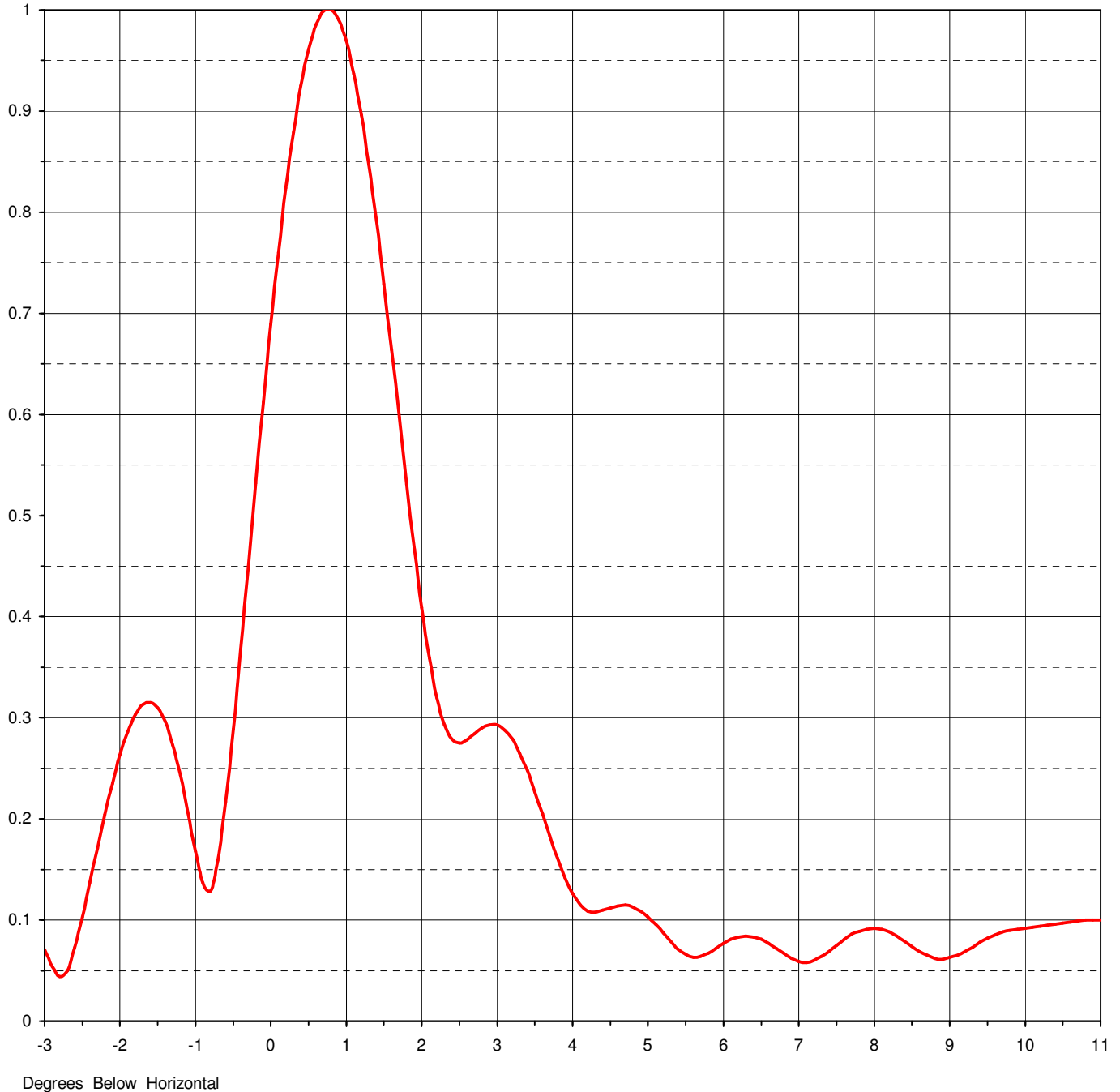




Proposal Number	C-02996	
Date	9-Oct-08	
Call Letters	WJMN-DT	Channel 48
Location	Escanaba, MI	
Customer		
Antenna Type	TFU-34JSC-R S390	

