



8165 E Kaiser Blvd. Anaheim, CA 92808
 p. 714.282.2270
 f. 714.676.5558

Report No: L061606209

Date: 8/17/2016



NVLAP LAB CODE 200927-0

Report No: L061606209

Report Prepared For: Beachside Lighting
 905 Kalaniana'ole Hwy # 29A Kailua, HI. 96734

Model Number: E3-M-2W-A

Test: Electrical and Photometric tests

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. Catalog number is E3-M-2W-A . Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 8/9/16

Date of Tests: 8/12/16 - 8/17/16

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-S1	11/18/16
Xitron Power Analyzer	2503AH	MT-EL01	11/30/16
ITECH DC Power Supply	IT6122	PSDC-03-S1	11/17/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/24/16
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

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

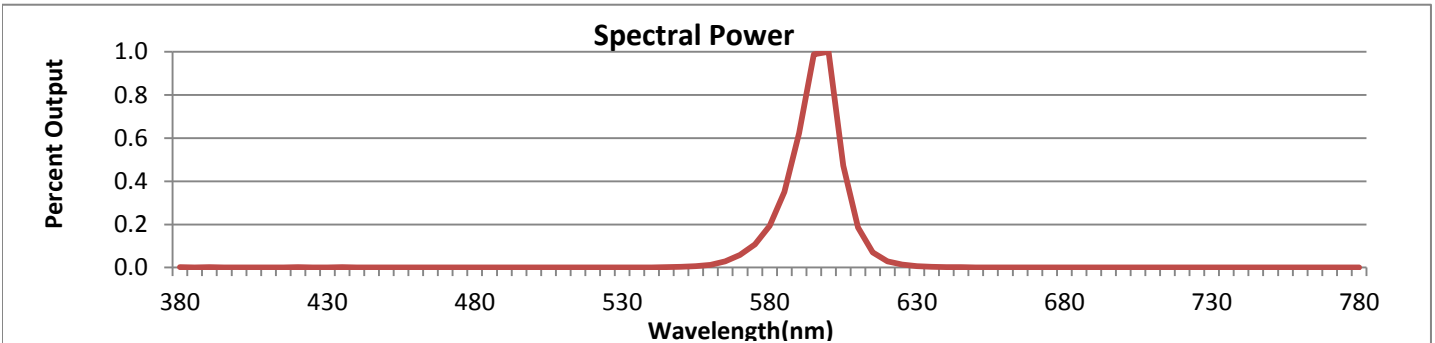
Test Summary

Manufacturer:	Beachside Lighting
Model Number:	E3-M-2W-A
Driver Model Number:	N/A
Total Lumens:	5.60
Input Voltage (VAC/60Hz):	12.00
Input Current (Amp):	0.26
Input Power (W):	2.24
Input Power Factor:	0.71
Current ATHD @ 12V(%):	90%
Current ATHD @ 277V(%):	N/A
Efficacy:	3
Color Rendering Index (CRI):	-23
Correlated Color Temperature (K):	1500
Chromaticity Coordinate x:	0.5952
Chromaticity Coordinate y:	0.4034
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:05
Total Operating Time (Hours):	2:05
Off State Power(W):	0.00



FIG. 1 LUMINAIRE

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.



