



PATTERN CERTIFICATION

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PATTERN CERTIFICATION

Method of Measurement

The azimuth pattern for “**WSVH**”, Dielectric Document Sketch #6, was measured in the following manner.

A single 4.4 to 1 scale model “**DV5ERD**” bay radiator was mounted on a similarly scaled model of the tower according to information provided to Dielectric by the customer; refer to Dielectric Document Sketch #6. The antenna under test, all parasitics, all known tower appurtenances, and the tower section were rotated through 360 degrees while receiving a signal at the appropriate frequency from a linear cavity-backed source antenna. The vertical polarization azimuth pattern was measured in an anechoic test range.

The transmit and scale model antennas are mounted at identical elevations and at opposite ends of the chamber. A Hewlett Packard model 8752C network analyzer was used to supply the RF signal to the source antenna at 4.4 times the fundamental FM frequency and to receive the signal intercepted by the antenna under test. The received signal was converted to a relative level, referenced to the source. This level was stored on a computer acting as the master controller. The computer controls the measurement system via IEEE-488 control bus through a GPIB card.

Statement of Qualifications

Keith L. Pelletier is a Senior Electrical Engineer here at Dielectric. He received a BS in Electrical Engineering Technology from the University of Maine in 1998. He has over 8 years experience in RF antenna engineering and has been employed by Dielectric Communications since 1997.

Signed By: _____

Date: _____



MSO NO: C-00892

DATE: November 1, 2007

PATTERN NO: 6

FM AZIMUTH PATTERN APPROVAL

The azimuth pattern of the vertical polarization as supplied by Dielectric in the document labeled “ Pattern 6 ”, is acknowledged as acceptable. We understand that Dielectric does not guarantee or predict signal strength in any particular location.

(Customer’s name)

By: _____
(Name typed or printed)

Title: _____

(Signature)

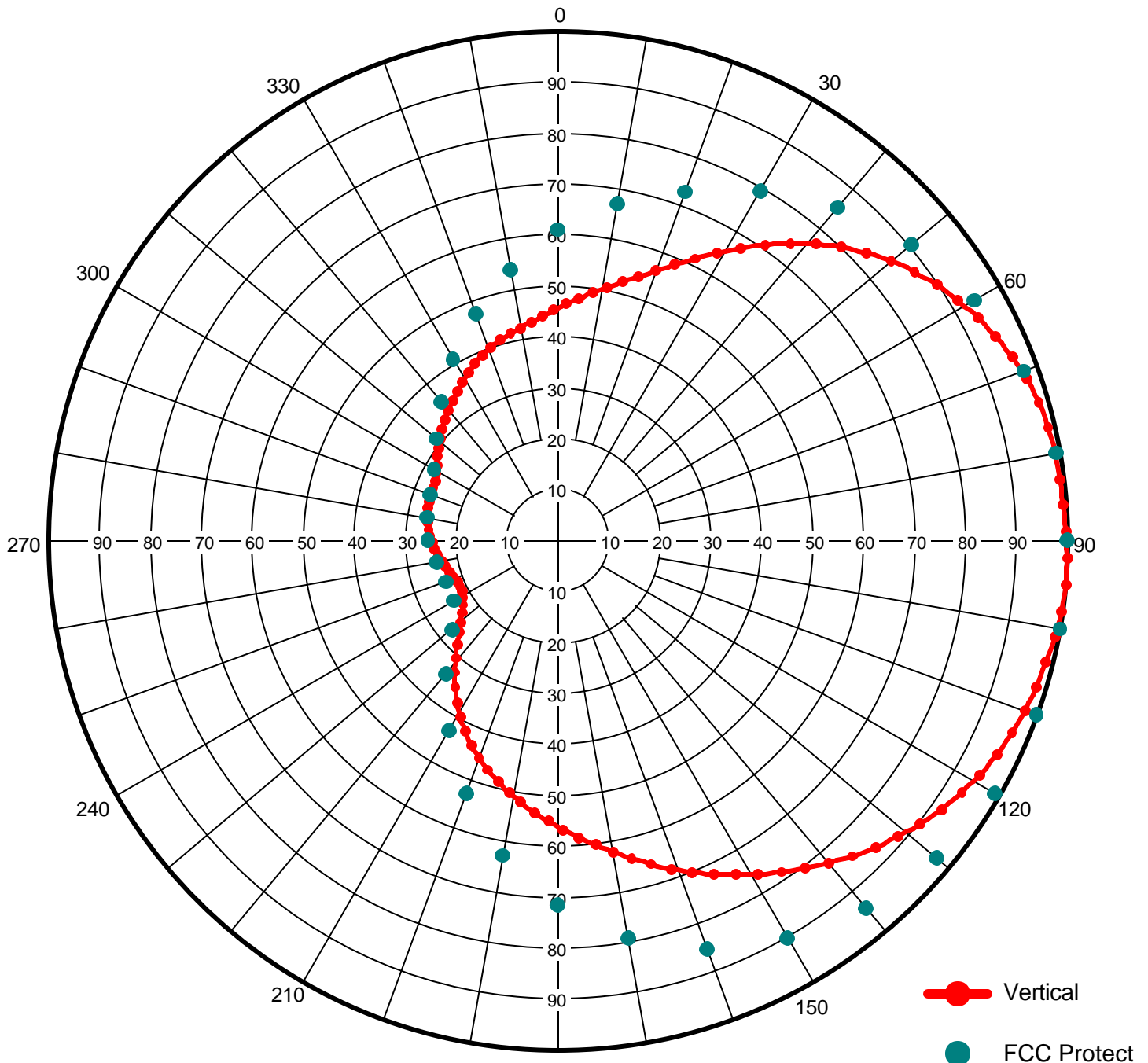
Proposal Number **C-00892**
Date **Oct 30, 2007**
Call Letters **WSVH**
Location **Savannah, GA**
Customer **GA Public**
Antenna Type **DCV5ER**

