



# **Preliminary Specification for AL PLUS™ Series Side Mounted UHF Elliptically Polarized Coaxial Slotted Array Television Antenna**

**W29EL, RF Channel 29  
W29EL, Indianapolis, IN  
March 28, 2022**

**Antenna Model:  
AL8O-29-PME-SP**

**Specification Number  
W29EL-032822-002**

**Preliminary Specification for  
AL PLUS™ Series Side Mounted  
UHF Elliptically Polarized  
Coaxial Slotted Array Television Antenna**

**Electrical Characteristics:**

<b>Channel:</b>	29		
<b>Frequency:</b>	560 MHz to 566 MHz		
<b>Service:</b>	ATSC		
<b>Azimuth Pattern Number:</b>	Horizontal Polarization	ALPL-O	
	Vertical Polarization	ALPL-O	
<b>Elevation Pattern Number:</b>	Horizontal Polarization	AL8PL7	
	Vertical Polarization	AL8PL7	
<b>Azimuth Directivity:</b>	Horizontal Polarization	1.00	(0.00 dB)
	Vertical Polarization	2.36	(3.73 dB)
<b>Elevation Directivity:</b>	Horizontal Polarization	8.50	(9.29 dBd)
	Vertical Polarization	8.50	(9.29 dBd)
<b>Peak Power Gain:</b>	Horizontal Polarization	7.40	(8.69 dBd)
	Vertical Polarization	2.59	(4.13 dBd)
<b>Gain at Horizontal:</b>	Horizontal Polarization	6.16	(7.89 dBd)
	Vertical Polarization	2.15	(3.33 dBd)
<b>ERP Vertical/Horizontal Ratio:</b>	0.350		
<b>Power Ratio:</b>	0.148		
<b>Electrical Beam Tilt:</b>	1.00 Degrees		
<b>Input Power Required:</b>	2.03 kW	(3.07 dBk)	
<b>RF Input:</b>	3-1/8-inch EIA, 50 Ω, flanged male		
<b>Input Power Rating (maximum):</b>	10 kW Average Power, 8VSB		
<b>Antenna VSWR (maximum):</b>	1.10 Over 6 MHz Channel		



**Preliminary Specification for  
AL PLUS™ Series Side Mounted  
UHF Elliptically Polarized  
Coaxial Slotted Array Television Antenna**

**Antenna Mechanical Characteristics:**

Mounting Configuration:	Side Mounted		
OA Height of Antenna (A):	18.9 feet	(5.8 meters)	
Height of Antenna, less RF Input section (B:)	15.6 feet	(5.8 meters)	
Height of Center of Radiation (above RF input, C):	11.1 feet	(3.4 meters)	
Deicing:	Unpressurized radome slot covers		
Radome Height:	3.50 inches	(88.9 millimeters)	
Radome Color:	Gray		
Climbing Device:	Not Applicable		
Calculated Weight <sup>1</sup> :	No Ice	174.7 lb	79.2 kg
	0.5inch (13 mm) ice	259.2 lb	117.6 kg
Windload Data <sup>1 &lt;</sup>	EPA No Ice	10.1 ft <sup>2</sup>	(0.9 m <sup>2</sup> )
	0.5inch (13 mm) ice	12.2 ft <sup>2</sup>	(1.1 m <sup>2</sup> )

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 antenna, standard mounts, and power divider and jumper feed harnessing where applicable. Custom mounting brackets/adapters are NOT included.

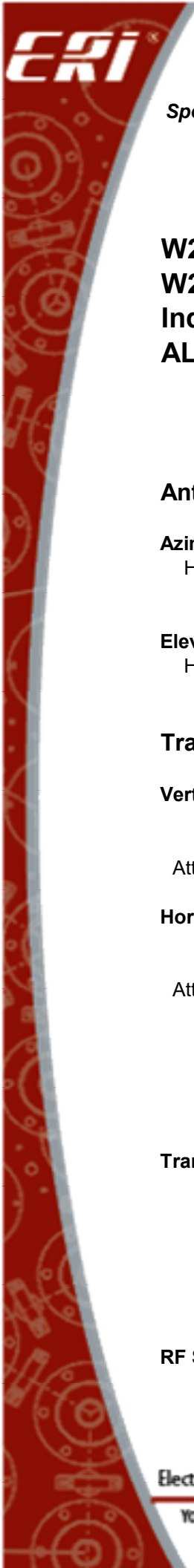
2) Loads calculated in accordance with the ANSI/TIA-222-G standard.

3) Low Power UHF television antennas are shipped with 15-inch (381 mm) stand off brackets for mounting on poles or tower legs (non- tapered) from 1.5-inches (35 mm) to 7.5-inches (191 mm) OD. Stand off support pipes, face mount brackets, and mounts for larger diameter poles are available from ERI as optional items.

**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.

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## Broadcast Antenna System Power Analysis

**W29EL**  
**W29EL**  
**Indianapolis, IN**  
**AL8O-29-PME-SP**

**RF Channel: 29**

### Antenna Parameters

#### Azimuth Directivity:

Horizontal: 1.00 (0.00 dB)  
Vertical: 2.36 (3.73 dB)

#### Elevation Directivity:

Horizontal: 8.50 (9.29 dB)  
Vertical: 8.50 (9.29 dB)

### Transmission Line

#### Vertical Run:

Type: 3-1/8-inch EIA, 50  $\Omega$   
Length: 780 feet 237.7 meters  
Attenuation: 0.230 dB/100 feet 0.755 dB/100 mtrs

#### Horizontal Run:

Type: 3-1/8-inch EIA, 50  $\Omega$   
Length: 20 feet 6.1 meters  
Attenuation: 0.230 dB/100 feet 0.755 dB/100 mtrs

**Transmission Line Efficiency:** 65.46%

**RF System/Other Efficiency:** 100.00%

#### Effective Radiated Power:

Horizontal: 15.00 kW (11.76 dBk)  
Vertical: 5.25 kW (7.20 dBk)

#### Power Gain:

Horizontal: 7.40 numeric (8.69 dBd)  
Vertical: 2.59 numeric (4.13 dBd)

#### Antenna Input Power:

2.03 kW (3.07 dBk)

#### Transmission Line Losses:

-1.07 kW (1.840 dB)

#### RF System/Other Losses:

0.00 kW (0.000 dB)

