	12.825	DEVM
	P 1	14.105	14.163	14.178	14.157	14.619	15.125	15.097	15.087	14.724	P 1
	P 2	16.074	16.042	16.052	16.136	16.546	16.840	16.672	16.430	15.874	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	542.100	540.400	539.000	537.850	537.150	536.300	535.950	535.450	535.900	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	44.280	41.855	40.568	37.628	29.135	25.265	25.661	27.626	31.574	BETA 2
STATOR-T.E.	BETA 2A	3.400	3.500	3.000	1.250	0.200	1.400	2.001	1.000	-2.001	BETA 2A
	V 2	425.16	423.71	424.81	426.88	471.79	491.93	459.05	424.83	342.03	V 2
	V 2A	349.54	345.30	338.61	366.94	433.20	478.30	432.28	403.98	385.77	V 2A
	VZ 2	304.39	315.59	322.69	338.04	411.89	444.42	413.19	375.85	290.96	VZ 2
	VZ 2A	348.93	344.65	338.13	366.80	433.05	477.88	431.67	403.56	385.13	VZ 2A
	V-THETA 2	296.83	282.72	276.27	260.58	229.58	209.74	198.51	196.70	178.81	V-THETA 2
	V-THETA 2A	20.73	21.08	17.72	8.00	1.51	11.68	15.08	7.05	-13.45	V-THETA 2A
	M 2	0.3778	0.3771	0.3786	0.3809	0.4226	0.4417	0.4113	0.3799	0.3042	M 2
	M 2A	0.3092	0.3058	0.3002	0.3262	0.3870	0.4290	0.3866	0.3607	0.3439	M 2A
	TURN(PR)	40.880	38.354	37.567	36.371	28.918	23.838	23.623	26.582	33.519	TURN(PR)
	UUBAR	0.0731	0.0735	0.1090	0.0560	0.0181	-0.0075	0.1232	0.1247	-0.2288	UUBAR
	LOSS PARA	0.0246	0.0250	0.0375	0.0199	0.0067	-0.0029	0.0488	0.0499	-0.0922	LOSS PARA
	DFAC	0.3967	0.3955	0.4127	0.3511	0.2614	0.1835	0.2176	0.2287	0.1000	DFAC
	EFFP	0.7865	0.7928	0.7164	0.7976	0.8929	1.1256	-0.0189	-0.2308	0.2008	EFFP
	INCID	-5.887	-1.533	0.278	-0.403	-7.569	-10.596	-13.036	-15.537	-27.624	INCID
	DEVM	12.232	14.812	14.310	12.225	11.212	13.066	14.440	13.679	2.855	DEVM
	P 2	16.074	16.042	16.052	16.136	16.546	16.840	16.672	16.430	15.874	P 2
	P 2A	15.963	15.932	15.888	16.050	16.511	16.856	16.446	16.236	16.100	P 2A
	T 2	542.100	540.400	539.000	537.850	537.150	536.300	535.950	535.450	535.900	T 2
	T 2A	542.100	540.400	539.000	537.850	537.150	536.300	535.950	535.450	535.900	T 2A
	UUBAR FS	0.0614	0.0873	0.0845	0.0411	0.0246	0.0248	0.1827	0.2431	0.2650	UUBAR FS
	P2 FS	16.054	16.064	16.012	16.112	16.558	16.910	16.805	16.673	16.537	P2 FS
	LOSS PARA FS	0.0206	0.0297	0.0290	0.0146	0.0091	0.0096	0.0723	0.0972	0.1068	LOSS PARA FS

Table A-5. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 71.21 Equivalent Rotor Speed = 2997.75 Equivalent Weight Flow = 71.46
Hub Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.60	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.065	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	270.69	270.69	270.69	270.69	270.69	270.69	270.69	270.69	270.69	V 0
	V 1	218.30	226.73	229.10	223.92	284.26	341.12	331.42	322.01	302.01	V 1
	VZ 0	270.69	270.69	270.69	270.69	270.67	270.65	270.63	270.62	270.62	VZ 0
	VZ 1	218.30	226.73	229.10	223.91	284.24	341.06	331.34	321.92	301.93	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	0.2439	M 0
	M 1	0.1963	0.2039	0.2061	0.2014	0.2563	0.3084	0.2995	0.2909	0.2725	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	1.5140	1.4082	1.3747	1.4166	0.9634	0.3558	0.4179	0.4935	0.6751	UUBAR
	DFAC	0.194	0.162	0.154	0.173	-0.050	-0.260	-0.224	-0.190	-0.116	DFAC
	EFFP	-0.2976	-0.2674	-0.2588	-0.2851	0.0970	0.6283	0.5494	0.4616	0.2680	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.215	15.215	15.215	15.215	15.215	15.215	15.215	15.215	15.215	P 0
	P 1	14.281	14.346	14.367	14.341	14.621	14.995	14.957	14.911	14.797	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.751	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	50.796	50.682	50.256	45.877	38.080	31.915	32.233	34.076	37.655	BETA 2
	BETA(PR) 1	63.209	61.482	61.052	62.468	58.004	54.434	56.002	56.964	58.757	BETA(PR) 1
	BETA(PR) 2	24.275	28.831	30.564	32.708	34.623	35.578	37.865	40.396	44.799	BETA(PR) 2
	V 1	218.75	238.24	245.55	240.40	303.06	364.49	356.54	347.44	326.65	V 1
	V 2	410.15	391.82	387.99	394.83	413.96	441.07	433.76	412.41	382.25	V 2
	VZ 1	218.71	238.19	245.52	240.39	302.69	363.01	354.20	344.96	324.52	VZ 1
	VZ 2	259.24	248.26	248.06	276.88	325.73	373.87	366.06	340.76	286.15	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	317.81	303.12	298.32	283.42	255.22	232.85	230.81	230.50	220.66	V-THETA 2
	V(PR) 1	485.3	498.9	507.3	520.0	571.5	625.0	634.8	654.1	626.8	V(PR) 1
	V(PR) 2	284.4	283.4	288.1	326.7	396.0	460.3	464.6	448.4	416.7	V(PR) 2
	VTHETA PR1	-433.2	-438.4	-443.9	-461.1	-484.5	-507.7	-525.2	-530.5	-534.9	VTHETA PR1
	VTHETA PR2	-116.9	-136.7	-146.5	-176.5	-224.9	-267.4	-284.6	-296.0	-304.7	VTHETA PR2
	U 1	433.15	438.36	443.90	461.15	484.47	507.69	525.16	530.48	534.93	U 1
	U 2	434.73	439.77	444.81	459.95	480.12	500.29	515.42	520.47	525.51	U 2
	M 1	0.1967	0.2144	0.2210	0.2163	0.2735	0.3300	0.3227	0.3143	0.2951	M 1
	M 2	0.3638	0.3476	0.3445	0.3508	0.3687	0.3939	0.3871	0.3675	0.3217	M 2
	M(PR) 1	0.4363	0.4489	0.4566	0.4680	0.5157	0.5659	0.5744	0.5736	0.5663	M(PR) 1
	M(PR) 2	0.2563	0.2514	0.2558	0.2903	0.3527	0.4110	0.4146	0.3995	0.3718	M(PR) 2
	TURN(PR)	38.932	32.648	30.487	29.759	23.365	18.799	18.652	16.465	11.893	TURN(PR)
	UUBAR	0.0986	0.1385	0.1407	0.0724	0.0543	0.0564	0.0630	0.0985	0.1415	UUBAR
	LOSS PARA	0.0260	0.0356	0.0360	0.0187	0.0144	0.0154	0.0173	0.0263	0.0343	LOSS PARA
	DFAC	0.6040	0.6105	0.6069	0.5393	0.4502	0.3879	0.3931	0.4192	0.4556	DFAC
	EFFP	0.8778	0.8481	0.8819	0.9421	0.9455	0.9177	0.9187	0.8661	0.7566	EFFP
	EFF	0.8753	0.8453	0.8797	0.9410	0.9445	0.9163	0.9173	0.8640	0.7543	EFF
	INCID	10.779	10.567	10.475	10.426	4.003	-1.563	-2.692	-5.352	-9.410	INCID
	DEVM	9.125	14.671	15.930	14.067	11.411	8.017	6.242	7.258	10.862	DEVM
	P 1	14.281	14.346	14.367	14.341	14.621	14.995	14.957	14.911	14.797	P 1
	P 2	16.420	16.314	16.314	16.386	16.583	16.862	16.836	16.681	16.350	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	542.810	541.650	540.500	540.100	538.820	538.000	538.150	538.260	538.620	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.846	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	51.156	50.413	49.428	45.939	37.648	31.829	32.815	35.059	39.173	BETA 2
STATOR-T.E.	BETA 2A	5.010	4.800	4.350	2.890	1.440	1.750	2.941	3.081	2.681	BETA 2A
	V 2	408.12	393.46	392.95	394.83	418.66	442.81	427.47	403.61	350.92	V 2
	V 2A	303.86	294.35	289.43	319.57	349.57	398.47	373.82	354.60	304.07	V 2A
	VZ 2	255.97	250.73	255.57	274.54	331.35	375.88	358.81	329.55	271.71	VZ 2
	VZ 2A	302.70	293.31	288.58	319.12	349.35	398.05	373.63	353.17	341.96	VZ 2A
	V-THETA 2	317.87	303.22	298.47	283.69	255.61	233.52	231.67	231.09	221.59	V-THETA 2
	V-THETA 2A	26.54	24.63	21.95	16.11	6.78	12.16	19.16	19.01	15.41	V-THETA 2A
	M 2	0.3620	0.3490	0.3490	0.3508	0.3730	0.3955	0.3813	0.3589	0.3114	M 2
	M 2A	0.2680	0.2597	0.2556	0.2827	0.3102	0.3548	0.3323	0.3143	0.3040	M 2A
	TURN(PR)	46.146	45.612	45.076	43.042	36.190	30.048	29.831	31.910	36.536	TURN(PR)
	UUBAR	0.1042	0.0683	0.0865	0.0349	0.0443	0.0180	0.1224	0.1239	-0.0779	UUBAR
	LOSS PARA	0.0350	0.0232	0.0297	0.0124	0.0164	0.0069	0.0484	0.0495	-0.0314	LOSS PARA
	DFAC	0.4960	0.4931	0.5060	0.4320	0.3841	0.2934	0.3234	0.3335	0.2618	DFAC
	EFFP	0.7771	0.8517	0.8193	0.9037	0.8616	0.9113	0.5075	0.4635	2.6030	EFFP
	INCID	0.989	7.025	9.137	7.908	0.942	-4.036	-5.889	-6.130	-20.031	INCID
	DEVM	13.842	16.112	15.660	13.864	12.452	13.415	15.380	15.758	7.432	DEVM
	P 2	16.420	16.314	16.314	16.386	16.583	16.862	16.836	16.681	16.350	P 2
	P 2A	16.272	16.223	16.200	16.339	16.516	16.831	16.640	16.505	16.433	P 2A
	T 2	542.810	541.650	540.500	540.100	538.820	538.000	538.150	538.260	538.620	T 2
	T 2A	542.810	541.650	540.500	540.100	538.820	538.000	538.150	538.260	538.620	T 2A
	UUBAR FS	0.1010	0.1322	0.1127	0.0732	0.0428	0.0428	0.1266	0.1795	0.1828	UUBAR FS
	P2 FS	16.418	16.409	16.352	16.440	16.580	16.906	16.844	16.777	16.689	P2 FS
	LOSS PARA FS	0.0339	0.0449	0.0387	0.0260	0.0157	0.0164	0.0500	0.0717	0.0736	LOSS PARA FS

Table A-5. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 71.59 Equivalent Rotor Speed = 3013.87 Equivalent Weight Flow = 59.11
Hub Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	224.58	224.58	224.58	224.58	224.58	224.58	224.58	224.58	224.58	V 0
	V 1	185.70	184.04	186.87	190.94	252.27	294.54	278.14	263.16	242.67	V 1
	VZ 0	224.58	224.58	224.58	224.58	224.58	224.54	224.52	224.52	224.52	VZ 0
	VZ 1	185.70	184.04	186.87	190.94	252.25	294.49	278.07	263.19	242.60	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2020	0.2020	0.2020	0.2020	0.2020	0.2020	0.2020	0.2020	0.2020	M 0
	M 1	0.1668	0.1653	0.1679	0.1715	0.2271	0.2657	0.2507	0.2376	0.2184	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	1.4176	1.3302	1.2841	1.3933	0.8593	0.3423	0.4224	0.5510	0.7355	UUBAR
	DFAC	0.173	0.181	0.168	0.150	-0.123	-0.511	-0.238	-0.172	-0.061	DFAC
	EFFP	-0.2859	-0.3270	-0.3145	-0.2474	0.2348	0.6814	0.5619	0.4067	0.1869	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.033	15.033	15.033	15.033	15.033	15.033	15.033	15.033	15.033	P 0
	P 1	14.436	14.473	14.492	14.446	14.671	14.889	14.855	14.801	14.722	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	55.794	56.198	56.568	54.019	45.122	34.990	37.268	38.938	41.498	BETA 2
	BETA(PR) 1	66.867	66.330	65.855	66.167	61.148	58.492	60.676	62.197	64.189	BETA(PR) 1
	BETA(PR) 2	29.037	32.095	32.439	31.490	37.665	38.672	40.102	42.167	47.351	BETA(PR) 2
	V 1	186.08	193.24	200.68	204.82	268.68	314.16	298.55	283.25	261.81	V 1
	V 2	383.70	374.74	377.49	395.54	382.80	400.98	407.04	395.42	358.74	V 2
	VZ 1	186.04	193.19	200.05	204.81	268.35	312.89	296.58	281.23	260.11	VZ 1
	VZ 2	215.70	208.47	207.97	232.38	250.46	306.86	323.26	305.35	268.15	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	317.32	311.39	315.02	320.07	269.36	257.39	245.97	246.72	257.22	V-THETA 2
	V(PR) 1	473.6	481.2	489.1	506.9	556.3	599.4	606.5	603.9	598.1	V(PR) 1
	V(PR) 2	246.7	240.1	246.4	272.5	316.5	393.5	423.4	412.6	396.4	V(PR) 2
	VTHETA PR1	-435.5	-440.7	-446.3	-463.6	-487.1	-510.4	-526.0	-533.3	-537.8	VTHETA PR1
	VTHETA PR2	-119.7	-130.7	-132.2	-142.3	-193.3	-245.6	-272.2	-276.6	-291.1	VTHETA PR2
	U 1	435.48	440.72	446.28	463.63	487.08	510.42	527.99	533.35	537.60	U 1
	U 2	437.06	442.14	447.21	462.42	482.70	502.98	518.20	523.27	528.34	U 2
	M 1	0.1671	0.1736	0.1798	0.1841	0.2421	0.2836	0.2693	0.2553	0.2358	M 1
	M 2	0.3394	0.3316	0.3344	0.3508	0.3396	0.3567	0.3635	0.3498	0.3161	M 2
	M(PR) 1	0.4254	0.4323	0.4395	0.4555	0.5012	0.5411	0.5472	0.5444	0.5387	M(PR) 1
	M(PR) 2	0.2183	0.2176	0.2183	0.2417	0.2810	0.3500	0.3781	0.3670	0.3516	M(PR) 2
	TURN(PR)	37.826	34.232	33.414	34.676	23.469	19.771	20.504	19.964	18.795	TURN(PR)
	UUBAR	0.1977	0.2235	0.2390	0.1949	0.2214	0.1562	0.1054	0.1308	0.1582	UUBAR
	LOSS PARA	0.0501	0.0555	0.0599	0.0511	0.0564	0.0410	0.0260	0.0340	0.0390	LOSS PARA
	DFAC	0.6735	0.6787	0.6876	0.6564	0.5978	0.4868	0.4414	0.4583	0.4764	DFAC
	EFFP	0.7729	0.7752	0.8019	0.8826	0.8241	0.8364	1.0773	0.8639	0.7811	EFFP
	LFF	0.7667	0.7692	0.7964	0.8803	0.8211	0.8337	1.0766	0.8616	0.7777	LFF
	INCID	14.437	15.415	15.277	14.124	7.149	2.501	1.995	-0.101	-3.956	INCID
	DEVM	13.887	17.935	17.805	12.849	14.453	11.409	8.477	9.028	11.374	DEVM
	P 1	14.436	14.473	14.492	14.446	14.671	14.889	14.855	14.801	14.723	P 1
	P 2	16.421	16.382	16.416	16.556	16.508	16.683	16.758	16.651	16.421	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	544.000	543.000	542.250	542.100	540.350	539.250	535.550	539.300	539.820	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	56.219	55.674	55.539	54.100	48.501	39.885	37.964	40.076	43.244	BETA 2
STATOR-T.E.	BETA 2A	3.200	3.080	3.480	2.700	1.800	3.251	4.751	4.952	5.052	BETA 2A
	V 2	381.64	376.29	382.27	395.54	387.05	402.51	401.25	384.01	347.56	V 2
	V 2A	283.76	275.75	272.45	290.46	300.72	337.24	331.70	315.01	306.55	V 2A
	VZ 2	212.31	211.10	216.30	231.91	256.39	308.63	316.00	293.98	252.90	VZ 2
	VZ 2A	283.31	275.35	272.02	290.10	300.47	336.50	330.19	313.55	307.03	VZ 2A
	V-THETA 2	317.37	311.49	315.18	320.38	289.81	257.92	246.57	247.34	237.65	V-THETA 2
	V-THETA 2A	15.84	14.62	15.11	13.68	9.44	19.11	27.45	27.17	27.14	V-THETA 2A
	M 2	0.3377	0.3330	0.3387	0.3506	0.3437	0.3581	0.3582	0.3418	0.3080	M 2
	M 2A	0.2497	0.2428	0.2400	0.2562	0.2658	0.2989	0.2938	0.2789	0.2729	M 2A
	TURN(PR)	53.019	52.793	52.357	51.394	46.683	36.601	33.168	35.076	38.136	TURN(PR)
	UUBAR	0.0656	0.0777	0.1184	0.1492	0.0829	0.0586	0.1403	0.1464	-0.0098	UUBAR
	LOSS PARA	0.0221	0.0264	0.0407	0.0530	0.0307	0.0225	0.0554	0.0584	-0.0039	LOSS PARA
	DFAC	0.5229	0.5358	0.5578	0.5418	0.4922	0.3918	0.3911	0.4115	0.3585	DFAC
	EFFP	0.8596	0.8389	0.7690	0.6897	0.7998	0.8131	0.3065	0.5737	1.0444	EFFP
	INCID	6.052	12.486	15.248	16.070	11.795	4.017	-0.743	-3.096	-15.960	INCID
	DEVM	12.032	14.392	14.490	13.675	12.812	14.915	17.188	17.627	9.900	DEVM
	P 2	16.421	16.382	16.416	16.556	16.508	16.683	16.758	16.651	16.421	P 2
	P 2A	16.339	16.286	16.267	16.354	16.400	16.600	16.559	16.462	16.431	P 2A
	T 2	544.000	543.000	542.250	542.100	540.350	539.250	535.550	539.300	539.820	T 2
	T 2A	544.000	543.000	542.250	542.100	540.350	539.250	539.550	539.300	539.820	T 2A
	UUBAR FS	0.1515	0.1791	0.2023	0.1901	0.1645	0.0990	0.1391	0.1807	0.1747	UUBAR FS
	P2 FS	16.547	16.531	16.547	16.623	16.633	16.746	16.756	16.705	16.654	P2 FS
	LOSS PARA FS	0.0510	0.0608	0.0695	0.0675	0.0609	0.0380	0.0549	0.0721	0.0695	LOSS PARA FS

Table A-6. Blade Element Performance
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 100.34 Equivalent Rotor Speed = 4224.11 Equivalent Weight Flow = 115.11
Tip Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	427.68	427.68	427.68	427.68	427.68	427.68	427.68	427.68	427.68	V 0
	V 1	530.06	549.70	554.44	564.32	547.77	363.61	268.73	259.93	226.09	V 1
	VZ 0	427.68	427.68	427.68	427.67	427.65	427.61	427.57	427.56	427.57	VZ 0
	VZ 1	530.05	549.70	554.44	564.31	547.73	363.55	268.66	259.86	226.03	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3888	0.3888	0.3888	0.3888	0.3888	0.3888	0.3888	0.3888	0.3888	M 0
	M 1	0.4858	0.5048	0.5093	0.5184	0.5029	0.3292	0.2421	0.2341	0.2033	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.9307	0.6592	0.5458	0.4530	0.6489	1.7968	2.1130	2.1268	2.1955	UUBAR
	DFAC	-0.239	-0.285	-0.296	-0.319	-0.281	0.150	0.372	0.392	0.471	DFAC
	EFFP	0.3717	0.5080	0.5671	0.6335	0.5075	-0.1752	-0.3706	-0.3881	-0.4446	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	16.227	16.227	16.227	16.227	16.227	16.227	16.227	16.227	16.227	P 0
	P 1	14.732	15.168	15.351	15.500	15.185	13.341	12.833	12.811	12.700	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	37.495	33.162	31.482	30.787	31.102	35.693	39.268	42.816	45.831	BETA 2
	BETA(PR) 1	46.959	46.481	45.801	46.270	46.974	61.565	68.639	69.617	72.186	BETA(PR) 1
	BETA(PR) 2	29.056	27.365	26.392	26.551	26.271	35.375	39.498	43.249	50.534	BETA(PR) 2
	V 1	531.44	586.70	608.32	621.64	594.72	388.94	286.35	279.73	243.80	V 1
	V 2	563.67	632.17	662.99	688.67	692.73	608.47	572.49	536.49	474.41	V 2
	VZ 1	531.34	586.57	608.24	621.61	593.99	387.37	286.45	277.74	242.21	VZ 1
	VZ 2	463.05	529.17	565.39	591.61	592.89	493.53	442.36	392.77	329.99	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	355.28	345.79	346.22	352.49	357.68	354.55	361.65	363.92	339.70	V-THETA 2
	V(PR) 1	809.3	851.9	872.5	899.3	905.4	814.3	794.2	798.1	792.2	V(PR) 1
	V(PR) 2	529.8	595.9	631.2	661.4	673.5	606.1	574.4	540.3	519.9	V(PR) 2
	VTHETA PR1	-610.4	-617.7	-625.5	-649.8	-682.7	-715.4	-740.0	-747.5	-753.8	VTHETA PR1
	VTHETA PR2	-257.3	-273.9	-280.6	-295.6	-318.9	-350.4	-364.6	-369.5	-400.8	VTHETA PR2
	U 1	610.35	617.64	625.49	649.80	682.67	715.39	740.00	747.49	753.76	U 1
	U 2	612.57	619.68	626.78	648.11	676.53	704.96	726.28	733.39	740.50	U 2
	M 1	0.4872	0.5406	0.5618	0.5749	0.5485	0.3527	0.2600	0.2521	0.2194	M 1
	M 2	0.5184	0.5647	0.5949	0.6186	0.6214	0.5405	0.5055	0.4722	0.4149	M 2
	M(PR) 1	0.7419	0.7850	0.8058	0.8317	0.8350	0.7384	0.7161	0.7194	0.7130	M(PR) 1
	M(PR) 2	0.4705	0.5325	0.5663	0.5941	0.6041	0.5384	0.5072	0.4755	0.4547	M(PR) 2
	TURN(PR)	14.897	19.110	19.406	19.719	20.681	26.146	29.304	26.337	21.643	TURN(PR)
	UUBAR	0.1868	0.1493	0.1201	0.1249	0.0995	-0.0567	-0.0633	0.0166	0.0438	UUBAR
	LOSS PARA	0.0473	0.0389	0.0319	0.0344	0.0282	-0.0156	-0.0169	0.0042	0.0099	LOSS PARA
	DFAC	0.4726	0.4198	0.3945	0.3850	0.3828	0.4011	0.4334	0.4814	0.4943	DFAC
	EFFP	0.7319	0.7711	0.8496	0.8446	0.8979	1.1211	1.0991	1.0257	0.9050	EFFP
	EFF	0.7251	0.7652	0.8452	0.8401	0.8946	1.1261	1.1034	1.0267	0.9014	EFF
	INCID	-5.472	-4.436	-4.777	-5.772	-5.030	5.581	10.192	7.354	4.077	INCID
	DEVM	13.909	13.206	11.756	7.910	5.061	7.814	7.874	10.110	14.559	DEVM
	P 1	14.752	15.168	15.351	15.500	15.185	13.341	12.833	12.811	12.700	P 1
	P 2	17.592	18.189	18.619	18.951	19.006	17.780	17.349	16.996	16.455	P 2
	T 1	516.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	555.900	554.800	553.500	555.200	557.100	558.100	561.000	561.200	562.900	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	37.763	32.972	30.694	30.825	30.607	35.565	40.130	44.290	48.044	BETA 2
STATOR-T.E.	BETA 2A	1.100	1.700	1.700	0.850	0.900	3.851	4.301	1.450	-1.751	BETA 2A
	V 2	580.25	635.59	674.68	688.67	703.93	611.35	563.05	522.99	458.43	V 2
	V 2A	506.71	538.52	563.04	609.23	626.57	574.72	485.31	461.11	452.20	V 2A
	VZ 2	458.71	533.20	576.93	591.28	605.57	496.89	430.06	374.00	306.21	VZ 2
	VZ 2A	506.61	538.27	562.77	609.08	626.28	573.09	483.55	460.56	451.51	VZ 2A
	V-THETA 2	355.34	345.90	346.39	352.62	358.23	355.27	362.53	364.84	340.60	V-THETA 2
	V-THETA 2A	9.77	15.97	16.70	9.04	9.84	38.58	36.37	11.66	-13.80	V-THETA 2A
	M 2	0.5152	0.5679	0.6061	0.6186	0.6322	0.5433	0.4968	0.4598	0.4004	M 2
	M 2A	0.4489	0.4769	0.5003	0.5428	0.5581	0.5090	0.4255	0.4035	0.3948	M 2A
	TURN(PR)	36.663	31.272	29.192	29.969	29.690	31.682	35.783	42.787	49.734	TURN(PR)
	UUBAR	0.0171	0.1050	0.1363	0.0858	0.0603	-0.0803	0.0902	0.0433	-0.2085	UUBAR
	LOSS PARA	0.0057	0.0357	0.0469	0.0305	0.0223	-0.0308	0.0357	0.0173	-0.0841	LOSS PARA
	DFAC	0.3240	0.3296	0.3339	0.2931	0.2938	0.2605	0.3691	0.3900	0.3271	DFAC
	EFFP	0.9338	0.6096	0.6061	0.6586	0.7513	1.6055	0.6804	0.8212	8.1230	EFFP
	INCID	-12.404	-10.415	-9.397	-7.205	-6.097	-0.303	1.423	1.117	-11.160	INCID
	DEVM	9.932	13.012	13.010	11.625	11.912	15.515	16.739	14.129	3.105	DEVM
	P 2	17.592	18.189	18.619	18.951	19.006	17.780	17.349	16.996	16.455	P 2
	P 2A	17.543	17.613	18.062	18.581	18.735	18.040	17.107	16.897	16.814	P 2A
	T 2	555.900	554.800	553.500	555.200	557.100	558.100	561.000	561.200	562.900	T 2
	T 2A	555.900	554.800	553.500	555.200	557.100	558.100	561.000	561.200	562.900	T 2A
	UUBAR FS	0.1462	0.1091	0.0920	0.0427	0.0279	0.0592	0.1699	0.1550	0.1129	UUBAR FS
	P2 FS	18.033	18.204	18.420	18.756	18.856	18.260	17.608	17.299	17.078	P2 FS
	LOSS PARA FS	0.0487	0.0371	0.0316	0.0151	0.0103	0.0227	0.0672	0.0619	0.0455	LOSS PARA FS

Table A-6. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 98.51 Equivalent Rotor Speed = 4147.38 Equivalent Weight Flow = 106.05
Tip Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	401.24	401.24	401.24	401.24	401.24	401.24	401.24	401.24	401.24	V 0
	V 1	516.10	545.55	540.77	527.43	495.64	370.45	312.63	295.29	261.77	V 1
	VZ 0	401.24	401.24	401.24	401.23	401.21	401.17	401.14	401.13	401.13	VZ 0
	VZ 1	516.09	545.55	540.77	527.42	495.60	370.39	312.55	295.21	261.70	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3641	0.3641	0.3641	0.3641	0.3641	0.3641	0.3641	0.3641	0.3641	M 0
	M 1	0.4725	0.5007	0.4961	0.4833	0.4530	0.3355	0.2822	0.2664	0.2358	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.7068	0.3880	0.3452	0.3841	0.5396	1.4104	1.6281	1.6748	1.7914	UUBAR
	DFAC	-0.286	-0.360	-0.348	-0.315	-0.235	0.077	0.221	0.264	0.348	DFAC
	EFFP	0.4896	0.6975	0.7140	0.6661	0.5039	-0.1158	-0.3088	-0.3638	-0.4497	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.783	15.783	15.783	15.783	15.783	15.783	15.783	15.783	15.783	P 0
	P 1	14.807	15.247	15.306	15.253	15.038	13.835	13.534	13.470	13.308	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	39.998	36.466	34.494	32.786	34.506	41.877	48.260	51.766	55.952	BETA 2
	BETA(PR) 1	49.199	46.183	46.045	47.828	51.432	60.661	65.324	66.705	69.224	BETA(PR) 1
	BETA(PR) 2	26.641	26.395	26.823	26.555	29.984	36.642	42.974	46.097	51.120	BETA(PR) 2
	V 1	517.39	582.07	592.19	577.96	535.12	396.40	336.03	318.26	282.62	V 1
	V 2	585.62	612.45	626.02	661.72	637.75	567.32	522.61	504.76	477.93	V 2
	VZ 1	517.29	581.94	592.12	577.93	534.46	394.80	333.82	315.99	280.78	VZ 1
	VZ 2	448.60	492.52	515.95	556.29	525.34	421.96	347.43	311.95	267.29	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	376.40	363.99	354.51	358.31	361.14	378.30	389.40	395.93	395.55	V-THETA 2
	V(PR) 1	791.7	840.6	853.1	860.9	857.7	806.5	800.5	799.9	792.2	V(PR) 1
	V(PR) 2	501.9	549.9	578.2	621.9	606.8	526.5	475.7	450.6	426.4	V(PR) 2
	VTHETA PR1	-599.3	-606.5	-614.1	-638.0	-670.3	-702.4	-726.6	-733.9	-740.1	VTHETA PR1
	VTHETA PR2	-225.0	-244.4	-260.9	-278.0	-303.1	-313.9	-323.7	-324.1	-331.5	VTHETA PR2
	U 1	599.27	606.47	614.13	638.00	670.27	702.39	726.56	733.92	740.07	U 1
	U 2	601.44	608.42	615.40	636.33	664.24	692.15	713.09	720.07	727.04	U 2
	M 1	0.4737	0.5361	0.5460	0.5321	0.4907	0.3596	0.3037	0.2874	0.2546	M 1
	M 2	0.5193	0.5455	0.5592	0.5928	0.5690	0.5021	0.4592	0.4421	0.4170	M 2
	M(PR) 1	0.7249	0.7743	0.7866	0.7926	0.7865	0.7317	0.7236	0.7224	0.7142	M(PR) 1
	M(PR) 2	0.4451	0.4898	0.5165	0.5571	0.5414	0.4660	0.4180	0.3947	0.3726	M(PR) 2
	TURN(PR)	22.554	19.783	19.220	21.273	21.428	23.973	22.299	20.562	18.079	TURN(PR)
	UUBAR	0.1306	0.1357	0.1007	0.0474	0.0836	0.0612	0.1405	0.1836	0.2028	UUBAR
	LOSS PARA	0.0338	0.0356	0.0267	0.0131	0.0233	0.0165	0.0357	0.0447	0.0451	LOSS PARA
	DFAC	0.5040	0.4731	0.4458	0.4055	0.4275	0.5038	0.5731	0.6086	0.6370	DFAC
	EFFP	0.8112	0.8087	0.8767	0.9757	0.9375	1.0325	0.9203	0.8622	0.8166	EFFP
	EFF	0.8057	0.8033	0.8731	0.9749	0.9355	1.0337	0.9173	0.8572	0.8101	EFF
	INCID	-3.232	-4.734	-4.533	-4.214	-2.572	4.675	6.661	4.427	1.099	INCID
	DEVM	11.492	12.235	12.189	7.914	6.773	9.081	11.348	12.958	15.145	DEVM
	P 1	14.807	15.247	15.306	15.253	15.038	13.835	13.534	13.470	13.308	P 1
	P 2	18.196	18.529	18.743	19.216	18.948	18.013	17.487	17.304	17.057	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	557.750	555.680	554.100	555.000	556.550	558.000	561.650	563.600	565.750	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	40.288	36.258	33.877	32.826	33.997	41.728	49.405	53.751	59.236	BETA 2
STATOR-T.E.	BETA 2A	1.550	2.550	2.750	2.391	1.300	4.301	4.251	3.151	1.601	BETA 2A
	V 2	582.18	615.67	636.34	661.72	647.16	569.93	514.45	492.53	461.80	V 2
	V 2A	473.20	491.51	505.37	566.11	569.32	486.27	413.58	396.25	395.46	V 2A
	VZ 2	444.09	496.45	528.29	555.96	536.29	425.05	334.51	291.04	236.08	VZ 2
	VZ 2A	473.03	491.02	504.77	565.54	568.98	484.62	412.11	395.30	394.89	VZ 2A
	V-THETA 2	376.46	364.11	354.69	358.65	361.69	379.07	390.34	396.94	396.60	V-THETA 2
	V-THETA 2A	12.80	21.87	24.25	23.61	12.91	36.45	30.63	21.76	11.03	V-THETA 2A
	M 2	0.5161	0.5486	0.5690	0.5928	0.5780	0.5045	0.4518	0.4310	0.4024	M 2
	M 2A	0.4157	0.4333	0.4466	0.5024	0.5047	0.4275	0.3606	0.3445	0.3431	M 2A
	TURN(PR)	38.738	33.707	31.125	30.430	32.680	37.393	45.107	50.551	57.585	TURN(PR)
	UUBAR	0.0622	0.1050	0.1206	0.0674	0.0028	-0.0019	0.0494	0.0321	-0.0895	UUBAR
	LOSS PARA	0.0209	0.0357	0.0415	0.0239	0.0010	-0.0007	0.0195	0.0128	-0.0361	LOSS PARA
	DFAC	0.3977	0.3911	0.3848	0.3248	0.3205	0.3795	0.4748	0.5020	0.4824	DFAC
	EFFP	0.8344	0.7405	0.7090	0.7803	0.9892	1.0062	0.8710	0.9154	1.3124	EFFP
	INCID	-9.879	-7.130	-6.413	-5.204	-2.707	5.859	10.697	10.580	0.039	INCID
	DEVM	10.382	13.862	14.060	13.365	12.312	15.964	16.689	15.828	6.453	DEVM
	P 2	18.196	18.529	18.743	19.216	18.948	18.013	17.487	17.304	17.057	P 2
	P 2A	18.008	18.169	18.298	18.942	18.937	18.018	17.374	17.238	17.218	P 2A
	T 2	557.750	555.680	554.100	555.000	556.550	558.000	561.650	563.600	565.750	T 2
	T 2A	557.750	555.680	554.100	555.000	556.550	558.000	561.650	563.600	565.750	T 2A
	UUBAR FS	0.0889	0.0871	0.0826	0.0505	0.0398	0.0640	0.0912	0.0943	0.0820	UUBAR FS
	P2 FS	18.284	18.462	18.690	19.144	19.095	18.215	17.592	17.447	17.393	P2 FS
	LOSS PARA FS	0.0298	0.0296	0.0284	0.0179	0.0142	0.0236	0.0360	0.0376	0.0331	LOSS PARA FS