AZIMUTH PATTERN

90.8% Ccov

Gain **2.53 (4.03) VPOL**
Calculated / Measured **Measured**

Frequency **91.1 MHz**
Drawing # **6**



Remarks: Vertical Dipole with 2 Vertical Parasitics



Proposal Number	C-00892
Date	1-Nov-07
Call Letters	WSVH
Location	Savannah, GA
Customer	GA Public
Antenna Type	DCV5ERD
Frequency	91.10 MHz
Drawing #:	6

TABULATION OF VERTICAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
0	0.456	13.002	19.962
10	0.501	13.819	24.096
20	0.564	14.848	30.537
30	0.656	16.161	41.312
40	0.761	17.450	55.596
50	0.853	18.442	69.850
60	0.921	19.108	81.431
70	0.969	19.549	90.140
80	0.990	19.735	94.090
90	0.998	19.805	95.616
100	0.995	19.779	95.042
110	0.975	19.603	91.260
120	0.943	19.313	85.368
130	0.891	18.820	76.213
140	0.826	18.162	65.498
150	0.757	17.405	55.013
160	0.689	16.587	45.573
170	0.621	15.685	37.022
180	0.562	14.817	30.321
190	0.509	13.957	24.872
200	0.453	12.945	19.700
210	0.389	11.622	14.527
220	0.313	9.734	9.405
230	0.249	7.747	5.952
240	0.216	6.512	4.479
250	0.216	6.512	4.479
260	0.232	7.132	5.167
270	0.249	7.747	5.952
280	0.260	8.122	6.490
290	0.265	8.288	6.742
300	0.275	8.609	7.260
310	0.303	9.452	8.814
320	0.335	10.324	10.774
330	0.368	11.140	13.001
340	0.399	11.842	15.283
350	0.424	12.370	17.258



Proposal Number **C-00892**
 Date **1-Nov-07**
 Call Letters **WSVH**
 Location **Savannah, GA**
 Customer **GA Public**
 Antenna Type **DCV5ERD**
 Frequency **91.10 MHz**
 Drawing #: **6**

