

Horizontal Polarization AZIMUTH PATTERN

Exhibit No.
Date **6 Apr 2017**
Call Letters **KTCW**
Channel **36**
Antenna Type **TLP-8B/VP-R**
Location **Roseburg, OR**
Customer **SBG**

Gain **1.7 (2.30 dB)**
Calculated
Drawing # **TLP-B**

Deg	Value																		
0	1.000	36	0.935	72	0.759	108	0.589	144	0.594	180	0.645	216	0.600	252	0.584	288	0.747	324	0.930
1	1.000	37	0.932	73	0.754	109	0.586	145	0.596	181	0.645	217	0.598	253	0.587	289	0.753	325	0.934
2	0.999	38	0.928	74	0.748	110	0.583	146	0.598	182	0.645	218	0.596	254	0.590	290	0.759	326	0.938
3	0.999	39	0.924	75	0.742	111	0.581	147	0.600	183	0.645	219	0.594	255	0.593	291	0.765	327	0.941
4	0.999	40	0.920	76	0.737	112	0.579	148	0.603	184	0.645	220	0.592	256	0.596	292	0.771	328	0.944
5	0.998	41	0.916	77	0.731	113	0.577	149	0.605	185	0.644	221	0.590	257	0.600	293	0.777	329	0.948
6	0.998	42	0.912	78	0.726	114	0.575	150	0.607	186	0.644	222	0.589	258	0.603	294	0.783	330	0.951
7	0.998	43	0.908	79	0.720	115	0.574	151	0.609	187	0.643	223	0.587	259	0.607	295	0.789	331	0.954
8	0.997	44	0.904	80	0.714	116	0.573	152	0.611	188	0.643	224	0.586	260	0.610	296	0.795	332	0.956
9	0.996	45	0.899	81	0.709	117	0.571	153	0.614	189	0.642	225	0.584	261	0.614	297	0.801	333	0.959
10	0.996	46	0.895	82	0.703	118	0.570	154	0.616	190	0.641	226	0.583	262	0.618	298	0.806	334	0.962
11	0.995	47	0.890	83	0.698	119	0.569	155	0.618	191	0.640	227	0.582	263	0.622	299	0.812	335	0.964
12	0.994	48	0.886	84	0.692	120	0.569	156	0.619	192	0.640	228	0.581	264	0.625	300	0.817	336	0.966
13	0.993	49	0.881	85	0.687	121	0.568	157	0.621	193	0.639	229	0.580	265	0.629	301	0.823	337	0.968
14	0.992	50	0.876	86	0.682	122	0.568	158	0.623	194	0.638	230	0.579	266	0.633	302	0.828	338	0.971
15	0.990	51	0.872	87	0.676	123	0.568	159	0.625	195	0.637	231	0.578	267	0.637	303	0.834	339	0.973
16	0.989	52	0.867	88	0.671	124	0.568	160	0.627	196	0.636	232	0.577	268	0.641	304	0.839	340	0.975
17	0.987	53	0.862	89	0.666	125	0.568	161	0.628	197	0.634	233	0.576	269	0.646	305	0.844	341	0.977
18	0.985	54	0.857	90	0.661	126	0.568	162	0.630	198	0.633	234	0.575	270	0.650	306	0.849	342	0.979
19	0.983	55	0.852	91	0.656	127	0.569	163	0.632	199	0.632	235	0.574	271	0.654	307	0.854	343	0.980
20	0.981	56	0.847	92	0.651	128	0.569	164	0.633	200	0.631	236	0.573	272	0.659	308	0.859	344	0.982
21	0.979	57	0.842	93	0.646	129	0.570	165	0.634	201	0.629	237	0.572	273	0.663	309	0.864	345	0.984
22	0.977	58	0.836	94	0.641	130	0.571	166	0.636	202	0.628	238	0.572	274	0.668	310	0.869	346	0.986
23	0.975	59	0.831	95	0.637	131	0.572	167	0.637	203	0.626	239	0.571	275	0.673	311	0.874	347	0.988
24	0.972	60	0.826	96	0.632	132	0.573	168	0.638	204	0.625	240	0.570	276	0.678	312	0.879	348	0.990
25	0.970	61	0.820	97	0.628	133	0.574	169	0.639	205	0.623	241	0.570	277	0.683	313	0.883	349	0.991
26	0.967	62	0.815	98	0.624	134	0.575	170	0.640	206	0.621	242	0.570	278	0.688	314	0.888	350	0.993
27	0.964	63	0.810	99	0.619	135	0.577	171	0.641	207	0.619	243	0.570	279	0.694	315	0.893	351	0.994
28	0.961	64	0.804	100	0.615	136	0.578	172	0.642	208	0.618	244	0.570	280	0.699	316	0.897	352	0.995
29	0.958	65	0.799	101	0.612	137	0.580	173	0.643	209	0.616	245	0.571	281	0.705	317	0.902	353	0.996
30	0.955	66	0.793	102	0.608	138	0.582	174	0.643	210	0.613	246	0.572	282	0.711	318	0.906	354	0.997
31	0.952	67	0.787	103	0.604	139	0.584	175	0.644	211	0.611	247	0.573	283	0.716	319	0.910	355	0.998
32	0.949	68	0.782	104	0.601	140	0.586	176	0.644	212	0.609	248	0.575	284	0.722	320	0.914	356	0.999
33	0.946	69	0.776	105	0.597	141	0.588	177	0.645	213	0.607	249	0.577	285	0.728	321	0.919	357	0.999
34	0.942	70	0.771	106	0.594	142	0.590	178	0.645	214	0.605	250	0.579	286	0.734	322	0.923	358	0.999
35	0.939	71	0.765	107	0.591	143	0.592	179	0.645	215	0.602	251	0.581	287	0.740	323	0.927	359	1.000

