



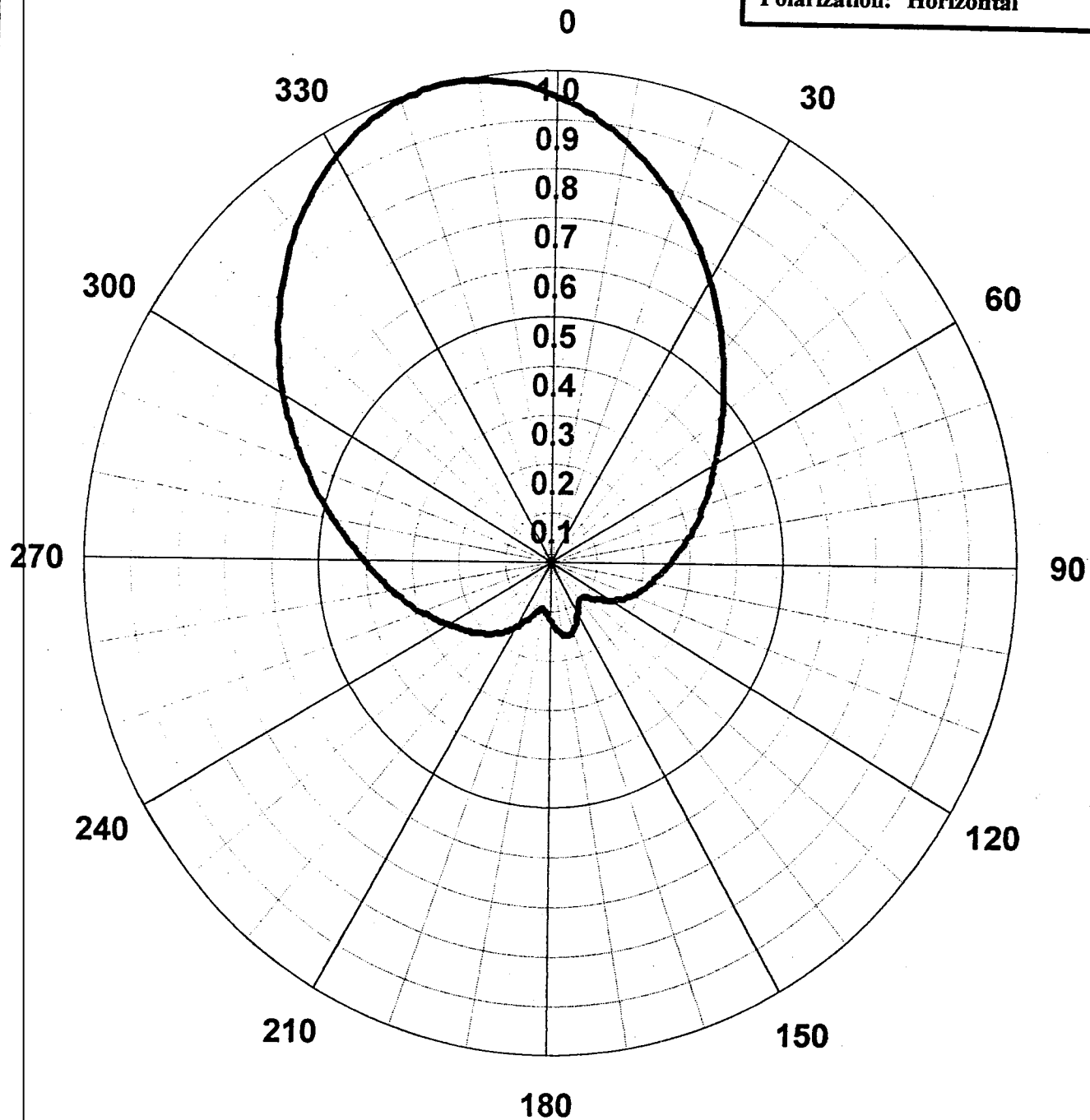
ANDREW

Channel: 20

Type: ALP-NR

Gain: 3.8 (5.8 dB)

