

Preliminary Specification for ETU Series Side Mounted UHF Horizontally Polarized Panel Television Antenna

**WSRE RF Channel 24/31
Pensacola State College, Pensacola, FL
July 12, 2019**

**Antenna Model:
ETU8U4-HSP1C-24/31**

**Specification Number
20181217-157-4**

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**Preliminary Specification for
ETU Series Side Mounted
UHF Horizontally Polarized
Panel Television Antenna**

Electrical Characteristics:

Channel:		24	
Frequency:		530 MHz to 536 MHz	
Service:		ATSC	
Azimuth Pattern Number:	Horizontal Polarization	ETUP1C-H	
Elevation Pattern Number:	Horizontal Polarization	ETU-8U4-H	
Azimuth Directivity:	Horizontal Polarization	5.39	(7.32 dB)
Elevation Directivity:	Horizontal Polarization	20.34	(13.08 dBd)
Peak Power Gain:	Horizontal Polarization	109.62	(20.40 dBd)
Gain at Horizontal:	Horizontal Polarization	81.07	(19.09 dBd)
Vertical/Horizontal Ratio:		0.00	
Electrical Beam Tilt:		1.00 Degrees	
Input Power Required:		7.84 kW	(8.94 dBk)
RF Input:		8-3/16-inch EIA, 75 Ω , flanged male	
Input Power Rating (maximum):		25 kW Average Power, 8VSB	
Antenna VSWR (maximum):		1.20 (Over UHF Band)	

**Preliminary Specification for
ETU Series Side Mounted
UHF Horizontally Polarized
Panel Television Antenna**

Electrical Characteristics:

Channel:		31	
Frequency:		572 MHz to 578 MHz	
Service:		ATSC	
Azimuth Pattern Number:	Horizontal Polarization	ETUP1C-H	
Elevation Pattern Number:	Horizontal Polarization	ETU-8U4-H	
Azimuth Directivity:	Horizontal Polarization	5.39	(7.32 dB)
Elevation Directivity:	Horizontal Polarization	20.76	(13.17 dBd)
Peak Power Gain:	Horizontal Polarization	111.88	(20.49 dBd)
Gain at Horizontal:	Horizontal Polarization	82.74	(19.18 dBd)
Vertical/Horizontal Ratio:		0.00	
Electrical Beam Tilt:		1.00 Degrees	
Input Power Required:		8.94 kW	(9.51 dBk)
RF Input:		8-3/16-inch EIA, 75 Ω , flanged male	
Input Power Rating (maximum):		25 kW Average Power, 8VSB	
Antenna VSWR (maximum):		1.20 (Over UHF Band)	

Preliminary Specification for ETU Series Side Mounted UHF Horizontally Polarized Panel Television Antenna

Antenna Mechanical Characteristics:

Mounting Configuration:	Side Mount		
Height of Antenna:	34.6 feet	(10.5 meters)	
Height of Center of Radiation (B):	17.3 feet	(5.3 meters)	
Overall Height (Includes two 3.5 ft lightning spurs) (A):	38.1 feet	(11.6 meters)	
Deicing:	Unpressurized element radome		
Radome Diameter (C):	41.3" x 17.7" x 8.1"	(1150mm x 450mm x 205mm)	
Radome Color:	Gray		
Climbing Device:	Not Applicable		
Calculated Weight ¹ :	No Ice	1600.0 lb	725.7 kg
	1/2" (13 mm) ice	2570.0 lb	1165.7 kg
Windload Data ^{1,2} :	EPA	No Ice	80.5 ft ² (36.5 m ²)
		1/2" (13 mm) ice	89.0 ft ² (40.4 m ²)

Estimated Mounting Assembly Loads:

Preliminary Mounting Configuration:	Leg Mount		
Estimated Antenna Offset:	12		
Calculated Weight ¹ :	No Ice	875.0 lb	396.9 kg
	1/2" (13 mm) ice	1200.0 lb	544.3 kg
¹ Effective Projected Area (EPA-ft ²):	No Ice	25.0 ft ²	(2.3 m ²)
	1/2" (13 mm) ice	34.0 ft ²	(3.2 m ²)

NOTES:

1) Please note, the listed weights and effective wind areas are based on the PRELIMINARY design of the antenna. Final As-Built values for the antenna are typically within +/-10% of the Preliminary design values, and will be provided in the technical manual that accompanies the antenna. Custom mounting brackets/adapters and/or antenna input section are NOT included.

2) Loading includes antenna module, hybrid phasing, feed harnessing, and standard mounting brackets.

NOTE: The purchaser or their representative shall be required to contact the tower owner, state and/or local building officials for specific design requirements and suitable parameters for a particular structure. Any variation from the parameters shown above must be communicated to ERI for comprehensive assessment.

Broadcast Antenna System Power Analysis

WSRE
Pensacola State College
Pensacola, FL
ETU8U4-HSP1C-24/31

RF Channel: 24

Antenna Parameters

Azimuth Directivity:

Horizontal: 5.39 (7.32 dB)

Effective Radiated Power:

Horizontal: 859.00 kW (29.34 dBk)

Elevation Directivity:

Horizontal: 20.34 (13.08 dB)

Peak Power Gain:

Horizontal: 109.62 numeric (20.40 dBd)

Transmission Line

Vertical Run:

Type: 8-3/16-inch EIA, 75 Ω
 Length: 1,749 feet 533.1 meters
 Attenuation: 0.079 dB/100 feet 0.259 dB/100 mtrs

Antenna Input Power:

7.84 kW (8.94 dBk)

Horizontal Run:

Type: 8-3/16-inch EIA, 75 Ω
 Length: 164 feet 50.0 meters
 Attenuation: 0.079 dB/100 feet 0.259 dB/100 mtrs

Transmission Line Losses:

-3.25 kW (1.509 dB)

Total Losses: 1.509 dB

RF System Losses:

0.00 kW (0.00 dB)

Line Efficiency: 70.65%

Total Losses:

-3.25 1.509

Transmitter Power Output:

11.09 kW
 (10.45 dBk)

Broadcast Antenna System Power Analysis

WSRE
Pensacola State College
Pensacola, FL
ETU8U4-HSP1C-24/31

RF Channel: 31

Antenna Parameters

Azimuth Directivity:

Horizontal: 5.39 (7.32 dB)

Elevation Directivity:

Horizontal: 20.76 (13.17 dB)

Effective Radiated Power:

Horizontal: 1000.00 kW (30.00 dBk)

