

AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-70459-5**
 Date **31-Jul-18**
 Call Letters **KSHV**
 Channel **16**
 Frequency **485 MHz**
 Antenna Type **TFU-30DSC/VP-R P220**
 Gain **2.17 (3.36dB)**
 Calculated

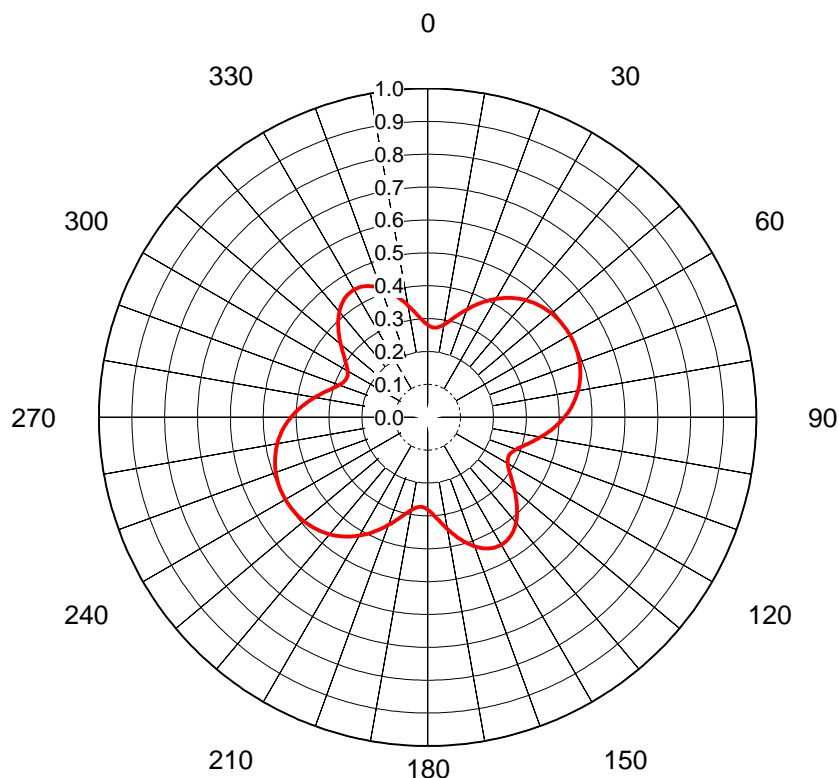
Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.680	36	0.510	72	0.600	108	0.510	144	0.970	180	0.680	216	0.510	252	0.600	288	0.510	324	0.970
1	0.660	37	0.520	73	0.590	109	0.520	145	0.980	181	0.660	217	0.520	253	0.590	289	0.520	325	0.980
2	0.650	38	0.530	74	0.580	110	0.530	146	0.980	182	0.650	218	0.530	254	0.580	290	0.530	326	0.980
3	0.630	39	0.530	75	0.580	111	0.540	147	0.990	183	0.630	219	0.530	255	0.580	291	0.540	327	0.990
4	0.620	40	0.540	76	0.570	112	0.560	148	0.990	184	0.620	220	0.540	256	0.570	292	0.560	328	0.990
5	0.600	41	0.550	77	0.560	113	0.570	149	1.000	185	0.600	221	0.550	257	0.560	293	0.570	329	1.000
6	0.590	42	0.550	78	0.550	114	0.590	150	1.000	186	0.590	222	0.550	258	0.550	294	0.590	330	1.000
7	0.570	43	0.560	79	0.550	115	0.600	151	1.000	187	0.570	223	0.560	259	0.550	295	0.600	331	1.000
8	0.560	44	0.570	80	0.540	116	0.620	152	0.990	188	0.560	224	0.570	260	0.540	296	0.620	332	0.990
9	0.540	45	0.580	81	0.530	117	0.630	153	0.990	189	0.540	225	0.580	261	0.530	297	0.630	333	0.990
10	0.530	46	0.580	82	0.530	118	0.650	154	0.980	190	0.530	226	0.580	262	0.530	298	0.650	334	0.980
11	0.520	47	0.590	83	0.520	119	0.660	155	0.980	191	0.520	227	0.590	263	0.520	299	0.660	335	0.980
12	0.510	48	0.600	84	0.510	120	0.680	156	0.970	192	0.510	228	0.600	264	0.510	300	0.680	336	0.970
13	0.510	49	0.600	85	0.510	121	0.690	157	0.970	193	0.510	229	0.600	265	0.510	301	0.690	337	0.970
14	0.500	50	0.610	86	0.500	122	0.710	158	0.970	194	0.500	230	0.610	266	0.500	302	0.710	338	0.970
15	0.490	51	0.610	87	0.490	123	0.730	159	0.960	195	0.490	231	0.610	267	0.490	303	0.730	339	0.960
