



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

Report No: L091911301



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Issue Date: 9/19/2019

Report Prepared For: Beachside Lighting
905 Kalaniana'ole Hwy. Space 2901

Model Number: R-003A-16-4W-A

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: 9/16/19

Date of Tests: 9/17/19 - 9/19/19

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:	Beachside Lighting
Model Number:	R-003A-16-4W-A
Driver Model Number:	N/A

Test Summary

Total Lumens:	61.60
Efficacy:	25.57
Color Redering Index:	31.8
Correlated Color Temperature:	1594
Input Voltage (VAC/60Hz):	12.00
Input Current (Amp):	0.3004
Input Power (W):	2.41
Input Power Factor:	0.6683
Current ATHD (%):	61.6%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	1:25

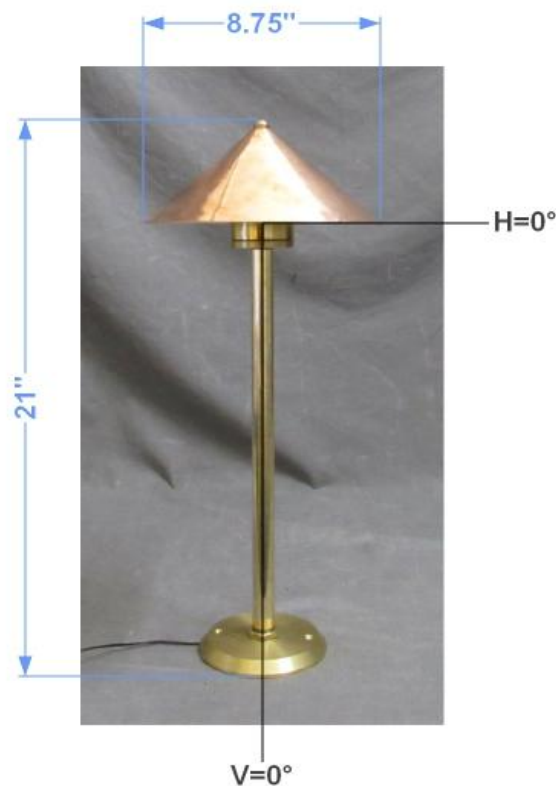
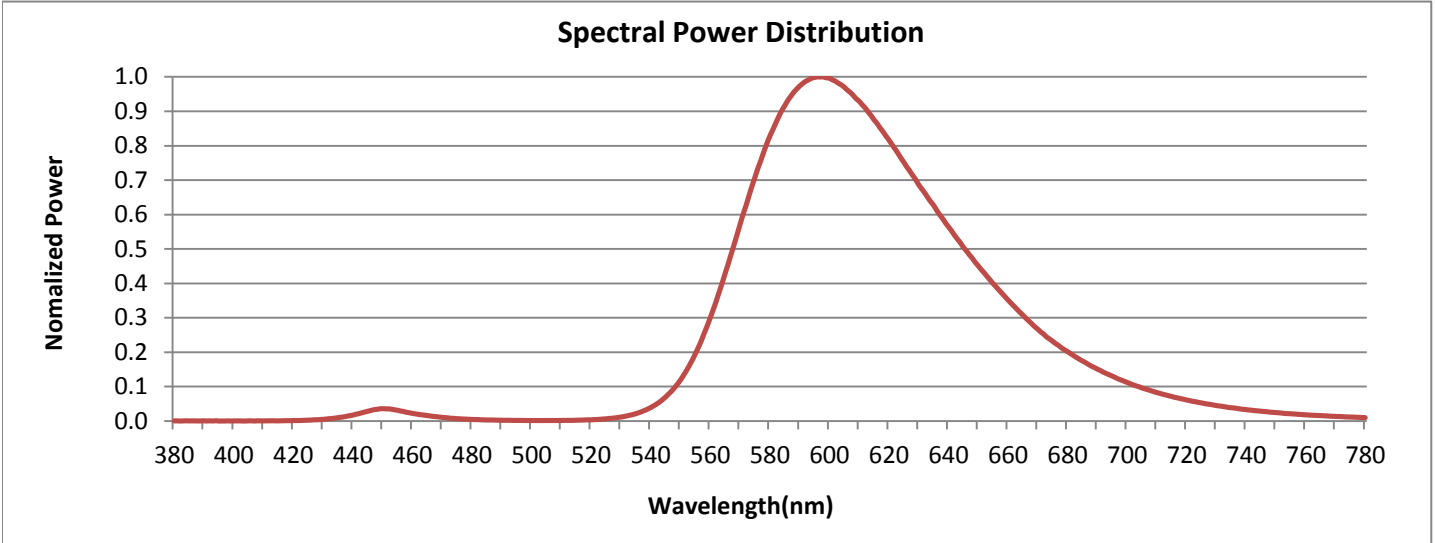


