

Description of Antenna System

The directional Andrew ATW20H3-HTOC-32H antenna currently installed for analog operations at WNCN will be re-used with no structural changes to the existing antenna mounting height, transmission line, or the supporting tower.

Page 2-5 of this exhibit detail the antenna's horizontal and vertical pattern as supplied from the manufacturer.

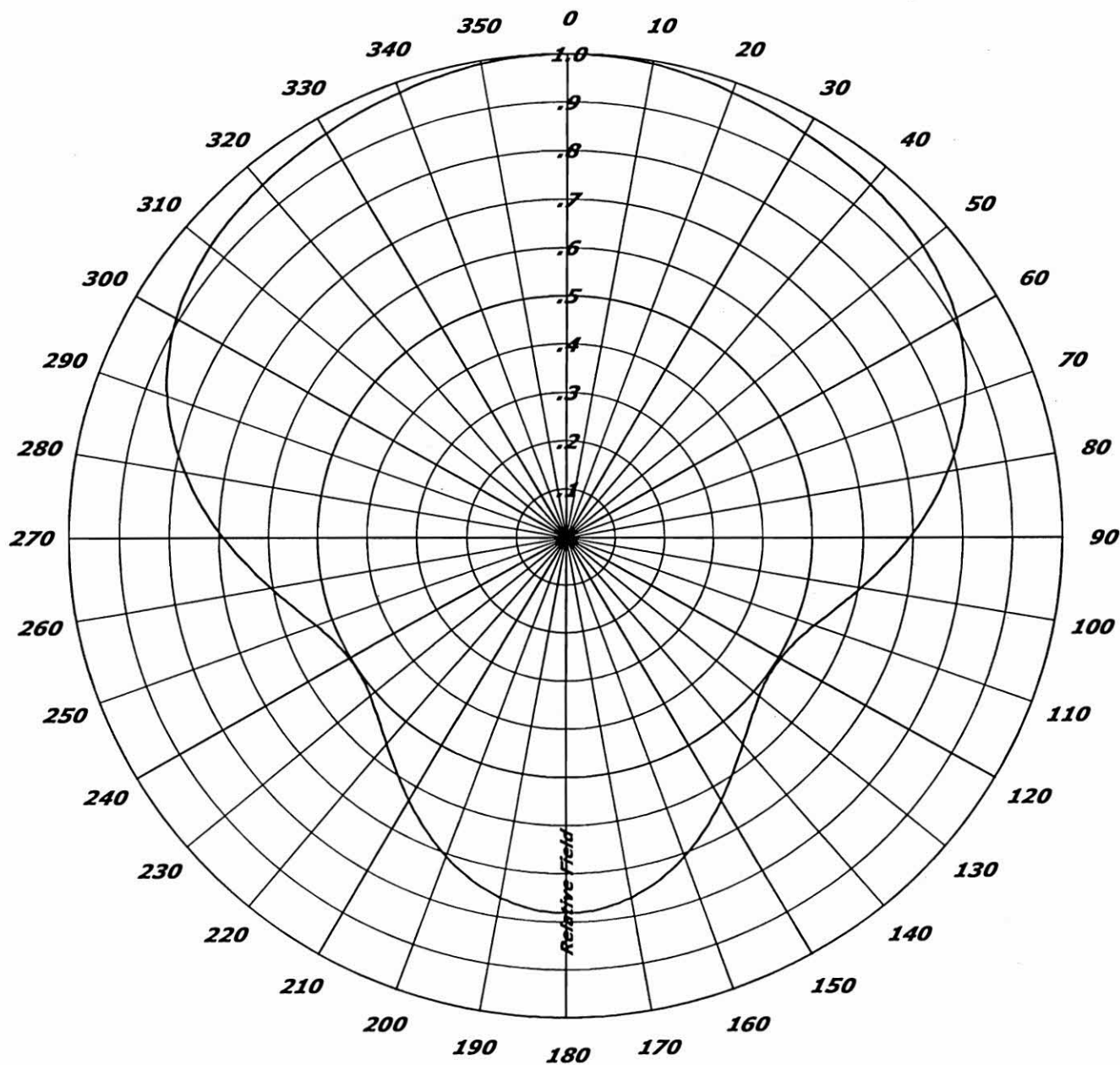
Page 6 Shows the resulting pattern and ERP values with the antenna rotated 60 degrees true north as specified in the body of the application.