Transmission Line

Vertical Run:

Type: 8-3/16-inch EIA, 75 Ω
 Length: 1,749 feet 533.1 meters
 Attenuation: 0.082 dB/100 feet 0.269 dB/100 mtrs

Horizontal Run:

Type: 8-3/16-inch EIA, 75 Ω
 Length: 164 feet 50.0 meters
 Attenuation: 0.082 dB/100 feet 0.269 dB/100 mtrs

Peak Power Gain:

Horizontal: 111.88 numeric (20.49 dBd)

Antenna Input Power:

8.94 kW (9.51 dBk)

Transmission Line Losses:

-3.89 kW (1.569 dB)

RF System Losses:

0.00 kW (0.00 dB)

Total Losses: 0.000 dB

Line Efficiency: 69.68%

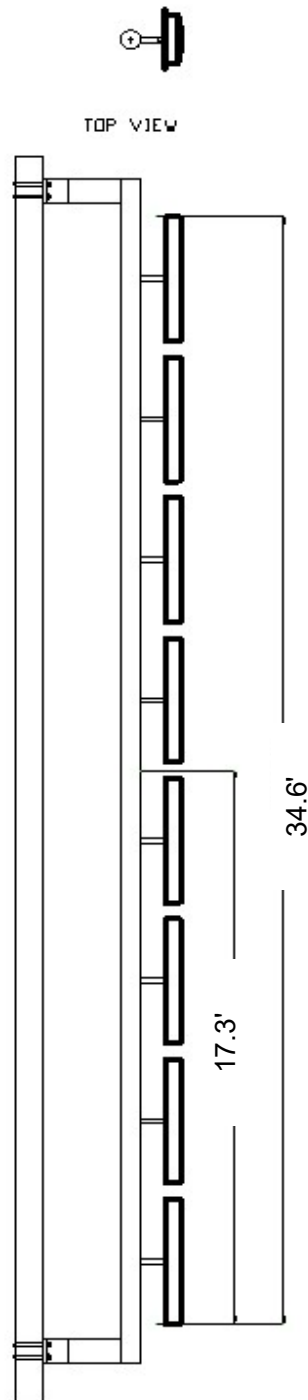
Total Losses:

-3.89 1.569

Transmitter Power Output:

12.83 kW
 (11.08 dBk)

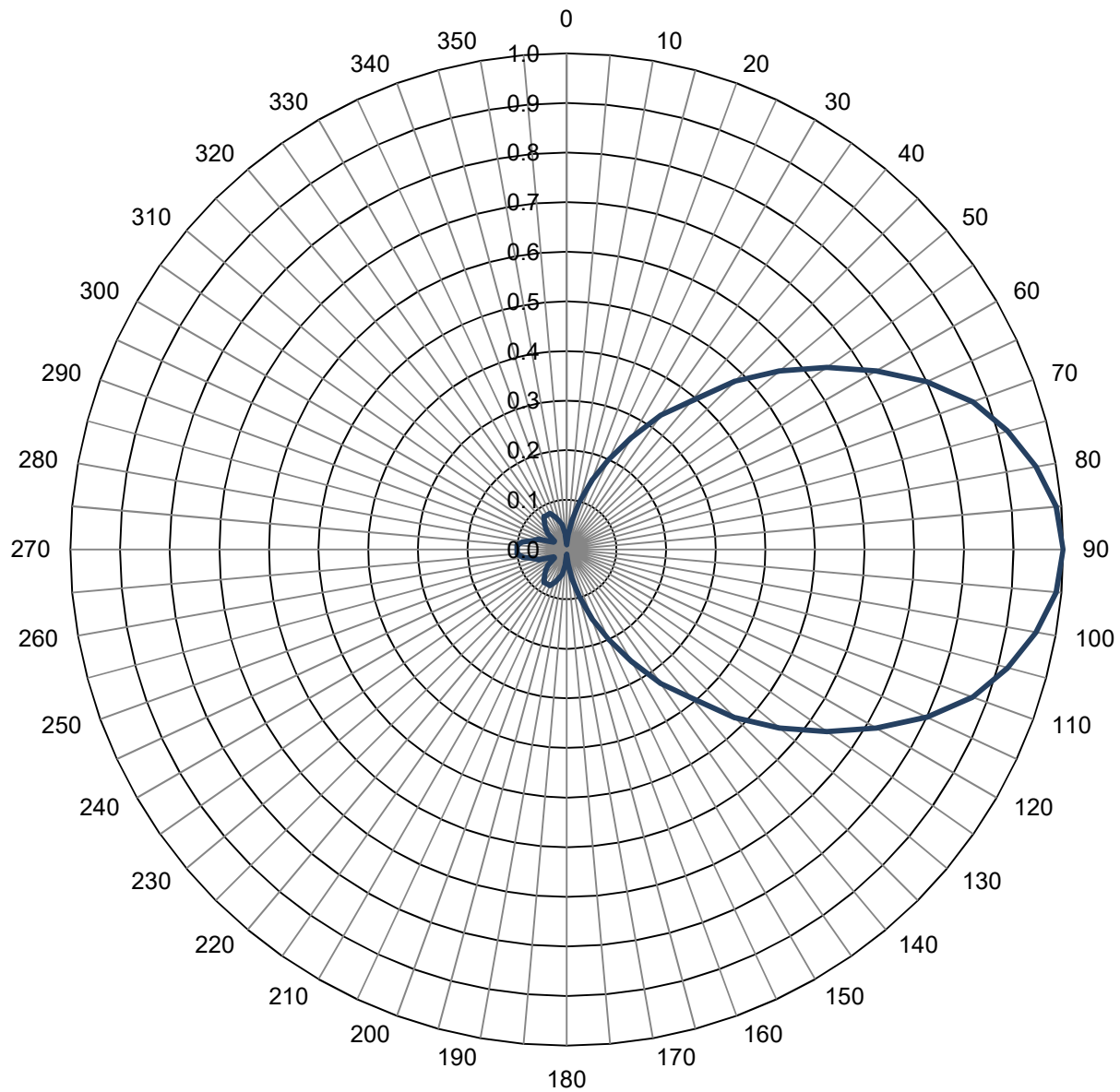
Typical Mounting Configuration Shown. Actual Configuration May Vary.



NOTE(s): The Hybrids and feed system designed for CH24.

Azimuth Pattern

Type:	ETUP1C-H	Polarization:	Horizontal
Directivity:	5.39 numeric (7.32 dB)	Frequency:	24 (ATSC)
Peak(s) at:		Location:	Pensacola, FL
		NOTE: Pattern shape and directivity may vary with channel and mounting configuration.	

