



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

Test #: L06131605

Date: 6/21/2013



NVLAP LAB CODE 200927-0

Test Report: L06131605

Model Number: LBDH-300 12 WATTS

Report Prepared For: AURORA LIGHT INC
2742 LOKER AVE WEST CARLSBAD, CA 92010

Test: Electrical and Photometric tests as required by the IESNA test standards.

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

Description of Sample: Client submitted the sample. Fixture catalog number is LBDH-300 12 WATTS
. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no modifications.

Sample Arrival Date: 5/24/13

Date of Tests: 6/19/13 - 6/20/13

Seasoning of Sample SSL: 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	01/04/14
Xitron Power Analysis System	2503AH	MT-EL01	01/09/14
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/04/14
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.

LM-79 Test Summary

Manufacturer:	AURORA LIGHT INC
Model Number:	LBDH-300 12 WATTS
LAMPCAT:	N/A
Driver Model Number:	N/A
Total Lumens:	97.60
Input Voltage (VAC/60Hz):	15.00
Input Current (Amp):	1.19
Input Power (W):	13.69
Input Power Factor:	0.7630
Total Harmonic Distortion @ 15V(%):	76.1%
Total Harmonic Distortion @ 277V(%):	N/A
Efficacy:	7.13
Color Rendering Index (CRI):	75.50
Correlated Color Temperature (K):	2252
Chromaticity Coordinate x:	0.5027
Chromaticity Coordinate y:	0.4186
Ambient Temperature (°F):	77.0
Stabilization Time (Hours):	1:15
Total Operating Time (Hours):	2:25
Off State Power(W):	0.00

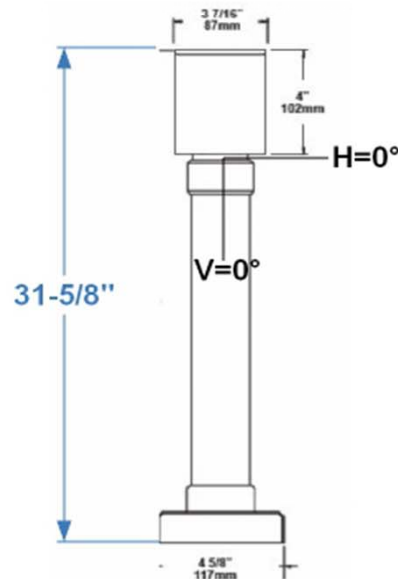
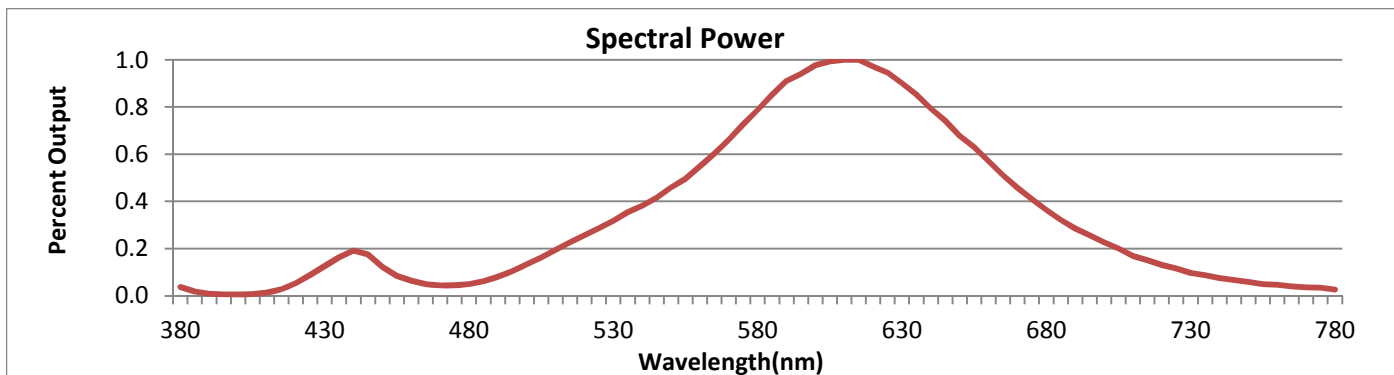