Table A-6. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 98.93 Equivalent Rotor Speed = 4165.08 Equivalent Weight Flow = 99.09
Tip Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.065	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	375.66	375.66	375.66	375.66	375.66	375.66	375.66	375.66	375.66	V 0
	V 1	465.24	498.83	499.90	496.97	473.32	348.81	290.33	277.58	246.77	V 1
	VZ 0	375.66	375.66	375.66	375.65	375.63	375.60	375.57	375.56	375.56	VZ 0
	VZ 1	465.24	498.83	499.90	496.96	473.29	348.76	290.25	277.50	246.70	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3404	0.3404	0.3404	0.3404	0.3404	0.3404	0.3404	0.3404	0.3404	M 0
	M 1	0.4241	0.4560	0.4570	0.4542	0.4318	0.3155	0.2618	0.2502	0.2221	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.7368	0.3834	0.3127	0.3657	0.5513	1.3640	1.6114	1.6379	1.7439	UUBAR
	DFAC	-0.238	-0.328	-0.331	-0.323	-0.260	0.071	0.227	0.261	0.343	DFAC
	EFFP	0.4270	0.6756	0.7211	0.6822	0.5250	-0.1118	-0.3250	-0.3728	-0.4651	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.625	15.625	15.625	15.625	15.625	15.625	15.625	15.625	15.625	P 0
	P 1	14.739	15.164	15.249	15.185	14.962	13.984	13.686	13.654	13.526	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	41.398	38.469	37.205	35.139	38.115	46.651	54.162	58.321	61.253	BETA 2
	BETA(PR) 1	52.232	48.968	48.549	49.738	52.886	62.236	66.998	68.066	70.408	BETA(PR) 1
	BETA(PR) 2	25.523	26.706	27.405	27.376	30.022	38.382	45.374	47.533	51.429	BETA(PR) 2
	V 1	466.38	530.16	544.78	542.67	509.97	372.85	311.81	298.92	266.28	V 1
	V 2	592.51	601.44	607.35	639.70	622.57	547.45	510.68	508.05	493.80	V 2
	VZ 1	466.29	530.04	544.71	542.64	509.34	371.34	309.76	296.79	264.54	VZ 1
	VZ 2	444.44	470.88	483.72	523.11	489.64	375.45	298.67	286.54	237.29	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	391.80	374.13	367.24	368.17	384.14	397.72	413.54	431.92	432.59	V-THETA 2
	V(PR) 1	761.4	807.5	822.9	839.6	844.5	797.9	793.5	795.4	789.5	V(PR) 1
	V(PR) 2	492.5	527.1	544.9	589.1	565.8	479.5	425.8	395.4	381.1	V(PR) 2
	VTHETA PR1	-601.8	-609.1	-616.7	-640.7	-673.1	-705.4	-729.7	-737.0	-743.2	VTHETA PR1
	VTHETA PR2	-212.2	-236.9	-250.8	-270.9	-282.9	-297.4	-302.6	-291.2	-297.6	VTHETA PR2
	U 1	601.83	609.06	616.75	640.72	673.13	705.39	729.66	737.05	743.23	U 1
	U 2	604.01	611.02	618.03	639.05	667.08	695.11	716.13	723.14	730.15	U 2
	M 1	0.4252	0.4859	0.5000	0.4980	0.4666	0.3377	0.2815	0.2697	0.2399	M 1
	M 2	0.5243	0.5340	0.5404	0.5706	0.5538	0.4822	0.4464	0.4431	0.4293	M 2
	M(PR) 1	0.6942	0.7401	0.7553	0.7705	0.7727	0.7227	0.7163	0.7176	0.7112	M(PR) 1
	M(PR) 2	0.4359	0.4680	0.4848	0.5255	0.5032	0.4224	0.3722	0.3449	0.3314	M(PR) 2
	TURN(PR)	26.705	22.258	21.142	22.361	22.845	23.813	21.580	20.494	18.959	TURN(PR)
	UUBAR	0.0696	0.1011	0.0920	0.0408	0.0982	0.1184	0.1944	0.2433	0.2491	UUBAR
	LOSS PARA	0.0182	0.0265	0.0242	0.0111	0.0274	0.0312	0.0474	0.0576	0.0550	LOSS PARA
	DFAC	0.5024	0.4833	0.4705	0.4331	0.4759	0.5654	0.6425	0.6914	0.7096	DFAC
	EFFP	0.8703	0.8455	0.8823	0.9684	0.9503	0.9487	0.8422	0.8125	0.7864	EFFP
	EFF	0.8659	0.8407	0.8786	0.9673	0.9485	0.9467	0.8363	0.8054	0.7783	EFF
	INCID	-0.199	-1.948	-2.029	-2.304	-1.117	6.253	8.342	5.795	2.289	INCID
	DEVM	10.373	12.546	12.771	8.735	6.811	10.820	13.748	14.394	15.454	DEVM
	P 1	14.739	15.164	15.249	15.185	14.962	13.984	13.686	13.654	13.526	P 1
	P 2	18.673	18.827	18.939	19.332	19.098	18.173	17.737	17.716	17.599	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	560.600	558.050	556.410	557.000	558.200	561.300	566.400	568.450	570.750	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	41.705	38.249	36.545	35.183	37.557	46.492	55.579	60.915	65.470	BETA 2
STATOR-T.E.	BETA 2A	2.700	3.200	3.350	3.250	3.451	3.451	3.601	3.751	2.151	BETA 2A
	V 2	589.01	604.55	617.04	639.70	631.43	549.83	502.81	495.72	476.94	V 2
	V 2A	466.19	472.54	477.69	532.63	526.02	450.08	400.00	388.34	390.60	V 2A
	VZ 2	439.74	474.76	495.72	522.75	500.36	378.31	284.06	240.87	197.94	VZ 2
	VZ 2A	465.67	471.79	476.85	531.70	524.89	449.00	398.89	387.17	389.91	VZ 2A
	V-THETA 2	391.87	374.26	367.42	368.53	384.73	398.54	414.54	433.02	433.73	V-THETA 2
	V-THETA 2A	21.96	26.38	27.91	30.19	31.65	27.07	25.10	25.38	14.64	V-THETA 2A
	M 2	0.5211	0.5369	0.5495	0.5706	0.5622	0.4844	0.4392	0.4320	0.4142	M 2
	M 2A	0.4083	0.4150	0.4203	0.4705	0.4638	0.3935	0.3470	0.3360	0.3373	M 2A
	TURN(PR)	39.005	35.048	33.193	31.927	34.089	43.007	51.934	57.122	63.277	TURN(PR)
	UUBAR	0.0691	0.0967	0.1120	0.0638	0.0346	-0.0079	-0.0145	0.0150	-0.0488	UUBAR
	LOSS PARA	0.0232	0.0329	0.0385	0.0227	0.0128	-0.0030	-0.0057	0.0060	-0.0197	LOSS PARA
	DFAC	0.4201	0.4164	0.4155	0.3558	0.3748	0.4429	0.5132	0.5476	0.5376	DFAC
	EFFP	0.8330	0.7762	0.7491	0.8161	0.9000	1.0217	1.0365	0.9641	1.1380	EFFP
	INCID	-8.462	-5.139	-3.746	-2.848	0.851	10.623	16.874	17.750	6.280	INCID
	DEVM	11.532	14.512	14.660	14.225	14.461	15.115	16.039	16.428	7.002	DEVM
	P 2	18.673	18.827	18.939	19.332	19.098	18.173	17.737	17.716	17.599	P 2
	P 2A	18.455	18.503	18.546	19.088	18.971	18.195	17.769	17.684	17.695	P 2A
	T 2	560.600	558.050	556.410	557.000	558.200	561.300	566.400	568.450	570.750	T 2
	T 2A	560.600	558.050	556.410	557.000	558.200	561.300	566.400	568.450	570.750	T 2A
	UUBAR FS	0.0718	0.0787	0.0793	0.0297	0.0611	0.0901	0.0924	0.1159	0.1139	UUBAR FS
	P2 FS	18.682	18.761	18.815	19.197	19.203	18.464	17.996	17.959	17.959	P2 FS
	LOSS PARA FS	0.0241	0.0267	0.0272	0.0105	0.0226	0.0342	0.0363	0.0463	0.0459	LOSS PARA FS

Table A-6. Blade Element Performance (Continued)
Stage D, Rotor D – Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 87.36 Equivalent Rotor Speed = 3677.76 Equivalent Weight Flow = 105.62
Tip Radial Distortion

INLET											
	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.065	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	401.52	401.52	401.52	401.52	401.52	401.52	401.52	401.52	401.52	V 0
	V 1	504.28	518.91	514.67	508.25	485.64	358.79	309.11	308.24	309.61	V 1
	VZ 0	401.52	401.52	401.52	401.51	401.49	401.45	401.42	401.41	401.41	VZ 0
	VZ 1	504.28	518.91	514.67	508.25	485.60	358.73	309.03	308.16	309.53	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	0.3644	M 0
	M 1	0.4612	0.4752	0.4711	0.4650	0.4435	0.3247	0.2790	0.2782	0.2795	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.6709	0.3525	0.2671	0.3215	0.5466	1.2998	1.5483	1.5949	1.6570	UUBAR
	DFAC	-0.256	-0.292	-0.282	-0.266	-0.210	0.106	0.230	0.232	0.229	DFAC
	EFFP	0.4715	0.6669	0.7179	0.6638	0.4685	-0.1827	-0.3481	-0.3371	-0.3138	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.714	15.714	15.714	15.714	15.714	15.714	15.714	15.714	15.714	P 0
	P 1	14.790	15.229	15.346	15.272	14.961	13.924	13.582	13.518	13.432	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	35.698	31.852	30.003	28.890	30.285	35.749	40.290	42.756	47.130	BETA 2
	BETA(PR) 1	46.434	44.243	44.114	45.518	48.643	58.470	62.876	63.110	63.110	BETA(PR) 1
	BETA(PR) 2	26.367	26.310	26.213	25.492	27.869	35.279	39.219	41.951	50.778	BETA(PR) 2
	V 1	505.56	552.33	561.76	555.64	523.86	383.70	332.23	332.40	334.98	V 1
	V 2	540.91	569.33	589.08	626.56	613.26	530.53	499.17	477.65	412.27	V 2
	VZ 1	505.46	552.20	561.69	555.61	523.22	382.14	330.04	330.03	332.79	VZ 1
	VZ 2	439.25	483.57	510.13	548.58	529.34	430.02	380.04	350.16	280.02	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	315.61	300.43	294.56	302.71	309.13	309.55	322.19	323.77	301.65	V-THETA 2
	V(PR) 1	733.5	770.9	782.4	793.0	792.3	731.6	724.9	730.8	736.6	V(PR) 1
	V(PR) 2	490.3	539.5	568.6	607.8	599.1	527.4	491.5	471.8	443.5	V(PR) 2
	VTHETA PR1	-531.4	-537.8	-544.6	-565.8	-594.4	-622.9	-644.3	-650.6	-656.3	VTHETA PR1
	VTHETA PR2	-217.7	-239.1	-251.2	-261.6	-279.9	-304.2	-310.2	-314.6	-343.1	VTHETA PR2
	U 1	531.41	537.80	544.59	565.75	594.37	622.86	644.29	650.81	656.27	U 1
	U 2	533.34	539.53	545.72	564.28	589.03	613.78	632.34	638.53	644.72	U 2
	M 1	0.4624	0.5073	0.5164	0.5105	0.4799	0.3478	0.3002	0.3004	0.3026	M 1
	M 2	0.4816	0.5091	0.5284	0.5637	0.5503	0.4720	0.4424	0.4225	0.3624	M 2
	M(PR) 1	0.6709	0.7086	0.7192	0.7285	0.7258	0.6631	0.6551	0.6604	0.6660	M(PR) 1
	M(PR) 2	0.4365	0.4824	0.5100	0.5468	0.5375	0.4692	0.4355	0.4171	0.3898	M(PR) 2
	TURN(PR)	20.063	17.928	17.899	20.025	20.753	23.140	23.595	21.096	12.261	TURN(PR)
	UUBAR	0.1489	0.1459	0.1147	0.0552	0.0625	0.0332	0.0679	0.1054	0.1503	UUBAR
	LOSS PARA	0.0386	0.0384	0.0306	0.0153	0.0178	0.0091	0.0183	0.0275	0.0337	LOSS PARA
	DFAC	0.4564	0.4147	0.3851	0.3509	0.3690	0.4203	0.4748	0.5083	0.5419	DFAC
	EFFP	0.7203	0.7156	0.7869	0.9235	0.9316	0.9914	0.9769	0.9244	0.7751	EFFP
	EFF	0.7145	0.7101	0.7826	0.9216	0.9298	0.9911	0.9763	0.9222	0.7695	EFF
	INCID	-5.998	-6.673	-6.464	-6.524	-5.361	2.479	4.203	0.816	-5.041	INCID
	DEVM	11.217	12.150	11.579	6.851	4.659	7.718	7.594	8.813	14.803	DEVM
	P 1	14.790	15.229	15.346	15.272	14.961	13.924	13.582	13.518	13.432	P 1
	P 2	17.090	17.432	17.689	18.106	17.913	16.983	16.662	16.469	15.956	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	549.300	547.450	546.150	546.750	548.150	549.250	550.650	551.350	552.690	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	35.935	31.686	29.509	28.925	29.871	35.639	41.121	44.151	49.351	BETA 2
STATOR-T.E.	BETA 2A	1.150	1.780	1.630	0.800	0.890	3.321	4.901	3.301	0.500	BETA 2A
	V 2	537.89	572.16	598.34	626.58	621.94	532.79	491.56	466.45	398.99	V 2
	V 2A	469.66	496.40	517.92	574.38	574.68	504.03	424.81	404.35	400.41	V 2A
	VZ 2	435.52	486.87	520.69	548.31	539.05	432.64	369.96	334.36	259.68	VZ 2
	VZ 2A	469.56	496.15	517.69	574.24	574.42	502.88	422.91	403.33	399.97	VZ 2A
	V-THETA 2	315.67	300.53	294.70	303.00	309.60	310.19	322.97	324.59	302.45	V-THETA 2
	V-THETA 2A	9.43	15.42	14.73	8.02	8.92	29.18	36.26	23.26	3.49	V-THETA 2A
	M 2	0.4788	0.5117	0.5371	0.5637	0.5585	0.4741	0.4354	0.4121	0.3504	M 2
	M 2A	0.4158	0.4411	0.4616	0.5142	0.5138	0.4474	0.3744	0.3557	0.3517	M 2A
	TURN(PR)	34.785	29.905	27.878	28.119	28.964	32.286	36.174	40.799	48.793	TURN(PR)
	UUBAR	0.0668	0.0881	0.0950	0.0381	0.0	-0.0729	0.0972	0.0965	-0.2099	UUBAR
	LOSS PARA	0.0225	0.0300	0.0327	0.0135	0.0	-0.0280	0.0384	0.0386	-0.0847	LOSS PARA
	DFAC	0.3187	0.3022	0.2956	0.2510	0.2556	0.2582	0.3684	0.3932	0.3004	DFAC
	EFFP	0.7430	0.6776	0.6604	0.7903	1.0000	1.6272	0.6427	0.6361	-26.6366	EFFP
	INCID	-14.232	-11.702	-10.781	-9.105	-6.833	-0.228	2.413	0.978	-9.853	INCID
	DEVM	9.982	13.092	12.940	11.775	11.902	14.985	17.338	15.978	5.354	DEVM
	P 2	17.090	17.432	17.689	18.106	17.913	16.983	16.662	16.469	15.956	P 2
	P 2A	16.924	17.181	17.389	17.972	17.913	17.159	16.464	16.294	16.229	P 2A
	T 2	549.300	547.450	546.150	546.750	548.150	549.250	550.650	551.350	552.690	T 2
	T 2A	549.300	547.450	546.150	546.750	548.150	549.250	550.650	551.350	552.690	T 2A
	UUBAR FS	0.1368	0.1025	0.0804	0.0255	0.0193	0.0737	0.1417	0.1531	0.1420	UUBAR FS
	P2 FS	17.291	17.478	17.638	18.060	17.980	17.365	16.767	16.590	16.489	P2 FS
	LOSS PARA FS	0.0460	0.0349	0.0276	0.0090	0.0000	0.0283	0.0559	0.0612	0.0573	LOSS PARA FS

Table A-6. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 88.49 Equivalent Rotor Speed = 3725.25 Equivalent Weight Flow = 97.85
Tip Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	371.51	371.51	371.51	371.51	371.51	371.51	371.51	371.51	371.51	V 0
	V 1	460.55	486.62	483.85	472.68	454.70	337.66	279.64	264.14	240.87	V 1
	VZ 0	371.51	371.51	371.51	371.50	371.48	371.45	371.42	371.41	371.41	VZ 0
	VZ 1	460.55	486.62	483.85	472.67	454.67	337.60	279.57	264.07	240.80	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3365	0.3365	0.3365	0.3365	0.3365	0.3365	0.3365	0.3365	0.3365	M 0
	M 1	0.4197	0.4444	0.4418	0.4312	0.4142	0.3052	0.2521	0.2379	0.2168	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.6716	0.3376	0.2925	0.3737	0.5543	1.3036	1.5924	1.6647	1.7459	UUBAR
	DFAC	-0.240	-0.310	-0.302	-0.272	-0.224	0.091	0.247	0.289	0.352	DFAC
	EFFP	0.4517	0.6893	0.7138	0.6335	0.4818	-0.1535	-0.3649	-0.4098	-0.4781	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.581	15.581	15.581	15.581	15.581	15.581	15.581	15.581	15.581	P 0
	P 1	14.792	15.184	15.237	15.142	14.930	14.050	13.710	13.626	13.530	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	516.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	39.398	35.554	33.974	32.486	34.092	40.882	46.177	49.667	54.000	BETA 2
	BETA(PR) 1	49.386	46.520	46.344	48.070	50.943	60.340	65.443	66.819	68.776	BETA(PR) 1
	BETA(PR) 2	26.298	26.102	25.966	25.900	28.908	36.351	41.263	45.191	49.229	BETA(PR) 2
	V 1	461.67	516.69	526.40	514.75	489.13	360.74	300.16	284.30	259.85	V 1
	V 2	531.43	557.64	574.21	603.77	586.42	513.99	482.70	458.15	438.63	V 2
	VZ 1	461.58	516.58	526.33	514.72	488.53	359.28	298.20	282.28	256.16	VZ 1
	VZ 2	410.65	453.66	476.17	509.27	485.44	368.17	333.71	296.06	257.50	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	337.29	324.23	320.87	324.27	328.57	336.03	347.71	348.72	354.42	V-THETA 2
	V(PR) 1	709.1	750.8	762.5	770.3	775.7	726.8	718.3	717.9	713.7	V(PR) 1
	V(PR) 2	458.1	505.2	529.7	566.2	554.8	482.6	444.6	420.9	394.9	V(PR) 2
	VTHETA PR1	-538.3	-544.7	-551.6	-573.1	-602.0	-630.9	-652.6	-659.2	-664.7	VTHETA PR1
	VTHETA PR2	-202.9	-222.3	-231.9	-247.3	-268.1	-285.7	-292.8	-298.1	-296.6	VTHETA PR2
	U 1	538.27	544.75	551.62	573.06	602.05	630.90	652.61	659.22	664.74	U 1
	U 2	540.23	546.49	552.76	571.57	596.64	621.71	640.51	646.78	653.04	U 2
	M 1	0.4208	0.4730	0.4823	0.4712	0.4468	0.3265	0.2708	0.2563	0.2340	M 1
	M 2	0.4724	0.4976	0.5137	0.5414	0.5242	0.4570	0.4262	0.4032	0.3849	M 2
	M(PR) 1	0.6463	0.6874	0.6987	0.7051	0.7085	0.6579	0.6481	0.6472	0.6428	M(PR) 1
	M(PR) 2	0.4072	0.4508	0.4738	0.5076	0.4959	0.4291	0.3927	0.3704	0.3465	M(PR) 2
	TURN(PR)	23.084	20.414	20.376	22.169	22.014	23.942	24.128	21.582	19.521	TURN(PR)
	UUBAR	0.1245	0.1271	0.0975	0.0368	0.0669	0.0619	0.0992	0.1357	0.1688	UUBAR
	LOSS PARA	0.0323	0.0335	0.0260	0.0102	0.0189	0.0168	0.0259	0.0335	0.0391	LOSS PARA
	DFAC	0.4920	0.4540	0.4304	0.3944	0.4206	0.4904	0.5473	0.5825	0.6210	DFAC
	EFFP	0.8123	0.8082	0.8808	0.9992	0.9671	1.0851	0.9610	0.8944	0.8491	EFFP
	EFF	0.8078	0.8036	0.8780	0.9992	0.9662	1.0877	0.9598	0.8912	0.8446	EFF
	INCID	-3.045	-4.396	-4.235	-3.973	-3.061	4.353	6.780	4.542	0.649	INCID
	DEVM	11.146	11.942	11.332	7.259	5.698	8.790	9.638	12.052	13.253	DEVM
	P 1	14.792	15.184	15.237	15.142	14.930	14.050	13.710	13.626	13.530	P 1
	P 2	17.496	17.793	17.994	18.344	18.132	17.358	17.029	16.817	16.669	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	550.250	548.600	547.450	547.950	549.350	548.400	553.230	554.770	556.420	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	39.666	35.375	33.411	32.527	33.634	40.755	47.200	51.438	56.945	BETA 2
STATOR-T.E.	BETA 2A	1.400	2.360	2.400	1.950	1.930	4.051	4.841	3.851	2.401	BETA 2A
	V 2	528.50	560.26	583.04	603.77	594.40	516.17	475.43	447.42	424.25	V 2
	V 2A	439.85	458.40	474.16	529.68	529.34	456.45	388.24	371.52	368.59	V 2A
	VZ 2	406.83	456.81	486.67	508.97	494.67	390.72	322.76	278.70	231.28	VZ 2
	VZ 2A	439.72	458.00	473.73	529.10	528.87	455.04	386.54	370.35	367.87	VZ 2A
	V-THETA 2	337.35	324.34	321.03	324.58	329.07	336.72	348.56	349.60	355.36	V-THETA 2
	V-THETA 2A	10.75	18.88	19.85	18.02	17.82	32.22	32.74	24.93	15.42	V-THETA 2A
	M 2	0.4696	0.5000	0.5220	0.5414	0.5318	0.4590	0.4195	0.3935	0.3719	M 2
	M 2A	0.3882	0.4058	0.4207	0.4716	0.4708	0.4040	0.3406	0.3251	0.3220	M 2A
	TURN(PR)	38.266	33.014	31.009	30.571	31.686	36.671	42.313	47.538	54.490	TURN(PR)
	UUBAR	0.0389	0.0911	0.1067	0.0432	-0.0053	-0.0341	0.0764	0.0345	-0.0419	UUBAR
	LOSS PARA	0.0131	0.0310	0.0367	0.0153	-0.0020	-0.0131	0.0302	0.0137	-0.0169	LOSS PARA
	DFAC	0.3760	0.3676	0.3648	0.3039	0.3040	0.3441	0.4483	0.4617	0.4564	DFAC
	EFFP	0.8839	0.7489	0.7219	0.8335	1.0230	1.1428	0.7855	0.8963	1.1610	EFFP
	INCID	-10.501	-8.013	-6.880	-5.504	-3.071	4.886	8.492	8.267	-2.256	INCID
	DEVM	10.232	13.672	13.710	12.925	12.942	15.714	17.279	16.528	7.252	DEVM
	P 2	17.496	17.793	17.994	18.344	18.132	17.358	17.029	16.817	16.669	P 2
	P 2A	17.400	17.538	17.669	18.201	18.149	17.438	16.881	16.759	16.732	P 2A
	T 2	550.250	548.600	547.450	547.950	549.350	548.400	553.230	554.770	556.420	T 2
	T 2A	550.250	548.600	547.350	547.950	549.350	548.400	553.230	554.770	556.420	T 2A
	UUBAR FS	0.0992	0.0716	0.0758	0.0289	0.0237	0.0652	0.0959	0.0932	0.0773	UUBAR FS
	P2 FS	17.659	17.733	17.892	18.295	18.226	17.606	17.071	16.928	16.864	P2 FS
	LOSS PARA FS	0.0334	0.0243	0.0261	0.0102	0.0089	0.0250	0.0379	0.0372	0.0312	LOSS PARA FS

Table A-6. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 89.54 Equivalent Rotor Speed = 3769.57 Equivalent Weight Flow = 90.04
Tip Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	342.49	342.49	342.49	342.49	342.49	342.49	342.49	342.49	342.49	V 0
	V 1	423.95	442.22	441.86	437.46	414.09	311.15	261.78	241.82	210.16	V 1
	VZ 0	342.49	342.49	342.49	342.49	342.47	342.44	342.41	342.40	342.40	VZ 0
	VZ 1	423.95	442.22	441.86	437.46	414.06	311.10	261.71	241.76	210.10	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3097	0.3097	0.3097	0.3097	0.3097	0.3097	0.3097	0.3097	0.3097	M 0
	M 1	0.3853	0.4025	0.4021	0.3980	0.3761	0.2809	0.2358	0.2176	0.1889	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.6177	0.3427	0.2898	0.3321	0.5331	1.2947	1.5063	1.5803	1.6967	UUBAR
	DFAC	-0.238	-0.291	-0.290	-0.277	-0.209	0.092	0.236	0.294	0.386	DFAC
	EFFP	0.4696	0.6691	0.7046	0.6638	0.4715	-0.1556	-0.3751	-0.4546	-0.5625	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.418	15.418	15.418	15.418	15.418	15.418	15.418	15.418	15.418	P 0
	P 1	14.805	15.078	15.131	15.069	14.889	14.134	13.924	13.851	13.735	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.766	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	41.898	38.563	37.491	35.684	38.101	46.261	53.209	57.355	60.662	BETA 2
	BETA(PR) 1	52.045	49.660	49.380	50.686	53.937	62.615	67.099	68.638	71.503	BETA(PR) 1
	BETA(PR) 2	26.197	27.112	27.625	28.144	30.916	36.840	44.330	46.717	50.671	BETA(PR) 2
	V 1	424.95	468.24	478.81	474.89	444.20	332.05	280.82	260.08	226.51	V 1
	V 2	528.69	540.22	546.31	568.26	554.95	507.63	469.60	463.06	450.00	V 2
	VZ 1	424.86	468.14	478.75	474.86	443.65	330.70	278.97	258.23	225.03	VZ 1
	VZ 2	393.51	422.39	433.46	461.56	436.54	350.63	280.91	249.53	220.30	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	353.05	336.74	332.49	331.47	342.31	366.41	375.63	389.52	391.94	V-THETA 2
	V(PR) 1	690.8	723.3	735.4	749.5	754.0	719.6	717.6	716.0	709.8	V(PR) 1
	V(PR) 2	438.6	474.6	489.2	523.5	509.1	436.7	392.0	364.6	348.1	V(PR) 2
	VTHETA PR1	-544.7	-551.2	-558.2	-579.9	-609.2	-638.4	-660.4	-667.1	-672.7	VTHETA PR1
	VTHETA PR2	-193.6	-216.3	-226.8	-246.9	-261.4	-262.7	-272.5	-265.0	-268.9	VTHETA PR2
	U 1	544.68	551.23	558.18	579.88	609.21	638.41	660.37	667.06	672.65	U 1
	U 2	546.65	553.00	559.34	578.37	603.73	629.10	648.13	654.47	660.61	U 2
	M 1	0.3863	0.4270	0.4370	0.4333	0.4043	0.3001	0.2531	0.2342	0.2037	M 1
	M 2	0.4688	0.4804	0.4867	0.5071	0.4941	0.4491	0.4126	0.4062	0.3936	M 2
	M(PR) 1	0.6279	0.6595	0.6712	0.6838	0.6863	0.6503	0.6469	0.6448	0.6384	M(PR) 1
	M(PR) 2	0.3889	0.4220	0.4359	0.4671	0.4532	0.3861	0.3444	0.3198	0.3045	M(PR) 2
	TURN(PR)	25.844	22.544	21.753	22.542	23.002	25.734	22.926	22.085	20.819	TURN(PR)
	UUBAR	0.0937	0.0979	0.0878	0.0509	0.0868	0.1060	0.1895	0.2303	0.2369	UUBAR
	LOSS PARA	0.0244	0.0255	0.0231	0.0138	0.0240	0.0285	0.0472	0.0554	0.0532	LOSS PARA
	DFAC	0.5134	0.4806	0.4691	0.4375	0.4704	0.5604	0.6337	0.6797	0.7034	DFAC
	EFFP	0.8489	0.8522	0.9033	0.9685	0.9640	0.9963	0.8543	0.8328	0.8093	EFFP
	EFF	0.8448	0.8484	0.9006	0.9676	0.9629	0.9962	0.8498	0.8276	0.8032	EFF
	INCID	-0.387	-1.256	-1.198	-1.357	-0.066	0.633	8.444	6.571	5.390	INCID
	DEVM	11.048	12.952	12.991	9.503	7.705	9.278	12.504	13.578	14.696	DEVM
	P 1	14.805	15.078	15.131	15.089	14.889	14.134	13.924	13.851	13.735	P 1
	P 2	17.869	18.016	18.111	18.341	18.205	17.670	17.271	17.208	17.124	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	552.600	550.600	549.050	549.450	550.550	553.000	557.450	558.800	560.700	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	42.190	38.359	36.874	35.729	37.597	46.113	54.528	59.765	64.619	BETA 2
STATOR-T.E.	BETA 2A	2.400	3.200	3.190	2.920	3.100	3.751	4.201	4.101	3.001	BETA 2A
	V 2	525.78	542.81	554.41	568.26	562.16	509.76	462.62	452.21	435.14	V 2
	V 2A	422.21	429.71	441.11	479.98	473.10	411.06	370.51	358.21	356.12	V 2A
	VZ 2	389.56	425.63	443.49	461.23	445.23	353.17	268.30	227.60	186.44	VZ 2
	VZ 2A	421.84	429.03	440.41	479.29	472.25	409.93	369.22	356.98	355.26	VZ 2A
	V-THETA 2	353.11	336.85	332.66	331.78	342.83	367.17	376.54	390.50	392.99	V-THETA 2
	V-THETA 2A	17.68	23.98	24.54	24.45	25.58	26.87	27.12	25.66	18.62	V-THETA 2A
	M 2	0.4661	0.4828	0.4943	0.5071	0.5008	0.4511	0.4062	0.3963	0.3802	M 2
	M 2A	0.3714	0.3789	0.3898	0.4252	0.4184	0.3612	0.3235	0.3121	0.3097	M 2A
	TURN(PR)	39.790	35.159	33.682	32.803	34.479	42.329	50.283	55.621	61.575	TURN(PR)
	UUBAR	0.0420	0.0816	0.0791	0.0409	0.0231	0.0410	0.0057	0.0178	-0.0290	UUBAR
	LOSS PARA	0.0141	0.0275	0.0272	0.0145	0.0085	0.0158	0.0022	0.0071	-0.0117	LOSS PARA
	DFAC	0.4119	0.4048	0.3959	0.3480	0.3682	0.4520	0.5002	0.5326	0.5308	DFAC
	EFFP	0.8912	0.8011	0.8032	0.8711	0.9285	0.8917	0.9853	0.9551	1.0829	EFFP
	INCID	-7.977	-5.029	-3.417	-2.302	0.691	10.244	15.823	16.599	5.428	INCID
	DEVM	11.232	14.512	14.500	13.895	14.111	15.415	16.639	16.777	7.852	DEVM
	P 2	17.869	18.016	18.111	18.341	18.205	17.670	17.271	17.208	17.124	P 2
	P 2A	17.765	17.801	17.890	18.221	18.139	17.576	17.261	17.177	17.172	P 2A
	T 2	552.600	550.600	549.050	549.450	550.550	553.000	557.450	558.800	560.700	T 2
	T 2A	552.600	550.600	549.050	549.450	550.550	553.000	557.450	558.800	560.700	T 2A
	UUBAR FS	0.0661	0.0775	0.0652	0.0408	0.0509	0.0887	0.0929	0.1080	0.1089	UUBAR FS
	P2 FS	17.932	18.006	18.069	18.341	18.289	17.791	17.450	17.387	17.376	P2 FS
	LOSS PARA FS	0.0222	0.0263	0.0224	0.0144	0.0187	0.0341	0.0358	0.0431	0.0439	LOSS PARA FS

