

***PRELIMINARY SPECIFICATION FOR
TRASAR[®] ELLIPTICALLY POLARIZED
COAXIAL SLOTTED ARRAY ANTENNA***

*Prepared for
WFYI-DT Channel 21 Indianapolis, IN
June 3, 2010*

**ANTENNA TYPE:
ATW28H3-ETO-21S**

**SPECIFICATION NO :
KO080609-2079 RevC**



PRELIMINARY SPECIFICATION FOR TRASAR[®] ELLIPTICALLY POLARIZED COAXIAL SLOTTED ARRAY ANTENNA

ELECTRICAL CHARACTERISTICS:

CHANNEL :		21
FREQUENCY RANGE :		512 - 518 MHz
AZIMUTH PATTERN NUMBER :	Hpol:	ATW-O
	Vpol:	ATW-V-O
ELEVATION PATTERN NUMBER :	Hpol:	ATW28H3H
	Vpol:	ATW25H3V
AZIMUTH DIRECTIVITY :	Hpol:	1.00 (0.00 dBd)
	Vpol:	1.33 (1.23 dBd)
ELEVATION DIRECTIVITY :	Hpol:	28.00 (14.47 dBd)
	Vpol:	25.00 (13.98 dBd)
PEAK POWER GAIN :	Hpol:	22.18 (13.46 dBd)
	Vpol:	6.90 (8.39 dBd)
GAIN AT HORIZONTAL :	Hpol:	12.67 (11.03 dBd)
	Vpol:	4.00 (6.02 dBd)
V/H RATIO:		0.311
ELECTRICAL BEAM TILT :		0.75 Degrees
INPUT POWER REQUIRED :		10.15 kW (10.06 dBk)
INPUT TYPE :		4 1/16-50 Ohm
INPUT POWER RATING (MAXIMUM):		36 kW Average, 8VSB Digital
ANTENNA VSWR (MAXIMUM) :		1.10 Over 6MHz Channel

PRELIMINARY SPECIFICATION FOR TRASAR[®] ELLIPTICALLY POLARIZED COAXIAL SLOTTED ARRAY ANTENNA

MECHANICAL CHARACTERISTICS:

MOUNTING CONFIGURATION:

Top Mount*

*(Tower Interface supplied and installed by others)

HEIGHT OF ANTENNA (D) :

61.91 feet

HEIGHT OF CENTER OF RADIATION (B) :

30.96 feet

OVERALL HEIGHT (A) :

65.41 feet

(Includes two 3.5-foot Lightning Rods)

DEICING :

Pressurized Radome Enclosure

RADOME DIAMETER (C):

18.40 inches, OD

RADOME COLOR :

AVIATION ORANGE (Standard)

CLIMBING DEVICE :

Fiberglass Climbing Ladder

¹ CALCULATED WEIGHT :

No Ice

With 0.5" Ice

11,240 lbs

12,940 lbs

² EFFECTIVE WIND AREA:

No Ice

With 0.5" Ice

CaAa:

79.3 sq.ft.

163.5 sq.ft.

Effective Moment Arm:

33.7 ft.

33.1 ft.

MOUNTING FLANGE :

BOLT CIRCLE :

17.75 in.

BOLT DIAMETER :

1.25 in.

NUMBER OF BOLTS :

16

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 weight is based on the theoretical calculated design weight of the antenna. Final As-Built weight for the antenna is typically within $\pm 10\%$ of the theoretical calculated value, and will be provided in the technical manual that accompanies the antenna. Specified loads include the antenna, lighting, lightning protection, and climbing apparatus. Antenna input section is NOT included.

² Specified effective wind area, CaAa, calculated using drag factors and wind interaction equations in accordance with the current ANSI/TIA-222-G standard. Design wind velocity coefficient, C, calculated using a fastest-mile basic wind speed of 70 mph with no ice in accordance with the ANSI/TIA/EIA-222-F standard. Effective wind area on all components with ice considered in subcritical flow.

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

WFYI-DT
Indianapolis, IN
ATW28H3-ETO-21S

Channel 21

ANTENNA PARAMETERS :

Azimuth Directivity :

Hor. Pol : 1.00 (0.00 dBd)
 Ver. Pol : 1.33 (1.23 dBd)

Elevation Directivity :

Hor. Pol : 28.00 (14.47 dBd)
 Ver. Pol : 25.00 (13.98 dBd)

TRANSMISSION LINE :

VERTICAL RUN :

Type: MACX450
 Length, ft. : 800
 Attenuation , dB/100 ft: 0.17

HORIZONTAL RUN :

Type: MACX450
 Length, ft. : 190
 Attenuation , dB/100 ft: 0.17

OTHER LINE LOSSES:

Type: 0
 Length, ft. : 0
 Attenuation , dB/100 ft: 0

Line Efficiency : 67.87%

ERP :

Hor. Pol : 225.00 kW (23.52 dBk)
 Ver. Pol : 70.00 kW (18.45 dBk)

POWER GAIN :

Hor. Pol : 22.18 (13.46 dBd)
 Ver. Pol : 6.90 (8.39 dBd)

