

# **Preliminary Specification for ETU Series Top Mounted UHF Elliptically Polarized Panel Television Antenna**

**WPME (DT), RF Channel 24, and WPXT-TV, RF Channel 34,  
Ironwood Comm Portland LLC**

**July 1, 2017**

**Antenna Model:  
ETU-8U3-ETP40-24/34**

**Specification Number  
20170701-013-1**

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**Preliminary Specification for  
ETU Series Top Mounted  
UHF Elliptically Polarized  
Panel Television Antenna**

**Electrical Characteristics:**

<b>Channel:</b>	24		
<b>Frequency:</b>	530 MHz to 536 MHz		
<b>Service:</b>	ATSC		
<b>Azimuth Pattern Number:</b>	Horizontal Polarization Vertical Polarization	ETU-OP4-H ETU-OP4-V	
<b>Elevation Pattern Number:</b>	Horizontal Polarization Vertical Polarization	ETU8U3H ETU8U3V	
<b>Azimuth Directivity:</b>	Horizontal Polarization Vertical Polarization	1.00 1.00	(0.00 dB) (0.00 dB)
<b>Elevation Directivity:</b>	Horizontal Polarization Vertical Polarization	22.04 22.04	(13.43 dBd) (13.43 dBd)
<b>Peak Power Gain:</b>	Horizontal Polarization Vertical Polarization	16.57 5.47	(12.19 dBd) (7.38 dBd)
<b>Gain at Horizontal:</b>	Horizontal Polarization Vertical Polarization	14.29 4.72	(11.55 dBd) (6.74 dBd)
<b>Vertical/Horizontal Ratio:</b>	0.33		
<b>Electrical Beam Tilt:</b>	0.75 Degrees		
<b>Input Power Required:</b>	0.69 kW		-(1.62 dBk)
<b>RF Input:</b>	4-1/16-inch flanged male		
<b>Input Power Rating (maximum):</b>	30 kW Average Power, 8VSB		
<b>Antenna VSWR (maximum):</b>	1.10 Over 6 MHz Channel		

**Preliminary Specification for  
ETU Series Top Mounted  
UHF Elliptically Polarized  
Panel Television Antenna**

**Electrical Characteristics:**

Channel:	34		
Frequency:	590 MHz to 596 MHz		
Service:	ATSC		
Azimuth Pattern Number:	Horizontal Polarization Vertical Polarization	ETU-OP4-H ETU-OP4-V	
Elevation Pattern Number:	Horizontal Polarization Vertical Polarization	ETU8U3H ETU8U3V	
Azimuth Directivity:	Horizontal Polarization Vertical Polarization	1.00 1.00	(0.00 dB) (0.00 dB)
Elevation Directivity:	Horizontal Polarization Vertical Polarization	23.00 23.00	(13.62 dBd) (13.62 dBd)
Peak Power Gain:	Horizontal Polarization Vertical Polarization	17.29 5.71	(12.38 dBd) (7.56 dBd)
Gain at Horizontal:	Horizontal Polarization Vertical Polarization	14.16 4.67	(11.51 dBd) (6.70 dBd)
Vertical/Horizontal Ratio:	0.33		
Electrical Beam Tilt:	0.75 Degrees		
Input Power Required:	5.96 kW (7.75 dBk)		
RF Input:	4-1/16-inch flanged male		
Input Power Rating (maximum):	30 kW Average Power, 8VSB		
Antenna VSWR (maximum):	1.10 Over 6 MHz Channel		

## Preliminary Specification for ETU Series Top Mounted UHF Elliptically Polarized Panel Television Antenna

### Mechanical Characteristics:

Mounting Configuration:		Top Mount		
Height of Antenna:		35.0 feet	(10.7 meters)	
Height of Center of Radiation:		17.5 feet	(5.3 meters)	
Overall Height (Includes four 3.5 ft lightning spurs):		38.5 feet	(11.7 meters)	
Deicing:		Fully enclosed unpressurized radome		
Radome Height:		9.8 inches	(250 millimeters)	
Radome Color:		Aviation Orange		
Climbing Device:		Fiberglass step bolts		
Calculated Weight <sup>1</sup> :		No Ice	7,070 lbm	(3206.9 kg)
		0.5inch (13 mm) ice	10,640 lbm	(4826.2 kg)
Windload Data <sup>3</sup> :	EPA	No Ice	194.6 sq.ft.	(18.08 sq.m.)
		0.5inch (13 mm) ice	202.0 sq.ft.	(18.76 sq.m.)
Effective Moment Arm <sup>3</sup> :	EPA	No Ice	19.2 feet	(5.85 meters)
		0.5inch (13 mm) ice	19.4 feet	(5.91 meters)

MOUNTING FLANGE2: Quantity (20), 1.38 inch holes for 1.25 inch bolts, on a 32.00 inch square mounting flange.

**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 translational and three rotational degrees of freedom.**

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. Specified loads include the UHF panel elements, feed harness, support mast, beacon and lightning spurs only.

2 The mounting flange specified is the standard ERI mounting flange used for this antenna configuration. In those instances where an existing top mounted antenna is being replaced the antenna supplied will be designed with a mounting flange to match that of the existing antenna unless electrical and/or mechanical requirements for the new antenna preclude the matching flange. Customer responsible for supplying verified flange requirements for the flange configuration being matched.

3 Loads calculated in accordance with the ANSI/TIA-222-G standard

**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

**WPME (DT) RF Channel: 24**  
**Ironwood Comm Portland LLC**  
**Lewiston, ME**  
**ETU-8U3-ETP4O-24/34**

### Antenna Parameters

#### Azimuth Directivity:

Horizontal: 1.00 (0.00 dB)  
 Vertical: 1.00 (0.00 dB)

#### Elevation Directivity:

Horizontal: 22.04 (13.43 dB)  
 Vertical: 22.04 (13.43 dB)

### Transmission Line

#### Vertical Run:

Type: 4-1/16-inch rigid line  
 Length: 649 feet 197.8 meters  
 Attenuation: 0.173 dB/100 feet 0.568 dB/100 mtrs

#### Horizontal Run:

Type: 4-1/16-inch rigid line  
 Length: 80 feet 24.4 meters  
 Attenuation: 0.173 dB/100 feet 0.568 dB/100 mtrs

#### Effective Radiated Power:

Horizontal: 11.40 kW (10.57 dBk)  
 Vertical: 3.76 kW (5.75 dBk)

#### Power Gain:

Horizontal: 16.57 numeric (12.19 dBd)  
 Vertical: 5.47 numeric (7.38 dBd)

#### Antenna Input Power:

0.69 kW (-1.62 dBk)

#### Transmission Line Losses:

-0.29 kW (1.511 dB)

**Total Losses:** 1.511 dB

**Line Efficiency:** 70.61%

#### Transmitter Power Output:

0.97 kW  
 -(0.11 dBk)

## Broadcast Antenna System Power Analysis

**WPXT-TV**                      **RF Channel: 34**  
**Ironwood Comm Portland LLC**  
**Portland, ME**  
**ETU-8U3-ETP4O-24/34**

### Antenna Parameters

#### Azimuth Directivity:

Horizontal: 1.00 (0.00 dB)  
 Vertical: 1.00 (0.00 dB)

#### Effective Radiated Power:

Horizontal: 103.00 kW (20.13 dBk)  
 Vertical: 33.99 kW (15.31 dBk)

#### Elevation Directivity:

Horizontal: 23.00 (13.62 dB)  
 Vertical: 23.00 (13.62 dB)

#### Power Gain:

Horizontal: 17.29 numeric (12.38 dBd)  
 Vertical: 5.71 numeric (7.56 dBd)

### Transmission Line

#### Vertical Run:

Type: 4-1/16-inch rigid line  
 Length: 649 feet 197.8 meters  
 Attenuation: 0.183 dB/100 feet 0.600 dB/100 mtrs

#### Antenna Input Power:

5.96 kW (7.75 dBk)

#### Horizontal Run:

Type: 4-1/16-inch rigid line  
 Length: 80 feet 24.4 meters  
 Attenuation: 0.183 dB/100 feet 0.600 dB/100 mtrs

#### Transmission Line Losses:

-2.62 kW (1.584 dB)

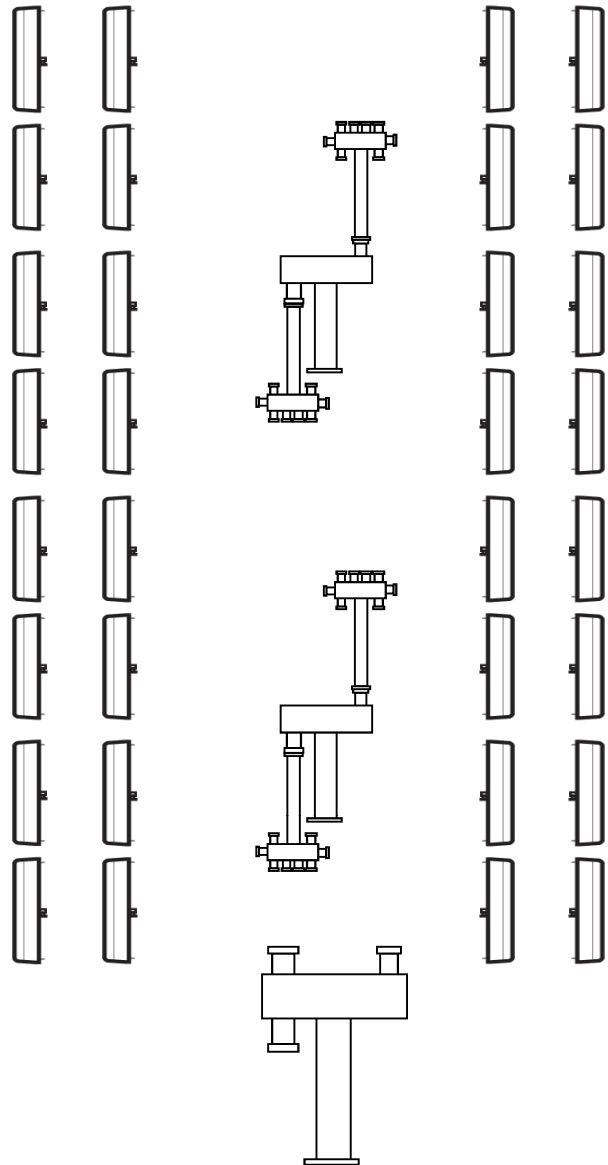
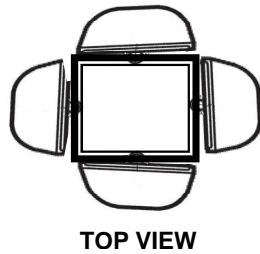
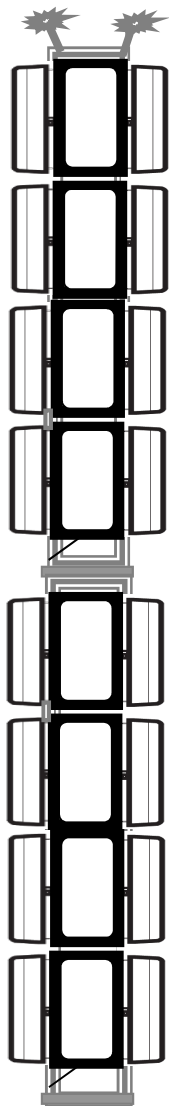
**Total Losses:** 1.584 dB

**Line Efficiency:** 69.44%

#### Transmitter Power Output:

8.58 kW  
 (9.33 dBk)

Typical Mounting Configuration Shown. Actual Configuration May Vary.