FIG. 1 LUMINAIRE

Colorimetry Test Results

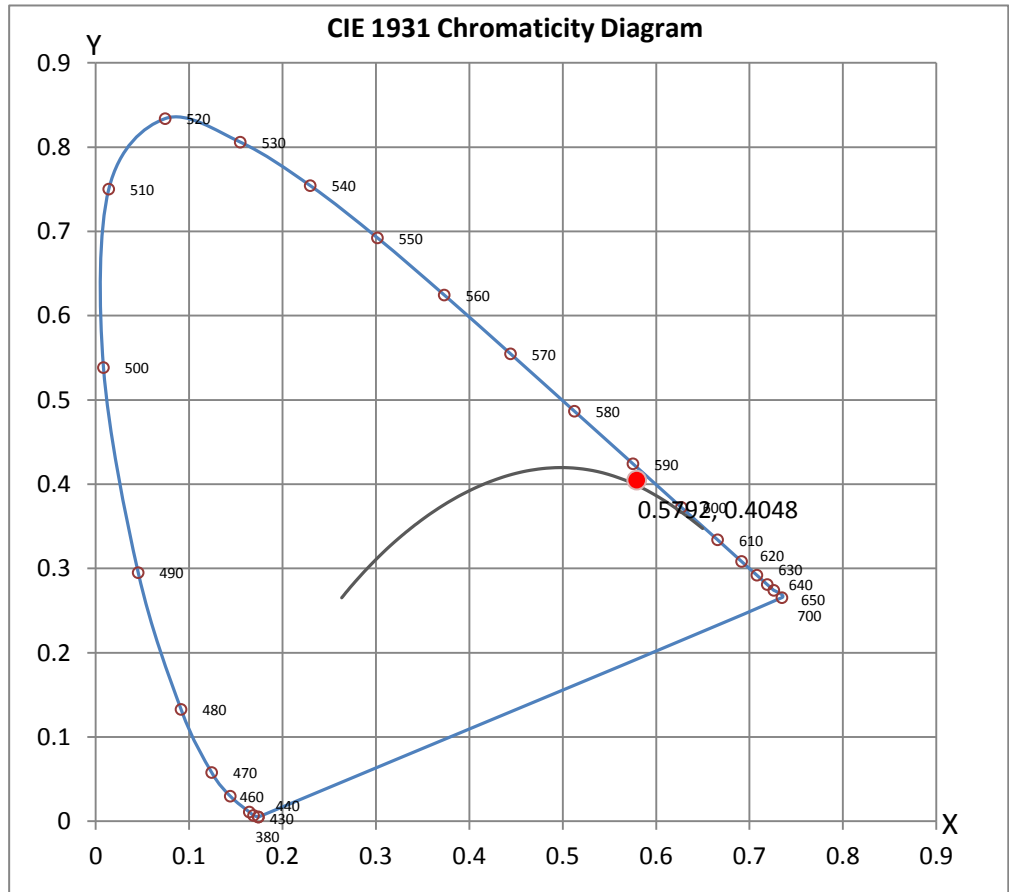


CRI & CCT

x	0.5792
y	0.4048
u'	0.3458
v'	0.5438
CRI	31.80
CCT	1594
Duv	0.00481

R Values

R1	22.53
R2	65.40
R3	69.80
R4	-0.23
R5	14.17
R6	52.39
R7	47.58
R8	-17.62
R9	-117.26
R10	40.24
R11	-31.65
R12	11.19
R13	25.62
R14	81.62
R15	18.69