ANTENNA INPUT :

kW : 10.15
 dBk : 10.06

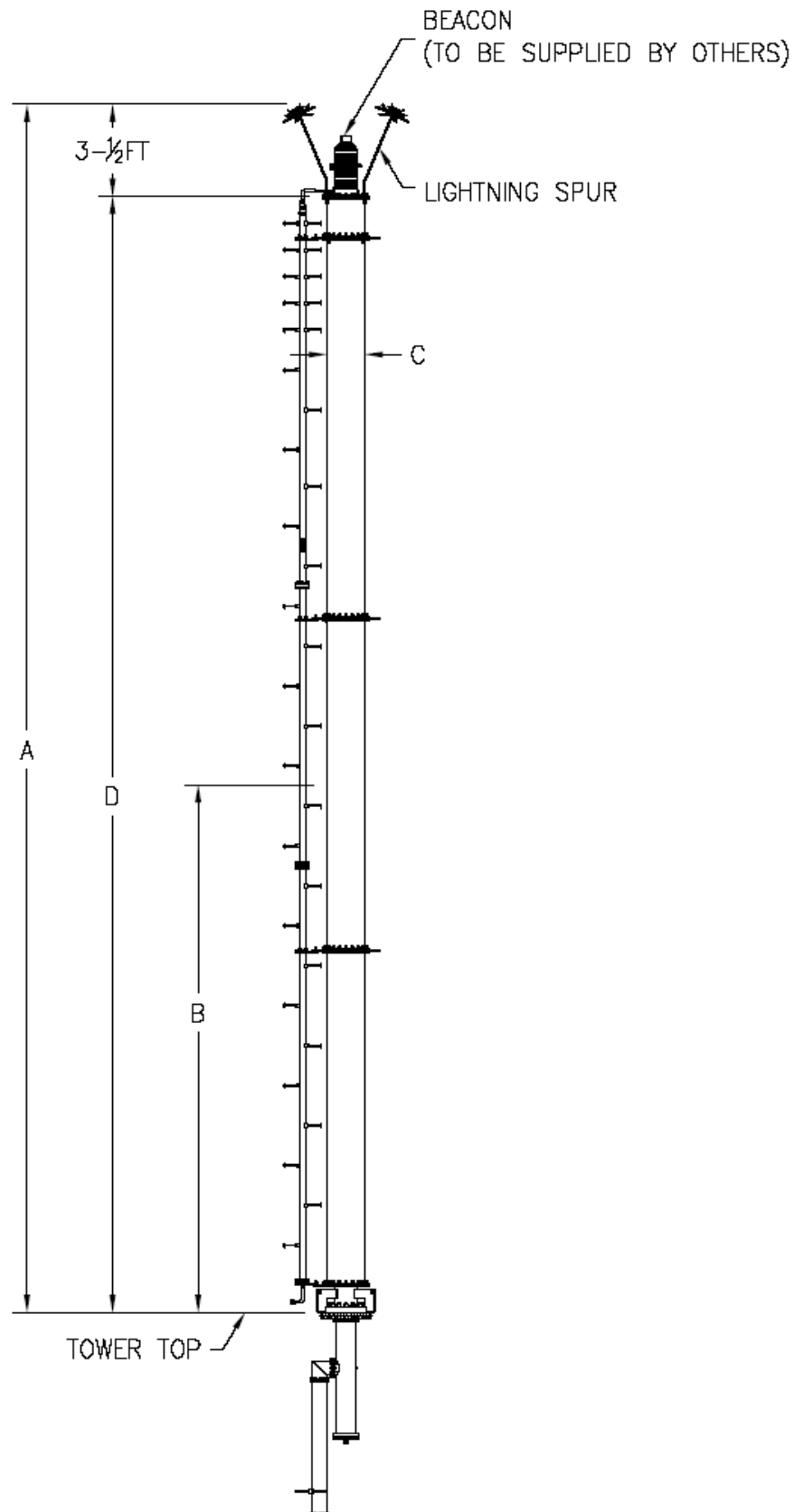
LINE LOSS :

kW : 4.80
 dB : 1.68

TRANSMITTER POWER :