Polarization: Horizontal



ANDREW CORPORATION
10500 W. 153rd Street
Orland Park, Illinois U.S.A. 60462

WSVI-DT AZIMUTH PATTERN
Model ALP16M4-HSNR-20
FIGURE 1A



Angle	Amp	dB	Angle	Amp	dB	Angle	Amp	dB	Angle	Amp	dB	Angle	Amp	dB
0	0.947	-0.47	72	0.338	-9.42	144	0.101	-19.91	216	0.176	-15.09	288	0.548	-5.22
1	0.941	-0.53	73	0.333	-9.55	145	0.103	-19.74	217	0.179	-14.94	289	0.558	-5.07
2	0.934	-0.59	74	0.328	-9.68	146	0.106	-19.49	218	0.183	-14.75	290	0.567	-4.93
3	0.927	-0.66	75	0.323	-9.82	147	0.108	-19.33	219	0.186	-14.61	291	0.577	-4.78
4	0.919	-0.73	76	0.318	-9.95	148	0.111	-19.09	220	0.189	-14.47	292	0.587	-4.63
5	0.912	-0.80	77	0.313	-10.09	149	0.114	-18.86	221	0.193	-14.29	293	0.597	-4.48
6	0.903	-0.89	78	0.309	-10.20	150	0.117	-18.64	222	0.196	-14.15	294	0.607	-4.34
7	0.895	-0.96	79	0.304	-10.34	151	0.120	-18.42	223	0.199	-14.02	295	0.617	-4.19
8	0.887	-1.04	80	0.299	-10.49	152	0.124	-18.13	224	0.202	-13.89	296	0.628	-4.04
9	0.878	-1.13	81	0.294	-10.63	153	0.127	-17.92	225	0.205	-13.76	297	0.638	-3.90
10	0.869	-1.22	82	0.289	-10.78	154	0.130	-17.72	226	0.208	-13.64	298	0.649	-3.76
11	0.860	-1.31	83	0.285	-10.90	155	0.133	-17.52	227	0.211	-13.51	299	0.659	-3.62
12	0.850	-1.41	84	0.281	-11.03	156	0.136	-17.33	228	0.214	-13.39	300	0.669	-3.49
13	0.841	-1.50	85	0.276	-11.18	157	0.139	-17.14	229	0.218	-13.23	301	0.679	-3.36
14	0.832	-1.60	86	0.272	-11.31	158	0.141	-17.02	230	0.221	-13.11	302	0.690	-3.22
15	0.822	-1.70	87	0.268	-11.44	159	0.144	-16.83	231	0.224	-13.00	303	0.700	-3.10
16	0.812	-1.81	88	0.264	-11.57	160	0.146	-16.71	232	0.227	-12.88	304	0.711	-2.96
17	0.803	-1.91	89	0.259	-11.73	161	0.148	-16.59	233	0.230	-12.77	305	0.721	-2.84
18	0.793	-2.01	90	0.256	-11.84	162	0.150	-16.48	234	0.233	-12.65	306	0.731	-2.72
19	0.783	-2.12	91	0.252	-11.97	163	0.151	-16.42	235	0.237	-12.51	307	0.742	-2.59
20	0.772	-2.25	92	0.248	-12.11	164	0.151	-16.42	236	0.240	-12.40	308	0.752	-2.48
21	0.762	-2.36	93	0.244	-12.25	165	0.151	-16.42	237	0.244	-12.25	309	0.762	-2.36
22	0.752	-2.48	94	0.240	-12.40	166	0.151	-16.42	238	0.248	-12.11	310	0.772	-2.25
23	0.742	-2.59	95	0.237	-12.51	167	0.151	-16.42	239	0.252	-11.97	311	0.783	-2.12
24	0.732	-2.71	96	0.233	-12.65	168	0.149	-16.54	240	0.255	-11.87	312	0.793	-2.01
25	0.721	-2.84	97	0.230	-12.77	169	0.148	-16.59	241	0.259	-11.73	313	0.803	-1.91
26	0.711	-2.96	98	0.227	-12.88	170	0.146	-16.71	242	0.263	-11.60	314	0.813	-1.80
27	0.700	-3.10	99	0.224	-13.00	171	0.144	-16.83	243	0.268	-11.44	315	0.822	-1.70
28	0.689	-3.24	100	0.221	-13.11	172	0.141	-17.02	244	0.272	-11.31	316	0.832	-1.60
29	0.679	-3.36	101	0.218	-13.23	173	0.139	-17.14	245	0.276	-11.18	317	0.841	-1.50
30	0.669	-3.49	102	0.214	-13.39	174	0.136	-17.33	246	0.280	-11.06	318	0.850	-1.41
31	0.659	-3.62	103	0.211	-13.51	175	0.133	-17.52	247	0.285	-10.90	319	0.860	-1.31
32	0.649	-3.76	104	0.208	-13.64	176	0.130	-17.72	248	0.289	-10.78	320	0.869	-1.22
33	0.638	-3.90	105	0.205	-13.76	177	0.127	-17.92	249	0.294	-10.63	321	0.878	-1.13
34	0.628	-4.04	106	0.202	-13.89	178	0.124	-18.13	250	0.299	-10.49	322	0.886	-1.05