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 : Dennis Malonzo

Test Report Reviewed by:



Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 12*



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 www.lightlaboratory.com

Photometric Test Report

IES ROAD REPORT
PHOTOMETRIC FILENAME : L091911301.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L091911301
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
 [ISSUEDATE] 9/19/2019
 [MANUFAC] Beachside Lighting
 [LUMCAT] R-003A-16-4W-A
 [LUMINAIRE] R-003A Pathlight on 16" riser with 4 watt amber lamp
 [BALLASTCAT] N/A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 12.00VAC, 2.41W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

IES Classification	Type VS
Longitudinal Classification	Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	62
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	26
Total Luminaire Watts	2.41
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	15.63
Maximum Candela Angle	90H 65V
Maximum Candela (<90 Degrees Vertical)	15.63
Maximum Candela Angle (<90 Degrees Vertical)	90H 65V
Maximum Candela At 90 Degrees Vertical	.192 (0.3% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	2.428 (3.9% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

IES ROAD REPORT
PHOTOMETRIC FILENAME : L091911301.IES

LUMINAIRE CLASSIFICATION SYSTEM (LCS)

ZONAL LUMEN SUMMARY

	Lumens	% Lamp	% Luminaire	Zone	%
FL - Front-Low (0-30)	5.1	N.A.	8.2		
FM - Front-Medium (30-60)	14.1	N.A.	22.9	0-20	7.4
FH - Front-High (60-80)	11.1	N.A.	18.0	0-30	16.5
FVH - Front-Very High (80-90)	0.5	N.A.	0.8	0-40	27.6
BL - Back-Low (0-30)	5.1	N.A.	8.2	0-60	62.3
BM - Back-Medium (30-60)	14.1	N.A.	22.9	0-80	98.2
BH - Back-High (60-80)	11.1	N.A.	18.0	0-90	99.9
BVH - Back-Very High (80-90)	0.5	N.A.	0.8	10-90	98.2
UL - Uplight-Low (90-100)	< 0.05	N.A.	0.1	20-40	20.2
UH - Uplight-High (100-180)	0.0	N.A.	0.0	20-50	34.9
				40-70	58.1
Total	61.6	N.A.	100.0	60-80	36
				70-80	12.5
BUG Rating	B0-U1-G0			80-90	1.7
				90-110	0.1
				90-120	0.1
				90-130	0.1
				90-150	0.1
				90-180	0.1
				110-180	0
				0-180	100