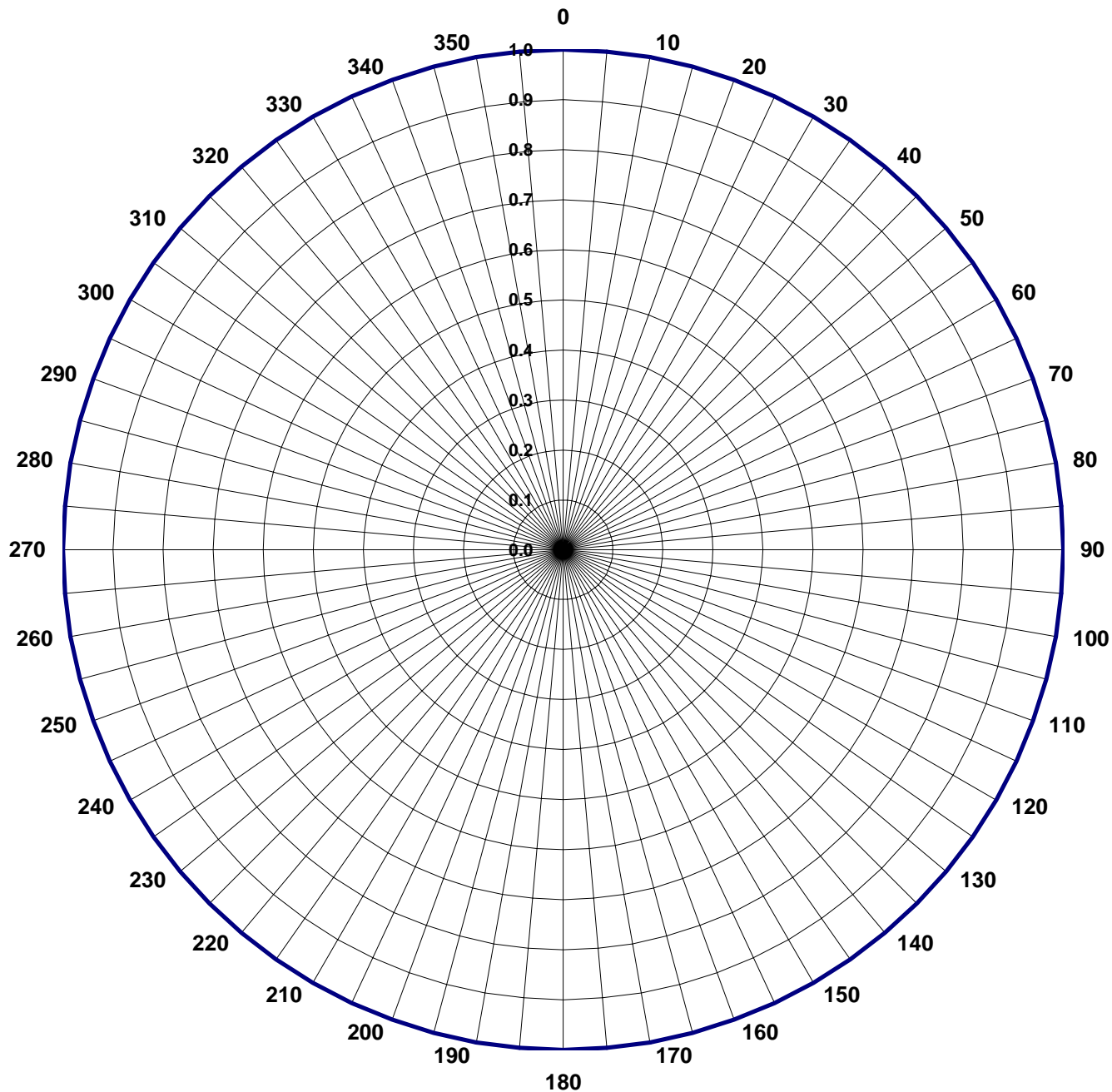
kW : 14.95
 dBk : 11.75

TYPICAL MOUNTING CONFIGURATION SHOWN. ACTUAL CONFIGURATION MAY VARY.



AZIMUTH PATTERN**TYPE:****ATW-O****Numeric****dB****Directivity:****1.00****0.00****Peak(s) at:****Polarization:****Horizontal****Frequency:****21 (Digital)****Location:****Indianapolis, IN**

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



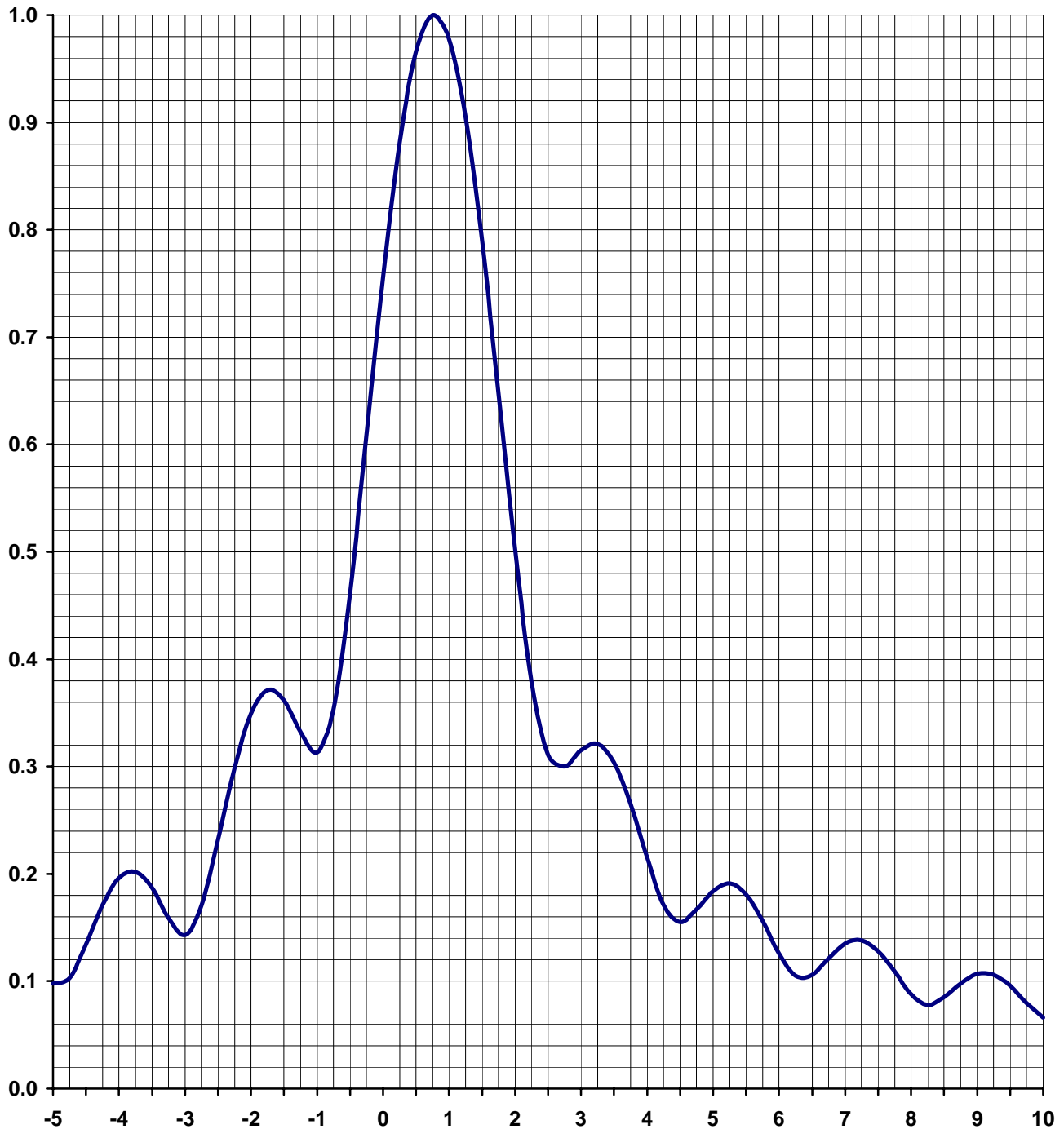
TABULATED DATA FOR AZIMUTH PATTERN**TYPE: ATW-O**