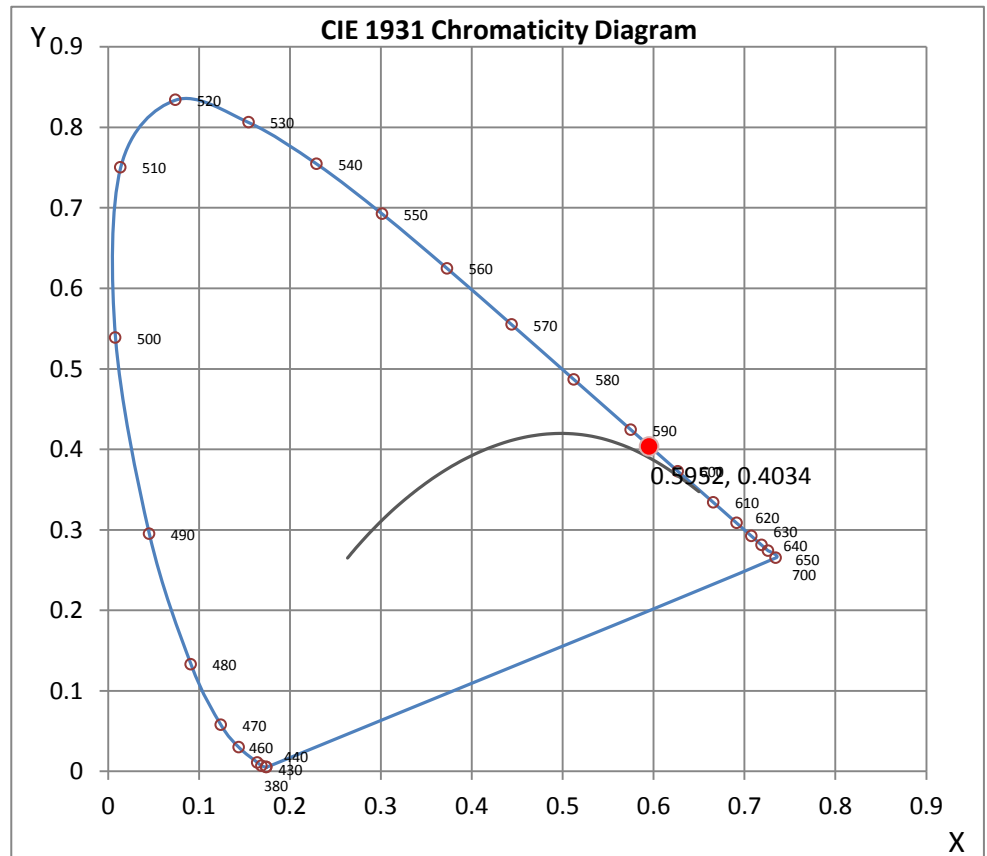
Wavelength	W/m ² nm	440	0.0000	510	0.0000	580	0.1930	650	0.0010	720	0.0000
380	0.0013	450	0.0000	520	0.0000	590	0.6240	660	0.0008	730	0.0000
390	0.0015	460	0.0007	530	0.0012	600	1.0000	670	0.0008	740	0.0000
400	0.0000	470	0.0000	540	0.0010	610	0.1854	680	0.0000	750	0.0009
410	0.0002	480	0.0000	550	0.0037	620	0.0284	690	0.0009	760	0.0005
420	0.0016	490	0.0001	560	0.0126	630	0.0062	700	0.0009	770	0.0000
430	0.0000	500	0.0000	570	0.0579	640	0.0017	710	0.0009	780	0.0007

CRI & CCT

x	0.5952
y	0.4034
u'	0.3580
v'	0.5459
CRI	-22.60
CCT	1500
Duv	0.00884

R Values

R1	-34.34
R2	54.30
R3	13.49
R4	-70.57
R5	-41.74
R6	46.38
R7	-10.40
R8	-137.73
R9	-387.48
R10	34.15
R11	-95.81
R12	-0.83
R13	-14.35
R14	43.74



*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

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 Released by:



Jeff Ahn
Engineering Manager

Test Report Reviewed by:



Steve Kang
Quality Assurance

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



8165 E. Kaiser Blvd. Anaheim, CA 92808
 p. 714.282.2270
 f. 714.676.5558

Photometric Test Report

IES ROAD REPORT
PHOTOMETRIC FILENAME : L061606209.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L061606209
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 8/17/2016
 [MANUFAC] Beachside Lighting
 [LUMCAT] E3-M-2W-A
 [LUMINAIRE] Marker Light
 [BALLASTCAT] N/A
 [LAMPPOSITION] 0,0
 [LAMPCAT] N/A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 12VAC, 2.24W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