FIG1. LUMIANIRE



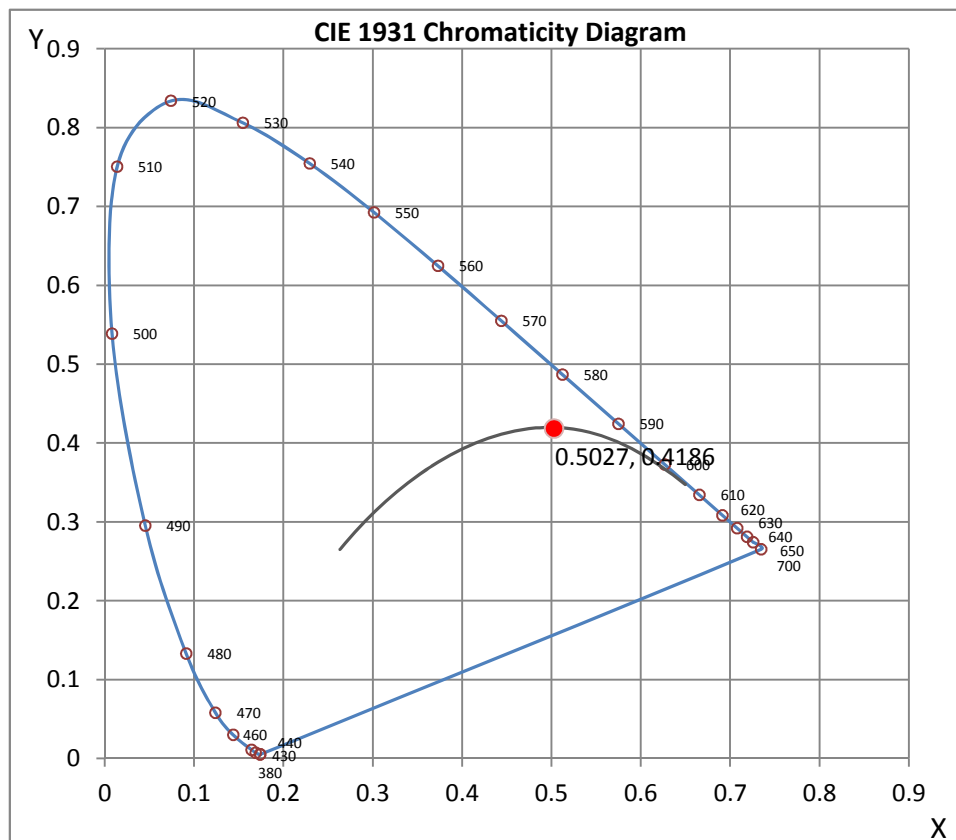
Wavelength	W/m ² nm	440	0.0013	510	0.0013	580	0.0054	650	0.0047	720	0.0009
380	0.0003	450	0.0008	520	0.0018	590	0.0062	660	0.0039	730	0.0007
390	0.0001	460	0.0004	530	0.0022	600	0.0067	670	0.0031	740	0.0005
400	0.0000	470	0.0003	540	0.0026	610	0.0069	680	0.0025	750	0.0004
410	0.0001	480	0.0003	550	0.0031	620	0.0067	690	0.0020	760	0.0003
420	0.0004	490	0.0006	560	0.0038	630	0.0062	700	0.0016	770	0.0002
430	0.0009	500	0.0009	570	0.0045	640	0.0054	710	0.0012	780	0.0002

CRI & CCT

x	0.5027
y	0.4186
u'	0.2865
v'	0.5368
CRI	75.50
CCT	2252
Duv	0.00106

R Values

R1	72.38
R2	85.45
R3	96.98
R4	71.12
R5	70.45
R6	81.00
R7	78.73
R8	48.27
R9	-7.65
R10	67.84
R11	67.09
R12	61.29
R13	75.09
R14	98.32





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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.

