



## IES ROAD REPORT

PHOTOMETRIC FILENAME : TMWP-LED-04L-50.IES

### DESCRIPTIVE INFORMATION (From Photometric File)

[TEST] IESNA:LM-63-2002

[TEST] 3582

[TESTLAB] TUV SUD America

[TESTDATE] 11/14/2018 11:38:22 AM

[ISSUEDATE] 1/7/2019

[MANUFAC] LSI INDUSTRIES, INC

[LUMCAT] TMWP-LED-04L-50

[OTHER] TEST PROCEDURE: IESNA LM-79-08

[ABSOLUTE] NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED

[OTHER] SCALED FROM ORIGINAL TEST DATA

[SEARCH\_SOURCETYPE] LED

[SEARCH\_APPLICATION] Outdoor

### CHARACTERISTICS

IES Classification	Type IV
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4044
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	129
Total Luminaire Watts	31.23
Ballast Factor	1.00
Upward Waste Light Ratio	0.13
Maximum Candela	1395.284
Maximum Candela Angle	360H 20V
Maximum Candela (<90 Degrees Vertical)	1395.284
Maximum Candela Angle (<90 Degrees Vertical)	360H 20V
Maximum Candela At 90 Degrees Vertical	922.708 (22.8% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	1156.903 (28.6% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

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**LUMINAIRE CLASSIFICATION SYSTEM (LCS)**

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	475.9	N.A.	11.8
FM - Front-Medium (30-60)	1170.8	N.A.	29.0
FH - Front-High (60-80)	882.8	N.A.	21.8
FVH - Front-Very High (80-90)	335.3	N.A.	8.3
BL - Back-Low (0-30)	300.6	N.A.	7.4
BM - Back-Medium (30-60)	302.2	N.A.	7.5
BH - Back-High (60-80)	59.9	N.A.	1.5
BVH - Back-Very High (80-90)	7.9	N.A.	0.2
UL - Uplight-Low (90-100)	238.4	N.A.	5.9
UH - Uplight-High (100-180)	270.2	N.A.	6.7
Total	4044.0	N.A.	100.0
BUG Rating	B1-U3-G3		

