



Antenna Model:

TLP-10H/VP-RReference Number: **C-71677-1**Date: **29-Jan-21**Customer: **Ray Mayhugh**Location: **Los Angeles**

Electrical Specifications

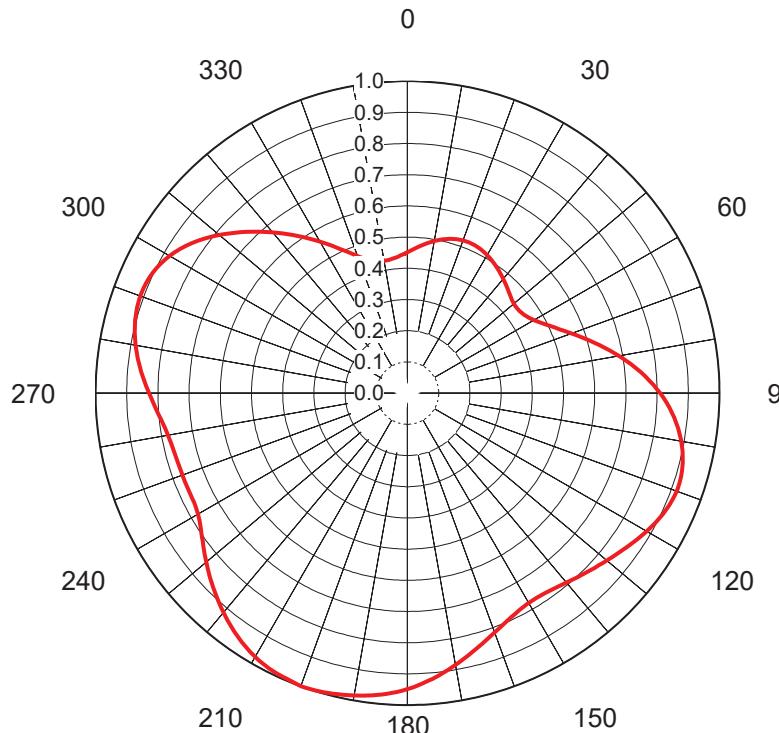
Polarization:	Elliptical / Circular
Azimuth Pattern:	H
Antenna Input:	1-5/8" 50 Ohm
VSWR:	Channel 1.08 : 1
Bandwidth:	6 MHz
Rated Input Power:	5.0 kW Maximum Average Power

Mechanical Specifications

Mounting:	Side Mounted
Environmental Protection:	Full Radome
Height:	21.7 ft (6.6 m)
Weight:	232 lb (106 kg) Excludes Mounts
Effective Projected Area:	23.9 ft² (2.2 m²)
	Basic Wind Speed: 85 mph (137 km/h)

Channel Specifications

Call	Ch	Freq	Hpol ERP	Vpol ERP	TPO	Peak Gain	Peak Gain	Peak Gain	Peak Gain
						Main Lobe Hpol	Main Lobe Vpol	at Horizontal Hpol	at Horizontal Vpol
KFLA	19	503	15.0 kW (11.76 dBk)	11.1 kW (10.45 dBk)	1.67 kW (2.23 dBk)	10.79 (10.33dB)	7.98 (9.02dB)	6.60 (8.19dB)	4.88 (6.89dB)



