



IES ROAD REPORT

PHOTOMETRIC FILENAME : TSWP-LED-02L-40.IES

DESCRIPTIVE INFORMATION (From Photometric File)

[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-40

[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	2283
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	826.567
Maximum Candela Angle	315H 12.5V
Maximum Candela (<90 Degrees Vertical)	826.567
Maximum Candela Angle (<90 Degrees Vertical)	315H 12.5V
Maximum Candela At 90 Degrees Vertical	417.223 (18.3% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	546.587 (23.9% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

IES ROAD REPORT
PHOTOMETRIC FILENAME : TSWP-LED-02L-40.IES

LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	291.9	N.A.	12.8
FM - Front-Medium (30-60)	501.9	N.A.	22.0
FH - Front-High (60-80)	398.6	N.A.	17.5
FVH - Front-Very High (80-90)	191.7	N.A.	8.4
BL - Back-Low (0-30)	147.6	N.A.	6.5
BM - Back-Medium (30-60)	167.1	N.A.	7.3
BH - Back-High (60-80)	95.4	N.A.	4.2
BVH - Back-Very High (80-90)	40.1	N.A.	1.8
UL - Uplight-Low (90-100)	181.7	N.A.	8.0
UH - Uplight-High (100-180)	267.0	N.A.	11.7
Total	2283.0	N.A.	100.0
BUG Rating	B1-U3-G2		