35	0.617	-4.19	107	0.199	-14.02	179	0.120	-18.42	251	0.304	-10.34	323	0.895	-0.96
36	0.607	-4.34	108	0.196	-14.15	180	0.117	-18.64	252	0.309	-10.20	324	0.903	-0.89
37	0.597	-4.48	109	0.193	-14.29	181	0.114	-18.86	253	0.313	-10.09	325	0.912	-0.80
38	0.587	-4.63	110	0.189	-14.47	182	0.111	-19.09	254	0.318	-9.95	326	0.919	-0.73
39	0.577	-4.78	111	0.186	-14.61	183	0.108	-19.33	255	0.323	-9.82	327	0.927	-0.66
40	0.567	-4.93	112	0.182	-14.80	184	0.106	-19.49	256	0.328	-9.68	328	0.934	-0.59
41	0.558	-5.07	113	0.179	-14.94	185	0.103	-19.74	257	0.333	-9.55	329	0.941	-0.53
42	0.549	-5.21	114	0.175	-15.14	186	0.101	-19.91	258	0.338	-9.42	330	0.948	-0.46
43	0.539	-5.37	115	0.172	-15.29	187	0.099	-20.09	259	0.343	-9.29	331	0.954	-0.41
44	0.530	-5.51	116	0.168	-15.49	188	0.098	-20.18	260	0.348	-9.17	332	0.960	-0.35
45	0.520	-5.68	117	0.164	-15.70	189	0.097	-20.26	261	0.353	-9.04	333	0.966	-0.30
46	0.511	-5.83	118	0.159	-15.97	190	0.097	-20.26	262	0.359	-8.90	334	0.971	-0.26
47	0.502	-5.99	119	0.155	-16.19	191	0.096	-20.35	263	0.364	-8.78	335	0.976	-0.21
48	0.493	-6.14	120	0.151	-16.42	192	0.097	-20.26	264	0.370	-8.64	336	0.980	-0.18
49	0.485	-6.29	121	0.147	-16.65	193	0.097	-20.26	265	0.375	-8.52	337	0.984	-0.14
50	0.477	-6.43	122	0.143	-16.89	194	0.098	-20.18	266	0.381	-8.38	338	0.987	-0.11
51	0.469	-6.58	123	0.139	-17.14	195	0.099	-20.09	267	0.386	-8.27	339	0.991	-0.08
52	0.461	-6.73	124	0.134	-17.46	196	0.101	-19.91	268	0.392	-8.13	340	0.994	-0.05
53	0.453	-6.88	125	0.130	-17.72	197	0.103	-19.74	269	0.398	-8.00	341	0.996	-0.03
54	0.445	-7.03	126	0.126	-17.99	198	0.106	-19.49	270	0.404	-7.87	342	0.997	-0.03
55	0.438	-7.17	127	0.122	-18.27	199	0.109	-19.25	271	0.411	-7.72	343	0.999	-0.01
56	0.431	-7.31	128	0.119	-18.49	200	0.112	-19.02	272	0.417	-7.60	344	1.000	0.00
57	0.424	-7.45	129	0.115	-18.79	201	0.115	-18.79	273	0.424	-7.45	345	1.000	0.00
58	0.417	-7.60	130	0.112	-19.02	202	0.118	-18.56	274	0.431	-7.31	346	1.000	0.00
59	0.411	-7.72	131	0.109	-19.25	203	0.122	-18.27	275	0.438	-7.17	347	0.999	-0.01
60	0.405	-7.85	132	0.106	-19.49	204	0.126	-17.99	276	0.446	-7.01	348	0.998	-0.02
61	0.398	-8.00	133	0.103	-19.74	205	0.130	-17.72	277	0.453	-6.88	349	0.996	-0.03
62	0.392	-8.13	134	0.101	-19.91	206	0.134	-17.46	278	0.461	-6.73	350	0.993	-0.06
63	0.386	-8.27	135	0.099	-20.09	207	0.139	-17.14	279	0.469	-6.58	351	0.991	-0.08
64	0.381	-8.38	136	0.098	-20.18	208	0.143	-16.89	280	0.477	-6.43	352	0.987	-0.11
65	0.375	-8.52	137	0.097	-20.26	209	0.147	-16.65	281	0.485	-6.29	353	0.984	-0.14
66	0.370	-8.64	138	0.097	-20.26	210	0.151	-16.42	282	0.493	-6.14	354	0.980	-0.18
67	0.364	-8.78	139	0.096	-20.35	211	0.155	-16.19	283	0.502	-5.99	355	0.976	-0.21
68	0.359	-8.90	140	0.096	-20.35	212	0.160	-15.92	284	0.511	-5.83	356	0.971	-0.26
69	0.353	-9.04	141	0.097	-20.26	213	0.164	-15.70	285	0.520	-5.68	357	0.966	-0.30
70	0.348	-9.17	142	0.098	-20.18	214	0.168	-15.49	286	0.529	-5.53	358	0.960	-0.35
71	0.343	-9.29	143	0.099	-20.09	215	0.172	-15.29	287	0.539	-5.37	359	0.954	-0.41

