

## Horizontal Polarization AZIMUTH PATTERN

Exhibit No.  
Date **9 Sep 2019**  
Call Letters **WFUP**  
Channel **45**  
Antenna Type **TFU-8WB**  
Location **Vanderbilt, MI**  
Customer **Cadillac Telecasting**

Gain **2.1 (3.24 dB)**  
Calculated  
Drawing # **WB-S230H**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.268	36	0.543	72	0.806	108	0.953	144	0.995	180	0.894	216	0.700	252	0.355	288	0.386	324	0.505
1	0.267	37	0.553	73	0.812	109	0.956	145	0.994	181	0.890	217	0.692	253	0.345	289	0.394	325	0.501
2	0.267	38	0.562	74	0.817	110	0.959	146	0.992	182	0.886	218	0.685	254	0.336	290	0.403	326	0.497
3	0.267	39	0.572	75	0.822	111	0.961	147	0.991	183	0.882	219	0.677	255	0.327	291	0.411	327	0.492
4	0.268	40	0.581	76	0.827	112	0.964	148	0.989	184	0.877	220	0.669	256	0.318	292	0.419	328	0.487
5	0.270	41	0.591	77	0.832	113	0.967	149	0.988	185	0.873	221	0.661	257	0.310	293	0.427	329	0.482
6	0.273	42	0.600	78	0.836	114	0.969	150	0.986	186	0.869	222	0.652	258	0.302	294	0.435	330	0.476
7	0.277	43	0.609	79	0.841	115	0.972	151	0.984	187	0.865	223	0.644	259	0.295	295	0.443	331	0.470
8	0.281	44	0.618	80	0.846	116	0.974	152	0.982	188	0.860	224	0.635	260	0.288	296	0.450	332	0.464
9	0.286	45	0.627	81	0.850	117	0.977	153	0.980	189	0.856	225	0.627	261	0.282	297	0.457	333	0.457
10	0.292	46	0.627	82	0.855	118	0.979	154	0.978	190	0.851	226	0.618	262	0.277	298	0.464	334	0.450
11	0.299	47	0.635	83	0.859	119	0.981	155	0.975	191	0.847	227	0.609	263	0.273	299	0.470	335	0.443
12	0.306	48	0.644	84	0.864	120	0.983	156	0.973	192	0.842	228	0.600	264	0.269	300	0.476	336	0.436
13	0.314	49	0.652	85	0.868	121	0.985	157	0.970	193	0.837	229	0.590	265	0.266	301	0.482	337	0.428
14	0.322	50	0.661	86	0.872	122	0.987	158	0.968	194	0.833	230	0.581	266	0.264	302	0.487	338	0.420
15	0.330	51	0.669	87	0.876	123	0.989	159	0.965	195	0.828	231	0.571	267	0.263	303	0.492	339	0.412
16	0.339	52	0.677	88	0.880	124	0.990	160	0.962	196	0.823	232	0.561	268	0.263	304	0.497	340	0.404
17	0.348	53	0.684	89	0.885	125	0.992	161	0.960	197	0.818	233	0.552	269	0.263	305	0.501	341	0.396
18	0.358	54	0.692	90	0.889	126	0.993	162	0.957	198	0.813	234	0.542	270	0.265	306	0.505	342	0.387
19	0.368	55	0.699	91	0.893	127	0.994	163	0.954	199	0.807	235	0.532	271	0.267	307	0.509	343	0.379
20	0.378	56	0.707	92	0.896	128	0.996	164	0.951	200	0.802	236	0.521	272	0.270	308	0.512	344	0.370
21	0.388	57	0.714	93	0.900	129	0.997	165	0.947	201	0.797	237	0.511	273	0.274	309	0.515	345	0.361
22	0.398	58	0.721	94	0.904	130	0.998	166	0.944	202	0.791	238	0.501	274	0.279	310	0.517	346	0.353
23	0.408	59	0.728	95	0.908	131	0.998	167	0.941	203	0.785	239	0.490	275	0.284	311	0.519	347	0.345
24	0.419	60	0.735	96	0.912	132	0.999	168	0.938	204	0.779	240	0.480	276	0.290	312	0.520	348	0.336
25	0.429	61	0.741	97	0.915	133	0.999	169	0.934	205	0.773	241	0.469	277	0.297	313	0.521	349	0.328
26	0.440	62	0.748	98	0.919	134	1.000	170	0.931	206	0.767	242	0.459	278	0.304	314	0.522	350	0.321
27	0.450	63	0.754	99	0.923	135	1.000	171	0.927	207	0.761	243	0.448	279	0.311	315	0.522	351	0.313
28	0.461	64	0.760	100	0.926	136	1.000	172	0.924	208	0.755	244	0.437	280	0.319	316	0.522	352	0.306
29	0.471	65	0.767	101	0.930	137	1.000	173	0.920	209	0.749	245	0.427	281	0.327	317	0.521	353	0.299
30	0.481	66	0.773	102	0.933	138	1.000	174	0.917	210	0.742	246	0.416	282	0.335	318	0.520	354	0.293
31	0.492	67	0.778	103	0.937	139	0.999	175	0.913	211	0.735	247	0.406	283	0.343	319	0.519	355	0.287
32	0.502	68	0.784	104	0.940	140	0.999	176	0.909	212	0.729	248	0.395	284	0.351	320	0.517	356	0.282
33	0.512	69	0.790	105	0.943	141	0.998	177	0.905	213	0.722	249	0.385	285	0.360	321	0.515	357	0.278
34	0.523	70	0.795	106	0.946	142	0.997	178	0.901	214	0.715	250	0.375	286	0.369	322	0.512	358	0.274
35	0.533	71	0.801	107	0.950	143	0.996	179	0.898	215	0.707	251	0.365	287	0.377	323	0.509	359	0.271

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## ELEVATION PATTERN

Exhibit No.