IES ROAD REPORT
PHOTOMETRIC FILENAME : TSWP-LED-02L-40.IES

CANDELA TABULATION

Vert. Angles	Horizontal Angles									
	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0	202.5
0.0	678.152	678.152	678.152	678.152	678.152	678.152	678.152	678.152	678.152	678.152
2.5	710.942	693.961	688.516	681.940	681.960	661.777	612.400	596.489	619.087	596.489
5.0	743.682	729.631	726.923	711.841	706.356	619.531	575.892	542.010	556.820	542.010
7.5	764.734	765.977	767.795	752.249	729.206	617.147	533.535	463.641	464.257	463.641
10.0	777.261	787.049	802.697	781.604	743.642	624.158	492.077	406.293	400.091	406.293
12.5	741.823	785.200	826.567	804.222	741.369	592.216	458.267	360.360	344.844	360.360
15.0	721.085	774.341	825.224	809.283	711.730	566.275	406.637	286.931	262.707	286.931
17.5	690.143	752.299	821.809	776.028	667.343	523.494	365.866	240.220	208.814	240.220
20.0	640.846	719.701	773.109	751.653	632.815	454.085	313.357	177.963	149.466	177.963
22.5	591.499	681.738	720.448	730.449	606.106	409.506	249.443	118.191	99.220	118.191
25.0	580.488	637.300	671.081	687.365	578.872	390.332	206.965	102.735	98.169	102.735
27.5	536.606	590.539	628.876	652.817	549.466	356.734	153.244	100.452	96.139	100.452
30.0	478.622	539.748	584.923	619.905	530.535	312.003	127.434	97.300	93.916	97.300
32.5	457.671	488.613	543.283	589.984	515.574	286.618	112.554	94.906	87.724	94.906
35.0	461.186	461.358	492.330	557.123	496.411	266.101	98.068	89.219	79.339	89.219
37.5	449.347	442.225	447.549	532.424	474.622	240.624	93.967	80.875	70.157	80.875
40.0	439.589	426.638	410.940	506.089	467.177	215.178	91.209	71.500	58.469	71.500
42.5	453.963	429.194	375.442	491.613	486.592	204.036	86.310	61.873	47.721	61.873
45.0	438.296	424.254	350.047	483.531	489.148	198.560	81.188	52.347	37.973	52.347
47.5	453.468	419.567	333.318	474.541	465.197	190.479	74.884	44.044	30.821	44.044
50.0	474.228	420.213	320.640	460.903	443.973	180.913	68.258	36.791	26.012	36.791
52.5	486.107	421.325	309.579	443.761	429.123	170.043	65.298	32.063	22.658	32.063
55.0	480.420	428.164	301.326	419.052	407.920	162.396	62.914	27.810	19.294	27.810
57.5	476.682	424.577	298.750	393.232	388.019	153.163	58.631	24.507	16.254	24.507
60.0	478.885	419.890	298.224	388.171	384.595	146.072	53.529	22.820	13.910	22.820
62.5	522.484	418.244	294.174	386.231	385.958	140.324	48.590	21.062	12.264	21.062
65.0	556.426	432.174	288.567	381.796	374.856	136.071	44.539	18.961	10.385	18.961
67.5	578.852	438.397	279.142	370.806	375.816	130.717	41.357	16.931	8.677	16.931
70.0	576.245	451.105	272.425	364.856	373.735	127.434	39.185	15.223	6.879	15.223
72.5	589.661	461.186	268.646	357.391	363.512	124.888	37.851	13.789	5.314	13.789
75.0	586.206	474.490	267.465	348.269	358.744	120.221	36.144	12.779	3.687	12.779
77.5	574.659	470.914	267.949	342.480	349.976	122.090	34.043	11.364	2.131	11.364
80.0	546.587	456.943	271.637	337.702	332.581	118.534	32.114	9.890	0.232	9.890
82.5	535.323	442.771	269.606	329.792	317.155	115.716	30.730	9.183	0.000	9.183
85.0	503.816	435.164	268.273	320.438	297.053	107.311	29.154	9.193	0.000	9.193
87.5	461.075	405.697	265.788	308.538	270.606	102.442	28.527	9.536	0.000	9.536
90.0	417.223	375.796	264.171	294.073	247.534	96.219	28.406	10.294	0.000	10.294
92.5	377.129	355.209	255.797	275.415	227.421	86.683	28.457	10.496	0.000	10.496
95.0	353.633	326.348	245.261	255.898	207.016	79.319	28.447	10.334	0.000	10.334
97.5	334.995	303.609	236.735	235.492	186.378	71.662	27.497	10.354	0.000	10.354
100.0	298.386	281.021	223.259	214.875	165.841	64.126	26.446	9.688	0.000	9.688
102.5	276.233	251.766	207.480	192.853	144.900	56.267	25.093	8.657	0.000	8.657
105.0	250.079	227.249	189.853	171.508	126.727	48.135	23.002	7.415	0.000	7.415
107.5	223.158	198.570	169.366	150.880	109.604	41.145	19.971	6.637	0.000	6.637
110.0	193.661	172.205	148.446	131.131	94.340	35.043	17.789	5.576	0.000	5.576
112.5	164.689	147.476	130.353	114.241	80.289	29.679	15.759	4.404	0.000	4.404
115.0	138.526	124.232	114.332	98.725	68.197	25.628	13.647	3.566	0.000	3.566
117.5	115.413	105.382	99.048	85.279	59.954	22.800	11.678	3.293	0.000	3.293
120.0	95.795	91.512	83.016	73.995	54.570	20.688	10.193	3.202	0.000	3.202
122.5	82.461	80.673	69.813	64.793	49.276	18.809	9.183	2.637	0.000	2.637
125.0	74.400	69.753	61.388	57.105	43.518	17.597	7.970	2.030	0.000	2.030
127.5	63.631	60.146	55.893	48.923	40.205	16.284	7.192	1.727	0.000	1.727
130.0	55.014	52.256	52.297	43.902	36.548	15.122	6.819	1.232	0.000	1.232

IES ROAD REPORT
PHOTOMETRIC FILENAME : TSWP-LED-02L-40.IES

CANDELA TABULATION - (Cont.)

132.5	49.155	47.145	47.559	40.912	32.124	14.415	6.354	1.586	0.000	1.586
135.0	46.044	46.084	43.731	40.326	29.032	13.486	5.728	1.626	0.000	1.626
137.5	43.710	44.458	42.094	37.447	27.477	12.627	5.576	1.505	0.000	1.505
140.0	40.579	45.882	41.387	34.467	23.769	11.294	4.930	1.647	0.000	1.647
142.5	41.064	50.600	41.256	30.709	20.193	10.223	4.576	1.909	0.000	1.909
145.0	47.448	55.832	38.760	27.558	16.516	9.324	4.647	2.364	0.000	2.364
147.5	47.892	52.701	36.629	26.457	13.819	8.849	5.243	2.596	0.000	2.596
150.0	39.639	43.872	36.154	26.426	12.274	8.677	5.213	2.637	0.000	2.637
152.5	32.710	39.700	38.528	24.163	11.546	8.061	4.960	2.384	0.000	2.384
155.0	31.528	39.963	39.165	22.355	10.304	7.506	4.788	2.303	0.020	2.303
157.5	28.820	35.053	33.902	24.497	10.486	8.405	4.455	1.647	0.242	1.647
160.0	26.325	32.417	32.629	24.315	12.072	8.162	3.909	1.131	0.313	1.131
162.5	24.628	29.578	31.437	20.123	11.061	7.384	3.576	0.798	0.303	0.798
165.0	22.507	26.275	26.770	18.325	9.880	6.859	3.323	0.717	0.313	0.717
167.5	18.971	21.497	20.022	14.920	8.647	5.273	2.657	0.414	0.414	0.414
170.0	12.668	14.324	13.385	10.607	6.546	3.505	1.839	0.364	0.394	0.364
172.5	7.223	8.283	7.799	5.990	4.162	2.152	0.828	0.485	0.424	0.485
175.0	4.293	4.546	2.940	2.253	1.990	0.919	0.313	0.384	0.394	0.384
177.5	0.364	1.040	0.778	0.636	0.515	0.455	0.465	0.404	0.414	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**

