

***PRELIMINARY SPECIFICATION FOR
ERI CARINA™ HORIZONTALLY POLARIZED
COAXIAL SLOTTED ARRAY ANTENNA***

*Prepared For
Juan Matos
Channel 38
Puerto Rico
June 27, 2006*

**ANTENNA TYPE:
ALP12L2-HSN-38**

SPECIFICATION NO:



**PRELIMINARY SPECIFICATION FOR
ERI CARINA™ HORIZONTALLY POLARIZED
COAXIAL SLOTTED ARRAY ANTENNA**

ELECTRICAL CHARACTERISTICS:

CHANNEL:	NTSC:	38
FREQUENCY RANGE:	NTSC:	614.00 - 620.00 MHz
AZIMUTH PATTERN NUMBER:	Hor Pol:	ALP-N
ELEVATION PATTERN NUMBER:	Hor Pol:	ALP12L2
AZIMUTH DIRECTIVITY:	Hor Pol:	3.77 (5.76 dB)
ELEVATION DIRECTIVITY:	Hor Pol:	12.64 (11.02 dBd)
PEAK POWER GAIN:	Hor Pol:	47.65 (16.78 dBd)
GAIN AT HORIZONTAL:	Hor Pol:	45.30 (16.56 dBd)
ELECTRICAL BEAM TILT:		-0.50 Degrees
INPUT POWER REQUIRED:		2.099 kW Peak Visual plus 10% Aural
MAXIMUM INPUT POWER:		4.000 kW Peak Visual plus 10% Aural
INPUT TYPE:		1-5/8" EIA
ANTENNA VSWR (MAXIMUM):	NTSC:	1.05 Visual + 0.5 MHz 1.08 Chroma 1.10 Over remainder of Channel

PRELIMINARY SPECIFICATION FOR ERI CARINA™ HORIZONTALLY POLARIZED COAXIAL SLOTTED ARRAY ANTENNA

MECHANICAL CHARACTERISTICS:

MOUNTING CONFIGURATION:

**(Tower Interface supplied and installed by others.)*

Side Mount

HEIGHT OF ANTENNA:

26.3 feet

HEIGHT OF CENTER OF
RADIATION:

13.2 feet

OVERALL HEIGHT (A):

26.3 feet

DEICING:

Unpressurized Slot Cover Radome Enclosure

RADOME DIAMETER (C):

CONTACT ERI

RADOME COLOR:

GRAY

CLIMBING DEVICE:

NOT APPLICABLE

CALCULATED WEIGHT¹:

170 lbs.

ANTENNA AREA³:

FRONT AREA:

$C_A A_C$: 25.0 square feet

A_C : 20.8 square feet

SIDE AREA:

$C_A A_C$: 13.7 square feet

A_C : 11.4 square feet

This antenna is designed to be supported by a structure that can resist the antenna base reactions and which provides a support that is rigid in the three transitional and three rotational degrees of freedom.

¹ Calculated weight is based on the PRELIMINARY design of the antenna. The actual weight of the antenna will be within $\pm 10\%$ of the calculated weight. The actual weight will be given in the technical manual that accompanies the antenna.

³ Antenna Area is calculated per EIA/TIA-RS222-F.

Note: Localized conditions may require higher wind speed specifications than TIA/EIA specifications. Check with local authorities to verify wind speed requirements.

Broadcast Antenna System

Power Analysis

Juan Matos Channel 38
Puerto Rico
ALP12L2-HSN-38

ANTENNA PARAMETERS

Azimuth Directivity:

Hor. Pol: 3.77
dBd: 5.76

Elevation Directivity:

Hor. Pol: 12.64
dBd: 11.02

TRANSMISSION LINE:

VERTICAL RUN:

Type: MACX350
Length, ft: 103 ft.
Attenuation, dB/100 ft: 0.241 dB/100 ft.

HORIZONTAL RUN:

Type: MACX350
Length, ft: 30 ft.
Attenuation, dB/100 ft: 0.241 dB/100 ft.