ELEVATION PATTERN

RMS Gain at Main Lobe	32.00 (15.05 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	15.20 (11.82 dB)	Frequency	677.00 MHz
Calculated / Measured	Calculated	Drawing #	34Y320075



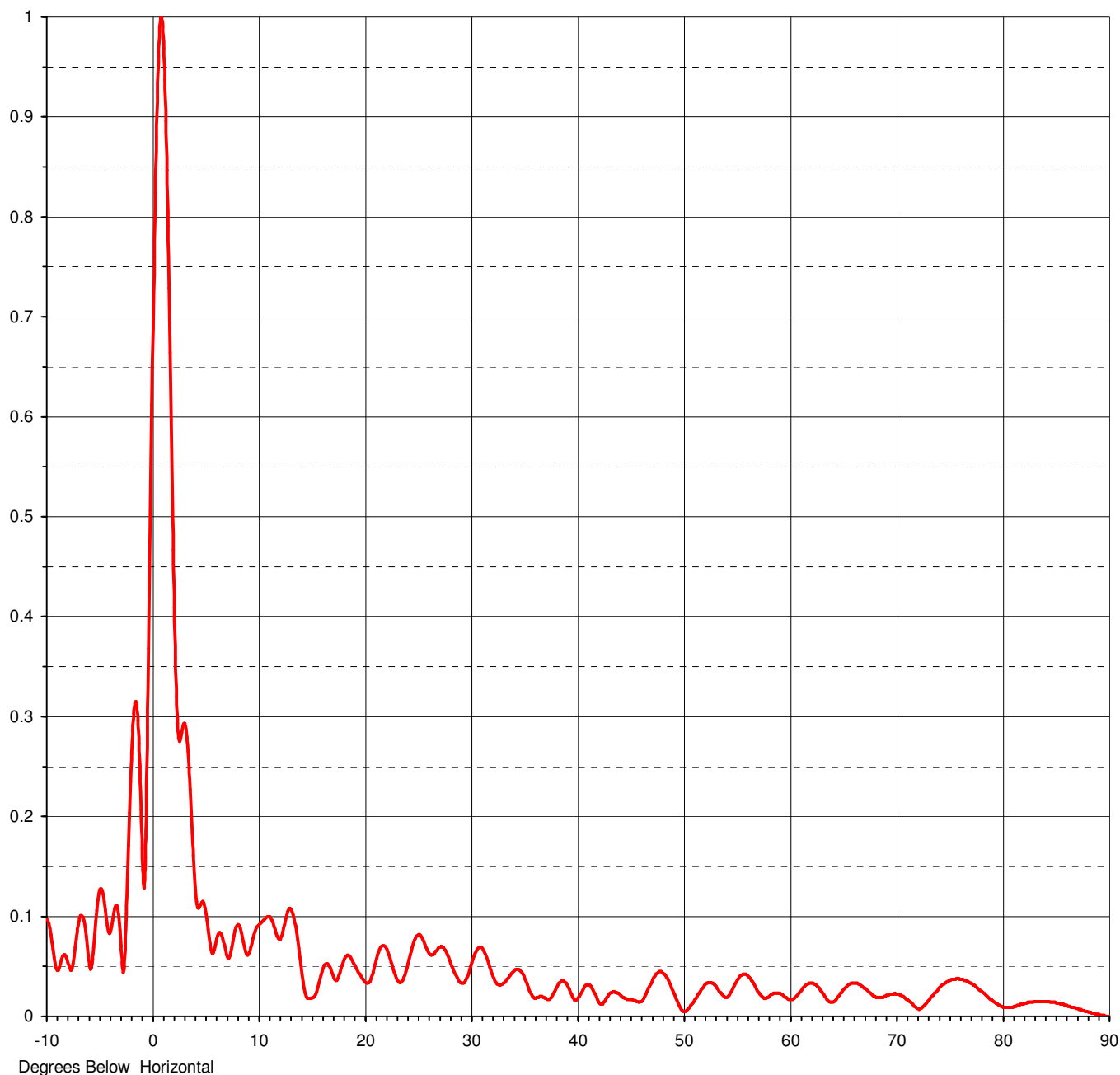


Proposal Number	C-02996		
Date	9-Oct-08		
Call Letters	WJMN-DT	Channel	48
Location	Escanaba, MI		
Customer			
Antenna Type	TFU-34JSC-R S390		

