



IES ROAD REPORT

PHOTOMETRIC FILENAME : TSWP-LED-02L-50.IES

DESCRIPTIVE INFORMATION (From Photometric File)

[TEST] IESNA:LM-63-2002

[TEST] 3583

[TESTLAB] TUV SUD America

[TESTDATE] 11/14/2018 1:18:46 PM

[ISSUEDATE] 1/7/2019

[MANUFAC] LSI INDUSTRIES, INC

[LUMCAT] TSWP-LED-02L-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	2285
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	112
Total Luminaire Watts	20.42
Ballast Factor	1.00
Upward Waste Light Ratio	0.20
Maximum Candela	827.291
Maximum Candela Angle	315H 12.5V
Maximum Candela (<90 Degrees Vertical)	827.291
Maximum Candela Angle (<90 Degrees Vertical)	315H 12.5V
Maximum Candela At 90 Degrees Vertical	417.589 (18.3% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	547.065 (23.9% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

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LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	292.2	N.A.	12.8
FM - Front-Medium (30-60)	502.3	N.A.	22.0
FH - Front-High (60-80)	399.0	N.A.	17.5
FVH - Front-Very High (80-90)	191.9	N.A.	8.4
BL - Back-Low (0-30)	147.7	N.A.	6.5
BM - Back-Medium (30-60)	167.2	N.A.	7.3
BH - Back-High (60-80)	95.4	N.A.	4.2
BVH - Back-Very High (80-90)	40.2	N.A.	1.8
UL - Uplight-Low (90-100)	181.8	N.A.	8.0
UH - Uplight-High (100-180)	267.3	N.A.	11.7
Total	2285.0	N.A.	100.0
BUG Rating	B1-U3-G2		