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

ELEVATION PATTERN

TYPE:	ATW28H3H	
Directivity:	Numeric	dBd
Main Lobe:	28.00	14.47
Horizontal:	16.00	12.04

Frequency:	21 (Digital)
Location:	Indianapolis, IN
Beam Tilt:	0.75
Polarization:	Horizontal



TABULATED DATA FOR ELEVATION PATTERN

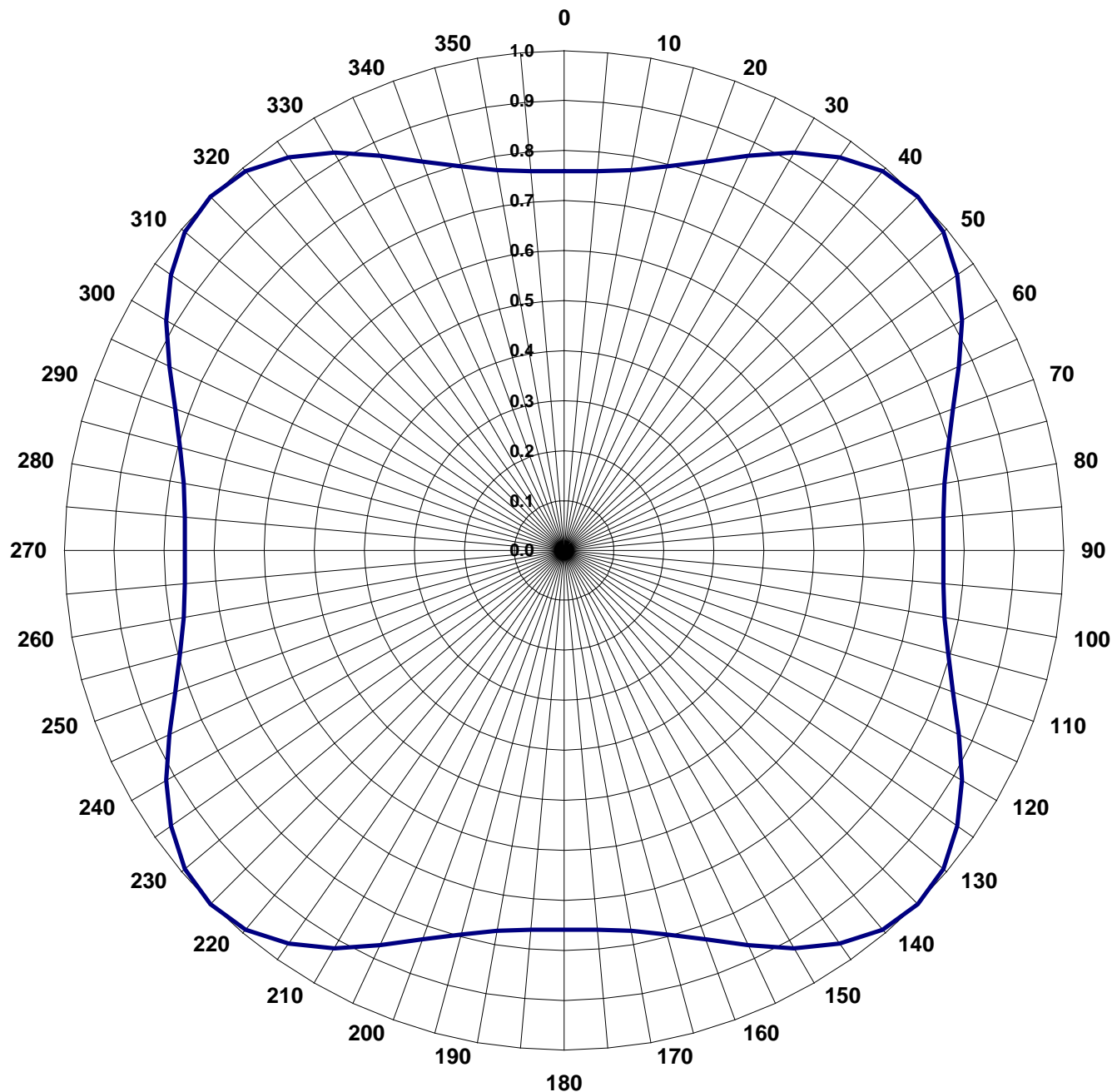
TYPE ATW28H3H
-5 to 10 degrees in 0.25 increments
10 to 90 degrees in 0.50 increments