Line Efficiency: 92.88 %

ERP:

kW: 100.00
dBk: 20.00

POWER GAIN:

Ratio: 47.65
dBd: 16.78

ANTENNA INPUT:

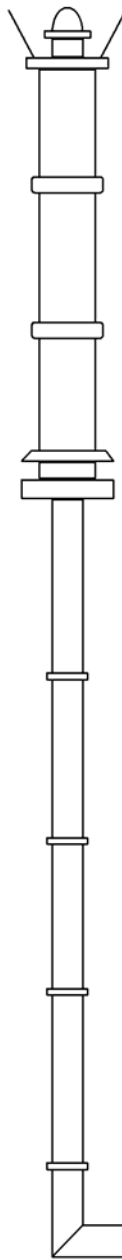
kW: 2.10
dBk: 3.22

LINE LOSS:

kW: 0.16
dB: 0.32

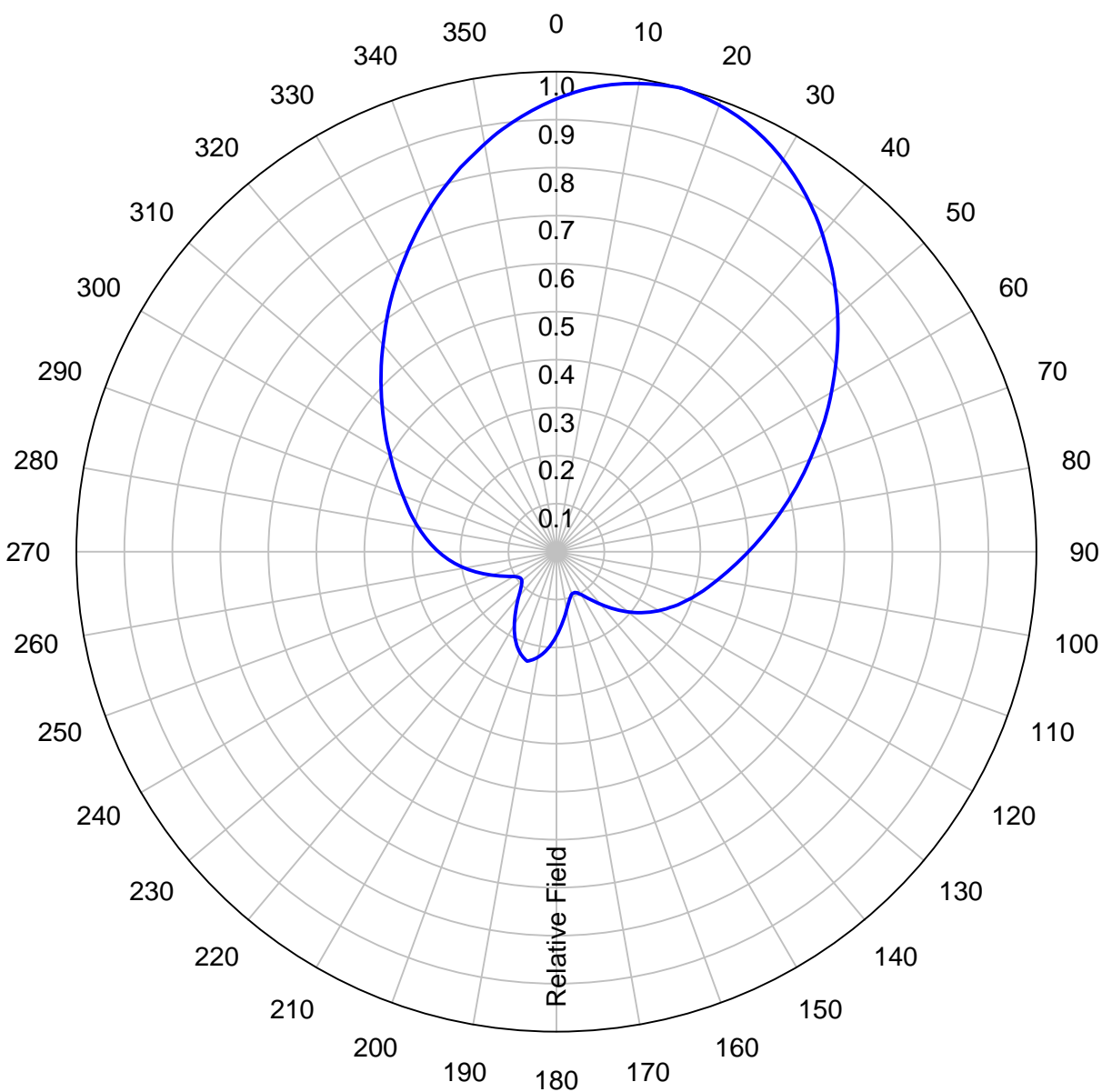
TRANSMITTER POWER:

kW: 2.26
dBk: 3.54



AZIMUTH PATTERN**Type:****ALP-N****Directivity:****Numeric****3.77****dBd****5.76****Peak(s) at:****Channel:****38****Location:****Puerto Rico****Polarization:****Horizontal**

Note: Pattern shape and directivity may vary with channel and mouting configuration.