IES Classification	Type IV
Longitudinal Classification	Very Long
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	2
Total Luminaire Watts	2.24
Ballast Factor	1.00
Upward Waste Light Ratio	0.81
Maximum Candela	1.36
Maximum Candela Angle	90H 92.5V
Maximum Candela (<90 Degrees Vertical)	1.22
Maximum Candela Angle (<90 Degrees Vertical)	90H 87.5V
Maximum Candela At 90 Degrees Vertical	1.34 (22.3% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	1.22 (20.3% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

IES ROAD REPORT
PHOTOMETRIC FILENAME : L061606209.IES

LUMINAIRE CLASSIFICATION SYSTEM (LCS)

ZONAL LUMEN SUMMARY

	Lumens	% Lamp	% Luminaire	Zone	%
FL - Front-Low (0-30)	0.0	N.A.	0.0		
FM - Front-Medium (30-60)	0.0	N.A.	0.0	0-20	0
FH - Front-High (60-80)	0.1	N.A.	2.1	0-30	0
FVH - Front-Very High (80-90)	0.4	N.A.	7.2	0-40	0
BL - Back-Low (0-30)	0.0	N.A.	0.0	0-60	0
BM - Back-Medium (30-60)	0.0	N.A.	0.0	0-80	4.3
BH - Back-High (60-80)	0.1	N.A.	2.1	0-90	18.8
BVH - Back-Very High (80-90)	0.4	N.A.	7.2	10-90	18.8
UL - Uplight-Low (90-100)	1.2	N.A.	20.9	20-40	0
UH - Uplight-High (100-180)	3.4	N.A.	60.3	20-50	0
				40-70	0.7
Total	5.6	N.A.	100.0	60-80	4.3
				70-80	3.6
BUG Rating	B0-U1-G0			80-90	14.5
				90-110	37
				90-120	51.1
				90-130	63.1
				90-150	76.1
				90-180	81.3
				110-180	44.3
				0-180	99.9

IES ROAD REPORT
PHOTOMETRIC FILENAME : L061606209.IES

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65.0	0.00	0.00	0.00	0.00	0.02	0.03	0.04	0.03	0.04	0.04
70.0	0.00	0.00	0.03	0.03	0.04	0.04	0.06	0.06	0.06	0.06
72.5	0.00	0.03	0.04	0.05	0.07	0.10	0.10	0.10	0.10	0.10
75.0	0.00	0.03	0.04	0.06	0.10	0.14	0.16	0.16	0.16	0.16
77.5	0.07	0.07	0.09	0.11	0.21	0.27	0.29	0.26	0.23	0.22
80.0	0.12	0.10	0.11	0.17	0.34	0.43	0.44	0.38	0.31	0.30
82.5	0.28	0.23	0.18	0.28	0.49	0.61	0.62	0.53	0.42	0.37
85.0	0.63	0.47	0.36	0.46	0.72	0.83	0.79	0.70	0.53	0.47
87.5	0.99	0.90	0.79	0.84	0.99	1.02	0.97	0.83	0.63	0.55
90.0	1.24	1.22	1.17	1.17	1.18	1.15	1.09	0.93	0.70	0.60
92.5	1.32	1.34	1.31	1.28	1.23	1.19	1.13	0.96	0.72	0.63
95.0	1.30	1.30	1.28	1.24	1.20	1.16	1.10	0.93	0.73	0.64
97.5	1.22	1.21	1.20	1.15	1.11	1.08	1.03	0.88	0.71	0.64
100.0	1.06	1.05	1.05	1.03	1.01	0.97	0.92	0.80	0.67	0.64
102.5	0.97	0.99	0.99	0.97	0.92	0.90	0.84	0.74	0.64	0.61
105.0	0.96	0.97	0.99	0.96	0.90	0.84	0.78	0.70	0.63	0.59
107.5	0.97	0.98	1.02	0.96	0.87	0.84	0.78	0.68	0.60	0.57
110.0	0.99	1.00	1.00	0.95	0.88	0.83	0.77	0.67	0.60	0.57
115.0	0.99	0.99	0.97	0.92	0.87	0.81	0.76	0.67	0.59	0.57
120.0	0.96	0.96	0.94	0.90	0.86	0.80	0.74	0.64	0.58	0.56
125.0	0.92	0.93	0.90	0.88	0.83	0.79	0.70	0.64	0.56	0.53
130.0	0.82	0.82	0.80	0.77	0.74	0.69	0.64	0.56	0.50	0.49
135.0	0.70	0.70	0.69	0.65	0.63	0.58	0.55	0.50	0.44	0.43
140.0	0.61	0.60	0.58	0.57	0.55	0.52	0.48	0.44	0.41	0.39
145.0	0.52	0.52	0.50	0.50	0.47	0.45	0.42	0.39	0.37	0.37
150.0	0.47	0.45	0.45	0.44	0.43	0.40	0.39	0.37	0.35	0.35
155.0	0.40	0.40	0.41	0.39	0.37	0.37	0.36	0.36	0.34	0.33
160.0	0.38	0.37	0.37	0.37	0.36	0.35	0.33	0.32	0.32	0.31
165.0	0.35	0.34	0.34	0.32	0.32	0.32	0.32	0.32	0.30	0.30
170.0	0.30	0.30	0.29	0.29	0.28	0.29	0.27	0.28	0.29	0.29
175.0	0.26	0.25	0.25	0.24	0.25	0.25	0.25	0.25	0.24	0.24
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