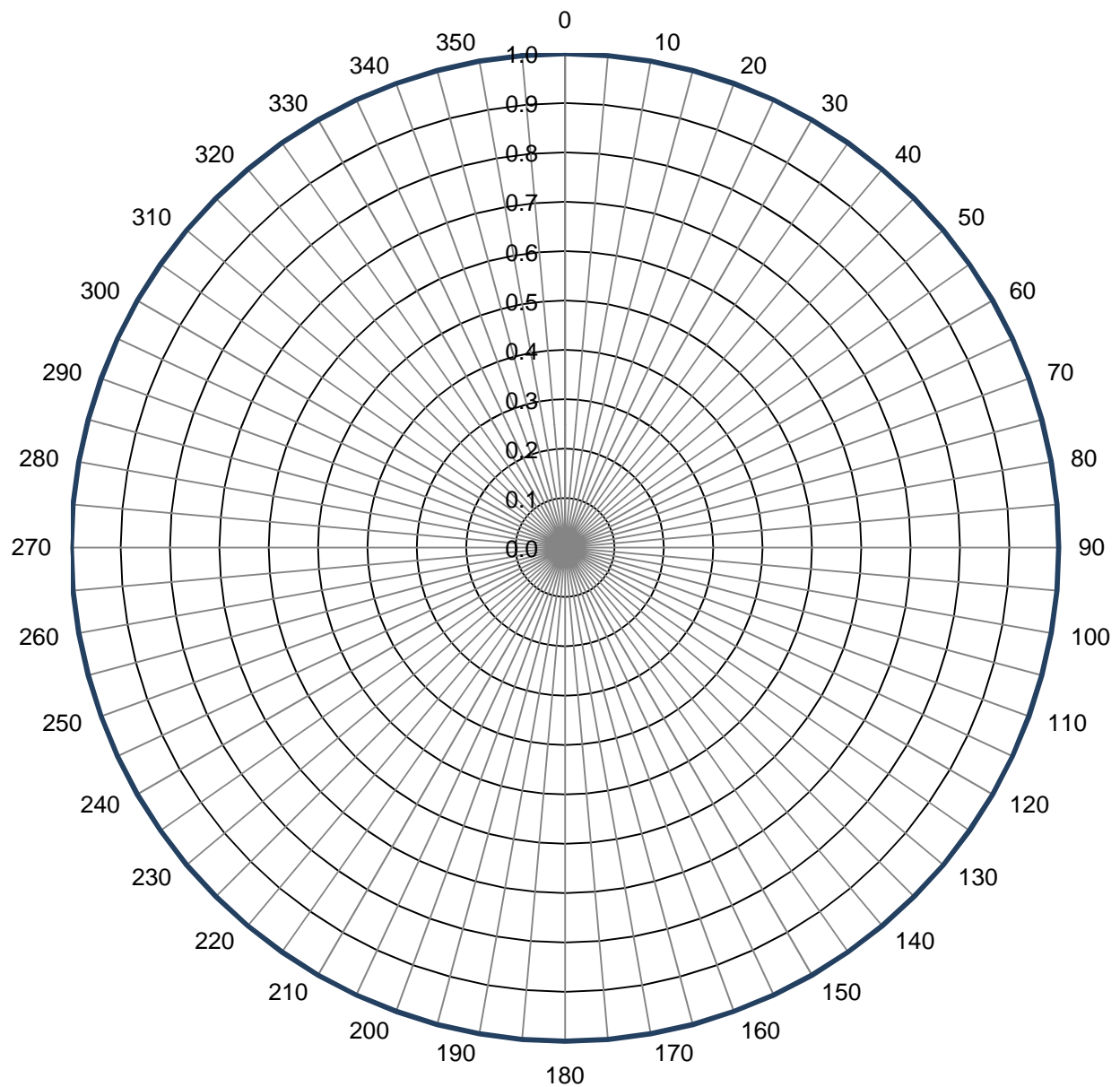
6 1/8-75 Ohm,  
EIA

## Azimuth Pattern

Type:	ETU-OP4-H	Polarization:	Horizontal
Directivity:	1.00 numeric (0.00 dB)	Frequency:	24 (ATSC)
Peak(s) at:		Location:	Lewiston, ME

NOTE: Pattern shape and directivity may vary with channel and mounting configuration.

Relative Field



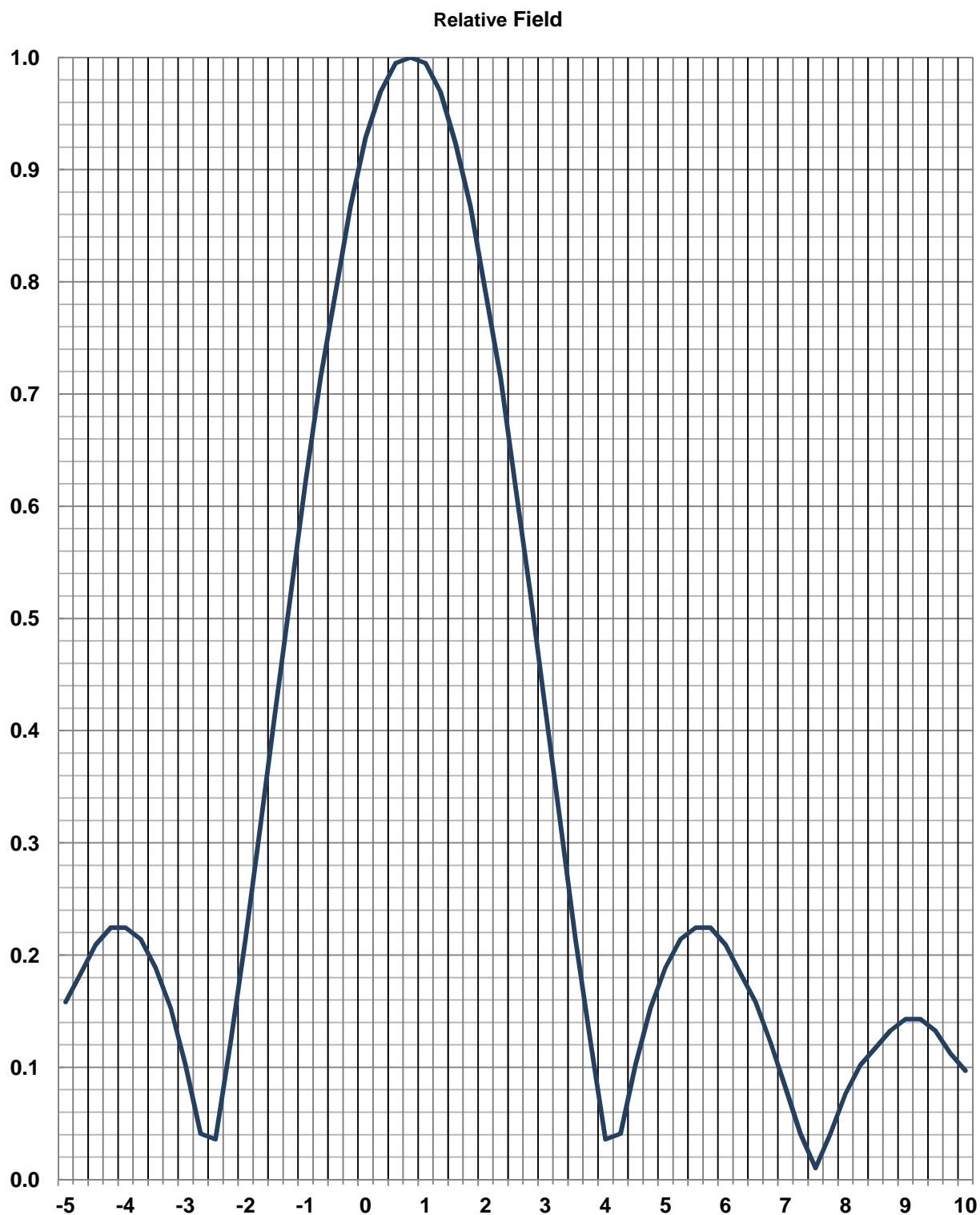


**Tabulated Data for Azimuth Pattern**Type: ETU-OP4-H

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	1.000	0.00	100	1.000	0.00	200	1.000	0.00	300	1.000	0.00
2	1.000	0.00	102	1.000	0.00	202	1.000	0.00	302	1.000	0.00
4	1.000	0.00	104	1.000	0.00	204	1.000	0.00	304	1.000	0.00
6	1.000	0.00	106	1.000	0.00	206	1.000	0.00	306	1.000	0.00
8	1.000	0.00	108	1.000	0.00	208	1.000	0.00	308	1.000	0.00
10	1.000	0.00	110	1.000	0.00	210	1.000	0.00	310	1.000	0.00
12	1.000	0.00	112	1.000	0.00	212	1.000	0.00	312	1.000	0.00
14	1.000	0.00	114	1.000	0.00	214	1.000	0.00	314	1.000	0.00
16	1.000	0.00	116	1.000	0.00	216	1.000	0.00	316	1.000	0.00
18	1.000	0.00	118	1.000	0.00	218	1.000	0.00	318	1.000	0.00
20	1.000	0.00	120	1.000	0.00	220	1.000	0.00	320	1.000	0.00
22	1.000	0.00	122	1.000	0.00	222	1.000	0.00	322	1.000	0.00
24	1.000	0.00	124	1.000	0.00	224	1.000	0.00	324	1.000	0.00
26	1.000	0.00	126	1.000	0.00	226	1.000	0.00	326	1.000	0.00
28	1.000	0.00	128	1.000	0.00	228	1.000	0.00	328	1.000	0.00
30	1.000	0.00	130	1.000	0.00	230	1.000	0.00	330	1.000	0.00
32	1.000	0.00	132	1.000	0.00	232	1.000	0.00	332	1.000	0.00
34	1.000	0.00	134	1.000	0.00	234	1.000	0.00	334	1.000	0.00
36	1.000	0.00	136	1.000	0.00	236	1.000	0.00	336	1.000	0.00
38	1.000	0.00	138	1.000	0.00	238	1.000	0.00	338	1.000	0.00
40	1.000	0.00	140	1.000	0.00	240	1.000	0.00	340	1.000	0.00
42	1.000	0.00	142	1.000	0.00	242	1.000	0.00	342	1.000	0.00
44	1.000	0.00	144	1.000	0.00	244	1.000	0.00	344	1.000	0.00
46	1.000	0.00	146	1.000	0.00	246	1.000	0.00	346	1.000	0.00
48	1.000	0.00	148	1.000	0.00	248	1.000	0.00	348	1.000	0.00
50	1.000	0.00	150	1.000	0.00	250	1.000	0.00	350	1.000	0.00
52	1.000	0.00	152	1.000	0.00	252	1.000	0.00	352	1.000	0.00
54	1.000	0.00	154	1.000	0.00	254	1.000	0.00	354	1.000	0.00
56	1.000	0.00	156	1.000	0.00	256	1.000	0.00	356	1.000	0.00
58	1.000	0.00	158	1.000	0.00	258	1.000	0.00	358	1.000	0.00
60	1.000	0.00	160	1.000	0.00	260	1.000	0.00	360	1.000	0.00
62	1.000	0.00	162	1.000	0.00	262	1.000	0.00			
64	1.000	0.00	164	1.000	0.00	264	1.000	0.00			
66	1.000	0.00	166	1.000	0.00	266	1.000	0.00			
68	1.000	0.00	168	1.000	0.00	268	1.000	0.00			
70	1.000	0.00	170	1.000	0.00	270	1.000	0.00			
72	1.000	0.00	172	1.000	0.00	272	1.000	0.00			
74	1.000	0.00	174	1.000	0.00	274	1.000	0.00			
76	1.000	0.00	176	1.000	0.00	276	1.000	0.00			
78	1.000	0.00	178	1.000	0.00	278	1.000	0.00			
80	1.000	0.00	180	1.000	0.00	280	1.000	0.00			
82	1.000	0.00	182	1.000	0.00	282	1.000	0.00			
84	1.000	0.00	184	1.000	0.00	284	1.000	0.00			
86	1.000	0.00	186	1.000	0.00	286	1.000	0.00			
88	1.000	0.00	188	1.000	0.00	288	1.000	0.00			
90	1.000	0.00	190	1.000	0.00	290	1.000	0.00			
92	1.000	0.00	192	1.000	0.00	292	1.000	0.00			
94	1.000	0.00	194	1.000	0.00	294	1.000	0.00			
96	1.000	0.00	196	1.000	0.00	296	1.000	0.00			
98	1.000	0.00	198	1.000	0.00	298	1.000	0.00			

## Elevation Pattern

Type:	ETU8U3H		Polarization:	Horizontal
Directivity:			Frequency:	24 (ATSC)
Main Lobe:	22.04 numeric	(13.43 dB)	Location:	Lewiston, ME
Horizontal:	19.00 numeric	(12.79 dB)	Beam Tilt:	0.75 degrees



**Tabulated Data for Elevation Pattern**Type: ETU8U3H

-5 to 10 degrees in 0.25 degree increments.