Table A-6. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 70.73 Equivalent Rotor Speed = 2977.76 Equivalent Weight Flow = 85.36
Tip Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.085	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	324.69	324.69	324.69	324.69	324.69	324.69	324.69	324.69	324.69	V 0
	V 1	390.36	411.32	412.20	403.24	383.78	285.84	235.51	227.27	206.03	V 1
	VZ 0	324.68	324.69	324.69	324.68	324.66	324.63	324.60	324.60	324.66	VZ 0
	VZ 1	390.36	411.32	412.20	403.23	383.75	285.80	235.45	227.21	205.96	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2933	0.2933	0.2933	0.2933	0.2933	0.2933	0.2933	0.2933	0.2933	M 0
	M 1	0.3540	0.3735	0.3743	0.3660	0.3479	0.2577	0.2119	0.2044	0.1852	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.6329	0.3335	0.2748	0.3335	0.5390	1.2552	1.5077	1.5605	1.6603	UUBAR
	DFAC	-0.202	-0.267	-0.270	-0.242	-0.182	0.120	0.275	0.300	0.365	DFAC
	EFFP	0.4188	0.6522	0.6976	0.6270	0.4306	-0.2180	-0.4510	-0.4762	-0.5474	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.335	15.335	15.335	15.335	15.335	15.335	15.335	15.335	15.335	P 0
	P 1	14.772	15.038	15.090	15.038	14.856	14.219	13.995	13.948	13.859	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.248	39.405	39.791	40.176	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	36.747	31.546	29.738	28.689	29.671	35.104	39.188	42.020	45.047	BETA 2
	BETA(PR) 1	47.725	45.048	44.699	46.378	49.537	58.957	64.326	65.281	67.455	BETA(PR) 1
	BETA(PR) 2	25.724	25.015	25.096	25.534	28.297	35.484	39.332	42.147	51.606	BETA(PR) 2
	V 1	391.25	434.81	445.65	436.57	411.00	304.76	252.42	244.32	222.04	V 1
	V 2	447.13	474.41	489.48	508.15	495.56	429.61	404.89	366.08	330.89	V 2
	VZ 1	391.17	434.71	445.60	436.54	410.49	303.53	250.76	242.56	220.59	VZ 1
	VZ 2	367.38	404.28	425.01	445.76	430.40	351.01	313.21	286.25	233.36	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	254.83	248.19	242.80	243.93	245.20	246.73	255.34	257.92	233.75	V-THETA 2
	V(PR) 1	581.6	615.4	626.9	632.6	632.9	589.2	579.5	580.8	575.9	V(PR) 1
	V(PR) 2	407.8	446.2	469.3	494.6	489.0	431.6	405.7	386.8	371.4	V(PR) 2
	VTHETA PR1	-430.3	-435.4	-440.9	-458.1	-481.2	-504.3	-521.7	-526.9	-531.4	VTHETA PR1
	VTHETA PR2	-177.6	-188.7	-199.1	-212.9	-231.7	-250.2	-256.7	-259.1	-286.3	VTHETA PR2
	U 1	430.27	435.44	440.94	458.07	481.24	504.31	521.66	526.94	531.56	U 1
	U 2	431.83	436.84	441.85	456.68	476.92	496.96	511.99	517.00	522.01	U 2
	M 1	0.3548	0.3955	0.4057	0.3972	0.3732	0.2750	0.2273	0.2199	0.1997	M 1
	M 2	0.3993	0.4251	0.4395	0.4569	0.4447	0.3835	0.3604	0.3432	0.2929	M 2
	M(PR) 1	0.5274	0.5597	0.5707	0.5757	0.5747	0.5318	0.5217	0.5227	0.5179	M(PR) 1
	M(PR) 2	0.3642	0.3998	0.4214	0.4442	0.4389	0.3853	0.3611	0.3438	0.3288	M(PR) 2
	TURN(PR)	21.997	20.028	19.600	20.843	21.219	23.424	24.937	23.080	16.414	TURN(PR)
	UUBAR	0.1169	0.1229	0.0864	0.0354	0.0412	0.0348	0.0624	0.1044	0.1220	UUBAR
	LOSS PARA	0.0305	0.0327	0.0232	0.0098	0.0117	0.0095	0.0167	0.0271	0.0272	LOSS PARA
	DFAC	0.4259	0.3934	0.3665	0.3377	0.3515	0.4073	0.4514	0.4882	0.4976	DFAC
	EFFP	0.7699	0.7867	0.8813	0.9909	0.9850	1.0261	0.9983	0.9515	0.8029	EFFP
	EFF	0.7665	0.7838	0.8796	0.9908	0.9848	1.0266	0.9982	0.9506	0.7996	EFF
	INCID	-4.707	-5.868	-5.880	-5.664	-4.467	2.968	5.659	2.996	-0.678	INCID
	DEVM	10.575	10.856	10.462	6.893	5.087	7.923	7.708	9.009	15.033	DEVM
	P 1	14.772	15.038	15.090	15.038	14.856	14.219	13.995	13.948	13.859	P 1
	P 2	16.343	16.551	16.697	16.885	16.760	16.176	15.988	15.863	15.529	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	538.520	537.080	536.000	536.320	537.170	537.660	538.850	539.130	540.130	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	34.956	31.399	29.303	28.724	29.326	35.010	39.935	43.291	47.006	BETA 2
STATOR-T.E.	BETA 2A	1.400	1.450	1.400	0.700	0.050	2.800	4.841	3.651	1.250	BETA 2A
	V 2	444.85	476.55	496.35	508.15	501.66	431.30	399.14	377.47	320.74	V 2
	V 2A	389.39	413.75	435.17	473.08	467.36	416.19	355.39	336.90	327.75	V 2A
	VZ 2	364.59	406.75	432.82	445.54	437.14	352.95	305.74	274.48	218.51	VZ 2
	VZ 2A	389.27	413.61	435.02	472.97	467.21	415.45	353.83	335.92	327.32	VZ 2A
	V-THETA 2	254.87	248.27	242.92	244.17	245.58	247.24	255.95	258.58	234.37	V-THETA 2
	V-THETA 2A	9.51	10.47	10.63	5.78	0.41	20.32	29.97	21.43	7.14	V-THETA 2A
	M 2	0.3972	0.4271	0.4460	0.4569	0.4504	0.3850	0.3552	0.3353	0.2836	M 2
	M 2A	0.3464	0.3691	0.3892	0.4241	0.4185	0.3712	0.3154	0.2986	0.2901	M 2A
	TURN(PR)	33.556	29.948	27.902	28.018	29.260	32.178	35.048	39.590	45.698	TURN(PR)
	UUBAR	0.0868	0.1017	0.0882	0.0232	0.0048	-0.0863	0.0782	0.0703	-0.2346	UUBAR
	LOSS PARA	0.0292	0.0346	0.0303	0.0082	0.0018	-0.0332	0.0309	0.0281	-0.0947	LOSS PARA
	DFAC	0.3105	0.3618	0.2845	0.2361	0.2499	0.2387	0.3354	0.3604	0.2656	DFAC
	EFFP	0.6509	0.6148	0.6471	0.8407	0.9667	2.1704	0.6413	0.6697	-4.0835	EFFP
	INCID	-15.211	-11.989	-10.987	-9.306	-7.377	-0.856	1.228	0.118	-12.198	INCID
	DEVM	10.232	12.762	12.710	11.675	11.062	14.465	17.278	16.328	6.103	DEVM
	P 2	16.343	16.551	16.697	16.885	16.760	16.176	15.988	15.863	15.529	P 2
	P 2A	16.197	16.353	16.510	16.833	16.750	16.311	15.883	15.779	15.727	P 2A
	T 2	538.520	537.080	536.000	536.320	537.170	537.660	538.850	539.130	540.130	T 2
	T 2A	538.520	537.080	536.000	536.320	537.170	537.660	538.850	539.130	540.130	T 2A
	UUBAR FS	0.1353	0.1048	0.0885	0.0372	0.0262	0.0847	0.1611	0.1729	0.1742	UUBAR FS
	P2 FS	16.437	16.597	16.698	16.918	16.808	16.469	16.119	16.009	15.947	P2 FS
	LOSS PARA FS	0.0455	0.0355	0.0304	0.0131	0.0098	0.0326	0.0636	0.0691	0.0702	LOSS PARA FS

Table A-6. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 70.80 Equivalent Rotor Speed = 2980.69 Equivalent Weight Flow = 80.21
Tip Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	5.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.065	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	305.98	305.98	305.98	305.98	305.98	305.98	305.98	305.98	305.98	V 0
	V 1	369.30	384.65	384.60	379.79	363.13	270.36	221.01	209.84	185.56	V 1
	VZ 0	305.98	305.98	305.98	305.97	305.96	305.93	305.90	305.90	305.90	VZ 0
	VZ 1	369.30	384.65	384.60	379.78	363.10	270.31	220.96	209.78	185.51	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2761	0.2761	0.2761	0.2761	0.2761	0.2761	0.2761	0.2761	0.2761	M 0
	M 1	0.3345	0.3487	0.3486	0.3442	0.3288	0.2436	0.1987	0.1886	0.1667	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.5725	0.3219	0.2559	0.2823	0.4933	1.2188	1.4562	1.5090	1.6277	UUBAR
	DFAC	-0.207	-0.257	-0.257	-0.241	-0.187	0.116	0.278	0.314	0.394	DFAC
	EFFP	0.4493	0.6501	0.7005	0.6639	0.4589	-0.2194	-0.4829	-0.5323	-0.6204	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.227	15.227	15.227	15.227	15.227	15.227	15.227	15.227	15.227	P 0
	P 1	14.776	14.974	15.026	15.006	14.840	14.270	14.083	14.042	13.949	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.256	33.621	34.007	35.164	36.706	38.246	39.405	39.791	40.176	DIA
ROTOR-L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR-T.E.	BETA 2	37.995	34.850	33.250	31.826	33.075	39.438	44.794	47.291	50.828	BETA 2
	BETA(PR) 1	49.330	47.026	46.761	48.157	51.154	60.386	65.749	67.003	69.529	BETA(PR) 1
	BETA(PR) 2	26.008	25.736	25.811	25.819	28.756	35.029	40.810	44.728	50.757	BETA(PR) 2
	V 1	370.13	406.17	415.09	410.61	388.42	288.10	236.79	225.47	199.66	V 1
	V 2	432.23	452.21	464.22	487.35	474.94	423.27	389.66	368.50	337.91	V 2
	VZ 1	370.06	406.08	415.04	410.58	387.95	286.94	235.23	223.80	198.56	VZ 1
	VZ 2	340.61	371.09	388.21	414.07	397.81	326.52	276.08	249.53	213.14	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	266.07	258.39	254.52	256.99	259.09	266.57	274.10	270.33	261.59	V-THETA 2
	V(PR) 1	567.4	595.8	605.9	615.5	618.8	581.2	573.4	573.6	568.2	V(PR) 1
	V(PR) 2	379.0	412.0	431.2	460.0	454.0	399.3	365.4	351.9	337.4	V(PR) 2
	VTHETA PR1	-430.7	-435.9	-441.4	-458.5	-481.7	-504.8	-522.2	-527.5	-531.9	VTHETA PR1
	VTHETA PR2	-166.2	-176.9	-187.8	-200.3	-218.3	-228.9	-238.4	-247.2	-260.9	VTHETA PR2
	U 1	430.69	435.87	441.37	458.52	481.72	504.80	522.17	527.46	531.88	U 1
	U 2	432.25	437.27	442.28	457.33	477.39	497.45	512.49	517.51	522.52	U 2
	M 1	0.3352	0.3667	0.3770	0.3729	0.3522	0.2596	0.2130	0.2026	0.1796	M 1
	M 2	0.3854	0.4042	0.4158	0.4371	0.4251	0.3773	0.3466	0.3266	0.2967	M 2
	M(PR) 1	0.5143	0.5408	0.5504	0.5589	0.5611	0.5241	0.5159	0.5155	0.5108	M(PR) 1
	M(PR) 2	0.3379	0.3683	0.3862	0.4125	0.4064	0.3559	0.3244	0.3118	0.2962	M(PR) 2
	TURN(PR)	23.316	21.286	20.947	22.337	22.378	25.309	24.889	22.230	18.749	TURN(PR)
	UUBAR	0.1152	0.1112	0.0845	0.0395	0.0475	0.0476	0.1014	0.1332	0.1413	UUBAR
	LOSS PARA	0.0300	0.0294	0.0226	0.0109	0.0134	0.0131	0.0266	0.0332	0.0317	LOSS PARA
	DFAC	0.4686	0.4359	0.4131	0.3809	0.4006	0.4673	0.5270	0.5503	0.5678	DFAC
	EFFP	0.7989	0.8269	0.9078	0.9979	0.9861	1.0481	0.9486	0.8829	0.8178	EFFP
	EFF	0.7956	0.8242	0.9064	0.9979	0.9859	1.0490	0.9476	0.8807	0.8144	EFF
	INCID	-3.101	-3.890	-3.818	-3.882	-2.849	4.399	7.088	4.726	1.436	INCID
	DEVM	10.859	11.576	11.178	7.178	5.546	7.469	9.185	11.589	14.782	DEVM
	P 1	14.778	14.974	15.026	15.006	14.840	14.270	14.083	14.042	13.949	P 1
	P 2	16.456	16.622	16.746	16.954	16.850	16.394	16.156	16.011	15.835	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	539.050	537.750	536.700	537.150	538.150	538.700	540.600	541.200	542.200	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR-L.E.	BETA 2	38.228	34.687	32.765	31.865	32.692	39.332	45.704	48.818	53.269	BETA 2
STATOR-T.E.	BETA 2A	1.800	1.680	1.600	1.350	0.800	3.851	5.451	5.252	5.801	BETA 2A
	V 2	430.05	454.20	470.55	487.35	480.64	424.92	384.21	360.39	327.51	V 2
	V 2A	363.10	381.01	394.45	435.76	432.85	383.14	328.52	310.46	306.49	V 2A
	VZ 2	337.83	373.47	395.67	413.83	404.31	328.43	268.09	237.11	195.72	VZ 2
	VZ 2A	362.92	380.83	394.28	435.58	432.66	382.05	324.78	308.88	305.50	VZ 2A
	V-THETA 2	266.11	258.48	254.65	257.24	259.48	269.12	274.76	271.02	262.29	V-THETA 2
	V-THETA 2A	11.40	11.17	11.01	10.26	6.04	25.72	30.99	28.39	20.30	V-THETA 2A
	M 2	0.3834	0.4061	0.4216	0.4371	0.4304	0.3788	0.3410	0.3192	0.2893	M 2
	M 2A	0.3223	0.3390	0.3516	0.3893	0.3863	0.3406	0.2889	0.2743	0.2705	M 2A
	TURN(PR)	36.428	33.006	31.163	30.509	31.875	35.448	40.207	43.518	49.415	TURN(PR)
	UUBAR	0.0451	0.0778	0.0914	0.0323	0.0051	-0.0302	0.0622	0.0142	-0.1554	UUBAR
	LOSS PARA	0.0152	0.0265	0.0314	0.0115	0.0019	-0.0116	0.0245	0.0057	-0.0625	LOSS PARA
	DFAC	0.3553	0.3467	0.3402	0.2863	0.2953	0.3201	0.4032	0.4097	0.3642	DFAC
	EFFP	0.8520	0.7546	0.7127	0.8510	0.9749	1.1517	0.7860	0.9470	2.2016	EFFP
	INCID	-11.939	-6.701	-7.526	-6.165	-4.012	3.464	6.996	5.646	-5.953	INCID
	DEVM	10.632	12.992	12.910	12.325	11.812	15.515	17.888	17.927	8.651	DEVM
	P 2	16.456	16.622	16.746	16.954	16.850	16.394	16.156	16.011	15.835	P 2
	P 2A	16.385	16.483	16.570	16.886	16.640	16.441	16.078	15.995	15.973	P 2A
	T 2	539.050	537.750	536.700	537.150	538.150	538.700	540.600	541.200	542.200	T 2
	T 2A	539.050	537.750	536.700	537.150	538.150	538.700	540.600	541.200	542.200	T 2A
	UUBAR FS	0.0954	0.0755	0.0718	0.0302	0.0203	0.0641	0.1108	0.1156	0.0887	UUBAR FS
	P2 FS	16.544	16.617	16.705	16.948	16.881	16.350	16.223	16.135	16.073	P2 FS
	LOSS PARA FS	0.0321	0.0287	0.0246	0.0107	0.0075	0.0248	0.0435	0.0464	0.0357	LOSS PARA FS

Table A-6. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Calculations Using Translated Values
Percent Equivalent Rotor Speed = 71.31 Equivalent Rotor Speed = 3002.25 Equivalent Weight Flow = 72.74
Tip Radial Distortion

INLET	PCT SPAN	96.80	92.00	86.90	71.00	49.50	28.10	12.00	7.10	3.00	PCT SPAN
	DIA	33.122	33.529	33.962	35.312	37.137	38.954	40.321	40.737	41.065	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	277.57	277.57	277.57	277.57	277.57	277.57	277.57	277.57	277.57	V 0
	V 1	330.03	348.21	343.06	337.19	330.01	247.18	206.33	193.89	169.21	V 1
	VZ 0	277.57	277.57	277.57	277.57	277.55	277.53	277.50	277.50	277.50	VZ 0
	VZ 1	330.03	348.21	343.06	337.19	329.99	247.14	206.28	193.85	169.16	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2502	0.2502	0.2502	0.2502	0.2502	0.2502	0.2502	0.2502	0.2502	M 0
	M 1	0.2982	0.3150	0.3102	0.3048	0.2982	0.2225	0.1854	0.1742	0.1519	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.5655	0.2620	0.2460	0.2939	0.4856	1.1566	1.4282	1.4921	1.6039	UUBAR
	DFAC	-0.189	-0.254	-0.236	-0.215	-0.189	0.109	0.257	0.301	0.390	DFAC
	EFFP	0.4270	0.6921	0.6876	0.6239	0.4649	-0.2183	-0.4521	-0.5162	-0.6325	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	15.125	15.125	15.125	15.125	15.125	15.125	15.125	15.125	15.125	P 0
	P 1	14.761	14.956	14.967	14.936	14.812	14.380	14.205	14.164	14.092	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.236	33.621	34.007	35.164	36.706	38.246	39.405	39.791	40.176	DIA
ROTOR INLET	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR EXIT	BETA 2	41.194	38.353	36.965	35.383	37.384	44.173	50.573	53.779	57.191	BETA 2
	BETA(PR) 1	52.682	50.103	50.283	51.786	54.039	62.725	67.345	68.735	71.333	BETA(PR) 1
	BETA(PR) 2	25.900	27.424	28.413	29.002	30.610	37.808	43.235	45.624	47.899	BETA(PR) 2
	V 1	330.75	367.12	369.36	363.63	352.45	263.22	220.97	208.24	182.18	V 1
	V 2	425.20	428.70	431.02	446.79	446.52	400.17	377.41	369.98	365.64	V 2
	VZ 1	330.69	367.04	369.31	363.61	352.01	262.16	219.52	206.76	180.99	VZ 1
	VZ 2	319.94	336.17	344.38	364.26	354.67	286.73	239.37	218.35	198.02	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	280.03	266.00	259.17	258.70	271.01	278.57	291.14	298.10	307.16	V-THETA 2
	V(PR) 1	545.5	572.3	578.0	587.8	599.7	572.5	570.5	570.6	565.9	V(PR) 1
	V(PR) 2	355.7	376.8	391.6	416.5	412.3	363.4	329.1	312.8	295.8	V(PR) 2
	VTHETA PR1	-433.8	-439.0	-444.6	-461.8	-485.2	-508.5	-525.9	-531.3	-535.7	VTHETA PR1
	VTHETA PR2	-155.4	-174.4	-186.3	-201.9	-209.8	-222.5	-225.1	-223.2	-219.1	VTHETA PR2
	U 1	433.80	439.02	444.56	461.84	485.20	506.46	525.95	531.27	535.73	U 1
	U 2	435.38	440.43	445.48	460.64	480.84	501.04	516.20	521.25	526.30	U 2
	M 1	0.2989	0.3324	0.3345	0.3292	0.3189	0.2371	0.1987	0.1872	0.1636	M 1
	M 2	0.3787	0.3825	0.3850	0.3993	0.3988	0.3557	0.3344	0.3274	0.3232	M 2
	M(PR) 1	0.4930	0.5182	0.5235	0.5322	0.5426	0.5157	0.5130	0.5129	0.5082	M(PR) 1
	M(PR) 2	0.3168	0.3379	0.3498	0.3726	0.3682	0.3230	0.2916	0.2768	0.2614	M(PR) 2
	TURN(PR)	26.779	22.674	21.667	22.783	23.410	24.876	24.069	23.076	23.422	TURN(PR)
	UUBAR	0.0946	0.1170	0.0943	0.0627	0.0794	0.0982	0.1615	0.1951	0.2117	UUBAR
	LOSS PARA	0.0245	0.0305	0.0246	0.0169	0.0220	0.0261	0.0408	0.0479	0.0563	LOSS PARA
	DFAC	0.4969	0.4747	0.4558	0.4267	0.4574	0.5278	0.5986	0.6334	0.6678	DFAC
	EFFP	0.8632	0.8505	0.9212	0.9655	0.9981	0.9721	0.8946	0.8650	0.8442	EFFP
	EFF	0.8609	0.8461	0.9199	0.9648	0.9980	0.9716	0.8925	0.8624	0.8411	EFF
	INCID	0.251	-0.813	-0.296	-0.256	0.036	6.743	8.692	8.466	8.219	INCID
	DEVM	10.750	13.265	13.779	10.361	7.399	10.246	11.609	12.485	11.922	DEVM
	P 1	14.761	14.956	14.967	14.936	14.812	14.380	14.205	14.164	14.092	P 1
	P 2	16.639	16.686	16.727	16.845	16.850	16.490	16.305	16.253	16.243	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	539.660	538.120	536.900	537.500	538.200	540.000	542.050	542.820	544.250	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATOR INLET	BETA 2	41.453	38.173	36.425	35.427	36.948	44.055	51.695	55.736	60.396	BETA 2
STATOR EXIT	BETA 2A	2.840	2.740	2.430	2.190	2.550	3.541	4.381	4.431	4.181	BETA 2A
	V 2	423.07	430.55	436.72	446.79	451.74	401.70	372.16	361.83	354.40	V 2
	V 2A	335.98	341.32	348.03	365.00	384.57	347.16	300.03	287.09	289.50	V 2A
	VZ 2	317.09	338.47	351.38	364.01	360.87	288.50	230.53	203.59	174.98	VZ 2
	VZ 2A	335.57	340.93	347.70	384.66	384.06	346.30	298.91	285.97	288.42	VZ 2A
	V-THETA 2	280.06	266.09	259.30	258.95	271.42	279.14	291.84	298.85	307.96	V-THETA 2
	V-THETA 2A	16.65	16.32	14.75	14.71	17.11	21.43	22.90	22.16	21.09	V-THETA 2A
	M 2	0.3767	0.3842	0.3903	0.3993	0.4036	0.3571	0.3296	0.3200	0.3129	M 2
	M 2A	0.2976	0.3029	0.3093	0.3427	0.3421	0.3076	0.2647	0.2530	0.2548	M 2A
	TURN(PR)	38.613	35.432	33.994	33.231	34.381	40.481	47.268	51.258	56.168	TURN(PR)
	UUBAR	0.0729	0.0886	0.0864	0.0170	0.0316	-0.0296	0.0392	0.0506	0.0338	UUBAR
	LOSS PARA	0.0245	0.0293	0.0297	0.0060	0.0117	-0.0114	0.0155	0.0203	0.0136	LOSS PARA
	DFAC	0.4156	0.4049	0.3960	0.3330	0.3579	0.3841	0.4619	0.5144	0.5118	DFAC
	EFFP	0.8129	0.7809	0.7764	0.9381	0.8923	1.1109	0.8928	0.8681	0.9023	EFFP
	INCID	-8.714	-5.215	-3.865	-2.603	0.243	8.186	12.988	12.567	1.200	INCID
	DEVM	11.672	14.052	13.740	13.165	13.562	15.205	16.819	17.106	9.031	DEVM
	P 2	16.639	16.686	16.727	16.845	16.850	16.490	16.305	16.253	16.243	P 2
	P 2A	16.526	16.547	16.583	16.815	16.794	16.531	16.258	16.197	16.207	P 2A
	T 2	539.680	538.120	536.900	537.500	538.200	540.000	542.050	542.820	544.250	T 2
	T 2A	539.680	538.120	536.900	537.500	538.200	540.000	542.050	542.820	544.250	T 2A
	UUBAR FS	0.0507	0.0586	0.0598	0.0111	0.0256	0.0379	0.0756	0.0922	0.1028	UUBAR FS
	P2 FS	16.602	16.638	16.680	16.834	16.839	16.987	16.330	16.304	16.325	P2 FS
	LOSS PARA FS	0.0170	0.0199	0.0205	0.0039	0.0094	0.0146	0.0298	0.0368	0.0413	LOSS PARA FS

Table A-7. Overall Performance - Stage D, Circumferential Distortion

Equivalent Weight Flow, lb/sec	ROTOR $\overline{P}_2/\overline{P}_1$	ROTOR η_{ad}	ROTOR η_p	STAGE $\overline{P}_{2A}/\overline{P}_1$	STAGE η_{ad}	STAGE η_p
			100% Design Equivalent Rotor Speed			
116.07	1.2386	0.8472	0.8517	1.2163	0.7731	0.7794
*101.60	1.2835	0.9596	0.9610	1.2643	0.8998	0.9030
* 90.59	1.2809	0.8613	0.8661	1.2478	0.7674	0.7745
			90% Design Equivalent Rotor Speed			
107.38	1.1973	0.8930	0.8957	1.1839	0.8358	0.8398
90.90	1.2257	0.9556	0.9568	1.2085	0.8874	0.8903
* 79.78	1.2252	0.8622	0.8661	1.2013	0.7763	0.7821
			70% Design Equivalent Rotor Speed			
87.12	1.1216	0.9488	0.9496	1.1142	0.8928	0.8948
73.45	1.1368	1.0113	1.0111	1.1286	0.9536	0.9540
61.84	1.1371	0.8612	0.8637	1.1233	0.7776	0.7816

NOTE: *Data taken at multiple screen positions.

