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## A Table of the Total Number of Stroboscopic Velocity Curves for Any of the Natural Numbers from 1 to 500 Inclusive Taken as a Limiting Value of $n$ and $m$

L. E. Dodd  
*Bureau of Standards*

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A TABLE OF THE TOTAL NUMBER OF STROBOSCOPIC VELOCITY CURVES FOR ANY OF THE NATURAL NUMBERS FROM 1 TO 500 INCLUSIVE TAKEN AS A LIMITING VALUE OF  $n$  AND  $m$

L. E. DODD

The stroboscopic velocity equation <sup>1</sup> is

$$v_s = (A - n/m \cdot B)D_o,$$

where  $n/m$  is a fraction at lowest terms. Since there are as many stroboscopic velocity curves as there are different values of  $n/m$  this fraction may be referred to as the "stroboscopic parameter."

A question of importance in the study of stroboscopy is, what is the total number of stroboscopic velocity curves for all possible values of the stroboscopic parameter up to and including a given limit determined by the condition,

$$n \text{ not greater than } m \text{ not greater than } p,$$

where  $p$  is the limiting natural number.

This total number,  $Q$ , of the stroboscopic velocity curves for each of the values of  $p$  from 1 to 500 inclusive has been calculated, and the  $Q$  values are given in the appended table.

TABLE

$p$	$Q$	$p$	$Q$	$p$	$Q$
1	1	61	2323	121	8991
2	3	62	2383	122	9111
3	7	63	2455	123	9271
4	11	64	2519	124	9391
5	19	65	2615	125	9591
6	23	66	2655	126	9663
7	35	67	2787	127	9915
8	43	68	2851	128	10043
9	55	69	2939	129	10211
10	63	70	2987	130	10307
11	83	71	3127	131	10567
12	91	72	3175	132	10647
13	115	73	3319	133	10863
14	127	74	3391	134	10995
15	143	75	3471	135	11139
16	159	76	3543	136	11267
17	191	77	3663	137	11539
18	203	78	3711	138	11627

<sup>1</sup> See Proceedings Iowa Academy of Science, vol. 24, 1917, p. 221.

TABLE — *Continued*

P	Q	P	Q	P	Q
19	239	79	3867	139	11903
20	255	80	3931	140	11999
21	279	81	4039	141	12183
22	299	82	4119	142	12323
23	343	83	4283	143	12563
24	359	84	4331	144	12659
25	399	85	4459	145	12883
26	423	86	4543	146	13027
27	459	87	4655	147	13195
28	483	88	4735	148	13339
29	539	89	4911	149	13635
30	555	90	4959	150	13715
31	615	91	5103	151	14015
32	647	92	5191	152	14159
33	687	93	5311	153	14351
34	719	94	5403	154	14471
35	767	95	5547	155	14711
36	791	96	5611	156	14807
37	863	97	5803	157	15119
38	899	98	5887	158	15275
39	947	99	6007	159	15483
40	979	100	6087	160	15611
41	1059	101	6287	161	15875
42	1083	102	6351	162	15983
43	1167	103	6555	163	16307
44	1207	104	6651	164	16467
45	1255	105	6747	165	16627
46	1299	106	6851	166	16791
47	1391	107	7063	167	17123
48	1423	108	7135	168	17219
49	1507	109	7351	169	17531
50	1547	110	7431	170	17659
51	1611	111	7575	171	17875
52	1659	112	7671	172	18043
53	1763	113	7895	173	18387
54	1799	114	7967	174	18499
55	1879	115	8143	175	18739
56	1927	116	8255	176	18899
57	1999	117	8399	177	19131
58	2055	118	8515	178	19307
59	2171	119	8707	179	19663
60	2203	120	8771	180	19759
181	20119	241	35567	301	55299
182	20263	242	35787	302	55599
183	20503	243	36111	303	55999
184	20679	244	36351	304	56287
185	20967	245	36687	305	56767
186	21087	246	36847	306	56959
187	21407	247	37279	307	57571
188	21591	248	37519	308	57811
189	21807	249	37847	309	58219
190	21951	250	38047	310	58459
191	22331	251	38547	311	59079
192	22459	252	38691	312	59271
193	22843	253	39131	313	59895
194	23035	254	39383	314	60207
195	23227	255	39639	315	60495
196	23395	256	39895	316	60807
197	23787	257	40407	317	61439