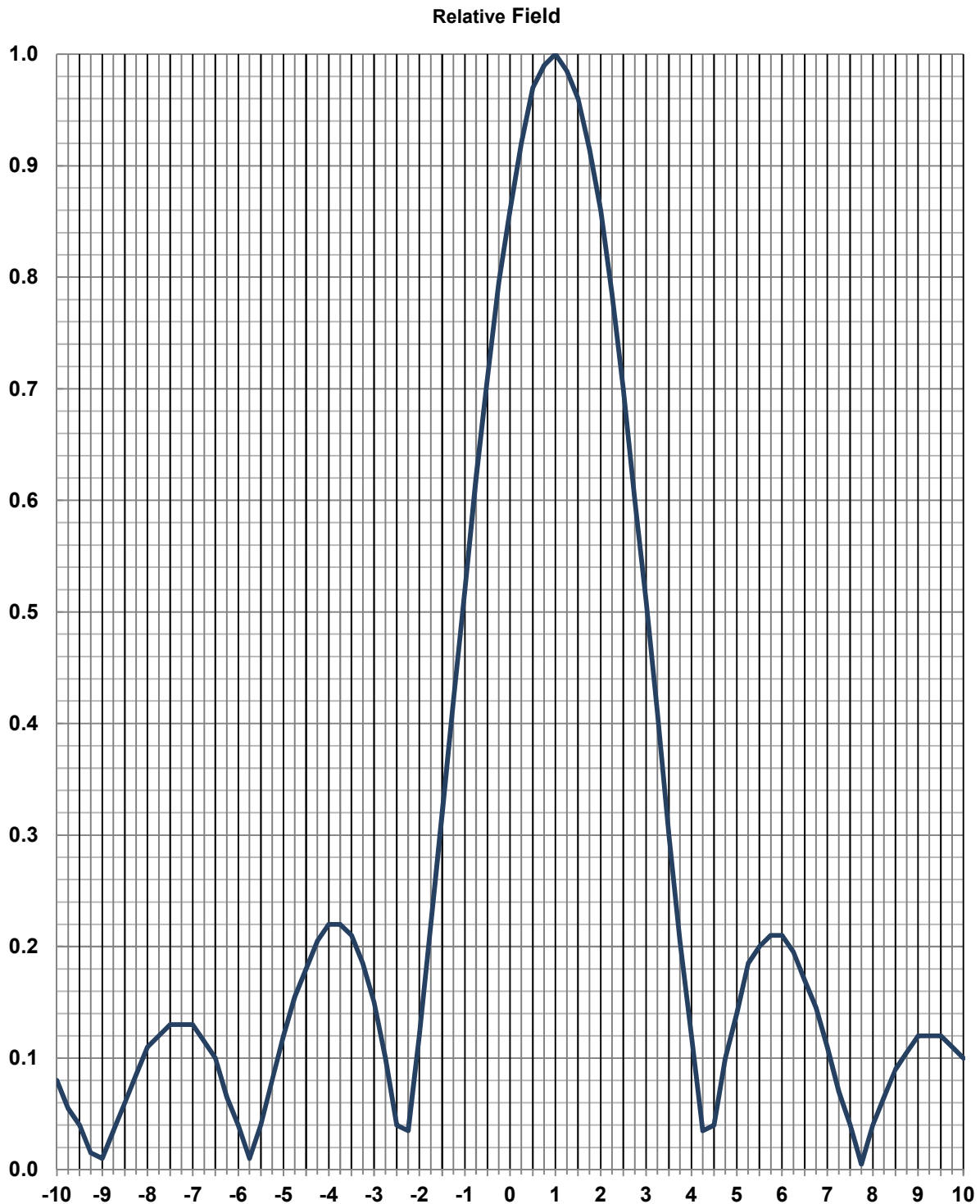
Relative Field

Tabulated Data for Azimuth PatternType: ETUP1C-H

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	0.010	-40.00	100	0.960	-0.35	200	0.070	-23.10	300	0.030	-30.46
2	0.010	-40.00	102	0.950	-0.45	202	0.070	-23.10	302	0.030	-30.46
4	0.020	-33.98	104	0.930	-0.63	204	0.080	-21.94	304	0.030	-30.46
6	0.030	-30.46	106	0.910	-0.82	206	0.080	-21.94	306	0.040	-27.96
8	0.050	-26.02	108	0.890	-1.01	208	0.080	-21.94	308	0.040	-27.96
10	0.060	-24.44	110	0.870	-1.21	210	0.080	-21.94	310	0.050	-26.02
12	0.080	-21.94	112	0.840	-1.51	212	0.080	-21.94	312	0.050	-26.02
14	0.090	-20.92	114	0.810	-1.83	214	0.080	-21.94	314	0.060	-24.44
16	0.110	-19.17	116	0.780	-2.16	216	0.080	-21.94	316	0.060	-24.44
18	0.130	-17.72	118	0.750	-2.50	218	0.070	-23.10	318	0.060	-24.44
20	0.150	-16.48	120	0.720	-2.85	220	0.070	-23.10	320	0.070	-23.10
22	0.170	-15.39	122	0.690	-3.22	222	0.060	-24.44	322	0.070	-23.10
24	0.190	-14.42	124	0.660	-3.61	224	0.060	-24.44	324	0.080	-21.94
26	0.210	-13.56	126	0.620	-4.15	226	0.060	-24.44	326	0.080	-21.94
28	0.230	-12.77	128	0.590	-4.58	228	0.050	-26.02	328	0.080	-21.94
30	0.260	-11.70	130	0.560	-5.04	230	0.050	-26.02	330	0.080	-21.94
32	0.290	-10.75	132	0.520	-5.68	232	0.040	-27.96	332	0.080	-21.94
34	0.310	-10.17	134	0.490	-6.20	234	0.040	-27.96	334	0.080	-21.94
36	0.340	-9.37	136	0.460	-6.74	236	0.030	-30.46	336	0.080	-21.94
38	0.370	-8.64	138	0.430	-7.33	238	0.030	-30.46	338	0.070	-23.10
40	0.390	-8.18	140	0.390	-8.18	240	0.030	-30.46	340	0.070	-23.10
42	0.430	-7.33	142	0.370	-8.64	242	0.040	-27.96	342	0.070	-23.10
44	0.460	-6.74	144	0.340	-9.37	244	0.040	-27.96	344	0.060	-24.44
46	0.490	-6.20	146	0.310	-10.17	246	0.050	-26.02	346	0.060	-24.44
48	0.520	-5.68	148	0.290	-10.75	248	0.050	-26.02	348	0.050	-26.02