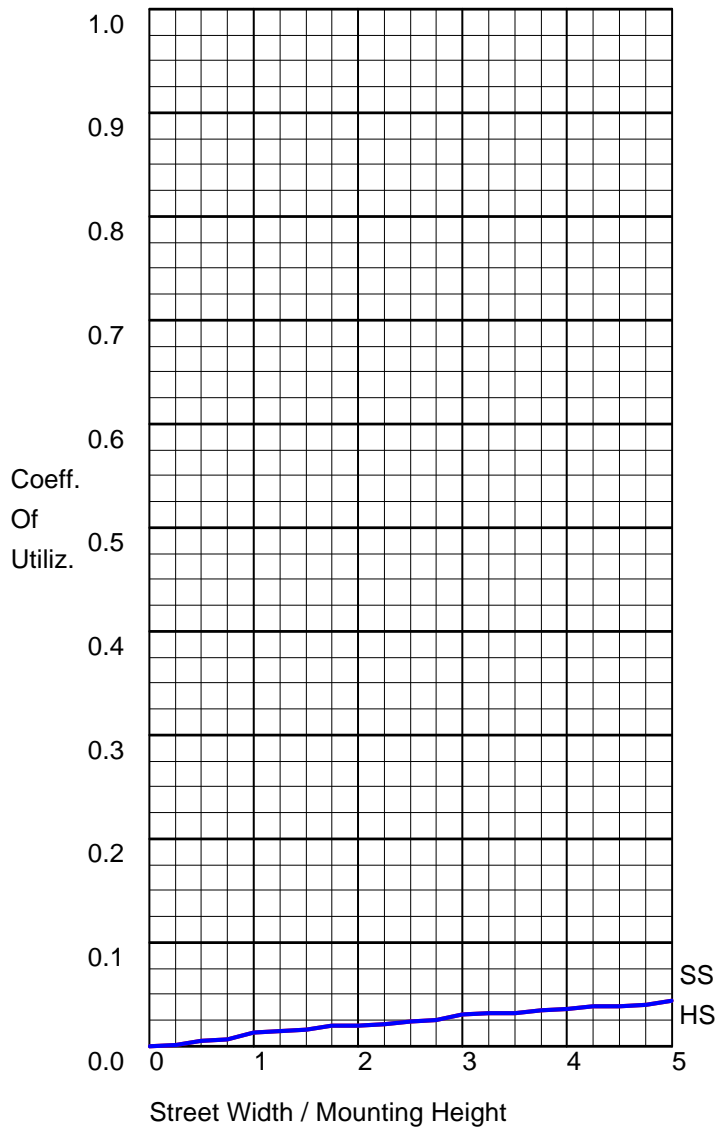
Vert. Angles	Horizontal Angles									
	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	
0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
30.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
35.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
40.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
45.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

IES ROAD REPORT
PHOTOMETRIC FILENAME : L061606209.IES

CANDELA TABULATION - (Cont.)