TABLE — *Continued*

p	Q	p	Q	p	Q
198	23907	258	40575	318	61647
199	24303	259	41007	319	62207
200	24463	260	41199	320	62463
201	24727	261	41535	321	62887
202	24927	262	41795	322	63151
203	25263	263	42319	323	63727
204	25391	264	42479	324	63943
205	25711	265	42895	325	64423
206	25915	266	43112	326	64747
207	26179	267	43463	327	65179
208	26371	268	43727	328	65499
209	26731	269	44263	329	66051
210	26827	270	44407	330	66211
211	27247	271	44947	331	66871
212	27455	272	45203	332	67199
213	20503	273	45491	333	67631
214	27947	274	45763	334	67963
215	28283	275	46163	335	68491
216	28427	276	46339	336	68683
217	28787	277	46891	337	69355
218	29003	278	47168	338	69667
219	29291	279	47527	339	70115
220	29451	280	47719	340	70371
221	29835	281	48279	341	70971
222	29979	282	48463	342	71187
223	30423	283	49027	343	71775
224	30615	284	49307	344	72111
225	30855	285	49595	345	72463
226	31079	286	49835	346	72807
227	31531	287	50315	347	73499
228	31675	288	50507	348	73723
229	32131	289	51051	349	74419
230	32307	290	51275	350	74659
231	32547	291	51659	351	75091
232	32771	292	51947	352	75411
233	33235	293	52531	353	76115
234	33379	294	52699	354	76347
235	33747	295	53163	355	76907
236	33979	296	53451	356	77259
237	34291	297	53811	357	77643
238	34483	298	54107	358	77999
239	34959	299	54635	359	78715
240	35087	300	54795	360	78907
361	79591	408	101283	455	126143
362	79951	409	102099	456	126431
363	80391	410	102419	457	127343
364	80679	411	102963	458	127799
365	81255	412	103371	459	128375
366	81495	413	104067	460	128727
367	82227	414	104331	461	129647
368	82589	415	104987	462	130887
369	83059	416	105371	463	130811
370	83347	417	105923	464	131259
371	83971	418	106283	465	131739
372	84211	419	107119	466	132203
373	84955	420	107311	467	133135
374	85275	421	108151	468	133423
375	85675	422	108571	469	134215
376	86043	423	109123	470	134583

TABLE—Continued

p	Q	p	Q	p	Q
377	86715	424	109539	471	135207
378	86931	425	110179	472	135671
379	87687	426	110459	473	136511
380	87975	427	111179	474	136823
381	88479	428	111603	475	137543
382	88859	429	112083	476	137927
383	89623	430	112419	477	138551
384	89879	431	113279	478	139027
385	90359	432	113567	479	139983
386	90743	433	114431	480	140239
387	91247	434	114791	481	141103
388	91631	435	115239	482	141583
389	92407	436	115671	483	142111
390	92599	437	116463	484	142551
391	93303	438	116751	485	143319
392	93639	439	117627	486	143643
393	94159	440	117947	487	144615
394	94551	441	118451	488	145095
395	95175	442	118835	489	145743
396	95415	443	119719	490	146079
397	96207	444	120007	491	147059
398	96603	445	120711	492	147379
399	97035	446	121155	493	148275
400	97355	447	121747	494	148707
401	98155	448	122131	495	149187
402	98419	449	123027	496	149667
403	99139	450	123267	497	150507
404	99539	451	124067	498	150835
405	99971	452	124515	499	151831
406	100307	453	125115	500	152231
407	101027	454	125567		

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