TABULATED DATA FOR AZIMUTH PATTERN

Type: ALP-N

PolarizationHorizontal

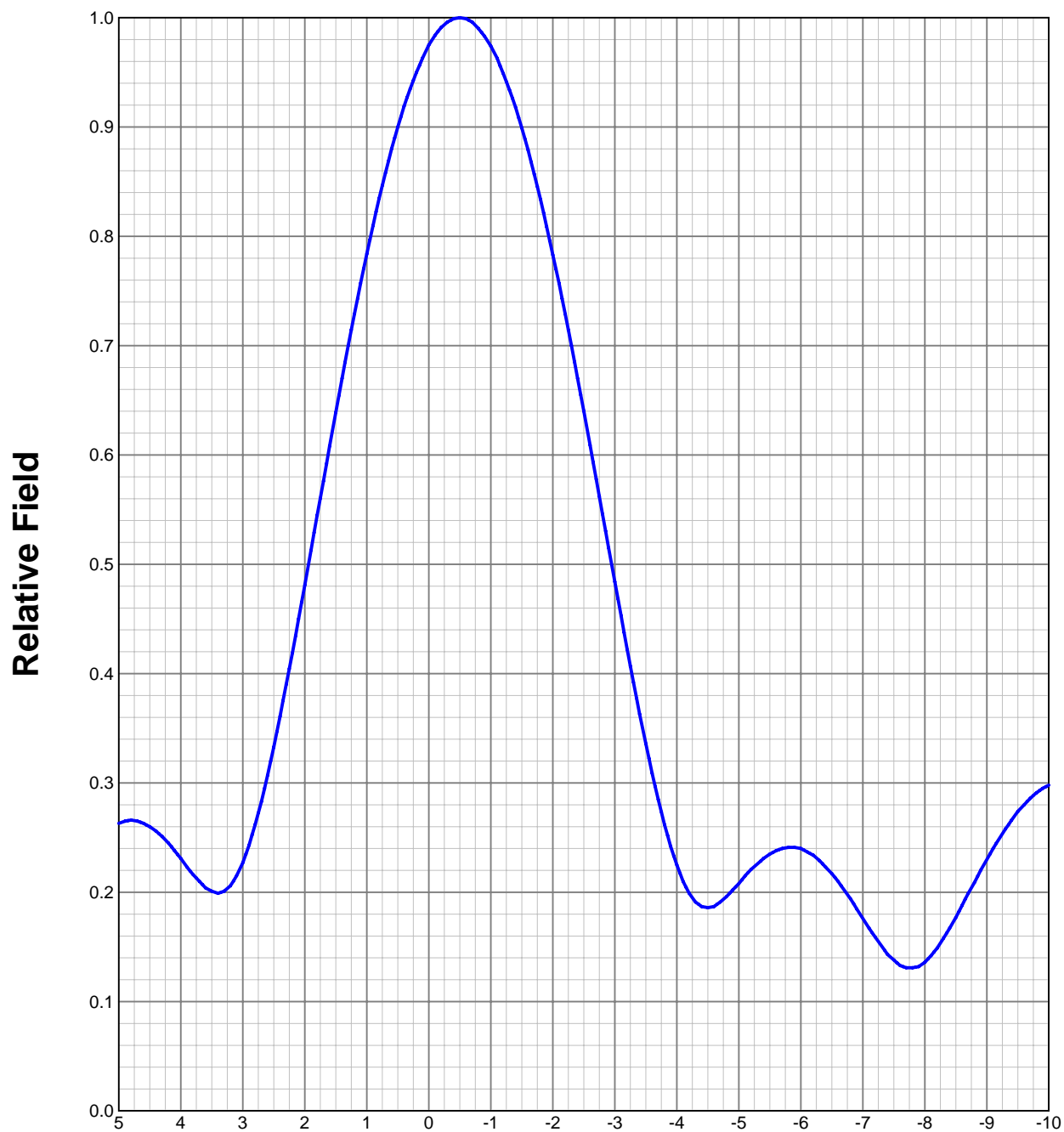
ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.943	-0.51	92	0.387	-8.25	184	0.197	-14.11	276	0.274	-11.24
2	0.956	-0.39	94	0.374	-8.54	186	0.207	-13.68	278	0.283	-10.96
4	0.967	-0.29	96	0.363	-8.80	188	0.216	-13.31	280	0.292	-10.69
6	0.977	-0.20	98	0.351	-9.09	190	0.223	-13.03	282	0.302	-10.40
8	0.984	-0.14	100	0.340	-9.37	192	0.229	-12.80	284	0.311	-10.14
10	0.990	-0.09	102	0.330	-9.63	194	0.234	-12.62	286	0.320	-9.90
12	0.995	-0.04	104	0.320	-9.90	196	0.234	-12.62	288	0.330	-9.63
14	0.998	-0.02	106	0.311	-10.14	198	0.229	-12.80	290	0.340	-9.37
16	0.998	-0.02	108	0.302	-10.40	200	0.223	-13.03	292	0.351	-9.09
18	0.995	-0.04	110	0.292	-10.69	202	0.216	-13.31	294	0.363	-8.80
20	0.990	-0.09	112	0.283	-10.96	204	0.207	-13.68	296	0.374	-8.54
22	0.984	-0.14	114	0.274	-11.24	206	0.197	-14.11	298	0.387	-8.25
24	0.977	-0.20	116	0.264	-11.57	208	0.187	-14.56	300	0.399	-7.98
26	0.967	-0.29	118	0.255	-11.87	210	0.175	-15.14	302	0.414	-7.66
28	0.956	-0.39	120	0.246	-12.18	212	0.164	-15.70	304	0.428	-7.37
30	0.943	-0.51	122	0.236	-12.54	214	0.153	-16.31	306	0.443	-7.07
32	0.929	-0.64	124	0.226	-12.92	216	0.142	-16.95	308	0.458	-6.78
34	0.914	-0.78	126	0.216	-13.31	218	0.132	-17.59	310	0.474	-6.48
36	0.898	-0.93	128	0.206	-13.72	220	0.123	-18.20	312	0.491	-6.18
38	0.881	-1.10	130	0.195	-14.20	222	0.114	-18.86	314	0.508	-5.88
40	0.862	-1.29	132	0.184	-14.70	224	0.107	-19.41	316	0.526	-5.58
42	0.843	-1.48	134	0.174	-15.19	226	0.102	-19.83	318	0.544	-5.29