Table A-8. Blade Element Performance
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (16°) - Station 2 (6°) - Station 2A (355°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	4.536	2.728	-2.335	-2.344	-1.592	-1.615	-1.397	-1.789	-1.911	BETA 1
STATION 2	BETA 2	54.082	53.791	53.121	48.012	46.003	44.969	46.586	50.313	55.454	BETA 2
	BETA(PR) 1	61.321	61.313	61.633	60.913	61.138	62.909	64.280	65.590	68.877	BETA(PR) 1
	BETA(PR) 2	24.743	18.205	27.790	30.027	33.114	35.850	39.363	42.693	47.623	BETA(PR) 2
	V 1	316.45	325.15	340.82	365.18	377.26	366.75	356.36	340.06	291.55	V 1
	V 2	558.99	610.08	553.46	565.23	568.69	570.75	555.34	532.44	505.25	V 2
	VZ 1	315.45	324.77	340.53	364.88	377.10	366.55	356.19	339.84	291.36	VZ 1
	VZ 2	327.91	360.39	332.14	378.11	394.89	403.37	381.04	339.48	286.15	VZ 2
	V-THETA 1	25.03	15.47	-13.89	-14.94	-10.48	-10.33	-8.69	-10.61	-9.72	V-THETA 1
	V-THETA 2	452.70	492.25	442.71	420.11	408.96	402.93	402.74	409.09	415.63	V-THETA 2
	V(PR) 1	657.3	676.6	716.7	750.6	781.2	804.9	820.8	822.4	808.5	V(PR) 1
	V(PR) 2	361.1	379.4	375.4	436.7	471.7	498.3	493.9	462.8	425.3	V(PR) 2
	VTHETA PR1	-576.7	-593.5	-630.7	-655.9	-684.2	-716.6	-739.5	-748.8	-754.2	VTHETA PR1
	VTHETA PR2	-151.1	-118.5	-175.0	-218.5	-257.6	-291.5	-312.6	-313.2	-313.6	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.2857	0.2937	0.3082	0.3306	0.3418	0.3321	0.3225	0.3075	0.2629	M 1
	M 2	0.4894	0.5376	0.4860	0.4965	0.4990	0.5018	0.4864	0.4649	0.4399	M 2
	M(PR) 1	0.5935	0.6112	0.6480	0.6796	0.7079	0.7289	0.7428	0.7435	0.7292	M(PR) 1
	M(PR) 2	0.3161	0.3343	0.3297	0.3836	0.4139	0.4381	0.4326	0.4041	0.3703	M(PR) 2
	TURN(PR)	36.578	43.108	33.843	30.888	28.041	27.113	25.010	23.003	21.365	TURN(PR)
	P 1	13.302	13.472	13.519	13.548	13.564	13.595	13.629	13.629	13.452	P 1
	P 2	18.227	18.804	18.169	18.399	18.517	18.684	18.526	18.287	18.048	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	568.911	566.964	565.050	565.941	567.361	565.513	568.034	569.384	570.168	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	54.082	53.791	53.121	48.012	46.003	44.969	46.586	50.313	55.454	BETA 2
STATION 2A	BETA 2A	2.031	1.978	0.641	0.077	3.093	3.831	4.651	5.306	4.926	BETA 2A
	V 2	558.99	610.08	553.46	565.23	568.69	570.75	555.34	532.44	505.25	V 2
	V 2A	406.71	399.91	392.36	416.13	443.75	466.37	441.45	426.96	430.09	V 2A
	VZ 2	327.91	360.39	332.14	378.11	394.89	403.37	381.04	339.48	286.15	VZ 2
	VZ 2A	406.45	399.67	392.32	416.09	443.01	465.16	439.78	424.89	428.19	VZ 2A
	V-THETA 2	452.70	492.25	442.71	420.11	408.96	402.93	402.74	409.09	415.63	V-THETA 2
	V-THETA 2A	14.41	13.80	4.39	0.56	23.94	31.15	35.78	39.46	36.90	V-THETA 2A
	M 2	0.4894	0.5376	0.4860	0.4965	0.4990	0.5018	0.4864	0.4649	0.4399	M 2
	M 2A	0.3514	0.3460	0.3398	0.3607	0.3849	0.4057	0.3826	0.3693	0.3718	M 2A
	TURN(PR)	52.050	51.812	52.480	47.933	42.890	41.079	41.839	44.902	50.426	TURN(PR)
	P 2	18.227	18.804	18.169	18.399	18.517	18.684	18.526	18.287	18.048	P 2
	P 2A	17.912	17.825	17.778	17.952	18.170	18.361	18.157	18.049	18.062	P 2A
	T 2	568.911	566.964	565.050	565.941	567.361	565.513	568.034	569.384	570.168	T 2
	T 2A	571.067	569.328	567.570	568.224	569.385	567.875	570.196	571.433	572.178	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (46°) - Station 2 (36°) - Station 2A (25°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.665	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	5.541	5.131	4.687	3.733	4.174	2.028	2.670	3.207	4.804	BETA 1
STATION 2	BETA 2	45.619	45.766	45.665	40.276	39.363	38.142	40.384	44.314	48.163	BETA 2
	BETA(PR) 1	52.278	51.402	51.113	50.617	52.538	54.715	57.125	58.323	61.712	BETA(PR) 1
	BETA(PR) 2	26.263	27.153	26.660	29.369	31.333	36.044	39.643	43.741	51.453	BETA(PR) 2
	V 1	434.98	455.45	468.15	500.49	490.22	487.93	459.06	441.06	384.71	V 1
	V 2	569.74	568.55	579.43	593.67	603.49	584.31	560.39	523.15	461.72	V 2
	VZ 1	432.94	453.62	466.58	499.43	488.90	487.56	458.48	440.30	383.32	VZ 1
	VZ 2	398.49	396.61	404.94	452.91	466.39	458.95	426.01	373.59	307.44	VZ 2
	V-THETA 1	42.00	40.73	38.25	32.59	35.68	17.26	21.38	24.67	32.21	V-THETA 1
	V-THETA 2	407.19	407.36	414.45	383.77	382.59	360.40	362.35	364.75	343.40	V-THETA 2
	V(PR) 1	707.6	727.1	743.2	787.1	803.8	844.1	844.7	838.5	808.9	V(PR) 1
	V(PR) 2	444.4	445.7	453.1	519.7	546.3	568.4	554.4	518.1	494.1	V(PR) 2
	VTHETA PR1	-559.7	-568.3	-578.5	-608.4	-638.0	-689.0	-709.4	-713.5	-712.2	VTHETA PR1
	VTHETA PR2	-196.6	-203.4	-203.3	-254.9	-283.9	-334.0	-353.0	-357.5	-385.9	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.3957	0.4149	0.4269	0.4576	0.4478	0.4456	0.4183	0.4014	0.3487	M 1
	M 2	0.5057	0.5056	0.5167	0.5298	0.5387	0.5213	0.4981	0.4633	0.4065	M 2
	M(PR) 1	0.6437	0.6624	0.6777	0.7196	0.7343	0.7709	0.7697	0.7630	0.7333	M(PR) 1
	M(PR) 2	0.3944	0.3964	0.4041	0.4638	0.4876	0.5071	0.4927	0.4589	0.4350	M(PR) 2
	TURN(PR)	26.015	24.250	24.453	21.250	21.222	18.725	17.574	14.687	10.366	TURN(PR)
	P 1	14.585	14.748	14.830	15.073	15.010	15.119	14.947	14.887	14.572	P 1
	P 2	18.267	18.262	18.402	18.661	18.879	18.781	18.592	18.201	17.660	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	555.243	553.182	551.253	551.916	552.657	551.247	552.882	553.363	554.737	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	45.619	45.766	45.665	40.276	39.363	38.142	40.384	44.314	48.163	BETA 2
STATION 2A	BETA 2A	1.825	2.453	1.809	1.583	2.363	3.155	4.118	4.579	4.292	BETA 2A
	V 2	569.74	568.55	579.43	593.67	603.49	584.31	560.39	523.15	461.72	V 2
	V 2A	419.21	414.33	409.47	448.00	477.41	480.41	437.10	421.25	418.89	V 2A
	VZ 2	398.49	396.61	404.94	452.91	466.39	458.95	426.01	373.59	307.44	VZ 2
	VZ 2A	419.00	413.94	409.25	447.78	476.90	479.50	435.75	419.67	417.41	VZ 2A
	V-THETA 2	407.19	407.36	414.45	383.77	382.59	360.40	362.35	364.75	343.40	V-THETA 2
	V-THETA 2A	13.35	17.73	12.93	12.37	19.68	26.43	31.37	33.61	31.33	V-THETA 2A
	M 2	0.5057	0.5056	0.5167	0.5298	0.5387	0.5213	0.4981	0.4633	0.4065	M 2
	M 2A	0.3674	0.3637	0.3600	0.3947	0.4212	0.4241	0.3844	0.3699	0.3672	M 2A
	TURN(PR)	43.793	43.312	43.856	38.691	36.980	34.929	36.170	39.628	43.762	TURN(PR)
	P 2	18.267	18.262	18.402	18.661	18.879	18.781	18.592	18.201	17.660	P 2
	P 2A	18.053	18.001	17.971	18.296	18.535	18.538	18.126	18.002	17.975	P 2A
	T 2	555.243	553.182	551.253	551.916	552.657	551.247	552.882	553.363	554.737	T 2
	T 2A	556.266	554.260	552.349	552.757	553.550	553.132	553.850	554.389	555.998	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (76°) - Station 2 (66°) - Station 2A (55°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	1.559	1.267	0.923	1.444	0.970	1.014	0.770	1.180	1.652	BETA 1
STATION 2	BETA 2	43.284	40.256	38.972	37.455	36.389	36.041	37.318	40.291	43.465	BETA 2
	BETA(PR) 1	54.561	52.908	51.584	50.600	52.668	54.823	57.615	58.711	59.703	BETA(PR) 1
	BETA(PR) 2	24.231	25.807	26.798	28.297	30.654	34.291	37.146	40.416	45.470	BETA(PR) 2
	V 1	420.26	453.01	483.03	515.99	507.37	491.79	459.70	443.27	427.99	V 1
	V 2	595.94	601.61	604.68	616.77	622.99	610.08	593.10	558.47	512.56	V 2
	VZ 1	420.10	452.89	482.96	515.83	507.27	491.65	459.57	443.10	427.77	VZ 1
	VZ 2	433.81	459.12	470.11	489.59	501.28	492.63	470.65	425.04	371.24	VZ 2
	V-THETA 1	11.43	10.02	7.78	13.00	8.59	8.70	6.18	9.13	12.34	V-THETA 1
	V-THETA 2	408.58	388.76	380.31	375.06	369.43	358.45	358.78	360.34	351.87	V-THETA 2
	V(PR) 1	724.5	750.9	777.3	812.7	836.5	853.4	858.1	853.2	848.0	V(PR) 1
	V(PR) 2	475.7	510.0	526.7	556.1	583.0	597.1	591.8	559.5	530.4	V(PR) 2
	VTHETA PR1	-590.3	-599.0	-609.0	-628.0	-665.1	-697.6	-724.6	-729.1	-732.1	VTHETA PR1
	VTHETA PR2	-195.2	-222.0	-237.4	-263.6	-297.1	-335.9	-356.5	-361.9	-377.4	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.3819	0.4126	0.4410	0.4724	0.4641	0.4493	0.4189	0.4034	0.3891	M 1
	M 2	0.5288	0.5352	0.5391	0.5498	0.5552	0.5448	0.5269	0.4943	0.4516	M 2
	M(PR) 1	0.6583	0.6840	0.7096	0.7440	0.7652	0.7797	0.7820	0.7766	0.7709	M(PR) 1
	M(PR) 2	0.4221	0.4537	0.4696	0.4957	0.5196	0.5332	0.5257	0.4952	0.4673	M(PR) 2
	TURN(PR)	30.330	27.101	24.786	22.304	22.030	20.584	20.560	18.399	14.342	TURN(PR)
	P 1	14.432	14.737	14.955	15.169	15.144	15.075	14.936	14.855	14.789	P 1
	P 2	18.709	18.782	18.816	19.018	19.191	19.169	19.040	18.657	18.217	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	558.061	555.905	553.939	555.346	556.274	552.824	556.623	557.200	557.925	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	43.284	40.256	38.972	37.455	36.389	36.041	37.318	40.291	43.465	BETA 2
STATION 2A	BETA 2A	1.806	2.788	2.710	2.702	1.904	2.598	3.529	3.896	3.685	BETA 2A
	V 2	595.94	601.61	604.68	616.77	622.99	610.08	593.10	558.47	512.56	V 2
	V 2A	442.34	448.07	443.28	492.18	529.67	533.53	493.15	469.48	455.33	V 2A
	VZ 2	433.81	459.12	470.11	489.59	501.28	492.63	470.65	425.04	371.24	VZ 2
	VZ 2A	442.12	447.53	442.76	491.58	529.26	532.78	491.96	468.13	454.07	VZ 2A
	V-THETA 2	408.58	388.76	380.31	375.06	369.43	358.45	358.78	360.34	351.87	V-THETA 2
	V-THETA 2A	13.94	21.79	20.96	23.20	17.59	24.17	30.34	31.88	29.24	V-THETA 2A
	M 2	0.5288	0.5352	0.5391	0.5498	0.5552	0.5448	0.5269	0.4943	0.4516	M 2
	M 2A	0.3881	0.3940	0.3904	0.4345	0.4686	0.4736	0.4349	0.4131	0.3999	M 2A
	TURN(PR)	41.477	37.467	36.262	34.751	34.466	33.386	33.695	36.289	39.670	TURN(PR)
	P 2	18.709	18.782	18.816	19.018	19.191	19.169	19.040	18.657	18.217	P 2
	P 2A	18.242	18.284	18.252	18.681	19.036	19.053	18.577	18.362	18.218	P 2A
	T 2	558.061	555.905	553.939	555.346	556.274	552.824	556.623	557.200	557.925	T 2
	T 2A	556.977	554.856	552.895	554.124	554.974	551.753	555.228	555.797	556.620	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (106°) - Station 2 (96°) - Station 2A (85°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	2.377	2.508	2.257	0.735	1.316	1.103	1.918	1.494	2.599	BETA 1
STATION 2	BETA 2	33.791	35.014	38.410	36.395	35.728	35.378	36.460	39.314	42.601	BETA 2
	BETA(PR) 1	55.231	52.759	52.323	53.103	53.496	56.002	59.697	61.874	67.011	BETA(PR) 1
	BETA(PR) 2	28.321	27.617	25.393	26.844	29.115	32.600	35.764	40.552	45.364	BETA(PR) 2
	V 1	406.38	448.48	462.59	476.66	490.39	470.39	419.20	389.36	310.22	V 1
	V 2	601.40	609.42	621.96	638.22	643.62	631.92	610.90	558.78	513.79	V 2
	VZ 1	406.02	448.04	462.23	476.62	490.24	470.24	418.88	389.17	309.87	VZ 1
	VZ 2	499.80	499.11	487.36	513.70	522.25	514.52	490.23	431.33	377.39	VZ 2
	V-THETA 1	16.85	19.62	18.22	6.11	11.26	9.05	14.03	10.15	14.07	V-THETA 1
	V-THETA 2	334.47	349.66	386.41	378.67	375.66	365.35	362.22	353.21	347.04	V-THETA 2
	V(PR) 1	712.0	740.4	756.3	793.9	824.1	841.0	830.2	825.6	793.4	V(PR) 1
	V(PR) 2	567.8	563.3	539.5	575.8	598.1	611.6	605.5	568.9	538.2	V(PR) 2
	VTHETA PR1	-584.9	-589.4	-598.6	-634.9	-662.4	-697.2	-716.7	-728.1	-730.4	VTHETA PR1
	VTHETA PR2	-269.3	-261.1	-231.3	-260.0	-290.9	-329.0	-353.1	-369.1	-382.2	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.3689	0.4083	0.4216	0.4349	0.4480	0.4290	0.3809	0.3531	0.2800	M 1
	M 2	0.5339	0.5426	0.5555	0.5705	0.5750	0.5644	0.5437	0.4947	0.4526	M 2
	M(PR) 1	0.6463	0.6741	0.6893	0.7244	0.7528	0.7670	0.7543	0.7486	0.7162	M(PR) 1
	M(PR) 2	0.5040	0.5015	0.4818	0.5147	0.5344	0.5463	0.5389	0.5037	0.4741	M(PR) 2
	TURN(PR)	26.910	25.142	26.930	26.261	24.397	23.453	24.022	21.427	21.757	TURN(PR)
	P 1	14.488	14.770	14.868	14.955	15.123	15.008	14.736	14.595	14.251	P 1
	P 2	18.792	18.951	19.129	19.356	19.510	19.478	19.280	18.683	18.241	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	558.146	555.902	553.893	554.717	555.830	554.864	556.509	556.909	558.223	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	33.791	35.014	38.410	36.395	35.728	35.378	36.460	39.314	42.601	BETA 2
STATION 2A	BETA 2A	2.203	2.636	2.555	2.362	2.094	2.504	3.296	4.082	4.012	BETA 2A
	V 2	601.40	609.42	621.96	638.22	643.62	631.92	610.90	558.78	513.79	V 2
	V 2A	464.51	465.53	463.92	511.26	536.66	542.48	489.67	469.86	459.22	V 2A
	VZ 2	499.80	499.11	487.36	513.70	522.25	514.52	490.23	431.33	377.39	VZ 2
	VZ 2A	464.17	465.03	463.44	510.77	536.19	541.76	488.61	468.40	457.77	VZ 2A
	V-THETA 2	334.47	349.66	386.41	378.67	375.66	365.35	362.22	353.21	347.04	V-THETA 2
	V-THETA 2A	17.66	21.41	20.68	21.07	19.60	23.69	28.14	33.43	32.11	V-THETA 2A
	M 2	0.5339	0.5426	0.5555	0.5705	0.5750	0.5644	0.5437	0.4947	0.4526	M 2
	M 2A	0.4077	0.4095	0.4088	0.4517	0.4747	0.4801	0.4312	0.4130	0.4028	M 2A
	TURN(PR)	31.567	32.377	35.855	34.031	33.615	32.818	33.071	35.127	38.480	TURN(PR)
	P 2	18.792	18.951	19.129	19.356	19.510	19.478	19.280	18.683	18.241	P 2
	P 2A	18.478	18.476	18.460	18.908	19.162	19.179	18.582	18.397	18.294	P 2A
	T 2	558.146	555.902	553.893	554.717	555.830	554.864	556.509	556.909	558.223	T 2
	T 2A	556.029	555.805	553.890	554.849	555.858	555.731	556.615	556.895	556.539	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (136°) - Station 2 (126°) - Station 2A (115°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	2.607	1.874	1.097	0.806	0.970	1.148	1.363	1.629	1.035	BETA 1
STATION 2	BETA 2	42.805	40.134	38.975	37.498	36.518	35.876	37.673	39.963	43.753	BETA 2
	BETA(PR) 1	52.489	51.418	51.128	50.663	52.293	53.427	57.153	58.051	59.677	BETA(PR) 1
	BETA(PR) 2	24.760	26.107	27.803	29.325	30.624	34.597	36.563	41.537	45.157	BETA(PR) 2
	V 1	446.76	473.76	489.71	519.39	514.19	516.50	464.87	452.61	430.98	V 1
	V 2	593.22	599.27	594.61	605.72	622.72	607.32	598.29	547.88	515.40	V 2
	VZ 1	446.29	473.50	489.62	519.33	514.09	516.32	464.65	452.35	430.87	VZ 1
	VZ 2	435.22	458.15	462.26	480.54	500.23	491.42	472.53	418.98	371.52	VZ 2
	V-THETA 1	20.32	15.49	9.38	7.31	8.70	10.35	11.06	12.86	7.78	V-THETA 1
	V-THETA 2	403.09	386.27	374.00	368.70	370.40	355.42	364.86	351.11	355.69	V-THETA 2
	V(PR) 1	732.9	759.3	780.2	819.3	840.6	866.6	856.7	854.9	853.5	V(PR) 1
	V(PR) 2	479.3	510.2	522.6	551.2	581.6	597.8	589.6	561.0	527.9	V(PR) 2
	VTHETA PR1	-581.4	-593.5	-607.4	-633.7	-665.0	-695.9	-719.7	-725.3	-736.7	VTHETA PR1
	VTHETA PR2	-200.7	-224.5	-243.8	-269.9	-296.1	-339.0	-350.5	-371.2	-373.6	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.4067	0.4322	0.4473	0.4756	0.4706	0.4729	0.4238	0.4122	0.3919	M 1
	M 2	0.5257	0.5324	0.5290	0.5390	0.5543	0.5416	0.5311	0.4838	0.4537	M 2
	M(PR) 1	0.6673	0.6927	0.7126	0.7503	0.7694	0.7933	0.7810	0.7786	0.7761	M(PR) 1
	M(PR) 2	0.4247	0.4533	0.4650	0.4905	0.5178	0.5332	0.5234	0.4954	0.4647	M(PR) 2
	TURN(PR)	27.729	25.312	23.325	21.340	21.686	18.882	20.680	16.618	14.631	TURN(PR)
	P 1	14.583	14.831	14.965	15.197	15.104	15.186	14.875	14.820	14.687	P 1
	P 2	18.733	18.862	18.822	18.974	19.282	19.221	19.181	18.613	18.312	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	559.249	557.171	555.115	555.993	557.393	553.944	557.931	558.582	559.066	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	42.805	40.134	38.975	37.498	36.518	35.876	37.673	39.963	43.753	BETA 2
STATION 2A	BETA 2A	2.511	2.537	2.426	2.042	2.217	2.502	3.161	4.216	4.162	BETA 2A
	V 2	593.22	599.27	594.61	605.72	622.72	607.32	598.29	547.88	515.40	V 2
	V 2A	459.78	467.24	459.87	502.91	538.08	541.77	499.92	477.25	464.55	V 2A
	VZ 2	435.22	458.15	462.26	480.54	500.23	491.42	472.53	418.98	371.52	VZ 2
	VZ 2A	459.33	466.77	459.44	502.54	537.56	541.05	498.91	475.69	463.00	VZ 2A
	V-THETA 2	403.09	386.27	374.00	368.70	370.40	355.42	364.86	351.11	355.69	V-THETA 2
	V-THETA 2A	20.14	20.68	19.46	17.92	20.81	23.64	27.55	35.07	33.69	V-THETA 2A
	M 2	0.5257	0.5324	0.5290	0.5390	0.5543	0.5416	0.5311	0.4838	0.4537	M 2
	M 2A	0.4032	0.4108	0.4049	0.4439	0.4757	0.4805	0.4404	0.4195	0.4077	M 2A
	TURN(PR)	40.293	37.596	36.549	35.454	34.282	33.317	34.418	35.641	39.482	TURN(PR)
	P 2	18.733	18.862	18.822	18.974	19.282	19.221	19.181	18.613	18.312	P 2
	P 2A	18.447	18.495	18.433	18.817	19.168	19.187	18.699	18.482	18.354	P 2A
	T 2	559.249	557.171	555.115	555.993	557.393	553.944	557.931	558.582	559.066	T 2
	T 2A	558.692	556.505	554.392	555.180	556.484	553.435	556.995	557.629	558.230	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (166°) - Station 2 (156°) - Station 2A (145°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	1.876	2.032	2.014	2.231	2.062	2.431	2.140	2.326	3.044	BETA 1
STATION 2	BETA 2	42.182	40.194	39.283	36.901	35.854	35.275	37.026	39.779	44.297	BETA 2
	BETA(PR) 1	55.600	53.447	52.546	53.195	55.744	56.876	60.548	62.224	66.865	BETA(PR) 1
	BETA(PR) 2	25.977	26.800	28.034	28.515	30.250	34.550	38.715	41.411	46.043	BETA(PR) 2
	V 1	403.19	440.24	460.38	466.36	448.13	448.86	404.47	381.05	311.49	V 1
	V 2	584.80	592.29	590.99	617.15	630.04	610.17	577.15	549.41	507.22	V 2
	VZ 1	402.97	439.95	460.09	466.01	447.82	448.40	404.12	380.67	311.02	VZ 1
	VZ 2	433.34	452.42	457.44	493.49	510.42	497.44	459.76	421.27	362.30	VZ 2
	V-THETA 1	13.20	15.61	16.18	18.15	16.12	19.04	15.10	15.46	16.54	V-THETA 1
	V-THETA 2	392.68	382.24	374.18	370.54	368.85	351.88	346.78	350.73	353.52	V-THETA 2
	V(PR) 1	713.3	738.7	756.6	777.9	795.6	820.6	821.9	816.9	791.6	V(PR) 1
	V(PR) 2	482.1	506.9	518.2	561.7	591.2	604.8	590.5	562.9	522.9	V(PR) 2
	VTHETA PR1	-588.5	-593.4	-600.6	-622.8	-657.6	-687.2	-715.7	-722.8	-727.9	VTHETA PR1
	VTHETA PR2	-211.1	-228.5	-243.6	-268.1	-297.7	-342.5	-368.5	-371.6	-375.7	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.3659	0.4006	0.4196	0.4252	0.4080	0.4087	0.3671	0.3453	0.2812	M 1
	M 2	0.5170	0.5249	0.5245	0.5485	0.5600	0.5418	0.5099	0.4841	0.4447	M 2
	M(PR) 1	0.6474	0.6722	0.6895	0.7092	0.7244	0.7472	0.7460	0.7404	0.7146	M(PR) 1
	M(PR) 2	0.4262	0.4492	0.4599	0.4992	0.5254	0.5371	0.5217	0.4960	0.4585	M(PR) 2
	TURN(PR)	29.623	26.647	24.512	24.682	25.511	22.380	21.924	20.918	20.932	TURN(PR)
	P 1	14.542	14.799	14.940	14.947	14.821	14.931	14.728	14.630	14.316	P 1
	P 2	18.657	18.735	18.727	19.096	19.343	19.242	18.940	18.641	18.251	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	560.892	559.134	557.394	558.468	559.811	558.723	560.894	561.204	562.730	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	42.182	40.194	39.283	36.901	35.854	35.275	37.026	39.779	44.297	BETA 2
STATION 2A	BETA 2A	2.503	2.671	2.605	2.117	2.012	2.597	3.174	4.032	3.693	BETA 2A
	V 2	584.80	592.29	590.99	617.15	630.04	610.17	577.15	549.41	507.22	V 2
	V 2A	474.79	473.18	476.16	528.17	560.95	569.22	512.88	491.02	479.70	V 2A
	VZ 2	433.34	452.42	457.44	493.49	510.42	497.44	459.76	421.27	362.30	VZ 2
	VZ 2A	474.34	472.66	475.65	527.76	560.48	568.43	511.83	489.53	478.36	VZ 2A
	V-THETA 2	392.68	382.24	374.18	370.54	368.85	351.88	346.78	350.73	353.52	V-THETA 2
	V-THETA 2A	20.73	22.05	21.64	19.51	19.69	25.78	28.38	34.51	30.88	V-THETA 2A
	M 2	0.5170	0.5249	0.5245	0.5485	0.5600	0.5418	0.5099	0.4841	0.4447	M 2
	M 2A	0.4159	0.4151	0.4183	0.4653	0.4949	0.5026	0.4502	0.4302	0.4193	M 2A
	TURN(PR)	39.678	37.522	36.678	34.782	33.823	32.622	33.758	35.641	40.494	TURN(PR)
	P 2	18.657	18.735	18.727	19.096	19.343	19.242	18.940	18.641	18.251	P 2
	P 2A	18.605	18.580	18.611	19.105	19.435	19.513	18.845	18.625	18.507	P 2A
	T 2	560.892	559.134	557.394	558.468	559.811	558.723	560.894	561.204	562.730	T 2
	T 2A	561.049	559.443	557.971	559.373	560.857	560.729	562.020	562.151	563.854	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (196°) - Station 2 (186°) - Station 2A (175°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	2.479	2.457	1.650	2.038	3.647	2.212	2.326	1.846	2.507	BETA 1
STATION 2	BETA 2	42.873	40.600	39.763	38.584	37.085	35.956	37.509	40.768	43.823	BETA 2
	BETA(PR) 1	51.343	49.876	50.566	50.389	51.378	54.096	55.953	57.538	59.468	BETA(PR) 1
	BETA(PR) 2	24.274	26.131	27.493	29.407	30.420	33.793	37.539	39.496	45.016	BETA(PR) 2
	V 1	465.65	495.83	494.38	515.62	513.22	497.84	481.08	460.49	428.47	V 1
	V 2	597.34	596.91	594.20	600.13	622.39	615.95	588.36	566.75	516.69	V 2
	VZ 1	465.21	495.36	494.12	515.29	512.16	497.40	480.60	460.17	428.02	VZ 1
	VZ 2	437.76	453.21	456.76	469.09	496.28	497.90	465.71	428.29	372.02	VZ 2
	V-THETA 1	20.14	21.26	15.96	18.34	32.64	19.21	19.52	14.83	18.74	V-THETA 1
	V-THETA 2	406.41	388.45	380.06	374.26	375.13	361.16	357.47	369.28	357.04	V-THETA 2
	V(PR) 1	744.7	768.7	777.9	808.2	820.5	848.2	858.4	857.4	842.6	V(PR) 1
	V(PR) 2	480.2	504.8	514.9	538.5	575.8	600.0	588.6	556.3	527.3	V(PR) 2
	VTHETA PR1	-581.6	-587.8	-600.8	-622.6	-641.1	-687.0	-711.2	-723.4	-725.7	VTHETA PR1
	VTHETA PR2	-197.4	-222.3	-237.7	-264.4	-291.4	-333.2	-357.9	-353.0	-372.2	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.4245	0.4531	0.4518	0.4720	0.4697	0.4551	0.4391	0.4197	0.3896	M 1
	M 2	0.5300	0.5307	0.5293	0.5347	0.5552	0.5512	0.5228	0.5022	0.4556	M 2
	M(PR) 1	0.6790	0.7025	0.7108	0.7399	0.7510	0.7753	0.7836	0.7814	0.7660	M(PR) 1
	M(PR) 2	0.4261	0.4488	0.4587	0.4798	0.5137	0.5369	0.5230	0.4930	0.4650	M(PR) 2
	TURN(PR)	27.070	23.745	23.073	20.984	20.974	20.355	18.504	18.146	14.563	TURN(PR)
	P 1	14.873	15.093	15.087	15.227	15.173	15.153	15.104	14.961	14.810	P 1
	P 2	16.795	18.815	18.804	18.915	19.269	19.352	19.082	18.841	18.339	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	558.358	556.082	553.772	554.169	555.165	551.279	555.795	556.645	557.333	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	42.873	40.600	39.763	38.584	37.085	35.956	37.509	40.768	43.823	BETA 2
STATION 2A	BETA 2A	2.549	2.909	2.892	2.226	1.896	2.675	3.370	4.060	3.570	BETA 2A
	V 2	597.34	596.91	594.20	600.13	622.39	615.95	588.36	566.75	516.69	V 2
	V 2A	451.19	453.15	448.65	491.42	534.08	537.20	502.46	480.04	463.50	V 2A
	VZ 2	437.76	453.21	456.76	469.09	496.28	497.90	465.71	428.29	372.02	VZ 2
	VZ 2A	450.74	452.56	448.06	491.00	533.67	536.42	501.33	478.56	462.27	VZ 2A
	V-THETA 2	406.41	388.45	380.06	374.26	375.13	361.16	357.47	369.28	357.04	V-THETA 2
	V-THETA 2A	20.07	23.00	22.64	19.09	17.67	25.06	29.52	33.97	28.84	V-THETA 2A
	M 2	0.5300	0.5307	0.5293	0.5347	0.5552	0.5512	0.5228	0.5022	0.4556	M 2
	M 2A	0.3951	0.3977	0.3944	0.4332	0.4719	0.4763	0.4425	0.4218	0.4064	M 2A
	TURN(PR)	40.323	37.690	36.871	36.356	35.170	33.224	34.045	36.602	40.143	TURN(PR)
	P 2	16.795	18.815	18.804	18.915	19.269	19.352	19.082	18.841	18.339	P 2
	P 2A	18.490	18.505	18.467	18.826	19.230	19.241	18.813	18.590	18.422	P 2A
	T 2	558.358	556.082	553.772	554.169	555.165	551.279	555.795	556.645	557.333	T 2
	T 2A	559.546	557.400	555.143	555.614	556.692	553.297	557.455	558.190	559.091	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (226°) - Station 2 (216°) - Station 2A (205°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-0.649	0.956	3.878	3.933	3.708	2.607	3.214	4.585	5.917	BETA 1
STATION 2	BETA 2	42.027	40.395	40.209	38.470	37.088	35.951	37.925	40.872	44.102	BETA 2
	BETA(PR) 1	56.362	53.956	51.848	51.492	54.199	56.263	58.745	60.820	61.799	BETA(PR) 1
	BETA(PR) 2	25.922	26.911	27.374	28.034	31.220	35.100	38.495	43.052	47.411	BETA(PR) 2
	V 1	404.40	437.90	461.08	484.69	465.20	458.28	429.67	395.90	380.25	V 1
	V 2	585.94	590.35	593.43	614.71	613.72	601.50	577.19	531.94	494.69	V 2
	VZ 1	404.34	437.84	460.02	483.55	464.20	457.75	428.91	394.57	378.18	VZ 1
	VZ 2	435.25	449.60	453.20	481.26	489.34	486.25	454.32	401.36	354.52	VZ 2
	V-THETA 1	-5.99	7.31	31.18	33.24	30.08	20.84	24.09	31.64	39.19	V-THETA 1
	V-THETA 2	392.27	382.57	383.10	382.40	369.93	352.65	354.00	347.32	343.58	V-THETA 2
	V(PR) 1	729.9	744.2	744.7	776.6	793.6	824.2	826.7	809.3	800.3	V(PR) 1
	V(PR) 2	483.9	504.2	510.3	545.3	572.5	595.2	581.7	550.4	524.8	V(PR) 2
	VTHETA PR1	-607.7	-601.7	-585.6	-607.7	-643.6	-685.4	-706.7	-706.6	-705.3	VTHETA PR1
	VTHETA PR2	-211.5	-228.2	-234.7	-256.3	-296.6	-341.7	-361.3	-375.0	-385.7	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.76	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.3671	0.3984	0.4202	0.4426	0.4241	0.4176	0.3907	0.3592	0.3446	M 1
	M 2	0.5203	0.5254	0.5289	0.5482	0.5468	0.5353	0.5122	0.4700	0.4353	M 2
	M(PR) 1	0.6625	0.6770	0.6787	0.7091	0.7235	0.7510	0.7517	0.7342	0.7253	M(PR) 1
	M(PR) 2	0.4297	0.4487	0.4549	0.4863	0.5101	0.5297	0.5162	0.4863	0.4618	M(PR) 2
	TURN(PR)	30.440	27.047	24.474	23.460	22.996	21.216	20.341	17.873	14.498	TURN(PR)
	P 1	14.590	14.838	15.008	15.161	15.056	15.062	14.934	14.766	14.757	P 1
	P 2	18.666	18.769	18.830	19.136	19.191	19.149	18.957	18.459	18.125	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	556.290	554.396	553.143	554.606	555.605	555.566	556.193	556.606	557.892	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	42.027	40.395	40.209	38.470	37.088	35.951	37.925	40.872	44.102	BETA 2
STATION 2A	BETA 2A	2.801	3.353	3.383	2.333	2.035	2.674	3.994	4.729	4.493	BETA 2A
	V 2	585.94	590.35	593.43	614.71	613.72	601.50	577.19	531.94	494.69	V 2
	V 2A	451.00	448.59	451.17	500.98	519.16	527.96	479.10	460.80	447.77	V 2A
	VZ 2	435.25	449.60	453.20	481.26	489.34	486.25	454.32	401.36	354.52	VZ 2
	VZ 2A	450.46	447.82	450.37	500.51	518.71	527.19	477.70	458.97	446.07	VZ 2A
	V-THETA 2	392.27	382.57	383.10	382.40	369.93	352.65	354.00	347.32	343.58	V-THETA 2
	V-THETA 2A	22.04	26.24	26.62	20.39	18.43	24.62	33.35	37.97	35.05	V-THETA 2A
	M 2	0.5203	0.5254	0.5289	0.5482	0.5468	0.5353	0.5122	0.4700	0.4353	M 2
	M 2A	0.3965	0.3951	0.3979	0.4428	0.4591	0.4674	0.4220	0.4052	0.3930	M 2A
	TURN(PR)	39.225	37.041	36.826	36.135	35.034	33.220	33.837	36.037	39.500	TURN(PR)
	P 2	18.666	18.769	18.830	19.136	19.191	19.149	18.957	18.459	18.125	P 2
	P 2A	18.501	18.482	18.506	18.949	19.093	19.126	18.589	18.416	18.302	P 2A
	T 2	556.290	554.396	553.143	554.606	555.605	555.566	556.193	556.606	557.892	T 2
	T 2A	555.195	553.198	551.943	553.469	554.656	554.121	555.417	555.798	557.002	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (256°) - Station 2 (246°) - Station 2A (235°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	4.037	3.605	3.466	3.101	3.761	2.545	2.544	2.289	3.193	BETA 1
STATION 2	BETA 2	42.486	42.528	42.793	40.682	39.941	38.764	41.930	44.719	50.036	BETA 2
	BETA(PR) 1	52.865	52.514	52.674	53.577	54.334	57.618	60.210	62.167	64.422	BETA(PR) 1
	BETA(PR) 2	24.938	25.580	25.550	30.372	31.808	34.783	39.477	42.973	47.433	BETA(PR) 2
	V 1	433.61	446.45	450.36	455.44	462.73	436.11	408.44	382.07	347.65	V 1
	V 2	592.98	593.73	599.68	582.59	596.68	595.43	559.48	529.93	498.34	V 2
	VZ 1	432.53	445.56	449.54	454.78	461.71	435.62	407.96	381.71	347.07	VZ 1
	VZ 2	437.28	437.54	440.05	441.78	457.29	463.68	415.44	375.82	319.57	VZ 2
	V-THETA 1	30.53	28.07	27.23	24.64	30.35	19.36	18.13	15.26	19.36	V-THETA 1
	V-THETA 2	400.49	401.33	407.39	379.75	382.91	372.33	373.14	372.15	381.33	V-THETA 2
	V(PR) 1	716.5	732.1	741.4	766.0	791.9	813.4	821.2	817.6	803.9	V(PR) 1
	V(PR) 2	482.3	485.1	487.7	512.1	538.4	565.4	539.3	514.7	473.3	V(PR) 2
	VTHETA PR1	-571.2	-580.9	-589.5	-616.3	-643.3	-686.9	-712.6	-723.0	-725.1	VTHETA PR1
	VTHETA PR2	-203.3	-209.4	-210.4	-258.9	-283.6	-322.1	-342.2	-350.1	-347.9	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.3944	0.4064	0.4101	0.4149	0.4218	0.3967	0.3708	0.3463	0.3144	M 1
	M 2	0.5251	0.5265	0.5328	0.5162	0.5292	0.5280	0.4940	0.4664	0.4369	M 2
	M(PR) 1	0.6516	0.6665	0.6751	0.6976	0.7218	0.7399	0.7456	0.7410	0.7271	M(PR) 1
	M(PR) 2	0.4270	0.4302	0.4334	0.4538	0.4775	0.5013	0.4762	0.4530	0.4149	M(PR) 2
	TURN(PR)	27.928	26.934	27.124	23.207	22.543	22.888	20.826	19.299	17.099	TURN(PR)
	P 1	14.955	15.146	15.156	15.195	15.237	15.142	15.061	14.913	14.719	P 1
	P 2	18.902	18.949	19.046	18.858	19.043	19.097	18.730	18.407	18.140	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	560.012	558.461	557.065	558.197	558.616	558.735	559.793	560.686	562.123	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	42.486	42.528	42.793	40.682	39.941	38.764	41.930	44.719	50.036	BETA 2
STATION 2A	BETA 2A	2.947	3.531	3.601	2.470	2.492	2.750	3.900	4.301	4.047	BETA 2A
	V 2	592.98	593.73	599.68	582.59	596.68	595.43	559.48	529.93	498.34	V 2
	V 2A	490.02	485.62	481.73	518.77	532.40	536.79	494.15	472.58	463.83	V 2A
	VZ 2	437.28	437.54	440.05	441.78	457.29	463.68	415.44	375.82	319.57	VZ 2
	VZ 2A	489.37	484.68	480.76	518.23	531.78	535.97	492.76	470.98	462.34	VZ 2A
	V-THETA 2	400.49	401.33	407.39	379.75	382.91	372.33	373.14	372.15	381.33	V-THETA 2
	V-THETA 2A	25.19	29.91	30.26	22.35	23.14	25.74	33.59	35.42	32.71	V-THETA 2A
	M 2	0.5251	0.5265	0.5328	0.5162	0.5292	0.5280	0.4940	0.4664	0.4369	M 2
	M 2A	0.4305	0.4272	0.4242	0.4577	0.4700	0.4740	0.4346	0.4147	0.4063	M 2A
	TURN(PR)	39.538	38.996	39.192	38.210	37.429	35.956	37.934	40.311	45.881	TURN(PR)
	P 2	18.902	18.949	19.046	18.858	19.043	19.097	18.730	18.407	18.140	P 2
	P 2A	18.795	18.760	18.730	19.071	19.187	19.183	18.708	18.507	18.417	P 2A
	T 2	560.012	558.461	557.065	558.197	558.616	558.735	559.793	560.686	562.123	T 2
	T 2A	559.053	557.347	555.913	557.058	557.647	557.680	558.310	558.997	560.347	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (286°) - Station 2 (276°) - Station 2A (265°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-2.615	-2.618	-2.747	-1.794	-2.135	-1.781	-0.500	-2.050	-2.305	BETA 1
STATION 2	BETA 2	39.673	39.740	39.643	40.743	42.781	43.609	47.672	51.266	55.560	BETA 2
	BETA(PR) 1	55.862	54.459	55.301	56.429	58.763	61.032	64.133	66.946	69.880	BETA(PR) 1
	BETA(PR) 2	26.312	25.956	26.251	28.644	33.251	38.469	43.777	46.533	50.665	BETA(PR) 2
	V 1	421.45	450.23	442.25	434.63	418.36	398.06	355.91	319.30	277.07	V 1
	V 2	592.56	602.58	606.98	598.85	574.60	549.52	517.47	502.27	482.03	V 2
	VZ 1	421.00	449.76	441.73	434.42	418.05	397.82	355.83	319.04	276.82	VZ 1
	VZ 2	456.09	463.35	467.39	453.70	421.57	397.45	347.90	313.80	272.26	VZ 2
	V-THETA 1	-19.23	-20.57	-21.19	-13.61	-15.58	-12.37	-3.11	-11.42	-11.14	V-THETA 1
	V-THETA 2	378.29	385.23	387.25	390.83	390.12	378.60	381.96	391.21	397.04	V-THETA 2
	V(PR) 1	750.2	773.7	776.0	785.6	806.2	821.4	815.6	814.7	804.7	V(PR) 1
	V(PR) 2	508.8	515.3	521.1	517.0	504.4	508.3	482.7	457.0	430.2	V(PR) 2
	VTHETA PR1	-620.9	-629.6	-638.0	-654.6	-689.3	-718.6	-733.9	-749.6	-755.6	VTHETA PR1
	VTHETA PR2	-225.5	-225.5	-230.5	-247.8	-276.4	-315.8	-333.4	-331.1	-332.2	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.3830	0.4100	0.4025	0.3953	0.3801	0.3612	0.3221	0.2884	0.2497	M 1
	M 2	0.5242	0.5341	0.5386	0.5300	0.5070	0.4835	0.4527	0.4384	0.4195	M 2
	M(PR) 1	0.6817	0.7046	0.7062	0.7146	0.7324	0.7453	0.7381	0.7358	0.7253	M(PR) 1
	M(PR) 2	0.4501	0.4568	0.4624	0.4576	0.4450	0.4473	0.4223	0.3988	0.3744	M(PR) 2
	TURN(PR)	29.550	28.503	29.050	27.787	25.530	22.619	20.451	20.518	19.324	TURN(PR)
	P 1	14.838	15.116	15.062	15.064	15.050	15.055	14.902	14.735	14.596	P 1
	P 2	19.030	19.174	19.238	19.114	18.783	18.490	18.129	17.975	17.819	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	560.944	559.866	559.170	561.078	561.971	562.586	566.039	567.290	568.790	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	39.673	39.740	39.643	40.743	42.781	43.609	47.672	51.266	55.560	BETA 2
STATION 2A	BETA 2A	2.805	3.048	3.160	2.715	3.648	3.013	1.970	1.070	0.045	BETA 2A
	V 2	592.56	602.58	606.98	598.85	574.60	549.52	517.47	502.27	482.03	V 2
	V 2A	488.05	486.00	486.20	508.80	498.92	479.41	427.46	410.86	405.36	V 2A
	VZ 2	456.09	463.35	467.39	453.70	421.57	397.45	347.90	313.80	272.26	VZ 2
	VZ 2A	487.46	485.31	485.44	508.18	497.80	478.57	426.99	410.55	405.07	VZ 2A
	V-THETA 2	378.29	385.23	387.25	390.83	390.12	378.60	381.96	391.21	397.04	V-THETA 2
	V-THETA 2A	23.88	25.64	26.80	24.10	31.74	25.19	14.69	7.67	0.32	V-THETA 2A
	M 2	0.5242	0.5341	0.5386	0.5300	0.5070	0.4835	0.4527	0.4384	0.4195	M 2
	M 2A	0.4291	0.4276	0.4280	0.4479	0.4386	0.4205	0.3726	0.3573	0.3518	M 2A
	TURN(PR)	36.867	36.691	36.483	38.026	39.113	40.537	45.604	50.089	55.410	TURN(PR)
	P 2	19.030	19.174	19.238	19.114	18.783	18.490	18.129	17.975	17.819	P 2
	P 2A	18.816	18.788	18.782	18.965	18.828	18.583	18.110	17.989	17.941	P 2A
	T 2	560.944	559.866	559.170	561.078	561.971	562.586	566.039	567.290	568.790	T 2
	T 2A	558.248	557.152	556.579	558.584	559.066	560.009	562.984	564.299	566.148	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (316°) - Station 2 (306°) - Station 2A (295°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-12.470	-12.460	-12.290	-12.968	-13.118	-14.160	-13.707	-14.179	-15.059	BETA 1
STATION 2	BETA 2	45.464	51.311	52.835	51.414	53.223	49.248	53.740	57.716	62.902	BETA 2
	BETA(PR) 1	67.697	66.551	65.852	66.464	68.378	69.919	71.651	73.464	75.449	BETA(PR) 1
	BETA(PR) 2	28.209	28.591	34.694	36.432	37.082	36.034	44.292	49.318	53.088	BETA(PR) 2
	V 1	276.01	299.22	313.63	318.43	302.11	293.37	271.48	244.44	215.16	V 1
	V 2	554.47	544.75	508.40	514.21	531.88	563.95	517.72	492.97	487.66	V 2
	VZ 1	271.45	292.17	306.44	310.31	294.21	284.42	263.70	236.95	207.75	VZ 1
	VZ 2	388.88	340.51	307.13	320.70	318.35	367.81	305.83	263.01	221.95	VZ 2
	V-THETA 1	-60.03	-64.56	-66.76	-71.46	-68.56	-71.76	-64.32	-59.87	-55.90	V-THETA 1
	V-THETA 2	395.23	425.20	405.14	401.93	425.91	426.83	416.95	416.30	433.77	V-THETA 2
	V(PR) 1	715.3	734.2	749.1	777.1	798.4	828.4	837.7	832.5	826.9	V(PR) 1
	V(PR) 2	441.3	387.8	373.5	398.6	399.2	455.5	428.0	404.1	370.1	V(PR) 2
	VTHETA PR1	-661.7	-673.6	-683.5	-712.4	-742.3	-778.0	-795.1	-798.1	-800.4	VTHETA PR1
	VTHETA PR2	-208.6	-185.6	-212.6	-236.7	-240.6	-267.6	-298.4	-306.0	-295.5	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.2506	0.2700	0.2832	0.2876	0.2726	0.2646	0.2446	0.2200	0.1934	M 1
	M 2	0.4851	0.4767	0.4441	0.4491	0.4645	0.4940	0.4506	0.4279	0.4229	M 2
	M(PR) 1	0.6447	0.6624	0.6763	0.7018	0.7205	0.7472	0.7548	0.7493	0.7434	M(PR) 1
	M(PR) 2	0.3860	0.3393	0.3263	0.3481	0.3487	0.3990	0.3725	0.3508	0.3210	M(PR) 2
	TURN(PR)	39.488	37.961	31.159	30.034	31.315	33.940	27.455	24.252	22.468	TURN(PR)
	P 1	13.630	13.815	13.831	13.806	13.768	13.780	13.790	13.761	13.675	P 1
	P 2	18.407	18.303	17.953	18.027	18.238	18.618	18.050	17.823	17.809	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	569.362	568.171	566.809	567.612	569.061	568.732	571.756	572.490	573.048	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	45.464	51.311	52.835	51.414	53.223	49.248	53.740	57.716	62.902	BETA 2
STATION 2A	BETA 2A	2.596	2.540	2.439	2.429	4.337	3.328	1.098	-0.415	-1.863	BETA 2A
	V 2	554.47	544.75	508.40	514.21	531.88	563.95	517.72	492.97	487.66	V 2
	V 2A	414.74	410.22	404.74	418.27	429.65	412.89	379.14	362.11	363.90	V 2A
	VZ 2	388.88	340.51	307.13	320.70	318.35	367.81	305.83	263.01	221.95	VZ 2
	VZ 2A	414.32	409.80	404.36	417.85	428.32	412.04	378.88	361.89	363.44	VZ 2A
	V-THETA 2	395.23	425.20	405.14	401.93	425.91	426.83	416.95	416.30	433.77	V-THETA 2
	V-THETA 2A	18.78	18.18	17.22	17.72	32.48	23.96	7.26	-2.62	-11.82	V-THETA 2A
	M 2	0.4851	0.4767	0.4441	0.4491	0.4645	0.4940	0.4506	0.4279	0.4229	M 2
	M 2A	0.3600	0.3563	0.3518	0.3634	0.3731	0.3582	0.3273	0.3120	0.3134	M 2A
	TURN(PR)	42.867	48.770	50.396	48.983	48.867	45.861	52.548	58.032	64.672	TURN(PR)
	P 2	18.407	18.303	17.953	18.027	18.238	18.618	18.050	17.823	17.809	P 2
	P 2A	18.110	18.058	18.020	18.101	18.154	18.002	17.763	17.656	17.656	P 2A
	T 2	569.362	568.171	566.809	567.612	569.061	568.732	571.756	572.490	573.048	T 2
	T 2A	566.755	565.594	564.433	565.717	567.163	567.032	570.488	571.432	572.219	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 98.91 Equivalent Rotor Speed = 4163.97 Equivalent Weight Flow = 101.60
Circumferential Distortion
Station 1 (346°) - Station 2 (336°) - Station 2A (325°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	32.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-7.204	-6.577	-6.369	-6.946	-6.542	-7.126	-6.387	-6.678	-7.168	BETA 1
STATION 2	BETA 2	53.766	54.390	54.561	50.604	47.815	46.293	47.895	50.696	54.266	BETA 2
	BETA(PR) 1	63.777	61.262	60.783	61.218	61.659	62.893	64.101	65.608	68.454	BETA(PR) 1
	BETA(PR) 2	24.595	28.623	38.109	39.072	32.960	38.419	44.564	47.956	48.808	BETA(PR) 2
	V 1	318.58	358.85	370.20	380.17	389.89	389.29	377.63	355.98	311.76	V 1
	V 2	560.57	540.15	486.60	495.84	566.76	546.92	510.91	490.03	493.72	V 2
	VZ 1	316.06	356.48	367.91	377.38	387.33	386.24	375.21	353.51	309.30	VZ 1
	VZ 2	331.34	314.51	282.15	314.69	380.47	377.53	342.03	309.92	287.96	VZ 2
	V-THETA 1	-39.95	-41.10	-41.07	-45.98	-44.42	-48.29	-42.00	-41.39	-38.90	V-THETA 1
	V-THETA 2	452.16	439.14	396.45	383.16	419.82	394.96	378.46	378.60	400.24	V-THETA 2
	V(PR) 1	715.3	741.4	753.7	783.8	815.9	847.7	859.1	856.0	842.2	V(PR) 1
	V(PR) 2	364.4	358.3	358.6	405.4	453.7	482.5	480.9	463.6	438.0	V(PR) 2
	VTHETA PR1	-641.7	-650.1	-657.8	-686.9	-718.1	-754.5	-772.8	-779.6	-783.4	VTHETA PR1
	VTHETA PR2	-151.7	-171.6	-221.3	-255.5	-246.7	-299.4	-336.9	-343.7	-329.0	VTHETA PR2
	U 1	601.71	609.02	616.77	640.97	673.70	706.25	730.76	738.21	744.46	U 1
	U 2	603.82	610.78	617.75	638.65	666.52	694.39	715.32	722.28	729.26	U 2
	M 1	0.2877	0.3248	0.3353	0.3445	0.3536	0.3530	0.3422	0.3221	0.2814	M 1
	M 2	0.4900	0.4719	0.4239	0.4322	0.4967	0.4786	0.4453	0.4261	0.4291	M 2
	M(PR) 1	0.6460	0.6711	0.6827	0.7103	0.7399	0.7687	0.7784	0.7747	0.7603	M(PR) 1
	M(PR) 2	0.3185	0.3130	0.3123	0.3533	0.3976	0.4222	0.4191	0.4031	0.3806	M(PR) 2
	TURN(PR)	39.182	32.640	22.674	22.148	28.716	24.530	19.632	17.758	19.756	TURN(PR)
	P 1	13.546	13.686	13.718	13.700	13.673	13.713	13.757	13.734	13.578	P 1
	P 2	18.350	18.102	17.619	17.762	18.562	18.449	18.035	17.843	17.902	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	570.870	569.574	568.172	568.143	568.529	568.340	569.593	570.257	571.217	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	53.766	54.390	54.561	50.604	47.815	46.293	47.895	50.696	54.266	BETA 2
STATION 2A	BETA 2A	2.302	2.122	1.198	0.837	3.787	3.739	3.158	2.873	1.993	BETA 2A
	V 2	560.57	540.15	486.60	495.84	566.76	546.92	510.91	490.03	493.72	V 2
	V 2A	379.28	375.09	367.25	382.51	413.45	415.77	377.82	369.56	372.44	V 2A
	VZ 2	331.34	314.51	282.15	314.69	380.47	377.53	342.03	309.92	287.96	VZ 2
	VZ 2A	378.97	374.82	367.16	382.43	412.46	414.73	377.06	368.89	371.95	VZ 2A
	V-THETA 2	452.16	439.14	396.45	383.16	419.82	394.96	378.46	378.60	400.24	V-THETA 2
	V-THETA 2A	15.23	13.89	7.68	5.59	27.30	27.10	20.80	18.51	12.94	V-THETA 2A
	M 2	0.4900	0.4719	0.4239	0.4322	0.4967	0.4786	0.4453	0.4261	0.4291	M 2
	M 2A	0.3276	0.3242	0.3177	0.3312	0.3587	0.3606	0.3267	0.3193	0.3215	M 2A
	TURN(PR)	51.463	52.267	53.363	49.765	44.008	42.495	44.640	47.717	52.168	TURN(PR)
	P 2	18.350	18.102	17.619	17.762	18.562	18.449	18.035	17.843	17.902	P 2
	P 2A	17.786	17.748	17.701	17.779	17.985	17.991	17.722	17.673	17.685	P 2A
	T 2	570.870	569.574	568.172	568.143	568.529	568.340	569.593	570.257	571.217	T 2
	T 2A	569.672	568.582	567.344	567.081	567.216	567.703	568.581	568.935	569.995	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (16°) - Station 2 (6°) - Station 2A (355°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-4.794	-4.700	-4.428	-4.188	-3.426	-3.497	-3.850	-4.098	-4.581	BETA 1
STATION 2	BETA 2	55.144	55.313	55.327	51.322	48.987	47.789	51.343	55.065	60.400	BETA 2
	BETA(PR) 1	63.980	62.299	61.511	61.933	62.264	63.965	64.715	65.897	67.466	BETA(PR) 1
	BETA(PR) 2	19.125	15.166	25.516	36.250	33.075	36.763	42.331	46.306	48.191	BETA(PR) 2
	V 1	312.44	340.84	356.24	362.50	372.48	362.20	363.30	347.79	325.85	V 1
	V 2	602.48	635.79	574.03	524.02	573.41	568.58	539.38	518.00	521.89	V 2
	VZ 1	311.34	339.69	355.18	361.53	371.79	361.48	362.41	346.84	324.78	VZ 1
	VZ 2	344.32	361.82	326.56	327.47	376.17	381.65	336.47	296.26	257.54	VZ 2
	V-THETA 1	-26.11	-27.93	-27.50	-26.47	-22.26	-22.09	-24.39	-24.85	-26.02	V-THETA 1
	V-THETA 2	494.39	522.79	472.09	409.08	432.54	420.73	420.63	424.13	453.35	V-THETA 2
	V(PR) 1	709.7	730.8	744.6	768.4	798.9	823.6	848.5	849.3	847.5	V(PR) 1
	V(PR) 2	364.4	374.9	361.9	406.1	449.1	477.0	456.0	429.6	387.0	V(PR) 2
	VTHETA PR1	-637.8	-647.0	-654.5	-678.0	-707.1	-740.0	-767.2	-775.3	-782.8	VTHETA PR1
	VTHETA PR2	-119.4	-98.1	-155.9	-240.1	-245.0	-285.1	-306.5	-310.1	-288.0	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.2821	0.3082	0.3224	0.3282	0.3374	0.3279	0.3289	0.3146	0.2944	M 1
	M 2	0.5292	0.5614	0.5046	0.4584	0.5034	0.4990	0.4717	0.4520	0.4550	M 2
	M(PR) 1	0.6407	0.6607	0.6739	0.6956	0.7236	0.7456	0.7682	0.7682	0.7656	M(PR) 1
	M(PR) 2	0.3201	0.3310	0.3181	0.3553	0.3943	0.4186	0.3988	0.3749	0.3374	M(PR) 2
	TURN(PR)	44.854	47.133	35.995	25.685	29.206	27.257	22.479	19.697	19.385	TURN(PR)
	P 1	13.581	13.723	13.757	13.747	13.795	13.783	13.817	13.758	13.648	P 1
	P 2	18.919	19.317	18.574	18.133	18.790	18.852	18.541	18.319	18.365	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	569.566	567.449	565.943	566.568	567.238	567.271	568.296	568.792	570.066	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	55.144	55.313	55.327	51.322	48.987	47.789	51.343	55.065	60.400	BETA 2
STATION 2A	BETA 2A	3.612	0.557	-1.815	-2.075	2.510	3.997	5.516	6.249	6.697	BETA 2A
	V 2	602.48	635.79	574.03	524.02	573.41	568.58	539.38	518.00	521.89	V 2
	V 2A	409.47	401.63	388.56	407.87	430.35	440.09	427.56	414.24	420.15	V 2A
	VZ 2	344.32	361.82	326.56	327.47	376.17	381.65	336.47	296.26	257.54	VZ 2
	VZ 2A	406.65	401.61	388.35	407.56	429.84	438.86	425.37	411.54	416.98	VZ 2A
	V-THETA 2	494.39	522.79	472.09	409.08	432.54	420.73	420.63	424.13	453.35	V-THETA 2
	V-THETA 2A	25.80	3.90	-12.31	-14.77	18.84	30.66	41.08	45.06	48.96	V-THETA 2A
	M 2	0.5292	0.5614	0.5046	0.4584	0.5034	0.4990	0.4717	0.4520	0.4550	M 2
	M 2A	0.3538	0.3474	0.3362	0.3531	0.3728	0.3814	0.3700	0.3580	0.3629	M 2A
	TURN(PR)	51.531	54.755	57.142	53.395	46.457	43.733	45.733	48.716	53.611	TURN(PR)
	P 2	18.919	19.317	18.574	18.133	18.790	18.852	18.541	18.319	18.365	P 2
	P 2A	18.118	18.012	17.920	18.069	18.243	18.328	18.231	18.131	18.166	P 2A
	T 2	569.566	567.449	565.943	566.568	567.238	567.271	568.296	568.792	570.066	T 2
	T 2A	571.449	569.650	568.322	569.090	569.946	570.183	571.037	571.399	572.560	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (46°) - Station 2 (36°) - Station 2A (25°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	5.763	6.005	6.525	4.815	5.454	4.433	5.106	5.037	6.649	BETA 1
STATION 2	BETA 2	48.929	46.300	45.694	42.370	43.059	41.016	43.867	47.261	51.706	BETA 2
	BETA(PR) 1	53.350	51.563	51.527	52.286	53.423	55.360	57.746	58.800	61.545	BETA(PR) 1
	BETA(PR) 2	27.710	27.993	29.252	31.920	33.765	38.778	42.216	45.772	49.326	BETA(PR) 2
	V 1	425.46	455.98	459.69	474.71	476.72	472.25	445.59	433.17	388.39	V 1
	V 2	558.52	569.49	567.35	572.44	578.69	559.79	540.76	513.74	492.98	V 2
	VZ 1	423.30	453.47	456.71	473.03	474.54	470.78	443.73	431.43	385.74	VZ 1
	VZ 2	366.94	393.45	396.29	422.90	422.66	421.87	389.16	348.04	305.04	VZ 2
	V-THETA 1	42.72	47.70	52.24	39.85	45.31	36.50	39.65	38.03	44.97	V-THETA 1
	V-THETA 2	421.06	411.72	406.01	385.76	394.95	366.93	374.07	376.65	386.33	V-THETA 2
	V(PR) 1	709.1	729.5	734.1	773.3	796.4	828.3	831.5	832.9	809.6	V(PR) 1
	V(PR) 2	414.5	445.6	454.2	498.3	508.7	541.8	526.5	499.9	468.8	V(PR) 2
	VTHETA PR1	-568.9	-571.4	-574.7	-611.7	-639.5	-661.4	-703.2	-712.4	-711.8	VTHETA PR1
	VTHETA PR2	-192.7	-209.1	-221.9	-263.4	-282.6	-338.9	-353.1	-357.6	-355.0	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.3867	0.4154	0.4189	0.4331	0.4350	0.4308	0.4056	0.3940	0.3522	M 1
	M 2	0.4937	0.5050	0.5040	0.5087	0.5147	0.4969	0.4784	0.4532	0.4333	M 2
	M(PR) 1	0.6446	0.6645	0.6690	0.7055	0.7267	0.7555	0.7569	0.7575	0.7341	M(PR) 1
	M(PR) 2	0.3664	0.3951	0.4035	0.4428	0.4524	0.4809	0.4657	0.4410	0.4121	M(PR) 2
	TURN(PR)	25.640	23.570	22.275	20.368	19.676	16.638	15.624	13.134	12.328	TURN(PR)
	P 1	14.526	14.749	14.760	14.869	14.912	14.939	14.834	14.811	14.579	P 1
	P 2	18.386	18.525	18.530	18.685	18.836	18.741	18.592	18.306	18.112	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	558.516	556.309	554.130	554.129	553.928	554.323	556.052	556.789	558.876	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	48.929	46.300	45.694	42.370	43.059	41.016	43.867	47.261	51.706	BETA 2
STATION 2A	BETA 2A	3.281	2.104	1.104	0.854	2.738	4.031	5.494	5.897	6.067	BETA 2A
	V 2	558.52	569.49	567.35	572.44	578.69	559.79	540.76	513.74	492.98	V 2
	V 2A	403.72	399.16	392.24	413.40	433.27	445.71	420.13	411.88	408.98	V 2A
	VZ 2	366.94	393.45	396.29	422.90	422.66	421.87	389.16	348.04	305.04	VZ 2
	VZ 2A	403.06	396.88	392.16	413.31	432.68	444.44	417.99	409.47	406.40	VZ 2A
	V-THETA 2	421.06	411.72	406.01	385.76	394.95	366.93	374.07	376.65	386.33	V-THETA 2
	V-THETA 2A	23.11	14.65	7.56	6.16	20.69	31.32	40.20	42.29	43.19	V-THETA 2A
	M 2	0.4937	0.5050	0.5040	0.5087	0.5147	0.4969	0.4784	0.4532	0.4333	M 2
	M 2A	0.3526	0.3492	0.3437	0.3627	0.3807	0.3919	0.3682	0.3604	0.3570	M 2A
	TURN(PR)	45.647	44.195	44.590	41.514	40.301	36.927	38.277	41.258	45.534	TURN(PR)
	P 2	18.386	18.525	18.530	18.685	18.836	18.741	18.592	18.306	18.112	P 2
	P 2A	18.131	18.057	18.022	18.190	18.333	18.438	18.212	18.134	18.113	P 2A
	T 2	558.516	556.309	554.130	554.129	553.928	554.323	556.052	556.789	558.876	T 2
	T 2A	559.163	557.078	554.755	554.685	554.496	554.902	556.599	557.619	559.901	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (76°) - Station 2 (66°) - Station 2A (55°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	3.178	1.848	1.003	1.389	0.836	0.571	0.424	0.427	1.158	BETA 1
STATION 2	BETA 2	46.218	44.505	43.155	41.480	40.083	39.387	40.823	44.324	48.107	BETA 2
	BETA(PR) 1	58.017	56.595	56.031	54.545	55.488	58.388	60.547	61.842	63.682	BETA(PR) 1
	BETA(PR) 2	25.310	27.130	26.427	30.670	31.818	35.629	38.330	41.210	45.696	BETA(PR) 2
	V 1	369.72	399.99	417.53	456.24	466.26	439.26	417.81	400.14	370.71	V 1
	V 2	585.02	582.21	600.04	586.65	605.94	594.67	581.93	555.12	519.83	V 2
	VZ 1	369.15	399.78	417.47	456.10	466.19	439.18	417.72	400.06	370.60	VZ 1
	VZ 2	404.78	415.22	437.73	439.49	463.41	459.03	439.49	396.35	346.50	VZ 2
	V-THETA 1	20.50	12.90	7.31	11.06	6.80	4.38	3.09	2.98	7.49	V-THETA 1
	V-THETA 2	422.36	408.11	410.41	388.56	390.00	376.88	379.67	387.11	386.28	V-THETA 2
	V(PR) 1	696.9	726.1	747.2	786.3	822.8	837.9	849.6	847.8	835.9	V(PR) 1
	V(PR) 2	447.8	466.6	488.8	511.0	545.7	565.5	561.4	528.0	497.0	V(PR) 2
	VTHETA PR1	-591.2	-606.2	-619.6	-640.5	-678.0	-713.5	-739.7	-747.4	-749.3	VTHETA PR1
	VTHETA PR2	-191.4	-212.8	-217.5	-260.6	-287.5	-329.0	-347.5	-347.1	-355.0	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.3348	0.3630	0.3793	0.4156	0.4251	0.3997	0.3796	0.3631	0.3358	M 1
	M 2	0.5170	0.5155	0.5330	0.5202	0.5382	0.5275	0.5149	0.4900	0.4569	M 2
	M(PR) 1	0.6312	0.6589	0.6788	0.7163	0.7502	0.7624	0.7718	0.7693	0.7571	M(PR) 1
	M(PR) 2	0.3957	0.4131	0.4342	0.4532	0.4847	0.5016	0.4967	0.4661	0.4369	M(PR) 2
	TURN(PR)	32.707	29.465	29.605	23.877	23.688	22.813	22.309	20.737	18.097	TURN(PR)
	P 1	14.357	14.548	14.633	14.891	14.960	14.827	14.778	14.681	14.518	P 1
	P 2	18.802	18.764	18.995	18.876	19.190	19.167	19.089	18.781	18.420	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	561.405	558.981	557.354	557.796	558.027	558.353	559.779	559.735	561.024	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	46.218	44.505	43.155	41.480	40.083	39.387	40.823	44.324	48.107	BETA 2
STATION 2A	BETA 2A	3.111	3.426	3.491	3.151	2.832	3.645	4.806	5.042	5.017	BETA 2A
	V 2	585.02	582.21	600.04	586.65	605.94	594.67	581.93	555.12	519.83	V 2
	V 2A	435.78	428.82	417.25	452.54	481.93	496.71	461.31	441.87	435.85	V 2A
	VZ 2	404.78	415.22	437.73	439.49	463.41	459.03	439.49	396.35	346.50	VZ 2
	VZ 2A	435.14	428.05	416.47	451.81	481.24	495.52	459.45	439.92	433.87	VZ 2A
	V-THETA 2	422.36	408.11	410.41	388.56	390.00	376.88	379.67	387.11	386.28	V-THETA 2
	V-THETA 2A	23.65	25.63	25.41	24.87	23.81	31.57	38.63	38.81	38.09	V-THETA 2A
	M 2	0.5170	0.5155	0.5330	0.5202	0.5382	0.5275	0.5149	0.4900	0.4569	M 2
	M 2A	0.3610	0.3755	0.3657	0.3975	0.4241	0.4375	0.4047	0.3871	0.3811	M 2A
	TURN(PR)	43.106	41.078	39.664	36.327	37.231	35.684	35.921	39.175	42.982	TURN(PR)
	P 2	18.802	18.764	18.995	18.876	19.190	19.167	19.089	18.781	18.420	P 2
	P 2A	18.444	18.367	18.313	18.591	18.830	18.949	18.583	18.422	18.342	P 2A
	T 2	561.405	558.981	557.354	557.796	558.027	558.353	559.779	559.735	561.024	T 2
	T 2A	560.344	557.941	556.196	556.510	556.572	556.882	558.439	558.569	560.057	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (106°) - Station 2 (96°) - Station 2A (85°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	3.226	4.177	3.938	3.352	3.470	2.828	1.812	2.103	2.942	BETA 1
STATION 2	BETA 2	45.657	43.312	42.506	40.927	39.613	38.891	40.103	42.655	46.653	BETA 2
	BETA(PR) 1	56.636	55.191	53.611	53.763	54.581	56.689	59.717	61.797	64.897	BETA(PR) 1
	BETA(PR) 2	25.945	28.080	29.512	31.603	33.649	36.098	39.900	43.000	48.025	BETA(PR) 2
	V 1	388.97	410.71	440.78	458.64	467.76	457.57	426.21	394.97	346.70	V 1
	V 2	581.67	578.00	574.55	579.69	589.21	591.25	567.58	539.63	498.37	V 2
	VZ 1	388.35	409.61	439.74	457.85	466.88	456.95	425.91	394.64	346.21	VZ 1
	VZ 2	406.55	420.57	423.56	437.96	453.71	459.61	433.26	396.04	341.45	VZ 2
	V-THETA 1	21.89	29.91	30.27	26.82	28.31	22.57	13.47	14.49	17.79	V-THETA 1
	V-THETA 2	415.98	396.49	388.20	379.73	375.52	370.74	364.87	364.88	361.75	V-THETA 2
	V(PR) 1	706.1	717.6	741.2	774.6	805.6	832.1	844.6	835.1	816.1	V(PR) 1
	V(PR) 2	452.1	476.7	486.7	514.2	545.3	569.6	565.9	542.6	511.4	V(PR) 2
	VTHETA PR1	-589.8	-589.2	-596.7	-624.7	-656.5	-695.3	-729.4	-735.9	-739.0	VTHETA PR1
	VTHETA PR2	-197.8	-224.4	-239.8	-269.5	-302.0	-335.1	-362.3	-369.3	-379.6	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.66	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.3527	0.3730	0.4011	0.4179	0.4265	0.4169	0.3874	0.3583	0.3136	M 1
	M 2	0.5138	0.5114	0.5092	0.5139	0.5226	0.5242	0.5017	0.4754	0.4370	M 2
	M(PR) 1	0.6403	0.6516	0.6745	0.7058	0.7346	0.7581	0.7678	0.7575	0.7381	M(PR) 1
	M(PR) 2	0.3994	0.4218	0.4314	0.4559	0.4837	0.5050	0.5002	0.4781	0.4485	M(PR) 2
	TURN(PR)	30.691	27.111	24.099	22.163	20.950	20.645	19.910	18.902	16.982	TURN(PR)
	P 1	14.435	14.606	14.789	14.879	14.957	14.974	14.825	14.687	14.458	P 1
	P 2	18.849	18.822	18.795	18.894	19.091	19.214	19.010	18.714	18.297	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	561.447	559.339	557.246	557.447	557.820	558.468	559.394	560.301	561.885	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	45.657	43.312	42.506	40.927	39.613	38.891	40.103	42.655	46.653	BETA 2
STATION 2A	BETA 2A	3.414	3.634	3.542	2.840	2.773	3.594	4.562	5.128	5.205	BETA 2A
	V 2	581.67	578.00	574.55	579.69	589.21	591.25	567.58	539.63	498.37	V 2
	V 2A	450.06	442.01	435.86	465.88	488.36	503.18	462.79	445.54	439.37	V 2A
	VZ 2	406.55	420.57	423.56	437.96	453.71	459.61	433.26	396.04	341.45	VZ 2
	VZ 2A	449.26	441.11	435.01	465.26	487.68	502.00	461.09	443.51	437.25	VZ 2A
	V-THETA 2	415.98	396.49	388.20	379.73	375.52	370.74	364.87	364.88	361.75	V-THETA 2
	V-THETA 2A	26.80	28.01	26.93	23.08	23.62	31.53	36.79	39.80	39.83	V-THETA 2A
	M 2	0.5138	0.5114	0.5092	0.5139	0.5226	0.5242	0.5017	0.4754	0.4370	M 2
	M 2A	0.3935	0.3869	0.3822	0.4092	0.4295	0.4428	0.4055	0.3898	0.3836	M 2A
	TURN(PR)	42.242	39.677	38.964	38.085	36.820	35.239	35.446	37.421	41.339	TURN(PR)
	P 2	18.849	18.822	18.795	18.894	19.091	19.214	19.010	18.714	18.297	P 2
	P 2A	18.617	18.550	18.510	18.747	18.932	19.043	18.636	18.497	18.424	P 2A
	T 2	561.447	559.339	557.246	557.447	557.820	558.468	559.394	560.301	561.885	T 2
	T 2A	561.347	559.280	557.135	557.435	557.854	558.532	559.742	560.264	562.042	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (136°) - Station 2 (126°) - Station 2A (115°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	3.276	2.540	2.096	1.524	1.964	1.461	1.590	0.742	0.450	BETA 1
STATION 2	BETA 2	46.816	44.602	43.646	42.326	40.817	40.155	42.395	43.808	47.736	BETA 2
	BETA(PR) 1	57.483	55.958	55.474	55.116	56.968	58.194	61.413	63.486	63.833	BETA(PR) 1
	BETA(PR) 2	25.406	27.596	28.016	30.294	33.513	36.177	37.959	41.661	45.648	BETA(PR) 2
	V 1	376.82	406.46	421.00	446.15	435.84	438.41	398.98	372.06	370.44	V 1
	V 2	582.25	577.27	584.03	587.39	586.94	587.10	582.63	551.33	520.04	V 2
	VZ 1	376.20	406.06	420.71	445.99	435.56	438.21	398.76	371.97	370.40	VZ 1
	VZ 2	398.45	409.59	422.61	434.25	444.02	448.17	429.47	397.08	349.13	VZ 2
	V-THETA 1	21.53	18.01	15.40	11.87	14.94	11.33	11.07	4.82	2.91	V-THETA 1
	V-THETA 2	424.54	406.77	403.09	395.50	383.50	378.13	392.09	380.90	384.18	V-THETA 2
	V(PR) 1	699.8	725.4	742.3	779.8	799.0	831.5	833.4	833.2	839.9	V(PR) 1
	V(PR) 2	441.1	462.2	478.7	503.0	532.8	556.0	545.9	532.6	500.4	V(PR) 2
	VTHETA PR1	-590.1	-601.1	-611.6	-639.7	-669.9	-706.6	-731.8	-745.6	-753.8	VTHETA PR1
	VTHETA PR2	-189.2	-214.1	-224.9	-253.7	-294.0	-327.7	-335.0	-353.3	-357.1	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.3414	0.3690	0.3826	0.4062	0.3965	0.3989	0.3620	0.3370	0.3355	M 1
	M 2	0.5145	0.5110	0.5182	0.5212	0.5206	0.5205	0.5161	0.4863	0.4571	M 2
	M(PR) 1	0.6341	0.6585	0.6745	0.7099	0.7269	0.7565	0.7562	0.7548	0.7608	M(PR) 1
	M(PR) 2	0.3898	0.4091	0.4248	0.4463	0.4726	0.4929	0.4835	0.4699	0.4398	M(PR) 2
	TURN(PR)	32.077	28.362	27.458	24.824	23.473	22.071	23.545	21.930	18.295	TURN(PR)
	P 1	14.493	14.694	14.791	14.952	14.890	14.962	14.739	14.609	14.636	P 1
	P 2	18.892	18.842	16.933	19.031	19.106	19.217	19.235	18.890	18.535	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	561.111	558.735	556.948	557.293	557.636	558.125	558.629	560.069	561.163	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	46.816	44.802	43.646	42.326	40.817	40.155	42.395	43.808	47.736	BETA 2
STATION 2A	BETA 2A	3.610	3.702	3.450	2.470	2.779	3.556	4.371	5.219	5.372	BETA 2A
	V 2	582.25	577.27	584.03	587.39	586.94	587.10	582.63	551.33	520.04	V 2
	V 2A	441.20	430.69	423.50	459.01	482.86	500.15	460.36	441.85	435.83	V 2A
	VZ 2	398.45	409.59	422.61	434.25	444.02	448.17	429.47	397.08	349.13	VZ 2
	VZ 2A	440.32	429.78	422.72	458.54	482.19	499.00	458.79	439.77	433.61	VZ 2A
	V-THETA 2	424.54	406.77	403.09	395.50	383.50	378.13	392.09	380.90	384.18	V-THETA 2
	V-THETA 2A	27.78	27.81	25.48	19.78	23.41	31.01	35.07	40.17	40.77	V-THETA 2A
	M 2	0.5145	0.5110	0.5182	0.5212	0.5206	0.5205	0.5161	0.4863	0.4571	M 2
	M 2A	0.3855	0.3768	0.3710	0.4030	0.4245	0.4401	0.4037	0.3865	0.3806	M 2A
	TURN(PR)	43.205	41.099	40.196	39.854	38.018	36.541	37.928	38.482	42.256	TURN(PR)
	P 2	18.892	18.842	18.933	19.031	19.106	19.217	19.235	18.890	18.535	P 2
	P 2A	18.568	18.505	18.446	18.720	18.924	19.063	18.668	18.507	18.429	P 2A
	T 2	561.111	558.735	556.948	557.293	557.636	558.125	558.629	560.069	561.163	T 2
	T 2A	561.408	559.117	557.251	557.447	557.750	558.267	558.813	560.163	561.351	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (166°) - Station 2 (156°) - Station 2A (145°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	5.820	5.498	5.804	5.801	5.571	4.988	5.308	6.055	6.040	BETA 1
STATION 2	BETA 2	46.554	44.027	43.312	41.933	40.862	39.456	40.998	43.872	48.305	BETA 2
	BETA(PR) 1	54.895	53.213	52.413	53.379	55.411	56.937	59.885	62.019	65.289	BETA(PR) 1
	BETA(PR) 2	25.690	28.343	28.895	31.688	32.722	36.908	39.723	43.259	47.207	BETA(PR) 2
	V 1	403.29	433.83	449.88	452.57	444.59	443.96	410.67	379.59	333.96	V 1
	V 2	586.79	573.37	577.40	575.81	594.47	581.51	567.81	536.43	506.83	V 2
	VZ 1	401.21	431.83	447.57	450.26	442.47	442.22	408.83	377.41	332.07	VZ 1
	VZ 2	399.39	412.25	420.13	428.34	449.41	448.42	427.70	385.94	336.54	VZ 2
	V-THETA 1	40.89	41.57	45.49	45.74	43.16	38.60	37.98	40.03	35.14	V-THETA 1
	V-THETA 2	421.66	398.49	396.08	384.77	388.77	369.07	371.77	371.03	377.79	V-THETA 2
	V(PR) 1	697.7	721.1	733.8	754.8	779.4	810.6	814.9	804.4	794.4	V(PR) 1
	V(PR) 2	443.2	468.4	479.9	503.4	534.5	561.6	557.2	531.0	496.3	V(PR) 2
	VTHETA PR1	-570.8	-577.5	-581.5	-605.8	-641.7	-679.3	-704.8	-710.4	-721.6	VTHETA PR1
	VTHETA PR2	-192.1	-222.4	-231.9	-264.4	-288.8	-336.8	-355.4	-363.2	-363.5	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.3660	0.3946	0.4097	0.4122	0.4047	0.4041	0.3729	0.3440	0.3018	M 1
	M 2	0.5140	0.5083	0.5129	0.5109	0.5280	0.5155	0.5023	0.4729	0.4450	M 2
	M(PR) 1	0.6332	0.6559	0.6682	0.6875	0.7095	0.7378	0.7400	0.7290	0.7180	M(PR) 1
	M(PR) 2	0.3923	0.4152	0.4263	0.4467	0.4747	0.4979	0.4929	0.4681	0.4357	M(PR) 2
	TURN(PR)	29.205	24.870	23.518	21.694	22.706	20.083	20.255	18.865	18.193	TURN(PR)
	P 1	14.659	14.890	14.982	14.981	14.946	15.006	14.836	14.686	14.485	P 1