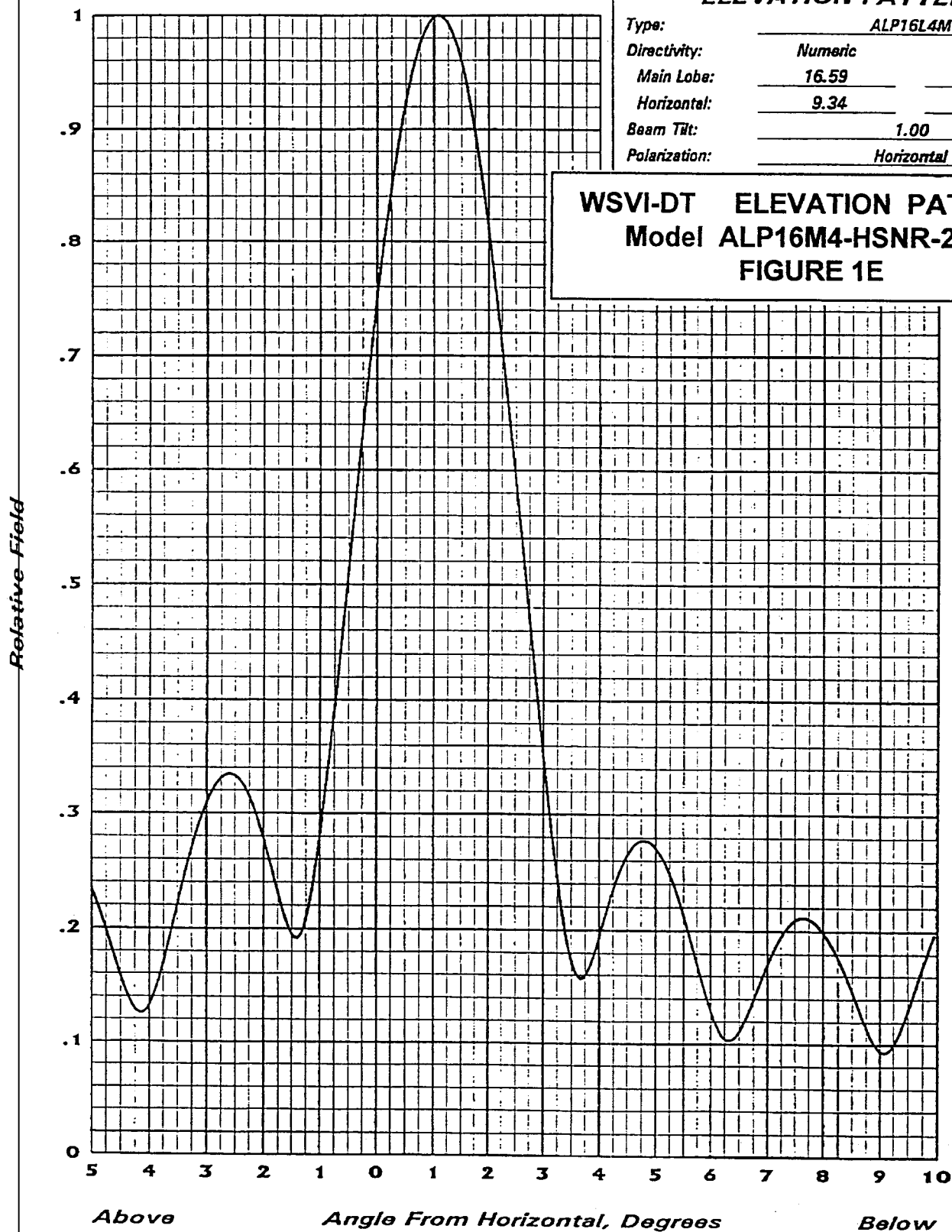
ANDREW CORPORATION
10500 W. 153rd Street
Orland Park, Illinois U.S.A. 60462