50	0.560	-5.04	150	0.260	-11.70	250	0.060	-24.44	350	0.050	-26.02
52	0.590	-4.58	152	0.230	-12.77	252	0.070	-23.10	352	0.040	-27.96
54	0.620	-4.15	154	0.210	-13.56	254	0.070	-23.10	354	0.030	-30.46
56	0.660	-3.61	156	0.190	-14.42	256	0.080	-21.94	356	0.020	-33.98
58	0.690	-3.22	158	0.170	-15.39	258	0.080	-21.94	358	0.010	-40.00
60	0.720	-2.85	160	0.150	-16.48	260	0.090	-20.92	360	0.010	-40.00
62	0.750	-2.50	162	0.130	-17.72	262	0.090	-20.92			
64	0.780	-2.16	164	0.110	-19.17	264	0.100	-20.00			
66	0.810	-1.83	166	0.090	-20.92	266	0.100	-20.00			
68	0.840	-1.51	168	0.080	-21.94	268	0.100	-20.00			
70	0.870	-1.21	170	0.060	-24.44	270	0.100	-20.00			
72	0.890	-1.01	172	0.050	-26.02	272	0.100	-20.00			
74	0.910	-0.82	174	0.030	-30.46	274	0.100	-20.00			
76	0.930	-0.63	176	0.020	-33.98	276	0.100	-20.00			
78	0.950	-0.45	178	0.010	-40.00	278	0.090	-20.92			
80	0.960	-0.35	180	0.010	-40.00	280	0.090	-20.92			
82	0.980	-0.18	182	0.010	-40.00	282	0.080	-21.94			
84	0.990	-0.09	184	0.020	-33.98	284	0.080	-21.94			
86	0.990	-0.09	186	0.030	-30.46	286	0.070	-23.10			
88	1.000	0.00	188	0.040	-27.96	288	0.070	-23.10			
90	1.000	0.00	190	0.050	-26.02	290	0.060	-24.44			
92	1.000	0.00	192	0.050	-26.02	292	0.050	-26.02			
94	0.990	-0.09	194	0.060	-24.44	294	0.050	-26.02			
96	0.990	-0.09	196	0.060	-24.44	296	0.040	-27.96			
98	0.980	-0.18	198	0.070	-23.10	298	0.040	-27.96			

Elevation Pattern

Type:	ETU-8U4-H	Polarization:	Horizontal
Directivity:		Frequency:	24 (ATSC)
Main Lobe:	20.34 numeric (13.08 dB)	Location:	Pensacola, FL
Horizontal:	15.04 numeric (11.77 dB)	Beam Tilt:	1.00 degrees



Tabulated Data for Elevation PatternType: ETU-8U4-H

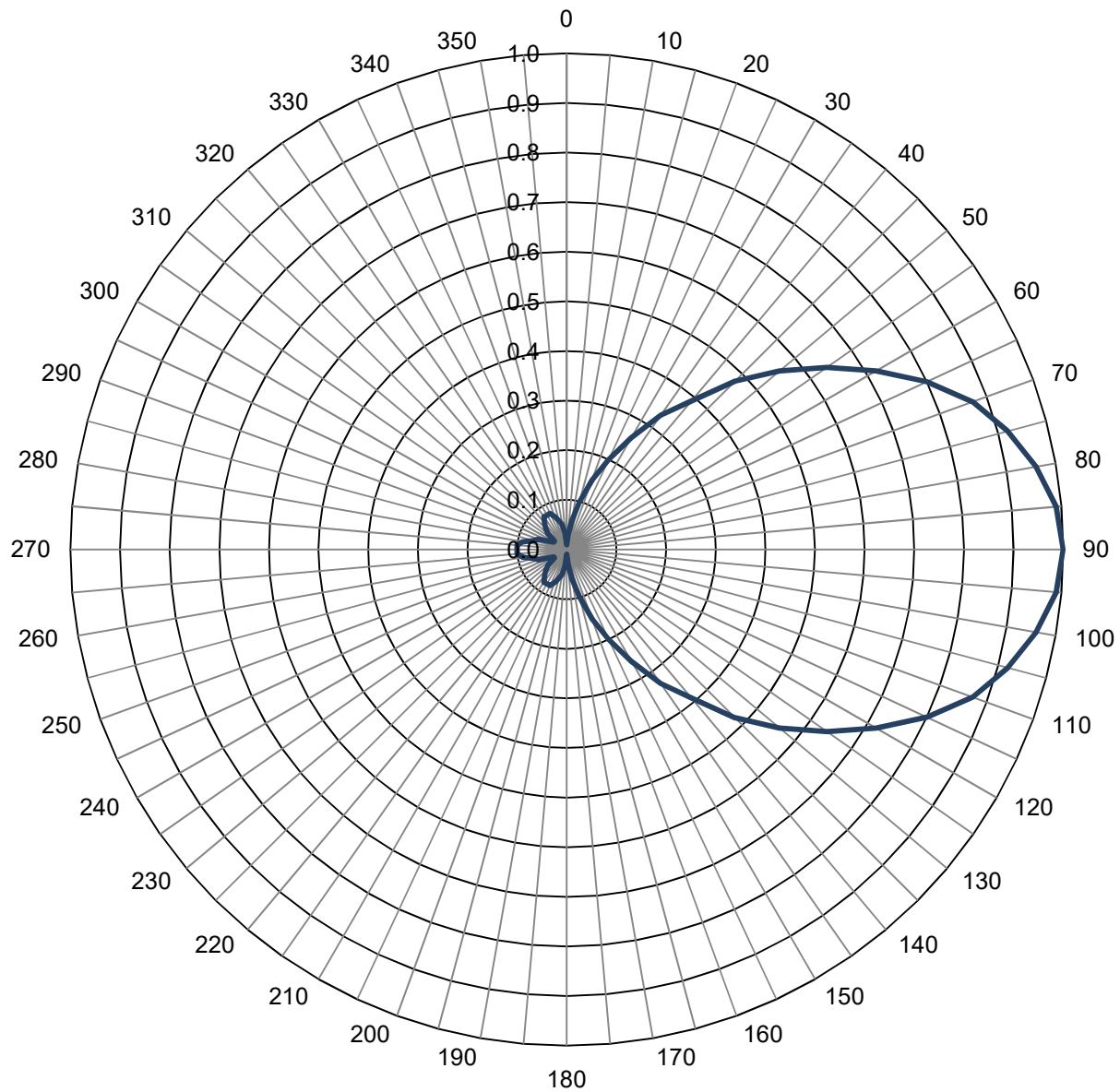
-5 to 10 degrees in 0.25 degree increments.