	P 2	18.817	18.742	18.801	18.843	19.150	19.094	19.008	18.672	18.371	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	559.340	556.945	555.119	556.150	556.865	557.569	558.543	559.493	561.237	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	46.554	44.027	43.312	41.933	40.862	39.456	40.998	43.872	48.305	BETA 2
STATION 2A	BETA 2A	3.441	3.711	3.579	2.582	2.999	3.547	4.299	5.191	5.276	BETA 2A
	V 2	580.79	573.37	577.40	575.81	594.47	581.51	567.81	536.43	506.83	V 2
	V 2A	435.32	425.59	420.43	458.03	484.14	501.14	457.10	440.38	434.39	V 2A
	VZ 2	399.39	412.25	420.13	428.34	449.41	448.42	427.70	385.94	336.54	VZ 2
	VZ 2A	434.53	424.68	419.60	457.52	483.37	500.00	455.59	438.32	432.25	VZ 2A
	V-THETA 2	421.66	398.49	396.08	384.77	388.77	369.07	371.77	371.03	377.79	V-THETA 2
	V-THETA 2A	26.13	27.54	26.24	20.63	25.32	30.99	34.25	39.82	39.92	V-THETA 2A
	M 2	0.5140	0.5083	0.5129	0.5109	0.5280	0.5155	0.5023	0.4729	0.4450	M 2
	M 2A	0.3808	0.3729	0.3689	0.4025	0.4259	0.4412	0.4007	0.3853	0.3793	M 2A
	TURN(PR)	43.112	40.315	39.733	39.349	37.843	35.851	36.603	36.574	42.921	TURN(PR)
	P 2	18.817	18.742	18.801	18.843	19.150	19.094	19.008	18.672	18.371	P 2
	P 2A	18.543	18.463	18.432	18.732	18.959	19.085	18.642	18.507	18.432	P 2A
	T 2	559.340	556.945	555.119	556.150	556.865	557.569	558.543	559.493	561.237	T 2
	T 2A	559.508	557.154	555.183	556.366	557.139	557.836	558.985	559.786	561.551	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (196°) - Station 2 (186°) - Station 2A (175°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	5.652	5.649	5.274	5.261	4.549	4.164	4.338	4.463	4.236	BETA 1
STATION 2	BETA 2	46.995	45.201	44.673	43.890	42.072	40.613	42.896	45.795	50.908	BETA 2
	BETA(PR) 1	55.501	54.432	55.125	54.986	56.981	58.855	61.062	62.732	64.988	BETA(PR) 1
	BETA(PR) 2	25.773	27.668	28.888	31.093	32.765	36.109	38.504	41.370	46.992	BETA(PR) 2
	V 1	395.52	415.47	412.30	430.61	424.52	416.72	395.38	373.01	342.24	V 1
	V 2	578.72	575.41	573.25	575.60	590.51	586.64	576.57	552.70	511.28	V 2
	VZ 1	393.59	413.44	410.55	428.80	423.16	415.56	394.17	371.82	341.27	VZ 1
	VZ 2	394.72	405.44	407.65	414.80	438.16	444.79	421.61	384.64	321.89	VZ 2
	V-THETA 1	38.95	40.90	37.90	39.48	33.67	30.25	29.90	29.02	25.28	V-THETA 1
	V-THETA 2	423.21	408.29	403.03	399.04	395.52	381.41	391.72	395.46	396.20	V-THETA 2
	V(PR) 1	694.9	710.8	718.0	747.3	776.6	803.5	814.7	811.6	807.2	V(PR) 1
	V(PR) 2	438.3	457.8	465.6	484.4	521.3	551.3	539.9	513.6	472.8	V(PR) 2
	VTHETA PR1	-572.7	-578.2	-589.1	-612.1	-651.2	-687.7	-712.9	-721.4	-731.5	VTHETA PR1
	VTHETA PR2	-190.6	-212.6	-224.9	-250.2	-282.0	-324.4	-335.4	-338.7	-345.1	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.3588	0.3774	0.3744	0.3916	0.3859	0.3786	0.3587	0.3379	0.3095	M 1
	M 2	0.5123	0.5103	0.5090	0.5108	0.5245	0.5206	0.5108	0.4879	0.4492	M 2
	M(PR) 1	0.6304	0.6457	0.6521	0.6796	0.7059	0.7299	0.7390	0.7352	0.7299	M(PR) 1
	M(PR) 2	0.3880	0.4060	0.4134	0.4299	0.4631	0.4892	0.4783	0.4534	0.4153	M(PR) 2
	TURN(PR)	29.729	26.765	26.237	23.895	24.233	22.801	22.650	21.467	18.106	TURN(PR)
	P 1	14.770	14.918	14.903	15.001	14.960	14.953	14.902	14.796	14.617	P 1
	P 2	18.796	18.792	18.784	18.854	19.090	19.132	19.060	18.780	18.373	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	558.887	556.593	555.210	555.920	556.440	557.095	557.842	559.395	560.968	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	46.995	45.201	44.673	43.890	42.072	40.613	42.896	45.795	50.908	BETA 2
STATION 2A	BETA 2A	3.295	3.767	3.784	2.767	3.028	3.405	4.288	5.259	5.454	BETA 2A
	V 2	578.72	575.41	573.25	575.60	590.51	586.64	576.57	552.70	511.28	V 2
	V 2A	439.03	428.95	425.97	454.02	477.74	489.45	451.67	433.91	432.27	V 2A
	VZ 2	394.72	405.44	407.65	414.80	438.16	444.79	421.61	384.64	321.89	VZ 2
	VZ 2A	438.31	428.01	425.03	453.45	476.96	488.41	450.17	431.84	430.01	VZ 2A
	V-THETA 2	423.21	408.29	403.03	399.04	395.52	381.41	391.72	395.46	396.20	V-THETA 2
	V-THETA 2A	25.23	28.16	28.11	21.92	25.23	29.06	33.75	39.75	41.06	V-THETA 2A
	M 2	0.5123	0.5103	0.5090	0.5108	0.5245	0.5206	0.5108	0.4879	0.4492	M 2
	M 2A	0.3843	0.3760	0.3739	0.3990	0.4203	0.4308	0.3962	0.3796	0.3776	M 2A
	TURN(PR)	43.699	41.433	40.889	41.121	39.024	37.149	38.511	40.429	45.348	TURN(PR)
	P 2	18.796	18.792	18.784	18.854	19.090	19.132	19.060	18.780	18.373	P 2
	P 2A	18.555	18.464	18.451	18.678	18.865	16.952	18.572	18.432	18.384	P 2A
	T 2	558.887	556.593	555.210	555.920	556.440	557.095	557.842	559.395	560.968	T 2
	T 2A	559.206	556.616	555.309	555.989	556.528	557.195	557.860	559.251	560.830	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (226°) - Station 2 (216°) - Station 2A (205°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.96	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	8.133	7.973	8.154	7.758	7.948	7.454	8.512	7.281	9.709	BETA 1
STATION 2	BETA 2	45.864	44.766	44.578	43.539	43.112	43.278	48.062	51.857	56.706	BETA 2
	BETA(PR) 1	56.389	54.843	54.333	55.437	56.768	59.635	61.212	62.343	65.633	BETA(PR) 1
	BETA(PR) 2	25.954	27.370	27.677	30.401	34.054	37.534	41.941	44.567	47.406	BETA(PR) 2
	V 1	375.05	400.75	412.18	414.14	415.09	394.04	381.42	371.63	322.75	V 1
	V 2	580.90	579.30	583.89	582.70	575.94	567.65	541.70	527.15	517.94	V 2
	VZ 1	371.27	396.87	408.01	410.35	411.08	390.66	377.15	368.57	318.10	VZ 1
	VZ 2	404.51	411.29	415.90	422.36	420.29	412.81	361.47	325.11	283.98	VZ 2
	V-THETA 1	53.06	55.59	58.46	55.90	57.39	51.11	56.45	47.09	54.43	V-THETA 1
	V-THETA 2	416.90	407.94	409.82	401.37	393.46	388.71	402.33	413.98	432.41	V-THETA 2
	V(PR) 1	670.7	689.2	699.8	723.3	750.1	772.8	783.2	794.1	771.0	V(PR) 1
	V(PR) 2	449.9	463.1	469.6	489.7	507.5	521.3	486.9	457.2	420.3	V(PR) 2
	VTHETA PR1	-558.6	-563.5	-568.5	-595.7	-627.4	-666.8	-686.4	-703.3	-702.3	VTHETA PR1
	VTHETA PR2	-196.9	-212.9	-218.1	-247.8	-284.1	-317.1	-324.8	-320.2	-308.9	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.3398	0.3637	0.3743	0.3762	0.3770	0.3574	0.3457	0.3366	0.2915	M 1
	M 2	0.5152	0.5146	0.5195	0.5174	0.5107	0.5023	0.4770	0.4631	0.4537	M 2
	M(PR) 1	0.6077	0.6254	0.6355	0.6570	0.6814	0.7010	0.7098	0.7193	0.6964	M(PR) 1
	M(PR) 2	0.3990	0.4114	0.4178	0.4349	0.4500	0.4613	0.4287	0.4016	0.3682	M(PR) 2
	TURN(PR)	30.436	27.473	26.656	25.038	22.732	22.156	19.365	17.882	18.338	TURN(PR)
	P 1	14.748	14.899	14.979	14.999	15.022	14.939	14.969	14.945	14.741	P 1
	P 2	18.746	18.770	18.858	18.858	18.839	18.791	18.519	18.361	18.288	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	557.155	555.375	554.141	555.974	556.881	558.215	561.174	562.436	564.570	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	45.864	44.766	44.578	43.539	43.112	43.278	48.062	51.857	56.706	BETA 2
STATION 2A	BETA 2A	3.291	3.970	4.157	3.025	2.583	3.081	4.611	5.812	6.581	BETA 2A
	V 2	580.90	579.30	583.89	582.70	575.94	567.65	541.70	527.15	517.94	V 2
	V 2A	438.71	428.84	428.22	458.00	466.00	465.85	422.55	413.05	414.80	V 2A
	VZ 2	404.51	411.29	415.90	422.36	420.29	412.81	361.47	325.11	283.98	VZ 2
	VZ 2A	437.98	427.80	427.07	457.32	465.42	465.00	420.97	410.70	411.77	VZ 2A
	V-THETA 2	416.90	407.94	409.82	401.37	393.46	388.71	402.33	413.98	432.41	V-THETA 2
	V-THETA 2A	25.18	29.69	31.04	24.17	21.00	25.03	33.95	41.80	47.50	V-THETA 2A
	M 2	0.5152	0.5146	0.5195	0.5174	0.5107	0.5023	0.4770	0.4631	0.4537	M 2
	M 2A	0.3847	0.3764	0.3764	0.4027	0.4096	0.4092	0.3694	0.3604	0.3613	M 2A
	TURN(PR)	42.572	40.795	40.421	40.512	40.509	40.138	43.355	45.942	50.026	TURN(PR)
	P 2	18.748	18.770	18.858	18.858	18.839	18.791	18.519	18.361	18.288	P 2
	P 2A	18.559	18.484	18.488	18.716	18.752	18.711	18.309	18.243	18.243	P 2A
	T 2	557.155	555.375	554.141	555.974	556.881	558.215	561.174	562.436	564.570	T 2
	T 2A	557.168	555.411	553.922	555.790	556.697	557.411	559.479	560.779	562.821	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (256°) - Station 2 (246°) - Station 2A (235°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	5.789	4.640	4.698	4.286	4.784	4.073	4.927	5.876	6.202	BETA 1
STATION 2	BETA 2	44.946	44.200	44.560	45.035	47.133	53.303	63.249	66.668	69.958	BETA 2
	BETA(PR) 1	56.844	57.864	57.766	58.904	60.498	64.205	66.035	67.894	71.556	BETA(PR) 1
	BETA(PR) 2	24.975	26.055	27.028	29.494	32.038	37.993	47.070	49.590	53.751	BETA(PR) 2
	V 1	350.22	371.24	377.13	377.05	371.28	336.33	319.23	294.16	245.02	V 1
	V 2	592.41	592.62	589.55	586.33	584.95	556.84	528.49	531.04	527.16	V 2
	VZ 1	348.43	370.02	375.86	375.99	369.97	335.43	317.99	292.56	243.56	VZ 1
	VZ 2	419.29	424.85	420.06	414.33	397.81	332.50	237.71	210.19	180.58	VZ 2
	V-THETA 1	35.32	30.03	30.89	28.18	30.96	23.89	27.41	30.11	26.47	V-THETA 1
	V-THETA 2	416.50	413.15	413.66	414.84	428.58	446.14	471.59	487.32	495.01	V-THETA 2
	V(PR) 1	673.5	695.6	704.7	728.0	751.3	770.9	782.9	777.5	769.8	V(PR) 1
	V(PR) 2	462.5	472.9	471.6	476.0	469.5	422.5	349.6	324.8	305.8	V(PR) 2
	VTHETA PR1	-576.3	-589.0	-596.1	-623.4	-653.9	-694.0	-715.4	-720.3	-730.3	VTHETA PR1
	VTHETA PR2	-195.3	-207.7	-214.3	-234.4	-248.9	-259.7	-255.5	-246.9	-246.3	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.3168	0.3363	0.3417	0.3416	0.3363	0.3040	0.2883	0.2653	0.2205	M 1
	M 2	0.5250	0.5261	0.5235	0.5196	0.5176	0.4899	0.4619	0.4636	0.4592	M 2
	M(PR) 1	0.6092	0.6301	0.6385	0.6596	0.6805	0.6968	0.7071	0.7012	0.6929	M(PR) 1
	M(PR) 2	0.4099	0.4198	0.4167	0.4218	0.4155	0.3717	0.3055	0.2836	0.2664	M(PR) 2
	TURN(PR)	33.669	31.810	30.738	29.412	28.477	26.267	19.060	18.410	17.910	TURN(PR)
	P 1	14.841	14.975	15.020	15.039	15.042	14.973	14.968	14.852	14.643	P 1
	P 2	18.897	18.940	18.925	18.907	18.884	18.517	18.246	18.288	18.281	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	559.100	557.242	556.707	558.574	559.912	563.325	567.995	569.376	571.610	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	44.946	44.200	44.560	45.035	47.133	53.303	63.249	66.668	69.958	BETA 2
STATION 2A	BETA 2A	3.298	4.048	4.332	3.305	1.950	0.972	1.889	3.081	4.111	BETA 2A
	V 2	592.41	592.62	589.55	586.33	584.95	556.84	528.49	531.04	527.16	V 2
	V 2A	462.63	455.39	456.97	467.46	450.97	435.68	403.98	394.19	399.43	V 2A
	VZ 2	419.29	424.85	420.06	414.33	397.81	332.50	237.71	210.19	180.58	VZ 2
	VZ 2A	461.66	454.24	455.65	466.63	450.60	435.46	403.56	393.40	398.12	VZ 2A
	V-THETA 2	418.50	413.15	413.66	414.84	428.58	446.14	471.59	487.32	495.01	V-THETA 2
	V-THETA 2A	26.61	32.15	34.52	26.95	15.34	7.39	13.31	21.18	28.61	V-THETA 2A
	M 2	0.5250	0.5261	0.5235	0.5196	0.5176	0.4899	0.4619	0.4636	0.4592	M 2
	M 2A	0.4060	0.4001	0.4018	0.4107	0.3954	0.3807	0.3509	0.3418	0.3458	M 2A
	TURN(PR)	41.647	40.151	40.228	41.728	45.163	52.273	61.281	63.509	65.777	TURN(PR)
	P 2	18.897	18.940	18.925	18.907	18.884	18.517	18.246	18.288	18.281	P 2
	P 2A	18.626	18.569	18.581	18.637	18.477	18.306	18.053	17.986	18.016	P 2A
	T 2	559.100	557.242	556.707	558.574	559.912	563.325	567.995	569.376	571.610	T 2
	T 2A	556.130	556.238	555.508	557.188	558.221	560.889	565.113	566.421	568.616	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (286°) - Station 2 (276°) - Station 2A (265°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-6.861	-6.291	-6.045	-5.567	-4.769	-6.275	-5.914	-5.889	-5.931	BETA 1
STATION 2	BETA 2	43.967	44.076	44.362	46.561	51.629	58.959	67.734	70.730	74.394	BETA 2
	BETA(PR) 1	62.228	61.402	61.456	62.386	64.825	68.244	70.952	74.166	78.541	BETA(PR) 1
	BETA(PR) 2	26.239	25.661	25.721	26.939	31.629	39.998	52.023	56.609	60.905	BETA(PR) 2
	V 1	346.39	361.26	363.90	360.85	336.21	301.50	267.46	220.44	157.55	V 1
	V 2	585.05	596.56	601.73	603.63	581.06	547.71	515.66	508.44	512.60	V 2
	VZ 1	343.90	359.08	361.88	359.14	335.03	299.65	265.98	219.24	156.69	VZ 1
	VZ 2	420.94	428.57	430.20	415.03	360.60	282.27	195.29	167.73	137.86	VZ 2
	V-THETA 1	-41.38	-39.59	-36.32	-35.01	-27.95	-32.95	-27.55	-22.61	-16.28	V-THETA 1
	V-THETA 2	406.31	414.97	420.72	438.28	455.43	469.02	476.97	479.75	493.56	V-THETA 2
	V(PR) 1	738.0	750.2	757.3	774.8	787.6	808.5	815.0	803.5	788.8	V(PR) 1
	V(PR) 2	469.3	475.5	477.5	465.6	423.7	368.9	317.8	305.1	283.8	V(PR) 2
	VTHETA PR1	-653.0	-658.7	-665.3	-686.6	-712.8	-750.9	-770.4	-773.0	-773.0	VTHETA PR1
	VTHETA PR2	-207.5	-205.9	-207.2	-210.9	-222.1	-236.8	-250.2	-254.5	-247.7	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.3133	0.3270	0.3295	0.3266	0.3039	0.2720	0.2409	0.1982	0.1414	M 1
	M 2	0.5150	0.5263	0.5314	0.5315	0.5093	0.4769	0.4463	0.4393	0.4421	M 2
	M(PR) 1	0.6675	0.6791	0.6857	0.7014	0.7119	0.7295	0.7342	0.7225	0.7079	M(PR) 1
	M(PR) 2	0.4131	0.4195	0.4217	0.4099	0.3714	0.3212	0.2750	0.2636	0.2448	M(PR) 2
	TURN(PR)	35.989	35.742	35.735	35.449	33.213	28.303	19.022	17.656	17.731	TURN(PR)
	P 1	14.847	14.946	14.979	15.023	15.000	14.939	14.865	14.700	14.548	P 1
	P 2	18.937	19.091	19.156	19.142	18.810	18.398	18.108	18.065	18.142	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	565.587	564.266	563.722	567.053	569.638	573.965	577.660	579.025	581.262	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	43.987	44.076	44.362	46.561	51.629	58.959	67.734	70.730	74.394	BETA 2
STATION 2A	BETA 2A	3.295	3.639	4.079	3.698	0.962	-5.454	-8.315	-7.732	-7.284	BETA 2A
	V 2	585.05	596.56	601.73	603.63	581.06	547.71	515.66	508.44	512.60	V 2
	V 2A	467.79	472.92	477.62	479.74	439.68	413.10	380.87	379.98	391.28	V 2A
	VZ 2	420.94	428.57	430.20	415.03	360.60	282.27	195.29	167.73	137.86	VZ 2
	VZ 2A	467.02	471.85	476.39	478.69	439.52	411.08	376.67	376.31	387.85	VZ 2A
	V-THETA 2	406.31	414.97	420.72	438.28	455.43	469.02	476.97	479.75	493.56	V-THETA 2
	V-THETA 2A	26.89	31.66	33.97	30.94	7.38	-39.25	-55.05	-51.09	-49.57	V-THETA 2A
	M 2	0.5150	0.5263	0.5314	0.5315	0.5093	0.4769	0.4463	0.4393	0.4421	M 2
	M 2A	0.4092	0.4144	0.4189	0.4195	0.3824	0.3572	0.3275	0.3262	0.3354	M 2A
	TURN(PR)	40.691	40.236	40.283	42.861	50.647	64.357	75.975	78.389	81.614	TURN(PR)
	P 2	18.937	19.091	19.156	19.142	18.810	18.398	18.108	18.065	18.142	P 2
	P 2A	18.535	18.568	18.592	18.563	18.207	17.995	17.783	17.782	17.877	P 2A
	T 2	565.587	564.266	563.722	567.053	569.638	573.965	577.660	579.025	581.262	T 2
	T 2A	561.961	560.653	559.975	563.447	566.260	570.640	574.956	576.596	578.979	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (316°) - Station 2 (306°) - Station 2A (295°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.665	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-23.657	-22.520	-21.469	-20.439	-21.745	-24.021	-24.433	-24.721	-25.886	BETA 1
STATION 2	BETA 2	45.457	46.214	49.203	48.503	55.704	61.720	74.846	79.057	85.154	BETA 2
	BETA(PR) 1	69.878	66.965	68.673	68.401	70.175	72.613	73.997	74.422	75.076	BETA(PR) 1
	BETA(PR) 2	28.383	31.525	36.528	32.792	37.007	44.293	65.120	72.822	82.311	BETA(PR) 2
	V 1	291.43	306.68	322.20	322.94	310.45	286.07	269.10	264.26	257.52	V 1
	V 2	562.23	537.84	506.01	552.12	541.77	525.88	475.70	460.12	457.01	V 2
	VZ 1	266.94	283.28	299.84	302.61	288.34	261.27	244.96	240.01	231.67	VZ 1
	VZ 2	394.37	358.38	330.62	365.81	305.20	249.03	124.33	87.33	38.61	VZ 2
	V-THETA 1	-116.94	-117.49	-117.92	-112.77	-115.01	-116.44	-111.29	-110.50	-112.42	V-THETA 1
	V-THETA 2	400.71	401.03	383.06	413.52	447.48	462.89	459.05	451.69	455.36	V-THETA 2
	V(PR) 1	775.9	789.2	803.0	822.1	850.2	874.3	888.6	893.7	899.5	V(PR) 1
	V(PR) 2	448.3	420.4	411.4	435.2	382.4	348.3	295.7	295.8	288.5	V(PR) 2
	VTHETA PR1	-728.6	-736.6	-744.9	-764.3	-799.8	-834.4	-854.1	-860.9	-869.2	VTHETA PR1
	VTHETA PR2	-213.1	-219.8	-244.9	-235.7	-230.0	-243.0	-268.1	-282.5	-285.9	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.2628	0.2768	0.2910	0.2917	0.2802	0.2579	0.2424	0.2380	0.2319	M 1
	M 2	0.4903	0.4687	0.4400	0.4811	0.4709	0.4554	0.4098	0.3958	0.3924	M 2
	M(PR) 1	0.6998	0.7122	0.7253	0.7425	0.7675	0.7883	0.8005	0.8050	0.8100	M(PR) 1
	M(PR) 2	0.3909	0.3664	0.3578	0.3792	0.3323	0.3016	0.2547	0.2544	0.2478	M(PR) 2
	TURN(PR)	41.496	37.438	31.546	35.611	33.187	28.378	8.950	1.660	-7.207	TURN(PR)
	P 1	13.929	14.025	14.081	14.071	14.086	14.078	14.064	14.066	14.036	P 1
	P 2	18.608	18.320	17.993	18.463	18.386	18.188	17.671	17.571	17.594	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	573.431	572.056	571.667	573.521	575.281	577.843	579.645	580.077	581.772	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	45.457	46.214	49.203	48.503	55.704	61.720	74.846	79.057	85.154	BETA 2
STATION 2A	BETA 2A	3.351	3.158	2.929	2.991	0.561	-8.232	-12.935	-12.724	-12.672	BETA 2A
	V 2	562.23	537.84	506.01	552.12	541.77	525.88	475.70	460.12	457.01	V 2
	V 2A	431.92	431.28	433.33	421.39	392.03	367.50	343.58	342.12	364.82	V 2A
	VZ 2	394.37	358.38	330.62	365.81	305.20	249.03	124.33	87.33	38.61	VZ 2
	VZ 2A	431.18	430.61	432.75	420.78	391.93	363.58	334.70	333.54	355.69	VZ 2A
	V-THETA 2	400.71	401.03	383.06	413.52	447.48	462.89	459.05	451.69	455.36	V-THETA 2
	V-THETA 2A	25.25	23.76	22.14	21.99	3.84	-52.60	-76.87	-75.31	-79.98	V-THETA 2A
	M 2	0.4903	0.4687	0.4400	0.4811	0.4709	0.4554	0.4098	0.3958	0.3924	M 2
	M 2A	0.3737	0.3736	0.3756	0.3641	0.3375	0.3151	0.2935	0.2921	0.3113	M 2A
	TURN(PR)	42.105	45.055	46.274	45.510	55.124	69.898	87.725	91.733	97.798	TURN(PR)
	P 2	18.608	18.320	17.993	18.463	18.386	18.188	17.671	17.571	17.594	P 2
	P 2A	18.137	18.112	18.115	17.987	17.764	17.612	17.539	17.562	17.715	P 2A
	T 2	573.431	572.056	571.667	573.521	575.281	577.843	579.645	580.077	581.772	T 2
	T 2A	571.389	569.971	569.619	572.055	574.237	577.420	579.892	580.627	582.510	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 100.54 Equivalent Rotor Speed = 4232.72 Equivalent Weight Flow = 90.59
Circumferential Distortion
Station 1 (346°) - Station 2 (336°) - Station 2A (325°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	36.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-11.179	-10.560	-10.196	-10.048	-10.115	-9.670	-9.355	-9.278	-10.320	BETA 1
STATION 2	BETA 2	51.969	53.427	53.687	50.400	50.065	50.307	52.765	57.688	62.812	BETA 2
	BETA(PR) 1	64.456	63.265	63.027	63.412	64.746	65.444	66.434	68.093	71.960	BETA(PR) 1
	BETA(PR) 2	31.449	34.045	40.548	35.410	33.474	38.581	47.852	52.790	58.566	BETA(PR) 2
	V 1	329.05	350.09	356.87	363.42	358.31	360.89	353.87	327.32	266.35	V 1
	V 2	527.11	514.95	478.46	530.55	568.93	552.37	497.07	474.47	453.20	V 2
	VZ 1	322.80	344.15	351.23	357.84	352.72	355.72	349.10	322.99	262.01	VZ 1
	VZ 2	324.74	306.83	283.34	338.17	365.10	352.48	300.39	253.34	206.90	VZ 2
	V-THETA 1	-63.79	-64.16	-63.17	-63.41	-62.93	-60.61	-57.51	-52.76	-47.71	V-THETA 1
	V-THETA 2	415.18	413.55	385.54	408.78	436.11	424.67	395.25	400.56	402.80	V-THETA 2
	V(PR) 1	748.6	765.0	774.4	799.5	826.8	856.0	873.2	865.7	846.1	V(PR) 1
	V(PR) 2	380.7	370.3	372.9	414.9	437.9	451.5	448.3	419.5	397.2	V(PR) 2
	VTHETA PR1	-675.4	-683.2	-690.1	-715.0	-747.7	-778.5	-800.3	-803.2	-804.5	VTHETA PR1
	VTHETA PR2	-198.6	-207.3	-242.4	-240.4	-241.4	-281.2	-331.9	-333.6	-338.5	VTHETA PR2
	U 1	611.65	619.07	626.96	651.56	684.82	717.92	742.83	750.40	756.76	U 1
	U 2	613.79	620.86	627.95	649.19	677.52	705.86	727.13	734.21	741.30	U 2
	M 1	0.2973	0.3167	0.3230	0.3290	0.3243	0.3267	0.3202	0.2957	0.2399	M 1
	M 2	0.4591	0.4485	0.4161	0.4628	0.4975	0.4819	0.4314	0.4110	0.3916	M 2
	M(PR) 1	0.6764	0.6921	0.7008	0.7238	0.7483	0.7748	0.7901	0.7821	0.7622	M(PR) 1
	M(PR) 2	0.3315	0.3225	0.3243	0.3620	0.3829	0.3939	0.3891	0.3634	0.3431	M(PR) 2
	TURN(PR)	33.007	29.221	22.479	28.004	31.290	26.919	18.676	15.405	13.493	TURN(PR)
	P 1	13.844	13.969	13.979	13.967	13.958	13.968	14.013	13.917	13.717	P 1
	P 2	18.146	17.944	17.605	18.157	18.687	18.541	17.911	17.712	17.562	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	571.686	570.601	569.395	570.265	571.244	572.179	572.964	573.239	574.564	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	51.969	53.427	53.687	50.400	50.065	50.307	52.765	57.688	62.812	BETA 2
STATION 2A	BETA 2A	3.555	1.400	-0.289	-0.390	1.604	-1.456	-2.715	-2.172	-1.866	BETA 2A
	V 2	527.11	514.95	478.46	530.55	568.93	552.37	497.07	474.47	453.20	V 2
	V 2A	383.61	381.39	379.66	391.60	401.45	390.81	355.30	349.03	358.15	V 2A
	VZ 2	324.74	306.83	283.34	338.17	365.10	352.48	300.39	253.34	206.90	VZ 2
	VZ 2A	382.87	381.27	379.64	391.55	401.20	390.54	354.72	348.56	357.71	VZ 2A
	V-THETA 2	415.18	413.55	385.54	408.78	436.11	424.67	395.25	400.56	402.80	V-THETA 2
	V-THETA 2A	23.79	9.32	-1.91	-2.67	11.23	-9.93	-16.82	-13.22	-11.65	V-THETA 2A
	M 2	0.4591	0.4485	0.4161	0.4628	0.4975	0.4819	0.4314	0.4110	0.3916	M 2
	M 2A	0.3310	0.3292	0.3280	0.3383	0.3467	0.3368	0.3054	0.2998	0.3074	M 2A
	TURN(PR)	48.413	52.026	53.976	50.786	48.441	51.703	55.383	59.760	64.585	TURN(PR)
	P 2	18.148	17.944	17.605	18.157	18.687	18.541	17.911	17.712	17.562	P 2
	P 2A	17.883	17.874	17.855	17.916	17.978	17.902	17.705	17.685	17.744	P 2A
	T 2	571.686	570.601	569.395	570.265	571.244	572.179	572.964	573.239	574.564	T 2
	T 2A	571.281	570.480	569.379	570.371	571.443	572.931	573.865	574.156	575.677	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed = 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (16°) - Station 2 (6°) - Station 2A (355°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-3.358	-3.538	-3.473	-3.407	-2.399	-2.207	-2.237	-2.243	-2.251	BETA 1
STATION 2	BETA 2	54.976	54.979	54.271	51.662	50.075	48.934	51.774	55.819	59.100	BETA 2
	BETA(PR) 1	64.811	62.893	62.380	63.297	63.115	65.068	65.950	67.072	68.006	BETA(PR) 1
	BETA(PR) 2	18.868	17.757	26.664	33.209	36.671	36.239	41.392	46.243	47.905	BETA(PR) 2
	V 1	263.08	291.05	301.30	300.45	315.19	301.93	299.79	286.78	275.95	V 1
	V 2	536.66	549.65	503.28	484.12	483.32	507.64	485.62	461.48	461.77	V 2
	VZ 1	262.62	290.49	300.75	299.92	314.90	301.66	299.50	286.51	275.71	VZ 1
	VZ 2	307.98	315.43	293.89	300.29	310.09	333.18	300.09	258.95	236.89	VZ 2
	V-THETA 1	-15.41	-17.96	-18.25	-17.86	-13.19	-11.63	-11.70	-11.22	-10.84	V-THETA 1
	V-THETA 2	439.46	450.12	408.56	379.71	370.54	382.39	380.99	381.31	395.82	V-THETA 2
	V(PR) 1	617.0	637.5	648.7	667.4	696.4	715.6	734.9	735.5	736.2	V(PR) 1
	V(PR) 2	325.5	331.2	329.4	358.9	386.8	413.7	400.8	375.1	354.0	V(PR) 2
	VTHETA PR1	-558.4	-567.5	-574.8	-596.2	-621.1	-648.9	-671.1	-677.3	-682.6	VTHETA PR1
	VTHETA PR2	-105.4	-101.0	-148.9	-196.6	-230.9	-244.2	-264.5	-270.4	-262.2	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.28	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.2370	0.2625	0.2719	0.2711	0.2846	0.2724	0.2705	0.2586	0.2487	M 1
	M 2	0.4732	0.4860	0.4441	0.4263	0.4254	0.4490	0.4270	0.4047	0.4048	M 2
	M(PR) 1	0.5558	0.5750	0.5853	0.6022	0.6268	0.6457	0.6631	0.6631	0.6635	M(PR) 1
	M(PR) 2	0.2870	0.2929	0.2907	0.3161	0.3405	0.3658	0.3524	0.3290	0.3103	M(PR) 2
	TURN(PR)	45.923	45.136	35.516	30.090	26.463	28.884	24.652	20.935	20.211	TURN(PR)
	P 1	13.906	14.003	14.031	14.006	14.073	14.036	14.067	14.007	13.957	P 1
	P 2	18.034	18.182	17.726	17.623	17.745	18.048	17.835	17.630	17.637	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	559.149	557.329	555.546	556.156	556.574	553.470	557.905	558.742	559.346	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	54.976	54.979	54.271	51.662	50.075	48.934	51.774	55.819	59.100	BETA 2
STATION 2A	BETA 2A	2.921	1.628	-0.762	-2.030	0.352	1.693	3.995	5.004	4.927	BETA 2A
	V 2	526.66	549.65	503.28	484.12	483.32	507.64	485.62	461.48	461.77	V 2
	V 2A	358.90	349.88	340.79	363.88	377.86	382.01	376.71	361.83	368.01	V 2A
	VZ 2	307.98	315.43	293.89	300.29	310.09	333.18	300.09	258.95	236.89	VZ 2
	VZ 2A	358.43	349.73	340.75	363.61	377.77	381.70	375.61	360.24	366.39	VZ 2A
	V-THETA 2	439.48	450.12	408.56	379.71	370.54	382.39	380.99	381.31	395.82	V-THETA 2
	V-THETA 2A	18.29	9.94	-4.53	-12.89	2.32	11.28	26.23	31.54	31.58	V-THETA 2A
	M 2	0.4732	0.4860	0.4441	0.4263	0.4254	0.4490	0.4270	0.4047	0.4048	M 2
	M 2A	0.3121	0.3046	0.2970	0.3172	0.3295	0.3346	0.3281	0.3146	0.3199	M 2A
	TURN(PR)	54.056	53.350	55.033	53.689	49.703	47.182	47.685	50.716	54.077	TURN(PR)
	P 2	18.034	18.182	17.726	17.623	17.745	18.048	17.835	17.630	17.637	P 2
	P 2A	17.432	17.339	17.282	17.421	17.531	17.571	17.518	17.431	17.457	P 2A
	T 2	559.149	557.329	555.546	556.156	556.574	553.470	557.905	558.742	559.346	T 2
	T 2A	560.962	559.304	557.722	558.582	559.232	556.630	560.563	561.267	561.924	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed - 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (46°) - Station 2 (36°) - Station 2A (25°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	5.040	4.746	5.187	3.942	4.784	2.944	3.681	3.751	5.702	BETA 1
STATION 2	BETA 2	49.042	46.729	46.012	44.062	43.327	42.160	44.531	47.568	51.898	BETA 2
	BETA(PR) 1	54.985	53.492	53.514	54.825	55.349	57.765	60.460	62.442	65.482	BETA(PR) 1
	BETA(PR) 2	26.487	27.396	28.466	33.167	35.579	38.081	41.793	45.011	46.452	BETA(PR) 2
	V 1	359.66	384.54	387.30	389.67	398.60	389.81	361.35	336.90	294.54	V 1
	V 2	503.65	508.73	508.59	494.65	496.66	501.03	483.07	462.04	458.91	V 2
	VZ 1	358.26	383.21	385.71	388.75	397.19	389.25	360.54	336.12	293.05	VZ 1
	VZ 2	330.14	348.71	353.22	355.44	362.61	370.97	343.76	311.20	282.75	VZ 2
	V-THETA 1	31.60	31.82	35.01	26.79	33.24	20.02	23.19	22.04	29.26	V-THETA 1
	V-THETA 2	380.35	370.41	365.92	343.99	342.03	335.90	338.18	340.43	360.58	V-THETA 2
	V(PR) 1	624.4	644.1	648.7	674.8	698.6	729.8	731.3	726.5	706.2	V(PR) 1
	V(PR) 2	368.9	392.8	401.8	424.6	446.1	471.9	462.0	441.0	411.2	V(PR) 2
	VTHETA PR1	-511.4	-517.7	-521.5	-551.6	-574.7	-617.3	-636.2	-644.1	-642.5	VTHETA PR1
	VTHETA PR2	-164.5	-180.7	-191.5	-232.3	-259.4	-290.7	-307.3	-311.3	-297.5	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.28	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.3255	0.3486	0.3512	0.3534	0.3617	0.3535	0.3271	0.3045	0.2657	M 1
	M 2	0.4470	0.4523	0.4528	0.4397	0.4433	0.4461	0.4284	0.4088	0.4055	M 2
	M(PR) 1	0.5651	0.5839	0.5881	0.6119	0.6338	0.6618	0.6620	0.6568	0.6370	M(PR) 1
	M(PR) 2	0.3273	0.3492	0.3577	0.3775	0.3966	0.4201	0.4097	0.3902	0.3633	M(PR) 2
	TURN(PR)	28.498	26.096	25.048	21.660	19.788	19.739	18.760	17.537	19.140	TURN(PR)
	P 1	14.639	14.802	14.812	14.838	14.894	14.902	14.795	14.690	14.521	P 1
	P 2	17.752	17.836	17.857	17.776	17.912	17.996	17.866	17.685	17.663	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	549.507	547.979	546.590	547.023	547.167	545.910	548.555	549.316	550.451	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	49.042	46.729	46.012	44.062	43.327	42.160	44.531	47.568	51.898	BETA 2
STATION 2A	BETA 2A	3.436	2.821	1.576	0.613	1.476	2.905	4.509	5.311	5.312	BETA 2A
	V 2	503.65	508.73	508.59	494.65	498.66	501.03	483.07	462.04	458.91	V 2
	V 2A	360.00	355.34	347.27	370.89	374.56	385.57	364.36	356.36	353.94	V 2A
	VZ 2	330.14	348.71	353.22	355.44	362.61	370.97	343.76	311.20	282.75	VZ 2
	VZ 2A	359.35	354.90	347.12	370.63	374.35	384.73	363.05	354.63	352.17	VZ 2A
	V-THETA 2	380.35	370.41	365.92	343.99	342.03	335.90	338.18	340.43	360.58	V-THETA 2
	V-THETA 2A	21.58	17.49	9.55	3.97	9.65	19.52	28.63	32.97	32.74	V-THETA 2A
	M 2	0.4470	0.4523	0.4528	0.4397	0.4433	0.4461	0.4284	0.4088	0.4055	M 2
	M 2A	0.3164	0.3127	0.3058	0.3270	0.3302	0.3400	0.3206	0.3132	0.3107	M 2A
	TURN(PR)	45.605	43.907	44.436	42.447	41.831	39.196	39.925	42.151	46.480	TURN(PR)
	P 2	17.752	17.836	17.857	17.776	17.912	17.996	17.866	17.685	17.663	P 2
	P 2A	17.472	17.418	17.384	17.314	17.353	17.628	17.461	17.406	17.395	P 2A
	T 2	549.507	547.979	546.590	547.023	547.167	545.910	548.555	549.316	550.451	T 2
	T 2A	549.443	547.923	546.574	546.940	547.012	546.954	548.526	549.175	550.527	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed = 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (76°) - Station 2 (66°) - Station 2A (55°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	3.669	3.160	2.659	1.736	1.661	1.782	1.785	2.156	3.355	BETA 1
STATION 2	BETA 2	46.264	44.245	43.131	42.103	40.725	40.037	41.718	45.477	49.629	BETA 2
	BETA(PR) 1	58.046	56.157	57.936	55.646	57.133	58.921	62.114	62.659	64.525	BETA(PR) 1
	BETA(PR) 2	25.558	26.107	26.427	28.734	34.057	36.497	39.316	42.340	46.705	BETA(PR) 2
	V 1	326.23	330.50	340.50	387.50	385.73	377.28	343.50	338.13	311.93	V 1
	V 2	517.37	525.51	532.73	534.99	516.59	518.58	506.53	483.01	454.78	V 2
	VZ 1	325.55	329.49	340.23	387.32	385.55	377.05	343.27	337.84	311.36	VZ 1
	VZ 2	357.67	376.45	388.78	396.91	391.34	396.55	377.36	338.05	294.09	VZ 2
	V-THETA 1	20.99	18.22	13.42	11.74	11.18	11.73	10.70	12.73	18.25	V-THETA 1
	V-THETA 2	373.81	366.66	364.21	358.67	336.90	333.18	336.43	343.72	345.91	V-THETA 2
	V(PR) 1	615.2	625.5	640.9	686.4	710.5	730.4	734.0	735.6	723.9	V(PR) 1
	V(PR) 2	396.5	419.2	434.2	452.7	472.6	494.0	488.8	458.3	429.6	V(PR) 2
	VTHETA PR1	-522.0	-531.3	-543.1	-566.6	-596.7	-625.6	-648.7	-653.4	-653.5	VTHETA PR1
	VTHETA PR2	-171.0	-184.5	-193.2	-217.6	-264.5	-293.4	-309.0	-308.0	-312.1	VTHETA PR2
	U 1	542.95	549.54	556.54	578.36	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.28	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.2947	0.2987	0.3079	0.3513	0.3497	0.3419	0.3106	0.3057	0.2816	M 1
	M 2	0.4577	0.4660	0.4734	0.4753	0.4580	0.4617	0.4482	0.4263	0.4003	M 2
	M(PR) 1	0.5558	0.5652	0.5795	0.6223	0.6441	0.6618	0.6637	0.6650	0.6535	M(PR) 1
	M(PR) 2	0.3507	0.3717	0.3858	0.4042	0.4190	0.4398	0.4325	0.4045	0.3782	M(PR) 2
	TURN(PR)	32.490	32.051	31.509	26.914	23.094	22.478	22.891	20.424	17.930	TURN(PR)
	P 1	14.602	14.632	14.681	14.936	14.942	14.894	14.782	14.767	14.651	P 1
	P 2	17.974	18.068	18.173	18.246	18.112	18.208	18.108	17.889	17.656	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	554.067	552.260	550.539	551.060	551.016	547.433	552.747	553.697	554.206	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	46.264	44.245	43.131	42.103	40.725	40.037	41.718	45.477	49.629	BETA 2
STATION 2A	BETA 2A	3.850	3.786	3.472	2.742	2.341	3.432	4.333	4.985	5.176	BETA 2A
	V 2	517.37	525.51	532.73	534.99	516.59	518.58	506.53	483.01	454.78	V 2
	V 2A	392.19	385.63	378.19	410.39	430.03	435.13	410.59	392.57	385.87	V 2A
	VZ 2	357.67	376.45	388.78	396.91	391.34	396.55	377.36	338.05	294.09	VZ 2
	VZ 2A	391.31	384.78	377.49	409.87	429.58	434.19	409.21	390.86	384.03	VZ 2A
	V-THETA 2	373.81	366.66	364.21	358.67	336.90	333.18	336.43	343.72	345.91	V-THETA 2
	V-THETA 2A	26.33	25.46	22.90	19.63	17.56	26.04	31.01	34.09	34.79	V-THETA 2A
	M 2	0.4577	0.4660	0.4734	0.4753	0.4580	0.4617	0.4482	0.4263	0.4003	M 2
	M 2A	0.3444	0.3390	0.3328	0.3617	0.3793	0.3853	0.3613	0.3448	0.3386	M 2A
	TURN(PR)	42.413	40.458	39.659	39.359	38.364	36.547	37.289	40.385	44.346	TURN(PR)
	P 2	17.974	18.068	18.173	18.246	18.112	18.208	18.108	17.889	17.656	P 2
	P 2A	17.756	17.712	17.672	17.880	18.030	18.070	17.829	17.702	17.647	P 2A
	T 2	554.067	552.260	550.539	551.060	551.016	547.433	552.747	553.697	554.206	T 2
	T 2A	552.525	550.823	549.214	549.761	550.174	546.386	551.331	552.285	552.901	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed - 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (106°) - Station 2 (96°) - Station 2A (85°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	1.676	2.203	2.837	2.845	1.529	2.278	0.841	1.159	0.451	BETA 1
STATION 2	BETA 2	45.265	43.696	42.803	41.758	40.743	39.738	41.014	43.965	47.012	BETA 2
	BETA(PR) 1	59.464	57.665	56.184	55.254	57.138	58.858	62.112	62.967	68.540	BETA(PR) 1
	BETA(PR) 2	24.494	27.584	28.224	30.858	33.627	36.555	39.627	42.849	47.000	BETA(PR) 2
	V 1	314.74	339.87	361.27	388.29	386.20	376.38	346.37	336.54	263.29	V 1
	V 2	528.47	515.78	519.38	518.41	520.24	518.73	504.85	479.52	450.71	V 2
	VZ 1	314.60	339.61	360.83	387.82	386.04	376.03	346.27	336.41	263.25	VZ 1
	VZ 2	371.95	372.91	381.06	386.69	393.99	398.39	380.18	344.46	306.75	VZ 2
	V-THETA 1	9.22	13.06	17.88	19.27	10.30	14.96	5.08	6.81	2.07	V-THETA 1
	V-THETA 2	375.40	356.31	352.90	345.23	339.40	331.20	330.65	332.23	329.09	V-THETA 2
	V(PR) 1	619.6	634.9	648.3	680.4	711.5	727.1	740.3	740.2	719.6	V(PR) 1
	V(PR) 2	408.7	420.7	432.5	450.5	473.4	496.6	494.6	470.8	450.6	V(PR) 2
	VTHETA PR1	-533.7	-536.5	-536.7	-559.1	-597.6	-622.3	-654.3	-659.3	-669.7	VTHETA PR1
	VTHETA PR2	-169.5	-194.8	-204.5	-231.0	-262.0	-295.4	-314.8	-319.5	-329.0	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.66	551.13	557.43	576.26	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.2842	0.3073	0.3270	0.3521	0.3501	0.3410	0.3133	0.3042	0.2371	M 1
	M 2	0.4664	0.4574	0.4616	0.4605	0.4619	0.4609	0.4470	0.4236	0.3969	M 2
	M(PR) 1	0.5594	0.5741	0.5869	0.6170	0.6450	0.6588	0.6696	0.6691	0.6481	M(PR) 1
	M(PR) 2	0.3623	0.3751	0.3843	0.4002	0.4203	0.4413	0.4380	0.4159	0.3968	M(PR) 2
	TURN(PR)	34.990	30.081	27.960	24.397	23.529	22.358	22.578	20.224	21.651	TURN(PR)
	P 1	14.491	14.620	14.743	14.902	14.881	14.883	14.796	14.771	14.476	P 1
	P 2	16.152	18.037	18.094	18.125	18.217	18.269	18.176	17.941	17.694	P 2
	T 1	516.699	516.699	516.699	516.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	553.011	551.200	549.355	549.759	550.490	549.423	551.999	552.493	553.616	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	45.265	43.696	42.803	41.756	40.743	39.738	41.014	43.965	47.012	BETA 2
STATION 2A	BETA 2A	3.939	3.670	3.517	2.635	2.355	3.162	4.152	4.919	5.578	BETA 2A
	V 2	528.47	515.78	519.38	518.41	520.24	518.73	504.85	479.52	450.71	V 2
	V 2A	410.95	400.97	396.85	423.93	437.83	447.09	411.32	393.39	386.96	V 2A
	VZ 2	371.95	372.91	381.06	386.69	393.99	398.39	380.18	344.46	306.75	VZ 2
	VZ 2A	409.98	400.04	396.09	423.44	437.36	446.24	410.03	391.72	384.65	VZ 2A
	V-THETA 2	375.40	356.31	352.90	345.23	339.40	331.20	330.65	332.23	329.09	V-THETA 2
	V-THETA 2A	26.23	27.06	24.34	19.49	17.99	24.65	29.77	33.71	37.59	V-THETA 2A
	M 2	0.4684	0.4574	0.4616	0.4605	0.4619	0.4609	0.4470	0.4236	0.3969	M 2
	M 2A	0.3608	0.3524	0.3493	0.3738	0.3861	0.3945	0.3616	0.3453	0.3391	M 2A
	TURN(PR)	41.325	39.825	39.286	39.121	36.366	36.518	36.766	38.939	41.326	TURN(PR)
	P 2	18.152	18.037	18.094	18.125	18.217	18.269	18.176	17.941	17.694	P 2
	P 2A	17.915	17.846	17.821	18.022	18.127	18.139	17.865	17.744	17.687	P 2A
	T 2	553.011	551.200	549.355	549.759	550.490	549.423	551.999	552.493	553.616	T 2
	T 2A	553.932	552.609	550.250	550.317	550.979	551.177	552.550	552.979	554.260	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed = 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (136°) - Station 2 (126°) - Station 2A (115°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.136	DIA
STATION 1	BETA 1	3.683	3.036	2.443	1.623	2.242	2.536	2.164	2.602	2.482	BETA 1
STATION 2	BETA 2	46.331	44.589	43.475	42.177	42.059	40.891	42.434	46.296	49.113	BETA 2
	BETA(PR) 1	58.918	56.617	55.417	55.830	57.011	58.683	61.505	62.787	62.898	BETA(PR) 1
	BETA(PR) 2	24.572	28.566	29.714	29.729	33.736	37.255	40.762	41.848	45.976	BETA(PR) 2
	V 1	315.74	350.39	373.06	385.37	385.15	377.98	351.07	335.11	336.68	V 1
	V 2	524.38	505.75	505.75	526.49	516.13	510.21	493.29	486.65	459.90	V 2
	VZ 1	315.08	349.89	372.72	385.21	384.83	377.56	350.76	334.71	336.33	VZ 1
	VZ 2	362.07	360.17	367.01	390.15	383.06	385.23	363.39	335.63	300.53	VZ 2
	V-THETA 1	20.28	18.56	15.90	10.91	15.07	16.72	13.25	15.21	14.58	V-THETA 1
	V-THETA 2	379.30	355.04	347.97	353.48	345.62	333.59	332.22	351.16	347.10	V-THETA 2
	V(PR) 1	610.3	635.9	656.7	685.9	706.8	726.4	735.2	732.0	738.3	V(PR) 1
	V(PR) 2	398.1	410.1	422.6	449.3	460.9	484.6	480.7	451.5	433.3	V(PR) 2
	VTHETA PR1	-522.7	-531.0	-540.6	-567.5	-592.8	-620.6	-646.2	-650.9	-657.2	VTHETA PR1
	VTHETA PR2	-165.6	-196.1	-209.5	-222.8	-255.8	-293.0	-313.2	-300.6	-310.9	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.26	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.2651	0.3170	0.3379	0.3494	0.3492	0.3425	0.3176	0.3029	0.3043	M 1
	M 2	0.4654	0.4489	0.4497	0.4683	0.4583	0.4549	0.4367	0.4303	0.4056	M 2
	M(PR) 1	0.5511	0.5753	0.5949	0.6218	0.6408	0.6582	0.6652	0.6616	0.6674	M(PR) 1
	M(PR) 2	0.3534	0.3646	0.3757	0.3997	0.4093	0.4321	0.4256	0.3993	0.3821	M(PR) 2
	TURN(PR)	34.346	28.051	25.703	26.103	23.293	21.483	20.837	21.045	17.031	TURN(PR)
	P 1	14.533	14.727	14.869	14.931	14.948	14.933	14.825	14.743	14.775	P 1
	P 2	18.150	17.981	17.994	18.252	18.218	18.247	18.093	18.056	17.809	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	551.065	549.543	547.634	549.008	549.854	545.246	551.156	551.904	552.534	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	46.331	44.589	43.475	42.177	42.059	40.891	42.434	46.296	49.113	BETA 2
STATION 2A	BETA 2A	3.927	3.882	3.435	2.411	2.283	3.009	4.040	4.909	5.739	BETA 2A
	V 2	524.38	505.75	505.75	526.49	516.13	510.21	493.29	486.65	459.90	V 2
	V 2A	396.38	389.52	379.39	410.33	430.29	434.96	407.06	385.65	379.88	V 2A
	VZ 2	362.07	360.17	367.01	390.15	383.06	385.23	363.39	335.63	300.53	VZ 2
	VZ 2A	395.45	388.62	378.70	409.92	429.85	434.20	405.84	384.01	377.71	VZ 2A
	V-THETA 2	379.30	355.04	347.97	353.48	345.62	333.59	332.22	351.16	347.10	V-THETA 2
	V-THETA 2A	27.15	26.37	22.73	17.26	17.14	22.82	28.66	32.98	37.96	V-THETA 2A
	M 2	0.4654	0.4489	0.4497	0.4683	0.4583	0.4549	0.4367	0.4303	0.4056	M 2
	M 2A	0.3485	0.3428	0.3343	0.3619	0.3797	0.3854	0.3582	0.3387	0.3333	M 2A
	TURN(PR)	42.403	40.706	40.040	39.764	39.756	37.823	38.297	41.280	43.267	TURN(PR)
	P 2	18.150	17.981	17.994	18.252	18.218	18.247	18.093	18.056	17.809	P 2
	P 2A	17.863	17.818	17.747	17.960	18.099	18.136	17.871	17.719	17.666	P 2A
	T 2	551.065	549.543	547.634	549.008	549.854	545.246	551.156	551.904	552.534	T 2
	T 2A	551.500	549.911	547.471	549.094	549.917	545.865	551.240	551.952	552.655	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed = 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (166°) - Station 2 (156°) - Station 2A (145°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	4.064	4.026	4.080	3.993	3.770	3.172	2.969	2.948	4.140	BETA 1
STATION 2	BETA 2	46.651	45.107	44.089	42.780	41.324	40.316	41.817	44.518	48.675	BETA 2
	BETA(PR) 1	57.273	55.053	54.161	55.128	56.804	58.541	62.432	64.417	67.091	BETA(PR) 1
	BETA(PR) 2	25.735	27.364	28.435	32.061	34.246	36.663	40.228	43.062	47.213	BETA(PR) 2
	V 1	334.55	366.95	383.25	385.31	382.15	377.75	335.69	311.70	276.21	V 1
	V 2	514.96	513.31	513.90	506.02	513.56	516.52	498.55	477.53	450.13	V 2
	VZ 1	333.70	366.04	382.28	384.37	381.30	377.12	335.18	311.23	275.46	VZ 1
	VZ 2	353.49	362.28	369.11	371.38	385.52	393.35	370.85	339.83	296.73	VZ 2
	V-THETA 1	23.71	25.76	27.27	26.83	25.13	20.90	17.38	16.03	19.94	V-THETA 1
	V-THETA 2	374.47	363.64	357.56	343.66	338.98	333.78	331.77	334.16	337.46	V-THETA 2
	V(PR) 1	617.2	639.0	652.9	672.3	696.5	722.6	724.3	720.8	707.7	V(PR) 1
	V(PR) 2	392.4	407.9	419.8	438.2	466.6	491.0	486.7	466.1	437.6	V(PR) 2
	VTHETA PR1	-519.2	-523.8	-529.3	-551.6	-582.8	-616.4	-642.0	-650.1	-651.8	VTHETA PR1
	VTHETA PR2	-170.4	-187.5	-199.9	-232.6	-262.5	-292.8	-313.7	-317.6	-320.6	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.28	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.3024	0.3323	0.3474	0.3493	0.3464	0.3423	0.3034	0.2814	0.2489	M 1
	M 2	0.4560	0.4553	0.4565	0.4489	0.4556	0.4586	0.4410	0.4215	0.3961	M 2
	M(PR) 1	0.5579	0.5786	0.5918	0.6095	0.6312	0.6548	0.6547	0.6507	0.6378	M(PR) 1
	M(PR) 2	0.3475	0.3618	0.3729	0.3888	0.4139	0.4360	0.4305	0.4114	0.3851	M(PR) 2
	TURN(PR)	31.536	27.689	25.726	23.068	22.576	21.932	22.298	21.461	19.968	TURN(PR)
	P 1	14.641	14.821	14.924	14.923	14.917	14.925	14.743	14.653	14.543	P 1
	P 2	18.006	18.012	18.033	18.006	18.142	18.251	18.111	17.930	17.686	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	552.706	550.861	549.300	550.142	550.801	550.000	552.489	553.001	554.229	T 2
STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.846	38.919	39.276	39.633	DIA
STATION 2	BETA 2	46.651	45.107	44.089	42.780	41.324	40.316	41.817	44.518	48.675	BETA 2
STATION 2A	BETA 2A	3.764	3.936	3.494	2.445	2.222	3.404	4.186	5.069	5.299	BETA 2A
	V 2	514.96	513.31	513.90	506.02	513.56	516.52	498.55	477.53	450.13	V 2
	V 2A	388.57	378.59	373.82	412.79	430.97	444.17	407.49	391.06	383.13	V 2A
	VZ 2	353.49	362.28	369.11	371.38	385.52	393.35	370.85	339.83	296.73	VZ 2
	VZ 2A	367.73	367.69	373.11	412.37	430.55	443.22	406.19	389.31	381.22	VZ 2A
	V-THETA 2	374.47	363.64	357.56	343.66	338.98	333.78	331.77	334.16	337.46	V-THETA 2
	V-THETA 2A	25.51	25.99	22.78	17.61	16.71	26.36	29.73	34.53	35.36	V-THETA 2A
	M 2	0.4560	0.4553	0.4565	0.4489	0.4556	0.4586	0.4410	0.4215	0.3961	M 2
	M 2A	0.3412	0.3328	0.3269	0.3638	0.3800	0.3919	0.3582	0.3453	0.3357	M 2A
	TURN(PR)	42.886	41.170	40.595	40.353	39.082	36.854	37.535	39.342	43.268	TURN(PR)
	P 2	18.006	18.012	18.033	18.006	18.142	18.251	18.111	17.930	17.686	P 2
	P 2A	17.817	17.746	17.714	17.962	18.115	18.206	17.885	17.760	17.700	P 2A
	T 2	552.706	550.861	549.300	550.142	550.801	550.000	552.489	553.001	554.229	T 2
	T 2A	552.252	550.558	549.040	550.015	550.779	550.968	552.490	552.832	554.191	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed = 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (196°) - Station 2 (186°) - Station 2A (175°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	6.245	5.320	4.691	4.858	4.749	4.240	5.159	5.205	5.759	BETA 1
STATION 2	BETA 2	47.569	45.395	44.993	44.579	42.844	42.117	43.886	47.565	51.907	BETA 2
	BETA(PR) 1	56.311	55.113	55.437	55.155	56.860	59.200	60.914	61.879	64.010	BETA(PR) 1
	BETA(PR) 2	24.116	26.178	27.900	29.674	33.232	37.315	39.674	43.479	47.316	BETA(PR) 2
	V 1	339.37	361.38	364.12	381.54	377.79	364.87	350.75	340.93	313.76	V 1
	V 2	523.69	521.34	515.45	520.26	518.51	507.52	500.86	473.83	452.65	V 2
	VZ 1	337.35	359.81	362.69	380.17	376.48	363.83	349.27	339.46	312.15	VZ 1
	VZ 2	353.47	366.09	364.52	370.56	380.03	376.03	360.33	319.16	278.84	VZ 2
	V-THETA 1	36.92	33.51	29.78	32.31	31.28	26.97	31.53	30.92	31.48	V-THETA 1
	V-THETA 2	386.67	371.17	364.43	365.15	352.45	339.97	346.59	349.10	355.70	V-THETA 2
	V(PR) 1	608.2	629.1	639.7	665.4	688.7	710.6	718.5	720.2	712.3	V(PR) 1
	V(PR) 2	387.3	407.9	412.5	426.5	454.6	473.4	469.1	440.7	412.0	V(PR) 2
	VTHETA PR1	-506.0	-516.0	-526.8	-546.1	-576.6	-610.3	-627.9	-635.2	-640.3	VTHETA PR1
	VTHETA PR2	-158.2	-180.0	-193.0	-211.1	-249.0	-286.6	-298.9	-302.7	-302.3	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.28	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.3068	0.3271	0.3297	0.3458	0.3423	0.3304	0.3173	0.3083	0.2833	M 1
	M 2	0.4643	0.4629	0.4581	0.4622	0.4604	0.4518	0.4433	0.4181	0.3985	M 2
	M(PR) 1	0.5498	0.5695	0.5791	0.6031	0.6240	0.6433	0.6500	0.6512	0.6431	M(PR) 1
	M(PR) 2	0.3432	0.3622	0.3666	0.3789	0.4036	0.4215	0.4152	0.3889	0.3628	M(PR) 2
	TURN(PR)	32.201	28.935	27.537	25.483	23.646	21.940	21.332	18.506	16.804	TURN(PR)
	P 1	14.760	14.865	14.876	14.989	14.961	14.943	14.881	14.856	14.732	P 1
	P 2	18.095	18.092	18.057	18.139	18.161	18.146	18.101	17.855	17.678	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	552.617	550.528	548.889	549.761	550.286	546.439	552.037	553.090	553.906	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	47.569	45.395	44.993	44.579	42.844	42.117	43.886	47.565	51.907	BETA 2
STATION 2A	BETA 2A	5.607	4.086	3.727	2.504	2.179	3.539	4.274	5.162	5.121	BETA 2A
	V 2	523.69	521.34	515.45	520.26	518.51	507.52	500.86	473.83	452.65	V 2
	V 2A	396.43	389.57	386.27	412.76	430.49	438.78	412.25	393.02	390.02	V 2A
	VZ 2	353.47	366.09	364.52	370.56	380.03	376.03	360.33	319.16	278.84	VZ 2
	VZ 2A	395.64	388.57	385.44	412.32	430.08	437.78	410.90	391.20	388.18	VZ 2A
	V-THETA 2	386.67	371.17	364.43	365.15	352.45	339.97	346.59	349.10	355.70	V-THETA 2
	V-THETA 2A	24.94	27.76	25.11	18.03	16.36	27.07	30.71	35.34	34.79	V-THETA 2A
	M 2	0.4643	0.4629	0.4581	0.4622	0.4604	0.4518	0.4433	0.4181	0.3985	M 2
	M 2A	0.3461	0.3425	0.3401	0.3838	0.3796	0.3884	0.3626	0.3449	0.3420	M 2A
	TURN(PR)	43.961	41.508	41.266	42.073	40.645	38.519	39.515	42.297	46.680	TURN(PR)
	P 2	18.095	18.092	18.057	18.139	18.161	18.146	18.101	17.855	17.678	P 2
	P 2A	17.851	17.864	17.779	17.961	18.091	18.138	17.894	17.753	17.715	P 2A
	T 2	552.617	550.528	548.889	549.761	550.286	546.439	552.037	553.090	553.906	T 2
	T 2A	552.964	550.856	549.182	549.976	550.504	547.095	552.152	553.070	553.938	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed = 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (226°) - Station 2 (216°) - Station 2A (205°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	6.516	5.982	6.553	6.469	6.078	5.121	6.317	6.610	7.223	BETA 1
STATION 2	BETA 2	46.208	45.364	45.122	44.168	43.554	43.447	46.914	50.296	53.959	BETA 2
	BETA(PR) 1	60.362	56.487	57.036	56.760	59.049	61.142	64.933	65.575	69.530	BETA(PR) 1
	BETA(PR) 2	25.329	27.048	26.854	31.115	33.946	37.924	41.485	43.422	46.440	BETA(PR) 2
	V 1	291.96	316.33	338.12	355.10	344.64	336.05	295.09	289.36	241.38	V 1
	V 2	519.21	514.93	522.98	510.14	511.24	500.48	484.51	475.12	461.67	V 2
	VZ 1	290.06	316.59	335.91	352.84	342.69	334.67	293.24	287.39	239.44	VZ 1
	VZ 2	359.31	361.79	369.02	365.90	370.37	362.95	330.44	303.04	271.26	VZ 2
	V-THETA 1	33.13	33.17	38.59	40.01	36.49	29.99	32.46	33.30	30.35	V-THETA 1
	V-THETA 2	374.79	366.41	370.59	355.43	352.13	343.79	353.28	364.96	372.79	V-THETA 2
	V(PR) 1	586.6	605.7	617.3	643.7	666.3	693.4	692.2	695.0	684.7	V(PR) 1
	V(PR) 2	397.5	406.2	413.6	427.4	446.7	460.7	441.9	418.1	394.4	V(PR) 2
	VTHETA PR1	-509.8	-516.4	-518.0	-538.4	-571.4	-607.3	-626.9	-632.8	-641.4	VTHETA PR1
	VTHETA PR2	-170.1	-184.7	-186.8	-220.9	-249.3	-282.8	-292.2	-286.8	-285.2	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.28	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.2633	0.2875	0.3057	0.3213	0.3117	0.3038	0.2662	0.2609	0.2172	M 1
	M 2	0.4610	0.4577	0.4657	0.4531	0.4538	0.4438	0.4279	0.4189	0.4061	M 2
	M(PR) 1	0.5290	0.5470	0.5581	0.5825	0.6026	0.6268	0.6243	0.6268	0.6161	M(PR) 1
	M(PR) 2	0.3529	0.3611	0.3683	0.3797	0.3965	0.4085	0.3903	0.3686	0.3469	M(PR) 2
	TURN(PR)	35.034	31.439	30.162	25.648	25.121	23.273	23.542	22.260	23.200	TURN(PR)
	P 1	14.643	14.783	14.883	14.977	14.925	14.929	14.811	14.812	14.662	P 1
	P 2	17.977	17.977	18.082	17.980	18.052	17.977	17.854	17.769	17.648	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	550.390	548.706	547.627	549.057	549.934	550.095	553.161	554.170	555.635	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	46.208	45.364	45.122	44.168	43.554	43.447	46.914	50.296	53.959	BETA 2
STATION 2A	BETA 2A	3.512	4.487	4.384	2.577	2.203	3.074	4.365	5.273	5.938	BETA 2A
	V 2	519.21	514.93	522.98	510.14	511.24	500.48	484.51	475.12	461.67	V 2
	V 2A	378.91	369.95	372.54	405.58	416.13	419.50	378.43	366.10	365.40	V 2A
	VZ 2	359.31	361.79	369.02	365.90	370.37	362.95	330.44	303.04	271.26	VZ 2
	VZ 2A	378.20	368.81	371.44	405.13	415.73	418.75	377.14	364.34	363.18	VZ 2A
	V-THETA 2	374.79	366.41	370.59	355.43	352.13	343.79	353.28	364.96	372.79	V-THETA 2
	V-THETA 2A	23.21	28.94	28.48	18.25	15.99	22.49	28.79	33.63	37.77	V-THETA 2A
	M 2	0.4610	0.4577	0.4657	0.4531	0.4538	0.4438	0.4279	0.4189	0.4061	M 2
	M 2A	0.3330	0.3255	0.3282	0.3576	0.3668	0.3696	0.3320	0.3208	0.3197	M 2A
	TURN(PR)	42.695	40.876	40.738	41.589	41.331	40.314	42.452	44.918	47.918	TURN(PR)
	P 2	17.977	17.977	18.082	17.980	18.052	17.977	17.854	17.769	17.648	P 2
	P 2A	17.737	17.676	17.690	17.917	17.969	17.967	17.638	17.563	17.555	P 2A
	T 2	550.390	548.706	547.627	549.057	549.934	550.095	553.161	554.170	555.635	T 2
	T 2A	550.704	548.848	547.740	549.112	549.920	550.685	552.422	553.194	554.707	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed = 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (256°) - Station 2 (246°) - Station 2A (235°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	5.316	5.071	5.245	4.840	4.760	4.427	5.894	6.382	6.720	BETA 1
STATION 2	BETA 2	45.039	45.067	44.429	44.989	46.659	51.808	60.650	64.826	67.362	BETA 2
	BETA(PR) 1	60.724	59.131	58.988	59.642	61.301	63.571	67.058	68.412	69.822	BETA(PR) 1
	BETA(PR) 2	24.201	24.933	25.234	29.351	32.974	37.108	44.108	46.893	49.589	BETA(PR) 2
	V 1	290.55	313.17	318.40	323.92	319.41	305.97	268.90	254.02	238.29	V 1
	V 2	531.49	531.85	537.76	521.70	513.10	500.19	479.68	479.75	478.84	V 2
	VZ 1	289.29	311.94	317.07	322.76	318.30	305.02	267.43	252.41	236.63	VZ 1
	VZ 2	375.56	375.63	384.02	368.95	352.04	309.02	234.92	203.93	184.20	VZ 2
	V-THETA 1	26.93	27.66	29.11	27.33	26.50	23.61	27.61	28.23	27.88	V-THETA 1
	V-THETA 2	376.07	376.51	376.44	368.81	373.04	392.81	417.76	433.88	441.69	V-THETA 2
	V(PR) 1	591.6	606.0	615.4	636.6	662.8	685.3	686.1	686.0	686.0	V(PR) 1
	V(PR) 2	411.8	414.2	424.5	423.3	419.8	388.0	327.7	299.0	284.6	V(PR) 2
	VTHETA PR1	-516.0	-521.9	-527.4	-551.1	-581.4	-613.7	-631.8	-637.9	-643.9	VTHETA PR1
	VTHETA PR2	-168.8	-174.6	-181.0	-207.5	-228.4	-233.8	-227.7	-217.9	-216.4	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.26	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.2620	0.2827	0.2875	0.2926	0.2885	0.2761	0.2423	0.2287	0.2144	M 1
	M 2	0.4719	0.4728	0.4788	0.4631	0.4546	0.4435	0.4218	0.4213	0.4200	M 2
	M(PR) 1	0.5335	0.5489	0.5558	0.5769	0.5986	0.6185	0.6181	0.6177	0.6173	M(PR) 1
	M(PR) 2	0.3656	0.3683	0.3780	0.3757	0.3720	0.3440	0.2882	0.2625	0.2496	M(PR) 2
	TURN(PR)	36.524	34.199	33.754	30.293	28.345	26.518	23.045	21.625	20.342	TURN(PR)
	P 1	14.782	14.920	14.943	14.987	14.998	14.996	14.893	14.843	14.778	P 1
	P 2	18.073	18.113	18.207	18.077	18.018	17.895	17.692	17.700	17.710	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	551.328	550.072	549.088	550.812	552.097	550.230	557.253	558.864	560.041	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	45.039	45.067	44.429	44.989	46.659	51.808	60.650	64.826	67.362	BETA 2
STATION 2A	BETA 2A	3.361	4.511	4.621	2.756	1.996	0.945	1.736	2.532	3.549	BETA 2A
	V 2	531.49	531.85	537.76	521.70	513.10	500.19	479.68	479.75	478.84	V 2
	V 2A	402.01	396.87	394.97	412.42	410.66	399.76	371.06	359.56	363.08	V 2A
	VZ 2	375.56	375.63	384.02	368.95	352.04	309.02	234.92	203.93	184.20	VZ 2
	VZ 2A	401.32	395.64	393.67	411.90	410.32	399.56	370.70	359.01	362.12	VZ 2A
	V-THETA 2	376.07	376.51	376.44	368.81	373.04	392.81	417.76	433.88	441.69	V-THETA 2
	V-THETA 2A	23.57	31.21	31.82	19.83	14.30	6.59	11.25	15.68	22.46	V-THETA 2A
	M 2	0.4719	0.4728	0.4788	0.4631	0.4546	0.4435	0.4216	0.4213	0.4200	M 2
	M 2A	0.3538	0.3496	0.3483	0.3635	0.3616	0.3523	0.3246	0.3159	0.3167	M 2A
	TURN(PR)	41.677	40.555	39.808	42.231	44.643	50.804	58.828	62.211	63.735	TURN(PR)
	P 2	18.073	18.113	18.207	18.077	18.018	17.895	17.692	17.700	17.710	P 2
	P 2A	17.793	17.752	17.743	17.653	17.620	17.725	17.511	17.432	17.448	P 2A
	T 2	551.328	550.072	549.088	550.812	552.097	550.230	557.253	558.864	560.041	T 2
	T 2A	550.726	549.337	548.256	549.794	550.858	549.160	555.366	556.846	558.074	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed = 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (286°) - Station 2 (276°) - Station 2A (265°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-7.156	-7.033	-7.070	-5.652	-5.496	-6.435	-5.082	-6.243	-6.419	BETA 1
STATION 2	BETA 2	45.509	45.597	45.793	47.659	51.682	55.467	64.553	67.756	70.732	BETA 2
	BETA(PR) 1	62.687	62.127	62.425	63.412	66.043	68.990	71.078	73.805	77.750	BETA(PR) 1
	BETA(PR) 2	26.360	25.483	25.725	26.749	30.839	38.043	48.549	52.121	55.832	BETA(PR) 2
	V 1	299.44	313.29	313.16	306.05	263.49	257.50	234.12	201.03	150.47	V 1
	V 2	513.57	525.94	529.49	533.78	520.97	494.73	464.83	461.77	460.33	V 2
	VZ 1	297.10	310.93	310.78	304.57	262.17	255.65	233.16	199.81	149.51	VZ 1
	VZ 2	359.90	367.99	369.19	358.13	322.93	280.26	199.60	174.69	151.84	VZ 2
	V-THETA 1	-37.31	-38.36	-38.54	-30.14	-27.15	-28.86	-20.73	-21.86	-16.82	V-THETA 1
	V-THETA 2	366.35	375.74	379.55	395.78	408.63	407.28	419.47	427.17	434.36	V-THETA 2
	V(PR) 1	651.9	665.1	671.4	680.5	694.9	713.6	719.0	716.4	704.6	V(PR) 1
	V(PR) 2	401.7	407.7	409.8	401.1	376.3	356.3	302.0	284.9	270.7	V(PR) 2
	VTHETA PR1	-580.3	-587.9	-595.1	-608.5	-635.1	-666.1	-680.1	-688.0	-688.6	VTHETA PR1
	VTHETA PR2	-176.5	-175.4	-177.9	-180.5	-192.8	-219.3	-226.0	-224.6	-223.7	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.28	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.2702	0.2826	0.2827	0.2762	0.2556	0.2319	0.2106	0.1807	0.1350	M 1
	M 2	0.4531	0.4650	0.4685	0.4714	0.4586	0.4339	0.4054	0.4022	0.4005	M 2
	M(PR) 1	0.5882	0.6004	0.6061	0.6141	0.6265	0.6426	0.6469	0.6436	0.6323	M(PR) 1
	M(PR) 2	0.3545	0.3604	0.3626	0.3542	0.3313	0.3125	0.2634	0.2482	0.2355	M(PR) 2
	TURN(PR)	36.507	36.644	36.699	36.665	35.222	31.002	22.623	21.788	22.022	TURN(PR)
	P 1	14.830	14.909	14.921	14.928	14.910	14.872	14.827	14.729	14.610	P 1
	P 2	17.973	18.129	18.166	18.206	18.082	17.819	17.554	17.540	17.567	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	556.499	555.376	554.900	557.305	559.533	561.431	564.957	566.152	567.485	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	45.509	45.597	45.793	47.659	51.682	55.467	64.553	67.758	70.732	BETA 2
STATION 2A	BETA 2A	3.063	3.613	3.826	3.249	1.230	-5.079	-7.486	-7.134	-6.828	BETA 2A
	V 2	513.57	525.94	529.49	533.78	520.97	494.73	464.83	461.77	460.33	V 2
	V 2A	405.46	409.28	409.65	419.37	396.46	372.69	347.42	344.91	354.78	V 2A
	VZ 2	359.90	367.99	369.19	358.13	322.93	280.26	199.60	174.69	151.84	VZ 2
	VZ 2A	404.88	408.46	408.73	418.65	396.30	371.09	344.29	342.05	352.01	VZ 2A
	V-THETA 2	366.35	375.74	379.55	395.78	408.63	407.28	419.47	427.17	434.36	V-THETA 2
	V-THETA 2A	21.67	25.79	27.33	23.77	8.51	-32.98	-45.25	-42.61	-42.15	V-THETA 2A
	M 2	0.4531	0.4650	0.4685	0.4714	0.4586	0.4339	0.4054	0.4022	0.4005	M 2
	M 2A	0.3560	0.3596	0.3602	0.3681	0.3469	0.3249	0.3015	0.2990	0.3072	M 2A
	TURN(PR)	42.445	41.983	41.967	44.608	50.452	60.486	71.960	74.811	77.485	TURN(PR)
	P 2	17.973	18.129	18.166	18.206	18.082	17.819	17.554	17.540	17.567	P 2
	P 2A	17.725	17.732	17.739	17.792	17.606	17.436	17.275	17.266	17.330	P 2A
	T 2	556.499	555.376	554.900	557.305	559.533	561.431	564.957	566.152	567.485	T 2
	T 2A	553.550	552.445	552.080	554.664	556.806	559.216	562.621	563.782	565.355	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed = 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (316°) - Station 2 (306°) - Station 2A (295°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.96	PCT SPAN
	DIA	33.234	33.617	34.001	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-21.156	-20.641	-19.181	-18.382	-18.261	-19.046	-18.693	-19.411	-19.884	BETA 1
STATION 2	BETA 2	46.999	48.821	49.885	51.211	56.320	61.093	74.267	78.396	82.752	BETA 2
	BETA(PR) 1	70.636	69.712	66.743	69.284	70.766	72.748	74.123	74.861	75.447	BETA(PR) 1
	BETA(PR) 2	25.767	27.807	32.261	31.170	38.168	42.620	63.094	70.179	78.117	BETA(PR) 2
	V 1	255.77	252.20	265.11	263.63	252.41	234.55	219.64	211.24	204.69	V 1
	V 2	513.75	501.06	475.84	497.50	474.41	474.84	431.32	423.93	413.48	V 2
	VZ 1	216.01	236.01	250.39	250.18	239.69	221.66	207.77	199.21	192.47	VZ 1
	VZ 2	350.38	329.91	306.59	311.65	263.03	229.42	116.93	85.26	52.16	VZ 2
	V-THETA 1	-84.37	-88.90	-87.10	-83.14	-79.09	-76.53	-71.11	-70.20	-69.61	V-THETA 1
	V-THETA 2	375.72	377.14	363.90	387.77	394.69	415.47	415.06	415.20	410.15	V-THETA 2
	V(PR) 1	664.1	680.7	690.6	707.2	727.6	747.5	759.5	762.8	766.0	V(PR) 1
	V(PR) 2	369.1	373.0	362.6	364.3	334.7	312.1	258.6	251.6	253.4	V(PR) 2
	VTHETA PR1	-627.3	-638.4	-643.6	-661.5	-687.0	-713.8	-730.5	-736.3	-741.4	VTHETA PR1
	VTHETA PR2	-169.1	-174.0	-193.5	-188.5	-206.7	-211.1	-230.4	-236.5	-247.9	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.28	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.2103	0.2271	0.2388	0.2375	0.2272	0.2110	0.1975	0.1899	0.1840	M 1
	M 2	0.4506	0.4395	0.4170	0.4361	0.4144	0.4151	0.3745	0.3675	0.3580	M 2
	M(PR) 1	0.5975	0.6128	0.6221	0.6370	0.6551	0.6725	0.6829	0.6857	0.6884	M(PR) 1
	M(PR) 2	0.3413	0.3272	0.3177	0.3193	0.2923	0.2728	0.2245	0.2181	0.2193	M(PR) 2
	TURN(PR)	45.069	41.906	36.481	36.117	32.618	30.186	11.107	4.750	-2.627	TURN(PR)
	P 1	14.122	14.206	14.253	14.251	14.242	14.234	14.245	14.224	14.211	P 1
	P 2	17.966	17.865	17.635	17.649	17.655	17.647	17.275	17.224	17.197	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	562.660	561.715	560.774	562.258	564.171	563.382	567.588	568.741	569.446	T 2