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**CANDELA TABULATION**

<b>Vert. Angles</b>	<b>Horizontal Angles</b>									
	<b>0.0</b>	<b>22.5</b>	<b>45.0</b>	<b>67.5</b>	<b>90.0</b>	<b>112.5</b>	<b>135.0</b>	<b>157.5</b>	<b>180.0</b>	<b>202.5</b>
<b>0.0</b>	1056.586	1056.586	1056.586	1056.586	1056.586	1056.586	1056.586	1056.586	1056.586	1056.586
<b>2.5</b>	1143.604	1143.103	1131.589	1088.675	1032.619	1057.828	1036.189	1024.278	1032.358	1024.278
<b>5.0</b>	1189.055	1173.710	1154.554	1131.798	1032.086	1026.105	978.076	960.768	966.833	960.768
<b>7.5</b>	1215.966	1200.517	1177.937	1147.613	1038.245	978.629	943.262	909.409	913.731	909.409
<b>10.0</b>	1194.191	1231.812	1183.000	1126.944	1036.272	967.272	896.298	862.226	858.687	862.226
<b>12.5</b>	1254.986	1207.448	1206.153	1130.159	1027.378	931.894	859.908	800.031	792.202	800.031
<b>15.0</b>	1229.140	1233.221	1161.872	1123.885	1012.607	880.201	802.808	760.374	764.738	760.374
<b>17.5</b>	1201.237	1196.842	1178.939	1091.807	980.852	843.112	758.276	689.265	677.928	689.265
<b>20.0</b>	1395.284	1198.481	1145.619	1057.797	949.066	789.457	710.998	620.922	604.147	620.922
<b>22.5</b>	1241.468	1315.197	1105.408	1037.963	915.307	751.271	639.618	551.253	522.254	551.253
<b>25.0</b>	1338.006	1243.347	1070.063	1021.512	885.348	710.174	568.049	467.388	439.119	467.388
<b>27.5</b>	1247.523	1247.324	1091.828	992.147	852.319	662.030	502.619	392.886	391.132	392.886
<b>30.0</b>	1235.852	1197.886	1157.039	975.884	816.984	618.928	440.529	347.446	308.655	347.446
<b>32.5</b>	1232.063	1175.432	1111.651	947.156	785.490	567.214	376.612	280.669	279.656	280.669
<b>35.0</b>	1165.526	1148.771	1075.793	927.531	751.825	519.091	317.977	241.659	213.683	241.659
<b>37.5</b>	1266.594	1092.349	1127.173	907.050	726.145	472.273	279.040	193.233	182.909	193.233
<b>40.0</b>	1181.758	1104.187	1047.389	901.507	702.209	428.054	264.979	158.879	145.976	158.879
<b>42.5</b>	1228.847	1105.085	1100.126	907.280	685.935	410.590	223.318	133.700	122.781	133.700
<b>45.0</b>	1220.465	1046.314	1056.429	912.468	666.237	382.186	181.729	110.704	104.273	110.704
<b>47.5</b>	1185.568	1090.742	1099.343	950.559	670.130	355.880	145.319	93.981	88.500	93.981
<b>50.0</b>	1228.169	1054.895	1059.488	974.025	632.739	317.351	115.714	79.095	71.756	79.095
<b>52.5</b>	1267.763	1091.640	1070.292	974.370	628.020	272.224	94.461	65.587	60.399	65.587
<b>55.0</b>	1241.040	1092.746	1096.608	975.915	605.984	222.785	78.657	55.399	51.850	55.399
<b>57.5</b>	1323.246	1130.211	1071.816	914.503	538.476	177.282	66.224	47.632	46.463	47.632
<b>60.0</b>	1246.886	1101.379	1071.169	930.255	491.167	121.727	56.432	41.839	40.450	41.839
<b>62.5</b>	1384.073	1142.821	1057.860	834.761	426.050	84.293	49.793	37.162	35.408	37.162
<b>65.0</b>	1213.795	1126.464	1003.651	880.556	346.193	63.562	44.490	32.955	30.106	32.955
<b>67.5</b>	1247.397	1037.869	997.951	745.478	279.385	50.754	39.574	28.112	25.408	28.112
<b>70.0</b>	1258.233	1052.024	928.095	753.777	209.779	42.204	35.920	23.320	21.170	23.320
<b>72.5</b>	1210.120	1051.074	887.540	668.460	145.246	35.962	31.619	19.301	18.132	19.301
<b>75.0</b>	1223.127	1045.751	859.992	635.682	93.020	31.170	28.060	15.178	15.115	15.178
<b>77.5</b>	1183.146	1011.302	826.932	557.725	67.424	27.475	24.615	11.431	12.339	11.431
<b>80.0</b>	1156.903	985.299	779.519	465.175	51.192	24.709	20.564	8.424	9.760	8.424
<b>82.5</b>	1075.606	933.095	738.223	420.758	43.624	22.224	16.598	5.637	6.357	5.637
<b>85.0</b>	1042.107	892.321	694.871	343.416	39.835	20.116	12.433	2.276	2.401	2.276
<b>87.5</b>	998.922	821.671	635.766	284.771	37.026	18.320	8.967	0.209	0.000	0.209
<b>90.0</b>	922.708	790.052	582.570	225.291	32.444	16.253	7.057	0.146	0.000	0.146
<b>92.5</b>	863.593	729.204	530.073	170.852	27.287	14.301	5.887	0.010	0.000	0.010
<b>95.0</b>	825.982	688.242	483.422	124.462	22.986	12.589	4.948	0.000	0.000	0.000
<b>97.5</b>	740.551	625.003	440.090	88.438	19.823	11.159	4.384	0.000	0.000	0.000
<b>100.0</b>	716.834	564.417	405.120	64.668	18.216	10.073	3.873	0.000	0.000	0.000
<b>102.5</b>	599.961	509.999	344.304	52.716	16.807	8.800	3.288	0.000	0.000	0.000
<b>105.0</b>	557.276	432.846	292.496	47.225	16.253	8.090	3.006	0.000	0.000	0.000
<b>107.5</b>	458.463	381.372	236.324	44.271	16.180	7.391	2.672	0.000	0.000	0.000
<b>110.0</b>	396.550	317.726	185.446	41.557	15.731	6.942	2.317	0.000	0.000	0.000
<b>112.5</b>	332.717	274.103	137.197	39.354	15.335	6.524	1.879	0.000	0.000	0.000
<b>115.0</b>	270.136	223.506	109.514	38.196	14.928	6.263	1.681	0.000	0.000	0.000
<b>117.5</b>	226.919	185.185	90.202	36.619	14.124	5.773	1.430	0.000	0.000	0.000
<b>120.0</b>	180.341	153.231	77.863	35.544	13.080	5.512	1.200	0.000	0.000	0.000
<b>122.5</b>	150.277	127.291	67.831	33.686	11.587	5.042	0.971	0.000	0.000	0.000
<b>125.0</b>	125.088	105.098	59.397	31.619	10.303	4.186	0.908	0.000	0.000	0.000
<b>127.5</b>	101.935	87.039	52.580	29.156	9.353	3.111	0.605	0.000	0.021	0.000
<b>130.0</b>	83.385	73.061	46.954	27.193	8.121	2.098	0.553	0.010	0.000	0.010

