



8165 E Kaiser Blvd.
Anaheim, CA 92808
www.lightlaboratory.com

Report No: L062014312



Report No: L062014312

Issue Date: 7/24/2020

Report Prepared For: Leadsun Inc
1920 South Archibald Ave Unit I Ontario CA 91761

Model Number: RS30-T3/30W/5000K

Test: Photometric/Colorimetric/Electrical Test

Standards Used: Appropriate part or all test guidelines were used for test performed:

IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products

ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

Special Test Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 7/6/20

Date of Tests: 7/20/20 - 7/24/20

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S4	1/9/21
BK PRECISION	1747	PS-DC04	1/10/21
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/21
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

General Information

Manufacturer:	Leadsun Inc
Model Number:	RS30-T3/30W/5000K
Driver Model Number:	N/A

Test Summary

Total Lumens:	4948.60
Efficacy:	164.60
Color Redering Index:	72.6
Correlated Color Temperature:	4973
Input Voltage (VDC):	22.17
Input Current (Amp):	1.3559
Input Power (W):	30.07
Input Power Factor:	1.0000
Current ATHD (%):	N/A

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:00

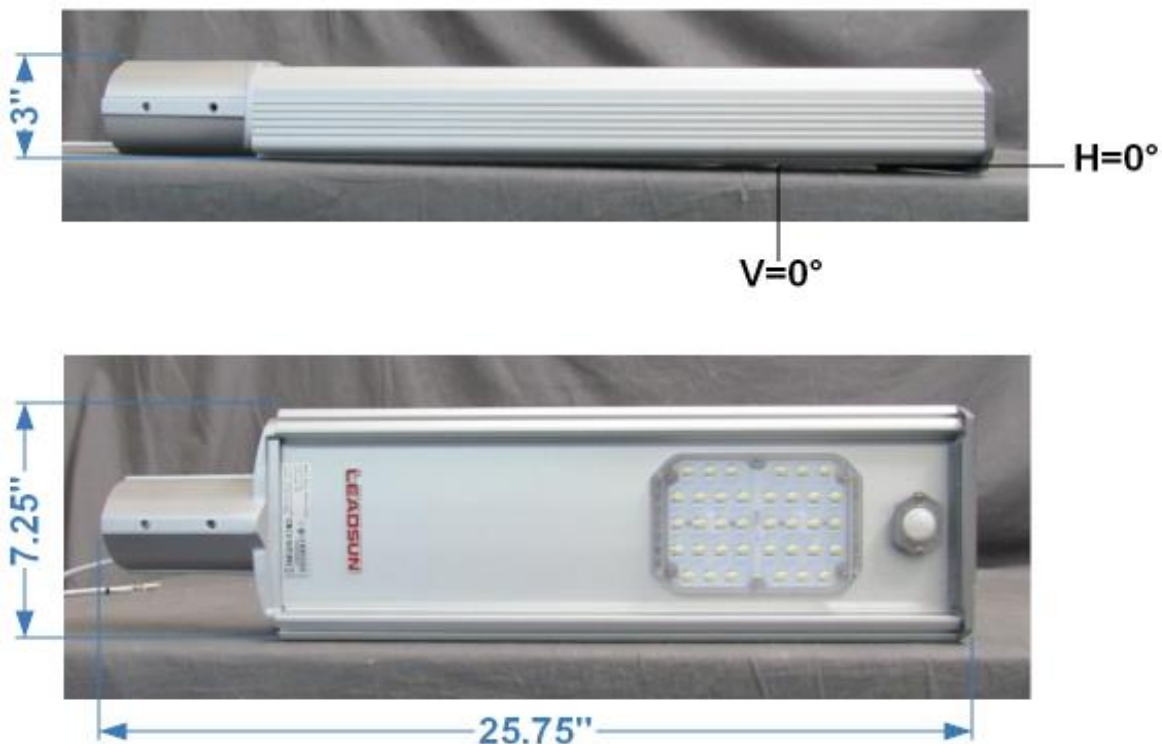
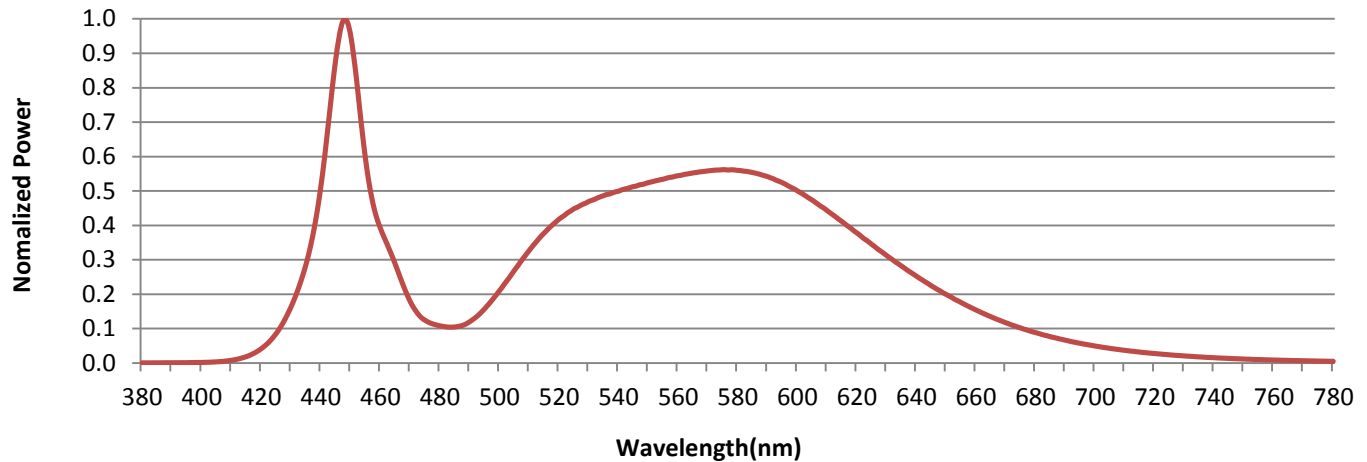