STATION D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	46.999	48.821	49.885	51.211	56.320	61.093	74.267	78.396	82.752	BETA 2
STATION 2A	BETA 2A	2.654	2.677	2.523	2.699	0.563	-8.022	-11.824	-11.653	-11.903	BETA 2A
	V 2	513.75	501.08	475.84	497.50	474.41	474.84	431.32	423.93	413.48	V 2
	V 2A	380.87	380.56	380.53	374.61	351.41	330.29	319.58	315.63	335.63	V 2A
	VZ 2	350.38	329.91	306.59	311.65	263.03	229.42	116.93	85.26	52.16	VZ 2
	VZ 2A	366.40	360.14	380.15	374.15	351.32	326.94	312.65	308.96	328.18	VZ 2A
	V-THETA 2	375.72	377.14	363.90	387.77	394.69	415.47	415.06	415.20	410.15	V-THETA 2
	V-THETA 2A	18.83	17.77	16.75	17.64	3.45	-46.08	-65.45	-63.72	-69.18	V-THETA 2A
	M 2	0.4506	0.4395	0.4170	0.4361	0.4144	0.4151	0.3745	0.3675	0.3580	M 2
	M 2A	0.3315	0.3316	0.3319	0.3260	0.3049	0.2863	0.2756	0.2720	0.2893	M 2A
	TURN(PR)	44.164	46.143	47.362	48.510	55.738	69.061	86.033	89.999	94.618	TURN(PR)
	P 2	17.966	17.865	17.635	17.649	17.655	17.647	17.275	17.224	17.197	P 2
	P 2A	17.477	17.456	17.447	17.390	17.259	17.124	17.100	17.109	17.220	P 2A
	T 2	562.660	561.715	560.774	562.258	564.171	563.382	567.588	568.741	569.446	T 2
	T 2A	561.221	560.057	559.231	561.001	563.093	562.985	567.320	568.582	569.417	T 2A