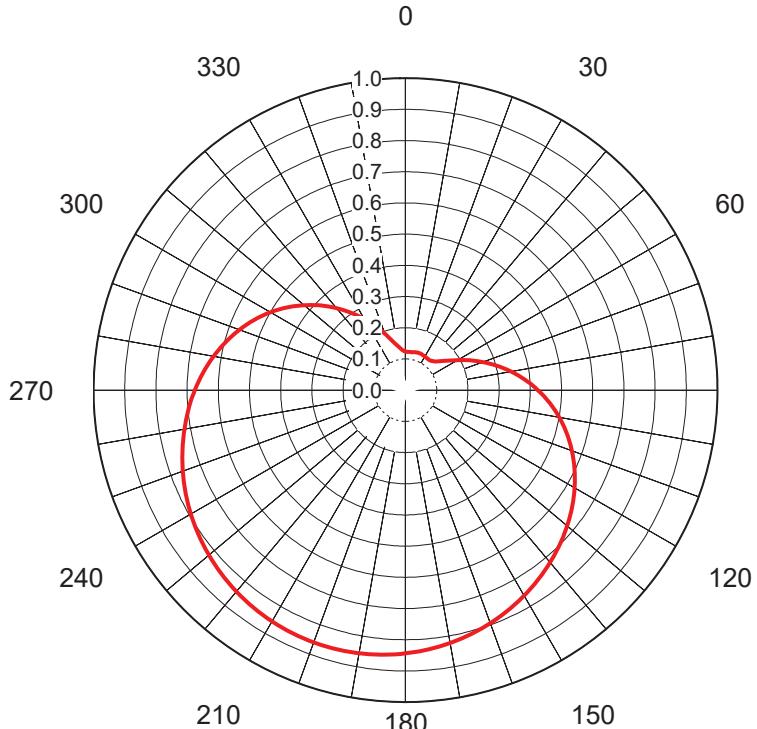
AZIMUTH PATTERN Horizontal Polarization

Proposal No. C-71677-1
 Date 29-Jan-21
 Call Letters KFLA
 Channel 19
 Frequency 503 MHz
 Antenna Type TLP-10H/VP-R
 Gain 1.72 (2.36dB)
 Calculated