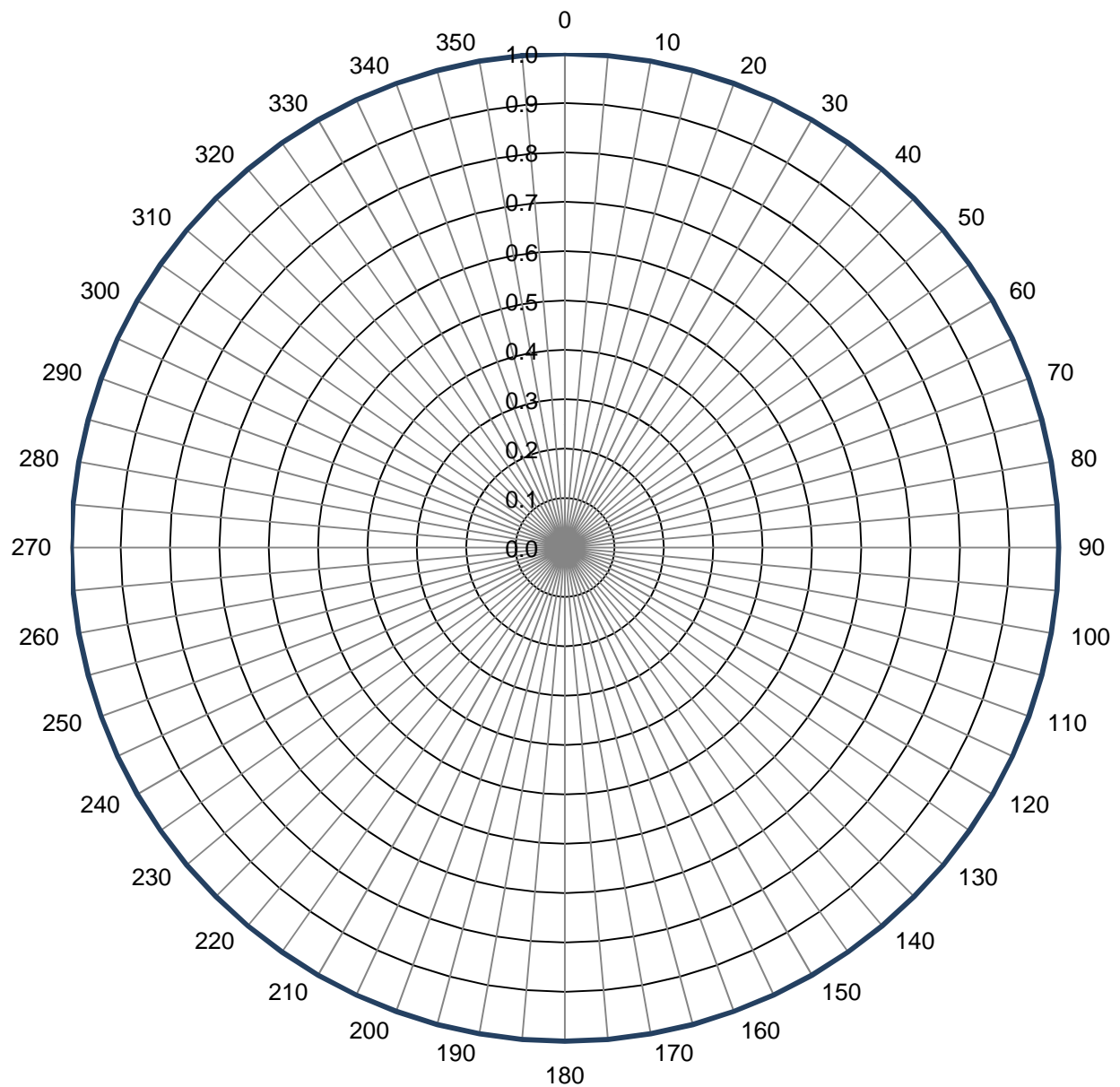
10 to 90 degrees in 0.50 degree increments.

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-5.00	0.158	-16.02	7.25	0.041	-27.78	29.00	0.316	-10.00	53.50	0.046	-26.76	78.00	0.071	-22.92
-4.75	0.184	-14.72	7.50	0.010	-39.82	29.50	0.286	-10.88	54.00	0.041	-27.78	78.50	0.066	-23.57
-4.50	0.209	-13.59	7.75	0.041	-27.78	30.00	0.250	-12.04	54.50	0.031	-30.28	79.00	0.061	-24.26
-4.25	0.224	-12.98	8.00	0.077	-22.32	30.50	0.199	-14.02	55.00	0.020	-33.80	79.50	0.051	-25.85
-4.00	0.224	-12.98	8.25	0.102	-19.82	31.00	0.148	-16.60	55.50	0.010	-39.82	80.00	0.046	-26.76
-3.75	0.214	-13.38	8.50	0.117	-18.61	31.50	0.097	-20.3	56.00	0.000	---	80.50	0.041	-27.78
-3.50	0.189	-14.48	8.75	0.133	-17.55	32.00	0.046	-26.76	56.50	0.015	-36.30	81.00	0.031	-30.28
-3.25	0.153	-16.30	9.00	0.143	-16.90	32.50	0.005	-45.85	57.00	0.031	-30.28	81.50	0.031	-30.28
-3.00	0.102	-19.82	9.25	0.143	-16.90	33.00	0.026	-31.87	57.50	0.041	-27.78	82.00	0.031	-30.28
-2.75	0.041	-27.78	9.50	0.133	-17.55	33.50	0.046	-26.76	58.00	0.051	-25.85	82.50	0.020	-33.80
-2.50	0.036	-28.94	9.75	0.112	-19.00	34.00	0.056	-25.02	58.50	0.051	-25.85	83.00	0.020	-33.80
-2.25	0.122	-18.24	10.00	0.097	-20.27	34.50	0.061	-24.26	59.00	0.061	-24.26	83.50	0.010	-39.82
-2.00	0.214	-13.38	10.50	0.041	-27.78	35.00	0.051	-25.85	59.50	0.061	-24.26	84.00	0.010	-39.82
-1.75	0.316	-10.00	11.00	0.015	-36.3	35.50	0.041	-27.78	60.00	0.051	-25.85	84.50	0.010	-39.82
-1.50	0.418	-7.57	11.50	0.066	-23.57	36.00	0.020	-33.80	60.50	0.051	-25.85	85.00	0.010	-39.82
-1.25	0.520	-5.67	12.00	0.097	-20.27	36.50	0.005	-45.85	61.00	0.041	-27.78	85.50	0.000	---
-1.00	0.622	-4.12	12.50	0.112	-19.00	37.00	0.010	-39.82	61.50	0.026	-31.87	86.00	0.000	---
-0.75	0.714	-2.92	13.00	0.097	-20.27	37.50	0.031	-30.28	62.00	0.010	-39.82	86.50	0.000	---
-0.50	0.791	-2.04	13.50	0.066	-23.57	38.00	0.041	-27.78	62.50	0.005	-45.85	87.00	0.000	---
-0.25	0.867	-1.24	14.00	0.026	-31.87	38.50	0.041	-27.78	63.00	0.020	-33.80	87.50	0.010	-39.82
0.00	0.929	-0.64	14.50	0.015	-36.30	39.00	0.041	-27.78	63.50	0.041	-27.78	88.00	0.010	-39.82
0.25	0.969	-0.27	15.00	0.056	-25.02	39.50	0.036	-28.94	64.00	0.061	-24.26	88.50	0.010	-39.82
0.50	0.995	-0.04	15.50	0.082	-21.8	40.00	0.026	-31.87	64.50	0.077	-22.32	89.00	0.010	-39.82
0.75	1.000	0.00	16.00	0.092	-20.74	40.50	0.010	-39.8	65.00	0.092	-20.74	89.50	0.010	-39.82
1.00	0.995	-0.04	16.50	0.087	-21.24	41.00	0.000	---	65.50	0.107	-19.40	90.00	0.010	-39.82
1.25	0.969	-0.27	17.00	0.061	-24.3	41.50	0.015	-36.30	66.00	0.122	-18.24			
1.50	0.923	-0.69	17.50	0.026	-31.87	42.00	0.031	-30.28	66.50	0.133	-17.55			
1.75	0.867	-1.24	18.00	0.015	-36.30	42.50	0.036	-28.94	67.00	0.143	-16.90			
2.00	0.791	-2.04	18.50	0.056	-25.0	43.00	0.041	-27.78	67.50	0.153	-16.30			
2.25	0.714	-2.92	19.00	0.082	-21.76	43.50	0.041	-27.78	68.00	0.163	-15.74			
2.50	0.617	-4.19	19.50	0.092	-20.74	44.00	0.031	-30.28	68.50	0.173	-15.22			
2.75	0.520	-5.67	20.00	0.092	-20.74	44.50	0.026	-31.87	69.00	0.173	-15.22			
3.00	0.418	-7.57	20.50	0.066	-23.57	45.00	0.010	-39.82	69.50	0.173	-15.22			
3.25	0.316	-10.00	21.00	0.026	-31.87	45.50	0.000	---	70.00	0.173	-15.22			
3.50	0.214	-13.38	21.50	0.015	-36.30	46.00	0.015	-36.30	70.50	0.173	-15.22			
3.75	0.122	-18.24	22.00	0.056	-25.02	46.50	0.026	-31.87	71.00	0.173	-15.22			
4.00	0.036	-28.94	22.50	0.092	-20.74	47.00	0.036	-28.94	71.50	0.163	-15.74			
4.25	0.041	-27.78	23.00	0.112	-19.00	47.50	0.041	-27.78	72.00	0.163	-15.74			
4.50	0.102	-19.82	23.50	0.112	-19.00	48.00	0.041	-27.78	72.50	0.153	-16.30			
4.75	0.153	-16.30	24.00	0.092	-20.74	48.50	0.041	-27.8	73.00	0.153	-16.3			
5.00	0.189	-14.48	24.50	0.051	-25.85	49.00	0.031	-30.28	73.50	0.143	-16.90			
5.25	0.214	-13.38	25.00	0.005	-45.85	49.50	0.020	-33.80	74.00	0.133	-17.55			
5.50	0.224	-12.98	25.50	0.066	-23.57	50.00	0.010	-39.82	74.50	0.128	-17.89			
5.75	0.224	-12.98	26.00	0.128	-17.89	50.50	0.000	---	75.00	0.122	-18.24			
6.00	0.209	-13.59	26.50	0.194	-14.25	51.00	0.015	-36.30	75.50	0.112	-19.00			
6.25	0.184	-14.72	27.00	0.250	-12.04	51.50	0.031	-30.28	76.00	0.102	-19.82			
6.50	0.158	-16.02	27.50	0.291	-10.73	52.00	0.041	-27.78	76.50	0.092	-20.74			
6.75	0.122	-18.24	28.00	0.316	-10.00	52.50	0.041	-27.78	77.00	0.087	-21.24			
7.00	0.082	-21.76	28.50	0.327	-9.72	53.00	0.051	-25.85	77.50	0.082	-21.76			

**Azimuth Pattern**

Type:	ETU-OP4-V	Polarization:	Vertical
Directivity:	1.00 numeric (0.00 dB)	Frequency:	24 (ATSC)
Peak(s) at:		Location:	Lewiston, ME
		NOTE: Pattern shape and directivity may vary with channel and mounting configuration.	