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: 11*

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



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Photometric Test Report

IES ROAD REPORT

PHOTOMETRIC FILENAME : L06131605.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L06131605
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 6/20/2013
[MANUFAC] AURORA LIGHT
[LUMCAT] LBDH-300 12 WATTS
[LUMINAIRE] 3-7/16"DIA. X 31-5/8"H. LED FIXTURE
[MORE] CLEAR LENS
[LAMPPOSITION] 0,0
[LAMPCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 15VAC, 13.69W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

IES Classification	Type V
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	98
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	7
Total Luminaire Watts	13.69
Ballast Factor	1.00
Upward Waste Light Ratio	0.20
Maximum Candela	65
Maximum Candela Angle	0H 5V
Maximum Candela (<90 Degrees Vertical)	65
Maximum Candela Angle (<90 Degrees Vertical)	0H 5V
Maximum Candela At 90 Degrees Vertical	1.19 (1.2% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	1.89 (1.9% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

IES ROAD REPORT
PHOTOMETRIC FILENAME : L06131605.IES

LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	14.7	N.A.	15.0
FM - Front-Medium (30-60)	19.3	N.A.	19.7
FH - Front-High (60-80)	4.3	N.A.	4.4
FVH - Front-Very High (80-90)	0.8	N.A.	0.8
BL - Back-Low (0-30)	14.7	N.A.	15.0
BM - Back-Medium (30-60)	19.3	N.A.	19.7
BH - Back-High (60-80)	4.3	N.A.	4.4
BVH - Back-Very High (80-90)	0.8	N.A.	0.8
UL - Uplight-Low (90-100)	2.1	N.A.	2.1
UH - Uplight-High (100-180)	17.4	N.A.	17.8
Total	97.7	N.A.	100.0
BUG Rating	B0-U2-G0		

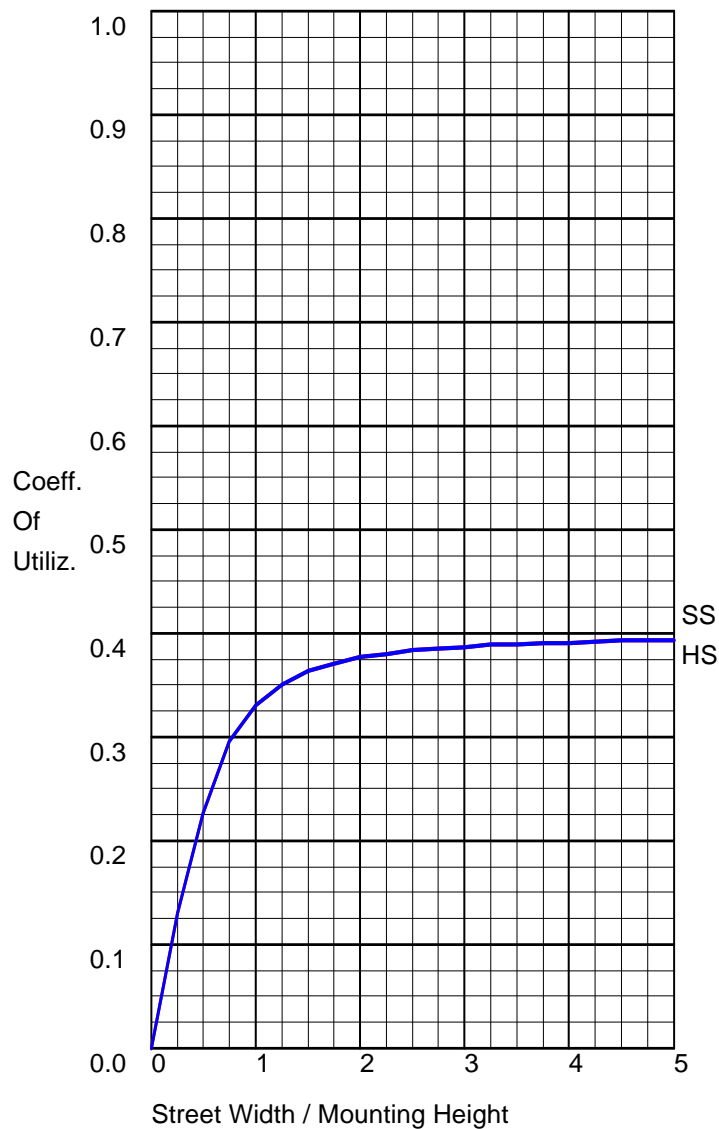
IES ROAD REPORT
PHOTOMETRIC FILENAME : L06131605.IES