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**CANDELA TABULATION - (Cont.)**

132.5	69.126	61.620	41.578	24.792	7.098	1.618	0.585	0.063	0.271	0.063
135.0	59.188	53.050	37.789	22.151	6.065	1.670	0.699	0.177	0.386	0.177
137.5	52.330	47.632	35.440	18.769	5.606	1.691	0.386	0.365	0.637	0.365
140.0	48.227	43.321	32.381	15.627	4.624	1.806	0.512	0.480	0.595	0.480
142.5	43.029	39.386	28.456	12.871	4.050	1.889	0.449	0.814	0.866	0.814
145.0	38.707	35.241	24.416	10.637	3.466	1.608	0.835	1.190	1.023	1.190
147.5	33.467	30.387	20.763	8.883	2.745	1.597	0.981	1.096	0.960	1.096
150.0	28.352	25.638	17.600	7.213	2.171	1.388	1.054	1.107	1.305	1.107
152.5	24.291	22.120	14.980	5.480	2.015	1.127	1.190	1.388	1.367	1.388
155.0	21.285	19.364	12.589	3.570	1.514	1.013	1.274	1.545	1.420	1.545
157.5	18.456	16.546	10.773	1.399	0.971	1.232	1.472	1.461	1.503	1.461
160.0	15.690	14.072	9.165	0.981	1.023	1.430	1.545	1.743	1.691	1.743
162.5	12.840	12.078	6.764	1.221	1.117	1.326	1.827	1.764	1.514	1.764
165.0	9.625	8.957	3.925	0.929	1.242	1.555	1.702	1.848	1.973	1.848
167.5	5.814	5.397	1.430	1.054	1.221	1.535	1.910	1.848	1.775	1.848
170.0	1.378	1.994	1.347	1.503	1.451	1.754	1.910	1.962	2.025	1.962
172.5	0.919	1.190	1.284	1.618	1.649	1.649	1.754	1.837	2.130	1.837
175.0	1.378	1.315	1.378	1.608	1.764	1.754	1.910	1.900	1.889	1.900
177.5	1.670	1.472	1.555	1.702	1.712	1.816	1.837	1.942	1.848	1.942
180.0	1.044	1.044	1.044	1.044	1.044	1.044	1.044	1.044	1.044	1.044