Relative Field

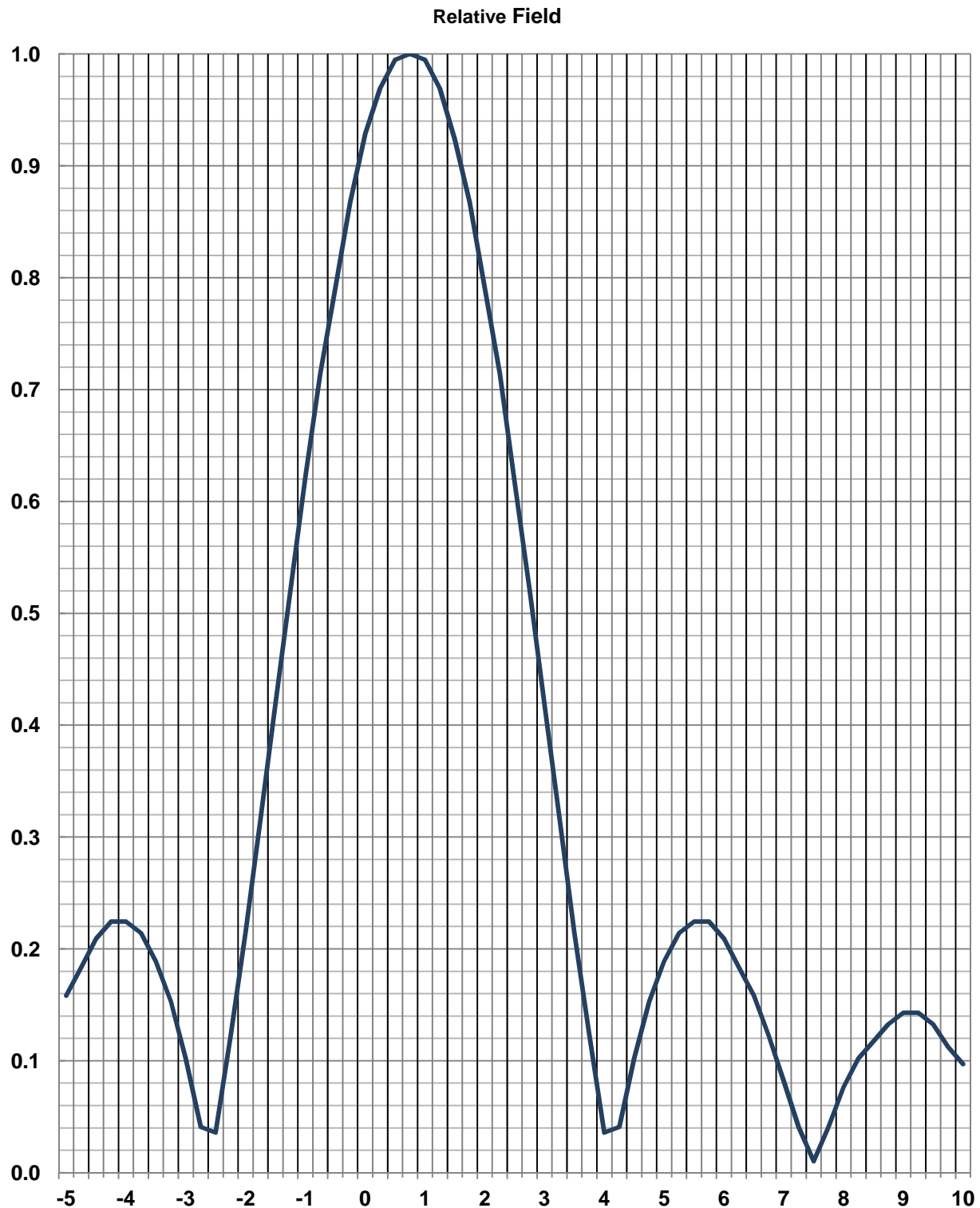


**Tabulated Data for Azimuth Pattern**Type: ETU-OP4-V

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	1.000	0.00	100	1.000	0.00	200	1.000	0.00	300	1.000	0.00
2	1.000	0.00	102	1.000	0.00	202	1.000	0.00	302	1.000	0.00
4	1.000	0.00	104	1.000	0.00	204	1.000	0.00	304	1.000	0.00
6	1.000	0.00	106	1.000	0.00	206	1.000	0.00	306	1.000	0.00
8	1.000	0.00	108	1.000	0.00	208	1.000	0.00	308	1.000	0.00
10	1.000	0.00	110	1.000	0.00	210	1.000	0.00	310	1.000	0.00
12	1.000	0.00	112	1.000	0.00	212	1.000	0.00	312	1.000	0.00
14	1.000	0.00	114	1.000	0.00	214	1.000	0.00	314	1.000	0.00
16	1.000	0.00	116	1.000	0.00	216	1.000	0.00	316	1.000	0.00
18	1.000	0.00	118	1.000	0.00	218	1.000	0.00	318	1.000	0.00
20	1.000	0.00	120	1.000	0.00	220	1.000	0.00	320	1.000	0.00
22	1.000	0.00	122	1.000	0.00	222	1.000	0.00	322	1.000	0.00
24	1.000	0.00	124	1.000	0.00	224	1.000	0.00	324	1.000	0.00
26	1.000	0.00	126	1.000	0.00	226	1.000	0.00	326	1.000	0.00
28	1.000	0.00	128	1.000	0.00	228	1.000	0.00	328	1.000	0.00
30	1.000	0.00	130	1.000	0.00	230	1.000	0.00	330	1.000	0.00
32	1.000	0.00	132	1.000	0.00	232	1.000	0.00	332	1.000	0.00
34	1.000	0.00	134	1.000	0.00	234	1.000	0.00	334	1.000	0.00
36	1.000	0.00	136	1.000	0.00	236	1.000	0.00	336	1.000	0.00
38	1.000	0.00	138	1.000	0.00	238	1.000	0.00	338	1.000	0.00
40	1.000	0.00	140	1.000	0.00	240	1.000	0.00	340	1.000	0.00
42	1.000	0.00	142	1.000	0.00	242	1.000	0.00	342	1.000	0.00
44	1.000	0.00	144	1.000	0.00	244	1.000	0.00	344	1.000	0.00
46	1.000	0.00	146	1.000	0.00	246	1.000	0.00	346	1.000	0.00
48	1.000	0.00	148	1.000	0.00	248	1.000	0.00	348	1.000	0.00
50	1.000	0.00	150	1.000	0.00	250	1.000	0.00	350	1.000	0.00
52	1.000	0.00	152	1.000	0.00	252	1.000	0.00	352	1.000	0.00
54	1.000	0.00	154	1.000	0.00	254	1.000	0.00	354	1.000	0.00
56	1.000	0.00	156	1.000	0.00	256	1.000	0.00	356	1.000	0.00
58	1.000	0.00	158	1.000	0.00	258	1.000	0.00	358	1.000	0.00
60	1.000	0.00	160	1.000	0.00	260	1.000	0.00	360	1.000	0.00
62	1.000	0.00	162	1.000	0.00	262	1.000	0.00			
64	1.000	0.00	164	1.000	0.00	264	1.000	0.00			
66	1.000	0.00	166	1.000	0.00	266	1.000	0.00			
68	1.000	0.00	168	1.000	0.00	268	1.000	0.00			
70	1.000	0.00	170	1.000	0.00	270	1.000	0.00			
72	1.000	0.00	172	1.000	0.00	272	1.000	0.00			
74	1.000	0.00	174	1.000	0.00	274	1.000	0.00			
76	1.000	0.00	176	1.000	0.00	276	1.000	0.00			
78	1.000	0.00	178	1.000	0.00	278	1.000	0.00			
80	1.000	0.00	180	1.000	0.00	280	1.000	0.00			
82	1.000	0.00	182	1.000	0.00	282	1.000	0.00			
84	1.000	0.00	184	1.000	0.00	284	1.000	0.00			
86	1.000	0.00	186	1.000	0.00	286	1.000	0.00			
88	1.000	0.00	188	1.000	0.00	288	1.000	0.00			
90	1.000	0.00	190	1.000	0.00	290	1.000	0.00			
92	1.000	0.00	192	1.000	0.00	292	1.000	0.00			
94	1.000	0.00	194	1.000	0.00	294	1.000	0.00			
96	1.000	0.00	196	1.000	0.00	296	1.000	0.00			
98	1.000	0.00	198	1.000	0.00	298	1.000	0.00			

## Elevation Pattern

Type:	ETU8U3V		Polarization:	Vertical
Directivity:			Frequency:	24 (ATSC)
Main Lobe:	22.04 numeric	(13.43 dB)	Location:	Lewiston, ME
Horizontal:	19.00 numeric	(12.79 dB)	Beam Tilt:	0.75 degrees



**Tabulated Data for Elevation Pattern**Type: ETU8U3V

-5 to 10 degrees in 0.25 degree increments.

