

Preliminary Specification

TRASAR® Top Mounted

UHF Elliptically Polarized

Coaxial Slotted Array Television Antenna

Project: WYES_Channel_Change

Customer: WYES

Location: New Orleans

Model: ATW32HS3-ETWC-28H

Specification No.: EBSP - 001706298071

Created By: WRM

Notes/Revisions:

Revision Date:

02-01-2021

Specification Code:

EBSP - 001706298071

**Preliminary Specification for
TRASAR® Top Mounted
UHF Elliptically Polarized
Coaxial Slotted Array Television Antenna**

Electrical Characteristics

Channel:	28
Frequency:	554 MHz to 560 MHz
Service:	ATSC
Azimuth Pattern Number:	Horizontal Polarization: ATW-WC Vertical Polarization: ATW-V8
Elevation Pattern Number:	Horizontal Polarization: ATW32HS3H Vertical Polarization: ATW29HS3H
Azimuth Directivity:	Horizontal Polarization: 1.40 (1.46 dB) Vertical Polarization: 1.80 (2.55 dB)
Elevation Directivity:	Horizontal Polarization: 32.00 (15.05 dBd) Vertical Polarization: 29.00 (14.62 dBd)
Peak Power Gain:	Horizontal Polarization: 31.35 (14.96 dBd) Vertical Polarization: 15.67 (11.95 dBd)
Gain at Horizontal:	Horizontal Polarization: 18.2 (12.60 dBd) Vertical Polarization: 8.8 (9.44 dBd)
ERP Vertical/Horizontal Ratio:	0.5
Power Ratio:	0.429
Electric Beam Tilt:	0.75 Degrees
Input Power Required:	31.90 kW (15.04 dBk)
RF Input:	6-1/8-inch EIA, 50 Ω , flanged male
Input Power Rating (maximum):	57 kW Average Power,
Antenna VSWR (maximum):	1.10 : 1 Over 6 MHz Channel

Preliminary Specification for TRASAR® Top Mounted UHF Elliptically Polarized Coaxial Slotted Array Television Antenna

Antenna Mechanical Characteristics

Mounting Configuration:	Top Mounted
Height of Antenna:	68.9 feet (21.0 meters)
Height of Center of Radiation:	34.5 feet (10.5 meters)
Overall Height (Includes four 3.5 ft. lightning spurs):	72.4 feet (22.1 meters)
Deicing:	Fully enclosed pressurized radome
Radome Diameter :	TBD (-- millimeters)
Radome Color:	Aviation Orange
Climbing Device:	Fiberglass Ladder
Calculated Weight ¹ :	No Ice: TBD lb (-- kg)
	0.5 inch (13 mm) ice: TBD lb (-- kg)
Effective Projected Area (EPA - ft ²) ¹² :	No Ice: TBD ft ² (-- m ²)
	0.5 inch (13 mm) ice: TBD ft ² (-- m ²)
Effective Moment Arm ¹² :	No Ice: TBD
	0.5 inch (13 mm) ice: TBD

MOUNTING FLANGE BOLT CIRCLE³: Quantity (16), 1.38 inch holes for 1.25 inch bolts, equally spaced on a 21.50 inch bolt circle. 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 antenna, lightning spurs, and beacon only. Custom mounting brackets/adapters and/or antenna input section are NOT included.

2. Preliminary antenna design based on a wind speed of 00 miles per hour (MPH) with no ice and 00 MPH with 0.00 -inches of design radial ice (0.00-inches of factored ice at antenna, tiz) with a height above ground level (HAGL) of 000 feet per ANSI/TIA-222-G. Structure Class II, Exposure Category C and Topographic Category I. Weight and wind area values include four lightning spurs and a standard beacon.

3. 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 bolt pattern unless electrical and/or mechanical requirements for the new antenna preclude the matching flange. Customer shall be responsible for supplying existing flange bolt pattern details when requesting a custom matching flange on the new antenna.

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

RF Channel: 28

WYES

ATW32HS3-ETWC-28H

Antenna Parameters

Azimuth Directivity:

Horizontal: 1.40 kW (1.46 dB)

Vertical: 1.80 kW (2.55 dB)

Elevation Directivity:

Horizontal: 32.00 (15.05 dB)

Vertical: 29.00 (14.62 dB)

Transmission Line

Vertical Run:

Type: 6-1/8-inch EIA, 50 Ω

Length: 100 feet (30.5 meters)

Attenuation: 0.117 db/100 feet (0.384 db/100 meters)

Horizontal Run:

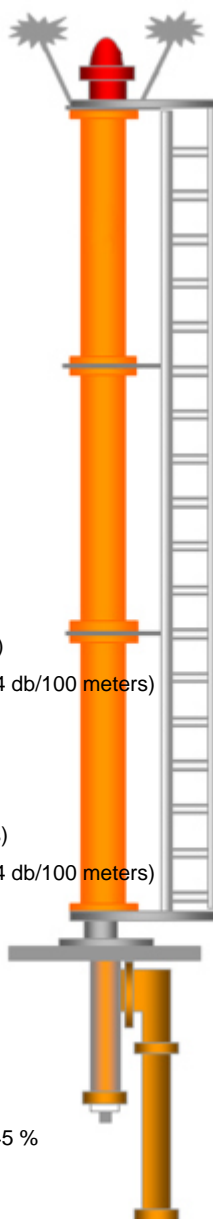
Type: 6-1/8-inch EIA, 50 Ω

Length: 1200 feet (365.9 meters)

Attenuation: 0.117 db/100 feet (0.384 db/100 meters)

Transmission Line Efficiency: 70.45 %

RF System/Other Efficiency: 100 %



Effective Radiated Power:

Horizontal: 999.99 kW (30 dBk)

Vertical: 499.99 kW (26.99 dBk)

Power Gain:

Horizontal: 31.35 numeric (14.96 dBd)

Vertical: 15.67 numeric (11.95 dBd)

Antenna Input Power:

31.90 kW (15.04 dBk)

Transmission Line Losses:

-13.38 kW (1.521 dB)

RF System/Other Losses:

0 kW (dB)

Total Losses:

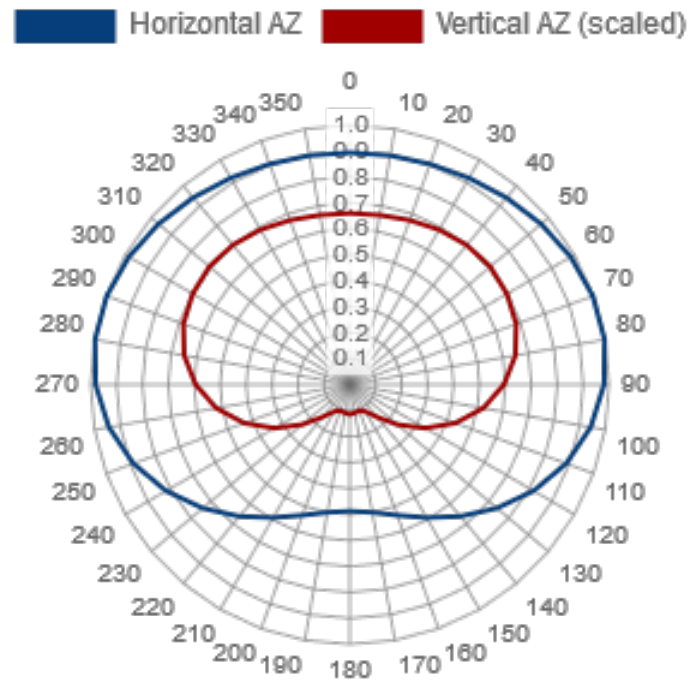
-13.38 kW (1.521 dB)