FIG. 1 LUMINAIRE

Colorimetry Test Results

Spectral Power Distribution



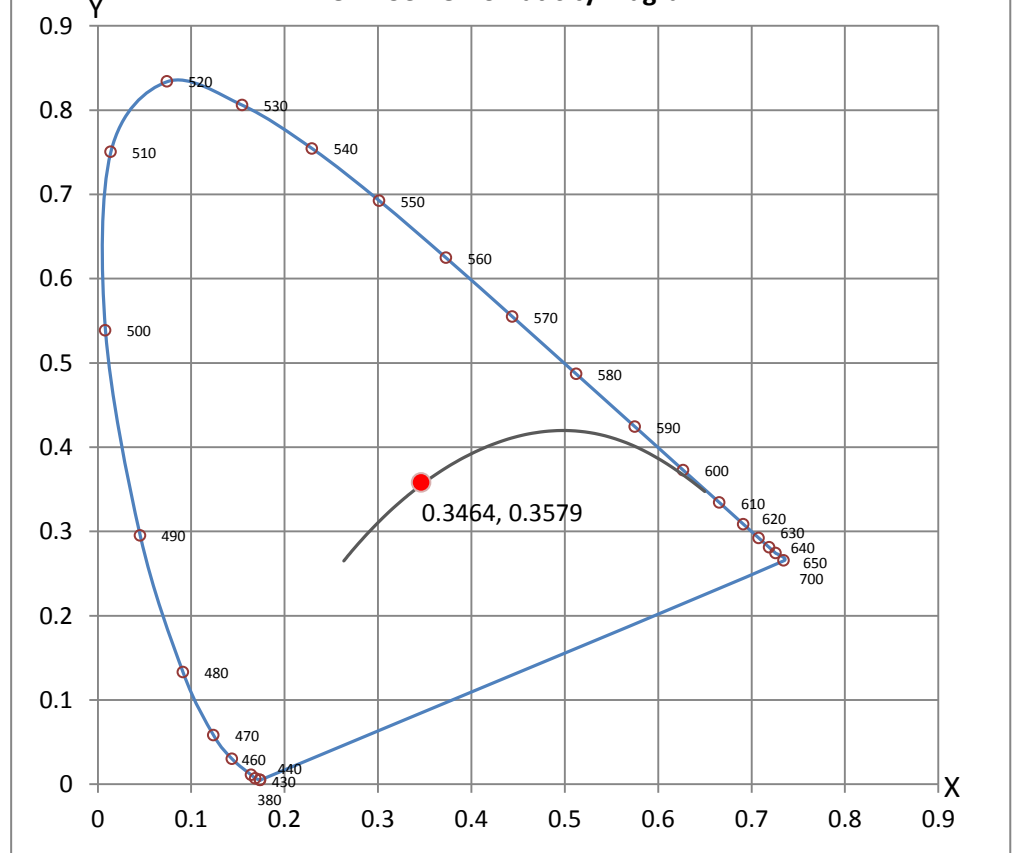
CRI & CCT

x	0.3464
y	0.3579
u'	0.2099
v'	0.4879
CRI	72.60
CCT	4973
Duv	0.00263

R Values

R1	69.52
R2	77.71
R3	83.54
R4	72.73
R5	69.89
R6	68.93
R7	82.39
R8	56.30
R9	-30.67
R10	46.89
R11	69.23
R12	40.32
R13	70.81
R14	90.37
R15	63.78

CIE 1931 Chromaticity Diagram





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Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Keyur Patel

Test Report Reviewed by:

Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 13*



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Photometric Test Report

IES ROAD REPORT

PHOTOMETRIC FILENAME : L062014312.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L062014312
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 7/24/2020
[MANUFAC] Leadsun Inc
[LUMCAT] RS30-T3/30W/5000K
[LUMINAIRE] 30W 5000K luminaire with 36 chips and T3 lens
[BALLASTCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[POWER SUPPLY] 1.36A CONSTANT CURRENT SOURCE
[INPUT] 22.17VDC, 30.07W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

IES Classification	Type II
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4949
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	165
Total Luminaire Watts	30.07
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	2317
Maximum Candela Angle	70H 45V
Maximum Candela (<90 Degrees Vertical)	2317
Maximum Candela Angle (<90 Degrees Vertical)	70H 45V
Maximum Candela At 90 Degrees Vertical	0 (0.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	111 (2.2% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

IES ROAD REPORT
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LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	701.1	N.A.	14.2
FM - Front-Medium (30-60)	1823.9	N.A.	36.9
FH - Front-High (60-80)	506.7	N.A.	10.2
FVH - Front-Very High (80-90)	15.6	N.A.	0.3
BL - Back-Low (0-30)	515.4	N.A.	10.4