TABULATION OF VERTICAL AZIMUTH PATTERN

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.456	45	0.810	90	0.998	135	0.860	180	0.562	225	0.278	270	0.249	315	0.319
1	0.460	46	0.818	91	0.999	136	0.854	181	0.557	226	0.271	271	0.250	316	0.322
2	0.464	47	0.828	92	1.000	137	0.847	182	0.551	227	0.265	272	0.251	317	0.325
3	0.468	48	0.836	93	1.000	138	0.840	183	0.546	228	0.259	273	0.253	318	0.328
4	0.473	49	0.845	94	1.000	139	0.833	184	0.541	229	0.254	274	0.254	319	0.331
5	0.477	50	0.853	95	1.000	140	0.826	185	0.536	230	0.249	275	0.255	320	0.335
6	0.481	51	0.861	96	1.000	141	0.819	186	0.530	231	0.243	276	0.256	321	0.338
7	0.486	52	0.869	97	0.999	142	0.812	187	0.525	232	0.239	277	0.257	322	0.341
8	0.491	53	0.876	98	0.998	143	0.805	188	0.519	233	0.235	278	0.258	323	0.344
9	0.496	54	0.883	99	0.996	144	0.798	189	0.514	234	0.231	279	0.259	324	0.347
10	0.501	55	0.890	100	0.995	145	0.792	190	0.509	235	0.227	280	0.260	325	0.350
11	0.506	56	0.897	101	0.993	146	0.784	191	0.503	236	0.224	281	0.261	326	0.354
12	0.512	57	0.904	102	0.991	147	0.777	192	0.498	237	0.222	282	0.262	327	0.357
13	0.517	58	0.910	103	0.990	148	0.771	193	0.492	238	0.220	283	0.263	328	0.361
14	0.523	59	0.916	104	0.987	149	0.764	194	0.486	239	0.218	284	0.263	329	0.364
15	0.528	60	0.921	105	0.985	150	0.757	195	0.481	240	0.216	285	0.264	330	0.368
16	0.535	61	0.928	106	0.984	151	0.750	196	0.476	241	0.215	286	0.264	331	0.371
17	0.542	62	0.933	107	0.982	152	0.743	197	0.470	242	0.214	287	0.264	332	0.375
18	0.549	63	0.939	108	0.979	153	0.736	198	0.464	243	0.213	288	0.264	333	0.378
19	0.556	64	0.943	109	0.977	154	0.729	199	0.459	244	0.213	289	0.265	334	0.381
20	0.564	65	0.948	110	0.975	155	0.723	200	0.453	245	0.212	290	0.265	335	0.385
21	0.571	66	0.953	111	0.973	156	0.716	201	0.448	246	0.213	291	0.265	336	0.388
22	0.580	67	0.957	112	0.970	157	0.709	202	0.442	247	0.213	292	0.265	337	0.391
23	0.589	68	0.962	113	0.968	158	0.702	203	0.436	248	0.214	293	0.266	338	0.394
24	0.598	69	0.966	114	0.965	159	0.695	204	0.429	249	0.215	294	0.266	339	0.396
25	0.607	70	0.969	115	0.963	160	0.689	205	0.423	250	0.216	295	0.267	340	0.399
26	0.616	71	0.973	116	0.959	161	0.681	206	0.417	251	0.217	296	0.269	341	0.402
27	0.626	72	0.976	117	0.955	162	0.674	207	0.410	252	0.219	297	0.270	342	0.405
28	0.635	73	0.979	118	0.952	163	0.668	208	0.403	253	0.220	298	0.272	343	0.407
29	0.646	74	0.982	119	0.947	164	0.661	209	0.396	254	0.222	299	0.273	344	0.409
30	0.656	75	0.984	120	0.943	165	0.654	210	0.389	255	0.223	300	0.275	345	0.412
31	0.667	76	0.986	121	0.939	166	0.647	211	0.381	256	0.225	301	0.278	346	0.414
32	0.677	77	0.987	122	0.934	167	0.640	212	0.374	257	0.227	302	0.280	347	0.416
33	0.688	78	0.988	123	0.929	168	0.634	213	0.366	258	0.229	303	0.282	348	0.419
34	0.698	79	0.990	124	0.925	169	0.627	214	0.359	259	0.230	304	0.285	349	0.421
35	0.709	80	0.990	125	0.919	170	0.621	215	0.351	260	0.232	305	0.288	350	0.424
36	0.719	81	0.991	126	0.914	171	0.614	216	0.344	261	0.234	306	0.291	351	0.426
37	0.730	82	0.991	127	0.909	172	0.608	217	0.336	262	0.236	307	0.294	352	0.429
38	0.740	83	0.992	128	0.903	173	0.602	218	0.328	263	0.237	308	0.297	353	0.431
39	0.751	84	0.993	129	0.897	174	0.596	219	0.321	264	0.239	309	0.300	354	0.434
40	0.761	85	0.993	130	0.891	175	0.590	220	0.313	265	0.241	310	0.303	355	0.437
41	0.771	86	0.994	131	0.885	176	0.584	221	0.305	266	0.243	311	0.307	356	0.441
42	0.781	87	0.995	132	0.879	177	0.579	222	0.298	267	0.244	312	0.310	357	0.445
43	0.791	88	0.996	133	0.873	178	0.573	223	0.291	268	0.246	313	0.313	358	0.448
44	0.800	89	0.996	134	0.867	179	0.567	224	0.284	269	0.247	314	0.316	359	0.452



Proposal Number	C-00892
Date	Nov 01, 2007
Call Letters	WSVH
Location	Savannah, GA
Customer	GA Public
Antenna Type	DCV5ERD
Frequency	91.10 MHz
Drawing #	6