Transmitter Power Output:

45.28 kW (16.56 dBk)

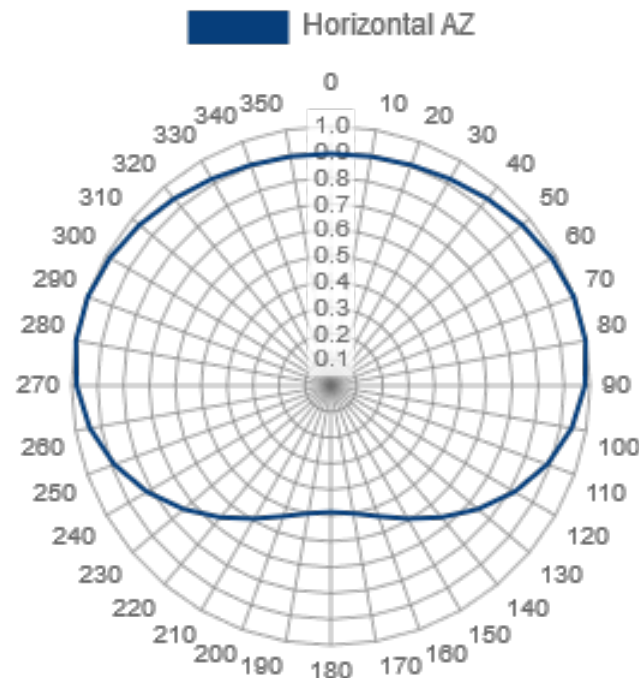
Composite Azimuth Patterns

Type:	ATW-WC	Polarization:	Elliptical
Directivity (H-Pol):	1.40 numeric (1.46 dB)	Frequency:	28 (ATSC)
Directivity (V-Pol):	1.80 numeric (2.55 dB)	Location:	New Orleans
Percent Horizontal:	69.97%	Note: Pattern shape and directivity may vary with channel and mounting.	
Percent Vertical:	30.03%		
Power Ratio:	42.91%		
ERP V/H Ratio:	50.00%		



Azimuth Pattern

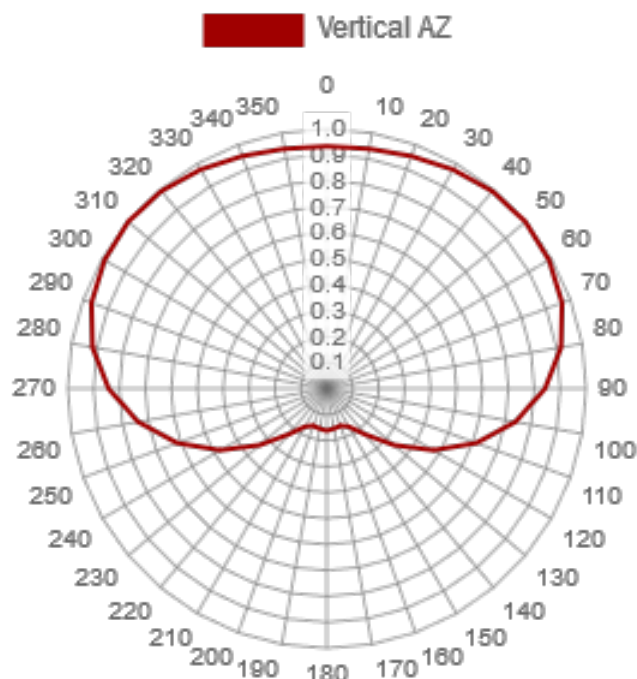
Type:	ATW-WC	Polarization:	Horizontal
Directivity:	1.40 numeric (1.46 dB)	Frequency:	28 (ATSC)
Peak(s) at:		Location:	New Orleans
Note: Pattern shape and directivity may vary with channel and mounting configuration.			



Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	0.893	-0.98	61	0.985	-0.13	122	0.803	-1.91	183	0.492	-6.16	244	0.847	-1.44	305	0.974	-0.23
1	0.893	-0.98	62	0.987	-0.11	123	0.796	-1.98	184	0.493	-6.14	245	0.854	-1.37	306	0.971	-0.26
2	0.894	-0.97	63	0.988	-0.1	124	0.788	-2.07	185	0.494	-6.13	246	0.861	-1.3	307	0.969	-0.27
3	0.894	-0.97	64	0.990	-0.09	125	0.780	-2.16	186	0.495	-6.11	247	0.868	-1.23	308	0.967	-0.29
4	0.894	-0.97	65	0.991	-0.08	126	0.772	-2.25	187	0.496	-6.09	248	0.875	-1.16	309	0.965	-0.31
5	0.895	-0.96	66	0.992	-0.07	127	0.764	-2.34	188	0.498	-6.06	249	0.882	-1.09	310	0.963	-0.33
6	0.895	-0.96	67	0.994	-0.05	128	0.757	-2.42	189	0.499	-6.04	250	0.889	-1.02	311	0.961	-0.35
7	0.895	-0.96	68	0.995	-0.04	129	0.749	-2.51	190	0.500	-6.02	251	0.895	-0.96	312	0.958	-0.37
8	0.895	-0.96	69	0.997	-0.03	130	0.741	-2.6	191	0.504	-5.95	252	0.900	-0.92	313	0.956	-0.39
9	0.896	-0.95	70	0.998	-0.02	131	0.733	-2.7	192	0.507	-5.9	253	0.906	-0.86	314	0.954	-0.41
10	0.896	-0.95	71	0.998	-0.02	132	0.725	-2.79	193	0.511	-5.83	254	0.911	-0.81	315	0.952	-0.43
11	0.897	-0.94	72	0.999	-0.01	133	0.718	-2.88	194	0.514	-5.78	255	0.917	-0.75	316	0.949	-0.45
12	0.898	-0.93	73	0.999	-0.01	134	0.710	-2.97	195	0.518	-5.71	256	0.922	-0.71	317	0.947	-0.47
13	0.898	-0.93	74	1.000	0	135	0.702	-3.07	196	0.522	-5.65	257	0.928	-0.65	318	0.945	-0.49
14	0.899	-0.92	75	1.000	0	136	0.694	-3.17	197	0.525	-5.6	258	0.933	-0.6	319	0.942	-0.52
15	0.900	-0.92	76	1.000	0	137	0.686	-3.27	198	0.529	-5.53	259	0.939	-0.55	320	0.940	-0.54
16	0.901	-0.91	77	0.999	-0.01	138	0.679	-3.36	199	0.532	-5.48	260	0.944	-0.5	321	0.938	-0.56
17	0.902	-0.9	78	0.999	-0.01	139	0.671	-3.47	200	0.536	-5.42	261	0.948	-0.46	322	0.936	-0.57
18	0.902	-0.9	79	0.998	-0.02	140	0.663	-3.57	201	0.542	-5.32	262	0.951	-0.44	323	0.934	-0.59
19	0.903	-0.89	80	0.998	-0.02	141	0.656	-3.66	202	0.547	-5.24	263	0.955	-0.4	324	0.932	-0.61
20	0.904	-0.88	81	0.996	-0.03	142	0.649	-3.76	203	0.553	-5.15	264	0.959	-0.36	325	0.930	-0.63
21	0.906	-0.86	82	0.995	-0.04	143	0.642	-3.85	204	0.558	-5.07	265	0.963	-0.33	326	0.927	-0.66
22	0.907	-0.85	83	0.993	-0.06	144	0.635	-3.94	205	0.564	-4.97	266	0.966	-0.3	327	0.925	-0.68
23	0.909	-0.83	84	0.991	-0.08	145	0.628	-4.04	206	0.570	-4.88	267	0.970	-0.26	328	0.923	-0.7
24	0.910	-0.82	85	0.990	-0.09	146	0.620	-4.15	207	0.575	-4.81	268	0.974	-0.23	329	0.921	-0.71
25	0.912	-0.8	86	0.988	-0.1	147	0.613	-4.25	208	0.581	-4.72	269	0.977	-0.2	330	0.919	-0.73
26	0.913	-0.79	87	0.986	-0.12	148	0.606	-4.35	209	0.586	-4.64	270	0.981	-0.17	331	0.918	-0.74
27	0.915	-0.77	88	0.984	-0.14	149	0.599	-4.45	210	0.592	-4.55	271	0.983	-0.15	332	0.916	-0.76
28	0.916	-0.76	89	0.983	-0.15	150	0.592	-4.55	211	0.599	-4.45	272	0.984	-0.14	333	0.915	-0.77
29	0.918	-0.74	90	0.981	-0.17	151	0.586	-4.64	212	0.606	-4.35	273	0.986	-0.12	334	0.913	-0.79
30	0.919	-0.73	91	0.977	-0.2	152	0.581	-4.72	213	0.613	-4.25	274	0.988	-0.1	335	0.912	-0.8
31	0.921	-0.71	92	0.974	-0.23	153	0.575	-4.81	214	0.620	-4.15	275	0.990	-0.09	336	0.910	-0.82
32	0.923	-0.7	93	0.970	-0.26	154	0.570	-4.88	215	0.628	-4.04	276	0.991	-0.08	337	0.909	-0.83
33	0.925	-0.68	94	0.966	-0.3	155	0.564	-4.97	216	0.635	-3.94	277	0.993	-0.06	338	0.907	-0.85
34	0.927	-0.66	95	0.963	-0.33	156	0.558	-5.07	217	0.642	-3.85	278	0.995	-0.04	339	0.906	-0.86
35	0.930	-0.63	96	0.959	-0.36	157	0.553	-5.15	218	0.649	-3.76	279	0.996	-0.03	340	0.904	-0.88
36	0.932	-0.61	97	0.955	-0.4	158	0.547	-5.24	219	0.656	-3.66	280	0.998	-0.02	341	0.903	-0.89
37	0.934	-0.59	98	0.951	-0.44	159	0.542	-5.32	220	0.663	-3.57	281	0.998	-0.02	342	0.902	-0.9
38	0.936	-0.57	99	0.948	-0.46	160	0.536	-5.42	221	0.671	-3.47	282	0.999	-0.01	343	0.902	-0.9
39	0.938	-0.56	100	0.944	-0.5	161	0.532	-5.48	222	0.679	-3.36	283	0.999	-0.01	344	0.901	-0.91
40	0.940	-0.54	101	0.939	-0.55	162	0.529	-5.53	223	0.686	-3.27	284	1.000	0	345	0.900	-0.92
41	0.942	-0.52	102	0.933	-0.6	163	0.525	-5.6	224	0.694	-3.17	285	1.000	0	346	0.899	-0.92
42	0.945	-0.49	103	0.928	-0.65	164	0.522	-5.65	225	0.702	-3.07	286	1.000	0	347	0.898	-0.93
43	0.947	-0.47	104	0.922	-0.71	165	0.518	-5.71	226	0.710	-2.97	287	0.999	-0.01	348	0.898	-0.93
44	0.949	-0.45	105	0.917	-0.75	166	0.514	-5.78	227	0.718	-2.88	288	0.999	-0.01	349	0.897	-0.94
45	0.952	-0.43	106	0.911	-0.81	167	0.511	-5.83	228	0.725	-2.79	289	0.998	-0.02	350	0.896	-0.95
46	0.954	-0.41	107	0.906	-0.86	168	0.507	-5.9	229	0.733	-2.7	290	0.998	-0.02	351	0.896	-0.95
47	0.956	-0.39	108	0.900	-0.92	169	0.504	-5.95	230	0.741	-2.6	291	0.997	-0.03	352	0.895	-0.96
48	0.958	-0.37	109	0.895	-0.96	170	0.500	-6.02	231	0.749	-2.51	292	0.995	-0.04	353	0.895	-0.96
49	0.961	-0.35	110	0.889	-1.02	171	0.499	-6.04	232	0.757	-2.42	293	0.994	-0.05	354	0.895	-0.96
50	0.963	-0.33	111	0.882	-1.09	172	0.498	-6.06	233	0.764	-2.34	294	0.992	-0.07	355	0.895	-0.96
51	0.965	-0.31	112	0.875	-1.16	173	0.496	-6.09	234	0.772	-2.25	295	0.991	-0.08	356	0.894	-0.97
52	0.967	-0.29	113	0.868	-1.23	174	0.495	-6.11	235	0.780	-2.16	296	0.990	-0.09	357	0.894	-0.97
53	0.969	-0.27	114	0.861	-1.3	175	0.494	-6.13	236	0.788	-2.07	297	0.988	-0.1	358	0.894	-0.97
54	0.971	-0.26	115	0.854	-1.37	176	0.493	-6.14	237	0.796	-1.98	298	0.987	-0.11	359	0.893	-0.98
55	0.974	-0.23	116	0.847	-1.44	177	0.492	-6.16	238	0.803	-1.91	299	0.985	-0.13	360	0.893	-0.98
56	0.976	-0.21	117	0.840	-1.51	178	0.490	-6.2	239	0.811	-1.82	300	0.984	-0.14			
57	0.978	-0.19	118	0.833	-1.59	179	0.489	-6.21	240	0.819	-1.73	301	0.982	-0.16			
58	0.980	-0.18	119	0.826	-1.66	180	0.488	-6.23	241	0.826	-1.66	302	0.980	-0.18			
59	0.982	-0.16	120	0.819	-1.73	181	0.489	-6.21	242	0.833	-1.59	303	0.978	-0.19			
60	0.984	-0.14	121	0.811	-1.82	182	0.490	-6.2	243	0.840	-1.51	304	0.976	-0.21			

Azimuth Pattern

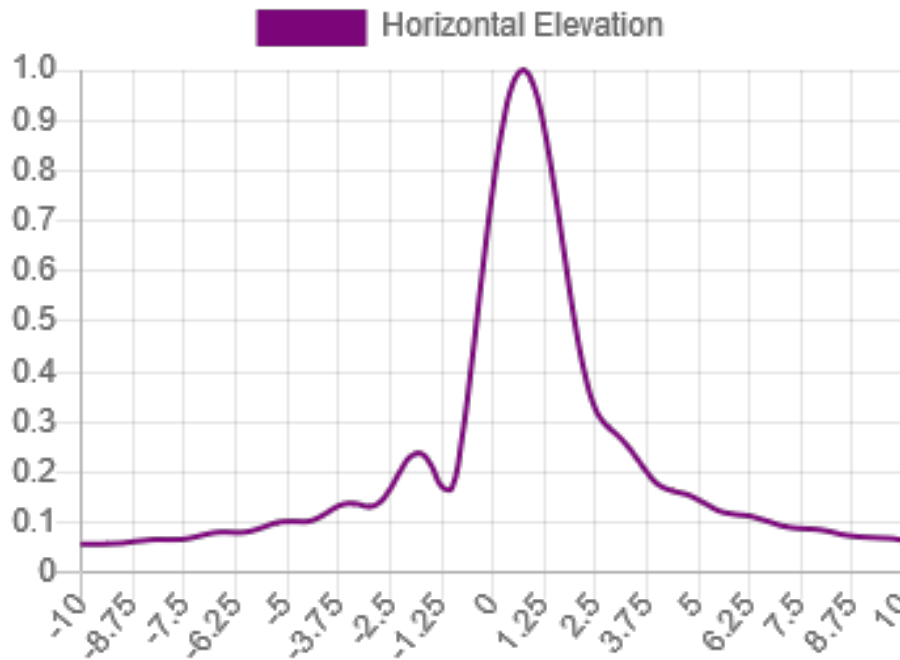
Type:	ATW-V8	Polarization:	Vertical
Directivity:	1.80 numeric (2.55 dB)	Frequency:	28 (ATSC)
Peak(s) at:		Location:	New Orleans
Note: Pattern shape and directivity may vary with channel and mounting configuration.			



Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	0.933	-0.6	61	0.989	-0.1	122	0.447	-6.99	183	0.161	-15.86	244	0.531	-5.5	305	0.997	-0.03
1	0.933	-0.6	62	0.987	-0.11	123	0.433	-7.27	184	0.160	-15.92	245	0.545	-5.27	306	0.998	-0.02
2	0.933	-0.6	63	0.985	-0.13	124	0.419	-7.56	185	0.160	-15.92	246	0.559	-5.05	307	0.999	-0.01
3	0.933	-0.6	64	0.983	-0.15	125	0.406	-7.83	186	0.160	-15.92	247	0.573	-4.84	308	0.999	-0.01
4	0.934	-0.59	65	0.981	-0.17	126	0.392	-8.13	187	0.159	-15.97	248	0.587	-4.63	309	1.000	0
5	0.934	-0.59	66	0.978	-0.19	127	0.379	-8.43	188	0.159	-15.97	249	0.600	-4.44	310	1.000	0
6	0.935	-0.58	67	0.975	-0.22	128	0.365	-8.75	189	0.158	-16.03	250	0.614	-4.24	311	1.000	0
7	0.935	-0.58	68	0.972	-0.25	129	0.352	-9.07	190	0.157	-16.08	251	0.627	-4.05	312	1.000	0
8	0.936	-0.57	69	0.969	-0.27	130	0.339	-9.4	191	0.156	-16.14	252	0.640	-3.88	313	0.999	-0.01
9	0.937	-0.57	70	0.966	-0.3	131	0.327	-9.71	192	0.156	-16.14	253	0.653	-3.7	314	0.999	-0.01
10	0.938	-0.56	71	0.962	-0.34	132	0.315	-10.03	193	0.155	-16.19	254	0.666	-3.53	315	0.998	-0.02
11	0.939	-0.55	72	0.958	-0.37	133	0.303	-10.37	194	0.154	-16.25	255	0.679	-3.36	316	0.998	-0.02
12	0.940	-0.54	73	0.954	-0.41	134	0.291	-10.72	195	0.153	-16.31	256	0.691	-3.21	317	0.997	-0.03
13	0.941	-0.53	74	0.950	-0.45	135	0.281	-11.03	196	0.153	-16.31	257	0.703	-3.06	318	0.996	-0.03
14	0.942	-0.52	75	0.945	-0.49	136	0.270	-11.37	197	0.153	-16.31	258	0.716	-2.9	319	0.994	-0.05
15	0.944	-0.5	76	0.941	-0.53	137	0.260	-11.7	198	0.152	-16.36	259	0.727	-2.77	320	0.993	-0.06
16	0.946	-0.48	77	0.935	-0.58	138	0.250	-12.04	199	0.152	-16.36	260	0.739	-2.63	321	0.991	-0.08
17	0.947	-0.47	78	0.930	-0.63	139	0.241	-12.36	200	0.152	-16.36	261	0.750	-2.5	322	0.990	-0.09
18	0.949	-0.45	79	0.924	-0.69	140	0.231	-12.73	201	0.153	-16.31	262	0.762	-2.36	323	0.988	-0.1
19	0.951	-0.44	80	0.918	-0.74	141	0.224	-13	202	0.153	-16.31	263	0.773	-2.24	324	0.986	-0.12
20	0.953	-0.42	81	0.912	-0.8	142	0.216	-13.31	203	0.154	-16.25	264	0.784	-2.11	325	0.984	-0.14
21	0.955	-0.4	82	0.906	-0.86	143	0.208	-13.64	204	0.155	-16.19	265	0.794	-2	326	0.982	-0.16
22	0.957	-0.38	83	0.899	-0.92	144	0.201	-13.94	205	0.156	-16.14	266	0.804	-1.89	327	0.980	-0.18
23	0.959	-0.36	84	0.892	-0.99	145	0.194	-14.24	206	0.158	-16.03	267	0.814	-1.79	328	0.978	-0.19
24	0.961	-0.35	85	0.884	-1.07	146	0.188	-14.52	207	0.161	-15.86	268	0.823	-1.69	329	0.976	-0.21
25	0.963	-0.33	86	0.877	-1.14	147	0.183	-14.75	208	0.164	-15.7	269	0.833	-1.59	330	0.974	-0.23
26	0.965	-0.31	87	0.868	-1.23	148	0.179	-14.94	209	0.167	-15.55	270	0.842	-1.49	331	0.972	-0.25
27	0.967	-0.29	88	0.860	-1.31	149	0.174	-15.19	210	0.170	-15.39	271	0.851	-1.4	332	0.970	-0.26
28	0.970	-0.26	89	0.851	-1.4	150	0.170	-15.39	211	0.174	-15.19	272	0.860	-1.31	333	0.967	-0.29
29	0.972	-0.25	90	0.842	-1.49	151	0.167	-15.55	212	0.178	-14.99	273	0.868	-1.23	334	0.965	-0.31
30	0.974	-0.23	91	0.833	-1.59	152	0.164	-15.7	213	0.183	-14.75	274	0.877	-1.14	335	0.963	-0.33
31	0.976	-0.21	92	0.824	-1.68	153	0.161	-15.86	214	0.188	-14.52	275	0.884	-1.07	336	0.961	-0.35
32	0.978	-0.19	93	0.814	-1.79	154	0.158	-16.03	215	0.194	-14.24	276	0.892	-0.99	337	0.959	-0.36
33	0.980	-0.18	94	0.804	-1.89	155	0.156	-16.14	216	0.200	-13.98	277	0.899	-0.92	338	0.957	-0.38
34	0.982	-0.16	95	0.794	-2	156	0.155	-16.19	217	0.208	-13.64	278	0.906	-0.86	339	0.955	-0.4
35	0.984	-0.14	96	0.784	-2.11	157	0.154	-16.25	218	0.216	-13.31	279	0.912	-0.8	340	0.953	-0.42
36	0.986	-0.12	97	0.773	-2.24	158	0.153	-16.31	219	0.224	-13	280	0.918	-0.74	341	0.951	-0.44
37	0.988	-0.1	98	0.762	-2.36	159	0.153	-16.31	220	0.231	-12.73	281	0.924	-0.69	342	0.949	-0.45
38	0.990	-0.09	99	0.750	-2.5	160	0.152	-16.36	221	0.241	-12.36	282	0.930	-0.63	343	0.947	-0.47
39	0.991	-0.08	100	0.739	-2.63	161	0.152	-16.36	222	0.250	-12.04	283	0.935	-0.58	344	0.946	-0.48
40	0.993	-0.06	101	0.727	-2.77	162	0.152	-16.36	223	0.260	-11.7	284	0.941	-0.53	345	0.944	-0.5
41	0.994	-0.05	102	0.716	-2.9	163	0.153	-16.31	224	0.270	-11.37	285	0.945	-0.49	346	0.942	-0.52
42	0.996	-0.03	103	0.703	-3.06	164	0.153	-16.31	225	0.280	-11.06	286	0.950	-0.45	347	0.941	-0.53
43	0.997	-0.03	104	0.691	-3.21	165	0.153	-16.31	226	0.291	-10.72	287	0.954	-0.41	348	0.940	-0.54
44	0.998	-0.02	105	0.679	-3.36	166	0.154	-16.25	227	0.303	-10.37	288	0.958	-0.37	349	0.939	-0.55
45	0.998	-0.02	106	0.666	-3.53	167	0.155	-16.19	228	0.315	-10.03	289	0.962	-0.34	350	0.938	-0.56
46	0.999	-0.01	107	0.653	-3.7	168	0.156	-16.14	229	0.327	-9.71	290	0.966	-0.3	351	0.937	-0.57
47	0.999	-0.01	108	0.640	-3.88	169	0.156	-16.14	230	0.339	-9.4	291	0.969	-0.27	352	0.936	-0.57
48	1.000	0	109	0.627	-4.05	170	0.157	-16.08	231	0.352	-9.07	292	0.972	-0.25	353	0.935	-0.58
49	1.000	0	110	0.614	-4.24	171	0.158	-16.03	232	0.365	-8.75	293	0.975	-0.22	354	0.935	-0.58
50	1.000	0	111	0.600	-4.44	172	0.159	-15.97	233	0.379	-8.43	294	0.978	-0.19	355	0.934	-0.59
51	1.000	0	112	0.587	-4.63	173	0.159	-15.97	234	0.392	-8.13	295	0.981	-0.17	356	0.934	-0.59
52	0.999	-0.01	113	0.573	-4.84	174	0.160	-15.92	235	0.406	-7.83	296	0.983	-0.15	357	0.933	-0.6
53	0.999	-0.01	114	0.559	-5.05	175	0.160	-15.92	236	0.419	-7.56	297	0.985	-0.13	358	0.933	-0.6
54	0.998	-0.02	115	0.545	-5.27	176	0.160	-15.92	237	0.433	-7.27	298	0.987	-0.11	359	0.933	-0.6
55	0.997	-0.03	116	0.531	-5.5	177	0.161	-15.86	238	0.447	-6.99	299	0.989	-0.1	360	0.933	-0.6
56	0.996	-0.03	117	0.517	-5.73	178	0.161	-15.86	239	0.461	-6.73	300	0.990	-0.09			
57	0.995	-0.04	118	0.503	-5.97	179	0.161	-15.86	240	0.475	-6.47	301	0.992	-0.07			
58	0.994	-0.05	119	0.489	-6.21	180	0.162	-15.81	241	0.489	-6.21	302	0.994	-0.05			
59	0.992	-0.07	120	0.475	-6.47	181	0.161	-15.86	242	0.503	-5.97	303	0.995	-0.04			
60	0.990	-0.09	121	0.461	-6.73	182	0.161	-15.86	243	0.517	-5.73	304	0.996	-0.03			

