



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

Report No: L021904313



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Issue Date: 2/22/2019

Report Prepared For: Beachside Lighting
905 Kalaniana'ole Hwy #2901 Kailua, HI 96734

Model Number: MB4-20-8W-SP-120V

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: 2/13/19

Date of Tests: 2/21/19 - 2/22/19

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:	MB4-20-8W-SP-120V
Driver Model Number:	N/A

Test Summary

Total Lumens:	43.40
Efficacy:	6.54
Color Redering Index:	85.0
Correlated Color Temperature:	2809
Input Voltage (VAC/60Hz):	120.04
Input Current (Amp):	0.0582
Input Power (W):	6.63
Input Power Factor:	0.9489
Current ATHD (%):	17.2%

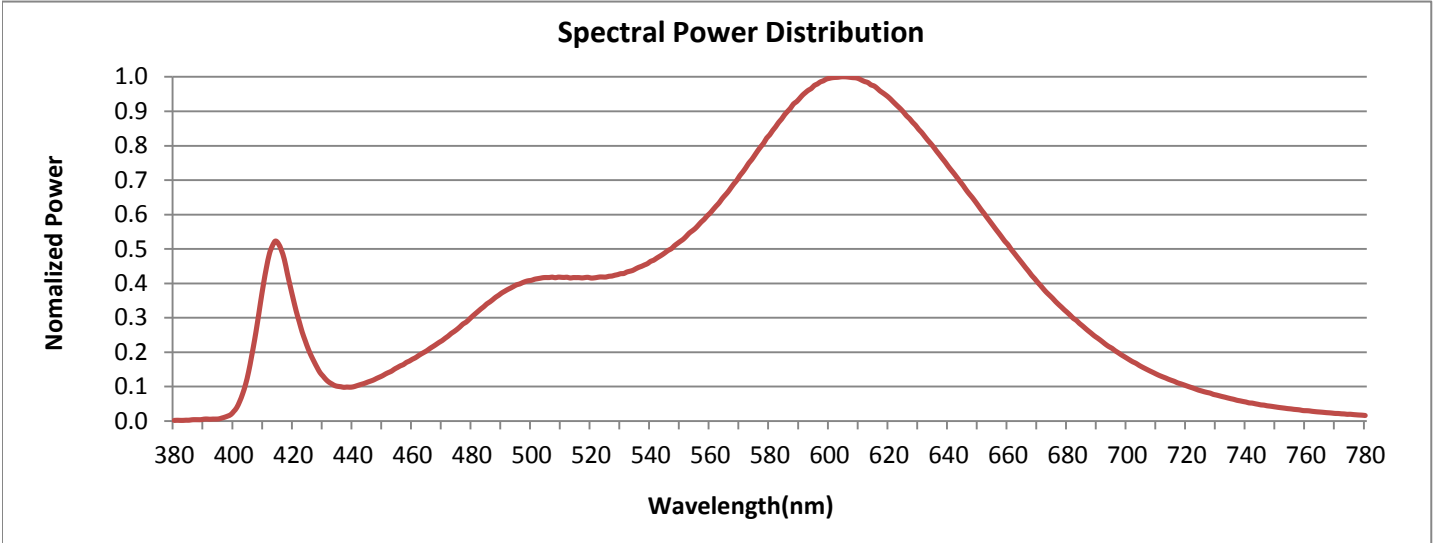
Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	2:00
Total Operating Time (Hours):	2:50