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.00	0.098	-20.18	6.75	0.121	-18.34	27.00	0.042	-27.54	50.50	0.027	-31.37	74.00	0.034	-29.37
-4.75	0.103	-19.74	7.00	0.135	-17.39	27.50	0.038	-28.40	51.00	0.034	-29.37	74.50	0.031	-30.17
-4.50	0.134	-17.46	7.25	0.138	-17.20	28.00	0.027	-31.37	51.50	0.038	-28.40	75.00	0.030	-30.46
-4.25	0.171	-15.34	7.50	0.128	-17.86	28.50	0.030	-30.46	52.00	0.037	-28.64	75.50	0.032	-29.90
-4.00	0.196	-14.15	7.75	0.109	-19.25	29.00	0.039	-28.18	52.50	0.031	-30.17	76.00	0.035	-29.12
-3.75	0.202	-13.89	8.00	0.088	-21.11	29.50	0.038	-28.40	53.00	0.025	-32.04	76.50	0.039	-28.18
-3.50	0.187	-14.56	8.25	0.078	-22.16	30.00	0.029	-30.75	53.50	0.026	-31.70	77.00	0.043	-27.33
-3.25	0.159	-15.97	8.50	0.085	-21.41	30.50	0.026	-31.70	54.00	0.033	-29.63	77.50	0.046	-26.74
-3.00	0.143	-16.89	8.75	0.098	-20.18	31.00	0.035	-29.12	54.50	0.038	-28.40	78.00	0.049	-26.20
-2.75	0.170	-15.39	9.00	0.107	-19.41	31.50	0.039	-28.18	55.00	0.039	-28.18	78.50	0.050	-26.02
-2.50	0.232	-12.69	9.25	0.106	-19.49	32.00	0.032	-29.90	55.50	0.034	-29.37	79.00	0.051	-25.85
-2.25	0.299	-10.49	9.50	0.096	-20.35	32.50	0.024	-32.40	56.00	0.027	-31.37	79.50	0.051	-25.85
-2.00	0.349	-9.14	9.75	0.080	-21.94	33.00	0.030	-30.46	56.50	0.025	-32.04	80.00	0.049	-26.20
-1.75	0.371	-8.61	10.00	0.066	-23.61	33.50	0.038	-28.40	57.00	0.029	-30.75	80.50	0.047	-26.56
-1.50	0.362	-8.83	10.50	0.073	-22.73	34.00	0.035	-29.12	57.50	0.036	-28.87	81.00	0.045	-26.94
-1.25	0.332	-9.58	11.00	0.089	-21.01	34.50	0.026	-31.70	58.00	0.040	-27.96	81.50	0.042	-27.54
-1.00	0.313	-10.09	11.50	0.076	-22.38	35.00	0.025	-32.04	58.50	0.040	-27.96	82.00	0.039	-28.18
-0.75	0.353	-9.04	12.00	0.053	-25.51	35.50	0.034	-29.37	59.00	0.035	-29.12	82.50	0.036	-28.87
-0.50	0.462	-6.71	12.50	0.065	-23.74	36.00	0.037	-28.64	59.50	0.029	-30.75	83.00	0.033	-29.63
-0.25	0.608	-4.32	13.00	0.077	-22.27	36.50	0.032	-29.90	60.00	0.026	-31.70	83.50	0.030	-30.46
0.00	0.756	-2.43	13.50	0.063	-24.01	37.00	0.024	-32.40	60.50	0.029	-30.75	84.00	0.027	-31.37
0.25	0.882	-1.09	14.00	0.046	-26.74	37.50	0.027	-31.37	61.00	0.036	-28.87	84.50	0.025	-32.04
0.50	0.966	-0.30	14.50	0.059	-24.58	38.00	0.035	-29.12	61.50	0.041	-27.74	85.00	0.022	-33.15
0.75	1.000	0.00	15.00	0.067	-23.48	38.50	0.036	-28.87	62.00	0.043	-27.33	85.50	0.020	-33.98
1.00	0.978	-0.19	15.50	0.053	-25.51	39.00	0.029	-30.75	62.50	0.041	-27.74	86.00	0.017	-35.39
1.25	0.905	-0.87	16.00	0.041	-27.74	39.50	0.023	-32.77	63.00	0.036	-28.87	86.50	0.015	-36.48
1.50	0.789	-2.06	16.50	0.054	-25.35	40.00	0.028	-31.06	63.50	0.031	-30.17	87.00	0.013	-37.72
1.75	0.648	-3.77	17.00	0.060	-24.44	40.50	0.035	-29.12	64.00	0.028	-31.06	87.50	0.011	-39.17
2.00	0.502	-5.99	17.50	0.046	-26.74	41.00	0.035	-29.12	64.50	0.030	-30.46	88.00	0.008	-41.94
2.25	0.380	-8.40	18.00	0.036	-28.87	41.50	0.028	-31.06	65.00	0.037	-28.64	88.50	0.006	-44.44
2.50	0.311	-10.14	18.50	0.049	-26.20	42.00	0.023	-32.77	65.50	0.042	-27.54	89.00	0.004	-47.96
2.75	0.300	-10.46	19.00	0.055	-25.19	42.50	0.029	-30.75	66.00	0.046	-26.74	89.50	0.002	-53.98
3.00	0.315	-10.03	19.50	0.042	-27.54	43.00	0.035	-29.12	66.50	0.047	-26.56	90.00	0.000	---
3.25	0.321	-9.87	20.00	0.034	-29.37	43.50	0.035	-29.12	67.00	0.044	-27.13			
3.50	0.304	-10.34	20.50	0.045	-26.94	44.00	0.029	-30.75	67.50	0.039	-28.18			
3.75	0.265	-11.54	21.00	0.050	-26.02	44.50	0.023	-32.77	68.00	0.034	-29.37			
4.00	0.215	-13.35	21.50	0.039	-28.18	45.00	0.027	-31.37	68.50	0.029	-30.75			
4.25	0.171	-15.34	22.00	0.031	-30.17	45.50	0.034	-29.37	69.00	0.029	-30.75			
4.50	0.155	-16.19	22.50	0.042	-27.54	46.00	0.036	-28.87	69.50	0.033	-29.63			
4.75	0.167	-15.55	23.00	0.047	-26.56	46.50	0.032	-29.90	70.00	0.039	-28.18			
5.00	0.184	-14.70	23.50	0.038	-28.40	47.00	0.024	-32.40	70.50	0.044	-27.13			
5.25	0.191	-14.38	24.00	0.029	-30.75	47.50	0.024	-32.40	71.00	0.048	-26.38			
5.50	0.181	-14.85	24.50	0.038	-28.40	48.00	0.031	-30.17	71.50	0.050	-26.02			
5.75	0.156	-16.14	25.00	0.044	-27.13	48.50	0.036	-28.87	72.00	0.050	-26.02			
6.00	0.126	-17.99	25.50	0.036	-28.87	49.00	0.036	-28.87	72.50	0.047	-26.56			
6.25	0.105	-19.58	26.00	0.027	-31.37	49.50	0.030	-30.46	73.00	0.043	-27.33			
6.50	0.106	-19.49	26.50	0.034	-29.37	50.00	0.024	-32.40	73.50	0.038	-28.40			