16	0.490	52	0.620	88	0.480	124	0.740	160	0.960	196	0.490	232	0.620	268	0.480	304	0.740	340	0.960
17	0.480	53	0.620	89	0.480	125	0.760	161	0.950	197	0.480	233	0.620	269	0.480	305	0.760	341	0.950
18	0.470	54	0.620	90	0.470	126	0.780	162	0.930	198	0.470	234	0.620	270	0.470	306	0.780	342	0.930
19	0.470	55	0.620	91	0.470	127	0.790	163	0.920	199	0.470	235	0.620	271	0.470	307	0.790	343	0.920
20	0.460	56	0.630	92	0.470	128	0.810	164	0.910	200	0.460	236	0.630	272	0.470	308	0.810	344	0.910
21	0.460	57	0.630	93	0.470	129	0.820	165	0.900	201	0.460	237	0.630	273	0.470	309	0.820	345	0.900
22	0.460	58	0.630	94	0.470	130	0.840	166	0.890	202	0.460	238	0.630	274	0.470	310	0.840	346	0.890
23	0.460	59	0.630	95	0.470	131	0.850	167	0.880	203	0.460	239	0.630	275	0.470	311	0.850	347	0.880
24	0.460	60	0.640	96	0.460	132	0.860	168	0.860	204	0.460	240	0.640	276	0.460	312	0.860	348	0.860
25	0.470	61	0.630	97	0.460	133	0.880	169	0.850	205	0.470	241	0.630	277	0.460	313	0.880	349	0.850
26	0.470	62	0.630	98	0.460	134	0.890	170	0.840	206	0.470	242	0.630	278	0.460	314	0.890	350	0.840
27	0.470	63	0.630	99	0.460	135	0.900	171	0.820	207	0.470	243	0.630	279	0.460	315	0.900	351	0.820
28	0.470	64	0.630	100	0.460	136	0.910	172	0.810	208	0.470	244	0.630	280	0.460	316	0.910	352	0.810
29	0.470	65	0.620	101	0.470	137	0.920	173	0.790	209	0.470	245	0.620	281	0.470	317	0.920	353	0.790
30	0.470	66	0.620	102	0.470	138	0.930	174	0.780	210	0.470	246	0.620	282	0.470	318	0.930	354	0.780
31	0.480	67	0.620	103	0.480	139	0.950	175	0.760	211	0.480	247	0.620	283	0.480	319	0.950	355	0.760
32	0.480	68	0.620	104	0.490	140	0.960	176	0.740	212	0.480	248	0.620	284	0.490	320	0.960	356	0.740
33	0.490	69	0.610	105	0.490	141	0.960	177	0.730	213	0.490	249	0.610	285	0.490	321	0.960	357	0.730
34	0.500	70	0.610	106	0.500	142	0.970	178	0.710	214	0.500	250	0.610	286	0.500	322	0.970	358	0.710
35	0.510	71	0.600	107	0.510	143	0.970	179	0.690	215	0.510	251	0.600	287	0.510	323	0.970	359	0.690