FIG. 1 LUMINAIRE

Colorimetry Test Results

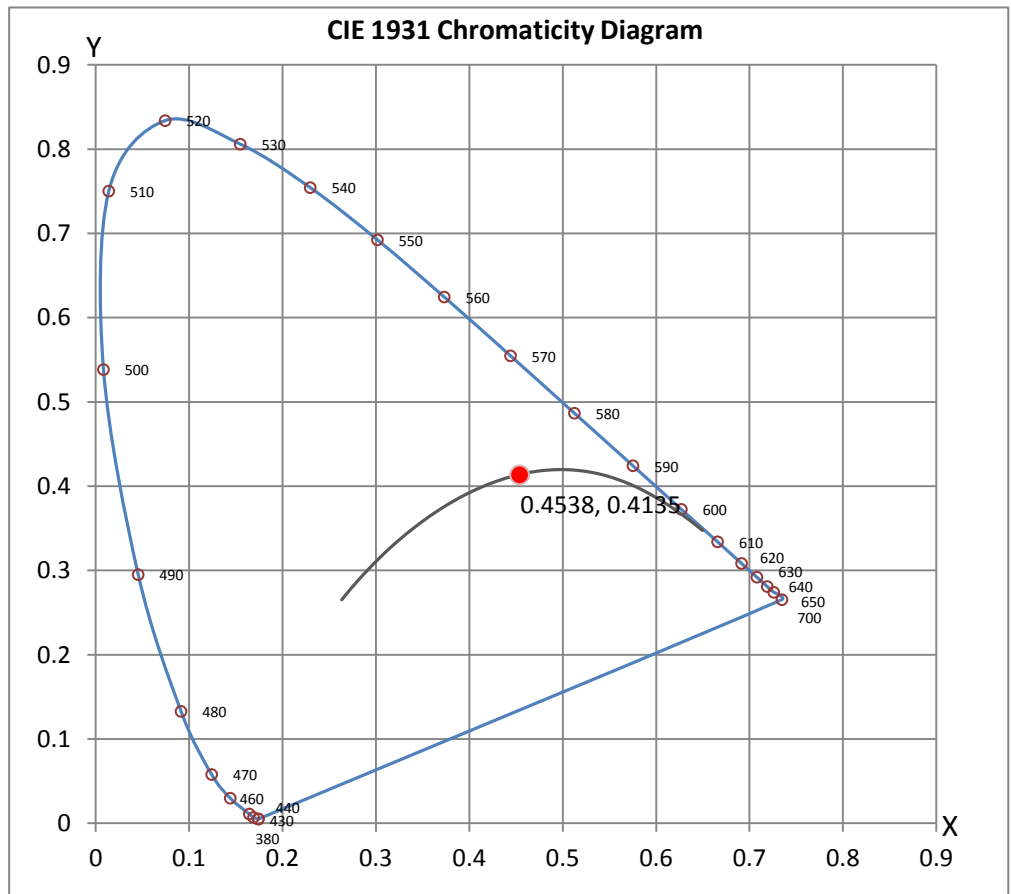


CRI & CCT

x	0.4538
y	0.4135
u'	0.2573
v'	0.5275
CRI	85.00
CCT	2809
Duv	0.00164

R Values

R1	84.14
R2	95.63
R3	89.66
R4	84.50
R5	87.50
R6	98.22
R7	81.20
R8	59.14
R9	13.86
R10	93.12
R11	85.80
R12	91.74
R13	86.98
R14	94.34
R15	74.65



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 Released by:



Joseph Shin
Engineering Manager

Test Report Reviewed by:



Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 11*



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Photometric Test Report

IES ROAD REPORT
PHOTOMETRIC FILENAME : L021904313.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L021904313
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 02/22/2019
[MANUFAC] Beachside Lighting
[LUMCAT] MB4-20-8W-SP-120V
[LUMINAIRE] MB4 BOLLARD, 8WATT 3000K SPOT , GU10 MR16 LAMP
[BALLASTCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120.04VAC, 6.63W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

IES Classification	Type V
Longitudinal Classification	Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	44
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	7
Total Luminaire Watts	6.63
Ballast Factor	1.00
Upward Waste Light Ratio	0.03
Maximum Candela	12.999
Maximum Candela Angle	0H 47.5V
Maximum Candela (<90 Degrees Vertical)	12.999
Maximum Candela Angle (<90 Degrees Vertical)	0H 47.5V
Maximum Candela At 90 Degrees Vertical	.174 (0.4% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	2.081 (4.7% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

IES ROAD REPORT
PHOTOMETRIC FILENAME : L021904313.IES

LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	1.2	N.A.	2.7
FM - Front-Medium (30-60)	13.1	N.A.	30.2
FH - Front-High (60-80)	6.3	N.A.	14.6
FVH - Front-Very High (80-90)	0.4	N.A.	0.9
BL - Back-Low (0-30)	1.2	N.A.	2.7
BM - Back-Medium (30-60)	13.1	N.A.	30.2
BH - Back-High (60-80)	6.3	N.A.	14.6
BVH - Back-Very High (80-90)	0.4	N.A.	0.9
UL - Uplight-Low (90-100)	0.2	N.A.	0.4
UH - Uplight-High (100-180)	1.3	N.A.	3.0
Total	43.5	N.A.	100.0
BUG Rating	B0-U1-G0		