BM - Back-Medium (30-60)	1030.4	N.A.	20.8
BH - Back-High (60-80)	339.4	N.A.	6.9
BVH - Back-Very High (80-90)	16.1	N.A.	0.3
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	4948.6	N.A.	100.0
BUG Rating	B2-U0-G1		

ZONAL LUMEN SUMMARY

Zone	%
0-20	11
0-30	24.6
0-40	42.8
0-60	82.3
0-80	99.4
0-90	100
10-90	97.2
20-40	31.9
20-50	52.5
40-70	52.3
60-80	17.1
70-80	4.2
80-90	0.6
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

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CANDELA TABULATION

Vert. Angles	Horizontal Angles									
	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0.0	1426	1426	1426	1426	1426	1426	1426	1426	1426	1426
5.0	1538	1540	1542	1537	1533	1532	1529	1524	1515	1509
10.0	1593	1594	1596	1593	1585	1583	1582	1576	1565	1559
15.0	1639	1640	1643	1639	1630	1626	1627	1620	1610	1605
20.0	1746	1746	1749	1747	1739	1726	1717	1700	1679	1668
25.0	1767	1767	1769	1775	1780	1782	1789	1796	1798	1789
30.0	1723	1726	1732	1748	1768	1786	1811	1843	1874	1896
35.0	1575	1579	1591	1612	1641	1685	1750	1829	1890	1943
37.5	1482	1487	1502	1522	1555	1607	1683	1770	1861	1945
40.0	1374	1381	1395	1420	1454	1514	1590	1686	1794	1908
42.5	1273	1277	1291	1316	1353	1409	1481	1585	1711	1843
45.0	1161	1164	1180	1212	1259	1317	1389	1492	1619	1753
47.5	1038	1043	1061	1096	1147	1210	1290	1392	1514	1657
50.0	902	910	933	971	1026	1096	1185	1307	1437	1566
52.5	746	755	778	817	879	964	1071	1204	1339	1465
55.0	586	594	611	646	704	784	905	1052	1199	1340
57.5	452	454	462	483	528	600	721	871	1028	1179
60.0	358	360	364	373	397	443	532	644	805	993
62.5	291	293	298	304	315	341	380	447	576	771
65.0	235	237	243	249	258	274	291	331	416	564
67.5	183	185	191	199	209	218	233	265	317	407
70.0	132	137	147	155	162	168	186	216	260	316
72.5	103	105	111	121	129	136	148	168	198	249
75.0	85	86	91	97	105	112	119	131	151	178
77.5	66	68	71	75	82	89	96	103	110	117
80.0	46	48	51	54	58	65	68	70	74	75
85.0	6	6	7	7	8	9	10	12	14	17
90.0	0	0	0	0	0	0	0	0	0	0