CANDELA TABULATION

Vert. Horizontal Angles
Angles

	<u>0</u>
0	38.51
5	65.00
10	44.05
15	31.20
20	29.37
25	32.38
30	33.43
35	27.93
40	22.22
45	16.72
50	11.42
55	9.11
60	7.39
65	5.65
70	4.05
75	2.70
80	1.89
85	1.44
90	1.19
95	1.79
100	2.78
105	3.49
110	4.07
115	4.64
120	4.28
125	4.22
130	3.92
135	4.37
140	4.03
145	3.47
150	1.01
155	0.56
160	0.45
165	0.43
170	0.42
175	0.39
180	0.00

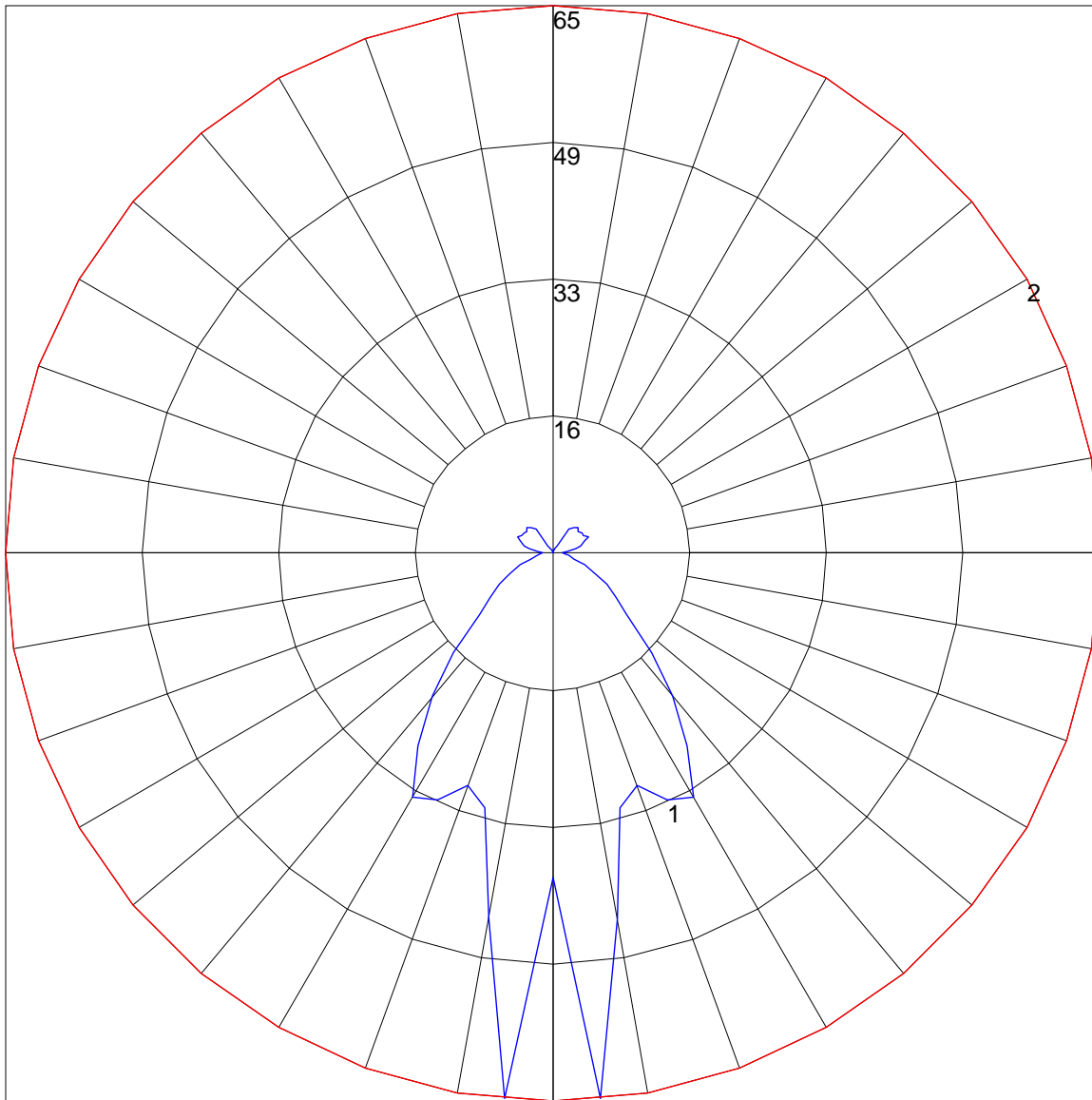
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