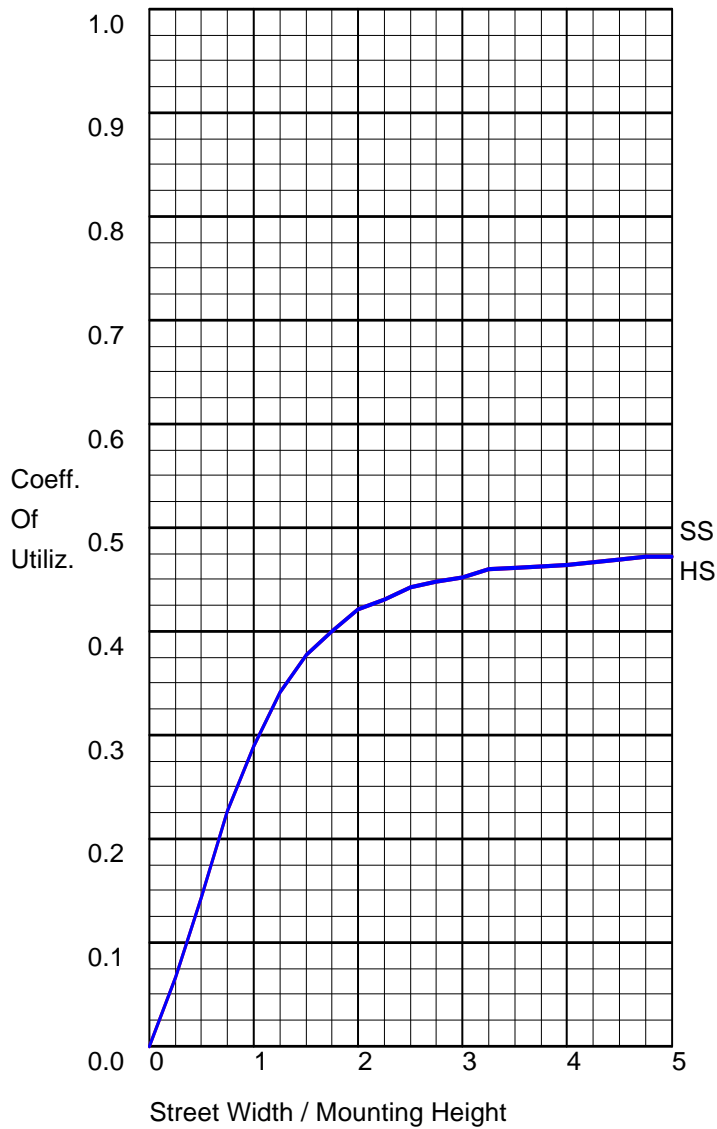
ZONAL LUMEN SUMMARY

Zone	%
0-20	0.6
0-30	5.4
0-40	19.6
0-60	65.6
0-80	94.7
0-90	96.6
10-90	96.5
20-40	19
20-50	41.7
40-70	64.6
60-80	29.1
70-80	10.5
80-90	1.9
90-110	0.9
90-120	1.4
90-130	1.9
90-150	3
90-180	3.4
110-180	2.5
0-180	100

CANDELA TABULATION

Vert. Angles	Horizontal Angles
	<u>0</u>
0.0	0.000
5.0	0.127
10.0	0.204
15.0	0.586
20.0	1.961
25.0	4.285
30.0	7.025
35.0	9.883
37.5	11.125
40.0	12.089
42.5	12.670
45.0	12.962
47.5	12.999
50.0	12.744
52.5	12.146
55.0	11.384
57.5	10.596
60.0	9.812
62.5	9.025
65.0	8.216
67.5	7.364
70.0	6.463
72.5	5.477
75.0	4.382
77.5	3.227
80.0	2.081
85.0	0.360
90.0	0.174
95.0	0.172
100.0	0.176
105.0	0.185
110.0	0.197
115.0	0.221
120.0	0.240
125.0	0.261
130.0	0.286
135.0	0.308
140.0	0.342
145.0	0.410
150.0	0.293
155.0	0.220
160.0	0.214
165.0	0.206
170.0	0.190
175.0	0.141
180.0	0.000