Type: CH32AZ-H-BID-OC

Peak(s) At: _____

Channel: _____ **32**

Location: Montgomery, AL



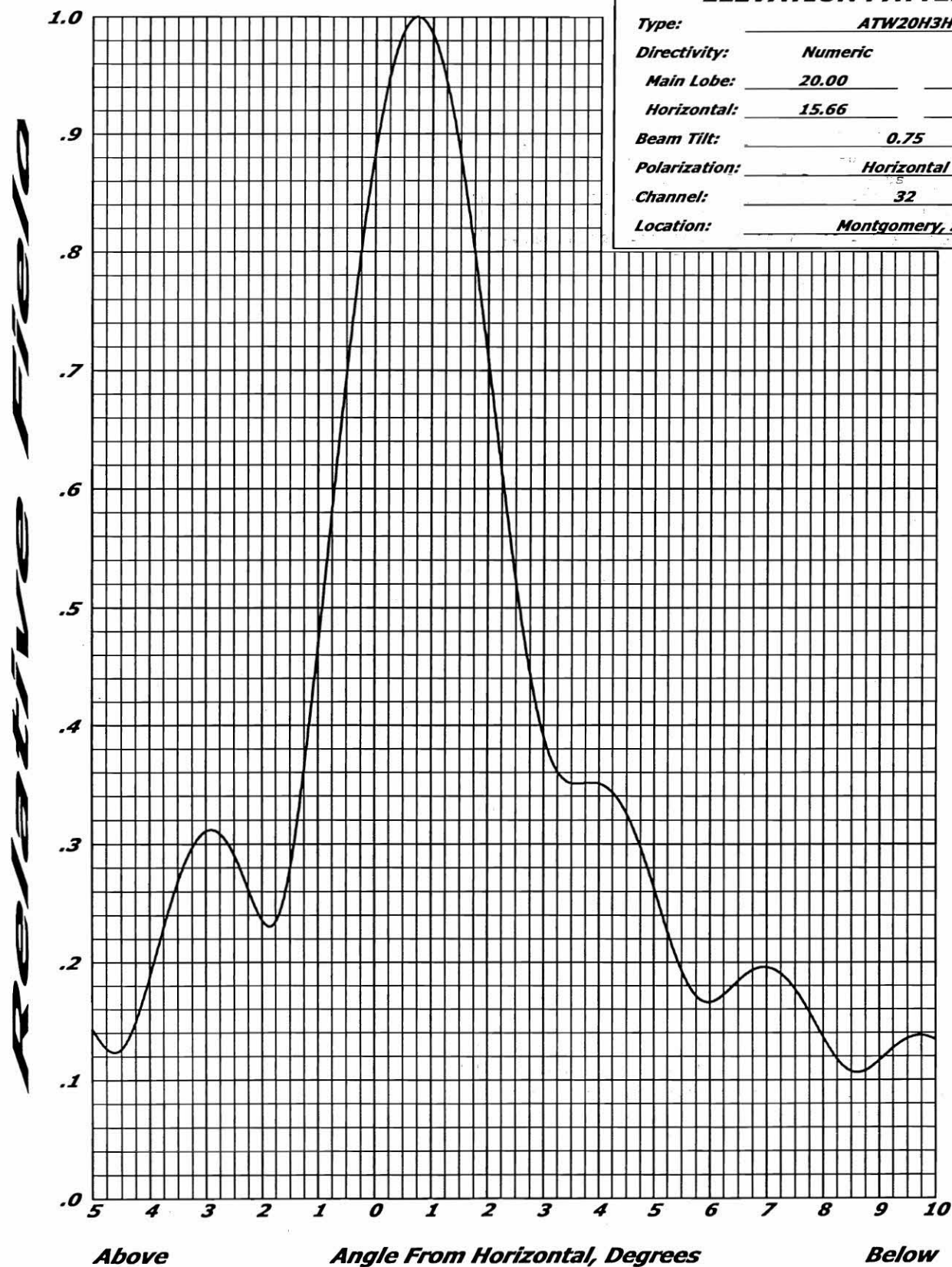
**TABULATED DATA FOR AZIMUTH PATTERN****TYPE : CH32AZ-H-BID-OC**