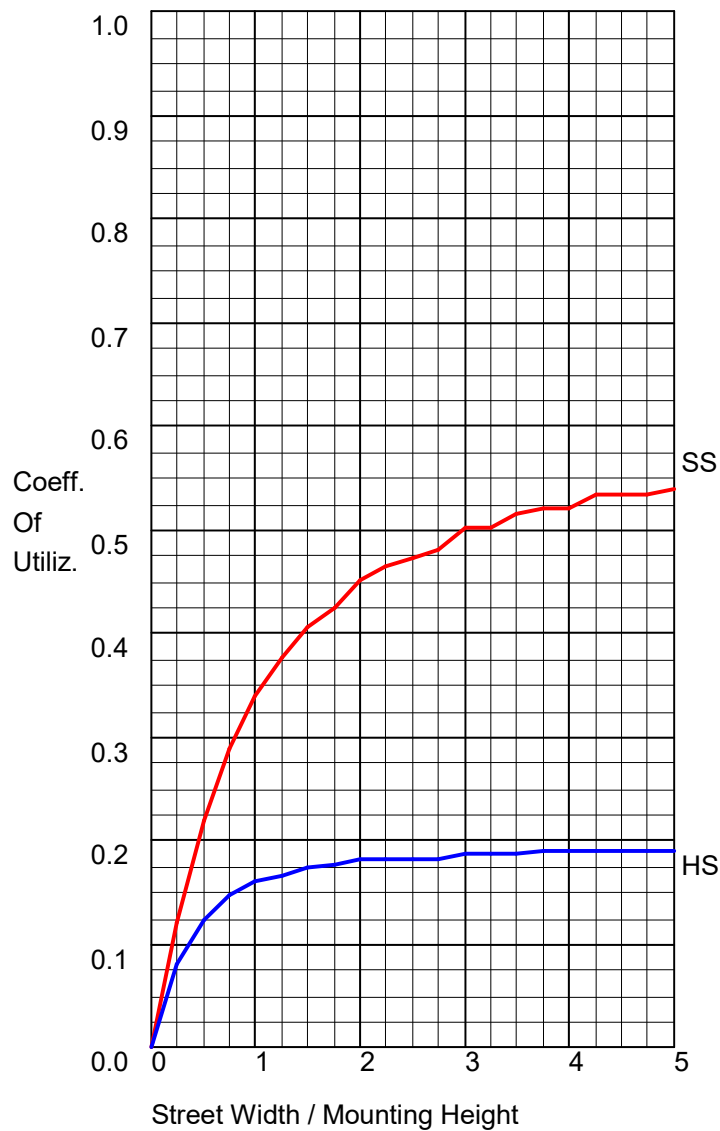
	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0.0	678.152	678.152	678.152	678.152	678.152	678.152	678.152
2.5	612.400	661.777	681.960	681.940	688.516	693.961	710.942
5.0	575.892	619.531	706.356	711.841	726.923	729.631	743.682
7.5	533.535	617.147	729.206	752.249	767.795	765.977	764.734
10.0	492.077	624.158	743.642	781.604	802.697	787.049	777.261
12.5	458.267	592.216	741.369	804.222	826.567	785.200	741.823
15.0	406.637	566.275	711.730	809.283	825.224	774.341	721.085
17.5	365.866	523.494	667.343	776.028	821.809	752.299	690.143
20.0	313.357	454.085	632.815	751.653	773.109	719.701	640.846
22.5	249.443	409.506	606.106	730.449	720.448	681.738	591.499
25.0	206.965	390.332	578.872	687.365	671.081	637.300	580.488
27.5	153.244	356.734	549.466	652.817	628.876	590.539	536.606
30.0	127.434	312.003	530.535	619.905	584.923	539.748	478.622
32.5	112.554	286.618	515.574	589.984	543.283	488.613	457.671
35.0	98.068	266.101	496.411	557.123	492.330	461.358	461.186
37.5	93.967	240.624	474.622	532.424	447.549	442.225	449.347
40.0	91.209	215.178	467.177	506.089	410.940	426.638	439.589
42.5	86.310	204.036	486.592	491.613	375.442	429.194	453.963
45.0	81.188	198.560	489.148	483.531	350.047	424.254	438.296
47.5	74.884	190.479	465.197	474.541	333.318	419.567	453.468
50.0	68.258	180.913	443.973	460.903	320.640	420.213	474.228
52.5	65.298	170.043	429.123	443.761	309.579	421.325	486.107
55.0	62.914	162.396	407.920	419.052	301.326	428.164	480.420
57.5	58.631	153.163	388.019	393.232	298.750	424.577	476.682
60.0	53.529	146.072	384.595	388.171	298.224	419.890	478.885
62.5	48.590	140.324	385.958	386.231	294.174	418.244	522.484
65.0	44.539	136.071	374.856	381.796	288.567	432.174	556.426
67.5	41.357	130.717	375.816	370.806	279.142	438.397	578.852
70.0	39.185	127.434	373.735	364.856	272.425	451.105	576.245
72.5	37.851	124.888	363.512	357.391	268.646	461.186	589.661
75.0	36.144	120.221	358.744	348.269	267.465	474.490	586.206
77.5	34.043	122.090	349.976	342.480	267.949	470.914	574.659