50.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65.0	0.04	0.04	0.04	0.05	0.06	0.06	0.07	0.07	0.07
70.0	0.08	0.08	0.09	0.10	0.11	0.10	0.12	0.12	0.10
72.5	0.10	0.11	0.14	0.15	0.17	0.17	0.18	0.17	0.17
75.0	0.16	0.17	0.19	0.21	0.23	0.24	0.24	0.26	0.24
77.5	0.24	0.27	0.31	0.35	0.37	0.39	0.40	0.41	0.40
80.0	0.33	0.41	0.46	0.51	0.55	0.57	0.59	0.59	0.59
82.5	0.44	0.55	0.67	0.73	0.77	0.78	0.81	0.82	0.82
85.0	0.56	0.72	0.86	0.94	0.98	1.01	1.02	1.04	1.03
87.5	0.64	0.86	1.01	1.10	1.15	1.17	1.21	1.21	1.22
90.0	0.70	0.93	1.10	1.19	1.24	1.27	1.30	1.32	1.34
92.5	0.74	0.97	1.12	1.22	1.27	1.29	1.33	1.35	1.36
95.0	0.74	0.94	1.10	1.17	1.21	1.24	1.30	1.33	1.34
97.5	0.72	0.90	1.03	1.10	1.14	1.18	1.23	1.26	1.27
100.0	0.69	0.82	0.92	0.99	1.02	1.06	1.07	1.10	1.11
102.5	0.64	0.73	0.84	0.90	0.93	0.96	0.97	0.98	0.97
105.0	0.63	0.70	0.79	0.84	0.87	0.90	0.91	0.92	0.92
107.5	0.61	0.68	0.76	0.81	0.84	0.86	0.89	0.90	0.90
110.0	0.61	0.67	0.74	0.82	0.84	0.87	0.89	0.89	0.89
115.0	0.59	0.66	0.74	0.82	0.84	0.87	0.88	0.89	0.89
120.0	0.57	0.64	0.72	0.79	0.84	0.87	0.88	0.89	0.89
125.0	0.57	0.62	0.70	0.77	0.81	0.84	0.84	0.87	0.87
130.0	0.50	0.54	0.62	0.70	0.71	0.75	0.77	0.77	0.77
135.0	0.44	0.47	0.52	0.57	0.61	0.63	0.64	0.65	0.66
140.0	0.40	0.43	0.46	0.50	0.53	0.55	0.56	0.56	0.56
145.0	0.37	0.39	0.41	0.44	0.46	0.47	0.47	0.49	0.49
150.0	0.35	0.36	0.38	0.39	0.42	0.43	0.44	0.44	0.44
155.0	0.34	0.35	0.36	0.37	0.37	0.39	0.40	0.40	0.40
160.0	0.31	0.32	0.33	0.33	0.35	0.36	0.37	0.35	0.35
165.0	0.31	0.31	0.30	0.31	0.32	0.32	0.32	0.32	0.33
170.0	0.27	0.28	0.29	0.29	0.28	0.28	0.28	0.28	0.28
175.0	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