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

AZIMUTH PATTERN Vertical Polarization

In Free Space

Proposal No. **C-70459-5**
Date **31-Jul-18**
Call Letters **KSHV**
Channel **16**
Frequency **485 MHz**
Antenna Type **TFU-30DSC/VP-R P220**
Gain **1.57 (1.96dB)**
Calculated



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.281	36	0.448	72	0.488	108	0.296	144	0.437	180	0.281	216	0.448	252	0.488	288	0.296
1	0.278	37	0.452	73	0.486	109	0.291	145	0.440	181	0.278	217	0.452	253	0.486	289	0.291
2	0.276	38	0.457	74	0.483	110	0.286	146	0.443	182	0.276	218	0.457	254	0.483	290	0.286
3	0.274	39	0.461	75	0.481	111	0.282	147	0.445	183	0.274	219	0.461	255	0.481	291	0.282
4	0.273	40	0.465	76	0.478	112	0.279	148	0.447	184	0.273	220	0.465	256	0.478	292	0.279
5	0.274	41	0.468	77	0.475	113	0.276	149	0.448	185	0.274	221	0.468	257	0.475	293	0.276
6	0.275	42	0.472	78	0.472	114	0.275	150	0.448	186	0.275	222	0.472	258	0.472	294	0.275
7	0.276	43	0.475	79	0.468	115	0.274	151	0.448	187	0.276	223	0.475	259	0.468	295	0.274
8	0.279	44	0.478	80	0.465	116	0.273	152	0.447	188	0.279	224	0.478	260	0.465	296	0.273
9	0.282	45	0.481	81	0.461	117	0.274	153	0.445	189	0.282	225	0.481	261	0.461	297	0.274
10	0.286	46	0.483	82	0.457	118	0.276	154	0.443	190	0.286	226	0.483	262	0.457	298	0.276
11	0.291	47	0.486	83	0.452	119	0.278	155	0.440	191	0.291	227	0.486	263	0.452	299	0.278
12	0.296	48	0.488	84	0.448	120	0.281	156	0.437	192	0.296	228	0.488	264	0.448	300	0.281
13	0.302	49	0.490	85	0.443	121	0.285	157	0.433	193	0.302	229	0.490	265	0.443	301	0.285
14	0.308	50	0.492	86	0.438	122	0.290	158	0.429	194	0.308	230	0.492	266	0.438	302	0.290
15	0.314	51	0.493	87	0.433	123	0.295	159	0.424	195	0.314	231	0.493	267	0.433	303	0.295
16	0.321	52	0.495	88	0.427	124	0.301	160	0.418	196	0.321	232	0.495	268	0.427	304	0.301
17	0.327	53	0.496	89	0.422	125	0.308	161	0.412	197	0.327	233	0.496	269	0.422	305	0.308
18	0.334	54	0.497	90	0.416	126	0.314	162	0.406	198	0.334	234	0.497	270	0.416	306	0.314
19	0.341	55	0.498	91	0.410	127	0.322	163	0.399	199	0.341	235	0.498	271	0.410	307	0.322
20	0.349	56	0.499	92	0.404	128	0.329	164	0.392	200	0.349	236	0.499	272	0.404	308	0.329
21	0.356	57	0.499	93	0.397	129	0.337	165	0.384	201	0.356	237	0.499	273	0.397	309	0.337
22	0.363	58	0.500	94	0.391	130	0.345	166	0.377	202	0.363	238	0.500	274	0.391	310	0.345
23	0.370	59	0.500	95	0.384	131	0.353	167	0.369	203	0.370	239	0.500	275	0.384	311	0.353
24	0.377	60	0.500	96	0.377	132	0.361	168	0.361	204	0.377	240	0.500	276	0.377	312	0.361
25	0.384	61	0.500	97	0.370	133	0.369	169	0.353	205	0.384	241	0.500	277	0.370	313	0.369
26	0.391	62	0.500	98	0.363	134	0.377	170	0.345	206	0.391	242	0.500	278	0.363	314	0.377
27	0.397	63	0.499	99	0.356	135	0.384	171	0.337	207	0.397	243	0.499	279	0.356	315	0.384
28	0.404	64	0.499	100	0.349	136	0.392	172	0.329	208	0.404	244	0.499	280	0.349	316	0.392
29	0.410	65	0.498	101	0.341	137	0.399	173	0.322	209	0.410	245	0.498	281	0.341	317	0.399
30	0.416	66	0.497	102	0.334	138	0.406	174	0.314	210	0.416	246	0.497	282	0.334	318	0.406
31	0.422	67	0.496	103	0.327	139	0.412	175	0.308	211	0.422	247	0.496	283	0.327	319	0.412
32	0.427	68	0.495	104	0.321	140	0.418	176	0.301	212	0.427	248	0.495	284	0.321	320	0.418
33	0.433	69	0.493	105	0.314	141	0.424	177	0.295	213	0.433	249	0.493	285	0.314	321	0.424
34	0.438	70	0.492	106	0.308	142	0.429	178	0.290	214	0.438	250	0.492	286	0.308	322	0.429
35	0.443	71	0.490	107	0.302	143	0.433	179	0.285	215	0.443	251	0.490	287	0.302	323	0.433