IES ROAD REPORT
PHOTOMETRIC FILENAME : TSWP-LED-02L-40.IES

CANDELA TABULATION - (Cont.)

80.0	32.114	118.534	332.581	337.702	271.637	456.943	546.587
82.5	30.730	115.716	317.155	329.792	269.606	442.771	535.323
85.0	29.154	107.311	297.053	320.438	268.273	435.164	503.816
87.5	28.527	102.442	270.606	308.538	265.788	405.697	461.075
90.0	28.406	96.219	247.534	294.073	264.171	375.796	417.223
92.5	28.457	86.683	227.421	275.415	255.797	355.209	377.129
95.0	28.447	79.319	207.016	255.898	245.261	326.348	353.633
97.5	27.497	71.662	186.378	235.492	236.735	303.609	334.995
100.0	26.446	64.126	165.841	214.875	223.259	281.021	298.386
102.5	25.093	56.267	144.900	192.853	207.480	251.766	276.233
105.0	23.002	48.135	126.727	171.508	189.853	227.249	250.079
107.5	19.971	41.145	109.604	150.880	169.366	198.570	223.158
110.0	17.789	35.043	94.340	131.131	148.446	172.205	193.661
112.5	15.759	29.679	80.289	114.241	130.353	147.476	164.689
115.0	13.647	25.628	68.197	98.725	114.332	124.232	138.526
117.5	11.678	22.800	59.954	85.279	99.048	105.382	115.413
120.0	10.193	20.688	54.570	73.995	83.016	91.512	95.795
122.5	9.183	18.809	49.276	64.793	69.813	80.673	82.461
125.0	7.970	17.597	43.518	57.105	61.388	69.753	74.400
127.5	7.192	16.284	40.205	48.923	55.893	60.146	63.631
130.0	6.819	15.122	36.548	43.902	52.297	52.256	55.014
132.5	6.354	14.415	32.124	40.912	47.559	47.145	49.155
135.0	5.728	13.486	29.032	40.326	43.731	46.084	46.044
137.5	5.576	12.627	27.477	37.447	42.094	44.458	43.710
140.0	4.930	11.294	23.769	34.467	41.387	45.882	40.579
142.5	4.576	10.223	20.193	30.709	41.256	50.600	41.064
145.0	4.647	9.324	16.516	27.558	38.760	55.832	47.448
147.5	5.243	8.849	13.819	26.457	36.629	52.701	47.892
150.0	5.213	8.677	12.274	26.426	36.154	43.872	39.639
152.5	4.960	8.061	11.546	24.163	38.528	39.700	32.710
155.0	4.788	7.506	10.304	22.355	39.165	39.963	31.528
157.5	4.455	8.405	10.486	24.497	33.902	35.053	28.820
160.0	3.909	8.162	12.072	24.315	32.629	32.417	26.325
162.5	3.576	7.384	11.061	20.123	31.437	29.578	24.628
165.0	3.323	6.859	9.880	18.325	26.770	26.275	22.507
167.5	2.657	5.273	8.647	14.920	20.022	21.497	18.971
170.0	1.839	3.505	6.546	10.607	13.385	14.324	12.668
172.5	0.828	2.152	4.162	5.990	7.799	8.283	7.223
175.0	0.313	0.919	1.990	2.253	2.940	4.546	4.293
177.5	0.465	0.455	0.515	0.636	0.778	1.040	0.364
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000