Pattern Number TLP-H-19 Hpol

Deg	Value																		
0	0.452	36	0.492	72	0.584	108	0.918	144	0.781	180	0.949	216	0.945	252	0.768	288	0.910	324	0.627
1	0.456	37	0.489	73	0.596	109	0.918	145	0.779	181	0.954	217	0.938	253	0.769	289	0.911	325	0.615
2	0.460	38	0.485	74	0.609	110	0.918	146	0.777	182	0.958	218	0.931	254	0.769	290	0.911	326	0.604
3	0.464	39	0.481	75	0.622	111	0.917	147	0.776	183	0.963	219	0.924	255	0.770	291	0.911	327	0.593
4	0.468	40	0.477	76	0.635	112	0.915	148	0.776	184	0.967	220	0.917	256	0.771	292	0.910	328	0.582
5	0.473	41	0.474	77	0.648	113	0.913	149	0.776	185	0.970	221	0.910	257	0.772	293	0.909	329	0.571
6	0.477	42	0.470	78	0.661	114	0.911	150	0.777	186	0.973	222	0.903	258	0.774	294	0.906	330	0.560
7	0.482	43	0.466	79	0.675	115	0.907	151	0.779	187	0.976	223	0.896	259	0.776	295	0.904	331	0.550
8	0.486	44	0.463	80	0.688	116	0.904	152	0.781	188	0.979	224	0.888	260	0.779	296	0.900	332	0.539
9	0.491	45	0.459	81	0.701	117	0.900	153	0.784	189	0.982	225	0.881	261	0.783	297	0.896	333	0.529
10	0.495	46	0.456	82	0.714	118	0.895	154	0.787	190	0.984	226	0.873	262	0.786	298	0.891	334	0.519
11	0.499	47	0.453	83	0.727	119	0.890	155	0.791	191	0.986	227	0.865	263	0.791	299	0.886	335	0.510
12	0.503	48	0.450	84	0.740	120	0.885	156	0.795	192	0.989	228	0.858	264	0.795	300	0.880	336	0.500
13	0.506	49	0.448	85	0.752	121	0.880	157	0.800	193	0.991	229	0.850	265	0.800	301	0.873	337	0.492
14	0.509	50	0.446	86	0.765	122	0.875	158	0.805	194	0.993	230	0.842	266	0.805	302	0.866	338	0.483
15	0.512	51	0.445	87	0.777	123	0.870	159	0.811	195	0.994	231	0.834	267	0.811	303	0.858	339	0.475
16	0.515	52	0.444	88	0.788	124	0.865	160	0.816	196	0.996	232	0.827	268	0.817	304	0.850	340	0.467
17	0.517	53	0.444	89	0.799	125	0.859	161	0.822	197	0.997	233	0.819	269	0.823	305	0.841	341	0.460
18	0.519	54	0.445	90	0.810	126	0.854	162	0.829	198	0.998	234	0.811	270	0.828	306	0.831	342	0.454
19	0.520	55	0.447	91	0.820	127	0.849	163	0.835	199	0.999	235	0.804	271	0.835	307	0.821	343	0.448
20	0.521	56	0.450	92	0.830	128	0.844	164	0.842	200	1.000	236	0.797	272	0.841	308	0.810	344	0.443
21	0.522	57	0.453	93	0.839	129	0.839	165	0.849	201	0.998	237	0.791	273	0.847	309	0.800	345	0.439
22	0.522	58	0.458	94	0.848	130	0.834	166	0.856	202	0.996	238	0.785	274	0.853	310	0.788	346	0.436
23	0.522	59	0.463	95	0.856	131	0.830	167	0.863	203	0.994	239	0.780	275	0.858	311	0.777	347	0.433
24	0.521	60	0.468	96	0.864	132	0.825	168	0.870	204	0.993	240	0.776	276	0.864	312	0.766	348	0.432
25	0.520	61	0.475	97	0.872	133	0.821	169	0.878	205	0.991	241	0.773	277	0.870	313	0.754	349	0.431
26	0.519	62	0.482	98	0.879	134	0.816	170	0.885	206	0.989	242	0.770	278	0.875	314	0.742	350	0.430
27	0.517	63	0.490	99	0.885	135	0.812	171	0.892	207	0.986	243	0.769	279	0.880	315	0.731	351	0.430
28	0.515	64	0.498	100	0.891	136	0.808	172	0.899	208	0.984	244	0.768	280	0.885	316	0.719	352	0.431
29	0.513	65	0.507	101	0.896	137	0.804	173	0.906	209	0.980	245	0.768	281	0.890	317	0.707	353	0.432
30	0.511	66	0.517	102	0.901	138	0.800	174	0.913	210	0.977	246	0.768	282	0.894	318	0.696	354	0.434
31	0.508	67	0.527	103	0.906	139	0.796	175	0.919	211	0.972	247	0.768	283	0.898	319	0.684	355	0.436
32	0.505	68	0.537	104	0.909	140	0.793	176	0.926	212	0.968	248	0.768	284	0.901	320	0.673	356	0.438
33	0.502	69	0.548	105	0.912	141	0.789	177	0.932	213	0.962	249	0.768	285	0.904	321	0.661	357	0.441
34	0.499	70	0.560	106	0.915	142	0.786	178	0.938	214	0.957	250	0.768	286	0.906	322	0.650	358	0.444
35	0.496	71	0.571	107	0.917	143	0.783	179	0.944	215	0.951	251	0.768	287	0.909	323	0.638	359	0.448

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AZIMUTH PATTERN Vertical Polarization

Proposal No. C-71677-1
 Date 29-Jan-21
 Call Letters KFLA
 Channel 19
 Frequency 503 MHz
 Antenna Type TLP-10H/VP-R
 Gain 2.18 (3.39dB)
 Calculated

