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Report No: L071407703

Date: 8/6/2014



NVLAP LAB CODE 200927-0

Report No: L071407703

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

Model Number: CPL14X

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 CPL14X. 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

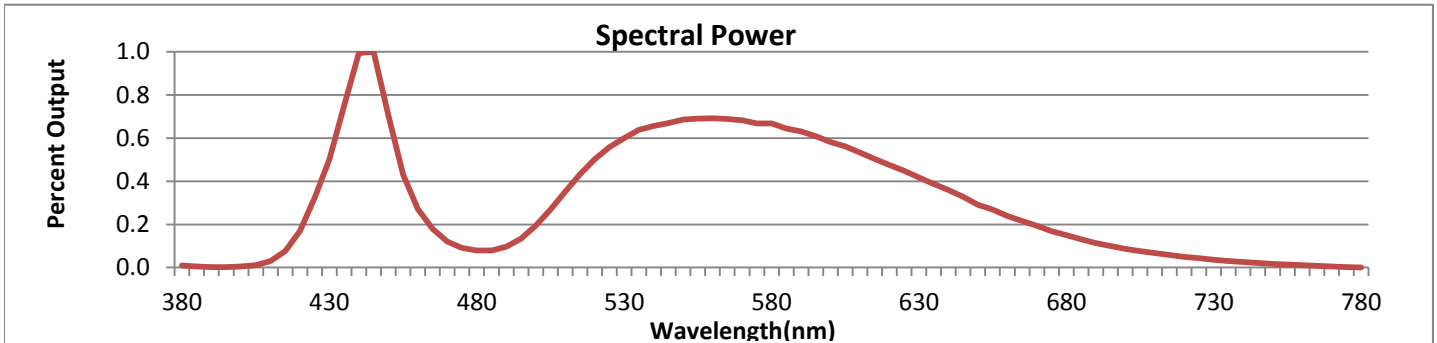
*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Summary

Manufacturer:	Cast Lighting
Model Number:	CPL14X
Driver Model Number:	CUSTOM DRIVER
Total Lumens:	1201.60
Input Voltage (VAC/60Hz):	14.00
Input Current (Amp):	1.71
Input Power (W):	22.59
Input Power Factor:	0.94
Total Harmonic Distortion @ 14V(%):	35%
Total Harmonic Distortion @ 277V(%):	N/A
Efficacy:	53
Color Rendering Index (CRI):	69
Correlated Color Temperature (K):	4792
Chromaticity Coordinate x:	0.3519
Chromaticity Coordinate y:	0.3614
Ambient Temperature (°F):	77.0
Stabilization Time (Hours):	1:00
Total Operating Time (Hours):	2:05
Off State Power(W):	0.00