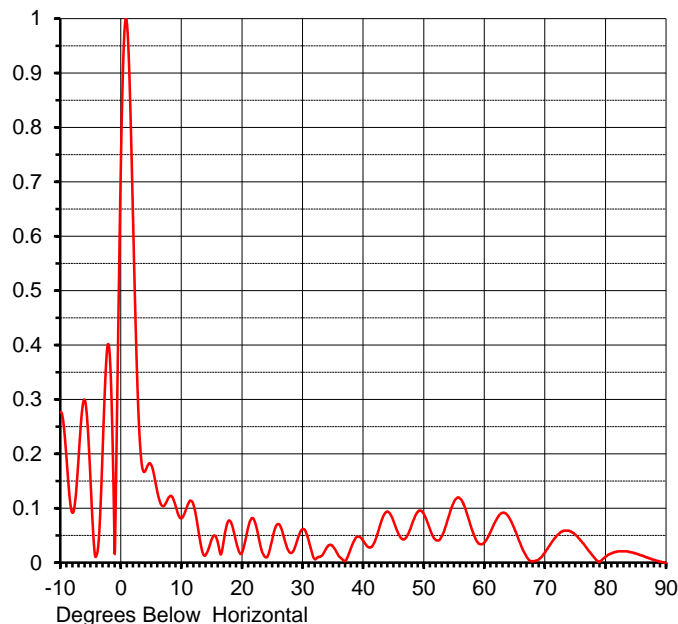
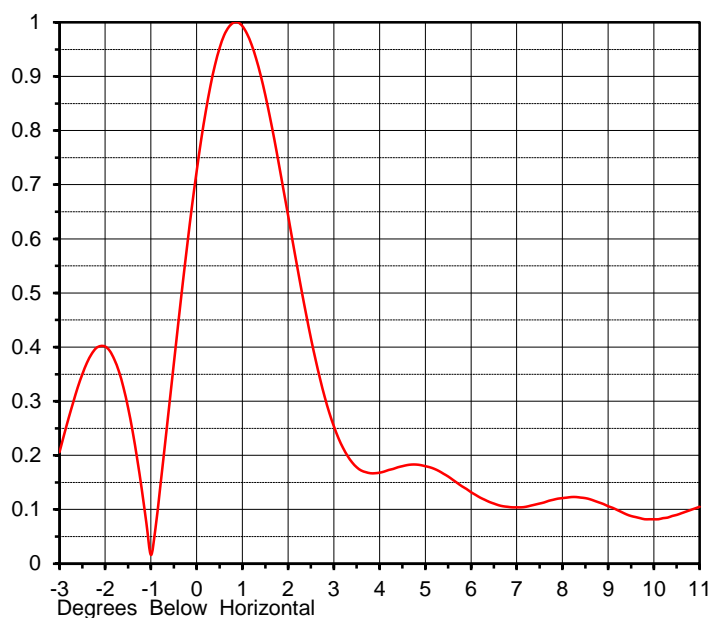
This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

ELEVATION PATTERN

Proposal No. **C-70459-5**
 Date **31-Jul-18**
 Call Letters **KSHV**
 Channel **16**
 Frequency **485 MHz**
 Antenna Type **TFU-30DSC/VP-R P220**

RMS Directivity at Main Lobe **22.6 (13.54 dB)**
 RMS Directivity at Horizontal **11.9 (10.76 dB)**
Calculated