44	0.825	-1.67	136	0.163	-15.76	228	0.097	-20.26	320	0.562	-5.01
46	0.805	-1.88	138	0.153	-16.31	230	0.094	-20.54	322	0.581	-4.72
48	0.785	-2.10	140	0.143	-16.89	232	0.093	-20.63	324	0.601	-4.42
50	0.765	-2.33	142	0.133	-17.52	234	0.093	-20.63	326	0.621	-4.14
52	0.744	-2.57	144	0.124	-18.13	236	0.095	-20.45	328	0.641	-3.86
54	0.723	-2.82	146	0.116	-18.71	238	0.099	-20.09	330	0.661	-3.60
56	0.702	-3.07	148	0.110	-19.17	240	0.103	-19.74	332	0.681	-3.34
58	0.681	-3.34	150	0.103	-19.74	242	0.110	-19.17	334	0.702	-3.07
60	0.661	-3.60	152	0.099	-20.09	244	0.116	-18.71	336	0.723	-2.82
62	0.641	-3.86	154	0.095	-20.45	246	0.124	-18.13	338	0.744	-2.57
64	0.621	-4.14	156	0.093	-20.63	248	0.133	-17.52	340	0.765	-2.33
66	0.601	-4.42	158	0.093	-20.63	250	0.143	-16.89	342	0.785	-2.10
68	0.581	-4.72	160	0.094	-20.54	252	0.153	-16.31	344	0.805	-1.88
70	0.562	-5.01	162	0.097	-20.26	254	0.163	-15.76	346	0.825	-1.67
72	0.544	-5.29	164	0.102	-19.83	256	0.174	-15.19	348	0.843	-1.48
74	0.526	-5.58	166	0.107	-19.41	258	0.184	-14.70	350	0.862	-1.29
76	0.508	-5.88	168	0.114	-18.86	260	0.195	-14.20	352	0.881	-1.10
78	0.491	-6.18	170	0.123	-18.20	262	0.206	-13.72	354	0.898	-0.93
80	0.474	-6.48	172	0.132	-17.59	264	0.216	-13.31	356	0.914	-0.78
82	0.458	-6.78	174	0.142	-16.95	266	0.226	-12.92	358	0.929	-0.64
84	0.443	-7.07	176	0.153	-16.31	268	0.236	-12.54	360	0.943	-0.51
86	0.428	-7.37	178	0.164	-15.70	270	0.246	-12.18			
88	0.414	-7.66	180	0.175	-15.14	272	0.255	-11.87			
90	0.399	-7.98	182	0.187	-14.56	274	0.264	-11.57			