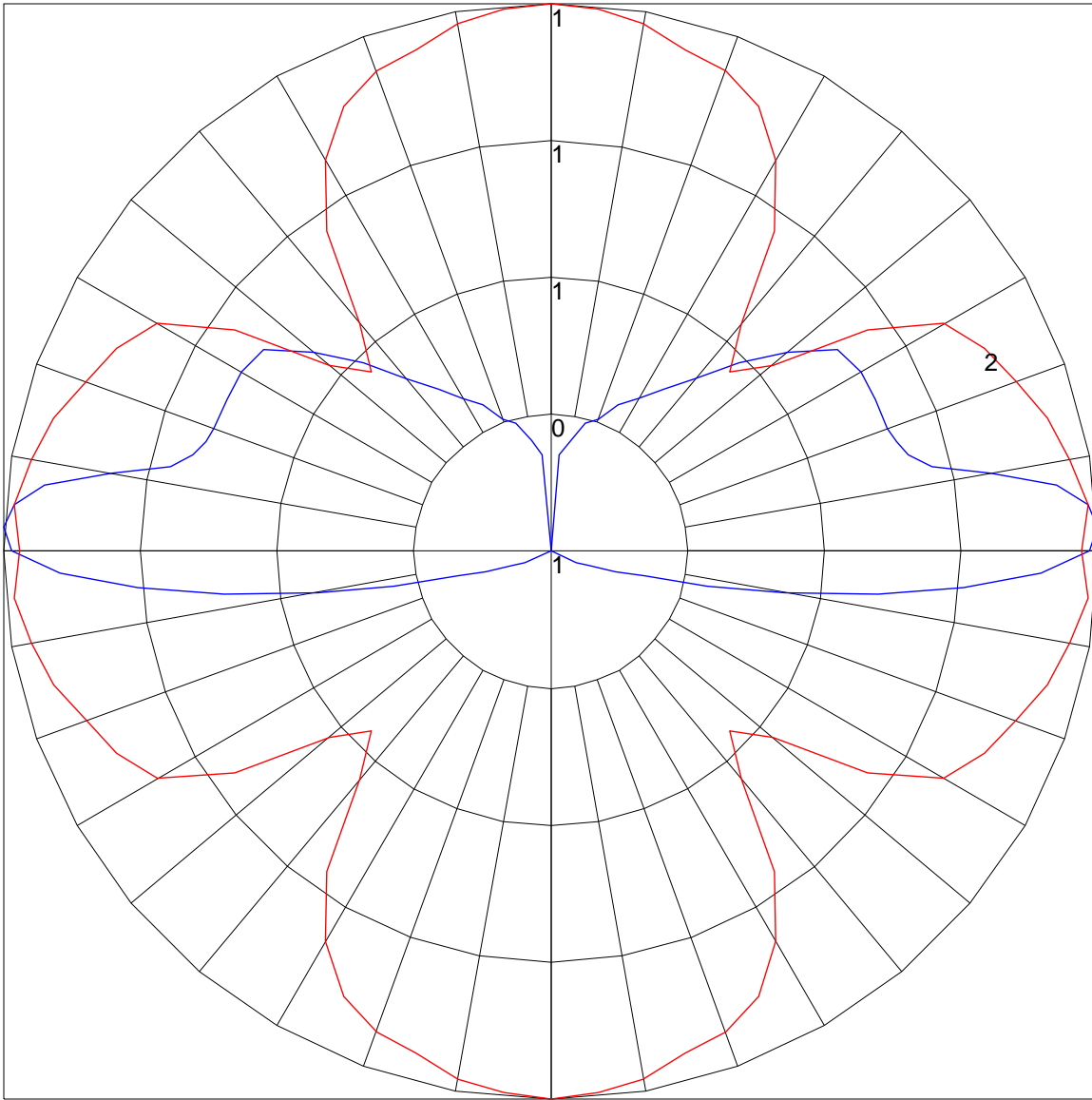
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