10 to 90 degrees in 0.50 degree increments.

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-10.00	0.080	-21.94	2.25	0.785	-2.10	19.00	0.040	-27.96	43.50	0.040	-27.96	68.00	0.080	-21.94
-9.75	0.055	-25.19	2.50	0.700	-3.10	19.50	0.050	-26.02	44.00	0.040	-27.96	68.50	0.080	-21.94
-9.50	0.040	-27.96	2.75	0.600	-4.44	20.00	0.050	-26.02	44.50	0.030	-30.46	69.00	0.090	-20.92
-9.25	0.015	-36.48	3.00	0.510	-5.85	20.50	0.040	-27.96	45.00	0.020	-33.98	69.50	0.090	-20.92
-9.00	0.010	-40.00	3.25	0.410	-7.74	21.00	0.020	-33.98	45.50	0.010	-40.00	70.00	0.090	-20.92
-8.75	0.035	-29.12	3.50	0.300	-10.46	21.50	0.010	-40.00	46.00	0.000	---	70.50	0.100	-20.00
-8.50	0.060	-24.44	3.75	0.205	-13.76	22.00	0.010	-40.00	46.50	0.010	-40.00	71.00	0.100	-20.00
-8.25	0.085	-21.41	4.00	0.120	-18.42	22.50	0.030	-30.46	47.00	0.020	-33.98	71.50	0.100	-20.00
-8.00	0.110	-19.17	4.25	0.035	-29.12	23.00	0.030	-30.46	47.50	0.030	-30.46	72.00	0.100	-20.00
-7.75	0.120	-18.42	4.50	0.040	-27.96	23.50	0.030	-30.46	48.00	0.030	-30.46	72.50	0.100	-20.00
-7.50	0.130	-17.72	4.75	0.100	-20.00	24.00	0.030	-30.46	48.50	0.040	-27.96	73.00	0.100	-20.00
-7.25	0.130	-17.72	5.00	0.140	-17.08	24.50	0.020	-33.98	49.00	0.030	-30.46	73.50	0.090	-20.92
-7.00	0.130	-17.72	5.25	0.185	-14.66	25.00	0.010	-40.00	49.50	0.030	-30.46	74.00	0.090	-20.92
-6.75	0.115	-18.79	5.50	0.200	-13.98	25.50	0.000	---	50.00	0.020	-33.98	74.50	0.090	-20.92
-6.50	0.100	-20.00	5.75	0.210	-13.56	26.00	0.010	-40.00	50.50	0.010	-40.00	75.00	0.080	-21.94
-6.25	0.065	-23.74	6.00	0.210	-13.56	26.50	0.030	-30.46	51.00	0.010	-40.00	75.50	0.080	-21.94
-6.00	0.040	-27.96	6.25	0.195	-14.20	27.00	0.040	-27.96	51.50	0.010	-40.00	76.00	0.080	-21.94
-5.75	0.010	-40.00	6.50	0.170	-15.39	27.50	0.050	-26.02	52.00	0.010	-40.00	76.50	0.070	-23.10
-5.50	0.040	-27.96	6.75	0.145	-16.77	28.00	0.060	-24.44	52.50	0.020	-33.98	77.00	0.070	-23.10
-5.25	0.080	-21.94	7.00	0.110	-19.17	28.50	0.080	-21.94	53.00	0.030	-30.46	77.50	0.070	-23.10
-5.00	0.120	-18.42	7.25	0.070	-23.10	29.00	0.090	-20.92	53.50	0.030	-30.46	78.00	0.060	-24.44
-4.75	0.155	-16.19	7.50	0.040	-27.96	29.50	0.100	-20.00	54.00	0.030	-30.46	78.50	0.060	-24.44
-4.50	0.180	-14.89	7.75	0.005	-46.02	30.00	0.110	-19.17	54.50	0.030	-30.46	79.00	0.060	-24.44
-4.25	0.205	-13.76	8.00	0.040	-27.96	30.50	0.110	-19.17	55.00	0.030	-30.46	79.50	0.050	-26.02
-4.00	0.220	-13.15	8.25	0.065	-23.74	31.00	0.100	-20.00	55.50	0.020	-33.98	80.00	0.050	-26.02
-3.75	0.220	-13.15	8.50	0.090	-20.92	31.50	0.080	-21.94	56.00	0.020	-33.98	80.50	0.050	-26.02
-3.50	0.210	-13.56	8.75	0.105	-19.58	32.00	0.050	-26.02	56.50	0.010	-40.00	81.00	0.040	-27.96
-3.25	0.185	-14.66	9.00	0.120	-18.42	32.50	0.030	-30.46	57.00	0.000	---	81.50	0.040	-27.96
-3.00	0.150	-16.48	9.25	0.120	-18.42	33.00	0.000	---	57.50	0.010	-40.00	82.00	0.040	-27.96
-2.75	0.100	-20.00	9.50	0.120	-18.42	33.50	0.020	-33.98	58.00	0.020	-33.98	82.50	0.040	-27.96
-2.50	0.040	-27.96	9.75	0.110	-19.17	34.00	0.040	-27.96	58.50	0.030	-30.46	83.00	0.040	-27.96
-2.25	0.035	-29.12	10.00	0.100	-20.00	34.50	0.050	-26.02	59.00	0.030	-30.46	83.50	0.030	-30.46
-2.00	0.120	-18.42	10.50	0.060	-24.44	35.00	0.050	-26.02	59.50	0.040	-27.96	84.00	0.030	-30.46
-1.75	0.220	-13.15	11.00	0.020	-33.98	35.50	0.050	-26.02	60.00	0.040	-27.96	84.50	0.030	-30.46
-1.50	0.320	-9.90	11.50	0.030	-30.46	36.00	0.040	-27.96	60.50	0.040	-27.96	85.00	0.030	-30.46
-1.25	0.420	-7.54	12.00	0.060	-24.44	36.50	0.020	-33.98	61.00	0.040	-27.96	85.50	0.030	-30.46
-1.00	0.520	-5.68	12.50	0.080	-21.94	37.00	0.000	---	61.50	0.030	-30.46	86.00	0.030	-30.46
-0.75	0.620	-4.15	13.00	0.080	-21.94	37.50	0.010	-40.00	62.00	0.030	-30.46	86.50	0.020	-33.98
-0.50	0.710	-2.97	13.50	0.070	-23.10	38.00	0.030	-30.46	62.50	0.020	-33.98	87.00	0.020	-33.98
-0.25	0.795	-1.99	14.00	0.040	-27.96	38.50	0.040	-27.96	63.00	0.010	-40.00	87.50	0.020	-33.98
0.00	0.860	-1.31	14.50	0.010	-40.00	39.00	0.040	-27.96	63.50	0.010	-40.00	88.00	0.020	-33.98
0.25	0.920	-0.72	15.00	0.030	-30.46	39.50	0.040	-27.96	64.00	0.000	---	88.50	0.020	-33.98
0.50	0.970	-0.26	15.50	0.050	-26.02	40.00	0.040	-27.96	64.50	0.010	-40.00	89.00	0.020	-33.98
0.75	0.990	-0.09	16.00	0.060	-24.44	40.50	0.030	-30.46	65.00	0.020	-33.98	89.50	0.020	-33.98
1.00	1.000	0.00	16.50	0.060	-24.44	41.00	0.010	-40.00	65.50	0.030	-30.46	90.00	0.020	-33.98
1.25	0.985	-0.13	17.00	0.050	-26.02	41.50	0.000	---	66.00	0.040	-27.96			
1.50	0.960	-0.35	17.50	0.030	-30.46	42.00	0.010	-40.00	66.50	0.050	-26.02			
1.75	0.915	-0.77	18.00	0.010	-40.00	42.50	0.020	-33.98	67.00	0.060	-24.44			
2.00	0.860	-1.31	18.50	0.020	-33.98	43.00	0.030	-30.46	67.50	0.070	-23.10			