**Vert. Angles**      **Horizontal Angles**

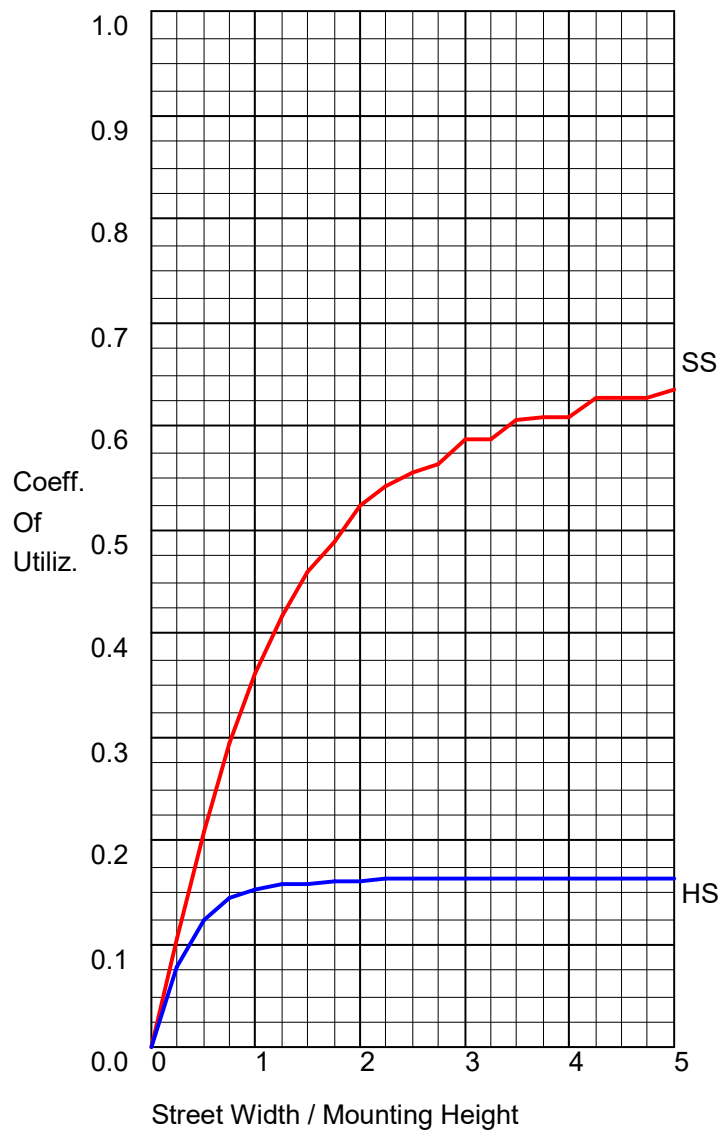
	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0.0	1056.586	1056.586	1056.586	1056.586	1056.586	1056.586	1056.586
2.5	1036.189	1057.828	1032.619	1088.675	1131.589	1143.103	1143.604
5.0	978.076	1026.105	1032.086	1131.798	1154.554	1173.710	1189.055
7.5	943.262	978.629	1038.245	1147.613	1177.937	1200.517	1215.966
10.0	896.298	967.272	1036.272	1126.944	1183.000	1231.812	1194.191
12.5	859.908	931.894	1027.378	1130.159	1206.153	1207.448	1254.986
15.0	802.808	880.201	1012.607	1123.885	1161.872	1233.221	1229.140
17.5	758.276	843.112	980.852	1091.807	1178.939	1196.842	1201.237
20.0	710.998	789.457	949.066	1057.797	1145.619	1198.481	1395.284
22.5	639.618	751.271	915.307	1037.963	1105.408	1315.197	1241.468
25.0	568.049	710.174	885.348	1021.512	1070.063	1243.347	1338.006
27.5	502.619	662.030	852.319	992.147	1091.828	1247.324	1247.523
30.0	440.529	618.928	816.984	975.884	1157.039	1197.886	1235.852
32.5	376.612	567.214	785.490	947.156	1111.651	1175.432	1232.063
35.0	317.977	519.091	751.825	927.531	1075.793	1148.771	1165.526
37.5	279.040	472.273	726.145	907.050	1127.173	1092.349	1266.594
40.0	264.979	428.054	702.209	901.507	1047.389	1104.187	1181.758
42.5	223.318	410.590	685.935	907.280	1100.126	1105.085	1228.847
45.0	181.729	382.186	666.237	912.468	1056.429	1046.314	1220.465
47.5	145.319	355.880	670.130	950.559	1099.343	1090.742	1185.568
50.0	115.714	317.351	632.739	974.025	1059.488	1054.895	1228.169
52.5	94.461	272.224	628.020	974.370	1070.292	1091.640	1267.763
55.0	78.657	222.785	605.984	975.915	1096.608	1092.746	1241.040
57.5	66.224	177.282	538.476	914.503	1071.816	1130.211	1323.246
60.0	56.432	121.727	491.167	930.255	1071.169	1101.379	1246.886
62.5	49.793	84.293	426.050	834.761	1057.860	1142.821	1384.073
65.0	44.490	63.562	346.193	880.556	1003.651	1126.464	1213.795
67.5	39.574	50.754	279.385	745.478	997.951	1037.869	1247.397
70.0	35.920	42.204	209.779	753.777	928.095	1052.024	1258.233
72.5	31.619	35.962	145.246	668.460	887.540	1051.074	1210.120
75.0	28.060	31.170	93.020	635.682	859.992	1045.751	1223.127
77.5	24.615	27.475	67.424	557.725	826.932	1011.302	1183.146