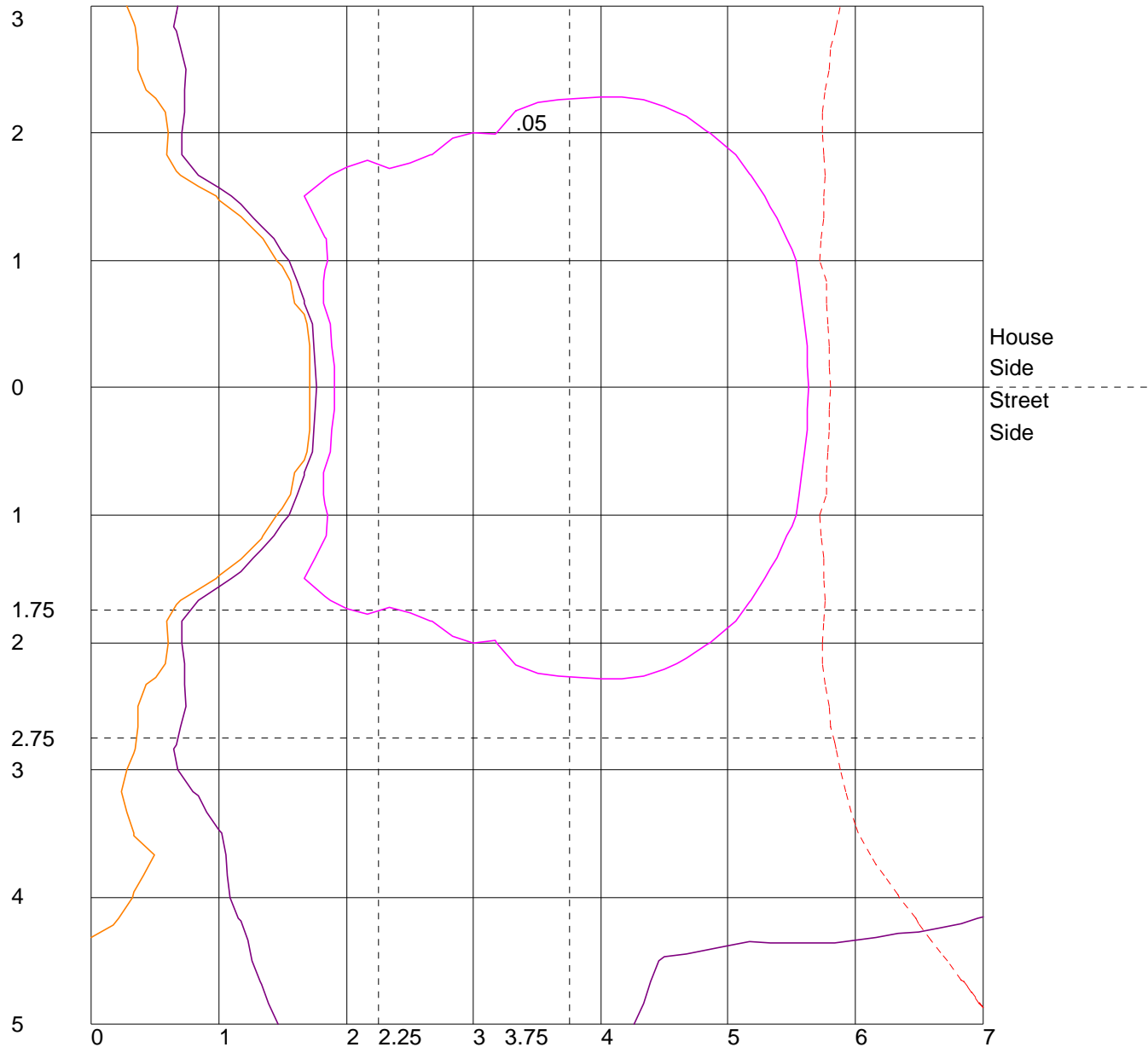
	Lumens	Percent Of Luminaire
Downward Street Side	0.5	9.4
Downward House Side	0.5	9.4
Downward Total	1.0	17.9
Upward Street Side	2.3	40.6
Upward House Side	2.3	40.6
Upward Total	4.6	82.2
Total Flux	5.6	100.1