Elevation Pattern

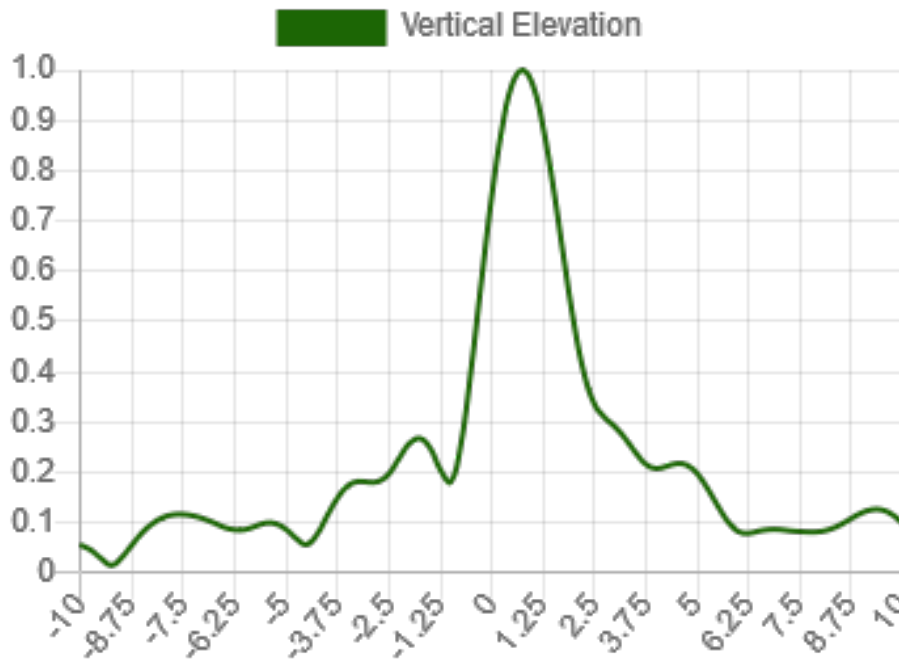
Type:	ATW32HS3H	Polarization:	Horizontal
Directivity:		Frequency:	28 (ATSC)
Main Lobe:	32.00 numeric (15.05 dB)	Location:	New Orleans
Horizontal:	18.58 numeric (12.69 dB)	Beam Tilt:	0.75 degrees



Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-10.00	0.058	-24.73	6.75	0.102	-19.83	23.50	0.029	-30.75	40.25	0.023	-32.77	57.00	0.025	-32.04	73.75	0.031	-30.17
-9.75	0.058	-24.73	7.00	0.095	-20.45	23.75	0.029	-30.75	40.50	0.023	-32.77	57.25	0.026	-31.7	74.00	0.030	-30.46
-9.50	0.058	-24.73	7.25	0.091	-20.82	24.00	0.029	-30.75	40.75	0.024	-32.4	57.50	0.026	-31.7	74.25	0.030	-30.46
-9.25	0.059	-24.58	7.50	0.089	-21.01	24.25	0.029	-30.75	41.00	0.024	-32.4	57.75	0.026	-31.7	74.50	0.029	-30.75
-9.00	0.060	-24.44	7.75	0.088	-21.11	24.50	0.029	-30.75	41.25	0.024	-32.4	58.00	0.026	-31.7	74.75	0.028	-31.06
-8.75	0.063	-24.01	8.00	0.086	-21.31	24.75	0.028	-31.06	41.50	0.023	-32.77	58.25	0.026	-31.7	75.00	0.027	-31.37
-8.50	0.065	-23.74	8.25	0.082	-21.72	25.00	0.028	-31.06	41.75	0.023	-32.77	58.50	0.026	-31.7	75.25	0.027	-31.37
-8.25	0.067	-23.48	8.50	0.077	-22.27	25.25	0.028	-31.06	42.00	0.023	-32.77	58.75	0.026	-31.7	75.50	0.026	-31.7
-8.00	0.067	-23.48	8.75	0.074	-22.62	25.50	0.028	-31.06	42.25	0.023	-32.77	59.00	0.025	-32.04	75.75	0.025	-32.04
-7.75	0.067	-23.48	9.00	0.072	-22.85	25.75	0.028	-31.06	42.50	0.023	-32.77	59.25	0.025	-32.04	76.00	0.025	-32.04
-7.50	0.068	-23.35	9.25	0.071	-22.97	26.00	0.028	-31.06	42.75	0.023	-32.77	59.50	0.025	-32.04	76.25	0.025	-32.04
-7.25	0.072	-22.85	9.50	0.070	-23.1	26.25	0.028	-31.06	43.00	0.023	-32.77	59.75	0.026	-31.7	76.50	0.025	-32.04
-7.00	0.077	-22.27	9.75	0.069	-23.22	26.50	0.027	-31.37	43.25	0.024	-32.4	60.00	0.026	-31.7	76.75	0.026	-31.7
-6.75	0.081	-21.83	10.00	0.065	-23.74	26.75	0.027	-31.37	43.50	0.023	-32.77	60.25	0.026	-31.7	77.00	0.026	-31.7
-6.50	0.082	-21.72	10.25	0.063	-24.01	27.00	0.027	-31.37	43.75	0.023	-32.77	60.50	0.027	-31.37	77.25	0.027	-31.37
-6.25	0.081	-21.83	10.50	0.062	-24.15	27.25	0.027	-31.37	44.00	0.023	-32.77	60.75	0.027	-31.37	77.50	0.028	-31.06
-6.00	0.082	-21.72	10.75	0.061	-24.29	27.50	0.027	-31.37	44.25	0.023	-32.77	61.00	0.027	-31.37	77.75	0.028	-31.06
-5.75	0.087	-21.21	11.00	0.061	-24.29	27.75	0.027	-31.37	44.50	0.023	-32.77	61.25	0.027	-31.37	78.00	0.029	-30.75
-5.50	0.094	-20.54	11.25	0.060	-24.44	28.00	0.027	-31.37	44.75	0.023	-32.77	61.50	0.027	-31.37	78.25	0.030	-30.46
-5.25	0.101	-19.91	11.50	0.058	-24.73	28.25	0.027	-31.37	45.00	0.023	-32.77	61.75	0.026	-31.7	78.50	0.030	-30.46
-5.00	0.103	-19.74	11.75	0.056	-25.04	28.50	0.026	-31.7	45.25	0.023	-32.77	62.00	0.026	-31.7	78.75	0.031	-30.17
-4.75	0.103	-19.74	12.00	0.054	-25.35	28.75	0.026	-31.7	45.50	0.023	-32.77	62.25	0.026	-31.7	79.00	0.031	-30.17
-4.50	0.103	-19.74	12.25	0.053	-25.51	29.00	0.026	-31.7	45.75	0.023	-32.77	62.50	0.026	-31.7	79.25	0.031	-30.17
-4.25	0.110	-19.17	12.50	0.053	-25.51	29.25	0.026	-31.7	46.00	0.023	-32.77	62.75	0.026	-31.7	79.50	0.032	-29.9
-4.00	0.122	-18.27	12.75	0.053	-25.51	29.50	0.026	-31.7	46.25	0.023	-32.77	63.00	0.026	-31.7	79.75	0.032	-29.9
-3.75	0.134	-17.46	13.00	0.051	-25.85	29.75	0.026	-31.7	46.50	0.023	-32.77	63.25	0.027	-31.37	80.00	0.031	-30.17
-3.50	0.139	-17.14	13.25	0.050	-26.02	30.00	0.026	-31.7	46.75	0.023	-32.77	63.50	0.027	-31.37	80.25	0.031	-30.17
-3.25	0.137	-17.27	13.50	0.048	-26.38	30.25	0.025	-32.04	47.00	0.023	-32.77	63.75	0.028	-31.06	80.50	0.031	-30.17
-3.00	0.132	-17.59	13.75	0.047	-26.56	30.50	0.025	-32.04	47.25	0.024	-32.4	64.00	0.028	-31.06	80.75	0.030	-30.46
-2.75	0.141	-17.02	14.00	0.047	-26.56	30.75	0.025	-32.04	47.50	0.024	-32.4	64.25	0.029	-30.75	81.00	0.030	-30.46
-2.50	0.167	-15.55	14.25	0.046	-26.74	31.00	0.025	-32.04	47.75	0.024	-32.4	64.50	0.029	-30.75	81.25	0.029	-30.75
-2.25	0.203	-13.85	14.50	0.045	-26.94	31.25	0.025	-32.04	48.00	0.023	-32.77	64.75	0.029	-30.75	81.50	0.028	-31.06
-2.00	0.232	-12.69	14.75	0.044	-27.13	31.50	0.025	-32.04	48.25	0.023	-32.77	65.00	0.028	-31.06	81.75	0.027	-31.37
-1.75	0.238	-12.47	15.00	0.043	-27.33	31.75	0.025	-32.04	48.50	0.023	-32.77	65.25	0.028	-31.06	82.00	0.026	-31.7
-1.50	0.215	-13.35	15.25	0.042	-27.54	32.00	0.025	-32.04	48.75	0.023	-32.77	65.50	0.027	-31.37	82.25	0.025	-32.04
-1.25	0.173	-15.24	15.50	0.042	-27.54	32.25	0.025	-32.04	49.00	0.023	-32.77	65.75	0.027	-31.37	82.50	0.024	-32.4
-1.00	0.188	-15.49	15.75	0.042	-27.54	32.50	0.025	-32.04	49.25	0.023	-32.77	66.00	0.027	-31.37	82.75	0.023	-32.77
-0.75	0.268	-11.44	16.00	0.042	-27.54	32.75	0.025	-32.04	49.50	0.024	-32.4	66.25	0.027	-31.37	83.00	0.022	-33.15
-0.50	0.425	-7.43	16.25	0.041	-27.74	33.00	0.025	-32.04	49.75	0.024	-32.4	66.50	0.027	-31.37	83.25	0.021	-33.56
-0.25	0.600	-4.44	16.50	0.040	-27.96	33.25	0.025	-32.04	50.00	0.024	-32.4	66.75	0.027	-31.37	83.50	0.019	-34.42
0.00	0.762	-2.36	16.75	0.039	-28.18	33.50	0.024	-32.4	50.25	0.024	-32.4	67.00	0.028	-31.06	83.75	0.019	-34.42
0.25	0.892	-0.99	17.00	0.038	-28.4	33.75	0.024	-32.4	50.50	0.024	-32.4	67.25	0.028	-31.06	84.00	0.017	-35.39
0.50	0.975	-0.22	17.25	0.038	-28.4	34.00	0.024	-32.4	50.75	0.023	-32.77	67.50	0.029	-30.75	84.25	0.016	-35.92
0.75	1.000	0	17.50	0.038	-28.4	34.25	0.024	-32.4	51.00	0.023	-32.77	67.75	0.030	-30.46	84.50	0.015	-36.48
1.00	0.968	-0.28	17.75	0.038	-28.4	34.50	0.024	-32.4	51.25	0.023	-32.77	68.00	0.030	-30.46	84.75	0.014	-37.08
1.25	0.885	-1.06	18.00	0.037	-28.64	34.75	0.024	-32.4	51.50	0.023	-32.77	68.25	0.030	-30.46	85.00	0.013	-37.72
1.50	0.766	-2.32	18.25	0.037	-28.64	35.00	0.024	-32.4	51.75	0.024	-32.4	68.50	0.030	-30.46	85.25	0.012	-38.42
1.75	0.629	-4.03	18.50	0.036	-28.87	35.25	0.024	-32.4	52.00	0.024	-32.4	68.75	0.030	-30.46	85.50	0.011	-39.17
2.00	0.497	-6.07	18.75	0.036	-28.87	35.50	0.024	-32.4	52.25	0.024	-32.4	69.00	0.030	-30.46	85.75	0.011	-39.17
2.25	0.393	-8.11	19.00	0.036	-28.87	35.75	0.024	-32.4	52.50	0.024	-32.4	69.25	0.030	-30.46	86.00	0.010	-40
2.50	0.326	-9.74	19.25	0.035	-29.12	36.00	0.023	-32.77	52.75	0.024	-32.4	69.50	0.029	-30.75	86.25	0.009	-40.92
2.75	0.295	-10.6	19.50	0.035	-29.12	36.25	0.023	-32.77	53.00	0.024	-32.4	69.75	0.029	-30.75	86.50	0.008	-41.94
3.00	0.277	-11.15	19.75	0.034	-29.37	36.50	0.023	-32.77	53.25	0.024	-32.4	70.00	0.028	-31.06	86.75	0.008	-41.94
3.25	0.256	-11.84	20.00	0.033	-29.63	36.75	0.024	-32.4	53.50	0.024	-32.4	70.25	0.028	-31.06	87.00	0.007	-43.1
3.50	0.229	-12.8	20.25	0.033	-29.63	37.00	0.024	-32.4	53.75	0.024	-32.4	70.50	0.028	-31.06	87.25	0.006	-44.44
3.75	0.201	-13.94	20.50	0.033	-29.63	37.25	0.024	-32.4	54.00	0.024	-32.4	70.75	0.028	-31.06	87.50	0.005	-46.02
4.00	0.178	-14.99	20.75	0.033	-29.63	37.50	0.023	-32.77	54.25	0.024	-32.4	71.00	0.028	-31.06	87.75	0.005	-46.02
4.25	0.167	-15.55	21.00	0.033	-29.63	37.75	0.023	-32.77	54.50	0.025	-32.04	71.25	0.029	-30.75	88.00	0.004	-47.96
4.50	0.161	-15.86	21.25	0.033	-29.63	38.00	0.023	-32.77	54.75	0.025	-32.04	71.50	0.029	-30.75	88.25	0.004	-47.96
4.75	0.156	-16.14	21.50	0.032	-29.9	38.25	0.023	-32.77	55.00	0.025	-32.04	71.75	0.030	-30.46	88.50	0.003	-50.46
5.00	0.146	-16.71	21.75	0.031	-30.17	38.50	0.023	-32.77	55.25	0.025	-32.04	72.00	0.031	-30.17	88.75	0.003	-50.46
5.25	0.135	-17.39	22.00	0.031	-30.17	38.75	0.023	-32.77	55.50	0.025	-32.04	72.25	0.031	-30.17	89.00	0.002	-53.98
5.50	0.124	-18.13	22.25	0.031	-30.17	39.00	0.023										