Vert. Angles	Horizontal Angles									
	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	<u>95</u>
0.0	1426	1426	1426	1426	1426	1426	1426	1426	1426	1426
5.0	1503	1497	1490	1483	1472	1462	1453	1442	1433	1419
10.0	1551	1544	1537	1521	1509	1495	1483	1465	1445	1422
15.0	1596	1584	1578	1562	1548	1533	1519	1496	1465	1435
20.0	1652	1637	1632	1619	1606	1591	1574	1545	1503	1466
25.0	1759	1730	1715	1696	1683	1674	1659	1627	1579	1532
30.0	1903	1897	1874	1834	1798	1769	1732	1682	1619	1564
35.0	1992	2033	2050	2023	1952	1881	1812	1737	1649	1563
37.5	2017	2081	2125	2127	2073	1983	1885	1783	1682	1578
40.0	2022	2110	2187	2215	2187	2095	1963	1837	1711	1596
42.5	1985	2107	2221	2280	2273	2180	2023	1882	1737	1598
45.0	1914	2078	2227	2306	2317	2259	2086	1915	1735	1579
47.5	1817	2006	2187	2296	2311	2277	2130	1923	1724	1558
50.0	1703	1855	2074	2240	2279	2270	2152	1917	1714	1532
52.5	1575	1725	1928	2152	2237	2249	2160	1911	1696	1518
55.0	1463	1585	1761	2015	2170	2203	2143	1903	1671	1487
57.5	1325	1457	1601	1880	2096	2146	2100	1882	1661	1483
60.0	1179	1333	1471	1707	1989	2088	2034	1811	1606	1439
62.5	981	1185	1335	1528	1807	1971	1906	1700	1502	1358
65.0	760	979	1144	1300	1534	1752	1716	1538	1350	1231
67.5	554	734	900	1010	1196	1408	1425	1264	1123	1027

IES ROAD REPORT
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CANDELA TABULATION - (Cont.)

70.0	396	514	632	716	846	1001	1027	944	829	763
72.5	308	377	428	466	520	600	598	542	471	459
75.0	211	241	262	283	312	333	320	288	274	282
77.5	130	149	167	179	192	188	178	174	177	174
80.0	79	89	100	107	111	108	106	104	106	99
85.0	19	21	24	26	28	29	29	29	28	27
90.0	0	0	0	0	0	0	0	0	0	0

Vert. Horizontal Angles
Angles

	<u>100</u>	<u>105</u>	<u>110</u>	<u>115</u>	<u>120</u>	<u>125</u>	<u>130</u>	<u>135</u>	<u>140</u>	<u>145</u>
0.0	1426	1426	1426	1426	1426	1426	1426	1426	1426	1426
5.0	1406	1398	1390	1380	1369	1364	1356	1346	1338	1333
10.0	1404	1387	1372	1351	1335	1321	1308	1290	1281	1270
15.0	1407	1379	1352	1324	1301	1277	1257	1231	1216	1200
20.0	1427	1387	1342	1303	1270	1232	1202	1171	1151	1134
25.0	1479	1419	1354	1300	1247	1192	1152	1115	1084	1059
30.0	1503	1427	1348	1281	1212	1145	1090	1048	1008	978
35.0	1479	1389	1302	1223	1144	1076	1015	964	927	900
37.5	1484	1384	1294	1206	1114	1032	968	920	883	856
40.0	1487	1378	1287	1187	1092	1001	931	880	841	812
42.5	1477	1364	1273	1178	1073	972	893	837	797	761
45.0	1457	1350	1261	1157	1049	934	850	792	744	710
47.5	1429	1321	1222	1120	1009	899	804	736	693	655
50.0	1395	1288	1185	1070	947	836	736	675	628	595
52.5	1369	1258	1147	1010	875	748	660	604	567	537
55.0	1336	1217	1109	955	800	658	577	529	503	480
57.5	1321	1190	1074	914	737	595	506	463	441	424
60.0	1296	1150	1022	857	657	525	448	406	381	369
62.5	1217	1063	938	769	581	481	407	362	328	310
65.0	1106	953	808	646	519	426	359	311	280	261
67.5	944	811	677	549	437	362	305	267	244	227
70.0	715	633	531	445	362	300	255	227	208	192
72.5	468	425	360	314	268	232	205	185	165	151
75.0	288	257	215	190	172	158	147	139	130	120
77.5	167	153	136	122	112	97	92	92	92	90
80.0	94	87	79	72	68	64	62	62	63	63
85.0	27	26	25	24	24	23	23	23	22	22
90.0	0	0	0	0	0	0	0	0	0	0