ELEVATION PATTERN

RMS Gain at Main Lobe	32.00 (15.05 dB)
RMS Gain at Horizontal	15.20 (11.82 dB)
Calculated / Measured	Calculated

Beam Tilt	0.75 deg
Frequency	677.00 MHz
Drawing #	34Y320075-90





Proposal Number **C-02996**
Date **9-Oct-08**
Call Letters **WJMN-DT** Channel **48**
Location **Escanaba, MI**
Customer
Antenna Type **TFU-34JSC-R S390**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **34Y320075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.097	2.4	0.279	10.6	0.097	30.5	0.065	51.0	0.015	71.5	0.012
-9.5	0.074	2.6	0.278	10.8	0.099	31.0	0.069	51.5	0.023	72.0	0.008
-9.0	0.046	2.8	0.290	11.0	0.100	31.5	0.059	52.0	0.031	72.5	0.010
-8.5	0.060	3.0	0.293	11.5	0.090	32.0	0.043	52.5	0.034	73.0	0.016
-8.0	0.054	3.2	0.279	12.0	0.077	32.5	0.032	53.0	0.031	73.5	0.023
-7.5	0.053	3.4	0.248	12.5	0.092	33.0	0.032	53.5	0.024	74.0	0.029
-7.0	0.092	3.6	0.205	13.0	0.108	33.5	0.038	54.0	0.019	74.5	0.033
-6.5	0.095	3.8	0.161	13.5	0.091	34.0	0.045	54.5	0.025	75.0	0.036
-6.0	0.051	4.0	0.126	14.0	0.051	34.5	0.047	55.0	0.035	75.5	0.037
-5.5	0.082	4.2	0.109	14.5	0.020	35.0	0.040	55.5	0.041	76.0	0.037
-5.0	0.127	4.4	0.110	15.0	0.018	35.5	0.026	56.0	0.041	76.5	0.036
-4.5	0.107	4.6	0.114	15.5	0.025	36.0	0.018	56.5	0.035	77.0	0.033
-4.0	0.085	4.8	0.113	16.0	0.045	36.5	0.020	57.0	0.025	77.5	0.029
-3.5	0.111	5.0	0.103	16.5	0.053	37.0	0.018	57.5	0.019	78.0	0.025
-3.0	0.071	5.2	0.087	17.0	0.042	37.5	0.018	58.0	0.019	78.5	0.020
-2.8	0.044	5.4	0.071	17.5	0.038	38.0	0.027	58.5	0.023	79.0	0.016
-2.6	0.073	5.6	0.063	18.0	0.054	38.5	0.035	59.0	0.023	79.5	0.012
-2.4	0.137	5.8	0.067	18.5	0.061	39.0	0.033	59.5	0.020	80.0	0.009
-2.2	0.204	6.0	0.077	19.0	0.053	39.5	0.022	60.0	0.017	80.5	0.009
-2.0	0.263	6.2	0.083	19.5	0.043	40.0	0.017	60.5	0.019	81.0	0.010
-1.8	0.303	6.4	0.083	20.0	0.035	40.5	0.026	61.0	0.025	81.5	0.011
-1.6	0.315	6.6	0.077	20.5	0.035	41.0	0.032	61.5	0.031	82.0	0.013
-1.4	0.296	6.8	0.067	21.0	0.053	41.5	0.026	62.0	0.033	82.5	0.014
-1.2	0.243	7.0	0.059	21.5	0.069	42.0	0.015	62.5	0.031	83.0	0.015
-1.0	0.168	7.2	0.060	22.0	0.069	42.5	0.014	63.0	0.025	83.5	0.015
-0.8	0.129	7.4	0.069	22.5	0.054	43.0	0.022	63.5	0.017	84.0	0.015
-0.6	0.217	7.6	0.081	23.0	0.038	43.5	0.025	64.0	0.014	84.5	0.014
-0.4	0.368	7.8	0.089	23.5	0.035	44.0	0.022	64.5	0.020	85.0	0.013
-0.2	0.532	8.0	0.092	24.0	0.048	44.5	0.018	65.0	0.027	85.5	0.012
0.0	0.689	8.2	0.088	24.5	0.069	45.0	0.017	65.5	0.032	86.0	0.011
0.2	0.824	8.4	0.079	25.0	0.081	45.5	0.016	66.0	0.033	86.5	0.009
0.4	0.925	8.6	0.069	25.5	0.077	46.0	0.015	66.5	0.032	87.0	0.008
0.6	0.986	8.8	0.062	26.0	0.065	46.5	0.022	67.0	0.028	87.5	0.006
0.8	1.000	9.0	0.063	26.5	0.062	47.0	0.034	67.5	0.023	88.0	0.004
1.0	0.969	9.2	0.069	27.0	0.069	47.5	0.043	68.0	0.019	88.5	0.003
1.2	0.896	9.4	0.078	27.5	0.067	48.0	0.044	68.5	0.019	89.0	0.002
1.4	0.791	9.6	0.085	28.0	0.056	48.5	0.038	69.0	0.021	89.5	0.001
1.6	0.664	9.8	0.088	28.5	0.043	49.0	0.026	69.5	0.022	90.0	0.000
1.8	0.531	10.0	0.091	29.0	0.034	49.5	0.013	70.0	0.022		
2.0	0.409	10.2	0.093	29.5	0.036	50.0	0.005	70.5	0.020		
2.2	0.320	10.4	0.095	30.0	0.050	50.5	0.008	71.0	0.017		

