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Report No: L071407702R01

Date: 8/6/2014



NVLAP LAB CODE 200927-0

Report No: L071407702R01

Report Prepared For: Cast Lighting
 1120-A Goffle Rd., Hawthorne, NJ 07506

Model Number: CPL13X

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 CPL13X. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 7/30/14

Date of Tests: 8/5/14 - 8/5/14

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	01/04/15
Xitron Power Analysis System	2503AH	MT-EL01	01/09/15
BK Precision DC Power Supply	1747	PSDC-04	01/08/15
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/04/15
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.

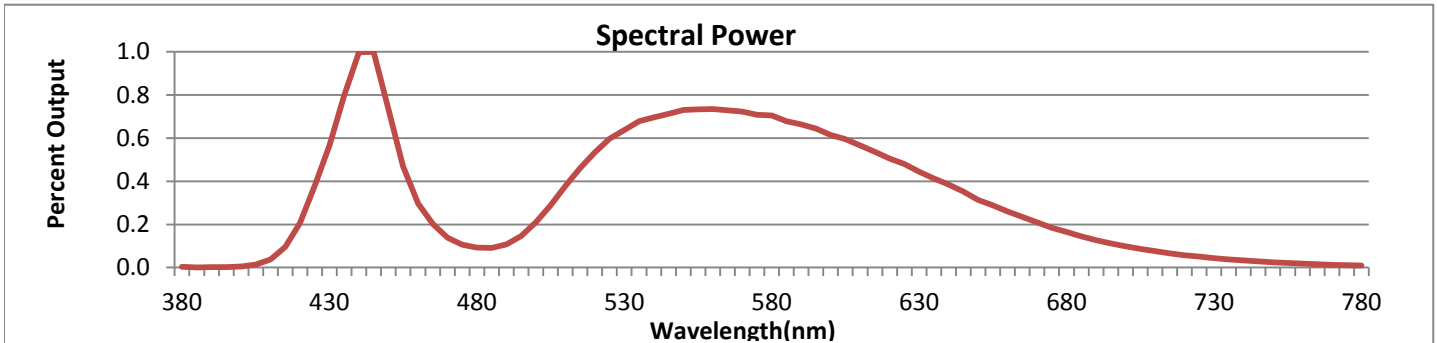
Test Summary

Manufacturer:	Cast Lighting
Model Number:	CPL13X
Driver Model Number:	CUSTOM DRIVER
Total Lumens:	892.00
Input Voltage (VAC/60Hz):	14.00
Input Current (Amp):	1.26
Input Power (W):	16.68
Input Power Factor:	0.94
Total Harmonic Distortion @ 14V(%):	35%
Total Harmonic Distortion @ 277V(%):	N/A
Efficacy:	53
Color Rendering Index (CRI):	70
Correlated Color Temperature (K):	4794
Chromaticity Coordinate x:	0.3519
Chromaticity Coordinate y:	0.3621
Ambient Temperature (°F):	77.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:35
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.