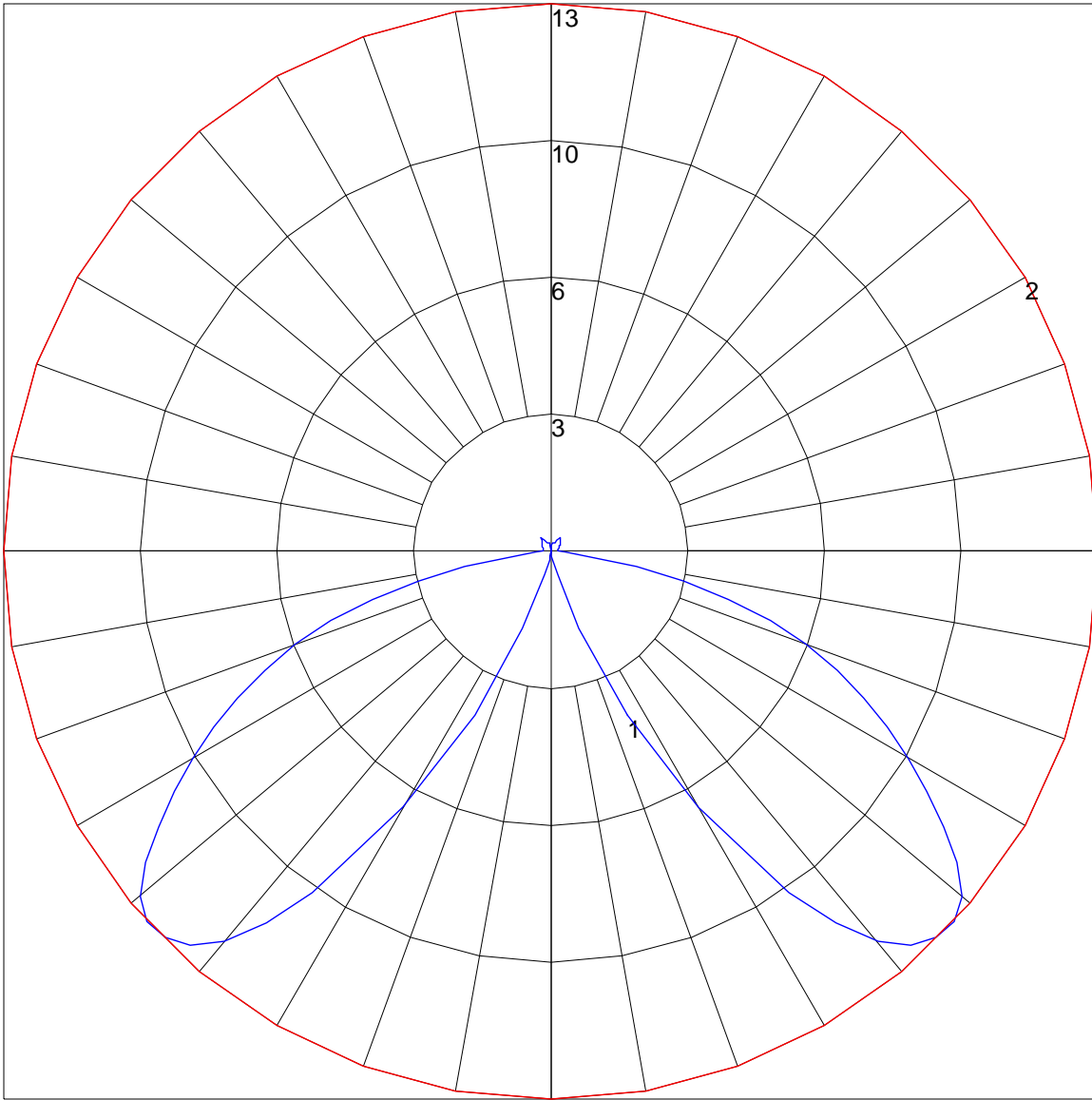
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