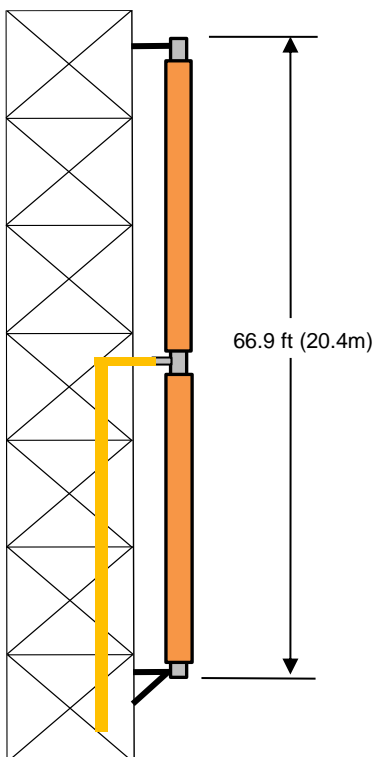
Beam Tilt **0.75 deg**
 Pattern Number **30Q226075**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.277	10.0	0.082	30.0	0.062	50.0	0.088	70.0	0.020
-9.0	0.183	11.0	0.108	31.0	0.037	51.0	0.060	71.0	0.037
-8.0	0.092	12.0	0.103	32.0	0.006	52.0	0.041	72.0	0.051
-7.0	0.205	13.0	0.040	33.0	0.012	53.0	0.051	73.0	0.059
-6.0	0.298	14.0	0.016	34.0	0.029	54.0	0.084	74.0	0.058
-5.0	0.129	15.0	0.045	35.0	0.029	55.0	0.114	75.0	0.051
-4.0	0.017	16.0	0.033	36.0	0.011	56.0	0.117	76.0	0.039
-3.0	0.238	17.0	0.048	37.0	0.004	57.0	0.092	77.0	0.024
-2.0	0.393	18.0	0.076	38.0	0.030	58.0	0.057	78.0	0.010
-1.0	0.066	19.0	0.036	39.0	0.048	59.0	0.035	79.0	0.002
0.0	0.784	20.0	0.021	40.0	0.039	60.0	0.038	80.0	0.012
1.0	0.979	21.0	0.068	41.0	0.028	61.0	0.058	81.0	0.018
2.0	0.595	22.0	0.076	42.0	0.044	62.0	0.081	82.0	0.021
3.0	0.232	23.0	0.029	43.0	0.079	63.0	0.092	83.0	0.021
4.0	0.170	24.0	0.010	44.0	0.094	64.0	0.083	84.0	0.020
5.0	0.178	25.0	0.048	45.0	0.074	65.0	0.059	85.0	0.017
6.0	0.127	26.0	0.071	46.0	0.048	66.0	0.031	86.0	0.013
7.0	0.104	27.0	0.040	47.0	0.046	67.0	0.009	87.0	0.009
8.0	0.122	28.0	0.018	48.0	0.072	68.0	0.003	88.0	0.005
9.0	0.103	29.0	0.040	49.0	0.095	69.0	0.007	89.0	0.002
								90.0	0.000

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided.
 No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

MECHANICAL SPECIFICATIONS



Proposal No. **C-70459-5**
 Date **31-Jul-18**
 Call Letters **KSHV**
 Channel **16**
 Frequency **485 MHz**
 Antenna Type **TFU-30DSC/VP-R P220**

Preliminary Specifications

Side Mounted

With ice TIA-222-G

Height AGL(z) 1657 ft (505.1 m)
 Basic Wind Speed 89 m/h (143.2 km/h)

Structure Class II
 Exposure Category C
 Topography Category 1

Design Ice 0.75 in $t_{iz} = 2.10$ in
 Wind Speed w/Ice 30 m/h (48.3 km/h)

Mechanical Specifications

		without ice	with ice	
Height	H2	66.9 ft (20.4m)		
Height of Center of Radiation	H3	33.45 ft (10.2m)		
Effective Projected Area	(EPA) _A	67.2 ft ² (6.2m ²)	162.5 ft ² (15.1m ²)	Mounts Excluded
Weight	W	1850 lb (0.8t)	6300 lb (2.9t)	Mounts Excluded

Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA-222-G

Prepared by: KLP

Date: 31-Jul-18

ME:

EE:

Rev. No.5 by: JBC

Date: 31-Jul-18

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric. Mechanical data is based on listed criteria and should be verified by the tower engineer.