Table A-8. Blade Element Performance (Continued)
Stage D, Rotor D - Stator D
Percent Equivalent Rotor Speed = 89.25 Equivalent Rotor Speed - 3757.35 Equivalent Weight Flow = 79.78
Circumferential Distortion
Station 1 (346°) - Station 2 (336°) - Station 2A (325°)

ROTOR D	PCT SPAN	94.99	90.00	84.99	70.00	50.00	30.00	14.98	9.99	4.98	PCT SPAN
	DIA	33.234	33.617	34.061	35.151	36.685	38.219	39.371	39.754	40.138	DIA
STATION 1	BETA 1	-10.461	-10.053	-10.062	-9.993	-9.707	-10.243	-9.785	-9.921	-10.942	BETA 1
STATION 2	BETA 2	51.295	52.069	52.669	50.981	51.343	52.797	58.046	62.120	66.538	BETA 2
	BETA(PR) 1	66.541	64.948	64.819	65.546	66.698	68.024	68.978	70.794	74.644	BETA(PR) 1
	BETA(PR) 2	28.361	27.106	32.392	31.243	35.095	40.472	49.552	55.794	60.784	BETA(PR) 2
	V 1	260.48	284.44	289.94	290.34	286.78	281.93	275.46	250.90	198.45	V 1
	V 2	487.38	499.49	472.31	497.30	493.18	477.80	439.74	414.98	404.15	V 2
	VZ 1	256.14	280.67	285.48	285.93	282.66	277.40	271.41	247.10	194.82	VZ 1
	VZ 2	304.76	307.04	285.11	313.08	307.98	288.68	232.50	193.89	160.81	VZ 2
	V-THETA 1	-47.29	-49.65	-50.66	-50.38	-48.35	-50.13	-46.81	-43.22	-37.67	V-THETA 1
	V-THETA 2	380.34	393.97	376.55	386.36	385.02	380.27	372.74	366.51	370.50	V-THETA 2
	V(PR) 1	643.4	661.4	671.0	690.7	714.5	741.3	756.6	751.2	735.7	V(PR) 1
	V(PR) 2	346.3	344.9	337.6	366.2	376.6	379.9	358.9	345.3	329.8	V(PR) 2
	VTHETA PR1	-590.2	-599.2	-607.2	-628.8	-656.3	-687.4	-706.2	-709.3	-709.4	VTHETA PR1
	VTHETA PR2	-164.5	-157.2	-180.9	-189.9	-216.4	-246.3	-272.7	-285.2	-287.5	VTHETA PR2
	U 1	542.95	549.54	556.54	578.38	607.91	637.29	659.40	666.13	671.77	U 1
	U 2	544.86	551.13	557.43	576.28	601.43	626.58	645.47	651.75	658.04	U 2
	M 1	0.2346	0.2564	0.2615	0.2618	0.2586	0.2542	0.2482	0.2259	0.1783	M 1
	M 2	0.4272	0.4387	0.4144	0.4366	0.4324	0.4185	0.3835	0.3612	0.3512	M 2
	M(PR) 1	0.5795	0.5963	0.6051	0.6229	0.6443	0.6682	0.6818	0.6762	0.6611	M(PR) 1
	M(PR) 2	0.3036	0.3090	0.2962	0.3215	0.3302	0.3328	0.3130	0.3006	0.2866	M(PR) 2
	TURN(PR)	36.160	37.843	32.427	34.305	31.621	27.609	19.519	15.099	13.955	TURN(PR)
	P 1	14.016	14.119	14.131	14.115	14.121	14.109	14.128	14.057	13.935	P 1
	P 2	17.622	17.699	17.469	17.759	17.811	17.658	17.308	17.130	17.066	P 2
	T 1	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	518.699	T 1
	T 2	561.297	560.135	559.178	560.515	561.596	561.306	563.101	563.470	564.525	T 2