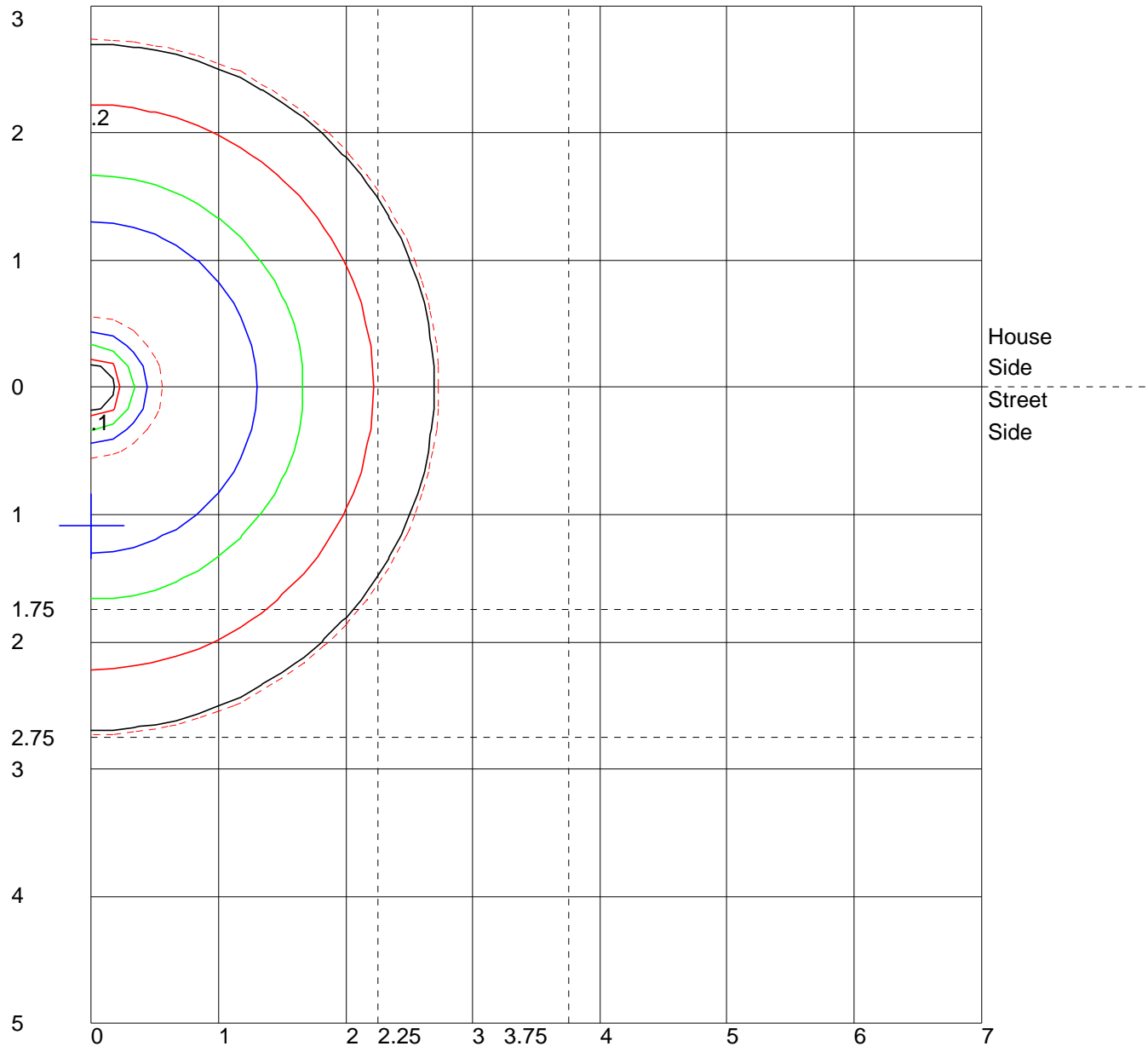
	Lumens	Percent Of Luminaire
Downward Street Side	21.0	48.3
Downward House Side	21.0	48.3
Downward Total	42.0	96.4
Upward Street Side	0.7	1.7
Upward House Side	0.7	1.7
Upward Total	1.4	3.2
Total Flux	43.4	99.6