Elevation Pattern

Type:	ATW29HS3H	Polarization:	Vertical
Directivity:		Frequency:	28 (ATSC)
Main Lobe:	29.00 numeric (14.62 dBd)	Location:	New Orleans
Horizontal:	16.27 numeric (12.11 dBd)	Beam Tilt:	0.75 degrees



Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-10.00	0.056	-25.04	6.75	0.087	-21.21	23.50	0.075	-22.5	40.25	0.061	-24.29	57.00	0.027	-31.37	73.75	0.039	-28.1
-9.75	0.046	-26.74	7.00	0.087	-21.21	23.75	0.078	-22.16	40.50	0.059	-24.58	57.25	0.0275	-31.21	74.00	0.039	-28.1
-9.50	0.029	-30.75	7.25	0.0845	-21.46	24.00	0.076	-22.38	40.75	0.055	-25.19	57.50	0.028	-31.06	74.25	0.039	-28.1
-9.25	0.016	-35.92	7.50	0.083	-21.62	24.25	0.0705	-23.04	41.00	0.048	-26.38	57.75	0.027	-31.37	74.50	0.038	-28.4
-9.00	0.032	-29.9	7.75	0.082	-21.72	24.50	0.062	-24.15	41.25	0.0405	-27.85	58.00	0.025	-32.04	74.75	0.0375	-28.5
-8.75	0.057	-24.88	8.00	0.083	-21.62	24.75	0.0515	-25.76	41.50	0.033	-29.63	58.25	0.0225	-32.96	75.00	0.037	-28.6
-8.50	0.081	-21.83	8.25	0.088	-21.11	25.00	0.039	-28.18	41.75	0.027	-31.37	58.50	0.019	-34.42	75.25	0.036	-28.8
-8.25	0.099	-20.09	8.50	0.097	-20.26	25.25	0.0265	-31.54	42.00	0.022	-33.15	58.75	0.0145	-36.77	75.50	0.035	-29.1
-8.00	0.111	-19.09	8.75	0.109	-19.25	25.50	0.015	-36.48	42.25	0.021	-33.56	59.00	0.01	-40	75.75	0.0345	-29
-7.75	0.1165	-18.67	9.00	0.12	-18.42	25.75	0.011	-39.17	42.50	0.021	-33.56	59.25	0.0065	-43.74	76.00	0.034	-29.3
-7.50	0.117	-18.64	9.25	0.1265	-17.96	26.00	0.013	-37.72	42.75	0.022	-33.15	59.50	0.007	-43.1	76.25	0.033	-29.6
-7.25	0.114	-18.86	9.50	0.126	-17.99	26.25	0.0165	-35.65	43.00	0.021	-33.56	59.75	0.012	-38.42	76.50	0.033	-29.6
-7.00	0.108	-19.33	9.75	0.1165	-18.67	26.50	0.017	-35.39	43.25	0.0195	-34.2	60.00	0.017	-35.39	76.75	0.033	-29.6
-6.75	0.1	-20	10.00	0.099	-20.09	26.75	0.014	-37.08	43.50	0.016	-35.92	60.25	0.023	-32.77	77.00	0.033	-29.6
-6.50	0.091	-20.82	10.25	0.076	-22.38	27.00	0.008	-41.94	43.75	0.011	-39.17	60.50	0.028	-31.06	77.25	0.033	-29.6
-6.25	0.0865	-21.26	10.50	0.051	-25.85	27.25	0.01	-40	44.00	0.005	-46.02	60.75	0.032	-29.9	77.50	0.033	-29.6
-6.00	0.087	-21.21	10.75	0.0325	-29.76	27.50	0.022	-33.15	44.25	0.0025	-52.04	61.00	0.036	-28.87	77.75	0.0335	-29.5
-5.75	0.0935	-20.58	11.00	0.03	-30.46	27.75	0.035	-29.12	44.50	0.01	-40	61.25	0.0385	-28.29	78.00	0.034	-29.3
-5.50	0.1	-20	11.25	0.038	-28.4	28.00	0.048	-26.38	44.75	0.0185	-34.66	61.50	0.041	-27.74	78.25	0.034	-29.3
-5.25	0.0985	-20.13	11.50	0.044	-27.13	28.25	0.059	-24.58	45.00	0.026	-31.7	61.75	0.043	-27.33	78.50	0.035	-29.1
-5.00	0.087	-21.21	11.75	0.046	-26.74	28.50	0.068	-23.35	45.25	0.0335	-29.5	62.00	0.044	-27.13	78.75	0.035	-29.1
-4.75	0.0685	-23.29	12.00	0.044	-27.13	28.75	0.0715	-22.91	45.50	0.041	-27.74	62.25	0.045	-26.94	79.00	0.035	-29.1
-4.50	0.057	-24.88	12.25	0.0405	-27.85	29.00	0.072	-22.85	45.75	0.046	-26.74	62.50	0.045	-26.94	79.25	0.035	-29.1
-4.25	0.0775	-22.21	12.50	0.042	-27.54	29.25	0.069	-23.22	46.00	0.051	-25.85	62.75	0.045	-26.94	79.50	0.035	-29.1
-4.00	0.115	-18.79	12.75	0.049	-26.2	29.50	0.062	-24.15	46.25	0.0545	-25.27	63.00	0.044	-27.13	79.75	0.035	-29.1
-3.75	0.15	-16.48	13.00	0.06	-24.44	29.75	0.053	-25.51	46.50	0.056	-25.04	63.25	0.0435	-27.23	80.00	0.035	-29.1
-3.50	0.174	-15.19	13.25	0.0725	-22.79	30.00	0.043	-27.33	46.75	0.055	-25.19	63.50	0.042	-27.54	80.25	0.035	-29.1
-3.25	0.1825	-14.77	13.50	0.084	-21.51	30.25	0.033	-29.63	47.00	0.053	-25.51	63.75	0.041	-27.74	80.50	0.034	-29.3
-3.00	0.181	-14.85	13.75	0.0925	-20.68	30.50	0.024	-32.4	47.25	0.049	-26.2	64.00	0.04	-27.96	80.75	0.034	-29.3
-2.75	0.1825	-14.77	14.00	0.098	-20.18	30.75	0.017	-35.39	47.50	0.044	-27.13	64.25	0.038	-28.4	81.00	0.033	-29.6