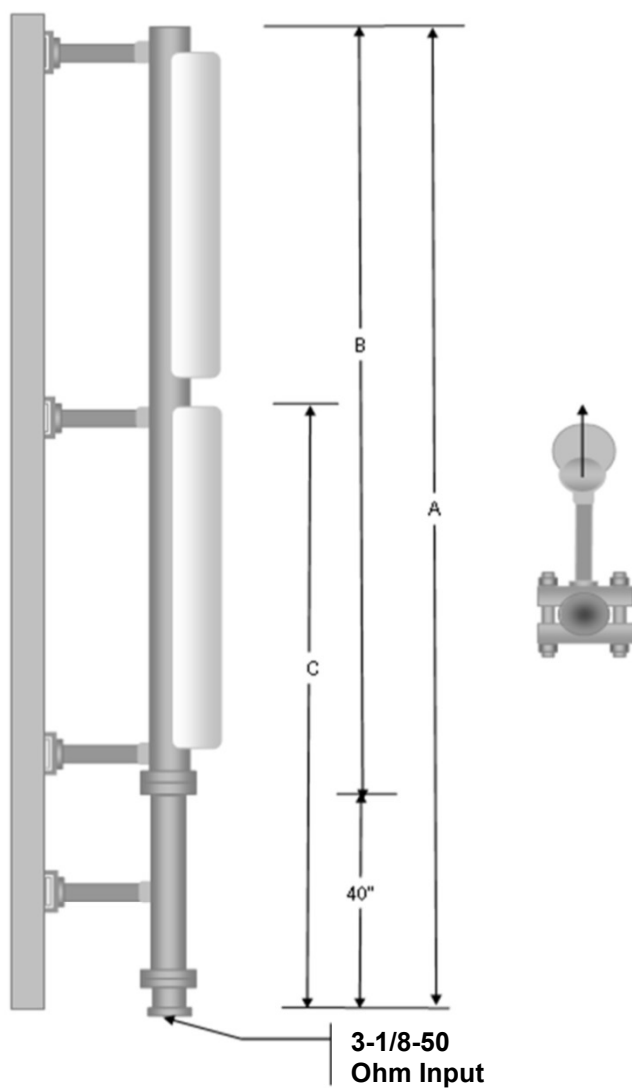
#### Total Losses:

-1.07 kW (1.840 dB)

#### Transmitter Power Output:

3.10 kW  
(4.91 dBk)

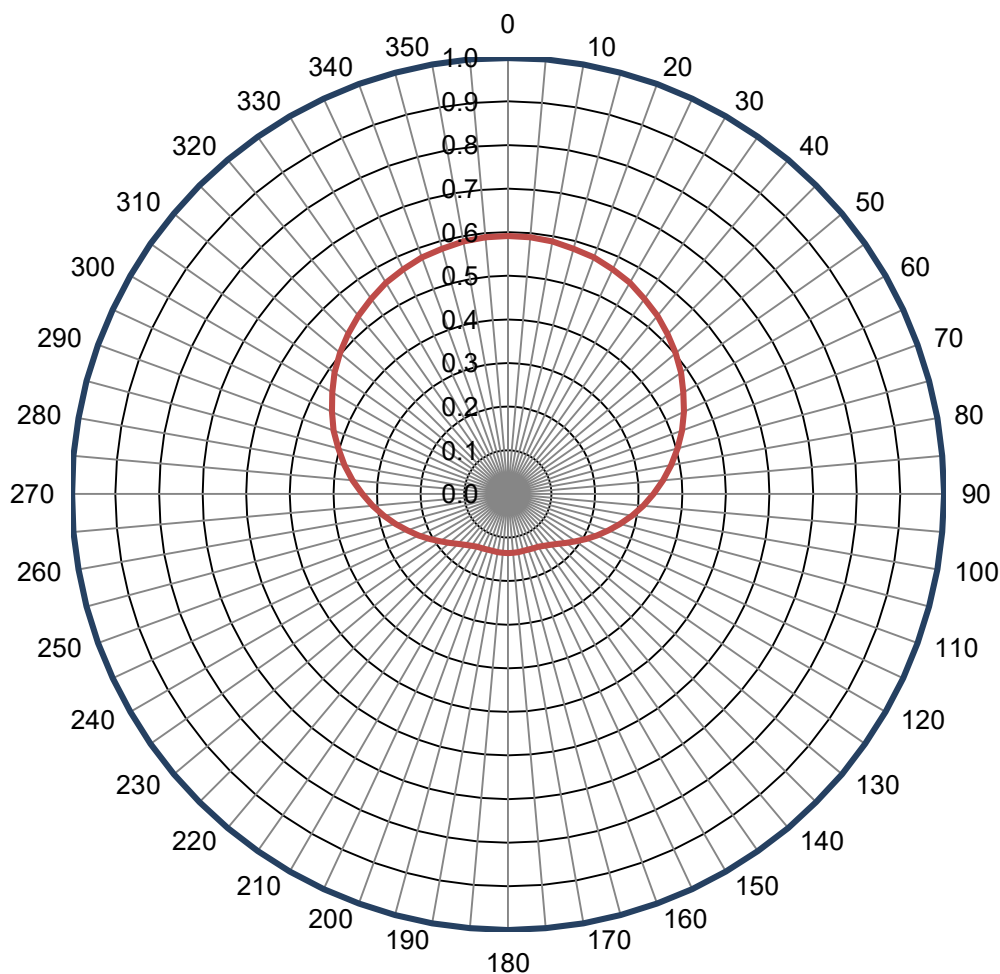
Typical Mounting Configuration Shown. Actual Configuration May Vary.

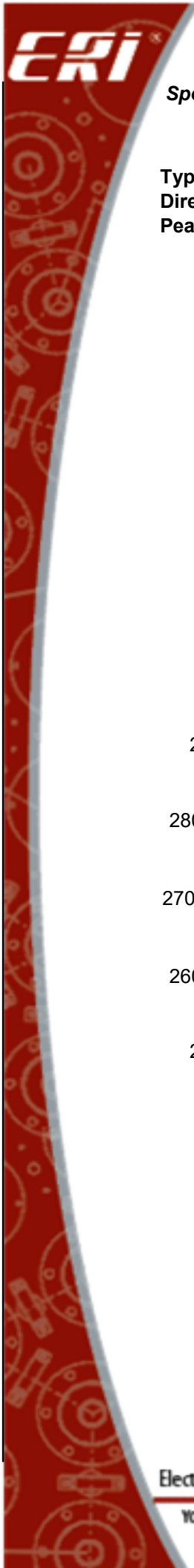


## Composite Azimuth Patterns

Type:	ALPL-O		Polarization:	Elliptical
Directivity (H-Pol):	1.00 numeric	(0.00 dB)	Channel:	29 (ATSC)
Directivity (V-Pol):	2.36 numeric	(3.73 dB)	Location:	Indianapolis, IN
Percent Horizontal:	87.08%		NOTE: Pattern shape and directivity may vary with channel and mounting	
Percent Vertical:	12.92%			
Power Ratio:	14.83%			
V/H ERP Ratio:	35.00%			

— Horizontal Relative Field      — Vertical Relative Field (scaled)