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.

Vertical Polarization AZIMUTH PATTERN

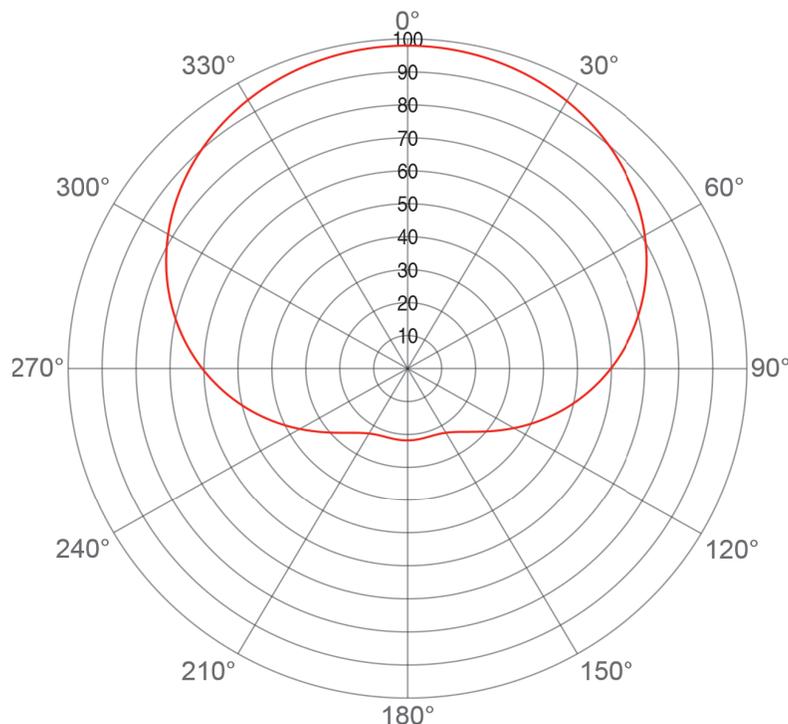


Exhibit No.
Date **6 Apr 2017**
Call Letters **KTCW**
Channel **36**
Antenna Type **TLP-8B/VP-R**
Location **Roseburg, OR**
Customer **SBG**