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	1.000	0.00	110	0.535	-5.43	220	0.560	-5.04	330	0.965	-0.31
2	1.000	0.00	112	0.526	-5.58	222	0.548	-5.22	332	0.967	-0.29
4	0.999	-0.01	114	0.517	-5.73	224	0.538	-5.38	334	0.970	-0.26
6	0.998	-0.02	116	0.511	-5.83	226	0.528	-5.55	336	0.973	-0.24
8	0.996	-0.03	118	0.506	-5.92	228	0.520	-5.68	338	0.976	-0.21
10	0.994	-0.05	120	0.503	-5.97	230	0.513	-5.80	340	0.979	-0.18
12	0.991	-0.08	122	0.501	-6.00	232	0.507	-5.90	342	0.983	-0.15
14	0.989	-0.10	124	0.502	-5.99	234	0.504	-5.95	344	0.986	-0.12
16	0.986	-0.12	126	0.504	-5.95	236	0.502	-5.99	346	0.989	-0.10
18	0.983	-0.15	128	0.507	-5.90	238	0.501	-6.00	348	0.991	-0.08
20	0.979	-0.18	130	0.513	-5.80	240	0.503	-5.97	350	0.994	-0.05
22	0.976	-0.21	132	0.520	-5.68	242	0.506	-5.92	352	0.996	-0.03
24	0.973	-0.24	134	0.528	-5.55	244	0.511	-5.83	354	0.998	-0.02
26	0.970	-0.26	136	0.538	-5.38	246	0.517	-5.73	356	0.999	-0.01
28	0.967	-0.29	138	0.548	-5.22	248	0.526	-5.58	358	1.000	0.00
30	0.965	-0.31	140	0.560	-5.04	250	0.535	-5.43	360	1.000	0.00
32	0.962	-0.34	142	0.573	-4.84	252	0.547	-5.24			
34	0.959	-0.36	144	0.587	-4.63	254	0.559	-5.05			
36	0.957	-0.38	146	0.601	-4.42	256	0.573	-4.84			
38	0.955	-0.40	148	0.616	-4.21	258	0.588	-4.61			
40	0.952	-0.43	150	0.631	-4.00	260	0.604	-4.38			
42	0.950	-0.45	152	0.646	-3.80	262	0.620	-4.15			
44	0.947	-0.47	154	0.662	-3.58	264	0.637	-3.92			
46	0.944	-0.50	156	0.676	-3.40	266	0.655	-3.68			
48	0.941	-0.53	158	0.691	-3.21	268	0.673	-3.44			
50	0.937	-0.57	160	0.705	-3.04	270	0.691	-3.21			
52	0.932	-0.61	162	0.718	-2.88	272	0.710	-2.97			
54	0.927	-0.66	164	0.730	-2.73	274	0.728	-2.76			
56	0.921	-0.71	166	0.741	-2.60	276	0.746	-2.55			
58	0.915	-0.77	168	0.751	-2.49	278	0.763	-2.35			
60	0.907	-0.85	170	0.760	-2.38	280	0.780	-2.16			
62	0.899	-0.92	172	0.767	-2.30	282	0.797	-1.97			
64	0.889	-1.02	174	0.772	-2.25	284	0.813	-1.80			
66	0.879	-1.12	176	0.777	-2.19	286	0.828	-1.64			
68	0.868	-1.23	178	0.779	-2.17	288	0.842	-1.49			
70	0.855	-1.36	180	0.780	-2.16	290	0.855	-1.36			
72	0.842	-1.49	182	0.779	-2.17	292	0.868	-1.23			
74	0.828	-1.64	184	0.777	-2.19	294	0.879	-1.12			
76	0.813	-1.80	186	0.772	-2.25	296	0.889	-1.02			
78	0.797	-1.97	188	0.767	-2.30	298	0.899	-0.92			
80	0.780	-2.16	190	0.760	-2.38	300	0.907	-0.85			
82	0.763	-2.35	192	0.751	-2.49	302	0.915	-0.77			
84	0.746	-2.55	194	0.741	-2.60	304	0.921	-0.71			
86	0.728	-2.76	196	0.730	-2.73	306	0.927	-0.66			
88	0.710	-2.97	198	0.718	-2.88	308	0.932	-0.61			
90	0.691	-3.21	200	0.705	-3.04	310	0.937	-0.57			
92	0.673	-3.44	202	0.691	-3.21	312	0.941	-0.53			
94	0.655	-3.68	204	0.676	-3.40	314	0.944	-0.50			
96	0.637	-3.92	206	0.662	-3.58	316	0.947	-0.47			
98	0.620	-4.15	208	0.646	-3.80	318	0.950	-0.45			
100	0.604	-4.38	210	0.631	-4.00	320	0.952	-0.43			
102	0.588	-4.61	212	0.616	-4.21	322	0.955	-0.40			
104	0.573	-4.84	214	0.601	-4.42	324	0.957	-0.38			
106	0.559	-5.05	216	0.587	-4.63	326	0.959	-0.36			
108	0.547	-5.24	218	0.573	-4.84	328	0.962	-0.34			