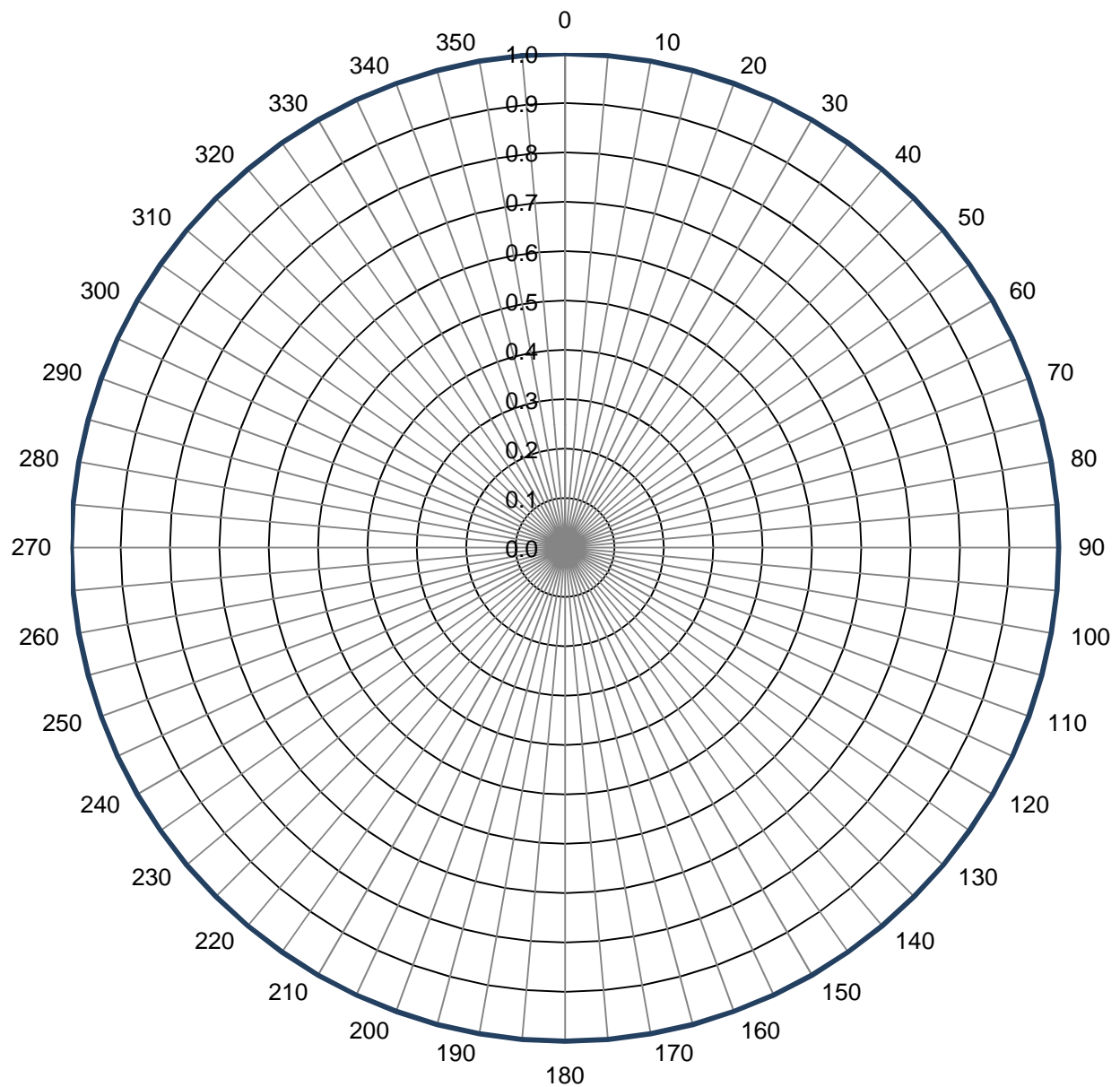
10 to 90 degrees in 0.50 degree increments.

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-5.00	0.158	-16.02	7.25	0.041	-27.78	29.00	0.316	-10.00	53.50	0.046	-26.76	78.00	0.071	-22.92
-4.75	0.184	-14.72	7.50	0.010	-39.82	29.50	0.286	-10.88	54.00	0.041	-27.78	78.50	0.066	-23.57
-4.50	0.209	-13.59	7.75	0.041	-27.78	30.00	0.250	-12.04	54.50	0.031	-30.28	79.00	0.061	-24.26
-4.25	0.224	-12.98	8.00	0.077	-22.32	30.50	0.199	-14.02	55.00	0.020	-33.80	79.50	0.051	-25.85
-4.00	0.224	-12.98	8.25	0.102	-19.82	31.00	0.148	-16.60	55.50	0.010	-39.82	80.00	0.046	-26.76
-3.75	0.214	-13.38	8.50	0.117	-18.61	31.50	0.097	-20.3	56.00	0.000	---	80.50	0.041	-27.78
-3.50	0.189	-14.48	8.75	0.133	-17.55	32.00	0.046	-26.76	56.50	0.015	-36.30	81.00	0.031	-30.28
-3.25	0.153	-16.30	9.00	0.143	-16.90	32.50	0.005	-45.85	57.00	0.031	-30.28	81.50	0.031	-30.28
-3.00	0.102	-19.82	9.25	0.143	-16.90	33.00	0.026	-31.87	57.50	0.041	-27.78	82.00	0.031	-30.28
-2.75	0.041	-27.78	9.50	0.133	-17.55	33.50	0.046	-26.76	58.00	0.051	-25.85	82.50	0.020	-33.80
-2.50	0.036	-28.94	9.75	0.112	-19.00	34.00	0.056	-25.02	58.50	0.051	-25.85	83.00	0.020	-33.80
-2.25	0.122	-18.24	10.00	0.097	-20.27	34.50	0.061	-24.26	59.00	0.061	-24.26	83.50	0.010	-39.82
-2.00	0.214	-13.38	10.50	0.041	-27.78	35.00	0.051	-25.85	59.50	0.061	-24.26	84.00	0.010	-39.82
-1.75	0.316	-10.00	11.00	0.015	-36.3	35.50	0.041	-27.78	60.00	0.051	-25.85	84.50	0.010	-39.82
-1.50	0.418	-7.57	11.50	0.066	-23.57	36.00	0.020	-33.80	60.50	0.051	-25.85	85.00	0.010	-39.82
-1.25	0.520	-5.67	12.00	0.097	-20.27	36.50	0.005	-45.8	61.00	0.041	-27.78	85.50	0.000	---
-1.00	0.622	-4.12	12.50	0.112	-19.00	37.00	0.010	-39.82	61.50	0.026	-31.87	86.00	0.000	---
-0.75	0.714	-2.92	13.00	0.097	-20.27	37.50	0.031	-30.28	62.00	0.010	-39.82	86.50	0.000	---
-0.50	0.791	-2.04	13.50	0.066	-23.57	38.00	0.041	-27.78	62.50	0.005	-45.85	87.00	0.000	---
-0.25	0.867	-1.24	14.00	0.026	-31.87	38.50	0.041	-27.78	63.00	0.020	-33.80	87.50	0.010	-39.82
0.00	0.929	-0.64	14.50	0.015	-36.30	39.00	0.041	-27.78	63.50	0.041	-27.78	88.00	0.010	-39.82
0.25	0.969	-0.27	15.00	0.056	-25.02	39.50	0.036	-28.94	64.00	0.061	-24.26	88.50	0.010	-39.82
0.50	0.995	-0.04	15.50	0.082	-21.8	40.00	0.026	-31.87	64.50	0.077	-22.32	89.00	0.010	-39.82
0.75	1.000	0.00	16.00	0.092	-20.74	40.50	0.010	-39.8	65.00	0.092	-20.74	89.50	0.010	-39.82
1.00	0.995	-0.04	16.50	0.087	-21.24	41.00	0.000	---	65.50	0.107	-19.40	90.00	0.010	-39.82
1.25	0.969	-0.27	17.00	0.061	-24.3	41.50	0.015	-36.30	66.00	0.122	-18.24			
1.50	0.923	-0.69	17.50	0.026	-31.9	42.00	0.031	-30.28	66.50	0.133	-17.55			
1.75	0.867	-1.24	18.00	0.015	-36.30	42.50	0.036	-28.94	67.00	0.143	-16.90			
2.00	0.791	-2.04	18.50	0.056	-25.0	43.00	0.041	-27.78	67.50	0.153	-16.30			
2.25	0.714	-2.92	19.00	0.082	-21.8	43.50	0.041	-27.78	68.00	0.163	-15.74			
2.50	0.617	-4.19	19.50	0.092	-20.74	44.00	0.031	-30.28	68.50	0.173	-15.22			
2.75	0.520	-5.67	20.00	0.092	-20.74	44.50	0.026	-31.87	69.00	0.173	-15.22			
3.00	0.418	-7.57	20.50	0.066	-23.57	45.00	0.010	-39.82	69.50	0.173	-15.22			
3.25	0.316	-10.00	21.00	0.026	-31.87	45.50	0.000	---	70.00	0.173	-15.22			
3.50	0.214	-13.38	21.50	0.015	-36.30	46.00	0.015	-36.30	70.50	0.173	-15.22			
3.75	0.122	-18.24	22.00	0.056	-25.02	46.50	0.026	-31.87	71.00	0.173	-15.22			
4.00	0.036	-28.94	22.50	0.092	-20.74	47.00	0.036	-28.94	71.50	0.163	-15.74			
4.25	0.041	-27.78	23.00	0.112	-19.00	47.50	0.041	-27.78	72.00	0.163	-15.74			
4.50	0.102	-19.82	23.50	0.112	-19.00	48.00	0.041	-27.78	72.50	0.153	-16.30			
4.75	0.153	-16.30	24.00	0.092	-20.74	48.50	0.041	-27.8	73.00	0.153	-16.3			
5.00	0.189	-14.48	24.50	0.051	-25.85	49.00	0.031	-30.28	73.50	0.143	-16.90			
5.25	0.214	-13.38	25.00	0.005	-45.85	49.50	0.020	-33.80	74.00	0.133	-17.55			
5.50	0.224	-12.98	25.50	0.066	-23.57	50.00	0.010	-39.82	74.50	0.128	-17.89			
5.75	0.224	-12.98	26.00	0.128	-17.89	50.50	0.000	---	75.00	0.122	-18.24			
6.00	0.209	-13.59	26.50	0.194	-14.25	51.00	0.015	-36.30	75.50	0.112	-19.00			
6.25	0.184	-14.72	27.00	0.250	-12.04	51.50	0.031	-30.28	76.00	0.102	-19.82			
6.50	0.158	-16.02	27.50	0.291	-10.73	52.00	0.041	-27.78	76.50	0.092	-20.74			
6.75	0.122	-18.24	28.00	0.316	-10.00	52.50	0.041	-27.78	77.00	0.087	-21.24			
7.00	0.082	-21.76	28.50	0.327	-9.72	53.00	0.051	-25.85	77.50	0.082	-21.76			

## Azimuth Pattern

Type:	ETU-OP4-H	Polarization:	Horizontal
Directivity:	1.00 numeric (0.00 dB)	Frequency:	34 (ATSC)
Peak(s) at:		Location:	Portland, ME
		NOTE: Pattern shape and directivity may vary with channel and mounting configuration.	