Gain **1.7 (2.30 dB)**
Calculated
Drawing # **TLP-B**

Deg	Value																		
0	0.980	36	0.919	72	0.733	108	0.453	144	0.238	180	0.218	216	0.241	252	0.459	288	0.739	324	0.923
1	0.980	37	0.915	73	0.726	109	0.445	145	0.235	181	0.218	217	0.244	253	0.467	289	0.746	325	0.926
2	0.979	38	0.912	74	0.719	110	0.437	146	0.233	182	0.218	218	0.248	254	0.475	290	0.753	326	0.929
3	0.979	39	0.908	75	0.712	111	0.429	147	0.231	183	0.218	219	0.251	255	0.483	291	0.759	327	0.932
4	0.979	40	0.905	76	0.705	112	0.421	148	0.229	184	0.218	220	0.255	256	0.491	292	0.766	328	0.935
5	0.978	41	0.901	77	0.698	113	0.414	149	0.227	185	0.218	221	0.258	257	0.499	293	0.772	329	0.938
6	0.978	42	0.897	78	0.691	114	0.406	150	0.225	186	0.218	222	0.262	258	0.508	294	0.779	330	0.941
7	0.977	43	0.893	79	0.683	115	0.398	151	0.224	187	0.218	223	0.267	259	0.516	295	0.785	331	0.944
8	0.976	44	0.889	80	0.676	116	0.391	152	0.222	188	0.218	224	0.271	260	0.524	296	0.791	332	0.946
9	0.976	45	0.884	81	0.668	117	0.383	153	0.221	189	0.218	225	0.276	261	0.532	297	0.797	333	0.949
10	0.975	46	0.880	82	0.661	118	0.376	154	0.220	190	0.218	226	0.281	262	0.540	298	0.803	334	0.951
11	0.974	47	0.876	83	0.653	119	0.369	155	0.219	191	0.217	227	0.286	263	0.549	299	0.809	335	0.953
12	0.973	48	0.871	84	0.646	120	0.361	156	0.218	192	0.217	228	0.291	264	0.557	300	0.815	336	0.955
13	0.972	49	0.866	85	0.638	121	0.354	157	0.218	193	0.217	229	0.296	265	0.565	301	0.820	337	0.957
14	0.970	50	0.862	86	0.630	122	0.348	158	0.217	194	0.217	230	0.302	266	0.573	302	0.826	338	0.959
15	0.969	51	0.857	87	0.622	123	0.341	159	0.217	195	0.217	231	0.308	267	0.581	303	0.831	339	0.961
16	0.967	52	0.852	88	0.615	124	0.334	160	0.217	196	0.217	232	0.314	268	0.589	304	0.837	340	0.963
17	0.966	53	0.847	89	0.607	125	0.328	161	0.216	197	0.217	233	0.320	269	0.597	305	0.842	341	0.965
18	0.964	54	0.842	90	0.599	126	0.321	162	0.216	198	0.218	234	0.326	270	0.605	306	0.847	342	0.966
19	0.963	55	0.837	91	0.591	127	0.315	163	0.216	199	0.218	235	0.333	271	0.613	307	0.852	343	0.968
20	0.961	56	0.831	92	0.583	128	0.309	164	0.216	200	0.218	236	0.339	272	0.621	308	0.857	344	0.969
21	0.959	57	0.826	93	0.575	129	0.303	165	0.216	201	0.219	237	0.346	273	0.629	309	0.862	345	0.971
22	0.957	58	0.820	94	0.567	130	0.297	166	0.216	202	0.219	238	0.353	274	0.637	310	0.867	346	0.972
23	0.955	59	0.815	95	0.558	131	0.292	167	0.216	203	0.220	239	0.360	275	0.644	311	0.872	347	0.973
24	0.953	60	0.809	96	0.550	132	0.286	168	0.216	204	0.220	240	0.367	276	0.652	312	0.876	348	0.974
25	0.950	61	0.803	97	0.542	133	0.281	169	0.217	205	0.221	241	0.374	277	0.660	313	0.881	349	0.975
26	0.948	62	0.797	98	0.534	134	0.276	170	0.217	206	0.222	242	0.381	278	0.667	314	0.885	350	0.976
27	0.945	63	0.791	99	0.526	135	0.272	171	0.217	207	0.223	243	0.389	279	0.675	315	0.889	351	0.977
28	0.943	64	0.785	100	0.518	136	0.267	172	0.217	208	0.225	244	0.396	280	0.682	316	0.893	352	0.977
29	0.940	65	0.779	101	0.510	137	0.263	173	0.217	209	0.226	245	0.404	281	0.690	317	0.897	353	0.978
30	0.938	66	0.773	102	0.501	138	0.259	174	0.217	210	0.228	246	0.412	282	0.697	318	0.901	354	0.979
31	0.935	67	0.766	103	0.493	139	0.255	175	0.218	211	0.229	247	0.419	283	0.704	319	0.905	355	0.979
32	0.932	68	0.760	104	0.485	140	0.251	176	0.218	212	0.231	248	0.427	284	0.712	320	0.909	356	0.979
33	0.929	69	0.753	105	0.477	141	0.247	177	0.218	213	0.234	249	0.435	285	0.719	321	0.913	357	0.980
34	0.926	70	0.747	106	0.469	142	0.244	178	0.218	214	0.236	250	0.443	286	0.726	322	0.916	358	0.980
35	0.922	71	0.740	107	0.461	143	0.241	179	0.218	215	0.239	251	0.451	287	0.733	323	0.920	359	0.980

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

Exhibit No.