Date

9 Sep 2019

Call Letters

WFUP

Channel

45

Antenna Type

TFU-8WB

Location

Vanderbilt, MI

Customer

Cadillac Telecasting

RMS Gain at Main Lobe

8.0 (9.03 dB)

Beam Tilt

1.05 Degrees

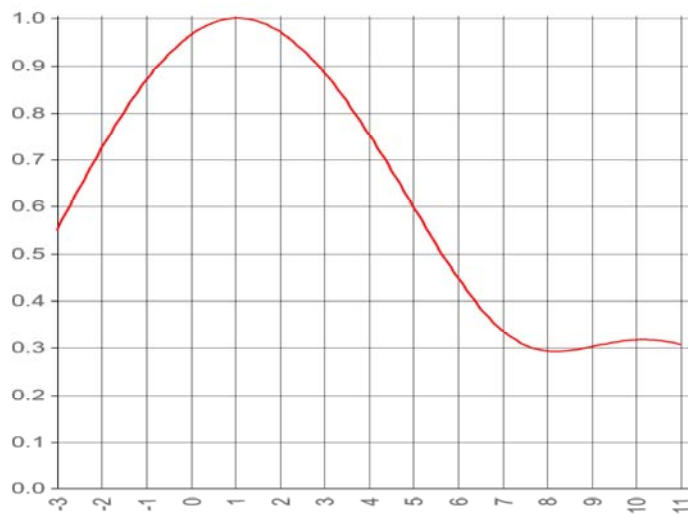
RMS Gain at Horizontal

7.4 (8.72 dB)

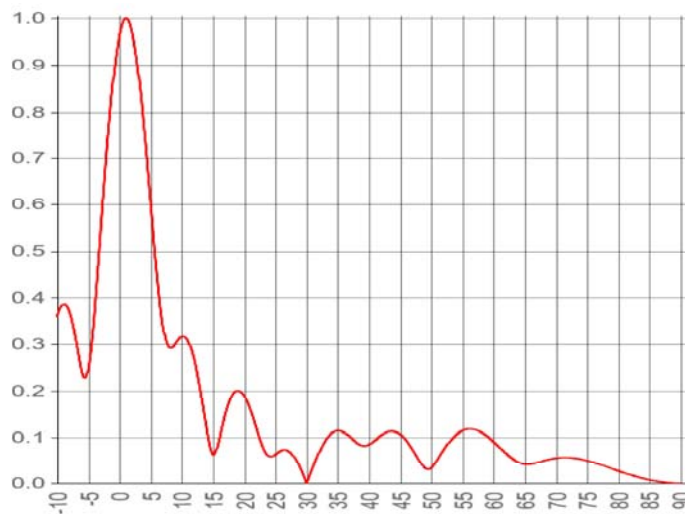
Drawing #

08I080105

Calculated



Degrees below horizontal



Degrees below horizontal

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10	0.360	10	0.316	30	0.000	50	0.034	70	0.055
-9	0.386	11	0.306	31	0.035	51	0.052	71	0.056
-8	0.368	12	0.265	32	0.067	52	0.073	72	0.056
-7	0.310	13	0.197	33	0.093	53	0.092	73	0.055
-6	0.242	14	0.118	34	0.109	54	0.106	74	0.052
-5	0.248	15	0.063	35	0.115	55	0.115	75	0.049
-4	0.373	16	0.097	36	0.111	56	0.118	76	0.045
-3	0.549	17	0.153	37	0.100	57	0.117	77	0.041
-2	0.724	18	0.189	38	0.088	58	0.111	78	0.036
-1	0.869	19	0.201	39	0.082	59	0.102	79	0.031
0	0.965	20	0.189	40	0.084	60	0.090	80	0.027
1	1.000	21	0.158	41	0.094	61	0.077	81	0.022
2	0.972	22	0.118	42	0.105	62	0.065	82	0.018
3	0.885	23	0.079	43	0.112	63	0.054	83	0.014
4	0.754	24	0.059	44	0.113	64	0.045	84	0.010
5	0.599	25	0.063	45	0.106	65	0.042	85	0.007
6	0.448	26	0.072	46	0.093	66	0.042	86	0.005
7	0.336	27	0.071	47	0.073	67	0.045	87	0.003
8	0.293	28	0.057	48	0.051	68	0.049	88	0.001
9	0.302	29	0.032	49	0.033	69	0.052	89	0.000

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## Mechanicals

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Channel **45**

Antenna Type **TFU-8WB**

Location **Vanderbilt, MI**

Customer **Cadillac Telecasting**

## Preliminary Specifications

### Side Mounted

#### Mechanical Specification without ice TIA-222-G

Basic Wind Speed 90 mph

Structure Class II

Exposure Category C

Topography Category 1

### Mechanical Specifications

Height less Lightning Protector	(H2)	14.4 ft (4.4 m)
Center of Radiation	(H3)	7.2 ft (2.2 m)
Effective Projected Area	(EPA)s	16.8 ft <sup>2</sup> (5.1 m <sup>2</sup> )
Weight	W	564.5 lbs

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