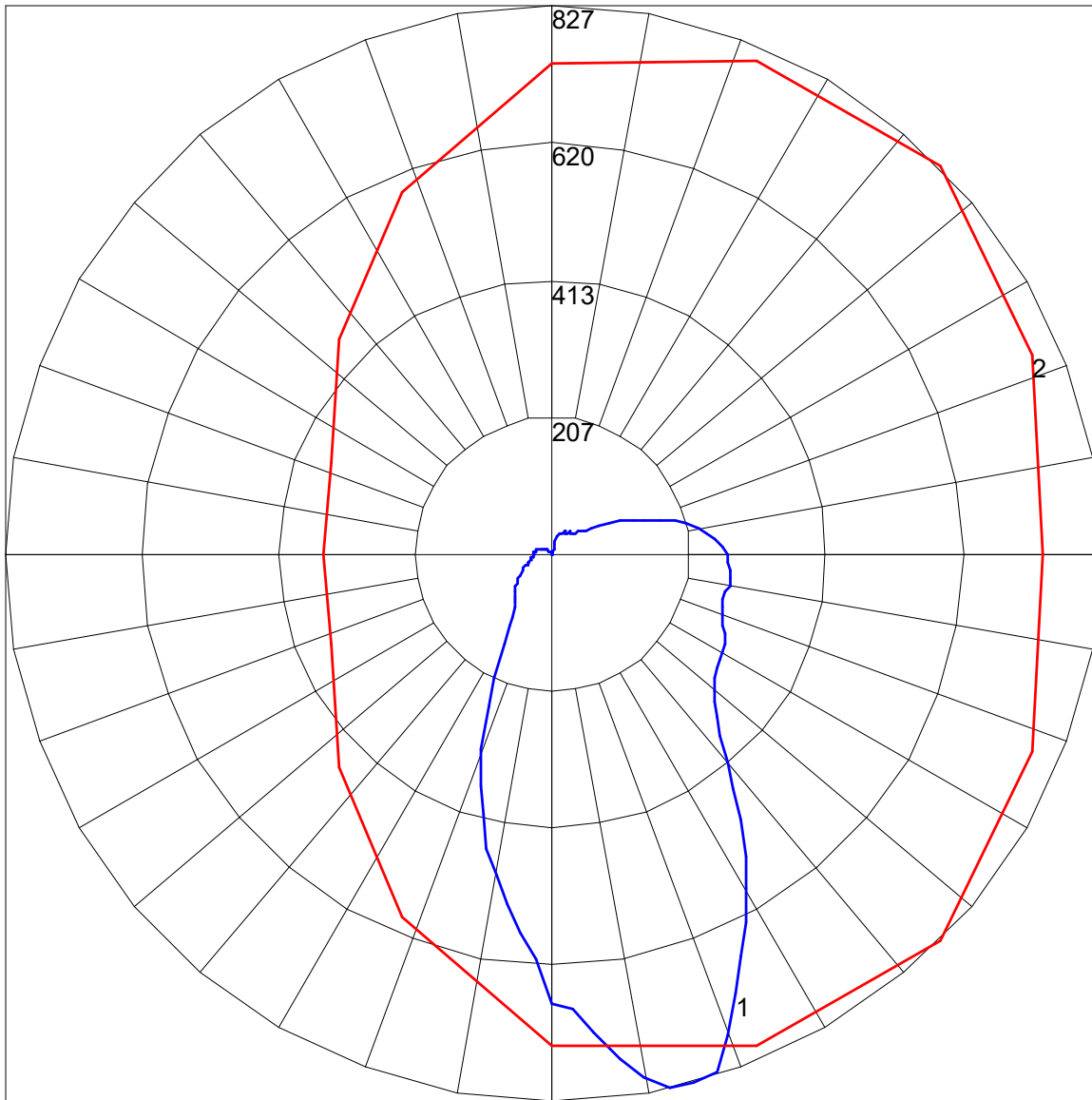
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