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**CANDELA TABULATION - (Cont.)**

<b>80.0</b>	20.564	24.709	51.192	465.175	779.519	985.299	1156.903
<b>82.5</b>	16.598	22.224	43.624	420.758	738.223	933.095	1075.606
<b>85.0</b>	12.433	20.116	39.835	343.416	694.871	892.321	1042.107
<b>87.5</b>	8.967	18.320	37.026	284.771	635.766	821.671	998.922
<b>90.0</b>	7.057	16.253	32.444	225.291	582.570	790.052	922.708
<b>92.5</b>	5.887	14.301	27.287	170.852	530.073	729.204	863.593
<b>95.0</b>	4.948	12.589	22.986	124.462	483.422	688.242	825.982
<b>97.5</b>	4.384	11.159	19.823	88.438	440.090	625.003	740.551
<b>100.0</b>	3.873	10.073	18.216	64.668	405.120	564.417	716.834
<b>102.5</b>	3.288	8.800	16.807	52.716	344.304	509.999	599.961
<b>105.0</b>	3.006	8.090	16.253	47.225	292.496	432.846	557.276
<b>107.5</b>	2.672	7.391	16.180	44.271	236.324	381.372	458.463
<b>110.0</b>	2.317	6.942	15.731	41.557	185.446	317.726	396.550
<b>112.5</b>	1.879	6.524	15.335	39.354	137.197	274.103	332.717
<b>115.0</b>	1.681	6.263	14.928	38.196	109.514	223.506	270.136
<b>117.5</b>	1.430	5.773	14.124	36.619	90.202	185.185	226.919
<b>120.0</b>	1.200	5.512	13.080	35.544	77.863	153.231	180.341
<b>122.5</b>	0.971	5.042	11.587	33.686	67.831	127.291	150.277
<b>125.0</b>	0.908	4.186	10.303	31.619	59.397	105.098	125.088
<b>127.5</b>	0.605	3.111	9.353	29.156	52.580	87.039	101.935
<b>130.0</b>	0.553	2.098	8.121	27.193	46.954	73.061	83.385
<b>132.5</b>	0.585	1.618	7.098	24.792	41.578	61.620	69.126
<b>135.0</b>	0.699	1.670	6.065	22.151	37.789	53.050	59.188
<b>137.5</b>	0.386	1.691	5.606	18.769	35.440	47.632	52.330
<b>140.0</b>	0.512	1.806	4.624	15.627	32.381	43.321	48.227
<b>142.5</b>	0.449	1.889	4.050	12.871	28.456	39.386	43.029
<b>145.0</b>	0.835	1.608	3.466	10.637	24.416	35.241	38.707
<b>147.5</b>	0.981	1.597	2.745	8.883	20.763	30.387	33.467
<b>150.0</b>	1.054	1.388	2.171	7.213	17.600	25.638	28.352
<b>152.5</b>	1.190	1.127	2.015	5.480	14.980	22.120	24.291
<b>155.0</b>	1.274	1.013	1.514	3.570	12.589	19.364	21.285
<b>157.5</b>	1.472	1.232	0.971	1.399	10.773	16.546	18.456
<b>160.0</b>	1.545	1.430	1.023	0.981	9.165	14.072	15.690
<b>162.5</b>	1.827	1.326	1.117	1.221	6.764	12.078	12.840
<b>165.0</b>	1.702	1.555	1.242	0.929	3.925	8.957	9.625
<b>167.5</b>	1.910	1.535	1.221	1.054	1.430	5.397	5.814
<b>170.0</b>	1.910	1.754	1.451	1.503	1.347	1.994	1.378
<b>172.5</b>	1.754	1.649	1.649	1.618	1.284	1.190	0.919
<b>175.0</b>	1.910	1.754	1.764	1.608	1.378	1.315	1.378
<b>177.5</b>	1.837	1.816	1.712	1.702	1.555	1.472	1.670
<b>180.0</b>	1.044	1.044	1.044	1.044	1.044	1.044	1.044