ANDREW **ELEVATION PATTERN**

Type:	ATW20H3H	
Directivity:	Numeric	dBd
Main Lobe:	20.00	(13.01)
Horizontal:	15.66	(11.95)
Beam Tilt:	0.75	
Polarization:	Horizontal	
Channel:	32	
Location:	Montgomery, AL	

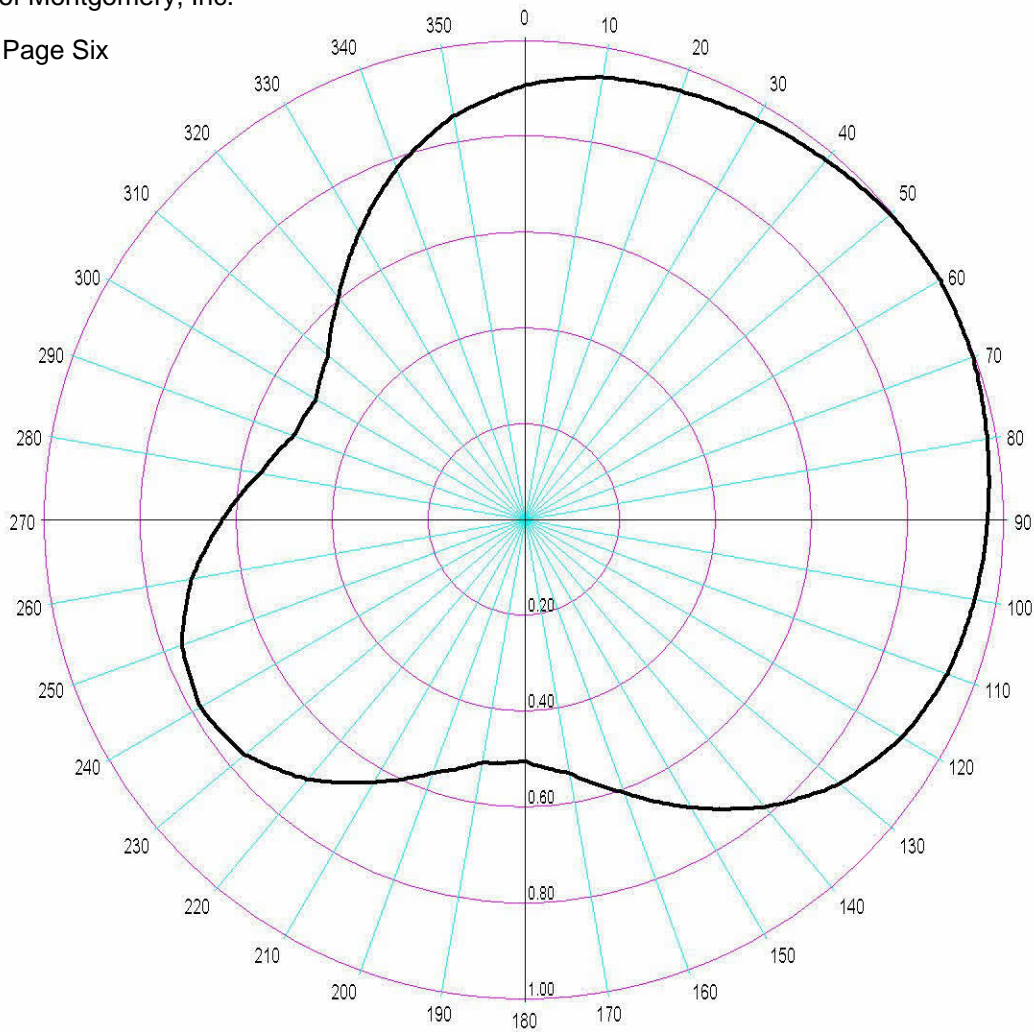




TABULATED DATA FOR ELEVATION PATTERN

TYPE : ATW20H3H

Angle Field dB -5 To 10 In 0.25 Increments	Angle Field dB 10 To 90 In 0.5 Increments	Angle Field dB	Angle Field dB
-5.00 0.143 -16.89	8.75 0.108 -19.32	35.00 0.039 -28.19	62.50 0.027 -31.21
-4.75 0.126 -17.96	9.00 0.117 -18.66	35.50 0.047 -26.54	63.00 0.029 -30.76
-4.50 0.126 -17.98	9.25 0.127 -17.90	36.00 0.049 -26.11	63.50 0.036 -28.98
-4.25 0.149 -16.54	9.50 0.135 -17.38	36.50 0.045 -26.97	64.00 0.044 -27.16
-4.00 0.187 -14.55	9.75 0.138 -17.21	37.00 0.036 -28.95	64.50 0.051 -25.78
-3.75 0.230 -12.77	10.00 0.134 -17.44	37.50 0.029 -30.76	65.00 0.057 -24.88
-3.50 0.268 -11.42	10.50 0.111 -19.08	38.00 0.032 -29.81	65.50 0.060 -24.42
-3.25 0.297 -10.55	11.00 0.084 -21.50	38.50 0.041 -27.70	66.00 0.060 -24.37
-3.00 0.311 -10.15	11.50 0.082 -21.75	39.00 0.048 -26.46	66.50 0.058 -24.71
-2.75 0.308 -10.22	12.00 0.099 -20.10	39.50 0.048 -26.42	67.00 0.053 -25.44
-2.50 0.291 -10.74	12.50 0.107 -19.40	40.00 0.042 -27.57	67.50 0.047 -26.57
-2.25 0.262 -11.63	13.00 0.097 -20.30	40.50 0.033 -29.69	68.00 0.039 -28.10
-2.00 0.236 -12.55	13.50 0.075 -22.55	41.00 0.028 -31.17	68.50 0.032 -29.88
-1.75 0.235 -12.57	14.00 0.063 -24.00	41.50 0.032 -29.84	69.00 0.027 -31.37