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	12.126	12.126	12.126	12.126	12.126	12.126	12.126	12.126	12.126	12.126
5.0	10.950	10.932	10.906	10.889	10.880	10.880	10.863	10.854	10.836	10.854
10.0	10.932	10.941	10.967	11.020	11.046	11.081	11.090	11.072	11.072	11.063
15.0	12.539	12.530	12.513	12.478	12.469	12.452	12.443	12.452	12.452	12.461
20.0	13.081	13.072	13.046	13.011	13.002	12.985	12.967	12.958	12.967	12.950
25.0	12.295	12.286	12.286	12.277	12.260	12.268	12.251	12.225	12.190	12.138
30.0	11.421	11.430	11.421	11.430	11.413	11.404	11.387	11.360	11.308	11.238
35.0	10.740	10.732	10.723	10.732	10.740	10.732	10.732	10.714	10.679	10.671
37.5	10.723	10.732	10.740	10.749	10.758	10.775	10.775	10.775	10.740	10.732
40.0	10.898	10.898	10.906	10.950	10.985	11.002	11.002	11.011	10.976	10.941
42.5	11.125	11.125	11.151	11.203	11.264	11.299	11.325	11.299	11.282	11.221
45.0	11.421	11.448	11.518	11.596	11.683	11.736	11.753	11.745	11.701	11.631
47.5	11.788	11.814	11.910	12.024	12.146	12.242	12.260	12.242	12.172	12.076
50.0	12.172	12.216	12.347	12.504	12.670	12.766	12.819	12.801	12.714	12.583
52.5	12.627	12.688	12.845	13.081	13.264	13.404	13.465	13.447	13.369	13.194
55.0	13.063	13.133	13.377	13.631	13.875	14.041	14.128	14.120	13.980	13.788
57.5	13.395	13.500	13.770	14.093	14.390	14.574	14.644	14.626	14.504	14.277
60.0	13.639	13.779	14.093	14.469	14.775	14.984	15.089	15.063	14.897	14.661
62.5	13.832	13.954	14.373	14.748	15.106	15.307	15.403	15.386	15.229	14.949
65.0	13.901	14.067	14.460	14.940	15.290	15.464	15.569	15.552	15.386	15.089
67.5	13.849	14.032	14.504	14.932	15.307	15.508	15.595	15.560	15.290	14.582
70.0	12.854	13.046	13.430	13.884	14.216	14.347	14.408	14.321	13.928	12.757
72.5	10.356	10.496	10.810	11.160	11.395	11.518	11.561	11.465	10.976	9.789
75.0	7.335	7.431	7.658	7.850	7.972	8.060	8.051	7.972	7.544	6.392
77.5	4.383	4.418	4.488	4.558	4.602	4.602	4.611	4.523	4.174	3.536
80.0	2.428	2.419	2.410	2.419	2.419	2.401	2.393	2.331	2.157	1.965
85.0	0.803	0.786	0.786	0.786	0.768	0.760	0.742	0.707	0.664	0.629
90.0	0.175	0.175	0.175	0.175	0.183	0.192	0.192	0.183	0.175	0.183
95.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

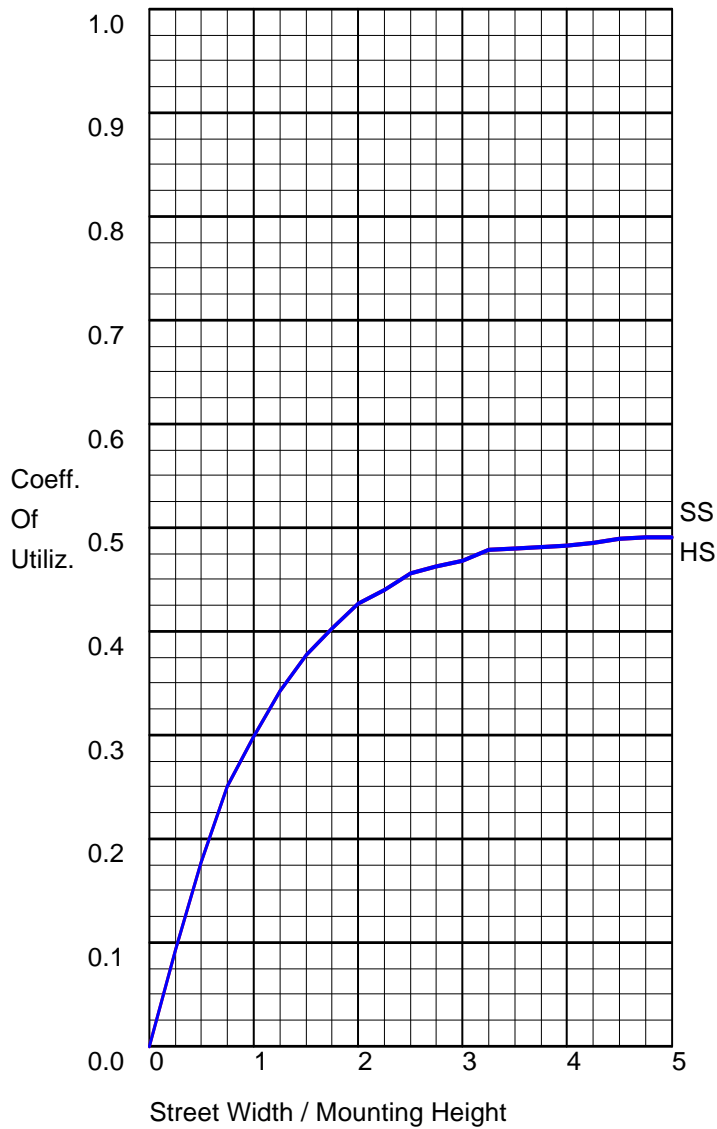
Vert. Angles	Horizontal Angles									
	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	
0.0	12.126	12.126	12.126	12.126	12.126	12.126	12.126	12.126	12.126	
5.0	10.863	10.863	10.863	10.863	10.845	10.810	10.793	10.802	10.775	
10.0	11.046	11.055	11.055	11.055	11.063	11.081	11.090	11.098	11.107	