Relative Field



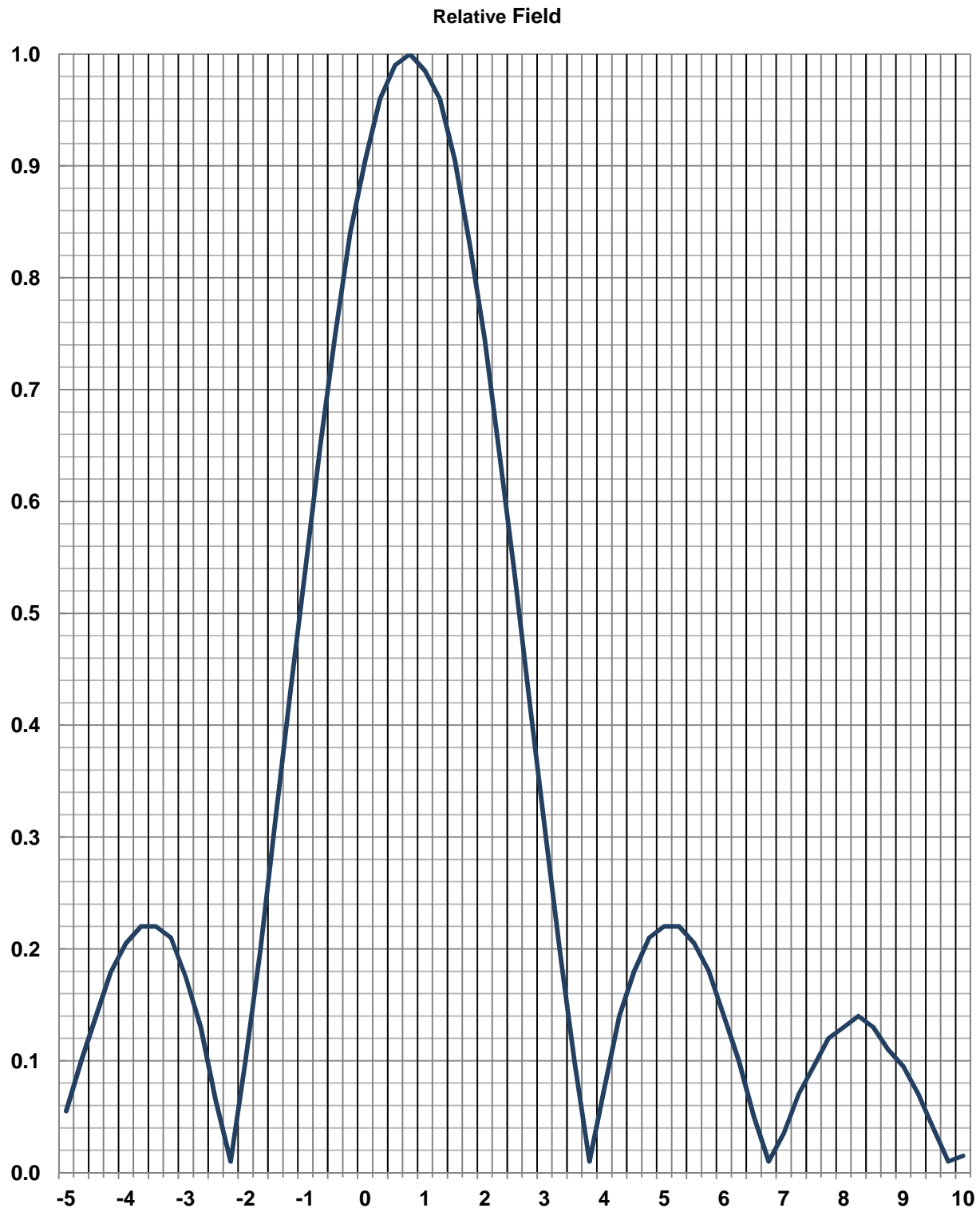


**Tabulated Data for Azimuth Pattern**Type: ETU-OP4-H

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	1.000	0.00	100	1.000	0.00	200	1.000	0.00	300	1.000	0.00
2	1.000	0.00	102	1.000	0.00	202	1.000	0.00	302	1.000	0.00
4	1.000	0.00	104	1.000	0.00	204	1.000	0.00	304	1.000	0.00
6	1.000	0.00	106	1.000	0.00	206	1.000	0.00	306	1.000	0.00
8	1.000	0.00	108	1.000	0.00	208	1.000	0.00	308	1.000	0.00
10	1.000	0.00	110	1.000	0.00	210	1.000	0.00	310	1.000	0.00
12	1.000	0.00	112	1.000	0.00	212	1.000	0.00	312	1.000	0.00
14	1.000	0.00	114	1.000	0.00	214	1.000	0.00	314	1.000	0.00
16	1.000	0.00	116	1.000	0.00	216	1.000	0.00	316	1.000	0.00
18	1.000	0.00	118	1.000	0.00	218	1.000	0.00	318	1.000	0.00
20	1.000	0.00	120	1.000	0.00	220	1.000	0.00	320	1.000	0.00
22	1.000	0.00	122	1.000	0.00	222	1.000	0.00	322	1.000	0.00
24	1.000	0.00	124	1.000	0.00	224	1.000	0.00	324	1.000	0.00
26	1.000	0.00	126	1.000	0.00	226	1.000	0.00	326	1.000	0.00
28	1.000	0.00	128	1.000	0.00	228	1.000	0.00	328	1.000	0.00
30	1.000	0.00	130	1.000	0.00	230	1.000	0.00	330	1.000	0.00
32	1.000	0.00	132	1.000	0.00	232	1.000	0.00	332	1.000	0.00
34	1.000	0.00	134	1.000	0.00	234	1.000	0.00	334	1.000	0.00
36	1.000	0.00	136	1.000	0.00	236	1.000	0.00	336	1.000	0.00
38	1.000	0.00	138	1.000	0.00	238	1.000	0.00	338	1.000	0.00
40	1.000	0.00	140	1.000	0.00	240	1.000	0.00	340	1.000	0.00
42	1.000	0.00	142	1.000	0.00	242	1.000	0.00	342	1.000	0.00
44	1.000	0.00	144	1.000	0.00	244	1.000	0.00	344	1.000	0.00
46	1.000	0.00	146	1.000	0.00	246	1.000	0.00	346	1.000	0.00
48	1.000	0.00	148	1.000	0.00	248	1.000	0.00	348	1.000	0.00
50	1.000	0.00	150	1.000	0.00	250	1.000	0.00	350	1.000	0.00
52	1.000	0.00	152	1.000	0.00	252	1.000	0.00	352	1.000	0.00
54	1.000	0.00	154	1.000	0.00	254	1.000	0.00	354	1.000	0.00
56	1.000	0.00	156	1.000	0.00	256	1.000	0.00	356	1.000	0.00
58	1.000	0.00	158	1.000	0.00	258	1.000	0.00	358	1.000	0.00
60	1.000	0.00	160	1.000	0.00	260	1.000	0.00	360	1.000	0.00
62	1.000	0.00	162	1.000	0.00	262	1.000	0.00			
64	1.000	0.00	164	1.000	0.00	264	1.000	0.00			
66	1.000	0.00	166	1.000	0.00	266	1.000	0.00			
68	1.000	0.00	168	1.000	0.00	268	1.000	0.00			
70	1.000	0.00	170	1.000	0.00	270	1.000	0.00			
72	1.000	0.00	172	1.000	0.00	272	1.000	0.00			
74	1.000	0.00	174	1.000	0.00	274	1.000	0.00			
76	1.000	0.00	176	1.000	0.00	276	1.000	0.00			
78	1.000	0.00	178	1.000	0.00	278	1.000	0.00			
80	1.000	0.00	180	1.000	0.00	280	1.000	0.00			
82	1.000	0.00	182	1.000	0.00	282	1.000	0.00			
84	1.000	0.00	184	1.000	0.00	284	1.000	0.00			
86	1.000	0.00	186	1.000	0.00	286	1.000	0.00			
88	1.000	0.00	188	1.000	0.00	288	1.000	0.00			
90	1.000	0.00	190	1.000	0.00	290	1.000	0.00			
92	1.000	0.00	192	1.000	0.00	292	1.000	0.00			
94	1.000	0.00	194	1.000	0.00	294	1.000	0.00			
96	1.000	0.00	196	1.000	0.00	296	1.000	0.00			
98	1.000	0.00	198	1.000	0.00	298	1.000	0.00			

## Elevation Pattern

Type:	ETU8U3H		Polarization:	Horizontal
Directivity:			Frequency:	34 (ATSC)
Main Lobe:	23.00 numeric	(13.62 dB)	Location:	Portland, ME
Horizontal:	18.84 numeric	(12.75 dB)	Beam Tilt:	0.75 degrees



**Tabulated Data for Elevation Pattern**Type: ETU8U3H

-5 to 10 degrees in 0.25 degree increments.

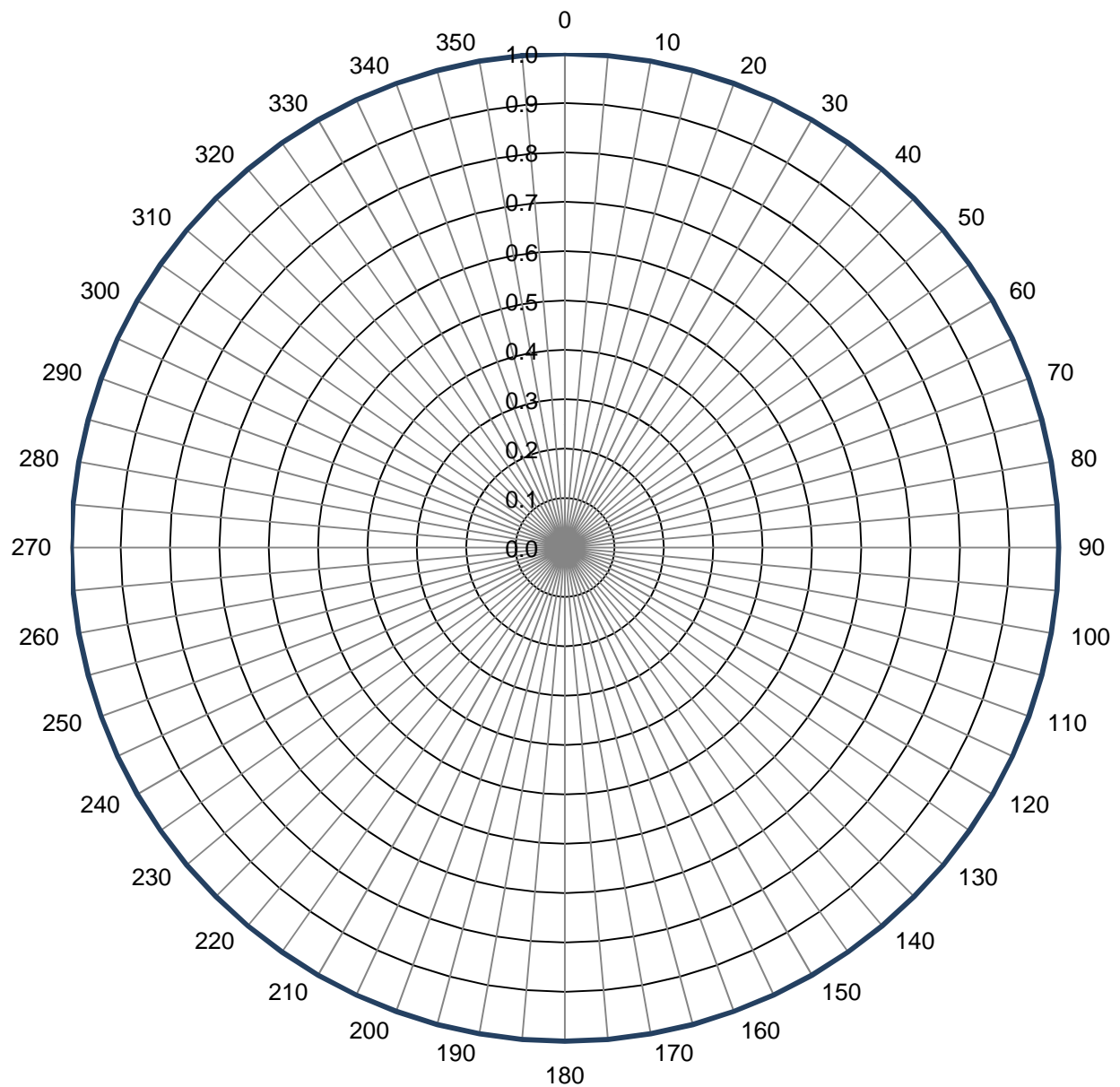
10 to 90 degrees in 0.50 degree increments.