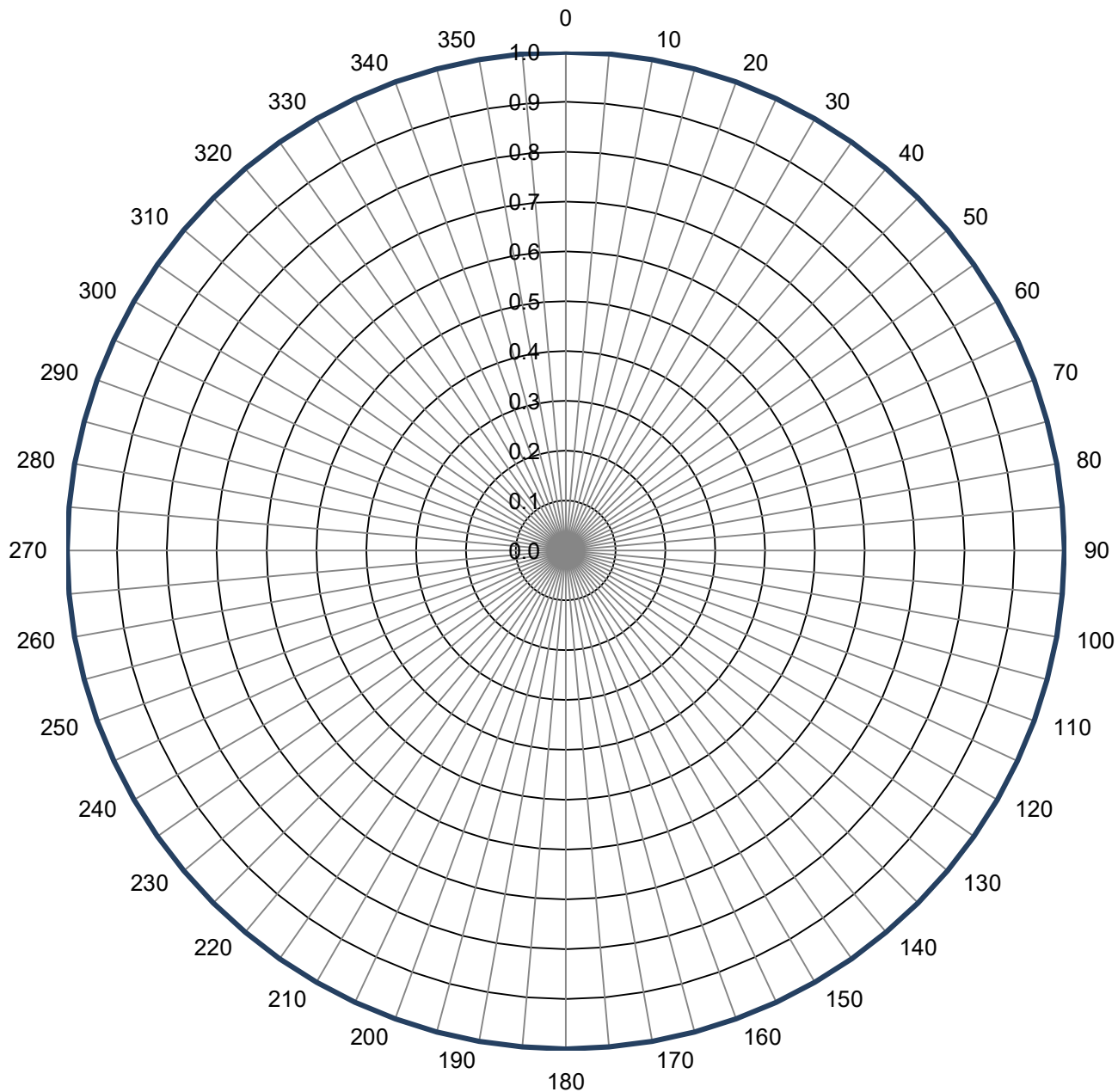




## Azimuth Pattern

Type:	ALPL-O	Polarization:	Horizontal
Directivity:	1.00 numeric (0.00 dB)	Channel:	29 (ATSC)
Peak(s) at:		Location:	Indianapolis, IN
		NOTE: Pattern shape and directivity may vary with channel and mounting configuration.	

## Relative Field



**Tabulated Data for Azimuth Pattern**

Type: ALPL-O

Angle	Field	dB
0	1.000	0.00
2	1.000	0.00
4	1.000	0.00
6	1.000	0.00
8	1.000	0.00
10	1.000	0.00
12	1.000	0.00
14	1.000	0.00
16	1.000	0.00
18	1.000	0.00
20	1.000	0.00
22	1.000	0.00
24	1.000	0.00
26	1.000	0.00
28	1.000	0.00
30	1.000	0.00
32	1.000	0.00
34	1.000	0.00
36	1.000	0.00
38	1.000	0.00
40	1.000	0.00
42	1.000	0.00
44	1.000	0.00
46	1.000	0.00
48	1.000	0.00
50	1.000	0.00
52	1.000	0.00
54	1.000	0.00
56	1.000	0.00
58	1.000	0.00
60	1.000	0.00
62	1.000	0.00
64	1.000	0.00
66	1.000	0.00
68	1.000	0.00
70	1.000	0.00
72	1.000	0.00
74	1.000	0.00
76	1.000	0.00
78	1.000	0.00
80	1.000	0.00
82	1.000	0.00
84	1.000	0.00
86	1.000	0.00
88	1.000	0.00
90	1.000	0.00
92	1.000	0.00
94	1.000	0.00
96	1.000	0.00
98	1.000	0.00

Angle	Field	dB
100	1.000	0.00
102	1.000	0.00
104	1.000	0.00
106	1.000	0.00
108	1.000	0.00
110	1.000	0.00
112	1.000	0.00
114	1.000	0.00
116	1.000	0.00
118	1.000	0.00
120	1.000	0.00
122	1.000	0.00
124	1.000	0.00
126	1.000	0.00
128	1.000	0.00
130	1.000	0.00
132	1.000	0.00
134	1.000	0.00
136	1.000	0.00
138	1.000	0.00
140	1.000	0.00
142	1.000	0.00
144	1.000	0.00
146	1.000	0.00
148	1.000	0.00
150	1.000	0.00
152	1.000	0.00
154	1.000	0.00
156	1.000	0.00
158	1.000	0.00
160	1.000	0.00
162	1.000	0.00
164	1.000	0.00
166	1.000	0.00
168	1.000	0.00
170	1.000	0.00
172	1.000	0.00
174	1.000	0.00
176	1.000	0.00
178	1.000	0.00
180	1.000	0.00
182	1.000	0.00
184	1.000	0.00
186	1.000	0.00
188	1.000	0.00
190	1.000	0.00
192	1.000	0.00
194	1.000	0.00
196	1.000	0.00
198	1.000	0.00