IES ROAD REPORT
PHOTOMETRIC FILENAME : L091911301.IES

CANDELA TABULATION - (Cont.)

15.0	12.504	12.504	12.530	12.548	12.513	12.452	12.399	12.356	12.365
20.0	12.950	12.976	12.976	12.967	12.932	12.906	12.880	12.862	12.871
25.0	12.015	11.954	11.963	12.059	12.050	12.068	12.129	12.172	12.225
30.0	11.125	11.055	11.098	11.177	11.203	11.186	11.247	11.360	11.369
35.0	10.662	10.662	10.679	10.697	10.679	10.662	10.671	10.749	10.758
37.5	10.723	10.740	10.767	10.767	10.758	10.723	10.749	10.819	10.845
40.0	10.932	10.941	10.950	10.959	10.950	10.941	10.994	11.090	11.107
42.5	11.186	11.194	11.194	11.229	11.221	11.194	11.291	11.413	11.474
45.0	11.579	11.561	11.552	11.561	11.596	11.570	11.745	11.884	11.945
47.5	12.007	11.954	11.954	11.954	11.998	12.015	12.225	12.365	12.452
50.0	12.469	12.382	12.373	12.382	12.469	12.504	12.784	12.932	13.028
52.5	13.019	12.906	12.854	12.897	12.976	13.037	13.430	13.552	13.639
55.0	13.570	13.395	13.343	13.404	13.526	13.622	14.050	14.216	14.268
57.5	13.989	13.788	13.709	13.823	13.936	14.085	14.582	14.722	14.757
60.0	14.364	14.102	14.015	14.137	14.233	14.425	14.975	15.124	15.194
62.5	14.600	14.294	14.207	14.329	14.504	14.705	15.255	15.447	15.456
65.0	14.504	13.963	13.997	14.373	14.513	14.757	15.429	15.604	15.630
67.5	13.535	12.548	12.897	13.945	14.312	14.836	15.395	15.587	15.613
70.0	11.325	10.199	10.705	12.347	13.002	13.587	14.076	14.216	14.233
72.5	8.374	7.326	7.815	9.675	10.347	10.845	11.317	11.430	11.439
75.0	5.292	4.654	4.986	6.427	7.274	7.649	7.902	7.990	7.981
77.5	3.021	2.829	2.934	3.676	4.148	4.366	4.532	4.549	4.558
80.0	1.842	1.790	1.834	2.000	2.209	2.331	2.393	2.401	2.375
85.0	0.594	0.594	0.603	0.637	0.664	0.707	0.733	0.742	0.733
90.0	0.166	0.183	0.175	0.175	0.175	0.175	0.183	0.183	0.175
95.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