FIG. 1 LUMINAIRE



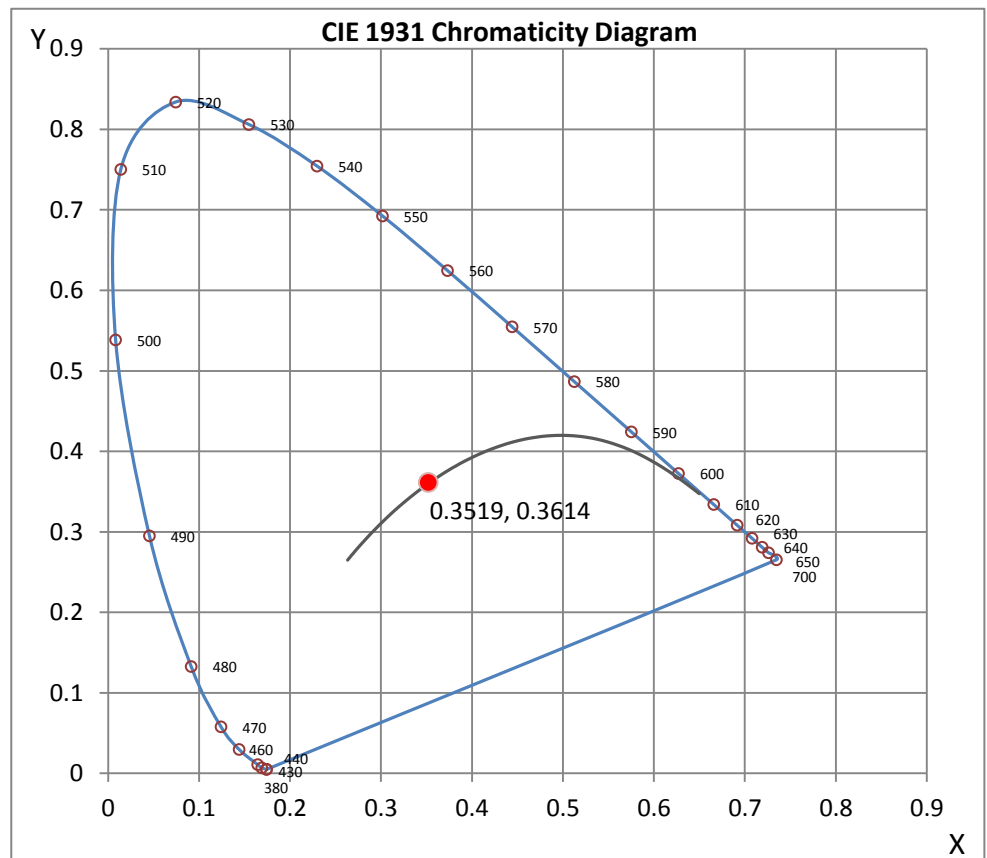
Wavelength	W/m ² nm	440	0.0891	510	0.0315	580	0.0599	650	0.0261	720	0.0045
380	0.0008	450	0.0634	520	0.0449	590	0.0565	660	0.0215	730	0.0033
390	0.0002	460	0.0243	530	0.0537	600	0.0521	670	0.0173	740	0.0023
400	0.0004	470	0.0108	540	0.0588	610	0.0478	680	0.0134	750	0.0015
410	0.0026	480	0.0072	550	0.0615	620	0.0426	690	0.0102	760	0.0009
420	0.0152	490	0.0086	560	0.0621	630	0.0374	700	0.0078	770	0.0004
430	0.0450	500	0.0174	570	0.0612	640	0.0322	710	0.0060	780	0.0001

CRI & CCT

x	0.3519
y	0.3614
u'	0.2122
v'	0.4904
CRI	69.20
CCT	4792
Duv	0.00222

R Values

R1	68.39
R2	72.42
R3	74.33
R4	71.12
R5	67.79
R6	61.66
R7	77.86
R8	60.03
R9	-19.57
R10	33.77
R11	68.13
R12	37.92
R13	68.20
R14	84.81



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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.

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:

Test Report Reviewed by:

Jeff Ahn
 Engineering Manager

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 : L071407703.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L071407703
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 8/5/2014
 [MANUFAC] CAST LIGHTING
 [LUMCAT] CPL14X
 [LUMINAIRE] 7"DIA X 35-3/4"H. LED LUMINAIRE
 [MORE] LED WITH OPTICS. FOUR 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, 22.59W
 [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	1202
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	53
Total Luminaire Watts	22.59
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	452.72
Maximum Candela Angle	0H 10V
Maximum Candela (<90 Degrees Vertical)	452.72
Maximum Candela Angle (<90 Degrees Vertical)	0H 10V
Maximum Candela At 90 Degrees Vertical	0 (0.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	20.51 (1.7% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