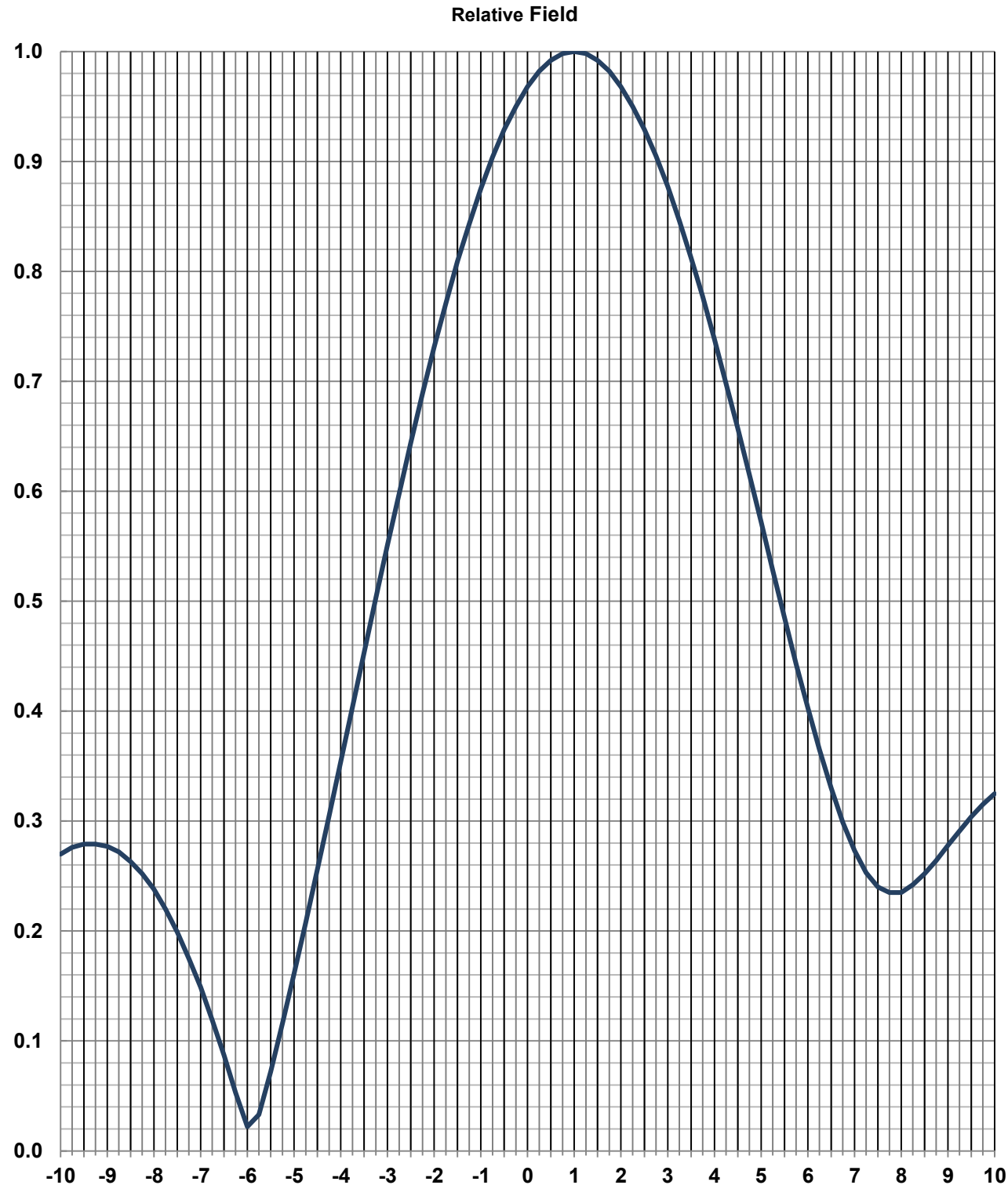
Angle	Field	dB
200	1.000	0.00
202	1.000	0.00
204	1.000	0.00
206	1.000	0.00
208	1.000	0.00
210	1.000	0.00
212	1.000	0.00
214	1.000	0.00
216	1.000	0.00
218	1.000	0.00
220	1.000	0.00
222	1.000	0.00
224	1.000	0.00
226	1.000	0.00
228	1.000	0.00
230	1.000	0.00
232	1.000	0.00
234	1.000	0.00
236	1.000	0.00
238	1.000	0.00
240	1.000	0.00
242	1.000	0.00
244	1.000	0.00
246	1.000	0.00
248	1.000	0.00
250	1.000	0.00
252	1.000	0.00
254	1.000	0.00
256	1.000	0.00
258	1.000	0.00
260	1.000	0.00
262	1.000	0.00
264	1.000	0.00
266	1.000	0.00
268	1.000	0.00
270	1.000	0.00
272	1.000	0.00
274	1.000	0.00
276	1.000	0.00
278	1.000	0.00
280	1.000	0.00
282	1.000	0.00
284	1.000	0.00
286	1.000	0.00
288	1.000	0.00
290	1.000	0.00
292	1.000	0.00
294	1.000	0.00
296	1.000	0.00
298	1.000	0.00

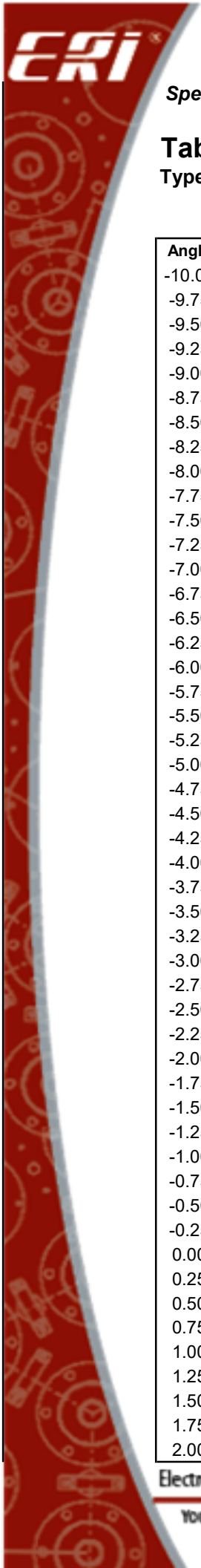
Angle	Field	dB
300	1.000	0.00
302	1.000	0.00
304	1.000	0.00
306	1.000	0.00
308	1.000	0.00
310	1.000	0.00
312	1.000	0.00
314	1.000	0.00
316	1.000	0.00
318	1.000	0.00
320	1.000	0.00
322	1.000	0.00
324	1.000	0.00
326	1.000	0.00
328	1.000	0.00
330	1.000	0.00
332	1.000	0.00
334	1.000	0.00
336	1.000	0.00
338	1.000	0.00
340	1.000	0.00
342	1.000	0.00
344	1.000	0.00
346	1.000	0.00
348	1.000	0.00
350	1.000	0.00
352	1.000	0.00
354	1.000	0.00
356	1.000	0.00
358	1.000	0.00
360	1.000	0.00



Elevation Pattern

Type:	AL8PL7		Polarization:	Horizontal
Directivity:			Channel:	29 (ATSC)
Main Lobe:	8.50 numeric	(9.29 dB)	Location:	Indianapolis, IN
Horizontal:	7.07 numeric	(8.49 dB)	Beam Tilt:	1.00 degrees





## Tabulated Data for Elevation Pattern

Type:

AL8PL7

-10 to 10 degrees in 0.25 degree increments.

10 to 90 degrees in 0.50 degree increments.