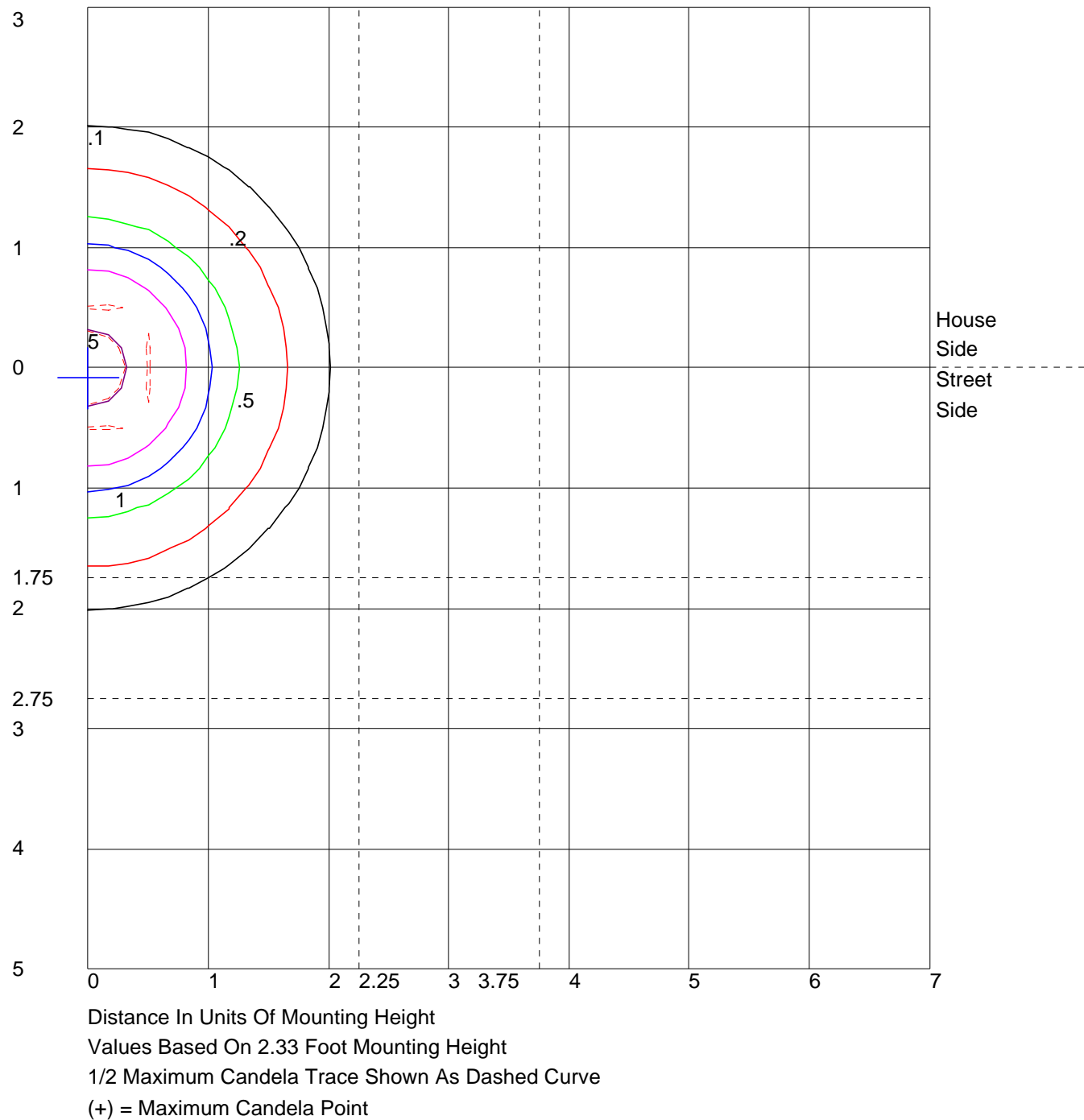
	Lumens	Percent Of Luminaire
Downward Street Side	39.1	40.1
Downward House Side	39.1	40.1
Downward Total	78.2	80.1
Upward Street Side	9.7	9.9
Upward House Side	9.7	9.9
Upward Total	19.4	19.9
Total Flux	97.6	100.0