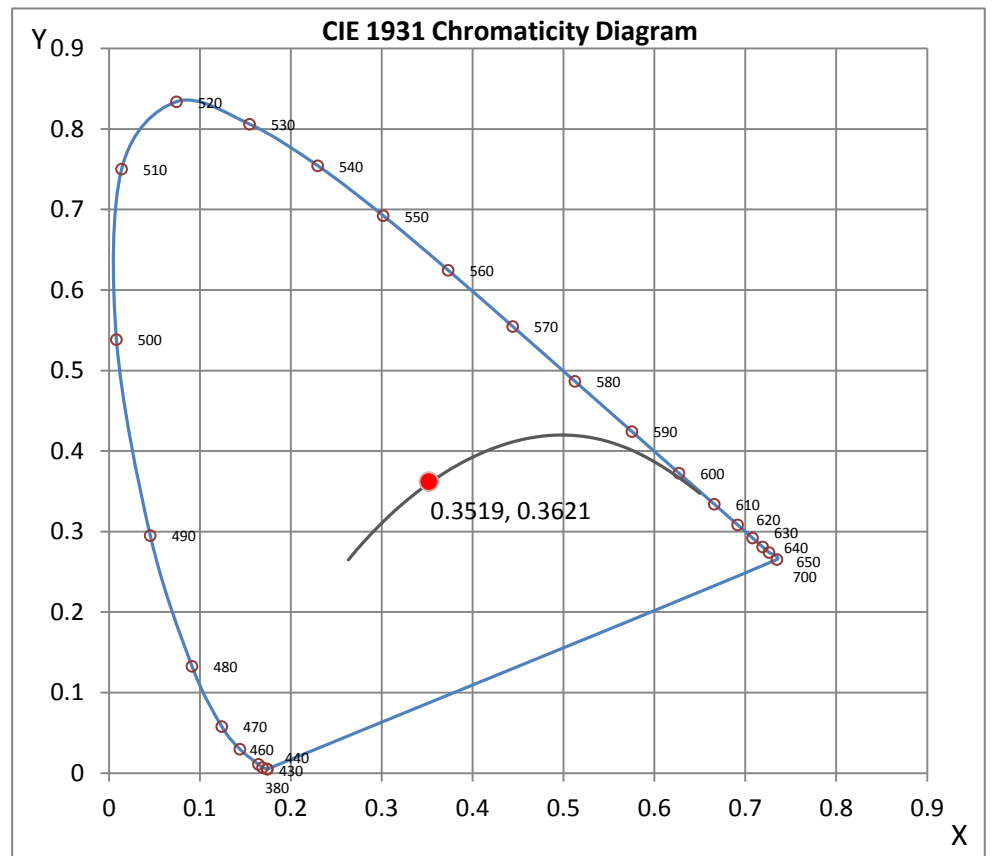
Wavelength	W/m ² nm	440	0.0650	510	0.0245	580	0.0460	650	0.0205	720	0.0037
380	0.0002	450	0.0480	520	0.0347	590	0.0433	660	0.0169	730	0.0029
390	0.0001	460	0.0194	530	0.0415	600	0.0400	670	0.0136	740	0.0022
400	0.0003	470	0.0090	540	0.0454	610	0.0369	680	0.0107	750	0.0016
410	0.0025	480	0.0060	550	0.0476	620	0.0329	690	0.0082	760	0.0012
420	0.0135	490	0.0070	560	0.0478	630	0.0290	700	0.0064	770	0.0008
430	0.0368	500	0.0137	570	0.0471	640	0.0251	710	0.0050	780	0.0006

CRI & CCT

x	0.3519
y	0.3621
u'	0.2119
v'	0.4907
CRI	69.60
CCT	4794
Duv	0.00256

R Values

R1	68.73
R2	72.71
R3	74.61
R4	71.48
R5	68.13
R6	62.13
R7	78.22
R8	60.60
R9	-17.84
R10	34.44
R11	68.44
R12	38.99
R13	68.53
R14	84.96



*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 : Wilson Khounlavong

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*



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Photometric Test Report

IES ROAD REPORT
PHOTOMETRIC FILENAME : L071407702.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L071407702
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 8/5/2014
 [MANUFAC] CAST LIGHTING
 [LUMCAT] CPL13X
 [LUMINAIRE] 6-3/4"DIA X 35-1/4"H. LED LUMINAIRE
 [MORE] LED WITH OPTICS. THREE LEDS
 [BALLASTCAT] CUSTOM DRIVER
 [LAMPPOSITION] 0,0
 [LAMPCAT] N/A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 14VAC, 16.68W
 [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	892
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	53
Total Luminaire Watts	16.68
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	330.77
Maximum Candela Angle	0H 15V
Maximum Candela (<90 Degrees Vertical)	330.77
Maximum Candela Angle (<90 Degrees Vertical)	0H 15V
Maximum Candela At 90 Degrees Vertical	0 (0.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	15.22 (1.7% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