IES ROAD REPORT
PHOTOMETRIC FILENAME : L071407703.IES

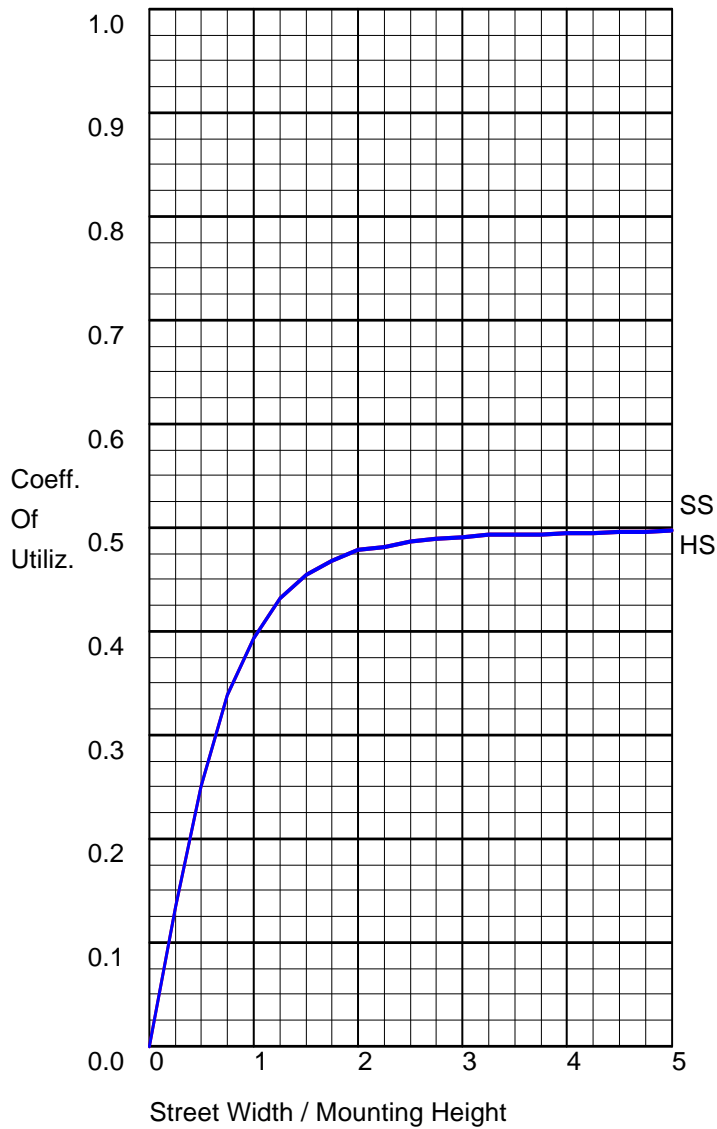
LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	173.8	N.A.	14.5
FM - Front-Medium (30-60)	345.0	N.A.	28.7
FH - Front-High (60-80)	75.6	N.A.	6.3
FVH - Front-Very High (80-90)	6.4	N.A.	0.5
BL - Back-Low (0-30)	173.8	N.A.	14.5
BM - Back-Medium (30-60)	345.0	N.A.	28.7
BH - Back-High (60-80)	75.6	N.A.	6.3
BVH - Back-Very High (80-90)	6.4	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	1201.6	N.A.	100.0
BUG Rating	B1-U0-G0		

CANDELA TABULATION

Vert. Angles	Horizontal Angles
	<u>0</u>
0	0.00
5	333.52
10	452.72
15	447.33
20	434.00
25	412.06
30	384.09
35	363.81
40	349.83
45	333.99
50	300.94
55	225.89
60	169.19
65	106.85
70	65.31
75	33.90
80	20.51
85	13.24
90	0.00