POLAR GRAPH

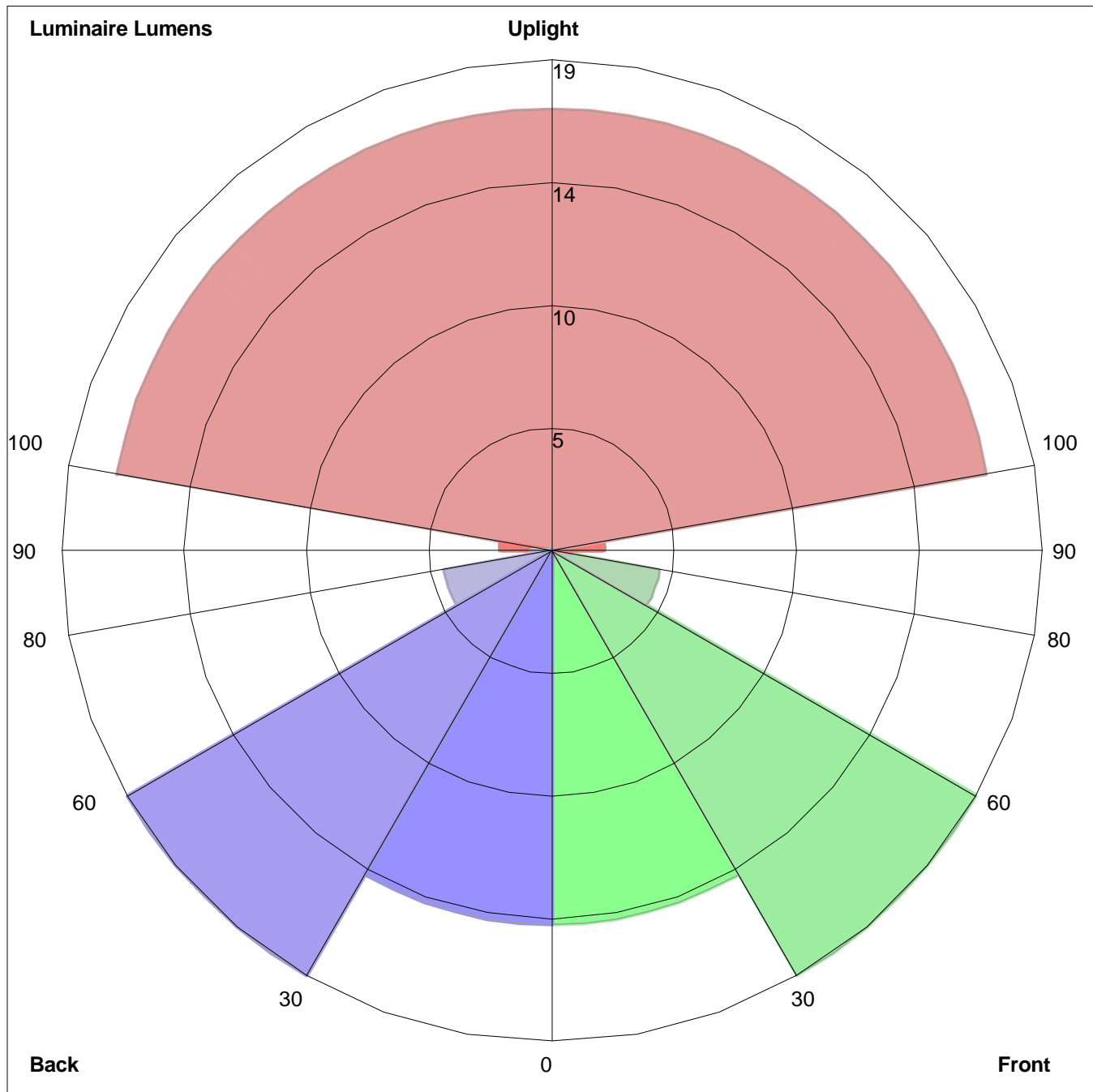


Maximum Candela = 65 Located At Horizontal Angle = 0, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=14.7, Medium=19.3, High=4.3, Very High=0.8
Back: Low=14.7, Medium=19.3, High=4.3, Very High=0.8
Uplight: Low=2.1, High=17.4

BUG Rating : B0-U2-G0