-1.50 0.279 -11.08	14.50 0.074 -22.59	42.00 0.041 -27.75	69.50 0.026 -31.56
-1.25 0.363 -8.80	15.00 0.087 -21.20	42.50 0.047 -26.56	70.00 0.031 -30.30
-1.00 0.469 -6.57	15.50 0.086 -21.30	43.00 0.047 -26.48	70.50 0.037 -28.57
-0.75 0.584 -4.67	16.00 0.071 -22.99	43.50 0.042 -27.49	71.00 0.045 -27.00
-0.50 0.697 -3.14	16.50 0.055 -25.26	44.00 0.034 -29.43	71.50 0.052 -25.75
-0.25 0.799 -1.95	17.00 0.056 -24.98	44.50 0.028 -31.14	72.00 0.057 -24.82
0.00 0.885 -1.06	17.50 0.070 -23.08	45.00 0.030 -30.32	72.50 0.062 -24.17
0.25 0.949 -0.45	18.00 0.077 -22.29	45.50 0.039 -28.21	73.00 0.065 -23.77
0.50 0.988 -0.10	18.50 0.070 -23.09	46.00 0.046 -26.69	73.50 0.066 -23.59
0.75 1.000 0.00	19.00 0.055 -25.26	46.50 0.049 -26.16	74.00 0.066 -23.61
1.00 0.985 -0.13	19.50 0.046 -26.80	47.00 0.047 -26.61	74.50 0.064 -23.81
1.25 0.944 -0.50	20.00 0.054 -25.35	47.50 0.040 -28.01	75.00 0.062 -24.19
1.50 0.881 -1.10	20.50 0.065 -23.71	48.00 0.031 -30.04	75.50 0.058 -24.73
1.75 0.801 -1.93	21.00 0.067 -23.50	48.50 0.028 -31.19	76.00 0.054 -25.43
2.00 0.709 -2.99	21.50 0.057 -24.85	49.00 0.032 -29.89	76.50 0.048 -26.29
2.25 0.613 -4.25	22.00 0.044 -27.17	49.50 0.040 -27.87	77.00 0.043 -27.31
2.50 0.522 -5.65	22.50 0.042 -27.62	50.00 0.047 -26.51	77.50 0.038 -28.48
2.75 0.445 -7.03	23.00 0.052 -25.66	50.50 0.050 -26.02	78.00 0.032 -29.78
3.00 0.390 -8.17	23.50 0.061 -24.36	51.00 0.048 -26.39	78.50 0.028 -31.16
3.25 0.361 -8.86	24.00 0.059 -24.56	51.50 0.042 -27.61	79.00 0.024 -32.48
3.50 0.351 -9.09	24.50 0.049 -26.25	52.00 0.033 -29.54	79.50 0.021 -33.57