WSVI-DT AZIMUTH PATTERN
Model ALP16M4-HSNR-20
FIGURE 1AT

ANDREW
ELEVATION PATTERN

Type:	ALP16L4M	
Directivity:	Numeric	dBd
Main Lobe:	16.59	(12.20)
Horizontal:	9.34	(9.70)
Beam Tilt:	1.00	
Polarization:	Horizontal	

WSVI-DT ELEVATION PATTERN
Model ALP16M4-HSNR-20
FIGURE 1E



ANDREW CORPORATION
10500 W. 153rd Street
Orland Park, Illinois U.S.A. 60462

**ANDREW**TABULATED DATA
TYPE ALP16L4M**WSVI-DT ELEVATION PATTERN**
Model ALP16M4-HSNR-20
FIGURE 1ET

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.00	0.233	-12.65	9.75	0.168	-15.50	39.00	0.064	-23.85	68.50	0.265	-11.53
-4.75	0.199	-14.04	10.00	0.205	-13.78	39.50	0.060	-24.40	69.00	0.258	-11.78
-4.50	0.159	-15.99	10.50	0.258	-11.78	40.00	0.048	-26.38	69.50	0.246	-12.18
-4.25	0.129	-17.78	11.00	0.272	-11.31	40.50	0.033	-29.72	70.00	0.232	-12.70
-4.00	0.133	-17.56	11.50	0.248	-12.11	41.00	0.026	-31.80	70.50	0.215	-13.36
-3.75	0.170	-15.38	12.00	0.196	-14.14	41.50	0.034	-29.27	71.00	0.196	-14.15
-3.50	0.222	-13.09	12.50	0.133	-17.55	42.00	0.046	-26.73	71.50	0.176	-15.08
-3.25	0.271	-11.34	13.00	0.073	-22.74	42.50	0.053	-25.56	72.00	0.156	-16.13
-3.00	0.309	-10.19	13.50	0.029	-30.67	43.00	0.052	-25.68	72.50	0.136	-17.34
-2.75	0.331	-9.59	14.00	0.007	-42.97	43.50	0.045	-27.04	73.00	0.116	-18.69
-2.50	0.334	-9.53	14.50	0.000	-69.56	44.00	0.033	-29.70	73.50	0.098	-20.19
-2.25	0.315	-10.03	15.00	0.011	-39.28	44.50	0.023	-32.91	74.00	0.081	-21.85
-2.00	0.278	-11.11	15.50	0.023	-32.81	45.00	0.024	-32.56	74.50	0.066	-23.66
-1.75	0.231	-12.73	16.00	0.029	-30.85	45.50	0.033	-29.76	75.00	0.053	-25.56
-1.50	0.195	-14.20	16.50	0.025	-32.07	46.00	0.040	-27.92	75.50	0.043	-27.42
-1.25	0.208	-13.63	17.00	0.022	-33.31	46.50	0.043	-27.38	76.00	0.036	-28.96
-1.00	0.282	-10.99	17.50	0.038	-28.44	47.00	0.039	-28.10	76.50	0.032	-29.86
-0.75	0.391	-8.15	18.00	0.060	-24.45	47.50	0.030	-30.34	77.00	0.032	-30.02
-0.50	0.513	-5.79	18.50	0.073	-22.73	48.00	0.018	-35.14	77.50	0.033	-29.70
-0.25	0.636	-3.93	19.00	0.070	-23.10	48.50	0.003	-51.38	78.00	0.035	-29.20
0.00	0.750	-2.50	19.50	0.053	-25.58	49.00	0.012	-38.64	78.50	0.037	-28.74
0.25	0.848	-1.43	20.00	0.051	-25.91	49.50	0.024	-32.55	79.00	0.038	-28.39
0.50	0.925	-0.68	20.50	0.093	-20.60	50.00	0.031	-30.10	79.50	0.039	-28.18
0.75	0.977	-0.21	21.00	0.150	-16.47	50.50	0.034	-29.40	80.00	0.039	-28.10