POLAR GRAPH



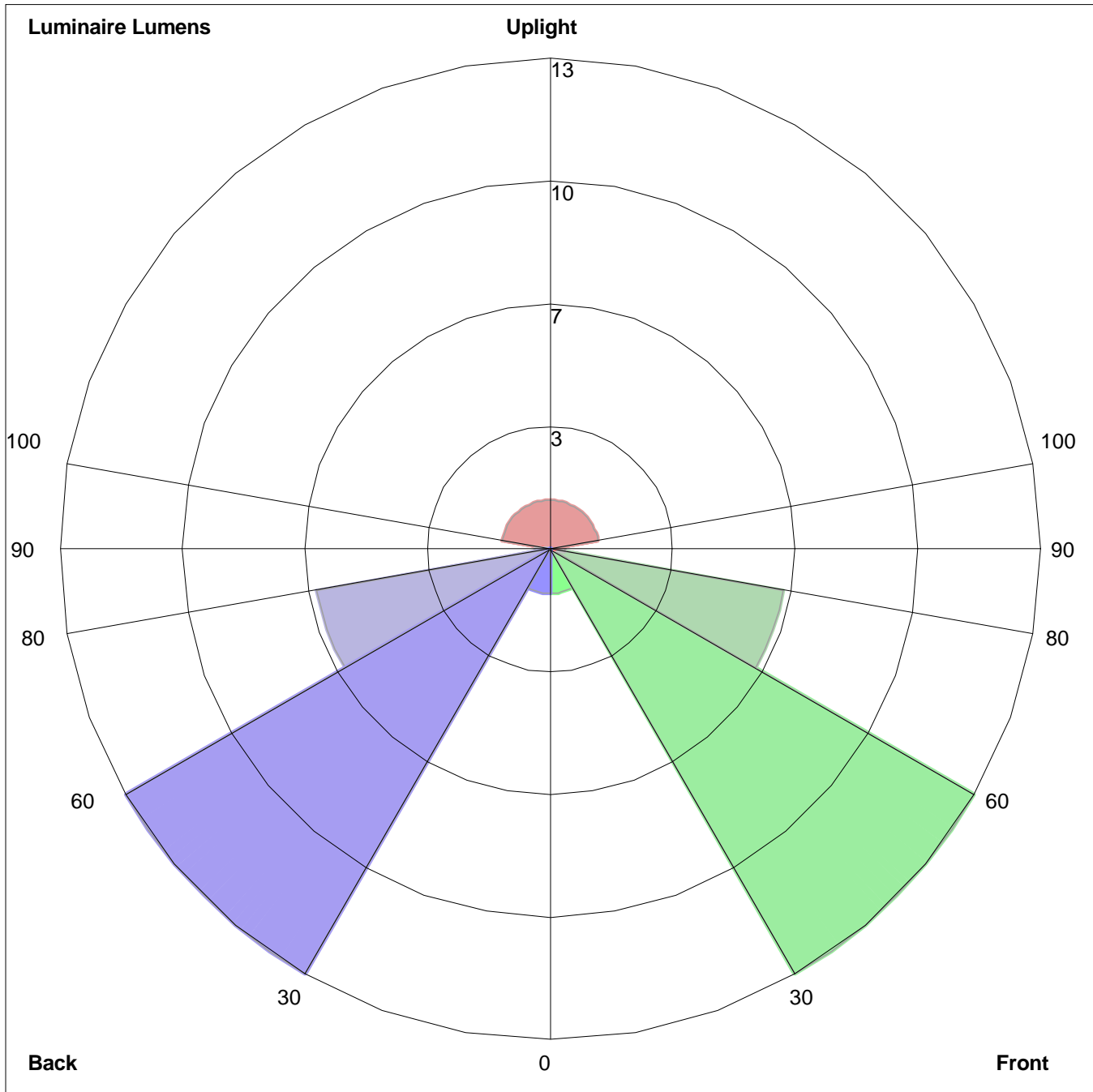
Maximum Candela = 12.999 Located At Horizontal Angle = 0, Vertical Angle = 47.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (47.5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height
 Values Based On 1.667 Foot Mounting Height
 1/2 Maximum Candela Trace Shown As Dashed Curve
 (+) = Maximum Candela Point

LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=1.2, Medium=13.1, High=6.3, Very High=0.4
Back: Low=1.2, Medium=13.1, High=6.3, Very High=0.4
Uplight: Low=0.2, High=1.3

BUG Rating : B0-U1-G0