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-5.00	0.055	-25.19	7.25	0.070	-23.10	29.00	0.005	-46.02	53.50	0.025	-32.04	78.00	0.020	-33.98
-4.75	0.100	-20.00	7.50	0.095	-20.45	29.50	0.035	-29.12	54.00	0.055	-25.19	78.50	0.020	-33.98
-4.50	0.140	-17.08	7.75	0.120	-18.42	30.00	0.060	-24.44	54.50	0.085	-21.41	79.00	0.020	-33.98
-4.25	0.180	-14.89	8.00	0.130	-17.72	30.50	0.070	-23.10	55.00	0.115	-18.79	79.50	0.020	-33.98
-4.00	0.205	-13.76	8.25	0.140	-17.1	31.00	0.070	-23.10	55.50	0.140	-17.08	80.00	0.020	-33.98
-3.75	0.220	-13.15	8.50	0.130	-17.72	31.50	0.050	-26.0	56.00	0.160	-15.92	80.50	0.020	-33.98
-3.50	0.220	-13.15	8.75	0.110	-19.17	32.00	0.025	-32.04	56.50	0.180	-14.89	81.00	0.020	-33.98
-3.25	0.210	-13.56	9.00	0.095	-20.45	32.50	0.000	---	57.00	0.190	-14.42	81.50	0.020	-33.98
-3.00	0.175	-15.14	9.25	0.070	-23.10	33.00	0.020	-33.98	57.50	0.200	-13.98	82.00	0.020	-33.98
-2.75	0.130	-17.72	9.50	0.040	-27.96	33.50	0.040	-27.96	58.00	0.200	-13.98	82.50	0.010	-40.00
-2.50	0.065	-23.74	9.75	0.010	-40.00	34.00	0.050	-26.02	58.50	0.195	-14.20	83.00	0.010	-40.00
-2.25	0.010	-40.00	10.00	0.015	-36.48	34.50	0.050	-26.02	59.00	0.190	-14.42	83.50	0.010	-40.00
-2.00	0.100	-20.00	10.50	0.065	-23.74	35.00	0.040	-27.96	59.50	0.175	-15.14	84.00	0.010	-40.00
-1.75	0.200	-13.98	11.00	0.090	-20.9	35.50	0.025	-32.04	60.00	0.160	-15.92	84.50	0.010	-40.00
-1.50	0.315	-10.03	11.50	0.100	-20.00	36.00	0.005	-46.0	60.50	0.140	-17.08	85.00	0.010	-40.00
-1.25	0.430	-7.33	12.00	0.075	-22.50	36.50	0.010	-40.00	61.00	0.120	-18.42	85.50	0.010	-40.00
-1.00	0.540	-5.35	12.50	0.035	-29.12	37.00	0.030	-30.46	61.50	0.100	-20.00	86.00	0.010	-40.00
-0.75	0.650	-3.74	13.00	0.005	-46.02	37.50	0.040	-27.96	62.00	0.080	-21.94	86.50	0.005	-46.02
-0.50	0.750	-2.50	13.50	0.050	-26.02	38.00	0.040	-27.96	62.50	0.060	-24.44	87.00	0.000	---
-0.25	0.840	-1.51	14.00	0.075	-22.50	38.50	0.040	-27.96	63.00	0.040	-27.96	87.50	0.000	---
0.00	0.905	-0.87	14.50	0.085	-21.41	39.00	0.030	-30.46	63.50	0.025	-32.04	88.00	0.000	---
0.25	0.960	-0.35	15.00	0.070	-23.10	39.50	0.015	-36.48	64.00	0.010	-40.00	88.50	0.000	---
0.50	0.990	-0.09	15.50	0.045	-26.9	40.00	0.000	---	64.50	0.000	---	89.00	0.000	---
0.75	1.000	0.00	16.00	0.005	-46.02	40.50	0.020	-34.0	65.00	0.010	-40.00	89.50	0.000	---
1.00	0.985	-0.13	16.50	0.035	-29.12	41.00	0.030	-30.46	65.50	0.020	-33.98	90.00	0.000	---
1.25	0.960	-0.35	17.00	0.065	-23.7	41.50	0.040	-27.96	66.00	0.030	-30.46			
1.50	0.905	-0.87	17.50	0.080	-21.94	42.00	0.040	-27.96	66.50	0.030	-30.46			
1.75	0.830	-1.62	18.00	0.075	-22.50	42.50	0.040	-27.96	67.00	0.040	-27.96			
2.00	0.745	-2.56	18.50	0.050	-26.0	43.00	0.030	-30.46	67.50	0.040	-27.96			
2.25	0.640	-3.88	19.00	0.015	-36.48	43.50	0.015	-36.48	68.00	0.040	-27.96			
2.50	0.535	-5.43	19.50	0.025	-32.04	44.00	0.000	---	68.50	0.030	-30.46			
2.75	0.420	-7.54	20.00	0.065	-23.74	44.50	0.015	-36.48	69.00	0.030	-30.46			
3.00	0.310	-10.17	20.50	0.090	-20.92	45.00	0.030	-30.46	69.50	0.030	-30.46			
3.25	0.200	-13.98	21.00	0.090	-20.92	45.50	0.040	-27.96	70.00	0.020	-33.98			
3.50	0.100	-20.00	21.50	0.080	-21.94	46.00	0.050	-26.02	70.50	0.020	-33.98			
3.75	0.010	-40.00	22.00	0.045	-26.94	46.50	0.045	-26.94	71.00	0.010	-40.00			
4.00	0.075	-22.50	22.50	0.015	-36.48	47.00	0.040	-27.96	71.50	0.010	-40.00			
4.25	0.140	-17.08	23.00	0.080	-21.94	47.50	0.025	-32.04	72.00	0.000	---			
4.50	0.180	-14.89	23.50	0.155	-16.19	48.00	0.010	-40.00	72.50	0.000	---			
4.75	0.210	-13.56	24.00	0.225	-12.96	48.50	0.010	-40.0	73.00	0.010	-40.0			
5.00	0.220	-13.15	24.50	0.285	-10.90	49.00	0.025	-32.04	73.50	0.010	-40.00			
5.25	0.220	-13.15	25.00	0.325	-9.76	49.50	0.040	-27.96	74.00	0.010	-40.00			
5.50	0.205	-13.76	25.50	0.340	-9.37	50.00	0.050	-26.02	74.50	0.020	-33.98			
5.75	0.180	-14.89	26.00	0.330	-9.63	50.50	0.060	-24.44	75.00	0.020	-33.98			
6.00	0.140	-17.08	26.50	0.300	-10.46	51.00	0.060	-24.44	75.50	0.020	-33.98			
6.25	0.100	-20.00	27.00	0.250	-12.04	51.50	0.050	-26.02	76.00	0.020	-33.98			
6.50	0.050	-26.02	27.50	0.190	-14.42	52.00	0.040	-27.96	76.50	0.020	-33.98			
6.75	0.010	-40.00	28.00	0.125	-18.06	52.50	0.020	-33.98	77.00	0.020	-33.98			
7.00	0.035	-29.12	28.50	0.060	-24.44	53.00	0.000	---	77.50	0.025	-32.04			

**Azimuth Pattern**

Type:	ETU-OP4-V	Polarization:	Vertical
Directivity:	1.00 numeric (0.00 dB)	Frequency:	34 (ATSC)
Peak(s) at:		Location:	Portland, ME
		NOTE: Pattern shape and directivity may vary with channel and mounting configuration.	