 Date **6 Apr 2017**

 Call Letters **KTCW**

 Channel **36**

 Antenna Type **TLP-8B/VP-R**

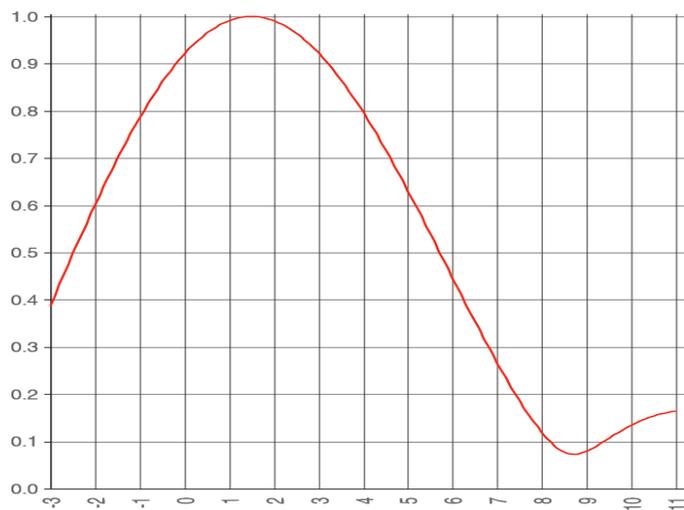
 Location **Roseburg, OR**

 Customer **SBG**

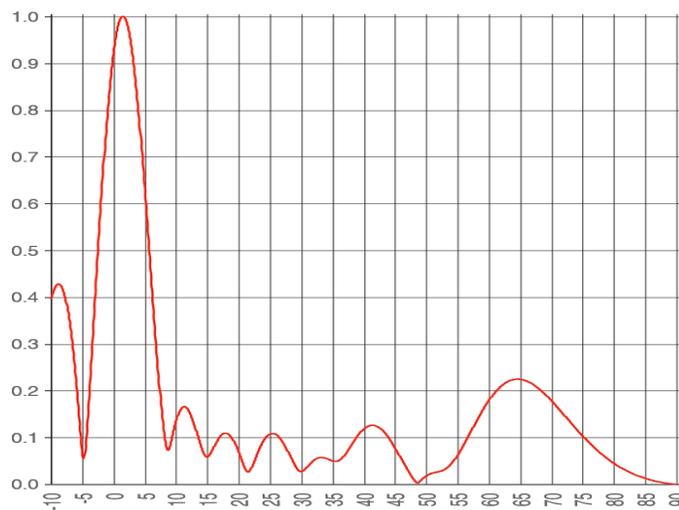
 RMS Gain at Main Lobe **8.0 (9.03 dB)**

 Beam Tilt **1.5 Degrees**

 RMS Gain at Horizontal **6.8 (8.32 dB)**

 Drawing # **08L080150**
Calculated


Degrees below horizontal



Degrees below horizontal

Angle	Field								
-10	0.396	10	0.134	30	0.027	50	0.018	70	0.179
-9	0.427	11	0.164	31	0.037	51	0.024	71	0.164
-8	0.413	12	0.158	32	0.051	52	0.027	72	0.148
-7	0.346	13	0.124	33	0.057	53	0.032	73	0.133
-6	0.225	14	0.080	34	0.055	54	0.044	74	0.118
-5	0.072	15	0.058	35	0.050	55	0.062	75	0.103
-4	0.169	16	0.078	36	0.050	56	0.085	76	0.089
-3	0.387	17	0.102	37	0.063	57	0.109	77	0.077
-2	0.601	18	0.109	38	0.083	58	0.134	78	0.065
-1	0.786	19	0.097	39	0.103	59	0.158	79	0.054
0	0.921	20	0.069	40	0.118	60	0.179	80	0.045
1	0.991	21	0.035	41	0.125	61	0.197	81	0.036
2	0.991	22	0.033	42	0.124	62	0.210	82	0.029
3	0.923	23	0.066	43	0.115	63	0.219	83	0.023
4	0.797	24	0.093	44	0.099	64	0.224	84	0.017
5	0.631	25	0.107	45	0.078	65	0.224	85	0.013
6	0.446	26	0.106	46	0.054	66	0.221	86	0.009
7	0.266	27	0.091	47	0.031	67	0.214	87	0.005
8	0.119	28	0.067	48	0.011	68	0.204	88	0.003
9	0.079	29	0.041	49	0.007	69	0.192	89	0.001

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.