TABULATED DATA FOR AZIMUTH PATTERN FCC FILING FORMAT

Type: ALP-N

PolarizationHorizontal

ANGLE	FIELD	ERP (kW)	ERP (dBk)
0	0.943	88.925	19.490
10	0.990	98.010	19.913
20	0.990	98.010	19.913
30	0.943	88.925	19.490
40	0.862	74.304	18.710
50	0.765	58.522	17.673
60	0.661	43.692	16.404
70	0.562	31.584	14.995
80	0.474	22.468	13.516
90	0.399	15.920	12.019
100	0.340	11.560	10.630
110	0.292	8.526	9.308
120	0.246	6.052	7.819
130	0.195	3.802	5.801
140	0.143	2.045	3.107
150	0.103	1.061	0.257
160	0.094	0.884	-0.537
170	0.123	1.513	1.798
180	0.175	3.062	4.861
190	0.223	4.973	6.966
200	0.223	4.973	6.966
210	0.175	3.062	4.861
220	0.123	1.513	1.798
230	0.094	0.884	-0.537
240	0.103	1.061	0.257
250	0.143	2.045	3.107
260	0.195	3.802	5.801
270	0.246	6.052	7.819
280	0.292	8.526	9.308
290	0.340	11.560	10.630
300	0.399	15.920	12.019
310	0.474	22.468	13.516
320	0.562	31.584	14.995
330	0.661	43.692	16.404
340	0.765	58.522	17.673
350	0.862	74.304	18.710

ELEVATION PATTERN**Type:****ALP12L2****Channel:****38****Directivity:****Numeric****dBd****Location:****Puerto Rico****Main Lobe:****12.64****11.02****Beam Tilt:****-0.50****Horizontal:****12.02****10.80****Polarization:****Horizontal**