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Proposal Number

C-02996

Date

9-Oct-08

Call Letters

WJMN-DT

Channel

48

Location

Escanaba, MI

Customer

Antenna Type

TFU-34JSC-R S390

AZIMUTH PATTERN

Gain

3.90

(5.91 dB)

Frequency

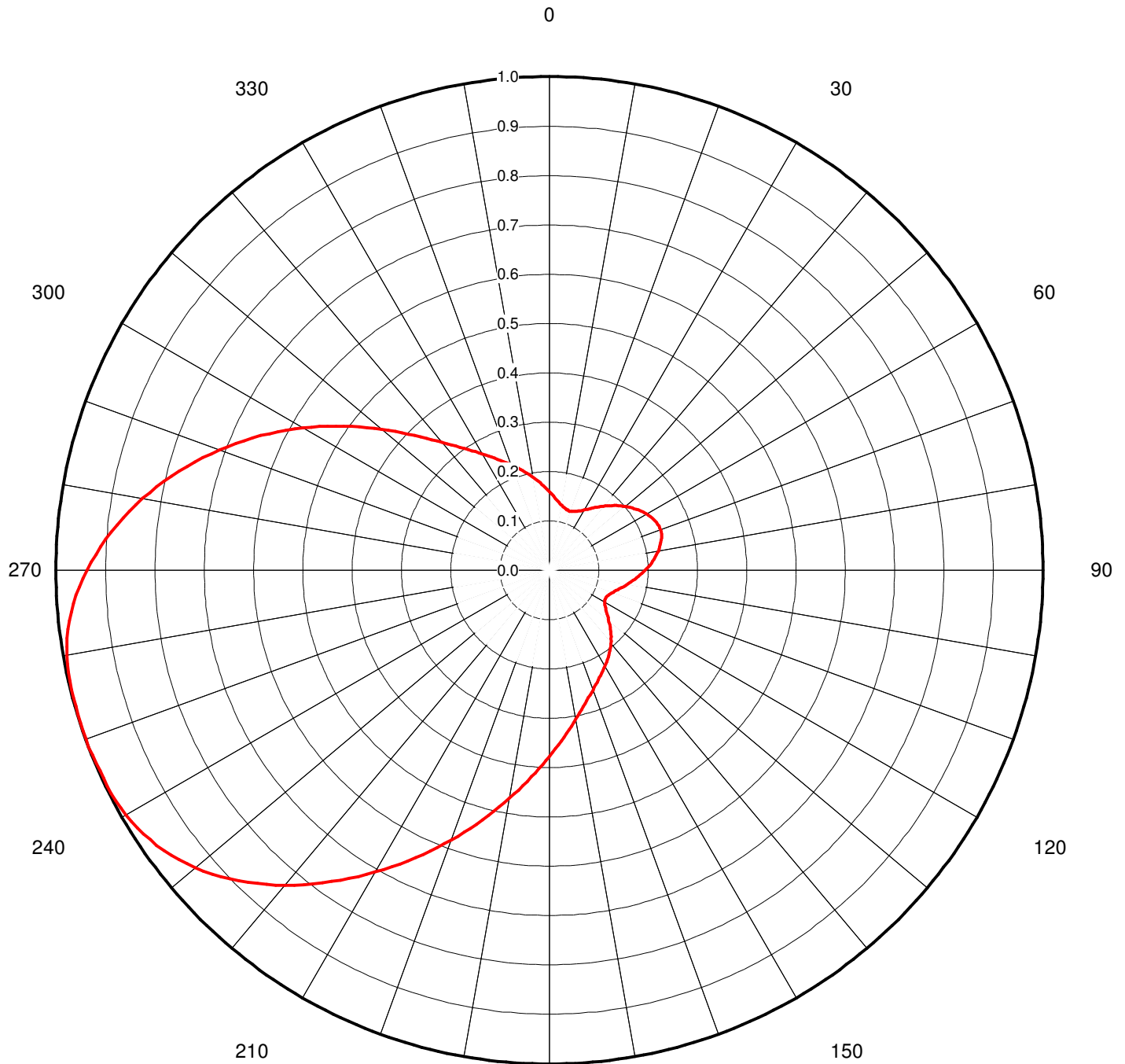
677.00 MHz

Calculated / Measured

Calculated

Drawing #

S390



180



Proposal Number **C-02996**
Date **9-Oct-08**
Call Letters **WJMN-DT** Channel **48**
Location **Escanaba, MI**
Customer
Antenna Type **TFU-34JSC-R S390**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **S390**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.159	45	0.185	90	0.194	135	0.175	180	0.377	225	0.890	270	0.937	315	0.386
1	0.156	46	0.188	91	0.191	136	0.179	181	0.385	226	0.900	271	0.929	316	0.375
2	0.153	47	0.191	92	0.187	137	0.183	182	0.394	227	0.910	272	0.920	317	0.365
3	0.151	48	0.194	93	0.184	138	0.187	183	0.402	228	0.919	273	0.910	318	0.356
4	0.148	49	0.198	94	0.181	139	0.190	184	0.411	229	0.928	274	0.901	319	0.346
5	0.146	50	0.201	95	0.177	140	0.194	185	0.420	230	0.937	275	0.891	320	0.338
6	0.143	51	0.204	96	0.174	141	0.197	186	0.430	231	0.945	276	0.880	321	0.330
7	0.141	52	0.207	97	0.171	142	0.201	187	0.439	232	0.952	277	0.870	322	0.322
8	0.139	53	0.210	98	0.167	143	0.204	188	0.449	233	0.959	278	0.859	323	0.315
9	0.137	54	0.212	99	0.164	144	0.207	189	0.459	234	0.965	279	0.848	324	0.308