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CANDELA TABULATION

Vert. Angles	Horizontal Angles									
	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>	<u>202.5</u>
0.0	678.746	678.746	678.746	678.746	678.746	678.746	678.746	678.746	678.746	678.746
2.5	711.565	694.569	689.120	682.538	682.558	662.357	612.936	597.012	619.629	597.012
5.0	744.334	730.270	727.560	712.465	706.975	620.074	576.396	542.485	557.307	542.485
7.5	765.404	766.648	768.468	752.908	729.845	617.688	534.003	464.047	464.664	464.047
10.0	777.941	787.739	803.400	782.289	744.293	624.705	492.509	406.649	400.441	406.649
12.5	742.473	785.888	827.291	804.927	742.018	592.735	458.668	360.676	345.146	360.676
15.0	721.716	775.019	825.947	809.992	712.354	566.771	406.993	287.182	262.937	287.182
17.5	690.747	752.958	822.529	776.708	667.928	523.953	366.186	240.431	208.997	240.431
20.0	641.408	720.331	773.786	752.311	633.370	454.482	313.631	178.119	149.597	178.119
22.5	592.017	682.335	721.079	731.089	606.637	409.864	249.662	118.294	99.307	118.294
25.0	580.997	637.859	671.669	687.967	579.379	390.674	207.146	102.825	98.255	102.825
27.5	537.076	591.057	629.427	653.389	549.947	357.046	153.378	100.540	96.223	100.540
30.0	479.041	540.221	585.435	620.448	531.000	312.277	127.545	97.385	93.998	97.385
32.5	458.072	489.041	543.759	590.501	516.026	286.869	112.653	94.989	87.801	94.989
35.0	461.590	461.762	492.761	557.611	496.846	266.334	98.154	89.297	79.409	89.297
37.5	449.741	442.613	447.941	532.890	475.037	240.835	94.049	80.946	70.218	80.946
40.0	439.974	427.012	411.300	506.532	467.586	215.366	91.289	71.563	58.520	71.563
42.5	454.361	429.570	375.771	492.043	487.018	204.214	86.385	61.928	47.763	61.928
45.0	438.680	424.626	350.353	483.955	489.576	198.734	81.259	52.393	38.006	52.393
47.5	453.866	419.935	333.610	474.956	465.604	190.646	74.950	44.082	30.848	44.082
50.0	474.643	420.582	320.921	461.307	444.362	181.071	68.317	36.823	26.035	36.823
52.5	486.533	421.694	309.850	444.149	429.499	170.192	65.355	32.091	22.678	32.091
55.0	480.841	428.539	301.590	419.419	408.277	162.538	62.969	27.835	19.311	27.835
57.5	477.100	424.949	299.011	393.576	388.359	153.297	58.682	24.528	16.268	24.528
60.0	479.304	420.258	298.486	388.511	384.932	146.200	53.576	22.840	13.922	22.840
62.5	522.942	418.610	294.431	386.569	386.296	140.447	48.632	21.081	12.274	21.081
65.0	556.913	432.553	288.820	382.131	375.185	136.190	44.578	18.978	10.394	18.978
67.5	579.359	438.781	279.387	371.131	376.145	130.831	41.393	16.945	8.685	16.945
70.0	576.750	451.500	272.663	365.175	374.063	127.545	39.219	15.237	6.885	15.237
72.5	590.177	461.590	268.882	357.704	363.831	124.998	37.884	13.801	5.318	13.801
75.0	586.719	474.906	267.699	348.574	359.058	120.326	36.176	12.790	3.690	12.790
77.5	575.163	471.327	268.184	342.780	350.282	122.197	34.073	11.374	2.133	11.374
80.0	547.065	457.344	271.875	337.998	332.872	118.638	32.142	9.898	0.233	9.898
82.5	535.792	443.159	269.842	330.081	317.433	115.817	30.757	9.191	0.000	9.191
85.0	504.257	435.545	268.508	320.719	297.313	107.405	29.179	9.201	0.000	9.201
87.5	461.479	406.053	266.021	308.809	270.843	102.532	28.552	9.544	0.000	9.544
90.0	417.589	376.125	264.403	294.330	247.751	96.304	28.431	10.303	0.000	10.303
92.5	377.460	355.520	256.021	275.656	227.620	86.759	28.482	10.505	0.000	10.505
95.0	353.942	326.634	245.476	256.122	207.197	79.389	28.472	10.343	0.000	10.343
97.5	335.288	303.875	236.942	235.699	186.541	71.725	27.521	10.363	0.000	10.363
100.0	298.648	281.267	223.455	215.063	165.986	64.182	26.470	9.696	0.000	9.696
102.5	276.475	251.987	207.662	193.022	145.027	56.316	25.115	8.665	0.000	8.665
105.0	250.299	227.449	190.019	171.658	126.838	48.177	23.022	7.421	0.000	7.421
107.5	223.354	198.744	169.515	151.012	109.700	41.181	19.989	6.643	0.000	6.643
110.0	193.831	172.356	148.576	131.246	94.423	35.074	17.805	5.581	0.000	5.581
112.5	164.833	147.605	130.467	114.341	80.359	29.705	15.773	4.408	0.000	4.408
115.0	138.647	124.340	114.432	98.811	68.257	25.651	13.659	3.569	0.000	3.569
117.5	115.514	105.474	99.135	85.354	60.007	22.820	11.688	3.296	0.000	3.296
120.0	95.879	91.592	83.089	74.060	54.618	20.707	10.202	3.205	0.000	3.205
122.5	82.533	80.743	69.874	64.850	49.320	18.826	9.191	2.639	0.000	2.639
125.0	74.465	69.814	61.442	57.155	43.557	17.613	7.977	2.032	0.000	2.032
127.5	63.687	60.199	55.942	48.966	40.240	16.298	7.199	1.729	0.000	1.729
130.0	55.062	52.302	52.343	43.941	36.580	15.136	6.825	1.233	0.000	1.233

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CANDELA TABULATION - (Cont.)