1.00	1.000	0.00	21.50	0.201	-13.96	51.00	0.031	-30.05	80.50	0.039	-28.15
1.25	0.994	-0.05	22.00	0.233	-12.66	51.50	0.025	-31.95	81.00	0.038	-28.31
1.50	0.959	-0.36	22.50	0.241	-12.37	52.00	0.019	-34.36	81.50	0.037	-28.58
1.75	0.898	-0.94	23.00	0.223	-13.02	52.50	0.021	-33.71	82.00	0.036	-28.94
2.00	0.813	-1.80	23.50	0.185	-14.64	53.00	0.030	-30.44	82.50	0.034	-29.39
2.25	0.709	-2.99	24.00	0.135	-17.42	53.50	0.041	-27.77	83.00	0.032	-29.92
2.50	0.593	-4.55	24.50	0.082	-21.75	54.00	0.049	-26.12	83.50	0.030	-30.54
2.75	0.470	-6.56	25.00	0.041	-27.83	54.50	0.054	-25.39	84.00	0.027	-31.24
3.00	0.350	-9.11	25.50	0.032	-29.84	55.00	0.053	-25.48	84.50	0.025	-32.02
3.25	0.244	-12.24	26.00	0.043	-27.41	55.50	0.048	-26.39	85.00	0.023	-32.89
3.50	0.173	-15.26	26.50	0.045	-25.95	56.00	0.039	-28.11	85.50	0.020	-33.86
3.75	0.160	-15.90	27.00	0.037	-28.58	56.50	0.031	-30.08	86.00	0.018	-34.95
4.00	0.194	-14.24	27.50	0.024	-32.30	57.00	0.031	-30.12	86.50	0.016	-36.18
4.25	0.235	-12.56	28.00	0.013	-37.96	57.50	0.041	-27.65	87.00	0.013	-37.58
4.50	0.265	-11.53	28.50	0.010	-40.45	58.00	0.056	-25.01	87.50	0.011	-39.23
4.75	0.278	-11.13	29.00	0.010	-40.16	58.50	0.070	-23.04	88.00	0.009	-41.22
5.00	0.272	-11.32	29.50	0.006	-43.87	59.00	0.082	-21.77	88.50	0.007	-43.76
5.25	0.249	-12.08	30.00	0.000	-99.99	59.50	0.088	-21.12	89.00	0.004	-47.32
5.50	0.213	-13.42	30.50	0.006	-44.32	60.00	0.089	-21.04	89.50	0.002	-53.36
5.75	0.171	-15.37	31.00	0.009	-41.02	60.50	0.084	-21.53	90.00	0.000	-99.99
6.00	0.129	-17.78	31.50	0.011	-39.00	61.00	0.074	-22.59			
6.25	0.105	-19.60	32.00	0.024	-32.35	61.50	0.062	-24.13			
6.50	0.111	-19.08	32.50	0.048	-26.45	62.00	0.053	-25.47			
6.75	0.139	-17.13	33.00	0.077	-22.31	62.50	0.057	-24.96			
7.00	0.171	-15.36	33.50	0.106	-19.47	63.00	0.074	-22.59			
7.25	0.195	-14.18	34.00	0.131	-17.66	63.50	0.100	-19.96			
7.50	0.209	-13.59	34.50	0.146	-16.72	64.00	0.130	-17.73			
7.75	0.210	-13.54	35.00	0.148	-16.58	64.50	0.160	-15.94			
8.00	0.199	-14.03	35.50	0.137	-17.27	65.00	0.188	-14.53			
8.25	0.176	-15.07	36.00	0.114	-18.89	65.50	0.213	-13.45			
8.50	0.146	-16.71	36.50	0.082	-21.68	66.00	0.234	-12.63			
8.75	0.114	-18.83	37.00	0.051	-25.93	66.50	0.250	-12.04			
9.00	0.094	-20.54	37.50	0.033	-29.57	67.00	0.261	-11.66			
9.25	0.100	-19.99	38.00	0.043	-27.29	67.50	0.268	-11.45			
9.50	0.130	-17.73	38.50	0.058	-24.76	68.00	0.269	-11.41			