IES ROAD REPORT
PHOTOMETRIC FILENAME : L071407702.IES

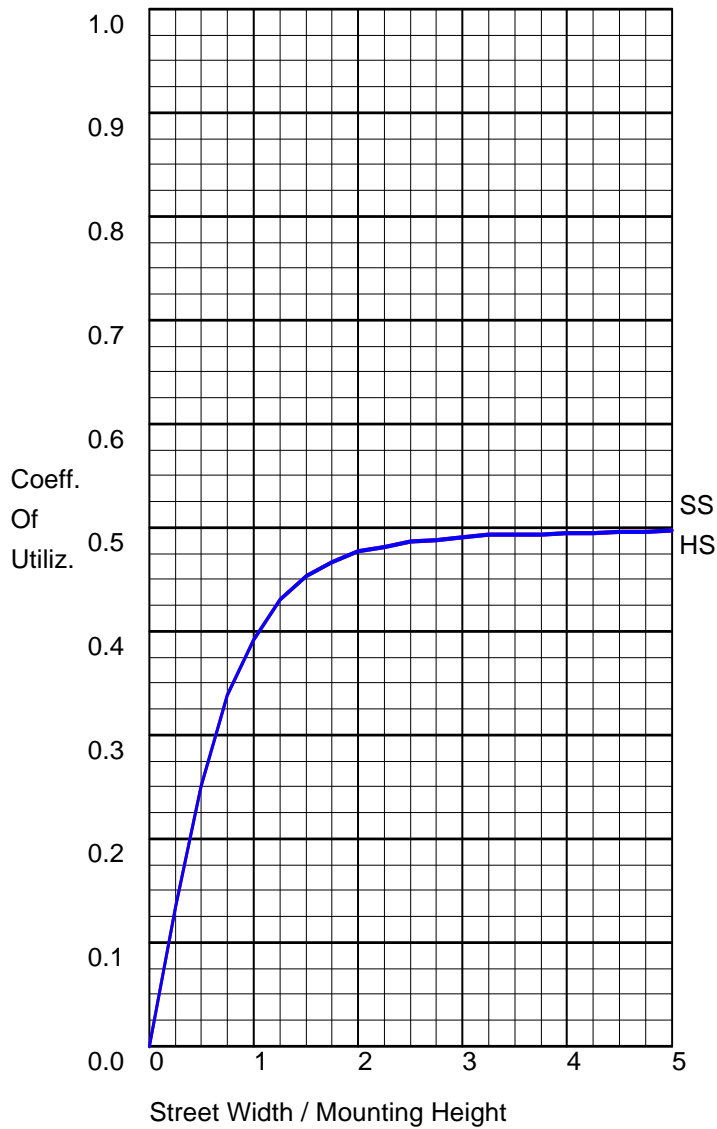
LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	128.8	N.A.	14.4
FM - Front-Medium (30-60)	255.1	N.A.	28.6
FH - Front-High (60-80)	57.2	N.A.	6.4
FVH - Front-Very High (80-90)	4.9	N.A.	0.5
BL - Back-Low (0-30)	128.8	N.A.	14.4
BM - Back-Medium (30-60)	255.1	N.A.	28.6
BH - Back-High (60-80)	57.2	N.A.	6.4
BVH - Back-Very High (80-90)	4.9	N.A.	0.5
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	892.0	N.A.	100.0
BUG Rating	B1-U0-G0		

CANDELA TABULATION

Vert. Angles	Horizontal Angles
	<u>0</u>
0	0.00
5	251.92
10	327.93
15	330.77
20	323.27
25	304.51
30	288.87
35	277.02
40	256.83
45	241.28
50	218.02
55	168.76
60	128.28
65	80.52
70	50.11
75	25.19
80	15.22
85	10.29
90	0.00