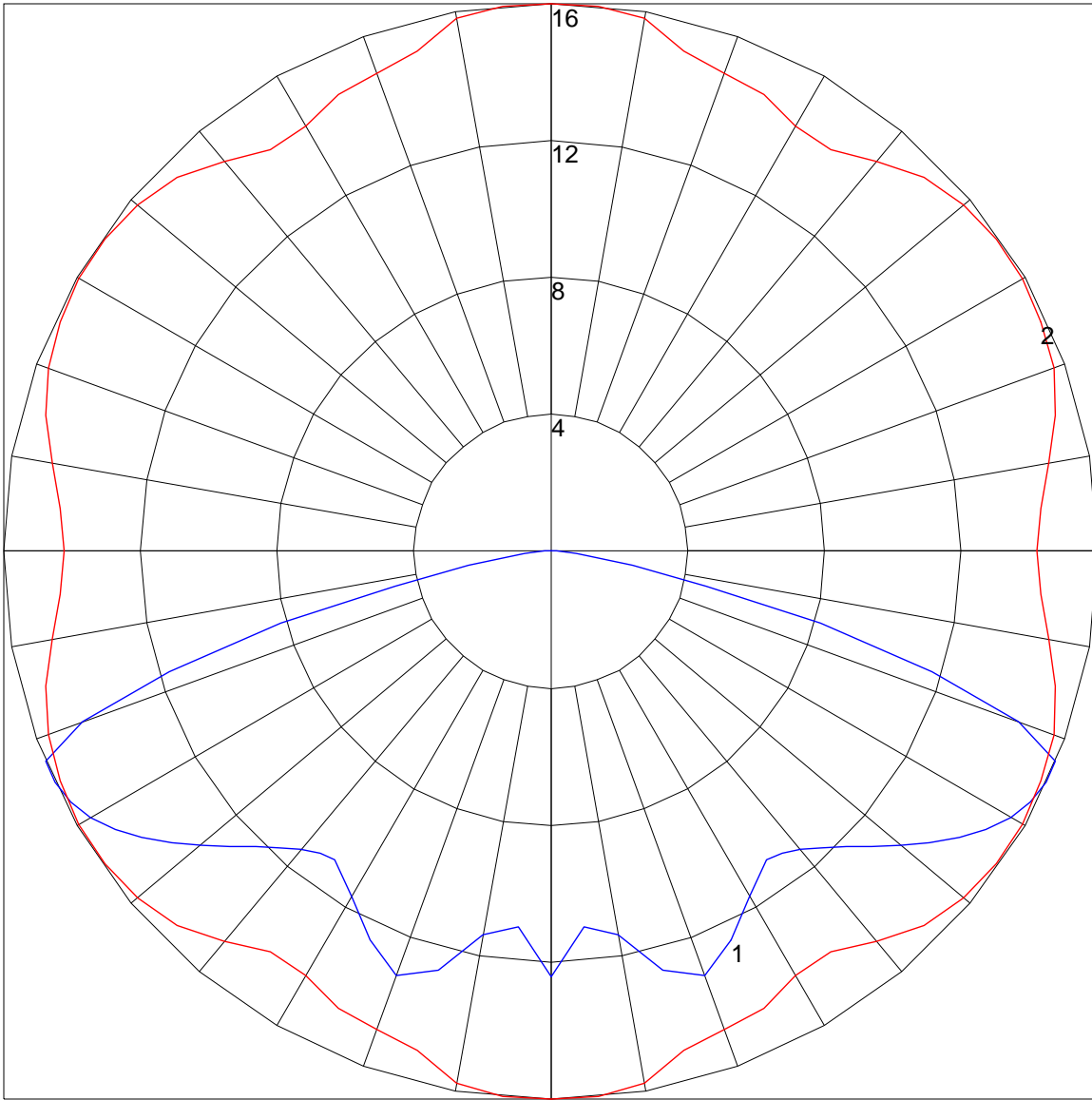
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