3.75 0.351 -9.09	25.00 0.038 -28.46	52.50 0.028 -31.21	80.00 0.020 -34.19
4.00 0.351 -9.10	25.50 0.039 -28.11	53.00 0.029 -30.72	80.50 0.019 -34.27
4.25 0.343 -9.29	26.00 0.050 -26.06	53.50 0.037 -28.72	81.00 0.020 -33.94
4.50 0.325 -9.75	26.50 0.056 -24.98	54.00 0.045 -26.96	81.50 0.021 -33.42
4.75 0.298 -10.53	27.00 0.054 -25.39	54.50 0.050 -25.94	82.00 0.023 -32.89
5.00 0.263 -11.61	27.50 0.044 -27.18	55.00 0.052 -25.67	82.50 0.024 -32.45
5.25 0.226 -12.93	28.00 0.035 -29.22	55.50 0.049 -26.12	83.00 0.025 -32.13
5.50 0.193 -14.29	28.50 0.037 -28.56	56.00 0.043 -27.30	83.50 0.025 -31.95
5.75 0.172 -15.30	29.00 0.047 -26.52	56.50 0.035 -29.10	84.00 0.025 -31.92
6.00 0.166 -15.60	29.50 0.053 -25.49	57.00 0.028 -30.91	84.50 0.025 -32.04
6.25 0.173 -15.25	30.00 0.051 -25.88	57.50 0.028 -31.09	85.00 0.024 -32.32
6.50 0.184 -14.69	30.50 0.042 -27.63	58.00 0.034 -29.38	85.50 0.023 -32.76
6.75 0.193 -14.27	31.00 0.033 -29.75	58.50 0.042 -27.45	86.00 0.021 -33.38
7.00 0.196 -14.16	31.50 0.034 -29.35	59.00 0.050 -26.06	86.50 0.020 -34.19
7.25 0.190 -14.41	32.00 0.043 -27.26	59.50 0.054 -25.29	87.00 0.017 -35.23
7.50 0.177 -15.04	32.50 0.050 -26.01	60.00 0.056 -25.11	87.50 0.015 -36.58
7.75 0.158 -16.04	33.00 0.049 -26.12	60.50 0.053 -25.50	88.00 0.012 -38.33
8.00 0.136 -17.30	33.50 0.042 -27.55	61.00 0.048 -26.46	88.50 0.009 -40.68
8.25 0.118 -18.57	34.00 0.033 -29.73	61.50 0.040 -27.98	89.00 0.006 -44.10
8.50 0.108 -19.36	34.50 0.031 -30.16	62.00 0.032 -29.85	89.50 0.003 -50.06