CUSTOMER GAIN SUMMARY

Azimuth Pattern Gain of Horizontal Polarization	2.53	(4.03 dB)
Elevation Pattern Gain Per Polarization	5.10	(7.08 dB)
Peak Gain at Horizontal Polarization	12.90	(11.11 dB)



Proposal Number	C-00892
Date	1-Nov-07
Call Letters	WSVH
Location	Savannah, GA
Customer	GA Public
Antenna Type	DCV5ERD
Drawing #	

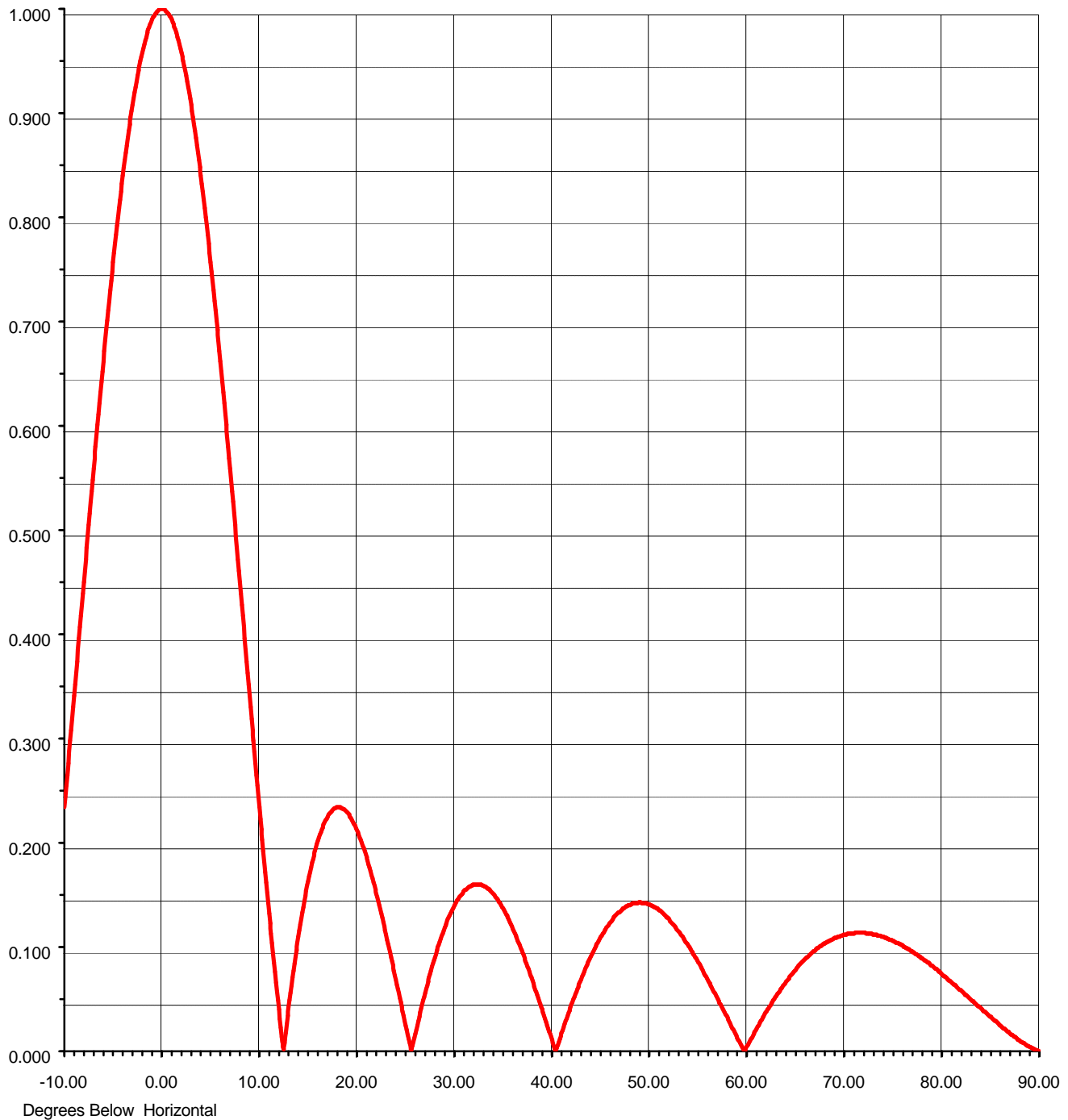
ELEVATION PATTERN

RMS Gain at Main Lobe **5.10 (7.08 dB)**

Beam Tilt **0.00 deg**

Frequency **91.10 MHz**

Calculated / Measured **Calculated**





Proposal Number **C-00892**
 Date **1-Nov-07**
 Call Letters **WSVH**
 Location **Savannah, GA**
 Customer **GA Public**
 Antenna Type **DCV5ERD**
 Frequency **91.10 MHz**