Azimuth Pattern

Type:	ETUP1C-H	Polarization:	Horizontal
Directivity:	5.39 numeric (7.32 dB)	Frequency:	31 (ATSC)
Peak(s) at:		Location:	Pensacola, FL
		NOTE: Pattern shape and directivity may vary with channel and mounting configuration.	

Relative Field

Tabulated Data for Azimuth PatternType: ETUP1C-H

Angle	Field	dB
0	0.010	-40.00
2	0.010	-40.00
4	0.020	-33.98
6	0.030	-30.46
8	0.050	-26.02
10	0.060	-24.44
12	0.080	-21.94
14	0.090	-20.92
16	0.110	-19.17
18	0.130	-17.72
20	0.150	-16.48
22	0.170	-15.39
24	0.190	-14.42
26	0.210	-13.56
28	0.240	-12.40
30	0.260	-11.70
32	0.290	-10.75
34	0.310	-10.17
36	0.340	-9.37
38	0.370	-8.64
40	0.390	-8.18
42	0.430	-7.33
44	0.460	-6.74
46	0.490	-6.20
48	0.520	-5.68
50	0.560	-5.04
52	0.590	-4.58
54	0.620	-4.15
56	0.660	-3.61
58	0.690	-3.22
60	0.720	-2.85
62	0.750	-2.50
64	0.780	-2.16
66	0.810	-1.83
68	0.840	-1.51
70	0.870	-1.21
72	0.890	-1.01
74	0.910	-0.82
76	0.930	-0.63
78	0.950	-0.45
80	0.960	-0.35
82	0.980	-0.18
84	0.990	-0.09
86	0.990	-0.09
88	1.000	0.00
90	1.000	0.00
92	1.000	0.00
94	0.990	-0.09
96	0.990	-0.09
98	0.980	-0.18

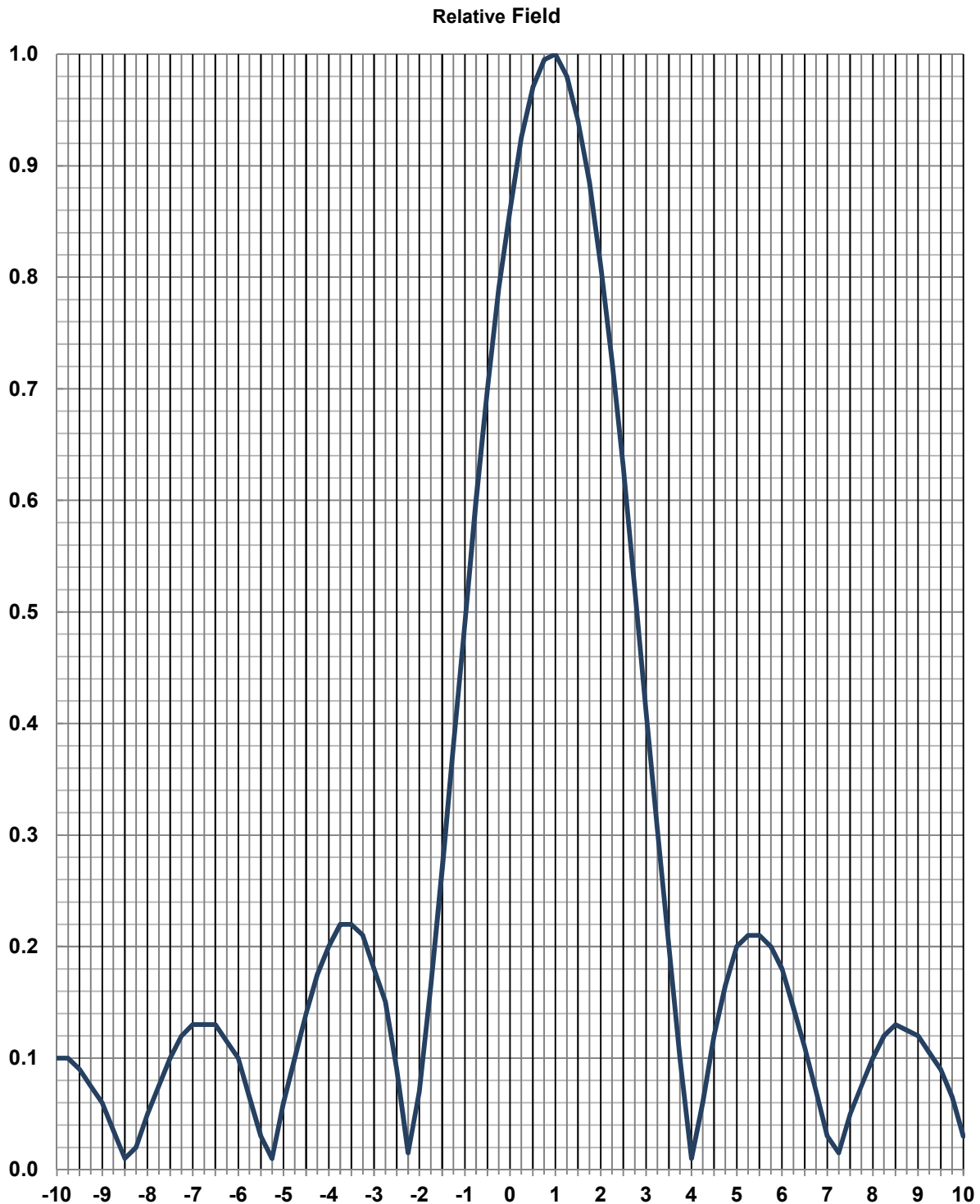
Angle	Field	dB
100	0.960	-0.35
102	0.950	-0.45
104	0.930	-0.63
106	0.910	-0.82
108	0.890	-1.01
110	0.870	-1.21
112	0.840	-1.51
114	0.810	-1.83
116	0.780	-2.16
118	0.750	-2.50
120	0.720	-2.85
122	0.690	-3.22
124	0.660	-3.61
126	0.620	-4.15
128	0.590	-4.58
130	0.560	-5.04
132	0.520	-5.68
134	0.490	-6.20
136	0.460	-6.74
138	0.430	-7.33
140	0.390	-8.18
142	0.370	-8.64
144	0.340	-9.37
146	0.310	-10.17
148	0.290	-10.75
150	0.260	-11.70
152	0.240	-12.40
154	0.210	-13.56
156	0.190	-14.42
158	0.170	-15.39
160	0.150	-16.48
162	0.130	-17.72
164	0.110	-19.17
166	0.090	-20.92
168	0.080	-21.94
170	0.060	-24.44
172	0.050	-26.02
174	0.030	-30.46
176	0.020	-33.98
178	0.010	-40.00
180	0.010	-40.00
182	0.010	-40.00
184	0.020	-33.98
186	0.030	-30.46
188	0.040	-27.96
190	0.050	-26.02
192	0.050	-26.02
194	0.060	-24.44
196	0.060	-24.44
198	0.070	-23.10