132.5	49.198	47.186	47.601	40.948	32.152	14.428	6.360	1.587	0.000	1.587
135.0	46.084	46.125	43.769	40.362	29.058	13.498	5.733	1.628	0.000	1.628
137.5	43.749	44.497	42.131	37.480	27.501	12.638	5.581	1.506	0.000	1.506
140.0	40.614	45.922	41.423	34.497	23.790	11.304	4.934	1.648	0.000	1.648
142.5	41.100	50.644	41.292	30.736	20.211	10.232	4.580	1.911	0.000	1.911
145.0	47.490	55.881	38.794	27.582	16.531	9.332	4.651	2.366	0.000	2.366
147.5	47.934	52.747	36.661	26.480	13.831	8.857	5.247	2.598	0.000	2.598
150.0	39.674	43.910	36.186	26.449	12.284	8.685	5.217	2.639	0.000	2.639
152.5	32.738	39.735	38.562	24.185	11.556	8.068	4.964	2.386	0.000	2.386
155.0	31.555	39.998	39.199	22.375	10.313	7.512	4.792	2.305	0.020	2.305
157.5	28.846	35.084	33.931	24.518	10.495	8.412	4.459	1.648	0.243	1.648
160.0	26.348	32.445	32.657	24.336	12.082	8.169	3.913	1.132	0.313	1.132
162.5	24.650	29.604	31.464	20.140	11.071	7.391	3.579	0.799	0.303	0.799
165.0	22.526	26.298	26.793	18.341	9.888	6.865	3.326	0.718	0.313	0.718
167.5	18.988	21.515	20.039	14.933	8.655	5.278	2.659	0.415	0.415	0.415
170.0	12.679	14.337	13.397	10.616	6.552	3.508	1.840	0.364	0.394	0.364
172.5	7.229	8.291	7.805	5.996	4.166	2.154	0.829	0.485	0.425	0.485
175.0	4.297	4.550	2.942	2.255	1.992	0.920	0.313	0.384	0.394	0.384
177.5	0.364	1.041	0.779	0.637	0.516	0.455	0.465	0.404	0.415	0.404
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Vert. Angles **Horizontal Angles**