-2.50	0.198	-14.07	14.25	0.0975	-20.22	31.00	0.014	-37.08	47.75	0.038	-28.4	64.50	0.036	-28.87	81.25	0.032	-29.9
-2.25	0.229	-12.8	14.50	0.091	-20.82	31.25	0.0145	-36.77	48.00	0.032	-29.9	64.75	0.0345	-29.24	81.50	0.031	-30.1
-2.00	0.258	-11.77	14.75	0.079	-22.05	31.50	0.015	-36.48	48.25	0.0265	-31.54	65.00	0.033	-29.63	81.75	0.0305	-30.3
-1.75	0.268	-11.44	15.00	0.062	-24.15	31.75	0.014	-37.08	48.50	0.023	-32.77	65.25	0.031	-30.17	82.00	0.029	-30.7
-1.50	0.249	-12.08	15.25	0.042	-27.54	32.00	0.011	-39.17	48.75	0.022	-33.15	65.50	0.03	-30.46	82.25	0.0285	-30.9
-1.25	0.2055	-13.74	15.50	0.023	-32.77	32.25	0.0055	-45.19	49.00	0.022	-33.15	65.75	0.029	-30.75	82.50	0.027	-31.3
-1.00	0.181	-14.85	15.75	0.0135	-37.39	32.50	0.006	-44.44	49.25	0.0235	-32.58	66.00	0.029	-30.75	82.75	0.026	-31.7
-0.75	0.2565	-11.82	16.00	0.02	-33.98	32.75	0.015	-36.48	49.50	0.025	-32.04	66.25	0.029	-30.75	83.00	0.025	-32.0
-0.50	0.406	-7.83	16.25	0.028	-31.06	33.00	0.027	-31.37	49.75	0.0245	-32.22	66.50	0.029	-30.75	83.25	0.024	-32.4
-0.25	0.581	-4.72	16.50	0.03	-30.46	33.25	0.0385	-28.29	50.00	0.023	-32.77	66.75	0.03	-30.46	83.50	0.023	-32.7
0.00	0.749	-2.51	16.75	0.027	-31.37	33.50	0.049	-26.2	50.25	0.0195	-34.2	67.00	0.03	-30.46	83.75	0.0215	-33.3
0.25	0.8835	-1.08	17.00	0.022	-33.15	33.75	0.0585	-24.66	50.50	0.015	-36.48	67.25	0.031	-30.17	84.00	0.02	-33.9
0.50	0.972	-0.25	17.25	0.023	-32.77	34.00	0.064	-23.88	50.75	0.009	-40.92	67.50	0.031	-30.17	84.25	0.019	-34.4
0.75	1.00	0	17.50	0.033	-29.63	34.25	0.0675	-23.41	51.00	0.003	-50.46	67.75	0.031	-30.17	84.50	0.018	-34.8
1.00	0.97	-0.26	17.75	0.047	-26.56	34.50	0.067	-23.48	51.25	0.0045	-46.94	68.00	0.031	-30.17	84.75	0.017	-35.3
1.25	0.886	-1.05	18.00	0.061	-24.29	34.75	0.063	-24.01	51.50	0.012	-38.42	68.25	0.03	-30.46	85.00	0.016	-35.9
1.50	0.766	-2.32	18.25	0.073	-22.73	35.00	0.056	-25.04	51.75	0.019	-34.42	68.50	0.029	-30.75	85.25	0.0145	-36.7
1.75	0.628	-4.04	18.50	0.081	-21.83	35.25	0.048	-26.38	52.00	0.026	-31.7	68.75	0.0275	-31.21	85.50	0.014	-37.0
2.00	0.497	-6.07	18.75	0.085	-21.41	35.50	0.039	-28.18	52.25	0.0315	-30.03	69.00	0.025	-32.04	85.75	0.0125	-38.0
2.25	0.396	-8.05	19.00	0.085	-21.41	35.75	0.0295	-30.6	52.50	0.037	-28.64	69.25	0.0235	-32.58	86.00	0.012	-38.4
2.50	0.336	-9.47	19.25	0.08	-21.94	36.00	0.022	-33.15	52.75	0.041	-27.74	69.50	0.021	-33.56	86.25	0.011	-39.1
2.75	0.309	-10.2	19.50	0.072	-22.85	36.25	0.0185	-34.66	53.00	0.045	-26.94	69.75	0.0185	-34.66	86.50	0.01	-40
3.00	0.291	-10.72	19.75	0.0595	-24.51	36.50	0.018	-34.89	53.25	0.047	-26.56	70.00	0.016	-35.92	86.75	0.009	-40.9
3.25	0.2675	-11.45	20.00	0.045	-26.94	36.75	0.0185	-34.66	53.50	0.049	-26.2	70.25	0.015	-36.48	87.00	0.008	-41.9
3.50	0.24	-12.4	20.25	0.029	-30.75	37.00	0.018	-34.89	53.75	0.049	-26.2	70.50	0.015	-36.48	87.25	0.0075	-42.5
3.75	0.2165	-13.29	20.50	0.015	-36.48	37.25	0.0165	-35.65	54.00	0.049	-26.2	70.75	0.016	-35.92	87.50	0.007	-43.1
4.00	0.208	-13.64	20.75	0.0095	-40.45	37.50	0.013	-37.72	54.25	0.0475	-26.47	71.00	0.018	-34.89	87.75	0.006	-44.4
4.25	0.2125	-13.45	21.00	0.015	-36.48	37.75	0.0075	-42.5	54.50	0.046	-26.74	71.25	0.0205	-33.76	88.00	0.005	-46.0
4.50	0.218	-13.23	21.25	0.02	-33.98	38.00	0.001	-60	54.75	0.0425	-27.43	71.50	0.023	-32.77	88.25	0.0045	-46.9
4.75	0.215	-13.35	21.50	0.02	-33.98	38.25	0.008	-41.94	55.00	0.039	-28.18	71.75	0.0265	-31.54	88.50	0.004	-47.9
5.00	0.198	-14.07	21.75	0.017	-35.39	38.50	0.017	-35.39	55.25	0.0355	-29	72.00	0.029	-30.75	88.75	0.003	-50.4
5.25	0.1685	-15.47	22.00	0.013	-37.72	38.75	0.027	-31.37	55.50	0.032	-29.9	72.25	0.0315	-30.03	89.00	0.003	-50.4
5.50	0.134	-17.46	22.25	0.0135	-34.66	39.00											