Angle	Field	dB
200	0.070	-23.10
202	0.070	-23.10
204	0.080	-21.94
206	0.080	-21.94
208	0.080	-21.94
210	0.080	-21.94
212	0.080	-21.94
214	0.080	-21.94
216	0.080	-21.94
218	0.070	-23.10
220	0.070	-23.10
222	0.070	-23.10
224	0.060	-24.44
226	0.060	-24.44
228	0.050	-26.02
230	0.050	-26.02
232	0.040	-27.96
234	0.040	-27.96
236	0.030	-30.46
238	0.030	-30.46
240	0.030	-30.46
242	0.040	-27.96
244	0.040	-27.96
246	0.050	-26.02
248	0.050	-26.02
250	0.060	-24.44
252	0.070	-23.10
254	0.070	-23.10
256	0.080	-21.94
258	0.080	-21.94
260	0.090	-20.92
262	0.090	-20.92
264	0.100	-20.00
266	0.100	-20.00
268	0.100	-20.00
270	0.100	-20.00
272	0.100	-20.00
274	0.100	-20.00
276	0.100	-20.00
278	0.090	-20.92
280	0.090	-20.92
282	0.080	-21.94
284	0.080	-21.94
286	0.070	-23.10
288	0.070	-23.10
290	0.060	-24.44
292	0.050	-26.02
294	0.050	-26.02
296	0.040	-27.96
298	0.040	-27.96

Angle	Field	dB
300	0.030	-30.46
302	0.030	-30.46
304	0.030	-30.46
306	0.040	-27.96
308	0.040	-27.96
310	0.050	-26.02
312	0.050	-26.02
314	0.060	-24.44
316	0.060	-24.44
318	0.070	-23.10
320	0.070	-23.10
322	0.070	-23.10
324	0.080	-21.94
326	0.080	-21.94
328	0.080	-21.94
330	0.080	-21.94
332	0.080	-21.94
334	0.080	-21.94
336	0.080	-21.94
338	0.070	-23.10
340	0.070	-23.10
342	0.070	-23.10
344	0.060	-24.44
346	0.060	-24.44
348	0.050	-26.02
350	0.050	-26.02
352	0.040	-27.96
354	0.030	-30.46
356	0.020	-33.98
358	0.010	-40.00
360	0.010	-40.00

Elevation Pattern

Type:	ETU-8U4-H	Polarization:	Horizontal
Directivity:		Frequency:	31 (ATSC)
Main Lobe:	20.76 numeric (13.17 dB)	Location:	Pensacola, FL
Horizontal:	15.35 numeric (11.86 dB)	Beam Tilt:	1.00 degrees



Tabulated Data for Elevation PatternType: ETU-8U4-H

-5 to 10 degrees in 0.25 degree increments.

10 to 90 degrees in 0.50 degree increments.