POLAR GRAPH



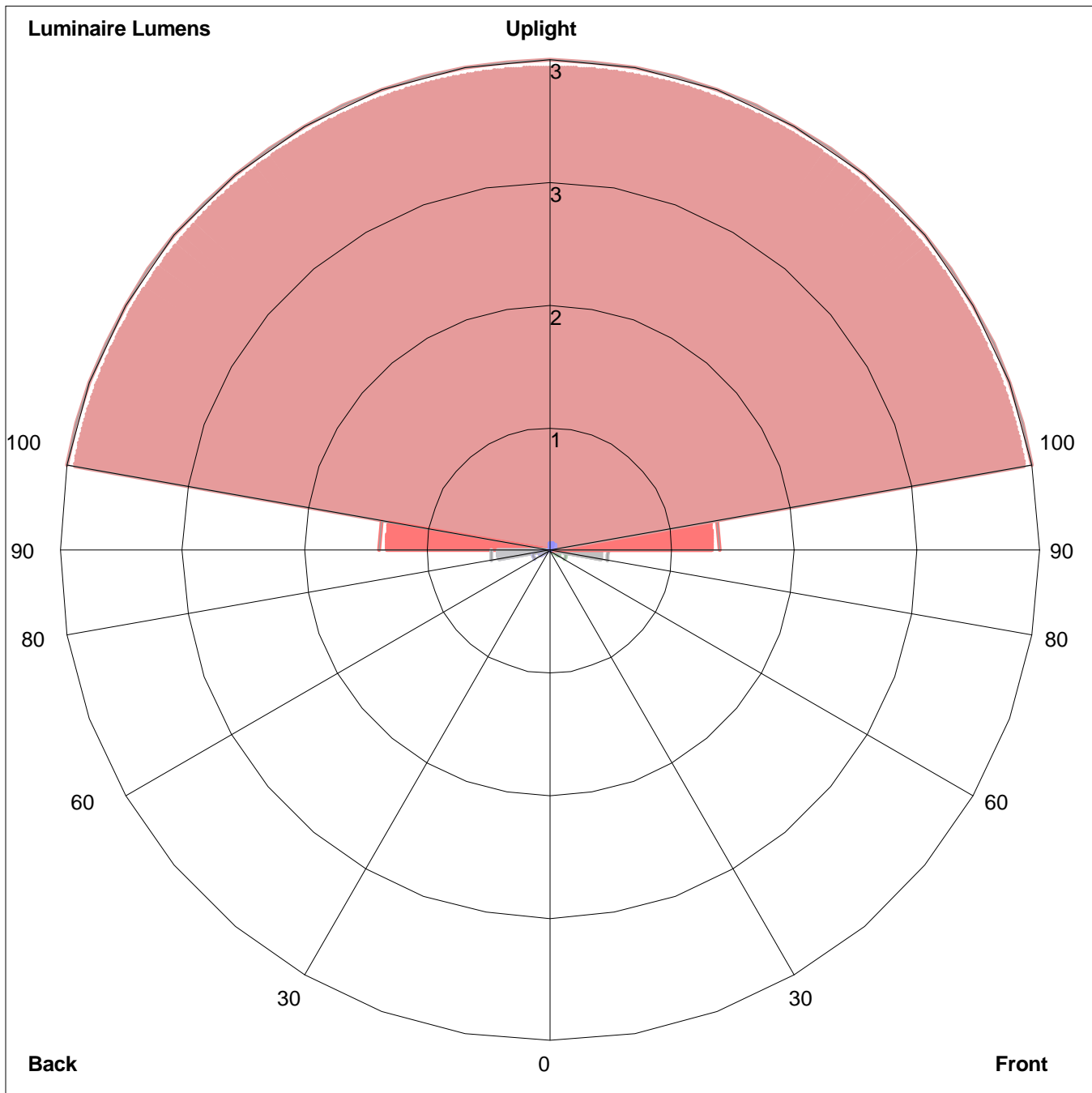
Maximum Candela = 1.36 Located At Horizontal Angle = 90, Vertical Angle = 92.5
1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (92.5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height
 Values Based On .25 Foot Mounting Height
 1/2 Maximum Candela Trace Shown As Dashed Curve
 (+) = Maximum Candela Point

LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=0.0, Medium=0.0, High=0.1, Very High=0.4
Back: Low=0.0, Medium=0.0, High=0.1, Very High=0.4
Uplight: Low=1.2, High=3.4

BUG Rating : B0-U1-G0