6

TABULATION OF ELEVATION PATTERN

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.234	10.5	0.182	31.0	0.154	51.5	0.131	72.0	0.114
-9.5	0.287	11.0	0.132	31.5	0.158	52.0	0.127	72.5	0.113
-9.0	0.341	11.5	0.085	32.0	0.160	52.5	0.121	73.0	0.112
-8.5	0.396	12.0	0.040	32.5	0.160	53.0	0.115	73.5	0.111
-8.0	0.450	12.5	0.002	33.0	0.159	53.5	0.108	74.0	0.110
-7.5	0.505	13.0	0.042	33.5	0.156	54.0	0.101	74.5	0.108
-7.0	0.559	13.5	0.077	34.0	0.151	54.5	0.093	75.0	0.106
-6.5	0.611	14.0	0.110	34.5	0.144	55.0	0.085	75.5	0.104
-6.0	0.662	14.5	0.138	35.0	0.137	55.5	0.077	76.0	0.101
-5.5	0.711	15.0	0.163	35.5	0.128	56.0	0.068	76.5	0.098
-5.0	0.757	15.5	0.184	36.0	0.117	56.5	0.059	77.0	0.095
-4.5	0.800	16.0	0.202	36.5	0.106	57.0	0.050	77.5	0.092
-4.0	0.840	16.5	0.215	37.0	0.094	57.5	0.041	78.0	0.089
-3.5	0.876	17.0	0.225	37.5	0.081	58.0	0.032	78.5	0.085
-3.0	0.908	17.5	0.231	38.0	0.068	58.5	0.022	79.0	0.082
-2.5	0.936	18.0	0.234	38.5	0.054	59.0	0.013	79.5	0.078
-2.0	0.958	18.5	0.233	39.0	0.040	59.5	0.004	80.0	0.074
-1.5	0.977	19.0	0.229	39.5	0.025	60.0	0.005	80.5	0.070
-1.0	0.990	19.5	0.222	40.0	0.011	60.5	0.013	81.0	0.066
-0.5	0.997	20.0	0.212	40.5	0.004	61.0	0.022	81.5	0.062
0.0	1.000	20.5	0.200	41.0	0.018	61.5	0.030	82.0	0.058
0.5	0.997	21.0	0.186	41.5	0.031	62.0	0.038	82.5	0.054
1.0	0.990	21.5	0.169	42.0	0.045	62.5	0.046	83.0	0.049
1.5	0.977	22.0	0.151	42.5	0.057	63.0	0.053	83.5	0.045
2.0	0.958	22.5	0.132	43.0	0.069	63.5	0.060	84.0	0.041
2.5	0.936	23.0	0.112	43.5	0.081	64.0	0.067	84.5	0.037
3.0	0.908	23.5	0.090	44.0	0.091	64.5	0.073	85.0	0.033
3.5	0.876	24.0	0.069	44.5	0.101	65.0	0.078	85.5	0.029
4.0	0.840	24.5	0.047	45.0	0.110	65.5	0.084	86.0	0.025
4.5	0.800	25.0	0.025	45.5	0.117	66.0	0.089	86.5	0.021
5.0	0.757	25.5	0.004	46.0	0.124	66.5	0.093	87.0	0.017
5.5	0.711	26.0	0.017	46.5	0.130	67.0	0.097	87.5	0.014
6.0	0.662	26.5	0.037	47.0	0.134	67.5	0.101	88.0	0.010
6.5	0.611	27.0	0.056	47.5	0.138	68.0	0.104	88.5	0.007
7.0	0.559	27.5	0.074	48.0	0.140	68.5	0.106	89.0	0.004
7.5	0.505	28.0	0.090	48.5	0.142	69.0	0.109	89.5	0.002
8.0	0.450	28.5	0.105	49.0	0.143	69.5	0.110	90.0	0.000
8.5	0.396	29.0	0.119	49.5	0.142	70.0	0.112		
9.0	0.341	29.5	0.130	50.0	0.141	70.5	0.113		
9.5	0.287	30.0	0.140	50.5	0.138	71.0	0.113		
10.0	0.234	30.5	0.148	51.0	0.135	71.5	0.114		