Vert. Horizontal Angles
Angles

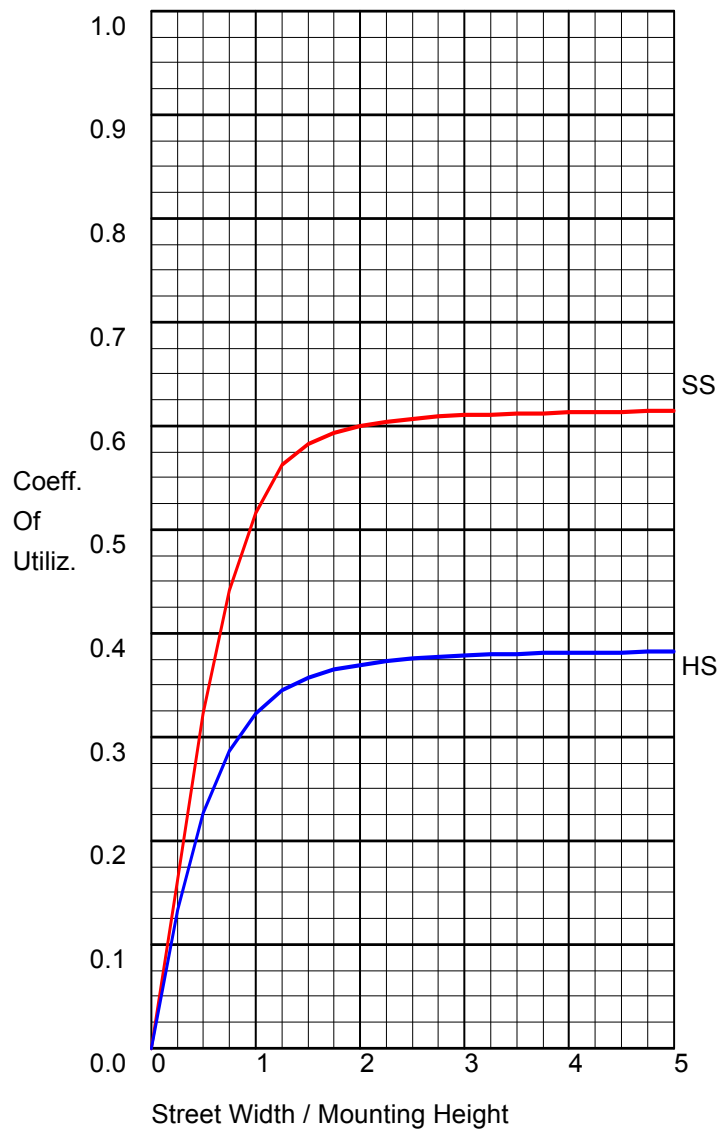
	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
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5.0	1329	1329	1325	1320	1315	1313	1312
10.0	1264	1258	1249	1241	1236	1232	1229
15.0	1191	1181	1170	1162	1158	1155	1153
20.0	1121	1108	1093	1086	1082	1078	1078
25.0	1037	1023	1008	1002	999	996	994
30.0	952	938	927	922	919	918	916
35.0	878	862	852	845	837	836	836
37.5	834	816	804	795	787	784	784
40.0	785	760	748	743	739	737	737
42.5	732	711	701	695	690	687	686
45.0	682	659	645	639	636	633	632
47.5	625	604	594	588	584	581	581

IES ROAD REPORT
PHOTOMETRIC FILENAME : L062014312.IES

CANDELA TABULATION - (Cont.)