Pattern Number TLP-H-19 Vpol

Deg	Value																		
0	0.124	36	0.123	72	0.279	108	0.555	144	0.737	180	0.844	216	0.849	252	0.752	288	0.579	324	0.310
1	0.123	37	0.123	73	0.287	109	0.561	145	0.741	181	0.845	217	0.848	253	0.748	289	0.573	325	0.302
2	0.123	38	0.123	74	0.295	110	0.568	146	0.745	182	0.847	218	0.846	254	0.744	290	0.567	326	0.294
3	0.123	39	0.124	75	0.303	111	0.574	147	0.749	183	0.848	219	0.845	255	0.740	291	0.560	327	0.286
4	0.123	40	0.124	76	0.311	112	0.580	148	0.753	184	0.850	220	0.843	256	0.736	292	0.554	328	0.278
5	0.123	41	0.125	77	0.319	113	0.586	149	0.757	185	0.851	221	0.842	257	0.732	293	0.547	329	0.270
6	0.123	42	0.126	78	0.327	114	0.592	150	0.761	186	0.852	222	0.840	258	0.728	294	0.541	330	0.262
7	0.123	43	0.127	79	0.335	115	0.598	151	0.764	187	0.853	223	0.838	259	0.724	295	0.534	331	0.255
8	0.123	44	0.129	80	0.343	116	0.604	152	0.768	188	0.854	224	0.836	260	0.720	296	0.527	332	0.247
9	0.124	45	0.131	81	0.352	117	0.609	153	0.771	189	0.855	225	0.834	261	0.716	297	0.520	333	0.240
10	0.124	46	0.133	82	0.360	118	0.615	154	0.775	190	0.856	226	0.832	262	0.711	298	0.514	334	0.233
11	0.124	47	0.135	83	0.368	119	0.620	155	0.778	191	0.857	227	0.830	263	0.707	299	0.506	335	0.225
12	0.125	48	0.138	84	0.376	120	0.626	156	0.782	192	0.858	228	0.827	264	0.703	300	0.499	336	0.218
13	0.125	49	0.141	85	0.384	121	0.631	157	0.785	193	0.858	229	0.825	265	0.698	301	0.492	337	0.212
14	0.125	50	0.144	86	0.393	122	0.636	158	0.789	194	0.859	230	0.822	266	0.694	302	0.485	338	0.205
15	0.126	51	0.148	87	0.401	123	0.642	159	0.792	195	0.859	231	0.820	267	0.689	303	0.477	339	0.198
16	0.126	52	0.152	88	0.409	124	0.647	160	0.795	196	0.860	232	0.817	268	0.685	304	0.470	340	0.192
17	0.126	53	0.156	89	0.417	125	0.652	161	0.798	197	0.860	233	0.815	269	0.680	305	0.462	341	0.186
18	0.126	54	0.160	90	0.425	126	0.657	162	0.801	198	0.860	234	0.812	270	0.675	306	0.455	342	0.180
19	0.126	55	0.165	91	0.433	127	0.662	163	0.804	199	0.860	235	0.809	271	0.670	307	0.447	343	0.175
20	0.126	56	0.170	92	0.440	128	0.667	164	0.807	200	0.860	236	0.806	272	0.666	308	0.439	344	0.170
21	0.126	57	0.175	93	0.448	129	0.672	165	0.810	201	0.860	237	0.803	273	0.661	309	0.432	345	0.165
22	0.126	58	0.181	94	0.456	130	0.676	166	0.813	202	0.860	238	0.800	274	0.656	310	0.424	346	0.160
23	0.126	59	0.187	95	0.463	131	0.681	167	0.815	203	0.860	239	0.797	275	0.651	311	0.416	347	0.155
24	0.126	60	0.193	96	0.471	132	0.686	168	0.818	204	0.860	240	0.794	276	0.646	312	0.408	348	0.151
25	0.126	61	0.199	97	0.478	133	0.690	169	0.821	205	0.859	241	0.791	277	0.641	313	0.400	349	0.147
26	0.126	62	0.206	98	0.486	134	0.695	170	0.823	206	0.859	242	0.788	278	0.635	314	0.392	350	0.144
27	0.125	63	0.212	99	0.493	135	0.699	171	0.825	207	0.858	243	0.784	279	0.630	315	0.384	351	0.140
28	0.125	64	0.219	100	0.500	136	0.704	172	0.828	208	0.857	244	0.781	280	0.625	316	0.375	352	0.137
29	0.125	65	0.226	101	0.508	137	0.708	173	0.830	209	0.857	245	0.778	281	0.619	317	0.367	353	0.135
30	0.124	66	0.233	102	0.515	138	0.712	174	0.832	210	0.856	246	0.774	282	0.614	318	0.359	354	0.132
31	0.124	67	0.241	103	0.522	139	0.717	175	0.834	211	0.855	247	0.771	283	0.608	319	0.351	355	0.130
32	0.124	68	0.248	104	0.528	140	0.721	176	0.836	212	0.854	248	0.767	284	0.602	320	0.343	356	0.129
33	0.123	69	0.255	105	0.535	141	0.725	177	0.838	213	0.853	249	0.763	285	0.597	321	0.334	357	0.127
34	0.123	70	0.263	106	0.542	142	0.729	178	0.840	214	0.852	250	0.760	286	0.591	322	0.326	358	0.126
35	0.123	71	0.271	107	0.548	143	0.733	179	0.842	215	0.851	251	0.756	287	0.585	323	0.318	359	0.125