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-10.00	0.100	-20.00	2.25	0.725	-2.79	19.00	0.050	-26.02	43.50	0.030	-30.46	68.00	0.030	-30.46
-9.75	0.100	-20.00	2.50	0.630	-4.01	19.50	0.030	-30.46	44.00	0.040	-27.96	68.50	0.020	-33.98
-9.50	0.090	-20.92	2.75	0.520	-5.68	20.00	0.000	---	44.50	0.040	-27.96	69.00	0.020	-33.98
-9.25	0.075	-22.50	3.00	0.410	-7.74	20.50	0.020	-33.98	45.00	0.030	-30.46	69.50	0.010	-40.00
-9.00	0.060	-24.44	3.25	0.305	-10.31	21.00	0.040	-27.96	45.50	0.020	-33.98	70.00	0.000	---
-8.75	0.035	-29.12	3.50	0.200	-13.98	21.50	0.050	-26.02	46.00	0.010	-40.00	70.50	0.000	---
-8.50	0.010	-40.00	3.75	0.100	-20.00	22.00	0.050	-26.02	46.50	0.010	-40.00	71.00	0.010	-40.00
-8.25	0.020	-33.98	4.00	0.010	-40.00	22.50	0.040	-27.96	47.00	0.020	-33.98	71.50	0.010	-40.00
-8.00	0.050	-26.02	4.25	0.060	-24.44	23.00	0.020	-33.98	47.50	0.030	-30.46	72.00	0.020	-33.98
-7.75	0.075	-22.50	4.50	0.120	-18.42	23.50	0.010	-40.00	48.00	0.040	-27.96	72.50	0.020	-33.98
-7.50	0.100	-20.00	4.75	0.165	-15.65	24.00	0.030	-30.46	48.50	0.040	-27.96	73.00	0.020	-33.98
-7.25	0.120	-18.42	5.00	0.200	-13.98	24.50	0.050	-26.02	49.00	0.040	-27.96	73.50	0.020	-33.98
-7.00	0.130	-17.72	5.25	0.210	-13.56	25.00	0.060	-24.44	49.50	0.030	-30.46	74.00	0.020	-33.98
-6.75	0.130	-17.72	5.50	0.210	-13.56	25.50	0.070	-23.10	50.00	0.020	-33.98	74.50	0.020	-33.98
-6.50	0.130	-17.72	5.75	0.200	-13.98	26.00	0.070	-23.10	50.50	0.010	-40.00	75.00	0.020	-33.98
-6.25	0.115	-18.79	6.00	0.180	-14.89	26.50	0.070	-23.10	51.00	0.000	---	75.50	0.020	-33.98
-6.00	0.100	-20.00	6.25	0.145	-16.77	27.00	0.060	-24.44	51.50	0.010	-40.00	76.00	0.020	-33.98
-5.75	0.065	-23.74	6.50	0.110	-19.17	27.50	0.060	-24.44	52.00	0.030	-30.46	76.50	0.020	-33.98
-5.50	0.030	-30.46	6.75	0.070	-23.10	28.00	0.060	-24.44	52.50	0.040	-27.96	77.00	0.020	-33.98
-5.25	0.010	-40.00	7.00	0.030	-30.46	28.50	0.050	-26.02	53.00	0.050	-26.02	77.50	0.010	-40.00
-5.00	0.060	-24.44	7.25	0.015	-36.48	29.00	0.040	-27.96	53.50	0.050	-26.02	78.00	0.010	-40.00
-4.75	0.100	-20.00	7.50	0.050	-26.02	29.50	0.030	-30.46	54.00	0.050	-26.02	78.50	0.010	-40.00
-4.50	0.140	-17.08	7.75	0.075	-22.50	30.00	0.010	-40.00	54.50	0.050	-26.02	79.00	0.010	-40.00
-4.25	0.175	-15.14	8.00	0.100	-20.00	30.50	0.010	-40.00	55.00	0.040	-27.96	79.50	0.010	-40.00
-4.00	0.200	-13.98	8.25	0.120	-18.42	31.00	0.020	-33.98	55.50	0.020	-33.98	80.00	0.010	-40.00
-3.75	0.220	-13.15	8.50	0.130	-17.72	31.50	0.030	-30.46	56.00	0.010	-40.00	80.50	0.010	-40.00
-3.50	0.220	-13.15	8.75	0.125	-18.06	32.00	0.040	-27.96	56.50	0.010	-40.00	81.00	0.010	-40.00
-3.25	0.210	-13.56	9.00	0.120	-18.42	32.50	0.040	-27.96	57.00	0.030	-30.46	81.50	0.000	---
-3.00	0.180	-14.89	9.25	0.105	-19.58	33.00	0.030	-30.46	57.50	0.050	-26.02	82.00	0.000	---
-2.75	0.150	-16.48	9.50	0.090	-20.92	33.50	0.020	-33.98	58.00	0.070	-23.10	82.50	0.000	---
-2.50	0.090	-20.92	9.75	0.065	-23.74	34.00	0.000	---	58.50	0.090	-20.92	83.00	0.000	---
-2.25	0.015	-36.48	10.00	0.030	-30.46	34.50	0.010	-40.00	59.00	0.110	-19.17	83.50	0.000	---
-2.00	0.070	-23.10	10.50	0.020	-33.98	35.00	0.030	-30.46	59.50	0.130	-17.72	84.00	0.000	---
-1.75	0.165	-15.65	11.00	0.060	-24.44	35.50	0.030	-30.46	60.00	0.140	-17.08	84.50	0.000	---
-1.50	0.270	-11.37	11.50	0.080	-21.94	36.00	0.040	-27.96	60.50	0.150	-16.48	85.00	0.000	---
-1.25	0.380	-8.40	12.00	0.090	-20.92	36.50	0.030	-30.46	61.00	0.150	-16.48	85.50	0.000	---
-1.00	0.490	-6.20	12.50	0.070	-23.10	37.00	0.020	-33.98	61.50	0.160	-15.92	86.00	0.000	---
-0.75	0.600	-4.44	13.00	0.040	-27.96	37.50	0.010	-40.00	62.00	0.150	-16.48	86.50	0.000	---
-0.50	0.700	-3.10	13.50	0.000	---	38.00	0.000	---	62.50	0.150	-16.48	87.00	0.000	---
-0.25	0.790	-2.05	14.00	0.040	-27.96	38.50	0.020	-33.98	63.00	0.150	-16.48	87.50	0.000	---
0.00	0.860	-1.31	14.50	0.060	-24.44	39.00	0.030	-30.46	63.50	0.140	-17.08	88.00	0.000	---
0.25	0.925	-0.68	15.00	0.070	-23.10	39.50	0.030	-30.46	64.00	0.130	-17.72	88.50	0.000	---
0.50	0.970	-0.26	15.50	0.060	-24.44	40.00	0.040	-27.96	64.50	0.120	-18.42	89.00	0.000	---
0.75	0.995	-0.04	16.00	0.040	-27.96	40.50	0.030	-30.46	65.00	0.110	-19.17	89.50	0.000	---
1.00	1.000	0.00	16.50	0.020	-33.98	41.00	0.020	-33.98	65.50	0.090	-20.92	90.00	0.000	---
1.25	0.980	-0.18	17.00	0.020	-33.98	41.50	0.010	-40.00	66.00	0.080	-21.94			
1.50	0.940	-0.54	17.50	0.040	-27.96	42.00	0.000	---	66.50	0.070	-23.10			
1.75	0.885	-1.06	18.00	0.060	-24.44	42.50	0.010	-40.00	67.00	0.060	-24.44			
2.00	0.810	-1.83	18.50	0.060	-24.44	43.00	0.030	-30.46	67.50	0.040	-27.96			