STATOR D	PCT SPAN	95.00	90.00	85.00	70.00	50.00	30.00	15.00	10.00	5.00	PCT SPAN
	DIA	33.207	33.564	33.921	34.992	36.420	37.848	38.919	39.276	39.633	DIA
STATION 2	BETA 2	51.295	52.069	52.869	50.981	51.343	52.797	58.046	62.120	66.538	BETA 2
STATION 2A	BETA 2A	2.786	1.844	0.220	-0.438	0.226	-2.870	-3.169	-2.498	-2.688	BETA 2A
	V 2	487.38	499.49	472.31	497.30	493.18	477.80	439.74	414.98	404.15	V 2
	V 2A	344.73	339.90	335.88	354.85	361.00	353.11	323.89	317.66	329.72	V 2A
	VZ 2	304.76	307.04	285.11	313.08	307.98	288.68	232.50	193.89	160.81	VZ 2
	VZ 2A	344.52	339.71	335.86	354.61	360.91	352.54	323.23	317.17	329.12	VZ 2A
	V-THETA 2	380.34	393.97	376.55	386.36	385.02	380.27	372.74	366.51	370.50	V-THETA 2
	V-THETA 2A	16.76	10.94	1.29	-2.71	1.42	-17.67	-17.90	-13.84	-15.45	V-THETA 2A
	M 2	0.4272	0.4387	0.4144	0.4366	0.4324	0.4185	0.3835	0.3612	0.3512	M 2
	M 2A	0.2996	0.2955	0.2922	0.3085	0.3136	0.3064	0.2804	0.2748	0.2851	M 2A
	TURN(PR)	48.506	50.224	52.649	51.417	51.097	55.608	61.124	64.526	69.142	TURN(PR)
	P 2	17.622	17.699	17.469	17.759	17.811	17.658	17.308	17.130	17.066	P 2
	P 2A	17.318	17.284	17.257	17.352	17.384	17.326	17.168	17.159	17.226	P 2A
	T 2	561.297	560.135	559.178	560.515	561.596	561.306	563.101	563.470	564.525	T 2
	T 2A	560.960	560.046	559.402	560.952	562.311	563.206	564.158	564.466	565.707	T 2A

APPENDIX B
STATOR D SURFACE STATIC PRESSURE COEFFICIENTS

$$C_p = \frac{P_{surface} - P_{2_{fs}}}{(\rho V^2/2)_{2_{fs}}}$$

Percent Design Equivalent Rotor Speed	Equivalent Weight Flow, lb/sec	Percent Chord																	
		Suction Surface												Pressure Surface					
		10% Span From Tip								90% Span From Tip				10% Span From Tip			90% Span From Tip		
		15	25	35	45	55	65	75	85	15	25	35	*	15	50	85	15	50	85
110	123.41	-0.76	-1.24	-1.61	-1.94	-1.79	-1.61	-1.39	-1.03	-0.27	-0.60	-0.81	-	-0.69	-0.31	-0.36	-0.04	0.21	0.22
110	116.07	-0.65	-0.76	-0.76	-0.74	-0.53	-0.34	-0.28	-0.20	-0.48	-0.48	-0.41	-	0.31	0.36	0.22	0.46	0.49	0.44
110	109.67	-0.73	-0.78	-0.73	-0.67	-0.47	-0.29	-0.23	-0.17	-0.49	-0.45	-0.34	-	0.38	0.39	0.24	0.49	0.51	0.44
110	102.55	-0.65	-0.62	-0.53	-0.42	-0.27	-0.13	-0.09	-0.02	-0.47	-0.38	-0.24	-	0.55	0.49	0.33	0.53	0.52	0.45
110	97.18	-0.70	-0.54	-0.42	-0.30	-0.20	-0.12	-0.09	-0.03	-0.49	-0.38	-0.23	-	0.58	0.47	0.31	0.51	0.51	0.43
100	120.02	-0.68	-1.16	-1.52	-1.87	-1.71	-1.54	-1.33	-0.96	-0.34	-0.68	-0.91	-	-0.60	-0.24	-0.30	-0.11	0.15	0.15
100	110.18	-0.60	-0.78	-0.81	-0.83	-0.63	-0.47	-0.36	-0.27	-0.42	-0.48	-0.46	-	0.21	0.30	0.17	0.38	0.45	0.40
100	102.67	-0.60	-0.67	-0.65	-0.62	-0.42	-0.25	-0.18	-0.13	-0.48	-0.48	-0.41	-	0.40	0.42	0.28	0.46	0.49	0.41
100	95.36	-0.62	-0.62	-0.55	-0.47	-0.30	-0.13	-0.10	-0.06	-0.53	-0.48	-0.36	-	0.52	0.49	0.33	0.50	0.50	0.41
100	88.32	-0.64	-0.50	-0.38	-0.28	-0.15	-0.06	-0.03	-0.03	-0.47	-0.39	-0.25	-	0.63	0.54	0.37	0.52	0.51	0.43
90	113.67	-0.67	-1.10	-1.43	-1.72	-1.64	-1.56	-1.36	-0.97	-0.37	-0.68	-0.88	-	-0.66	-0.27	-0.33	-0.12	0.14	0.14
90	103.01	-0.59	-0.78	-0.85	-0.91	-0.76	-0.58	-0.49	-0.33	-0.41	-0.52	-0.52	-	0.13	0.24	0.12	0.32	0.42	0.37
90	91.28	-0.56	-0.62	-0.61	-0.58	-0.40	-0.23	-0.16	-0.11	-0.46	-0.48	-0.41	-	0.40	0.41	0.27	0.45	0.48	0.41
90	85.21	-0.56	-0.56	-0.50	-0.42	-0.25	-0.10	-0.06	-0.03	-0.45	-0.42	-0.32	-	0.52	0.49	0.33	0.52	0.52	0.43
90	76.85	-0.58	-0.44	-0.33	-0.25	-0.13	-0.04	-0.01	0.04	-0.47	-0.38	-0.25	-	0.63	0.52	0.35	0.55	0.51	0.43
70	92.54	-0.62	-1.02	-1.29	-1.58	-1.53	-1.49	-1.31	-0.90	-0.39	-0.68	-0.83	-	-0.59	-0.23	-0.28	-0.05	0.16	0.14
70	82.65	-0.58	-0.79	-0.91	-1.00	-0.89	-0.77	-0.64	-0.40	-0.41	-0.55	-0.59	-	0.01	0.16	0.05	0.26	0.37	0.33
70	71.87	-0.58	-0.67	-0.68	-0.67	-0.52	-0.30	-0.24	-0.17	-0.52	-0.56	-0.52	-	0.32	0.36	0.22	0.38	0.43	0.35
70	65.46	-0.67	-0.66	-0.61	-0.54	-0.36	-0.19	-0.15	-0.11	-0.53	-0.50	-0.40	-	0.46	0.42	0.26	0.47	0.46	0.38
70	58.15	-0.54	-0.41	-0.29	-0.19	-0.08	0.00	0.03	0.09	-0.40	-0.32	-0.18	-	0.66	0.56	0.40	0.57	0.55	0.47
50	66.41	-0.55	-0.89	-1.11	-1.39	-1.31	-1.28	-1.14	-0.76	-0.39	-0.67	-0.83	-	-0.43	-0.12	-0.17	-0.02	0.17	0.15
50	59.41	-0.62	-0.87	-0.99	-1.12	-1.01	-0.94	-0.77	-0.49	-0.45	-0.61	-0.67	-	-0.05	0.09	0.00	0.19	0.31	0.28
50	51.12	-0.63	-0.73	-0.75	-0.84	-0.61	-0.44	-0.36	-0.24	-0.55	-0.62	-0.59	-	0.27	0.29	0.16	0.34	0.38	0.31
50	46.51	-0.60	-0.62	-0.57	-0.52	-0.35	-0.16	-0.12	-0.06	-0.53	-0.52	-0.44	-	0.48	0.46	0.31	0.45	0.46	0.37
50	40.70	-0.61	-0.49	-0.39	-0.28	-0.16	-0.07	-0.03	-0.03	-0.49	-0.43	-0.29	-	0.62	0.52	0.36	0.53	0.50	0.41

*Suction surface static pressure instrumentation at 45, 55, 65, 75 and 85% chord, 90% span from tip were inoperative.

APPENDIX C
DEFINITIONS

Definitions of Symbols

a_o	Inlet relative stagnation velocity of sound, ft/sec
c	Chord length, inches
C_p	Static pressure coefficient
d	Diameter, inches
D	Diffusion factor
g_c	Gravitational acceleration, 32.174 lb_m - ft/lb_f-sec^2
i_m	Incidence angle, degree from axial direction
M	Mach number
N	Rotor speed, rpm
P	Total pressure, psia
PR	Rotor tip static pressure ratio (ratio of local static pressure to static pressure at -7.3% axial chord)
p	Static pressure, psia
R	Gas constant for air, 53.34 $ft\text{-}lb_f/lb_m$ - °R
r	Radius, inches
S	Blade passage gap (leading edge), inches
t	Blade maximum thickness, inches
T	Total temperature, °R
T_s	Static temperature, °R
U	Rotor speed, ft/sec
V	Velocity, ft/sec
W	Actual flowrate, lb_m/sec
α	Cone angle (angle of plane tangent to conic surface that approximates the design streamline of revolution), deg
β	Air angle, degrees from axial direction

Definitions of Symbols (Continued)

γ	Ratio of specific heats
γ°	Blade-chord angle, degree from axial direction
δ	Ratio of total pressure to NASA standard sea level pressure of 14.694 psia
δ°	Deviation angle, degree
η	Efficiency
θ	Ratio of total temperature to NASA standard sea level temperature of 518.7°R
κ	Blade metal angle, degree from axial direction
ρ	Density, $lb_f/sec^2/ft^4$
σ	Solidity, chord divided by blade spacing (c/S)
ϕ	Blade camber angle, $\kappa_1 - \kappa_2$, degree
$\bar{\omega}$	Loss coefficient
$\bar{\omega} \cos \beta/2\sigma$	Loss parameter

Subscripts

0	Compressor inlet (bellmouth)
1	Rotor inlet
2	Rotor exit/stator inlet
2A	Stator exit
ad	Adiabatic
f	Force
fs	Freestream value
id	Isentropic condition
L	Local
m	Mean or mass
max	Maximum
min	Minimum

Definition of Symbols (Continued)

Subscripts (Continued)

le	Leading edge
p	Polytropic
te	Trailing edge
s	Static condition
z	Axial component
θ	Tangential component

Superscripts:

'	Related to rotor blade
-	Mass average value

Definitions of Overall Performance Variables

Pressure ratio:

Rotor: $\frac{\overline{P}_2}{\overline{P}_1}$ Stage: $\frac{\overline{P}_{2A}}{\overline{P}_1}$

Equivalent flow:

$$\frac{W\sqrt{\theta}}{\delta}$$

Equivalent rotor speed:

$$N/\sqrt{\theta}$$

Adiabatic efficiency:

Rotor: $\eta_{ad} = \frac{\left(\overline{P}_2/\overline{P}_1\right)^{\frac{\gamma-1}{\gamma}} - 1}{\overline{T}_{2A}/518.7 - 1}$ Stage: $\eta_{ad} = \frac{\left(\overline{P}_{2A}/\overline{P}_1\right)^{\frac{\gamma-1}{\gamma}} - 1}{\overline{T}_{2A}/518.7 - 1}$

Definitions of Overall Performance Variables (Concluded)

Polytropic efficiency:

$$\text{Rotor: } \eta_p = \frac{\frac{\gamma - 1}{\gamma} \ln (\bar{P}_2/\bar{P}_1)}{\ln (\bar{T}_2/518.7)} \qquad \text{Stator: } \eta_p = \frac{\frac{\gamma - 1}{\gamma} \ln(\bar{p}_{2A}/\bar{p}_2)}{\ln(\bar{T}s_{2A}/\bar{T}s_2)}$$

Change in surge pressure ratio:

$$\Delta \text{ Surge Pressure Ratio} = \left[1.0 - \frac{(\bar{P}_{2A}/\bar{P}_1)_{\text{Distorted}}}{(\bar{P}_{2A}/\bar{P}_1)_{\text{Uniform Inlet}}} \right]_{N/\sqrt{\theta} = \text{ constant}}$$

Values of pressure ratio for each condition are at constant value of flow which corresponds to the flow at surge with distortion.

Average pressures and temperatures for circumferential distortion tests:

$$\bar{P}_1 = \frac{(3)\ (\bar{P}_1 \text{ Undistorted}) + (1)\ (\bar{P}_1 \text{ Distorted})}{4}$$

$$\bar{P}_2 = \frac{(3)\ (\bar{P}_2 \text{ Undistorted}) + (1)\ (\bar{P}_2 \text{ Distorted})}{4}$$

$$\bar{P}_{2A} = \frac{(3)\ (\bar{P}_{2A} \text{ Undistorted}) + (1)\ (\bar{P}_{2A} \text{ Distorted})}{4}$$

T_1 = Plenum Conditions (corrected to standard day)

$\bar{T}_2$ = Set equal to $\bar{T}_{2A}$

$$\bar{T}_{2A} = \frac{(3)\ (\bar{T}_{2A} \text{ Undistorted}) + (1)\ (\bar{T}_{2A} \text{ Distorted})}{4}$$

Definitions of Blade Element Performance Variables

Incidence angle:

$$\text{Rotor: } i_m = \beta_1' - \kappa_{le} \qquad \text{Stator: } i_m = \beta_2 - \kappa_{le}$$

Diffusion factor:

$$\text{Rotor: } D = 1 - \frac{V_2'}{V_1'} + \frac{d_2 V_{\theta 2} - d_1 V_{\theta 1}}{(d_1 + d_2)\, V_1' \sigma}$$

Definitions of Blade Element Performance Variables (Concluded)

Diffusion factor:

$$\text{Stator: } D = 1 - \frac{V_{2A}}{V_2} - \frac{d_2 V_{\theta 2} - d_{2A} V_{\theta 2A}}{(d_2 + d_{2A})\, V_2 \sigma}$$

Deviation angle:

$$\text{Rotor: } \delta^\circ = \beta'_2 - \kappa_{te} \qquad \text{Stator: } \delta^\circ = \beta_{2A} - \kappa_{te}$$

Loss coefficient:

$$\text{Rotor: } \bar{\omega}' = \frac{(\bar{P}'_2)_{id} - P'_2}{\bar{P}'_1 - p_1}$$

where:

$$(P'_2)_{id} = P'_1 \left\{ 1 + \frac{\gamma - 1}{2} \left(\frac{U_2^2}{a_{o_1}^2} \right) \left[1 - \left(\frac{d_1}{d_2} \right)^2 \right] \right\}^{\frac{\gamma}{\gamma - 1}}$$

$$P' \text{ is found from } p/P' = \left[1 + \frac{\gamma - 1}{2} M'^2 \right]^{\frac{\gamma}{1 - \gamma}}$$

and M' is calculated using trigonometric functions and the measurements of U, β, P, and p.

$$\text{Stator: } \bar{\omega} = \frac{P_2 - \bar{P}_{2A}}{P_2 - p_2} \qquad \bar{\omega}_{fs} = \frac{P_{2A_{fs}} - \bar{P}_{2A}}{P_{2A_{fs}} - p_2}$$

where:

$P_{2A_{fs}}$ = stator exit average freestream total pressure from wake rakes

P_2 = stator inlet total pressure from 20-deg wedge probes

Definitions of Blade Element Performance Variables (Continued)

Rotor tip static pressure ratio:

$$PR = \frac{p_L}{p \text{ at } -7.3\% \text{ axial chord}}$$

Stator static pressure coefficient:

$$Cp = \frac{p_{surface} - p_{2fs}}{(\rho V^2/2)_{2fs}}$$

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