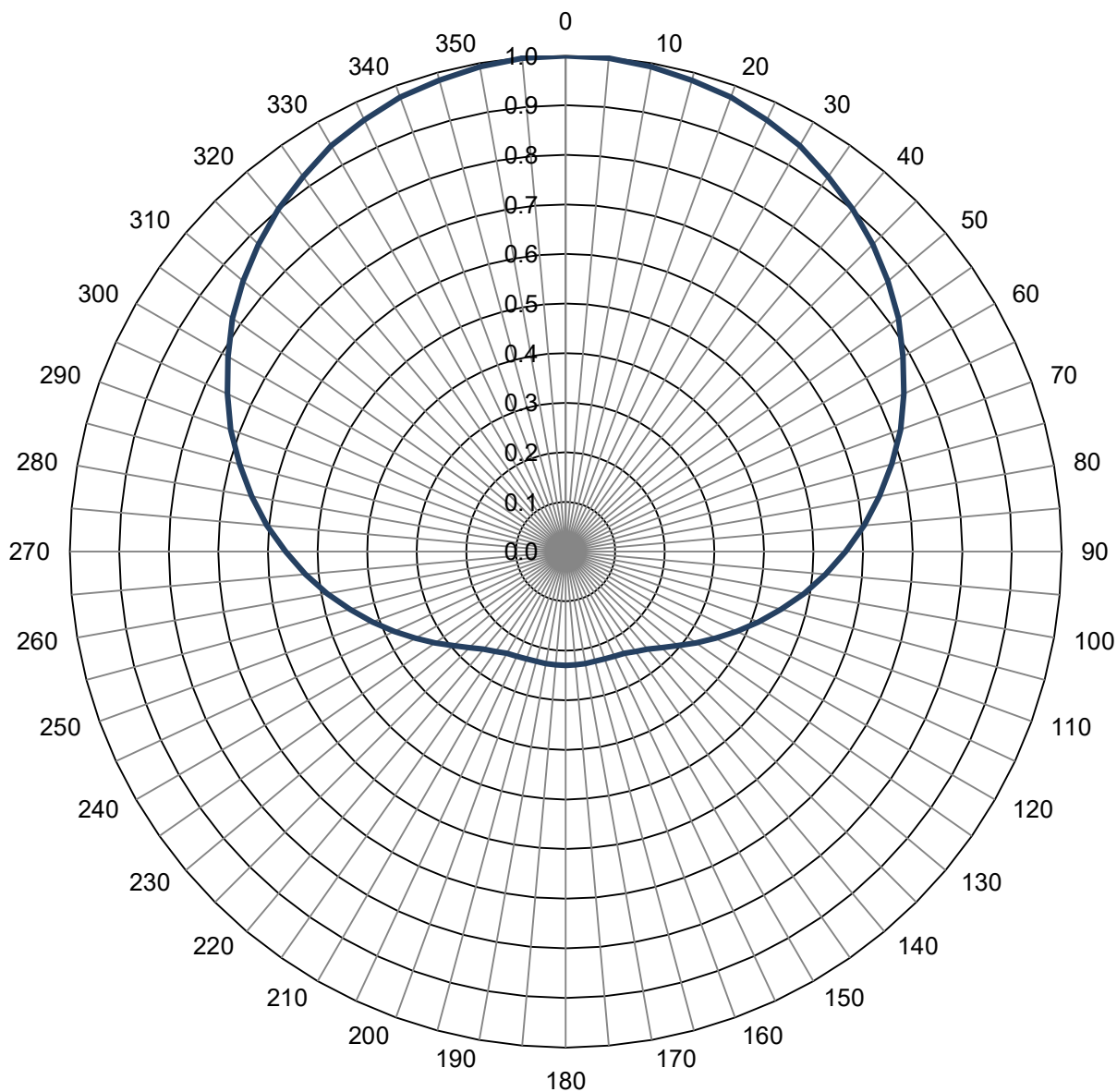
Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-10.00	0.270	-11.37	2.25	0.950	-0.45	19.00	0.185	-14.66	43.50	0.077	-22.27	68.00	0.053	-25.51
-9.75	0.276	-11.18	2.50	0.929	-0.64	19.50	0.186	-14.61	44.00	0.088	-21.11	68.50	0.054	-25.35
-9.50	0.279	-11.09	2.75	0.905	-0.87	20.00	0.180	-14.89	44.50	0.098	-20.18	69.00	0.056	-25.04
-9.25	0.279	-11.09	3.00	0.877	-1.14	20.50	0.168	-15.49	45.00	0.105	-19.58	69.50	0.059	-24.58
-9.00	0.277	-11.15	3.25	0.846	-1.45	21.00	0.152	-16.36	45.50	0.110	-19.17	70.00	0.063	-24.01
-8.75	0.272	-11.31	3.50	0.812	-1.81	21.50	0.131	-17.65	46.00	0.112	-19.02	70.50	0.067	-23.48
-8.50	0.263	-11.60	3.75	0.777	-2.19	22.00	0.108	-19.33	46.50	0.112	-19.02	71.00	0.071	-22.97
-8.25	0.252	-11.97	4.00	0.738	-2.64	22.50	0.084	-21.51	47.00	0.110	-19.17	71.50	0.075	-22.50
-8.00	0.238	-12.47	4.25	0.698	-3.12	23.00	0.062	-24.15	47.50	0.106	-19.49	72.00	0.079	-22.05
-7.75	0.220	-13.15	4.50	0.657	-3.65	23.50	0.049	-26.20	48.00	0.099	-20.09	72.50	0.083	-21.62
-7.50	0.199	-14.02	4.75	0.615	-4.22	24.00	0.050	-26.02	48.50	0.090	-20.92	73.00	0.086	-21.31
-7.25	0.175	-15.14	5.00	0.572	-4.85	24.50	0.064	-23.88	49.00	0.080	-21.94	73.50	0.089	-21.01
-7.00	0.149	-16.54	5.25	0.528	-5.55	25.00	0.082	-21.72	49.50	0.069	-23.22	74.00	0.091	-20.82
-6.75	0.119	-18.49	5.50	0.485	-6.29	25.50	0.100	-20.00	50.00	0.056	-25.04	74.50	0.093	-20.63
-6.50	0.087	-21.21	5.75	0.443	-7.07	26.00	0.114	-18.86	50.50	0.043	-27.33	75.00	0.095	-20.45
-6.25	0.053	-25.51	6.00	0.403	-7.89	26.50	0.126	-17.99	51.00	0.029	-30.75	75.50	0.096	-20.35
-6.00	0.022	-33.15	6.25	0.365	-8.75	27.00	0.132	-17.59	51.50	0.017	-35.39	76.00	0.096	-20.35
-5.75	0.033	-29.63	6.50	0.330	-9.63	27.50	0.135	-17.39	52.00	0.014	-37.08	76.50	0.097	-20.26
-5.50	0.072	-22.85	6.75	0.299	-10.49	28.00	0.133	-17.52	52.50	0.024	-32.40	77.00	0.096	-20.35
-5.25	0.116	-18.71	7.00	0.273	-11.28	28.50	0.126	-17.99	53.00	0.037	-28.64	77.50	0.096	-20.35
-5.00	0.161	-15.86	7.25	0.253	-11.94	29.00	0.116	-18.71	53.50	0.051	-25.85	78.00	0.095	-20.45
-4.75	0.208	-13.64	7.50	0.240	-12.40	29.50	0.103	-19.74	54.00	0.064	-23.88	78.50	0.093	-20.63
-4.50	0.256	-11.84	7.75	0.235	-12.58	30.00	0.087	-21.21	54.50	0.077	-22.27	79.00	0.092	-20.72
-4.25	0.305	-10.31	8.00	0.235	-12.58	30.50	0.069	-23.22	55.00	0.089	-21.01	79.50	0.090	-20.92