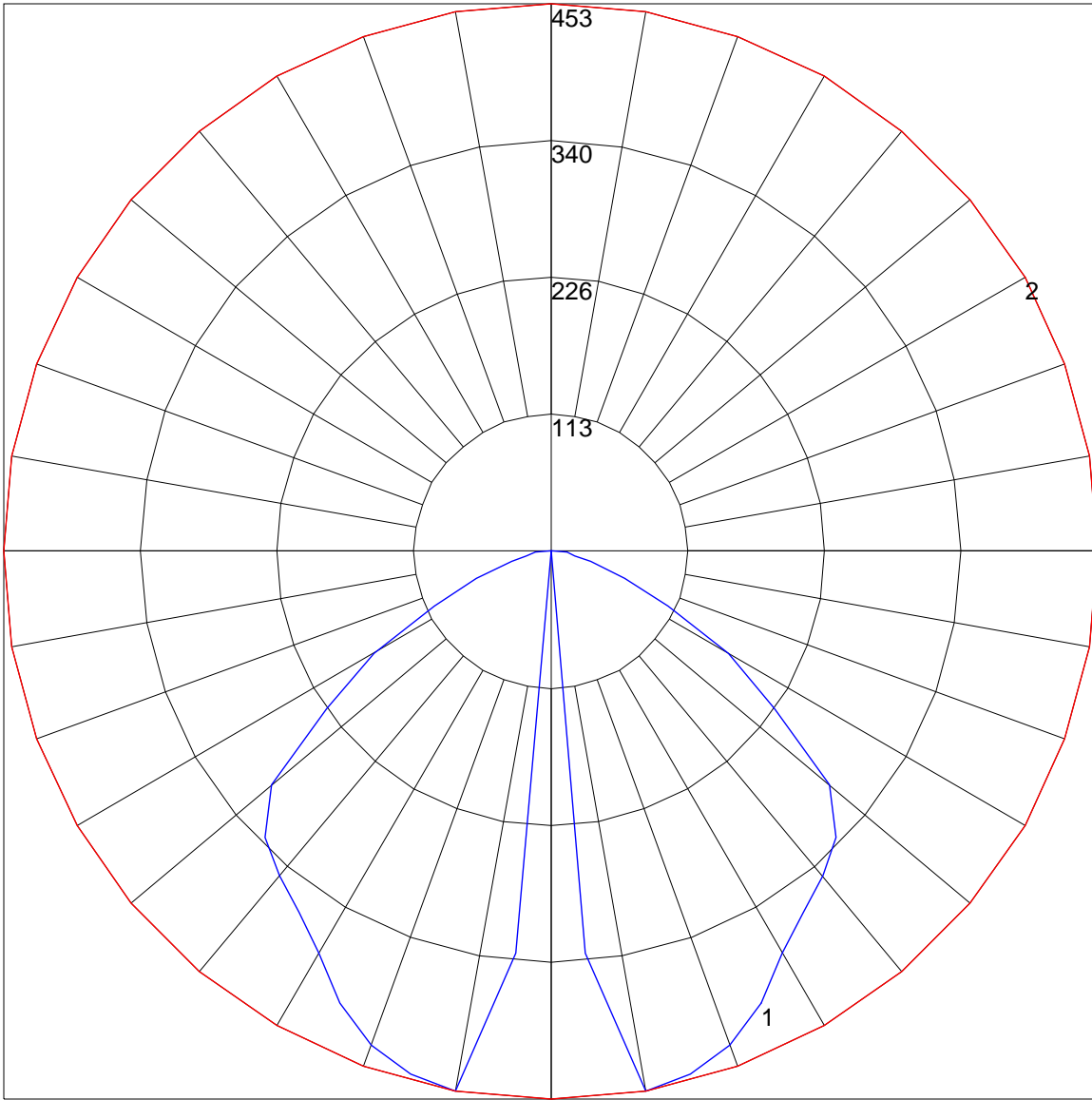
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