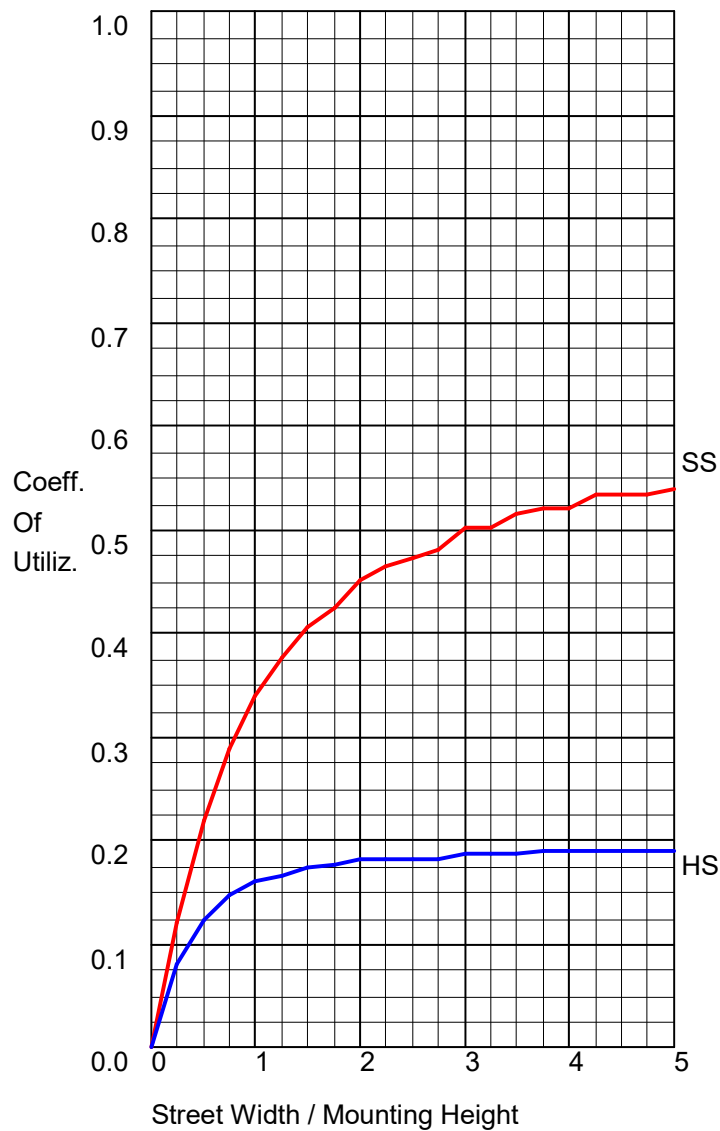
	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0.0	678.746	678.746	678.746	678.746	678.746	678.746	678.746
2.5	612.936	662.357	682.558	682.538	689.120	694.569	711.565
5.0	576.396	620.074	706.975	712.465	727.560	730.270	744.334
7.5	534.003	617.688	729.845	752.908	768.468	766.648	765.404
10.0	492.509	624.705	744.293	782.289	803.400	787.739	777.941
12.5	458.668	592.735	742.018	804.927	827.291	785.888	742.473
15.0	406.993	566.771	712.354	809.992	825.947	775.019	721.716
17.5	366.186	523.953	667.928	776.708	822.529	752.958	690.747
20.0	313.631	454.482	633.370	752.311	773.786	720.331	641.408
22.5	249.662	409.864	606.637	731.089	721.079	682.335	592.017
25.0	207.146	390.674	579.379	687.967	671.669	637.859	580.997
27.5	153.378	357.046	549.947	653.389	629.427	591.057	537.076
30.0	127.545	312.277	531.000	620.448	585.435	540.221	479.041
32.5	112.653	286.869	516.026	590.501	543.759	489.041	458.072
35.0	98.154	266.334	496.846	557.611	492.761	461.762	461.590
37.5	94.049	240.835	475.037	532.890	447.941	442.613	449.741
40.0	91.289	215.366	467.586	506.532	411.300	427.012	439.974
42.5	86.385	204.214	487.018	492.043	375.771	429.570	454.361
45.0	81.259	198.734	489.576	483.955	350.353	424.626	438.680
47.5	74.950	190.646	465.604	474.956	333.610	419.935	453.866
50.0	68.317	181.071	444.362	461.307	320.921	420.582	474.643
52.5	65.355	170.192	429.499	444.149	309.850	421.694	486.533
55.0	62.969	162.538	408.277	419.419	301.590	428.539	480.841
57.5	58.682	153.297	388.359	393.576	299.011	424.949	477.100
60.0	53.576	146.200	384.932	388.511	298.486	420.258	479.304
62.5	48.632	140.447	386.296	386.569	294.431	418.610	522.942
65.0	44.578	136.190	375.185	382.131	288.820	432.553	556.913
67.5	41.393	130.831	376.145	371.131	279.387	438.781	579.359
70.0	39.219	127.545	374.063	365.175	272.663	451.500	576.750
72.5	37.884	124.998	363.831	357.704	268.882	461.590	590.177
75.0	36.176	120.326	359.058	348.574	267.699	474.906	586.719
77.5	34.073	122.197	350.282	342.780	268.184	471.327	575.163

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CANDELA TABULATION - (Cont.)