10	0.135	55	0.215	100	0.161	145	0.210	190	0.469	235	0.971	280	0.836	325	0.301
11	0.133	56	0.218	101	0.158	146	0.213	191	0.480	236	0.976	281	0.825	326	0.295
12	0.132	57	0.220	102	0.155	147	0.216	192	0.490	237	0.980	282	0.813	327	0.289
13	0.130	58	0.223	103	0.152	148	0.219	193	0.501	238	0.984	283	0.801	328	0.283
14	0.129	59	0.225	104	0.149	149	0.222	194	0.512	239	0.988	284	0.789	329	0.277
15	0.128	60	0.227	105	0.146	150	0.225	195	0.523	240	0.991	285	0.776	330	0.272
16	0.128	61	0.229	106	0.143	151	0.228	196	0.535	241	0.993	286	0.764	331	0.267
17	0.127	62	0.231	107	0.141	152	0.231	197	0.546	242	0.995	287	0.751	332	0.262
18	0.127	63	0.233	108	0.138	153	0.234	198	0.558	243	0.996	288	0.738	333	0.257
19	0.127	64	0.235	109	0.136	154	0.237	199	0.570	244	0.996	289	0.725	334	0.253
20	0.127	65	0.236	110	0.134	155	0.240	200	0.581	245	0.997	290	0.712	335	0.248
21	0.127	66	0.238	111	0.132	156	0.243	201	0.593	246	0.997	291	0.699	336	0.244
22	0.128	67	0.239	112	0.131	157	0.247	202	0.606	247	0.998	292	0.685	337	0.240
23	0.129	68	0.239	113	0.129	158	0.250	203	0.618	248	0.998	293	0.672	338	0.235
24	0.130	69	0.240	114	0.128	159	0.254	204	0.630	249	1.000	294	0.659	339	0.231
25	0.131	70	0.240	115	0.128	160	0.258	205	0.643	250	0.999	295	0.645	340	0.227
26	0.133	71	0.239	116	0.127	161	0.262	206	0.655	251	0.999	296	0.631	341	0.223
27	0.135	72	0.239	117	0.127	162	0.266	207	0.668	252	0.999	297	0.618	342	0.220