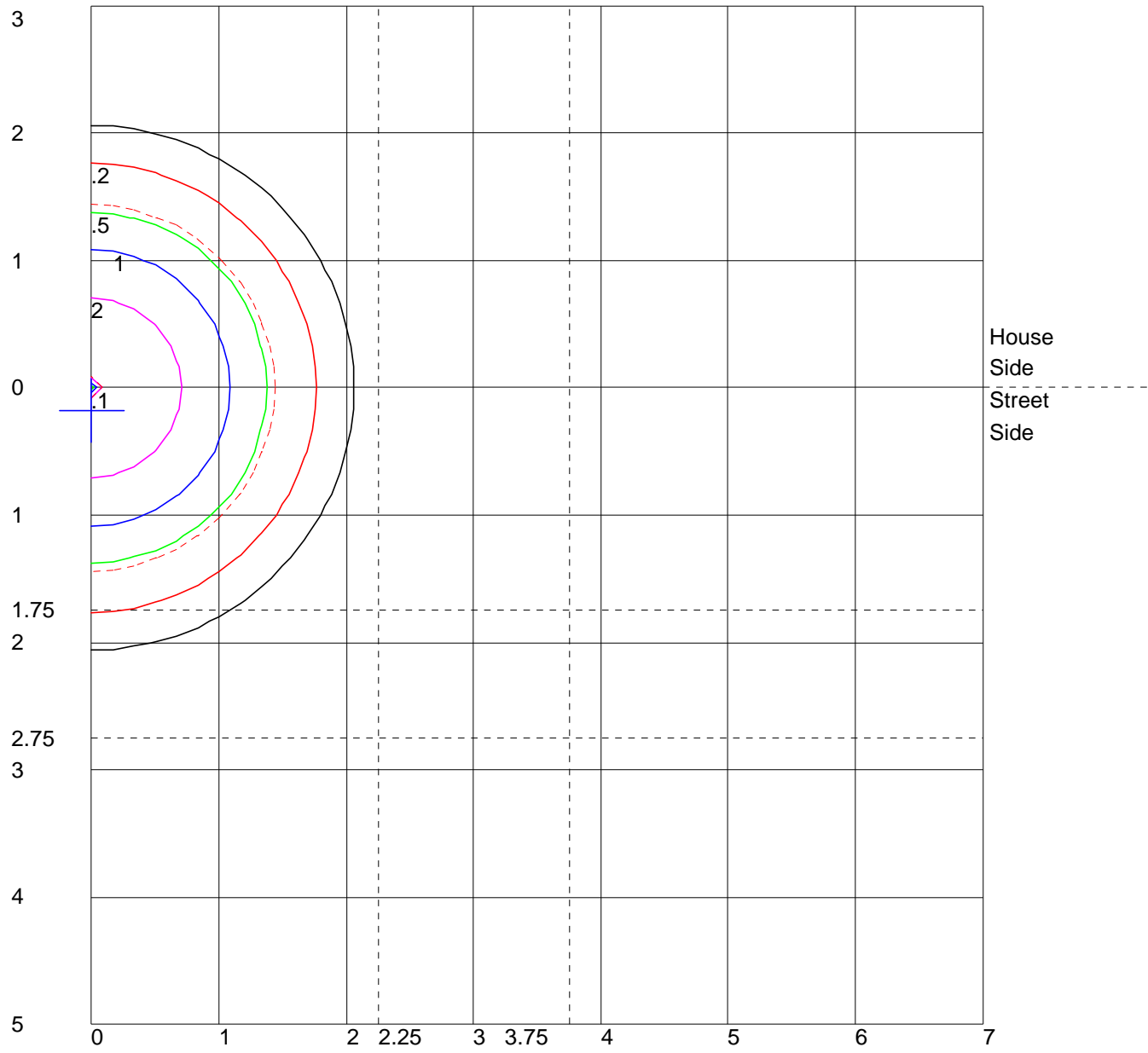
	Lumens	Percent Of Luminaire
Downward Street Side	600.8	50.0
Downward House Side	600.8	50.0
Downward Total	1201.6	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	1201.6	100.0