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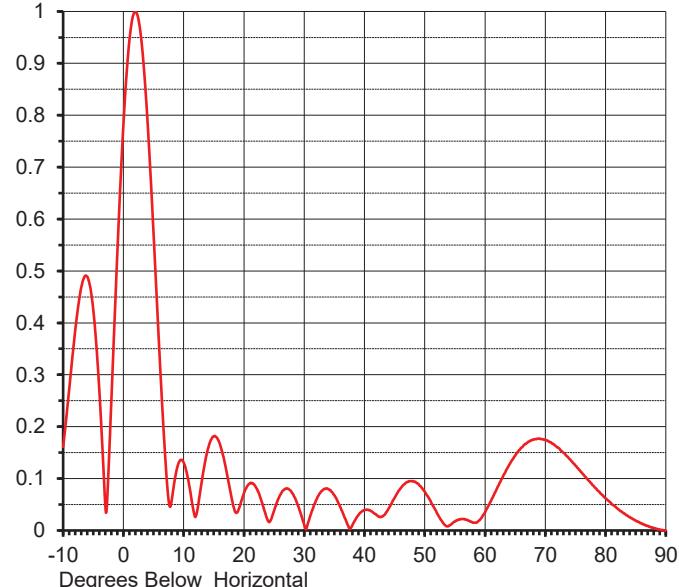
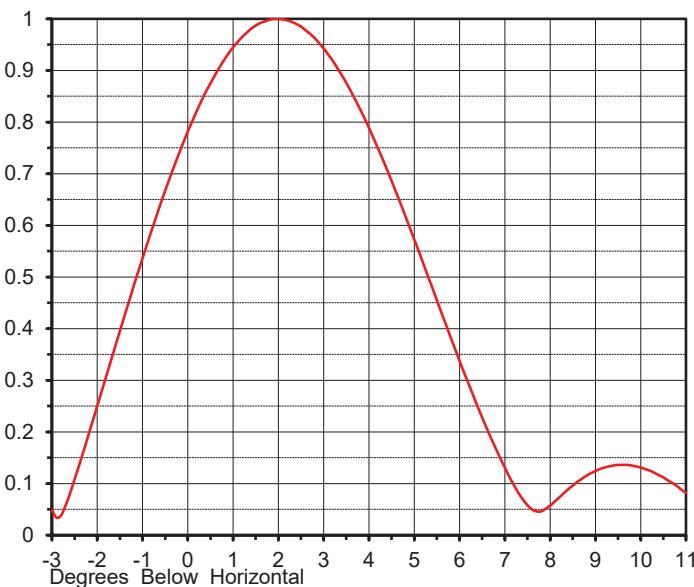
ELEVATION PATTERN

Proposal No. **C-71677-1**
 Date **29-Jan-21**
 Call Letters **KFLA**
 Channel **19**
 Frequency **503 MHz**
 Antenna Type **TLP-10H/VP-R**

RMS Directivity at Main Lobe
 RMS Directivity at Horizontal

9.9 (9.97 dB)
6.1 (7.85 dB)
Calculated

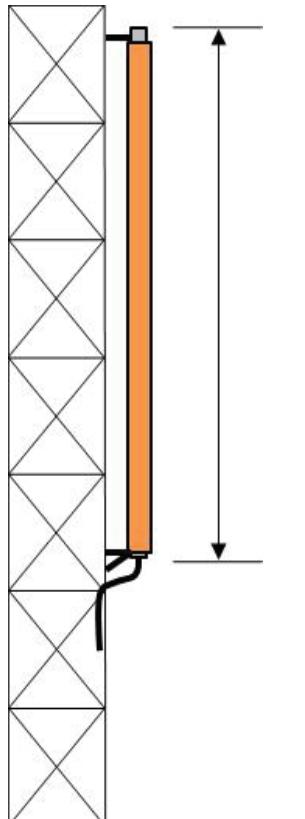
Beam Tilt **2.00 deg**
 Pattern Number **10L099200-19**