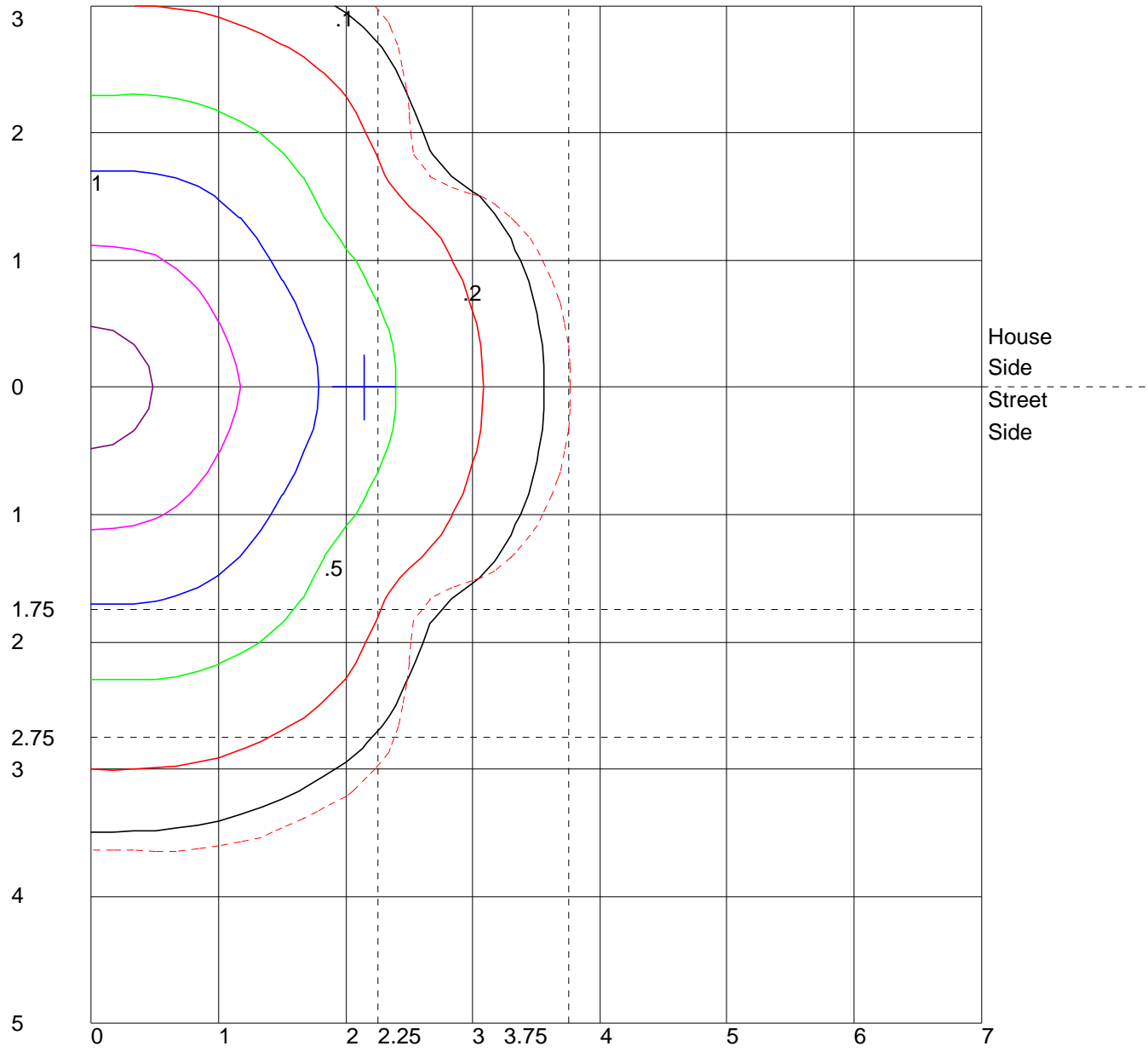
	Lumens	Percent Of Luminaire
Downward Street Side	30.8	50.0
Downward House Side	30.8	50.0
Downward Total	61.6	100.1
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	61.6	100.1