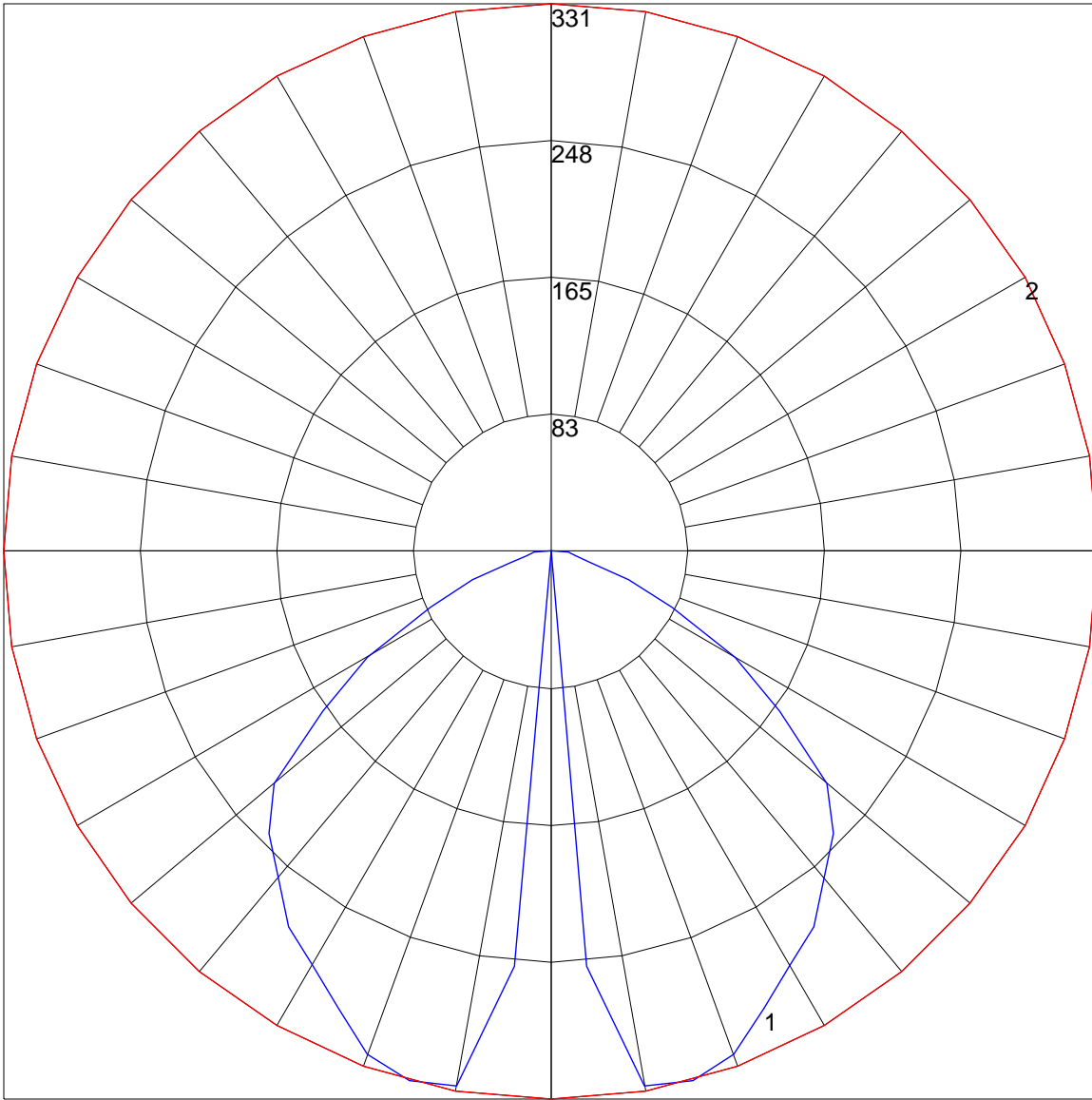
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