-4.00	0.354	-9.02	8.25	0.242	-12.32	31.00	0.050	-26.02	55.50	0.099	-20.09	80.00	0.087	-21.21
-3.75	0.404	-7.87	8.50	0.252	-11.97	31.50	0.034	-29.37	56.00	0.108	-19.33	80.50	0.085	-21.41
-3.50	0.453	-6.88	8.75	0.264	-11.57	32.00	0.027	-31.37	56.50	0.116	-18.71	81.00	0.082	-21.72
-3.25	0.503	-5.97	9.00	0.278	-11.12	32.50	0.035	-29.12	57.00	0.123	-18.20	81.50	0.078	-22.16
-3.00	0.551	-5.18	9.25	0.291	-10.72	33.00	0.050	-26.02	57.50	0.128	-17.86	82.00	0.075	-22.50
-2.75	0.598	-4.47	9.50	0.304	-10.34	33.50	0.066	-23.61	58.00	0.132	-17.59	82.50	0.071	-22.97
-2.50	0.644	-3.82	9.75	0.315	-10.03	34.00	0.081	-21.83	58.50	0.134	-17.46	83.00	0.067	-23.48
-2.25	0.689	-3.24	10.00	0.325	-9.76	34.50	0.094	-20.54	59.00	0.135	-17.39	83.50	0.063	-24.01
-2.00	0.731	-2.72	10.50	0.338	-9.42	35.00	0.104	-19.66	59.50	0.135	-17.39	84.00	0.059	-24.58
-1.75	0.771	-2.26	11.00	0.341	-9.34	35.50	0.111	-19.09	60.00	0.133	-17.52	84.50	0.055	-25.19
-1.50	0.809	-1.84	11.50	0.335	-9.50	36.00	0.114	-18.86	60.50	0.130	-17.72	85.00	0.050	-26.02
-1.25	0.843	-1.48	12.00	0.320	-9.90	36.50	0.115	-18.79	61.00	0.127	-17.92	85.50	0.045	-26.94
-1.00	0.875	-1.16	12.50	0.296	-10.57	37.00	0.112	-19.02	61.50	0.122	-18.27	86.00	0.041	-27.74
-0.75	0.904	-0.88	13.00	0.265	-11.54	37.50	0.106	-19.49	62.00	0.117	-18.64	86.50	0.036	-28.87
-0.50	0.929	-0.64	13.50	0.229	-12.80	38.00	0.097	-20.26	62.50	0.111	-19.09	87.00	0.031	-30.17
-0.25	0.950	-0.45	14.00	0.191	-14.38	38.50	0.086	-21.31	63.00	0.104	-19.66	87.50	0.026	-31.70
0.00	0.968	-0.28	14.50	0.152	-16.36	39.00	0.072	-22.85	63.50	0.097	-20.26	88.00	0.021	-33.56
0.25	0.982	-0.16	15.00	0.118	-18.56	39.50	0.057	-24.88	64.00	0.090	-20.92	88.50	0.016	-35.92
0.50	0.992	-0.07	15.50	0.095	-20.45	40.00	0.041	-27.74	64.50	0.083	-21.62	89.00	0.010	-40.00
0.75	0.998	-0.02	16.00	0.091	-20.82	40.50	0.024	-32.40	65.00	0.076	-22.38	89.50	0.005	-46.02
1.00	1.000	0.00	16.50	0.104	-19.66	41.00	0.012	-38.42	65.50	0.069	-23.22	90.00	0.000	---
1.25	0.998	-0.02	17.00	0.126	-17.99	41.50	0.018	-34.89	66.00	0.064	-23.88			
1.50	0.992	-0.07	17.50	0.147	-16.65	42.00	0.033	-29.63	66.50	0.059	-24.58			
1.75	0.982	-0.16	18.00	0.165	-15.65	42.50	0.049	-26.20	67.00	0.055	-25.19			
2.00	0.968	-0.28	18.50	0.178	-14.99	43.00	0.064	-23.88	67.50	0.053	-25.51			