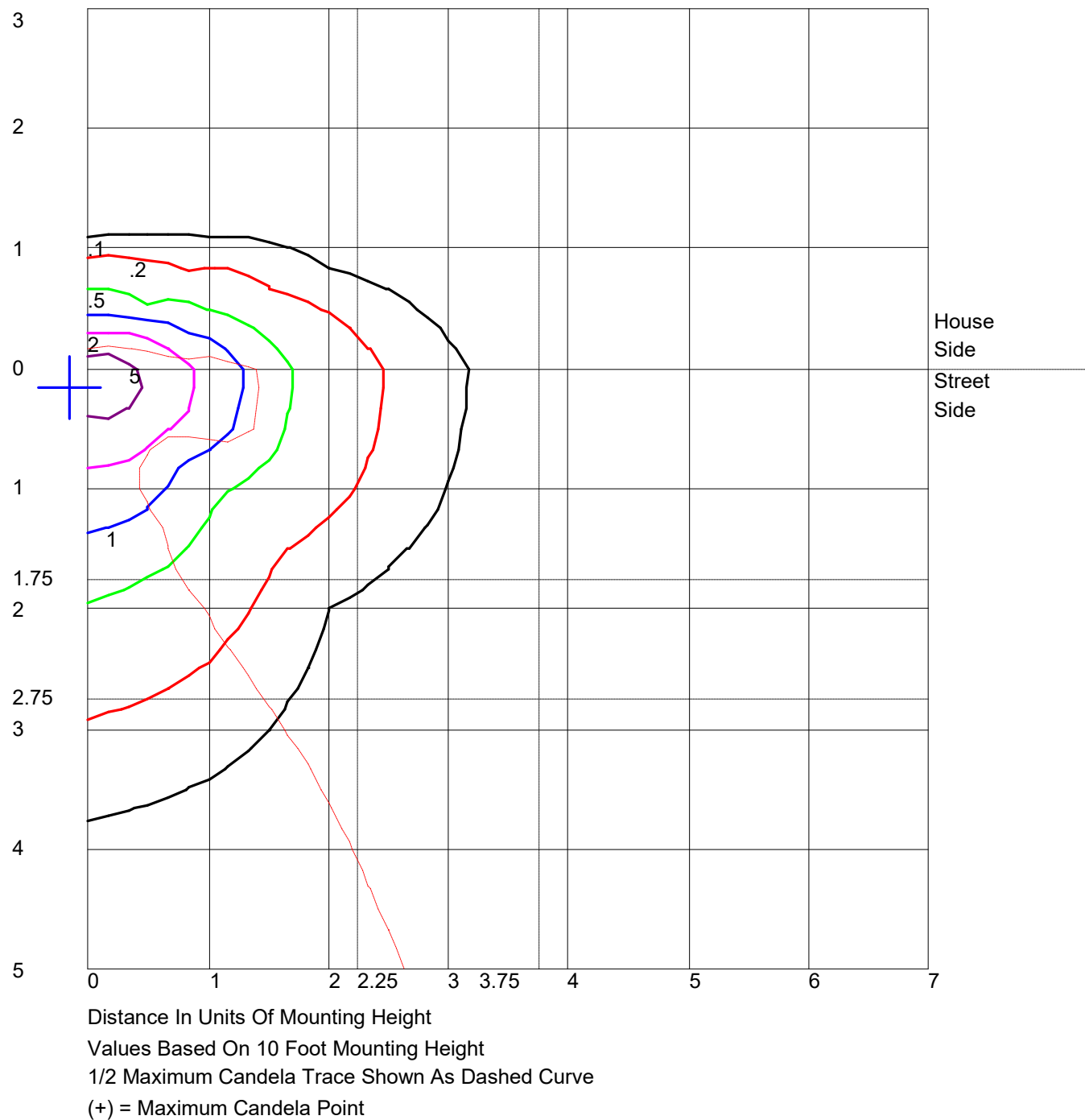
	Lumens	Percent Of Luminaire
Downward Street Side	1384.1	60.6
Downward House Side	450.2	19.7
Downward Total	1834.3	80.3
Upward Street Side	376.8	16.5
Upward House Side	71.9	3.2
Upward Total	448.7	19.7
Total Flux	2283.0	100.0