Angle	Field								
-10.0	0.161	10.0	0.131	30.0	0.011	50.0	0.075	70.0	0.174
-9.0	0.271	11.0	0.082	31.0	0.028	51.0	0.056	71.0	0.169
-8.0	0.385	12.0	0.027	32.0	0.059	52.0	0.034	72.0	0.160
-7.0	0.468	13.0	0.094	33.0	0.077	53.0	0.015	73.0	0.150
-6.0	0.489	14.0	0.156	34.0	0.080	54.0	0.009	74.0	0.138
-5.0	0.425	15.0	0.181	35.0	0.068	55.0	0.017	75.0	0.125
-4.0	0.271	16.0	0.167	36.0	0.045	56.0	0.022	76.0	0.112
-3.0	0.048	17.0	0.120	37.0	0.017	57.0	0.020	77.0	0.099
-2.0	0.250	18.0	0.060	38.0	0.010	58.0	0.015	78.0	0.086
-1.0	0.536	19.0	0.037	39.0	0.030	59.0	0.019	79.0	0.074
0.0	0.782	20.0	0.072	40.0	0.039	60.0	0.035	80.0	0.062
1.0	0.945	21.0	0.091	41.0	0.038	61.0	0.057	81.0	0.051
2.0	1.000	22.0	0.083	42.0	0.030	62.0	0.081	82.0	0.042
3.0	0.943	23.0	0.054	43.0	0.027	63.0	0.105	83.0	0.033
4.0	0.789	24.0	0.018	44.0	0.042	64.0	0.126	84.0	0.026
5.0	0.573	25.0	0.038	45.0	0.063	65.0	0.144	85.0	0.019
6.0	0.338	26.0	0.068	46.0	0.081	66.0	0.159	86.0	0.013
7.0	0.131	27.0	0.081	47.0	0.093	67.0	0.169	87.0	0.009
8.0	0.057	28.0	0.072	48.0	0.095	68.0	0.175	88.0	0.005
9.0	0.124	29.0	0.047	49.0	0.089	69.0	0.177	89.0	0.002
								90.0	0.000

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MECHANICAL SPECIFICATIONS



21.7 ft (6.6 m)

Proposal No.	C-71677-1
Date	29-Jan-21
Call Letters	KFLA
Channel	19
Frequency	503 MHz
Antenna Type	TLP-10H/VP-R

Preliminary Specifications

Side Mounted

With Ice TIA-222-G

Basic Wind Speed	85 mph (137 km/h)
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Structure Class	II
Exposure Category	C
Topography Category	3

Design Ice	2.00 in	tiz = 4.69 in
Wind Speed with Ice	30 mph	

Mechanical Specifications

without ice

with ice

Height	H2	21.7 ft (6.6 m)	
Height of Center of Radiation	H3	10.9 ft (3.4 m)	
Effective Projected Area	(EPA) _S	23.9 ft ² (2.2 m ²)	71.5 ft ² (6.6 m ²) mounts excluded
Weight	W	232 lb (106 kg)	3985 lb (1808 kg) mounts excluded

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

Mechanical data is based on listed criteria and should be verified by the tower engineer.

Prepared by: SM

Date: 29-Jan-21

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Summary

Proposal No.	C-71677-1
Date	29-Jan-21
Call Letters	KFLA
Channel	19
Frequency	503 MHz
Antenna Type	TLP-10H/VP-R

Antenna

	Hpol	Vpol
ERP:	15.0 kW (11.76 dBk)	11.1 kW (10.45 dBk)
Peak Gain	10.79 (10.33 dBd)	7.98 (9.02 dBd)

Antenna Input Power **1.39 kW (1.43 dBk)**

Transmission Line

Type:	Flexline Air	Attenuation:	(0.80 dB)
Size:	3"	Efficiency:	83.1%
Impedance:	50 Ohm		
Length:	220 ft	67.1 m	

Transmitter Output

1.67 kW (2.23 dBk)

Transmitter filter losses not included

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