80.0	32.142	118.638	332.872	337.998	271.875	457.344	547.065
82.5	30.757	115.817	317.433	330.081	269.842	443.159	535.792
85.0	29.179	107.405	297.313	320.719	268.508	435.545	504.257
87.5	28.552	102.532	270.843	308.809	266.021	406.053	461.479
90.0	28.431	96.304	247.751	294.330	264.403	376.125	417.589
92.5	28.482	86.759	227.620	275.656	256.021	355.520	377.460
95.0	28.472	79.389	207.197	256.122	245.476	326.634	353.942
97.5	27.521	71.725	186.541	235.699	236.942	303.875	335.288
100.0	26.470	64.182	165.986	215.063	223.455	281.267	298.648
102.5	25.115	56.316	145.027	193.022	207.662	251.987	276.475
105.0	23.022	48.177	126.838	171.658	190.019	227.449	250.299
107.5	19.989	41.181	109.700	151.012	169.515	198.744	223.354
110.0	17.805	35.074	94.423	131.246	148.576	172.356	193.831
112.5	15.773	29.705	80.359	114.341	130.467	147.605	164.833
115.0	13.659	25.651	68.257	98.811	114.432	124.340	138.647
117.5	11.688	22.820	60.007	85.354	99.135	105.474	115.514
120.0	10.202	20.707	54.618	74.060	83.089	91.592	95.879
122.5	9.191	18.826	49.320	64.850	69.874	80.743	82.533
125.0	7.977	17.613	43.557	57.155	61.442	69.814	74.465
127.5	7.199	16.298	40.240	48.966	55.942	60.199	63.687
130.0	6.825	15.136	36.580	43.941	52.343	52.302	55.062
132.5	6.360	14.428	32.152	40.948	47.601	47.186	49.198
135.0	5.733	13.498	29.058	40.362	43.769	46.125	46.084
137.5	5.581	12.638	27.501	37.480	42.131	44.497	43.749
140.0	4.934	11.304	23.790	34.497	41.423	45.922	40.614
142.5	4.580	10.232	20.211	30.736	41.292	50.644	41.100
145.0	4.651	9.332	16.531	27.582	38.794	55.881	47.490
147.5	5.247	8.857	13.831	26.480	36.661	52.747	47.934
150.0	5.217	8.685	12.284	26.449	36.186	43.910	39.674
152.5	4.964	8.068	11.556	24.185	38.562	39.735	32.738
155.0	4.792	7.512	10.313	22.375	39.199	39.998	31.555
157.5	4.459	8.412	10.495	24.518	33.931	35.084	28.846
160.0	3.913	8.169	12.082	24.336	32.657	32.445	26.348
162.5	3.579	7.391	11.071	20.140	31.464	29.604	24.650
165.0	3.326	6.865	9.888	18.341	26.793	26.298	22.526
167.5	2.659	5.278	8.655	14.933	20.039	21.515	18.988
170.0	1.840	3.508	6.552	10.616	13.397	14.337	12.679
172.5	0.829	2.154	4.166	5.996	7.805	8.291	7.229
175.0	0.313	0.920	1.992	2.255	2.942	4.550	4.297
177.5	0.465	0.455	0.516	0.637	0.779	1.041	0.364
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000