Azim	Rel.FS	ERP [kW]	dBk
0.0	0.907	68.280	18.343
5.0	0.922	70.557	18.485
10.0	0.937	72.871	18.626
15.0	0.944	73.964	18.690
20.0	0.952	75.223	18.764
25.0	0.958	76.174	18.818
30.0	0.965	77.292	18.881
35.0	0.972	78.417	18.944
40.0	0.979	79.551	19.006
45.0	0.986	80.692	19.068
50.0	0.994	82.007	19.139
55.0	0.997	82.503	19.165
60.0	1.000	83.000	19.191
65.0	0.997	82.503	19.165
70.0	0.994	82.007	19.139
75.0	0.986	80.692	19.068
80.0	0.979	79.551	19.006
85.0	0.972	78.417	18.944

Azim	Rel.FS	ERP [kW]	dBk
90.0	0.965	77.292	18.881
95.0	0.958	76.174	18.818
100.0	0.952	75.223	18.764
105.0	0.944	73.964	18.690
110.0	0.937	72.871	18.626
115.0	0.922	70.557	18.485
120.0	0.907	68.280	18.343
125.0	0.881	64.421	18.090
130.0	0.855	60.675	17.830
135.0	0.817	55.402	17.435
140.0	0.780	50.497	17.033
145.0	0.735	44.839	16.517
150.0	0.691	39.631	15.980
155.0	0.647	34.745	15.409
160.0	0.604	30.280	14.812
165.0	0.569	26.872	14.293
170.0	0.535	23.757	13.758
175.0	0.519	22.357	13.494

Azim	Rel.FS	ERP [kW]	dBk
180.0	0.503	21.000	13.222
185.0	0.508	21.419	13.308
190.0	0.513	21.843	13.393
195.0	0.536	23.846	13.774
200.0	0.560	26.029	14.155
205.0	0.595	29.384	14.681
210.0	0.631	33.047	15.191
215.0	0.668	37.037	15.686
220.0	0.705	41.253	16.155
225.0	0.732	44.473	16.481
230.0	0.760	47.941	16.807
235.0	0.770	49.211	16.921
240.0	0.780	50.497	17.033
245.0	0.770	49.211	16.921
250.0	0.760	47.941	16.807
255.0	0.732	44.473	16.481
260.0	0.705	41.253	16.155
265.0	0.668	37.037	15.686

Azim	Rel.FS	ERP [kW]	dBk
270.0	0.631	33.047	15.191
275.0	0.595	29.384	14.681
280.0	0.560	26.029	14.155
285.0	0.536	23.846	13.774
290.0	0.513	21.843	13.393
295.0	0.508	21.419	13.308
300.0	0.503	21.000	13.222
305.0	0.519	22.357	13.494
310.0	0.535	23.757	13.758
315.0	0.569	26.872	14.293
320.0	0.604	30.280	14.812
325.0	0.647	34.745	15.409
330.0	0.691	39.631	15.980
335.0	0.735	44.839	16.517
340.0	0.780	50.497	17.033
345.0	0.817	55.402	17.435
350.0	0.855	60.675	17.830
355.0	0.881	64.421	18.090

Depicted Values include rotation to 60 Degrees True North