TABULATED DATA FOR ELEVATION PATTERN

Type: ALP12L2

PolarizationHorizontal

ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB
5.00	0.263	-11.60	-6.75	0.198	-14.07	-27.00	0.030	-30.46	-50.50
4.75	0.266	-11.52	-7.00	0.176	-15.09	-27.50	0.021	-33.56	-51.00
4.50	0.260	-11.70	-7.25	0.155	-16.19	-28.00	0.019	-34.42	-51.50
4.25	0.248	-12.11	-7.50	0.138	-17.20	-28.50	0.017	-35.39	-52.00
4.00	0.231	-12.73	-7.75	0.131	-17.65	-29.00	0.012	-38.42	-52.50
3.75	0.213	-13.43	-8.00	0.136	-17.33	-29.50	0.006	-44.44	-53.00
3.50	0.201	-13.94	-8.25	0.153	-16.28	-30.00	0.000	-40.00	-53.50
3.25	0.204	-13.83	-8.50	0.177	-15.04	-30.50	0.005	-46.02	-54.00
3.00	0.227	-12.88	-8.75	0.204	-13.81	-31.00	0.008	-41.94	-54.50
2.75	0.272	-11.29	-9.00	0.230	-12.77	-31.50	0.013	-37.72	-55.00
2.50	0.333	-9.55	-9.25	0.254	-11.92	-32.00	0.022	-33.15	-55.50
2.25	0.404	-7.86	-9.50	0.274	-11.24	-32.50	0.037	-28.64	-56.00
2.00	0.481	-6.36	-9.75	0.288	-10.80	-33.00	0.057	-24.88	-56.50
1.75	0.560	-5.03	-10.00	0.298	-10.52	-33.50	0.080	-21.94	-57.00
1.50	0.639	-3.89	-10.50	0.300	-10.46	-34.00	0.104	-19.66	-57.50
1.25	0.714	-2.92	-11.00	0.282	-11.00	-34.50	0.128	-17.86	-58.00
1.00	0.784	-2.11	-11.50	0.246	-12.18	-35.00	0.148	-16.59	-58.50
0.75	0.847	-1.45	-12.00	0.199	-14.02	-35.50	0.164	-15.70	-59.00
0.50	0.900	-0.92	-12.50	0.147	-16.65	-36.00	0.173	-15.24	-59.50
0.25	0.943	-0.51	-13.00	0.096	-20.35	-36.50	0.176	-15.09	-60.00
0.00	0.975	-0.22	-13.50	0.053	-25.51	-37.00	0.171	-15.34	-60.50
-0.25	0.994	-0.06	-14.00	0.020	-33.98	-37.50	0.160	-15.92	-61.00
-0.50	1.000	0.00	-14.50	0.001	-60.00	-38.00	0.144	-16.83	-61.50
-0.75	0.993	-0.06	-15.00	0.011	-39.17	-38.50	0.123	-18.20	-62.00
-1.00	0.974	-0.23	-15.50	0.015	-36.48	-39.00	0.100	-20.00	-62.50
-1.25	0.942	-0.52	-16.00	0.023	-32.77	-39.50	0.076	-22.38	-63.00
-1.50	0.899	-0.92	-16.50	0.035	-29.12	-40.00	0.056	-25.04	-63.50
-1.75	0.845	-1.46	-17.00	0.047	-26.56	-40.50	0.043	-27.33	-64.00
-2.00	0.783	-2.12	-17.50	0.055	-25.19	-41.00	0.039	-28.18	-64.50
-2.25	0.714	-2.92	-18.00	0.056	-25.04	-41.50	0.042	-27.54	-65.00
-2.50	0.640	-3.88	-18.50	0.051	-25.85	-42.00	0.047	-26.56	-65.50
-2.75	0.562	-5.01	-19.00	0.048	-26.38	-42.50	0.049	-26.20	-66.00
-3.00	0.484	-6.30	-19.50	0.059	-24.58	-43.00	0.047	-26.56	-66.50
-3.25	0.407	-7.81	-20.00	0.087	-21.21	-43.50	0.043	-27.33	-67.00
-3.50	0.336	-9.47	-20.50	0.123	-18.20	-44.00	0.036	-28.87	-67.50
-3.75	0.273	-11.26	-21.00	0.159	-15.97	-44.50	0.029	-30.75	-68.00
-4.00	0.225	-12.96	-21.50	0.192	-14.33	-45.00	0.023	-32.77	-68.50
-4.25	0.195	-14.20	-22.00	0.216	-13.31	-45.50	0.020	-33.98	-69.00
-4.50	0.186	-14.61	-22.50	0.229	-12.80	-46.00	0.020	-33.98	-69.50
-4.75	0.194	-14.27	-23.00	0.231	-12.73	-46.50	0.021	-33.56	-70.00
-5.00	0.208	-13.64	-23.50	0.221	-13.11	-47.00	0.021	-33.56	-70.50
-5.25	0.224	-13.01	-24.00	0.201	-13.94	-47.50	0.018	-34.89	-71.00
-5.50	0.235	-12.58	-24.50	0.173	-15.24	-48.00	0.011	-39.17	-71.50
-5.75	0.240	-12.38	-25.00	0.141	-17.02	-48.50	0.002	-53.98	-72.00
-6.00	0.240	-12.40	-25.50	0.107	-19.41	-49.00	0.010	-40.00	-72.50
-6.25	0.232	-12.71	-26.00	0.076	-22.38	-49.50	0.024	-32.40	-73.00
-6.50	0.217	-13.27	-26.50	0.049	-26.20	-50.00	0.040	-27.96	-73.50