AZIMUTH PATTERN

TYPE:**ATW-V-O****Numeric****dB****Directivity:****1.33****1.23****Peak(s) at:****Polarization:****Vertical****Frequency:****21 (Digital)****Location:****Indianapolis, IN**

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



TABULATED DATA FOR AZIMUTH PATTERN

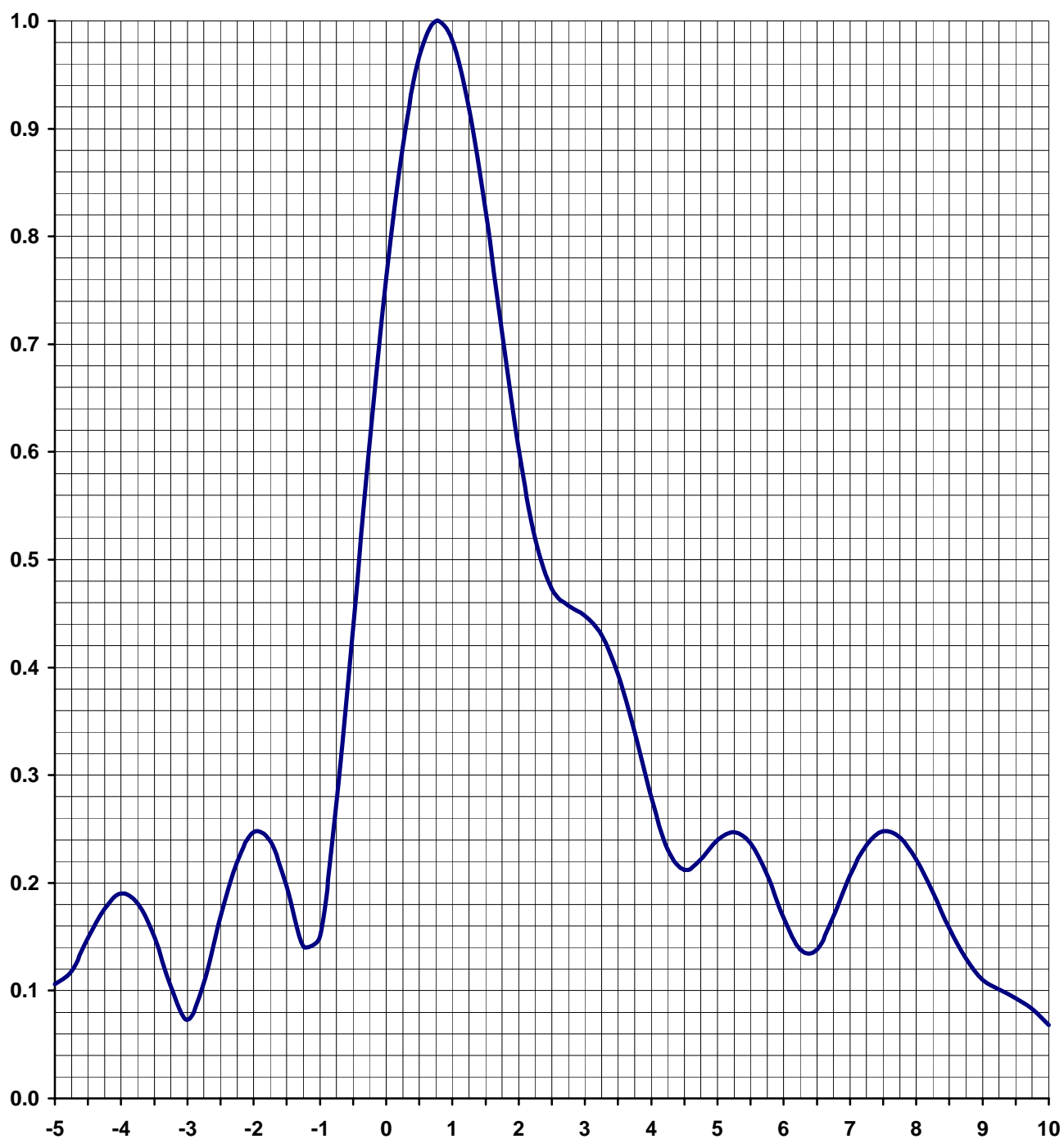
TYPE: ATW-V-O

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.758	-2.41	92	0.758	-2.41	184	0.760	-2.38	276	0.762	-2.36
2	0.758	-2.41	94	0.760	-2.38	186	0.762	-2.36	278	0.766	-2.32
4	0.760	-2.38	96	0.762	-2.36	188	0.766	-2.32	280	0.772	-2.25
6	0.762	-2.36	98	0.766	-2.32	190	0.772	-2.25	282	0.779	-2.17
8	0.766	-2.32	100	0.772	-2.25	192	0.779	-2.17	284	0.789	-2.06
10	0.772	-2.25	102	0.779	-2.17	194	0.789	-2.06	286	0.800	-1.94
12	0.779	-2.17	104	0.789	-2.06	196	0.800	-1.94	288	0.813	-1.80
14	0.789	-2.06	106	0.800	-1.94	198	0.813	-1.80	290	0.828	-1.64
16	0.800	-1.94	108	0.813	-1.80	200	0.828	-1.64	292	0.844	-1.47
18	0.813	-1.80	110	0.828	-1.64	202	0.844	-1.47	294	0.862	-1.29
20	0.828	-1.64	112	0.844	-1.47	204	0.862	-1.29	296	0.881	-1.10
22	0.844	-1.47	114	0.862	-1.29	206	0.881	-1.10	298	0.900	-0.92
24	0.862	-1.29	116	0.881	-1.10	208	0.900	-0.92	300	0.918	-0.74
26	0.881	-1.10	118	0.900	-0.92	210	0.918	-0.74	302	0.936	-0.57
28	0.900	-0.92	120	0.918	-0.74	212	0.936	-0.57	304	0.953	-0.42
30	0.918	-0.74	122	0.936	-0.57	214	0.953	-0.42	306	0.968	-0.28
32	0.936	-0.57	124	0.953	-0.42	216	0.968	-0.28	308	0.980	-0.18
34	0.953	-0.42	126	0.968	-0.28	218	0.980	-0.18	310	0.990	-0.09
36	0.968	-0.28	128	0.980	-0.18	220	0.990	-0.09	312	0.996	-0.03
38	0.980	-0.18	130	0.990	-0.09	222	0.996	-0.03	314	1.000	0.00
40	0.990	-0.09	132	0.996	-0.03	224	1.000	0.00	316	1.000	0.00