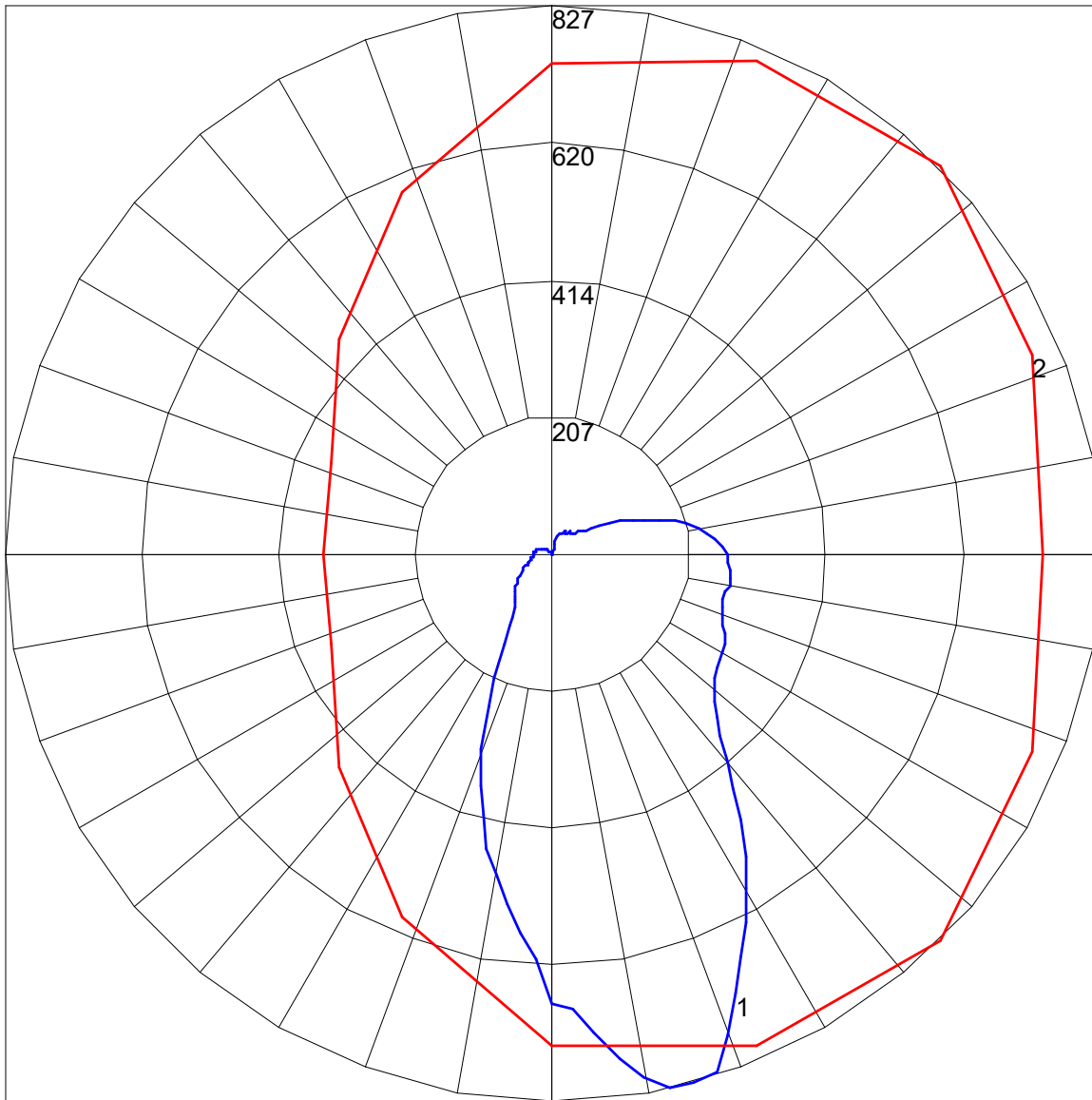
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