### Azimuth Pattern

Type:	ALPL-O	Polarization:	Vertical
Directivity:	2.36 numeric (3.73 dB)	Channel:	29 (ATSC)
Peak(s) at:		Location:	Indianapolis, IN
		NOTE: Pattern shape and directivity may vary with channel and mounting configuration.	

### Relative Field



## Tabulated Data for Azimuth Pattern

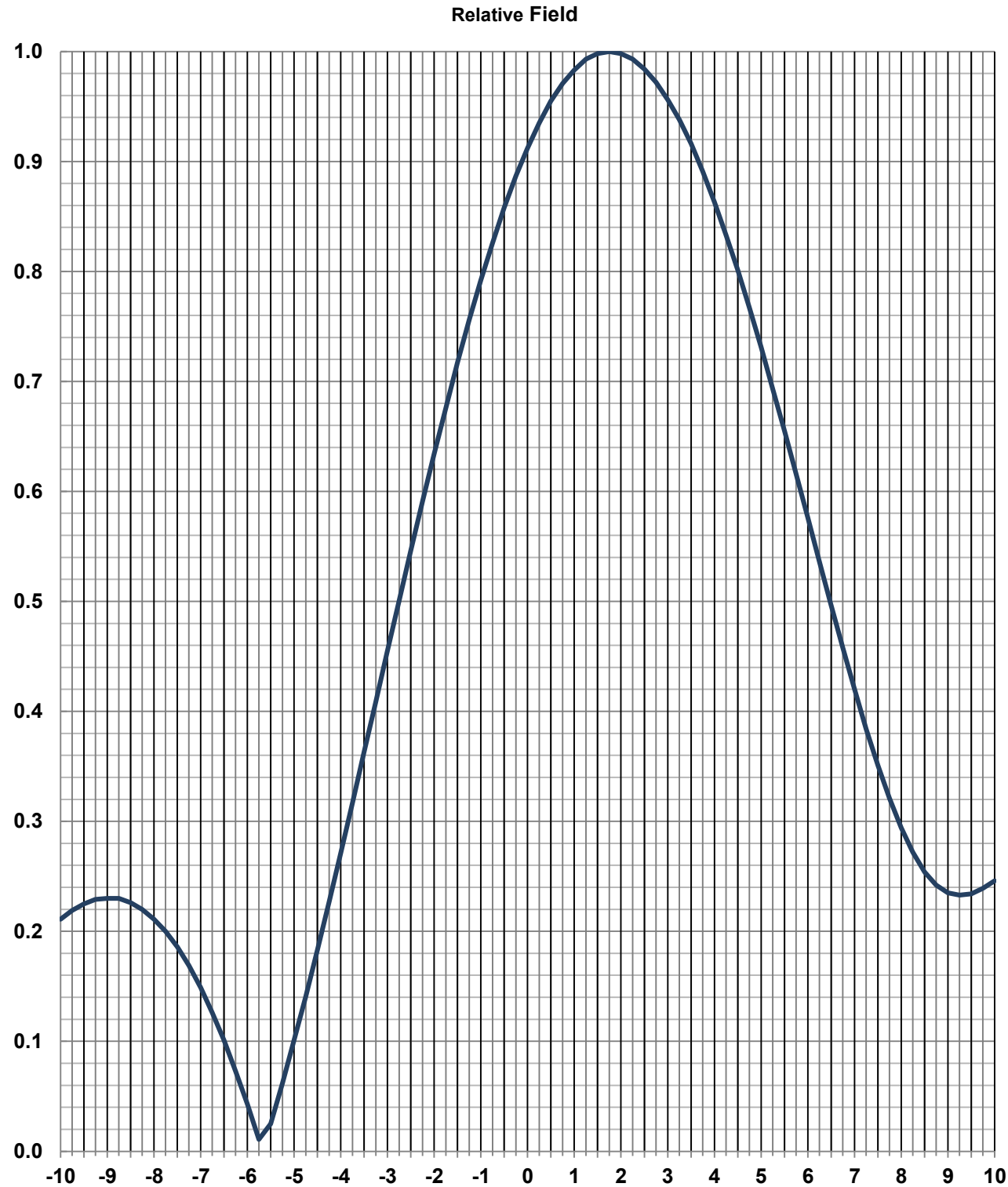
Type: ALPL-O

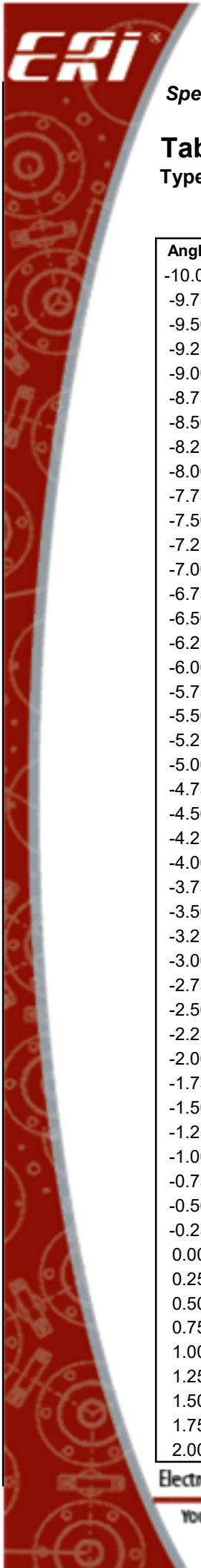
Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	1.000	0.00	100	0.488	-6.22	200	0.230	-12.76	300	0.786	-2.09
2	1.000	0.00	102	0.473	-6.49	202	0.230	-12.76	302	0.800	-1.94
4	0.999	-0.01	104	0.458	-6.77	204	0.232	-12.68	304	0.813	-1.80
6	0.999	-0.01	106	0.442	-7.08	206	0.233	-12.64	306	0.825	-1.67
8	0.996	-0.03	108	0.428	-7.36	208	0.235	-12.57	308	0.838	-1.54
10	0.993	-0.06	110	0.414	-7.65	210	0.237	-12.50	310	0.849	-1.42
12	0.991	-0.08	112	0.400	-7.95	212	0.240	-12.39	312	0.860	-1.31
14	0.988	-0.10	114	0.387	-8.24	214	0.243	-12.28	314	0.872	-1.19
16	0.983	-0.15	116	0.374	-8.53	216	0.248	-12.10	316	0.881	-1.10
18	0.979	-0.18	118	0.361	-8.84	218	0.252	-11.96	318	0.891	-1.00
20	0.975	-0.22	120	0.349	-9.13	220	0.257	-11.79	320	0.901	-0.91
22	0.968	-0.28	122	0.337	-9.44	222	0.264	-11.56	322	0.911	-0.81
24	0.963	-0.33	124	0.326	-9.73	224	0.271	-11.33	324	0.919	-0.73
26	0.957	-0.38	126	0.315	-10.03	226	0.278	-11.11	326	0.926	-0.67
28	0.951	-0.44	128	0.304	-10.33	228	0.286	-10.86	328	0.935	-0.58
30	0.945	-0.49	130	0.295	-10.59	230	0.295	-10.59	330	0.945	-0.49
32	0.935	-0.58	132	0.286	-10.86	232	0.304	-10.33	332	0.951	-0.44
34	0.926	-0.67	134	0.278	-11.11	234	0.315	-10.03	334	0.957	-0.38
36	0.919	-0.73	136	0.271	-11.33	236	0.326	-9.73	336	0.963	-0.33
38	0.911	-0.81	138	0.264	-11.56	238	0.337	-9.44	338	0.968	-0.28
40	0.901	-0.91	140	0.257	-11.79	240	0.349	-9.13	340	0.975	-0.22
42	0.891	-1.00	142	0.252	-11.96	242	0.361	-8.84	342	0.979	-0.18
44	0.881	-1.10	144	0.248	-12.10	244	0.374	-8.53	344	0.983	-0.15
46	0.872	-1.19	146	0.243	-12.28	246	0.387	-8.24	346	0.988	-0.10
48	0.860	-1.31	148	0.240	-12.39	248	0.400	-7.95	348	0.991	-0.08
50	0.849	-1.42	150	0.237	-12.50	250	0.414	-7.65	350	0.993	-0.06
52	0.838	-1.54	152	0.235	-12.57	252	0.428	-7.36	352	0.996	-0.03
54	0.825	-1.67	154	0.233	-12.64	254	0.442	-7.08	354	0.999	-0.01
56	0.813	-1.80	156	0.232	-12.68	256	0.458	-6.77	356	0.999	-0.01
58	0.800	-1.94	158	0.230	-12.76	258	0.473	-6.49	358	1.000	0.00
60	0.786	-2.09	160	0.230	-12.76	260	0.488	-6.22	360	1.000	0.00
62	0.774	-2.23	162	0.229	-12.79	262	0.504	-5.96			
64	0.760	-2.39	164	0.229	-12.79	264	0.518	-5.72			
66	0.746	-2.55	166	0.229	-12.79	266	0.535	-5.44			
68	0.734	-2.69	168	0.229	-12.79	268	0.550	-5.20			
70	0.719	-2.87	170	0.229	-12.79	270	0.565	-4.97			
72	0.704	-3.05	172	0.229	-12.79	272	0.581	-4.72			
74	0.690	-3.23	174	0.229	-12.79	274	0.596	-4.50			
76	0.674	-3.43	176	0.229	-12.79	276	0.612	-4.27			
78	0.658	-3.64	178	0.229	-12.79	278	0.628	-4.05			
80	0.643	-3.84	180	0.229	-12.79	280	0.643	-3.84			
82	0.628	-4.05	182	0.229	-12.79	282	0.658	-3.64			
84	0.612	-4.27	184	0.229	-12.79	284	0.674	-3.43			
86	0.596	-4.50	186	0.229	-12.79	286	0.690	-3.23			
88	0.581	-4.72	188	0.229	-12.79	288	0.704	-3.05			
90	0.565	-4.97	190	0.229	-12.79	290	0.719	-2.87			
92	0.550	-5.20	192	0.229	-12.79	292	0.734	-2.69			
94	0.535	-5.44	194	0.229	-12.79	294	0.746	-2.55			
96	0.518	-5.72	196	0.229	-12.79	296	0.760	-2.39			
98	0.504	-5.96	198	0.229	-12.79	298	0.774	-2.23			



Elevation Pattern

Type:	AL8PL7		Polarization:	Vertical
Directivity:			Channel:	29 (ATSC)
Main Lobe:	8.50 numeric	(9.29 dB)	Location:	Indianapolis, IN
Horizontal:	7.07 numeric	(8.49 dB)	Beam Tilt:	1.00 degrees





## Tabulated Data for Elevation Pattern

Type:

AL8PL7

-10 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	0.211	-13.51	2.25	0.993	-0.06	19.00	0.141	-17.02	43.50	0.014	-37.08	68.00	0.065	-23.74
-9.75	0.219	-13.19	2.50	0.984	-0.14	19.50	0.153	-16.31	44.00	0.028	-31.06	68.50	0.059	-24.58
-9.50	0.225	-12.96	2.75	0.972	-0.25	20.00	0.160	-15.92	44.50	0.041	-27.74	69.00	0.055	-25.19
-9.25	0.229	-12.80	3.00	0.956	-0.39	20.50	0.162	-15.81	45.00	0.054	-25.35	69.50	0.050	-26.02
-9.00	0.230	-12.77	3.25	0.938	-0.56	21.00	0.158	-16.03	45.50	0.066	-23.61	70.00	0.046	-26.74
-8.75	0.230	-12.77	3.50	0.916	-0.76	21.50	0.149	-16.54	46.00	0.076	-22.38	70.50	0.042	-27.54
-8.50	0.226	-12.92	3.75	0.891	-1.00	22.00	0.136	-17.33	46.50	0.084	-21.51	71.00	0.039	-28.18
-8.25	0.220	-13.15	4.00	0.863	-1.28	22.50	0.120	-18.42	47.00	0.091	-20.82	71.50	0.037	-28.64
-8.00	0.211	-13.51	4.25	0.833	-1.59	23.00	0.101	-19.91	47.50	0.096	-20.35	72.00	0.035	-29.12
-7.75	0.200	-13.98	4.50	0.801	-1.93	23.50	0.080	-21.94	48.00	0.099	-20.09	72.50	0.034	-29.37
-7.50	0.186	-14.61	4.75	0.767	-2.30	24.00	0.060	-24.44	48.50	0.100	-20.00	73.00	0.034	-29.37
-7.25	0.169	-15.44	5.00	0.731	-2.72	24.50	0.045	-26.94	49.00	0.100	-20.00	73.50	0.035	-29.12
-7.00	0.149	-16.54	5.25	0.693	-3.19	25.00	0.041	-27.74	49.50	0.097	-20.26	74.00	0.036	-28.87
-6.75	0.126	-17.99	5.50	0.655	-3.68	25.50	0.050	-26.02	50.00	0.093	-20.63	74.50	0.037	-28.64
-6.50	0.101	-19.91	5.75	0.616	-4.21	26.00	0.065	-23.74	50.50	0.088	-21.11	75.00	0.039	-28.18
-6.25	0.073	-22.73	6.00	0.576	-4.79	26.50	0.081	-21.83	51.00	0.081	-21.83	75.50	0.040	-27.96
-6.00	0.043	-27.33	6.25	0.536	-5.42	27.00	0.095	-20.45	51.50	0.073	-22.73	76.00	0.042	-27.54
-5.75	0.011	-39.17	6.50	0.496	-6.09	27.50	0.107	-19.41	52.00	0.063	-24.01	76.50	0.043	-27.33
-5.50	0.025	-32.04	6.75	0.458	-6.78	28.00	0.115	-18.79	52.50	0.053	-25.51	77.00	0.044	-27.13
-5.25	0.062	-24.15	7.00	0.420	-7.54	28.50	0.120	-18.42	53.00	0.043	-27.33	77.50	0.045	-26.94
-5.00	0.101	-19.91	7.25	0.384	-8.31	29.00	0.121	-18.34	53.50	0.032	-29.90	78.00	0.046	-26.74
-4.75	0.141	-17.02	7.50	0.351	-9.09	29.50	0.118	-18.56	54.00	0.021	-33.56	78.50	0.047	-26.56
-4.50	0.183	-14.75	7.75	0.321	-9.87	30.00	0.111	-19.09	54.50	0.012	-38.42	79.00	0.047	-26.56
-4.25	0.227	-12.88	8.00	0.294	-10.63	30.50	0.102	-19.83	55.00	0.012	-38.42	79.50	0.047	-26.56
-4.00	0.271	-11.34	8.25	0.272	-11.31	31.00	0.090	-20.92	55.50	0.020	-33.98	80.00	0.047	-26.56
-3.75	0.317	-9.98	8.50	0.254	-11.90	31.50	0.075	-22.50	56.00	0.031	-30.17	80.50	0.046	-26.74
-3.50	0.363	-8.80	8.75	0.242	-12.32	32.00	0.059	-24.58	56.50	0.041	-27.74	81.00	0.045	-26.94
-3.25	0.409	-7.77	9.00	0.235	-12.58	32.50	0.043	-27.33	57.00	0.051	-25.85	81.50	0.044	-27.13
-3.00	0.455	-6.84	9.25	0.233	-12.65	33.00	0.028	-31.06	57.50	0.060	-24.44	82.00	0.043	-27.33
-2.75	0.501	-6.00	9.50	0.234	-12.62	33.50	0.021	-33.56	58.00	0.069	-23.22	82.50	0.041	-27.74
-2.50	0.546	-5.26	9.75	0.239	-12.43	34.00	0.029	-30.75	58.50	0.076	-22.38	83.00	0.040	-27.96
-2.25	0.591	-4.57	10.00	0.246	-12.18	34.50	0.042	-27.54	59.00	0.083	-21.62	83.50	0.038	-28.40
-2.00	0.634	-3.96	10.50	0.262	-11.63	35.00	0.057	-24.88	59.50	0.089	-21.01	84.00	0.035	-29.12
-1.75	0.676	-3.40	11.00	0.276	-11.18	35.50	0.070	-23.10	60.00	0.094	-20.54	84.50	0.033	-29.63
-1.50	0.717	-2.89	11.50	0.285	-10.90	36.00	0.082	-21.72	60.50	0.098	-20.18	85.00	0.031	-30.17
-1.25	0.756	-2.43	12.00	0.288	-10.81	36.50	0.092	-20.72	61.00	0.101	-19.91	85.50	0.028	-31.06
-1.00	0.792	-2.03	12.50	0.282	-11.00	37.00	0.098	-20.18	61.50	0.102	-19.83	86.00	0.025	-32.04
-0.75	0.826	-1.66	13.00	0.270	-11.37	37.50	0.103	-19.74	62.00	0.103	-19.74	86.50	0.022	-33.15
-0.50	0.858	-1.33	13.50	0.251	-12.01	38.00	0.104	-19.66	62.50	0.104	-19.66	87.00	0.019	-34.42
-0.25	0.887	-1.04	14.00	0.226	-12.92	38.50	0.103	-19.74	63.00	0.103	-19.74	87.50	0.016	-35.92
0.00	0.912	-0.80	14.50	0.196	-14.15	39.00	0.099	-20.09	63.50	0.101	-19.91	88.00	0.013	-37.72
0.25	0.935	-0.58	15.00	0.164	-15.70	39.50	0.093	-20.63	64.00	0.099	-20.09	88.50	0.010	-40.00
0.50	0.955	-0.40	15.50	0.132	-17.59	40.00	0.084	-21.51	64.50	0.096	-20.35	89.00	0.007	-43.10
0.75	0.971	-0.26	16.00	0.104	-19.66	40.50	0.074	-22.62	65.00	0.093	-20.63	89.50	0.003	-50.46
1.00	0.983	-0.15	16.50	0.084	-21.51	41.00	0.062	-24.15	65.50	0.089	-21.01	90.00	0.000	---
1.25	0.993	-0.06	17.00	0.079	-22.05	41.50	0.048	-26.38	66.00	0.084	-21.51			
1.50	0.998	-0.02	17.50	0.089	-21.01	42.00	0.034	-29.37	66.50	0.080	-21.94			
1.75	1.000	0.00	18.00	0.107	-19.41	42.50	0.020	-33.98	67.00	0.075	-22.50			
2.00	0.998	-0.02	18.50	0.125	-18.06	43.00	0.008	-41.94	67.50	0.070	-23.10			