50.0	573	554	542	532	526	522	521
52.5	516	497	485	475	469	465	464
55.0	459	443	431	422	415	412	410
57.5	407	390	377	369	362	357	355
60.0	358	341	327	319	312	307	305
62.5	304	295	286	279	274	271	269
65.0	257	256	251	244	240	235	234
67.5	216	214	213	206	197	187	184
70.0	177	165	163	153	132	114	111
72.5	141	131	122	109	99	94	92
75.0	112	105	95	86	81	79	78
77.5	88	83	76	70	69	68	66
80.0	63	62	58	56	55	54	53
85.0	22	23	23	25	27	28	27
90.0	0	0	0	0	0	0	0

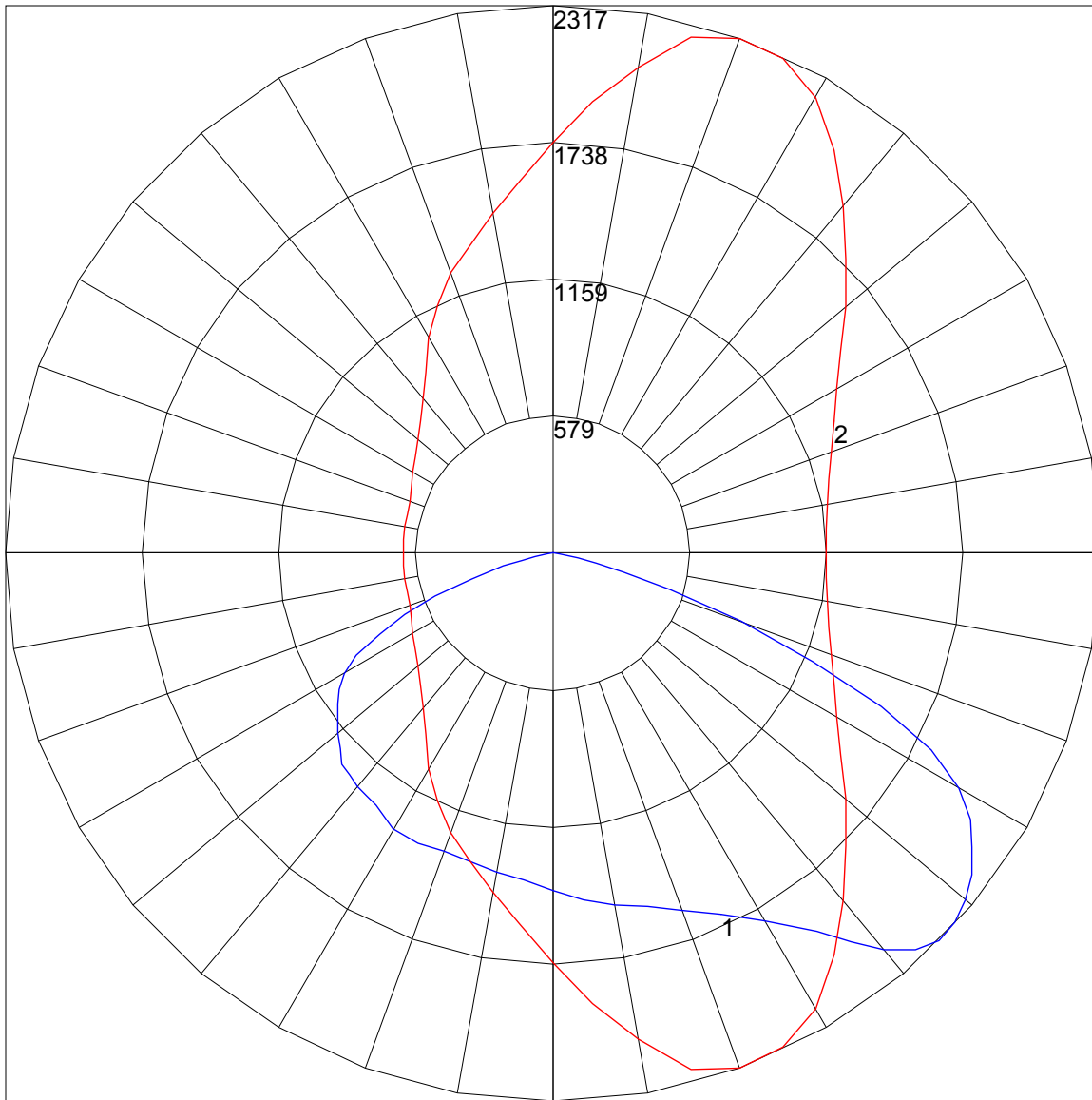
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