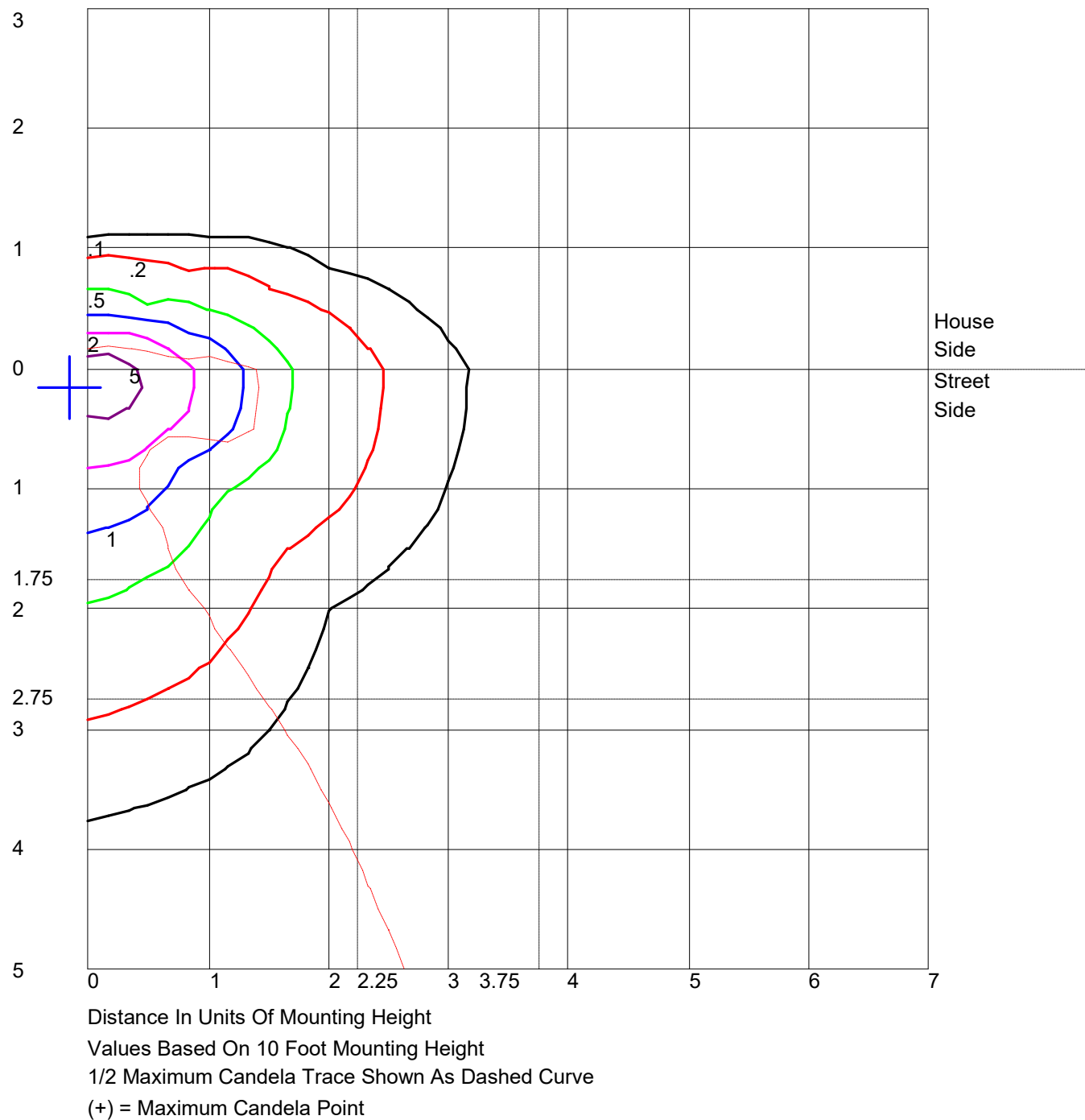
	Lumens	Percent Of Luminaire
Downward Street Side	1385.3	60.6
Downward House Side	450.6	19.7
Downward Total	1835.9	80.3
Upward Street Side	377.1	16.5
Upward House Side	72.0	3.2
Upward Total	449.1	19.7
Total Flux	2285.0	100.0