28	0.137	73	0.238	118	0.127	163	0.270	208	0.680	253	0.999	298	0.604	343	0.216
29	0.139	74	0.236	119	0.128	164	0.275	209	0.693	254	0.998	299	0.590	344	0.212
30	0.141	75	0.235	120	0.129	165	0.279	210	0.706	255	0.998	300	0.577	345	0.209
31	0.143	76	0.233	121	0.131	166	0.284	211	0.719	256	0.998	301	0.563	346	0.205
32	0.146	77	0.231	122	0.133	167	0.289	212	0.731	257	0.997	302	0.549	347	0.202
33	0.149	78	0.229	123	0.135	168	0.295	213	0.744	258	0.996	303	0.536	348	0.198
34	0.151	79	0.226	124	0.137	169	0.301	214	0.757	259	0.995	304	0.522	349	0.195
35	0.154	80	0.224	125	0.140	170	0.306	215	0.770	260	0.993	305	0.509	350	0.191
36	0.157	81	0.221	126	0.143	171	0.312	216	0.783	261	0.990	306	0.495	351	0.188
37	0.160	82	0.219	127	0.146	172	0.319	217	0.795	262	0.986	307	0.482	352	0.185
38	0.163	83	0.216	128	0.149	173	0.325	218	0.808	263	0.982	308	0.469	353	0.181
39	0.166	84	0.213	129	0.153	174	0.332	219	0.820	264	0.978	309	0.457	354	0.178
40	0.169	85	0.210	130	0.156	175	0.339	220	0.833	265	0.972	310	0.444	355	0.175
41	0.172	86	0.207	131	0.160	176	0.346	221	0.845	266	0.966	311	0.432	356	0.172
42	0.175	87	0.204	132	0.164	177	0.354	222	0.856	267	0.960	312	0.420	357	0.168
43	0.179	88	0.200	133	0.168	178	0.361	223	0.868	268	0.953	313	0.408	358	0.165
44	0.182	89	0.197	134	0.172	179	0.369	224	0.879	269	0.945	314	0.397	359	0.162

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