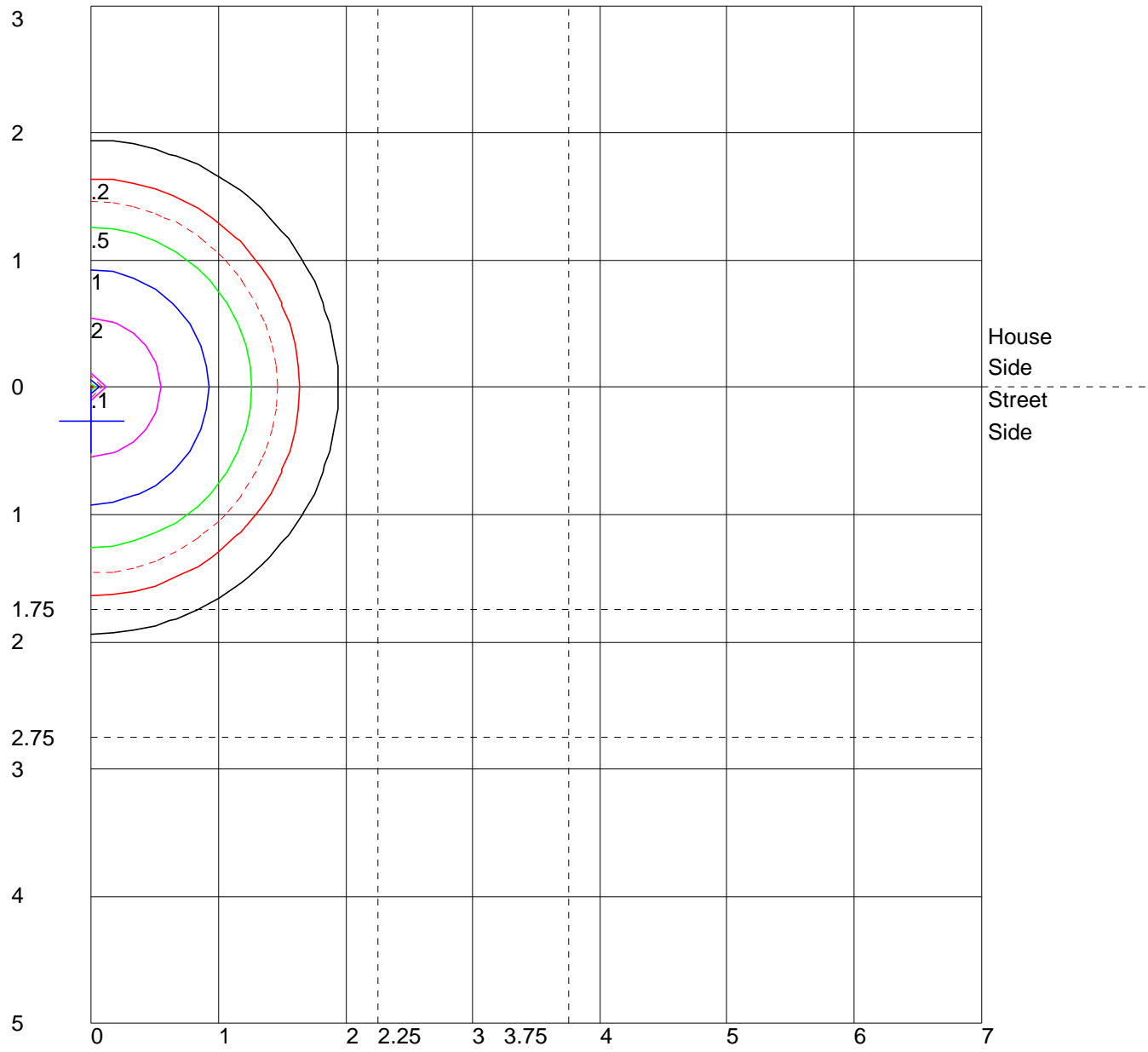
	Lumens	Percent Of Luminaire
Downward Street Side	446.0	50.0
Downward House Side	446.0	50.0
Downward Total	892.0	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	892.0	100.0