POLAR GRAPH

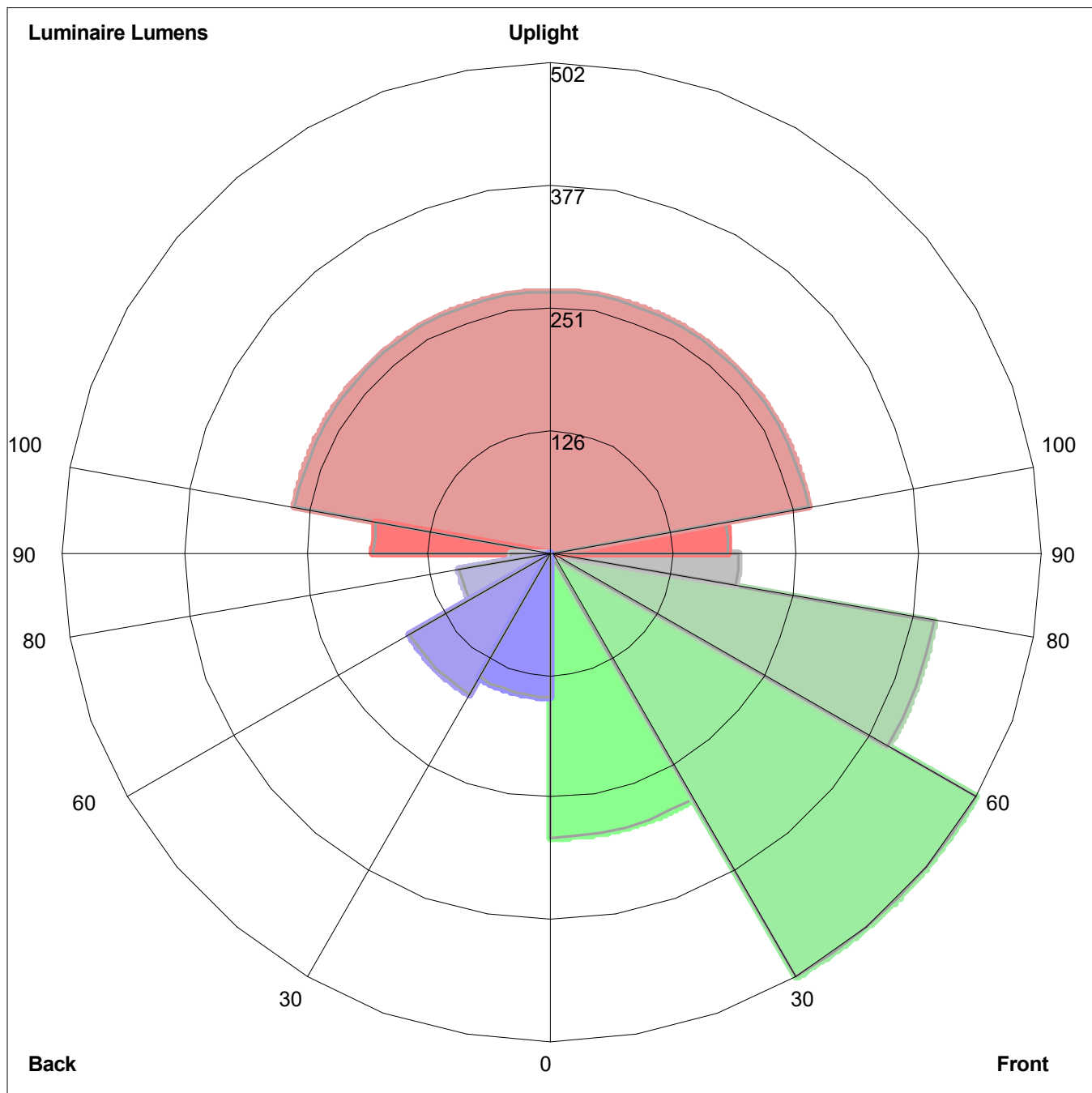


Maximum Candela = 827.291 Located At Horizontal Angle = 315, Vertical Angle = 12.5
1 - Vertical Plane Through Horizontal Angles (315 - 135) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (12.5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=292.2, Medium=502.3, High=399.0, Very High=191.9
Back: Low=147.7, Medium=167.2, High=95.4, Very High=40.2
Uplight: Low=181.8, High=267.3

BUG Rating : B1-U3-G2