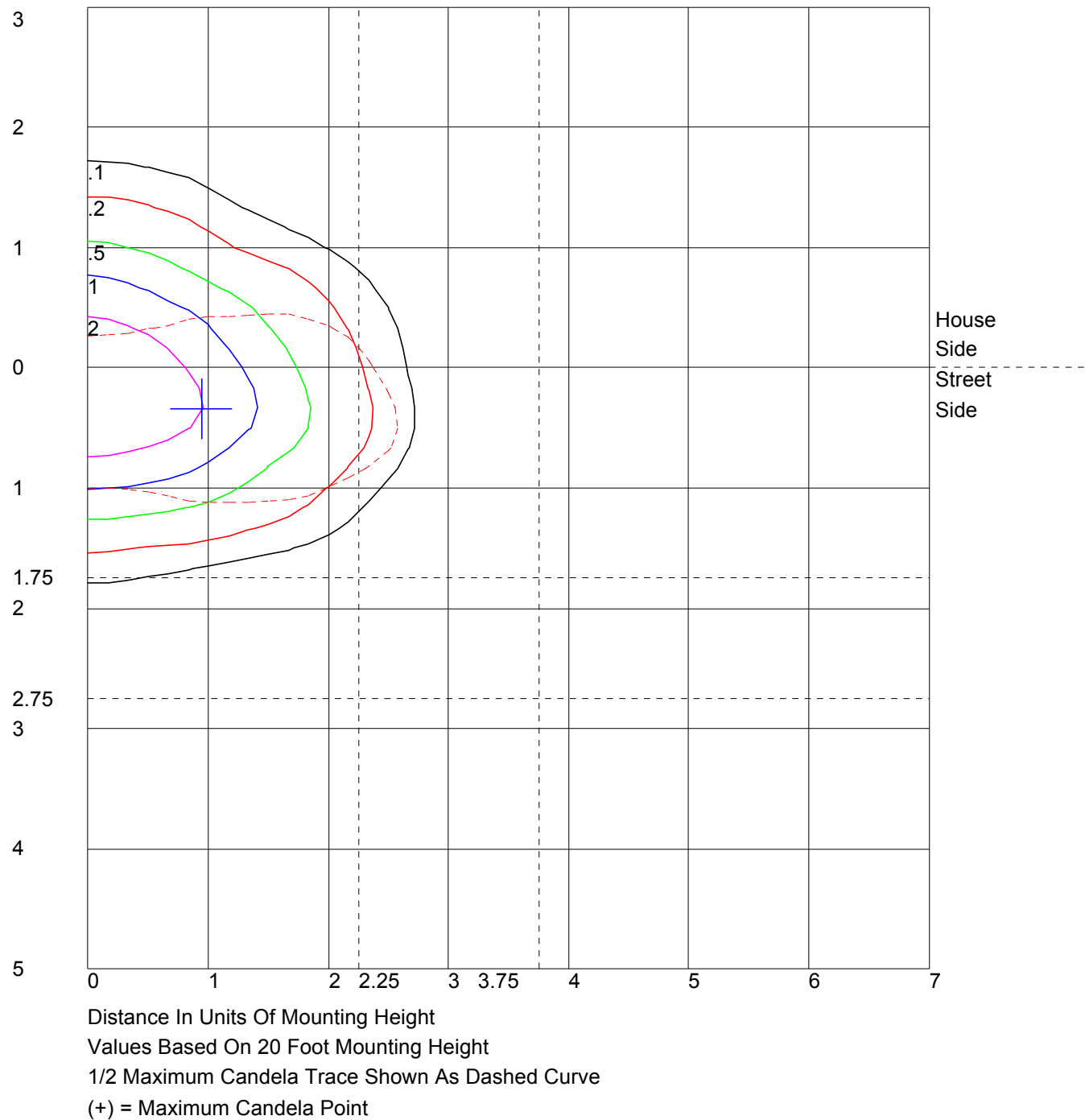
	Lumens	Percent Of Luminaire
Downward Street Side	3047.4	61.6
Downward House Side	1901.2	38.4
Downward Total	4948.6	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	4948.6	100.0