POLAR GRAPH



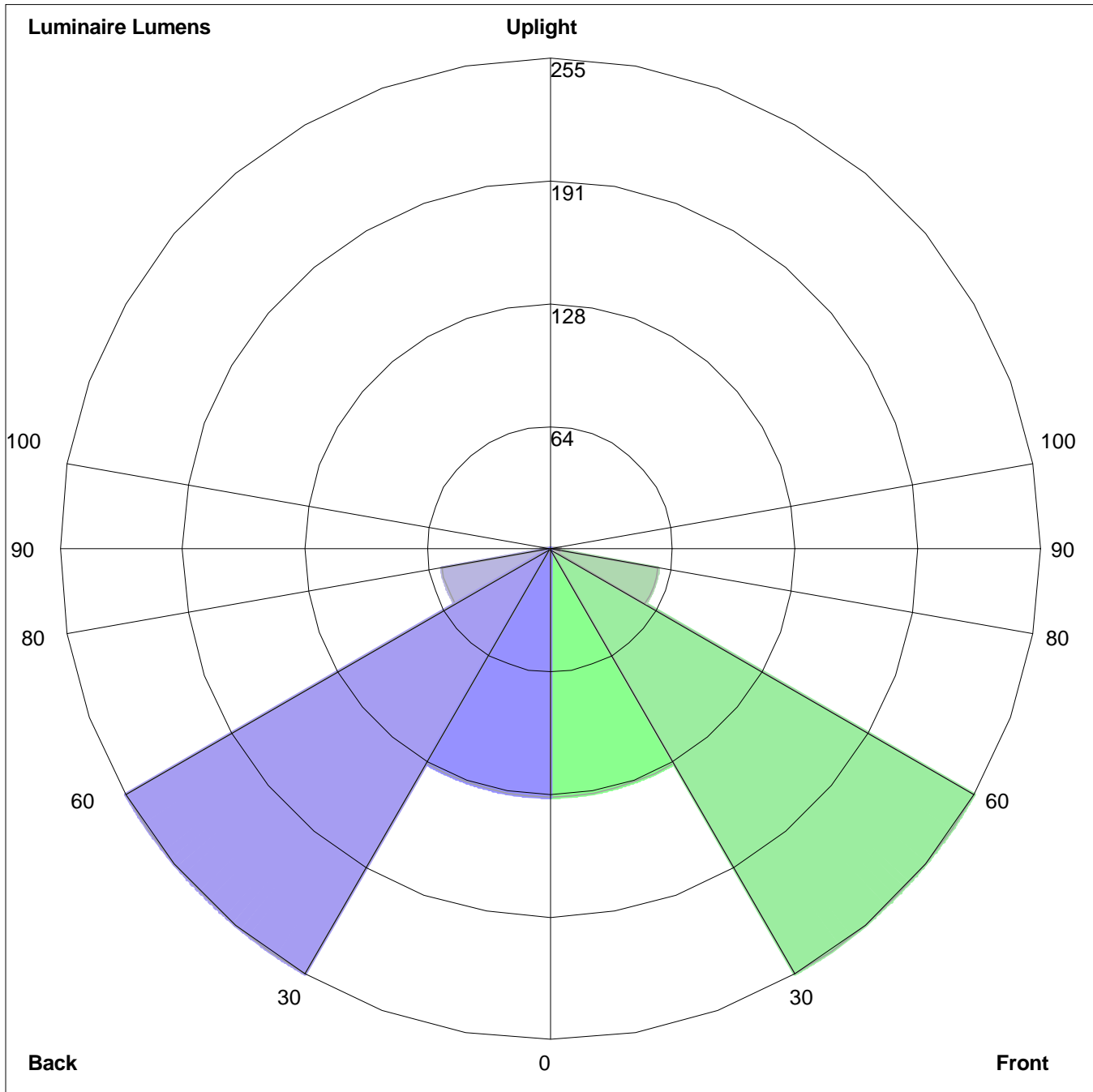
Maximum Candela = 330.77 Located At Horizontal Angle = 0, Vertical Angle = 15
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (15) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height
 Values Based On 10 Foot Mounting Height
 1/2 Maximum Candela Trace Shown As Dashed Curve
 (+) = Maximum Candela Point

LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=128.8, Medium=255.1, High=57.2, Very High=4.9
Back: Low=128.8, Medium=255.1, High=57.2, Very High=4.9
Uplight: Low=0.0, High=0.0

BUG Rating : B1-U0-G0