POLAR GRAPH



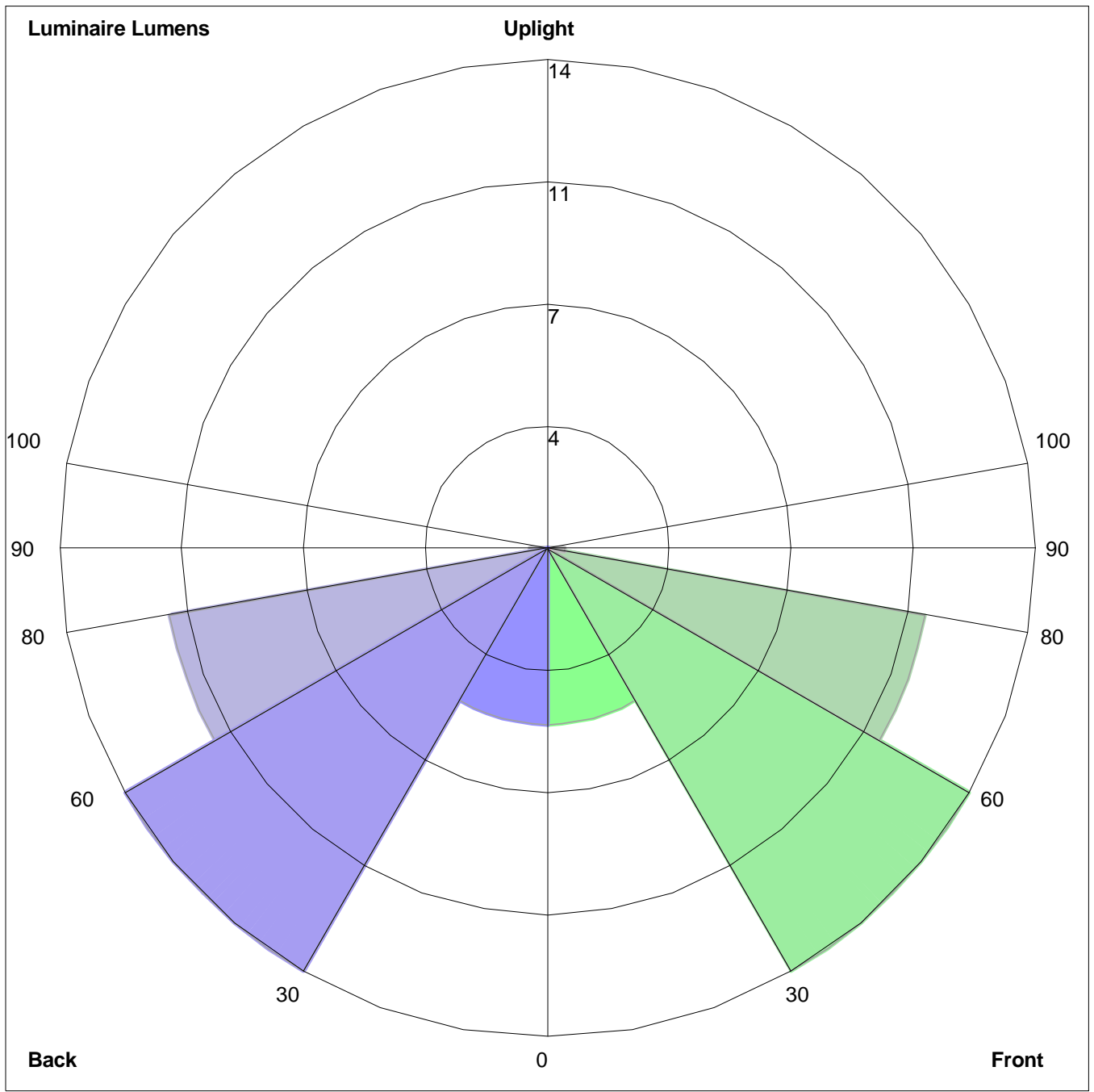
Maximum Candela = 15.63 Located At Horizontal Angle = 90, Vertical Angle = 65
1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (65) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height
 Values Based On 1.333 Foot Mounting Height
 1/2 Maximum Candela Trace Shown As Dashed Curve
 (+) = Maximum Candela Point

LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=5.1, Medium=14.1, High=11.1, Very High=0.5
Back: Low=5.1, Medium=14.1, High=11.1, Very High=0.5
Uplight: Low=0.0, High=0.0

BUG Rating : B0-U1-G0