Relative Field

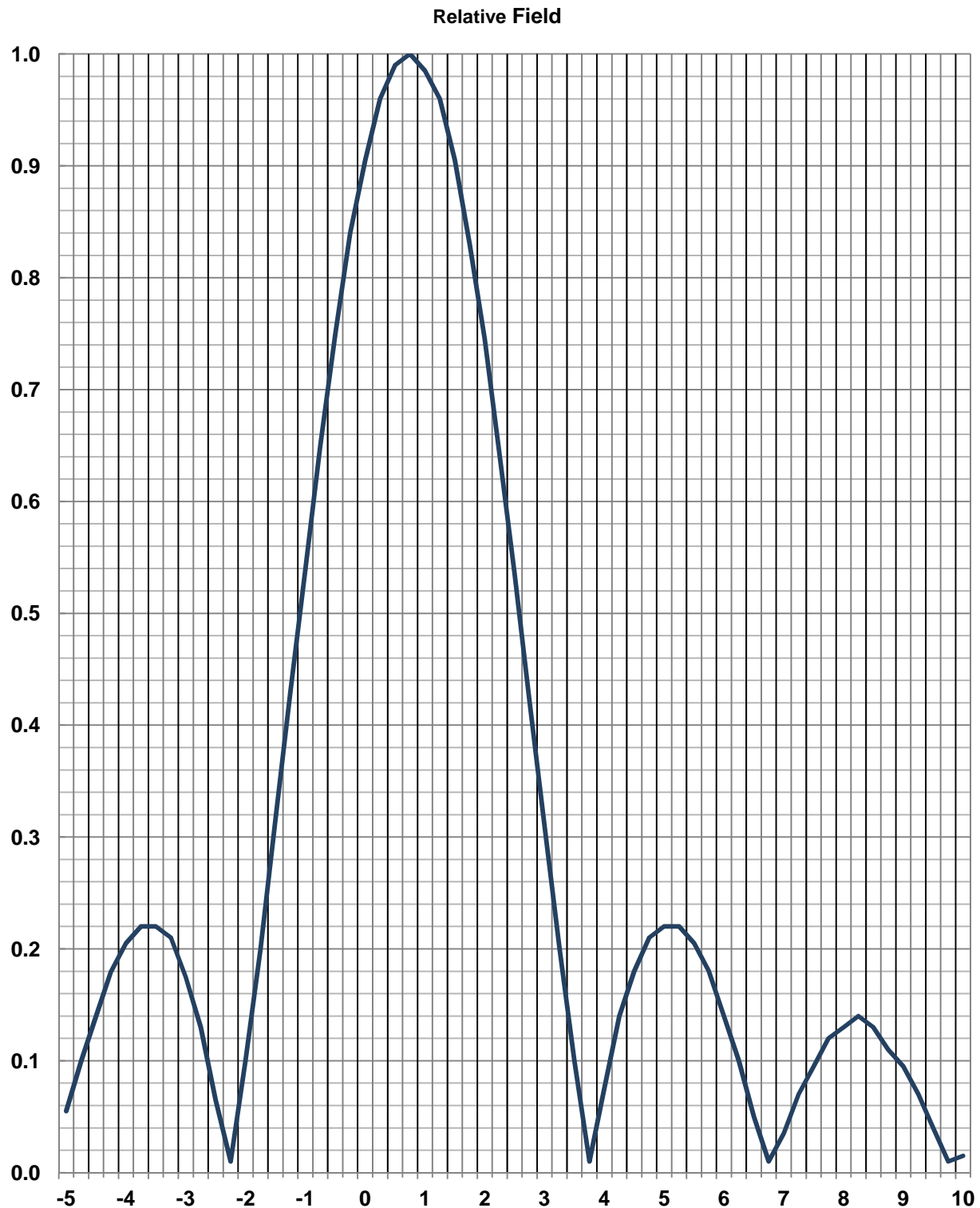


**Tabulated Data for Azimuth Pattern**Type: ETU-OP4-V

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	1.000	0.00	100	1.000	0.00	200	1.000	0.00	300	1.000	0.00
2	1.000	0.00	102	1.000	0.00	202	1.000	0.00	302	1.000	0.00
4	1.000	0.00	104	1.000	0.00	204	1.000	0.00	304	1.000	0.00
6	1.000	0.00	106	1.000	0.00	206	1.000	0.00	306	1.000	0.00
8	1.000	0.00	108	1.000	0.00	208	1.000	0.00	308	1.000	0.00
10	1.000	0.00	110	1.000	0.00	210	1.000	0.00	310	1.000	0.00
12	1.000	0.00	112	1.000	0.00	212	1.000	0.00	312	1.000	0.00
14	1.000	0.00	114	1.000	0.00	214	1.000	0.00	314	1.000	0.00
16	1.000	0.00	116	1.000	0.00	216	1.000	0.00	316	1.000	0.00
18	1.000	0.00	118	1.000	0.00	218	1.000	0.00	318	1.000	0.00
20	1.000	0.00	120	1.000	0.00	220	1.000	0.00	320	1.000	0.00
22	1.000	0.00	122	1.000	0.00	222	1.000	0.00	322	1.000	0.00
24	1.000	0.00	124	1.000	0.00	224	1.000	0.00	324	1.000	0.00
26	1.000	0.00	126	1.000	0.00	226	1.000	0.00	326	1.000	0.00
28	1.000	0.00	128	1.000	0.00	228	1.000	0.00	328	1.000	0.00
30	1.000	0.00	130	1.000	0.00	230	1.000	0.00	330	1.000	0.00
32	1.000	0.00	132	1.000	0.00	232	1.000	0.00	332	1.000	0.00
34	1.000	0.00	134	1.000	0.00	234	1.000	0.00	334	1.000	0.00
36	1.000	0.00	136	1.000	0.00	236	1.000	0.00	336	1.000	0.00
38	1.000	0.00	138	1.000	0.00	238	1.000	0.00	338	1.000	0.00
40	1.000	0.00	140	1.000	0.00	240	1.000	0.00	340	1.000	0.00
42	1.000	0.00	142	1.000	0.00	242	1.000	0.00	342	1.000	0.00
44	1.000	0.00	144	1.000	0.00	244	1.000	0.00	344	1.000	0.00
46	1.000	0.00	146	1.000	0.00	246	1.000	0.00	346	1.000	0.00
48	1.000	0.00	148	1.000	0.00	248	1.000	0.00	348	1.000	0.00
50	1.000	0.00	150	1.000	0.00	250	1.000	0.00	350	1.000	0.00
52	1.000	0.00	152	1.000	0.00	252	1.000	0.00	352	1.000	0.00
54	1.000	0.00	154	1.000	0.00	254	1.000	0.00	354	1.000	0.00
56	1.000	0.00	156	1.000	0.00	256	1.000	0.00	356	1.000	0.00
58	1.000	0.00	158	1.000	0.00	258	1.000	0.00	358	1.000	0.00
60	1.000	0.00	160	1.000	0.00	260	1.000	0.00	360	1.000	0.00
62	1.000	0.00	162	1.000	0.00	262	1.000	0.00			
64	1.000	0.00	164	1.000	0.00	264	1.000	0.00			
66	1.000	0.00	166	1.000	0.00	266	1.000	0.00			
68	1.000	0.00	168	1.000	0.00	268	1.000	0.00			
70	1.000	0.00	170	1.000	0.00	270	1.000	0.00			
72	1.000	0.00	172	1.000	0.00	272	1.000	0.00			
74	1.000	0.00	174	1.000	0.00	274	1.000	0.00			
76	1.000	0.00	176	1.000	0.00	276	1.000	0.00			
78	1.000	0.00	178	1.000	0.00	278	1.000	0.00			
80	1.000	0.00	180	1.000	0.00	280	1.000	0.00			
82	1.000	0.00	182	1.000	0.00	282	1.000	0.00			
84	1.000	0.00	184	1.000	0.00	284	1.000	0.00			
86	1.000	0.00	186	1.000	0.00	286	1.000	0.00			
88	1.000	0.00	188	1.000	0.00	288	1.000	0.00			
90	1.000	0.00	190	1.000	0.00	290	1.000	0.00			
92	1.000	0.00	192	1.000	0.00	292	1.000	0.00			
94	1.000	0.00	194	1.000	0.00	294	1.000	0.00			
96	1.000	0.00	196	1.000	0.00	296	1.000	0.00			
98	1.000	0.00	198	1.000	0.00	298	1.000	0.00			

### Elevation Pattern

Type:	ETU8U3V		Polarization:	Vertical
Directivity:			Frequency:	34 (ATSC)
Main Lobe:	23.00 numeric	(13.62 dB)	Location:	Portland, ME
Horizontal:	18.84 numeric	(12.75 dB)	Beam Tilt:	0.75 degrees



**Tabulated Data for Elevation Pattern**Type: ETU8U3V

-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
-5.00	0.055	-25.19	7.25	0.070	-23.10	29.00	0.005	-46.02	53.50	0.025	-32.04	78.00	0.020	-33.98
-4.75	0.100	-20.00	7.50	0.095	-20.45	29.50	0.035	-29.12	54.00	0.055	-25.19	78.50	0.020	-33.98
-4.50	0.140	-17.08	7.75	0.120	-18.42	30.00	0.060	-24.44	54.50	0.085	-21.41	79.00	0.020	-33.98
-4.25	0.180	-14.89	8.00	0.130	-17.72	30.50	0.070	-23.10	55.00	0.115	-18.79	79.50	0.020	-33.98
-4.00	0.205	-13.76	8.25	0.140	-17.1	31.00	0.070	-23.10	55.50	0.140	-17.08	80.00	0.020	-33.98
-3.75	0.220	-13.15	8.50	0.130	-17.72	31.50	0.050	-26.0	56.00	0.160	-15.92	80.50	0.020	-33.98
-3.50	0.220	-13.15	8.75	0.110	-19.17	32.00	0.025	-32.04	56.50	0.180	-14.89	81.00	0.020	-33.98
-3.25	0.210	-13.56	9.00	0.095	-20.45	32.50	0.000	---	57.00	0.190	-14.42	81.50	0.020	-33.98
-3.00	0.175	-15.14	9.25	0.070	-23.10	33.00	0.020	-33.98	57.50	0.200	-13.98	82.00	0.020	-33.98
-2.75	0.130	-17.72	9.50	0.040	-27.96	33.50	0.040	-27.96	58.00	0.200	-13.98	82.50	0.010	-40.00
-2.50	0.065	-23.74	9.75	0.010	-40.00	34.00	0.050	-26.02	58.50	0.195	-14.20	83.00	0.010	-40.00
-2.25	0.010	-40.00	10.00	0.015	-36.48	34.50	0.050	-26.02	59.00	0.190	-14.42	83.50	0.010	-40.00
-2.00	0.100	-20.00	10.50	0.065	-23.74	35.00	0.040	-27.96	59.50	0.175	-15.14	84.00	0.010	-40.00
-1.75	0.200	-13.98	11.00	0.090	-20.9	35.50	0.025	-32.04	60.00	0.160	-15.92	84.50	0.010	-40.00
-1.50	0.315	-10.03	11.50	0.100	-20.00	36.00	0.005	-46.0	60.50	0.140	-17.08	85.00	0.010	-40.00
-1.25	0.430	-7.33	12.00	0.075	-22.50	36.50	0.010	-40.00	61.00	0.120	-18.42	85.50	0.010	-40.00
-1.00	0.540	-5.35	12.50	0.035	-29.12	37.00	0.030	-30.46	61.50	0.100	-20.00	86.00	0.010	-40.00
-0.75	0.650	-3.74	13.00	0.005	-46.02	37.50	0.040	-27.96	62.00	0.080	-21.94	86.50	0.005	-46.02
-0.50	0.750	-2.50	13.50	0.050	-26.02	38.00	0.040	-27.96	62.50	0.060	-24.44	87.00	0.000	---
-0.25	0.840	-1.51	14.00	0.075	-22.50	38.50	0.040	-27.96	63.00	0.040	-27.96	87.50	0.000	---
0.00	0.905	-0.87	14.50	0.085	-21.41	39.00	0.030	-30.46	63.50	0.025	-32.04	88.00	0.000	---
0.25	0.960	-0.35	15.00	0.070	-23.10	39.50	0.015	-36.48	64.00	0.010	-40.00	88.50	0.000	---
0.50	0.990	-0.09	15.50	0.045	-26.9	40.00	0.000	---	64.50	0.000	---	89.00	0.000	---
0.75	1.000	0.00	16.00	0.005	-46.02	40.50	0.020	-34.0	65.00	0.010	-40.00	89.50	0.000	---
1.00	0.985	-0.13	16.50	0.035	-29.12	41.00	0.030	-30.46	65.50	0.020	-33.98	90.00	0.000	---
1.25	0.960	-0.35	17.00	0.065	-23.7	41.50	0.040	-27.96	66.00	0.030	-30.46			
1.50	0.905	-0.87	17.50	0.080	-21.9	42.00	0.040	-27.96	66.50	0.030	-30.46			
1.75	0.830	-1.62	18.00	0.075	-22.50	42.50	0.040	-27.96	67.00	0.040	-27.96			
2.00	0.745	-2.56	18.50	0.050	-26.0	43.00	0.030	-30.46	67.50	0.040	-27.96			
2.25	0.640	-3.88	19.00	0.015	-36.48	43.50	0.015	-36.48	68.00	0.040	-27.96			
2.50	0.535	-5.43	19.50	0.025	-32.04	44.00	0.000	---	68.50	0.030	-30.46			
2.75	0.420	-7.54	20.00	0.065	-23.74	44.50	0.015	-36.48	69.00	0.030	-30.46			
3.00	0.310	-10.17	20.50	0.090	-20.92	45.00	0.030	-30.46	69.50	0.030	-30.46			
3.25	0.200	-13.98	21.00	0.090	-20.92	45.50	0.040	-27.96	70.00	0.020	-33.98			
3.50	0.100	-20.00	21.50	0.080	-21.94	46.00	0.050	-26.02	70.50	0.020	-33.98			
3.75	0.010	-40.00	22.00	0.045	-26.94	46.50	0.045	-26.94	71.00	0.010	-40.00			
4.00	0.075	-22.50	22.50	0.015	-36.48	47.00	0.040	-27.96	71.50	0.010	-40.00			
4.25	0.140	-17.08	23.00	0.080	-21.94	47.50	0.025	-32.04	72.00	0.000	---			
4.50	0.180	-14.89	23.50	0.155	-16.19	48.00	0.010	-40.00	72.50	0.000	---			
4.75	0.210	-13.56	24.00	0.225	-12.96	48.50	0.010	-40.0	73.00	0.010	-40.0			
5.00	0.220	-13.15	24.50	0.285	-10.90	49.00	0.025	-32.04	73.50	0.010	-40.00			
5.25	0.220	-13.15	25.00	0.325	-9.76	49.50	0.040	-27.96	74.00	0.010	-40.00			
5.50	0.205	-13.76	25.50	0.340	-9.37	50.00	0.050	-26.02	74.50	0.020	-33.98			
5.75	0.180	-14.89	26.00	0.330	-9.63	50.50	0.060	-24.44	75.00	0.020	-33.98			
6.00	0.140	-17.08	26.50	0.300	-10.46	51.00	0.060	-24.44	75.50	0.020	-33.98			
6.25	0.100	-20.00	27.00	0.250	-12.04	51.50	0.050	-26.02	76.00	0.020	-33.98			
6.50	0.050	-26.02	27.50	0.190	-14.42	52.00	0.040	-27.96	76.50	0.020	-33.98			
6.75	0.010	-40.00	28.00	0.125	-18.06	52.50	0.020	-33.98	77.00	0.020	-33.98			
7.00	0.035	-29.12	28.50	0.060	-24.44	53.00	0.000	---	77.50	0.025	-32.04			