42	0.996	-0.03	134	1.000	0.00	226	1.000	0.00	318	0.996	-0.03
44	1.000	0.00	136	1.000	0.00	228	0.996	-0.03	320	0.990	-0.09
46	1.000	0.00	138	0.996	-0.03	230	0.990	-0.09	322	0.980	-0.18
48	0.996	-0.03	140	0.990	-0.09	232	0.980	-0.18	324	0.968	-0.28
50	0.990	-0.09	142	0.980	-0.18	234	0.968	-0.28	326	0.953	-0.42
52	0.980	-0.18	144	0.968	-0.28	236	0.953	-0.42	328	0.936	-0.57
54	0.968	-0.28	146	0.953	-0.42	238	0.936	-0.57	330	0.918	-0.74
56	0.953	-0.42	148	0.936	-0.57	240	0.918	-0.74	332	0.900	-0.92
58	0.936	-0.57	150	0.918	-0.74	242	0.900	-0.92	334	0.881	-1.10
60	0.918	-0.74	152	0.900	-0.92	244	0.881	-1.10	336	0.862	-1.29
62	0.900	-0.92	154	0.881	-1.10	246	0.862	-1.29	338	0.844	-1.47
64	0.881	-1.10	156	0.862	-1.29	248	0.844	-1.47	340	0.828	-1.64
66	0.862	-1.29	158	0.844	-1.47	250	0.828	-1.64	342	0.813	-1.80
68	0.844	-1.47	160	0.828	-1.64	252	0.813	-1.80	344	0.800	-1.94
70	0.828	-1.64	162	0.813	-1.80	254	0.800	-1.94	346	0.789	-2.06
72	0.813	-1.80	164	0.800	-1.94	256	0.789	-2.06	348	0.779	-2.17
74	0.800	-1.94	166	0.789	-2.06	258	0.779	-2.17	350	0.772	-2.25
76	0.789	-2.06	168	0.779	-2.17	260	0.772	-2.25	352	0.766	-2.32
78	0.779	-2.17	170	0.772	-2.25	262	0.766	-2.32	354	0.762	-2.36
80	0.772	-2.25	172	0.766	-2.32	264	0.762	-2.36	356	0.760	-2.38
82	0.766	-2.32	174	0.762	-2.36	266	0.760	-2.38	358	0.758	-2.41
84	0.762	-2.36	176	0.760	-2.38	268	0.758	-2.41	360	0.758	-2.41
86	0.760	-2.38	178	0.758	-2.41	270	0.758	-2.41			
88	0.758	-2.41	180	0.758	-2.41	272	0.758	-2.41			
90	0.758	-2.41	182	0.758	-2.41	274	0.760	-2.38			

ELEVATION PATTERN

TYPE:	ATW25H3V	
Directivity:	Numeric	dBd
Main Lobe:	25.00	13.98
Horizontal:	14.48	11.61

Frequency:	21 (Digital)
Location:	Indianapolis, IN
Beam Tilt:	0.75
Polarization:	Vertical