POLAR GRAPH

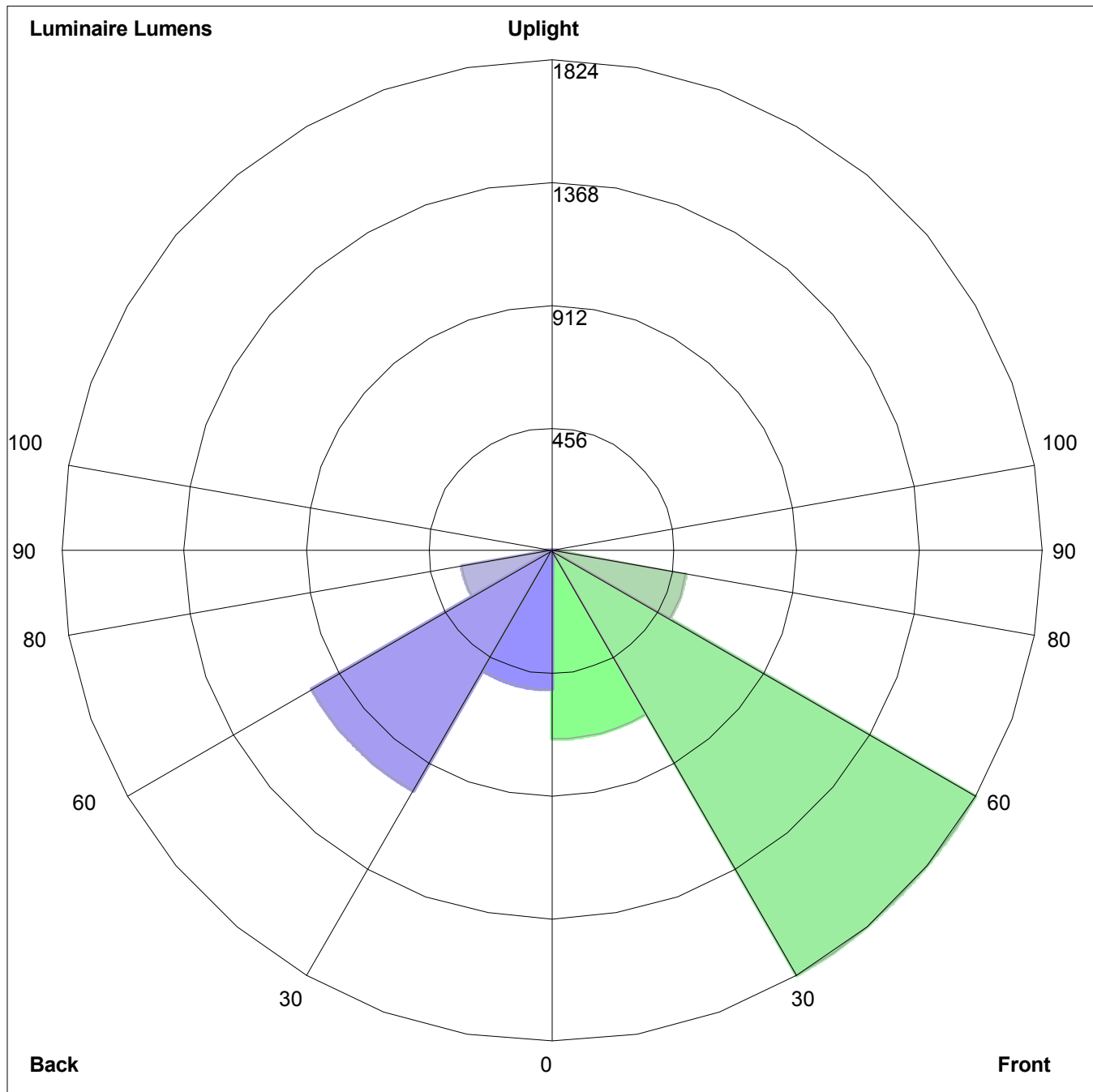


Maximum Candela = 2317 Located At Horizontal Angle = 70, Vertical Angle = 45
1 - Vertical Plane Through Horizontal Angles (70 - 250) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (45) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=701.1, Medium=1823.9, High=506.7, Very High=15.6
Back: Low=515.4, Medium=1030.4, High=339.4, Very High=16.1
Uplight: Low=0.0, High=0.0

BUG Rating : B2-U0-G1