POLAR GRAPH

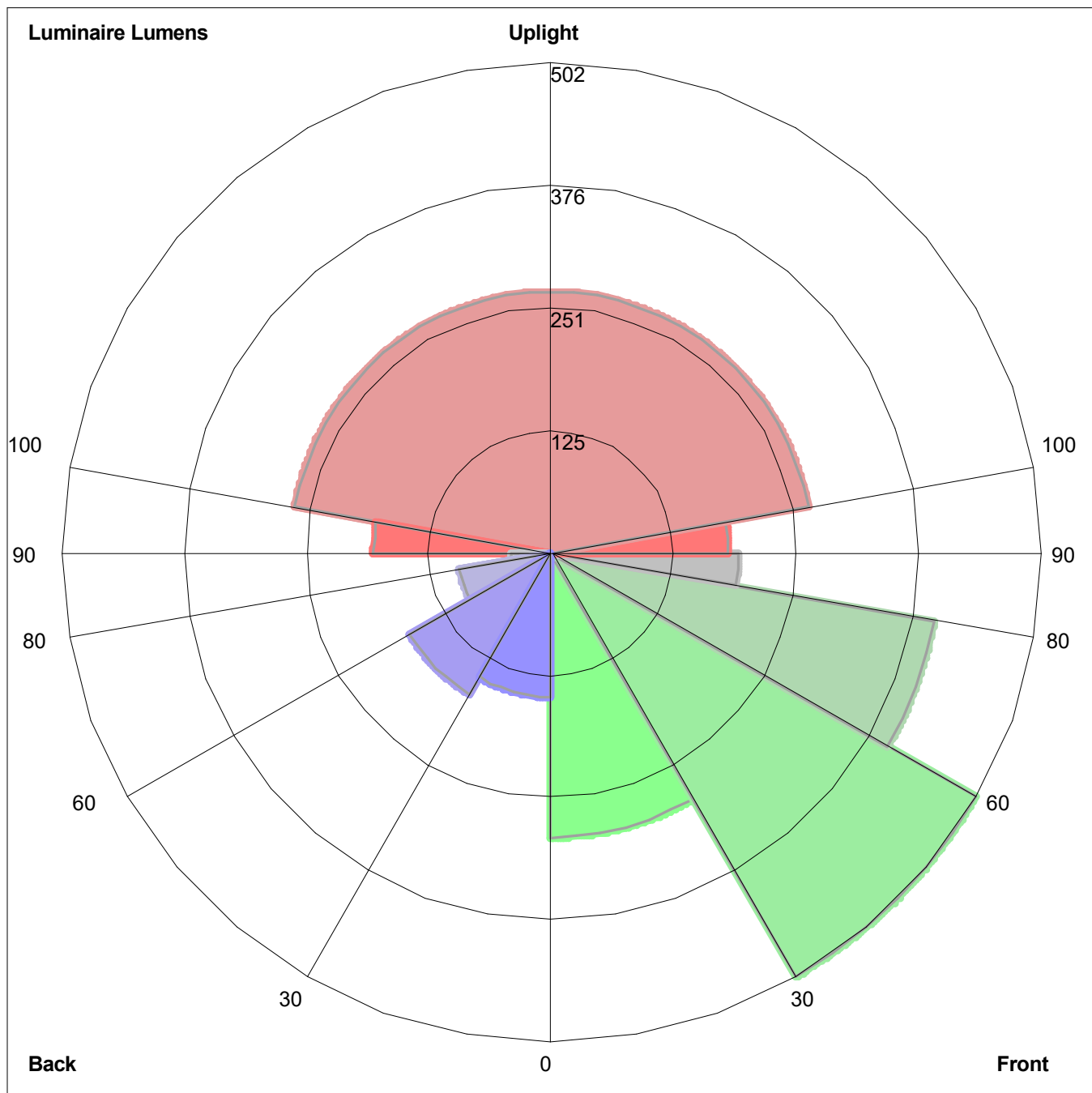


Maximum Candela = 826.567 Located At Horizontal Angle = 315, Vertical Angle = 12.5
1 - Vertical Plane Through Horizontal Angles (315 - 135) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (12.5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=291.9, Medium=501.9, High=398.6, Very High=191.7
Back: Low=147.6, Medium=167.1, High=95.4, Very High=40.1
Uplight: Low=181.7, High=267.0

BUG Rating : B1-U3-G2