TABULATED DATA FOR ELEVATION PATTERN

TYPE: ATW25H3V

-5 to 10 degrees in 0.25 increments

10 to 90 degrees in 0.50 increments

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.00	0.106	-19.49	6.75	0.169	-15.44	27.00	0.041	-27.74	50.50	0.155	-16.19	74.00	0.109	-19.25
-4.75	0.118	-18.56	7.00	0.207	-13.68	27.50	0.053	-25.51	51.00	0.148	-16.59	74.50	0.108	-19.33
-4.50	0.149	-16.54	7.25	0.235	-12.58	28.00	0.031	-30.17	51.50	0.141	-17.02	75.00	0.107	-19.41
-4.25	0.176	-15.09	7.50	0.248	-12.11	28.50	0.018	-34.89	52.00	0.134	-17.46	75.50	0.106	-19.49
-4.00	0.190	-14.42	7.75	0.242	-12.32	29.00	0.042	-27.54	52.50	0.126	-17.99	76.00	0.104	-19.66
-3.75	0.181	-14.85	8.00	0.222	-13.07	29.50	0.039	-28.18	53.00	0.118	-18.56	76.50	0.102	-19.83
-3.50	0.150	-16.48	8.25	0.191	-14.38	30.00	0.037	-28.64	53.50	0.110	-19.17	77.00	0.100	-20.00
-3.25	0.104	-19.66	8.50	0.158	-16.03	30.50	0.045	-26.94	54.00	0.101	-19.91	77.50	0.098	-20.18
-3.00	0.073	-22.73	8.75	0.130	-17.72	31.00	0.049	-26.20	54.50	0.093	-20.63	78.00	0.096	-20.35
-2.75	0.107	-19.41	9.00	0.110	-19.17	31.50	0.057	-24.88	55.00	0.084	-21.51	78.50	0.093	-20.63
-2.50	0.169	-15.44	9.25	0.101	-19.91	32.00	0.058	-24.73	55.50	0.075	-22.50	79.00	0.090	-20.92
-2.25	0.220	-13.15	9.50	0.093	-20.63	32.50	0.043	-27.33	56.00	0.066	-23.61	79.50	0.087	-21.21
-2.00	0.247	-12.15	9.75	0.083	-21.62	33.00	0.035	-29.12	56.50	0.057	-24.88	80.00	0.084	-21.51
-1.75	0.239	-12.43	10.00	0.068	-23.35	33.50	0.046	-26.74	57.00	0.048	-26.38	80.50	0.081	-21.83
-1.50	0.197	-14.11	10.50	0.040	-27.96	34.00	0.041	-27.74	57.50	0.039	-28.18	81.00	0.077	-22.27
-1.25	0.141	-17.02	11.00	0.032	-29.90	34.50	0.020	-33.98	58.00	0.030	-30.46	81.50	0.074	-22.62
-1.00	0.151	-16.42	11.50	0.056	-25.04	35.00	0.024	-32.40	58.50	0.021	-33.56	82.00	0.070	-23.10
-0.75	0.274	-11.24	12.00	0.047	-26.56	35.50	0.043	-27.33	59.00	0.013	-37.72	82.50	0.066	-23.61
-0.50	0.437	-7.19	12.50	0.147	-16.65	36.00	0.044	-27.13	59.50	0.004	-47.96	83.00	0.062	-24.15
-0.25	0.606	-4.35	13.00	0.142	-16.95	36.50	0.032	-29.90	60.00	0.004	-47.96	83.50	0.058	-24.73
0.00	0.761	-2.37	13.50	0.064	-23.88	37.00	0.028	-31.06	60.50	0.012	-38.42	84.00	0.054	-25.35
0.25	0.884	-1.07	14.00	0.053	-25.51	37.50	0.037	-28.64	61.00	0.019	-34.42	84.50	0.050	-26.02
0.50	0.967	-0.29	14.50	0.010	-40.00	38.00	0.038	-28.40	61.50	0.027	-31.37	85.00	0.046	-26.74
0.75	1.000	0.00	15.00	0.015	-36.48	38.50	0.027	-31.37	62.00	0.034	-29.37	85.50	0.041	-27.74
1.00	0.982	-0.16	15.50	0.012	-38.42	39.00	0.020	-33.98	62.50	0.041	-27.74	86.00	0.037	-28.64
1.25	0.919	-0.73	16.00	0.047	-26.56	39.50	0.034	-29.37	63.00	0.048	-26.38	86.50	0.032	-29.90
1.50	0.823	-1.69	16.50	0.118	-18.56	40.00	0.049	-26.20	63.50	0.054	-25.35	87.00	0.028	-31.06
1.75	0.711	-2.96	17.00	0.122	-18.27	40.50	0.055	-25.19	64.00	0.060	-24.44	87.50	0.023	-32.77
2.00	0.602	-4.41	17.50	0.056	-25.04	41.00	0.050	-26.02	64.50	0.066	-23.61	88.00	0.019	-34.42
2.25	0.520	-5.68	18.00	0.057	-24.88	41.50	0.037	-28.64	65.00	0.071	-22.97	88.50	0.014	-37.08
2.50	0.473	-6.50	18.50	0.030	-30.46	42.00	0.019	-34.42	65.50	0.076	-22.38	89.00	0.009	-40.92
2.75	0.457	-6.80	19.00	0.015	-36.48	42.50	0.006	-44.44	66.00	0.081	-21.83	89.50	0.005	-46.02
3.00	0.448	-6.97	19.50	0.018	-34.89	43.00	0.019	-34.42	66.50	0.085	-21.41	90.00	0.000	---
3.25	0.430	-7.33	20.00	0.033	-29.63	43.50	0.030	-30.46	67.00	0.089	-21.01			
3.50	0.394	-8.09	20.50	0.075	-22.50	44.00	0.036	-28.87	67.50	0.092	-20.72			
3.75	0.340	-9.37	21.00	0.106	-19.49	44.50	0.038	-28.40	68.00	0.096	-20.35			
4.00	0.279	-11.09	21.50	0.083	-21.62	45.00	0.035	-29.12	68.50	0.098	-20.18			
4.25	0.231	-12.73	22.00	0.043	-27.33	45.50	0.031	-30.17	69.00	0.101	-19.91			
4.50	0.212	-13.47	22.50	0.057	-24.88	46.00	0.025	-32.04	69.50	0.103	-19.74			
4.75	0.222	-13.07	23.00	0.029	-30.75	46.50	0.019	-34.42	70.00	0.105	-19.58			
5.00	0.240	-12.40	23.50	0.020	-33.98	47.00	0.014	-37.08	70.50	0.107	-19.41			
5.25	0.247	-12.15	24.00	0.034	-29.37	47.50	0.009	-40.92	71.00	0.108	-19.33			
5.50	0.237	-12.51	24.50	0.035	-29.12	48.00	0.006	-44.44	71.50	0.109	-19.25			
5.75	0.207	-13.68	25.00	0.054	-25.35	48.50	0.004	-47.96	72.00	0.109	-19.25			
6.00	0.168	-15.49	25.50	0.074	-22.62	49.00	0.003	-50.46	72.50	0.110	-19.17			
6.25	0.138	-17.20	26.00	0.080	-21.94	49.50	0.001	-60.00	73.00	0.110	-19.17			
6.50	0.138	-17.20	26.50	0.055	-25.19	50.00	0.000	---	73.50	0.109	-19.25			