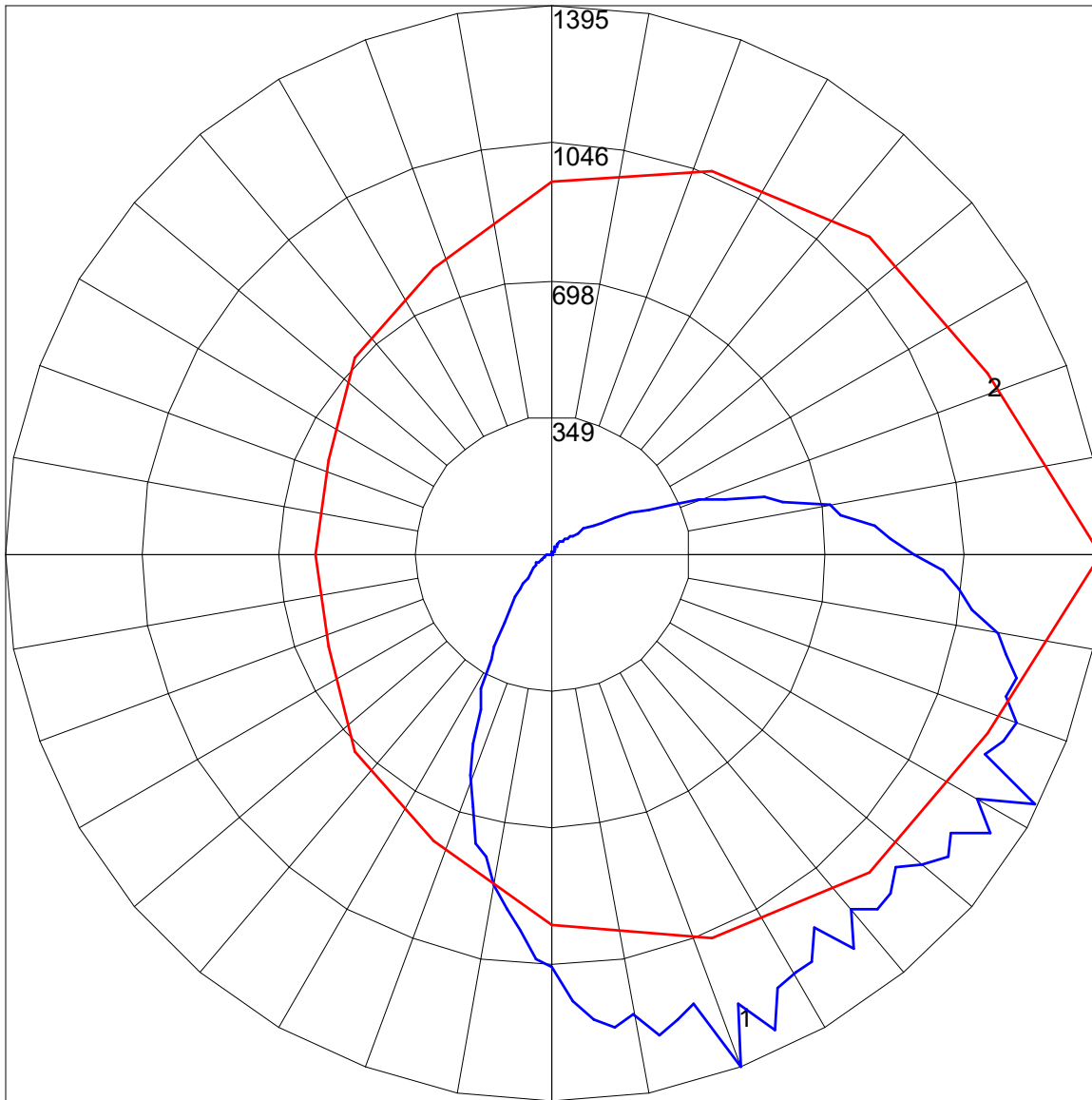
### COEFFICIENTS OF UTILIZATION



### FLUX DISTRIBUTION

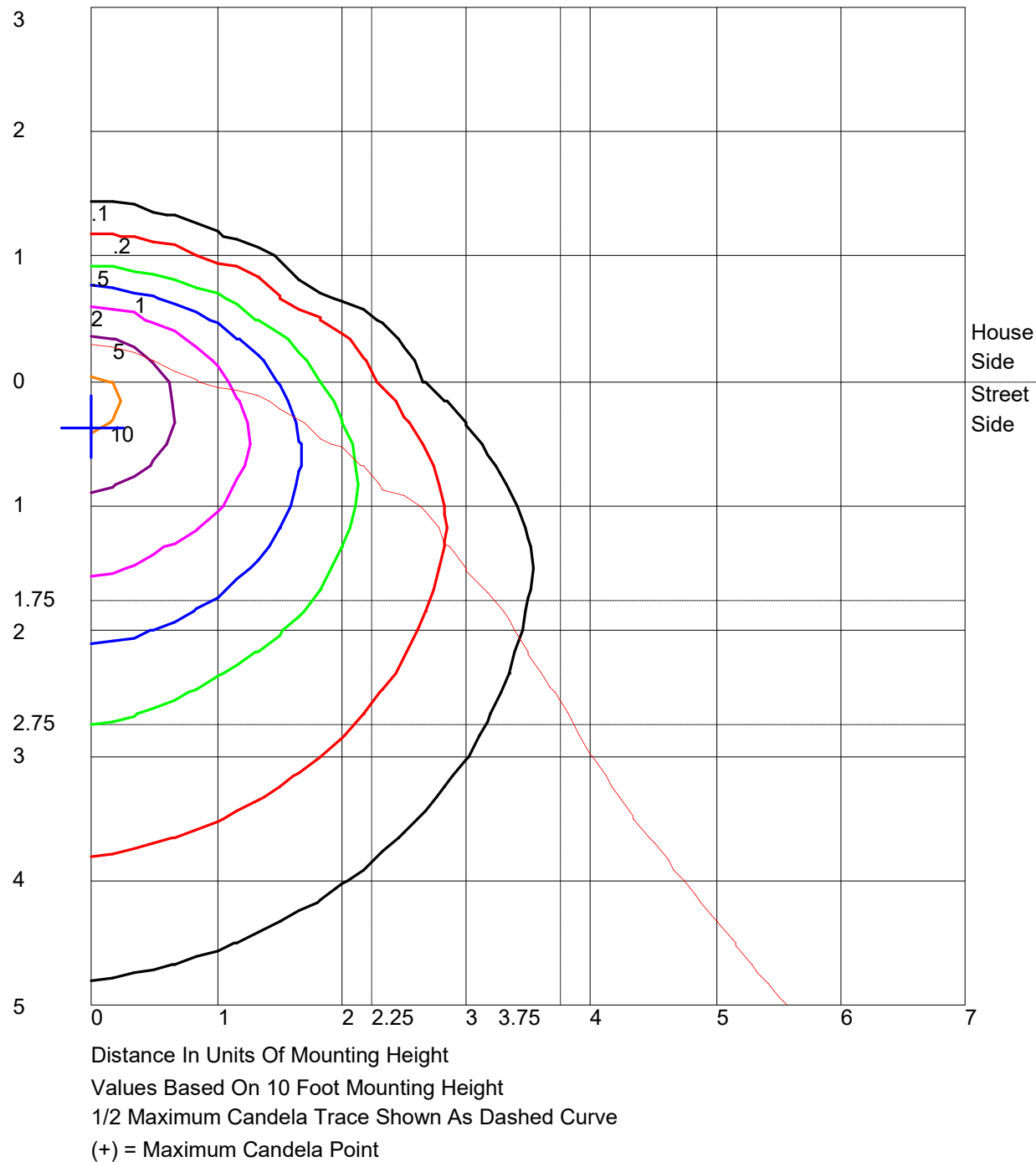
	Lumens	Percent Of Luminaire
Downward Street Side	2864.8	70.8
Downward House Side	670.7	16.6
Downward Total	3535.5	87.4
Upward Street Side	497.2	12.3
Upward House Side	11.3	0.3
Upward Total	508.5	12.6
Total Flux	4044.0	100.0

POLAR GRAPH



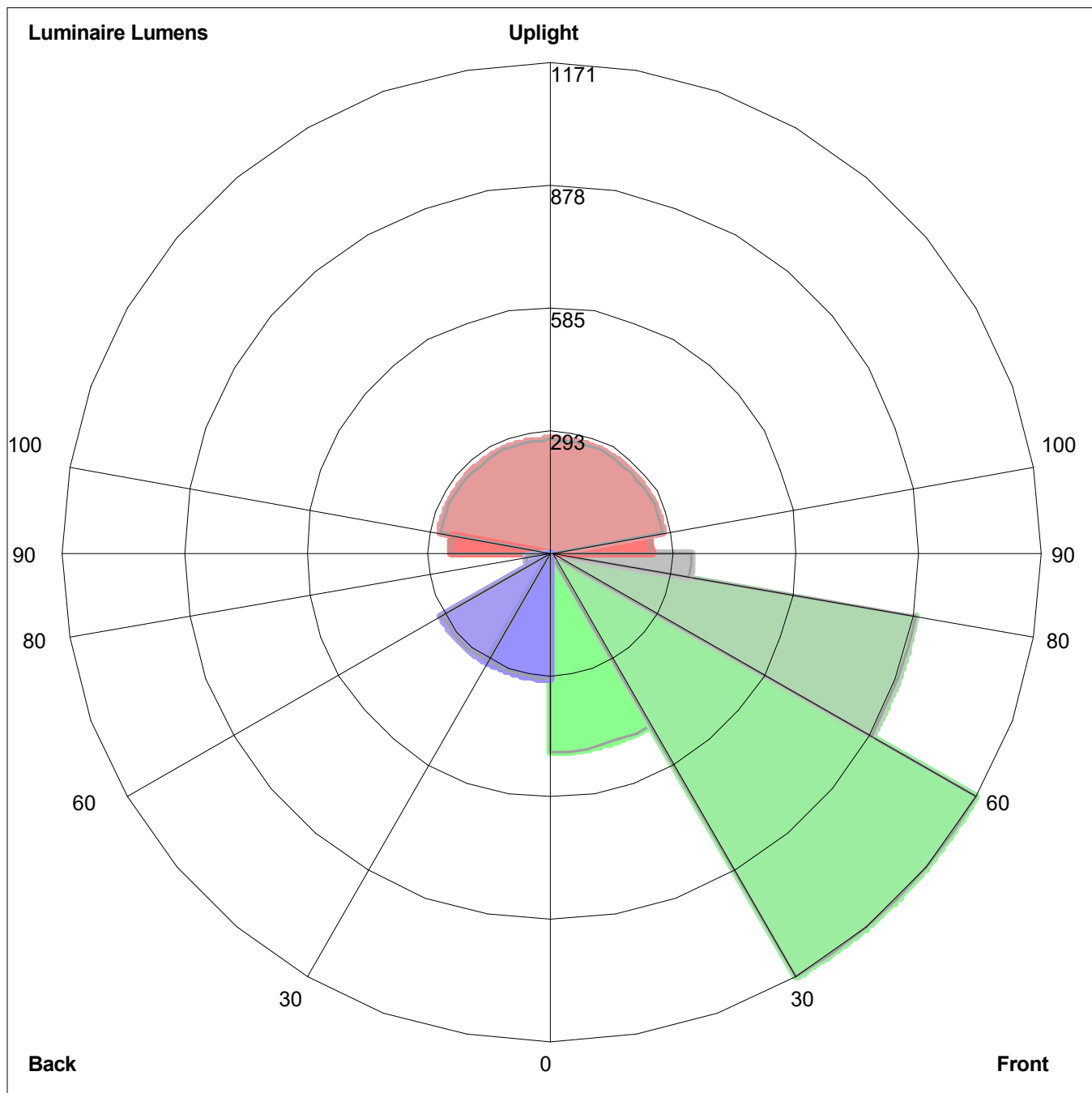
Maximum Candela = 1395.284 Located At Horizontal Angle = 360, Vertical Angle = 20  
# 1 - Vertical Plane Through Horizontal Angles (360 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (20) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE





LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:  
Front: Low=475.9, Medium=1170.8, High=882.8, Very High=335.3  
Back: Low=300.6, Medium=302.2, High=59.9, Very High=7.9  
Uplight: Low=238.4, High=270.2

BUG Rating : B1-U3-G3