POLAR GRAPH



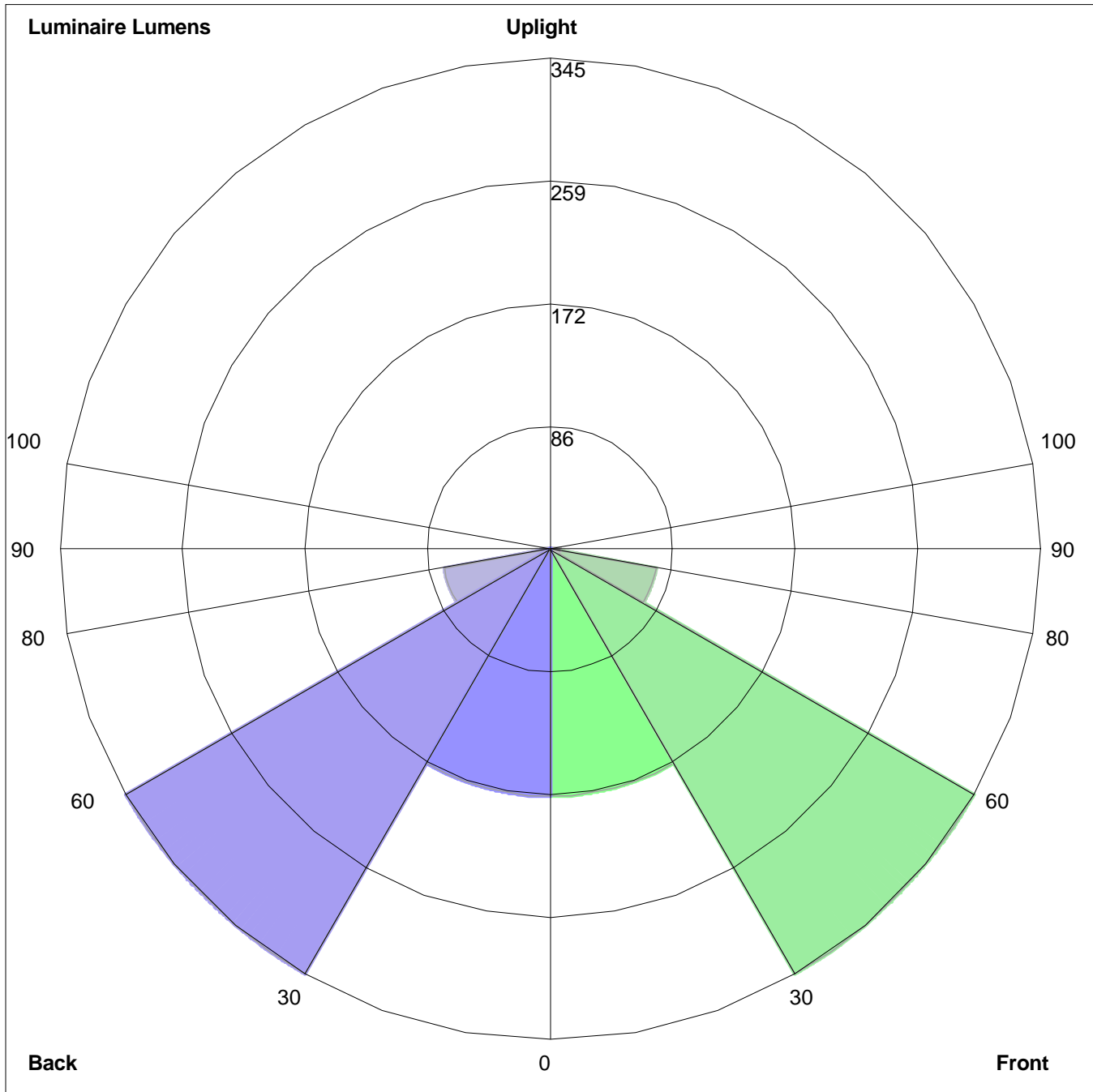
Maximum Candela = 452.72 Located At Horizontal Angle = 0, Vertical Angle = 10
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)

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=173.8, Medium=345.0, High=75.6, Very High=6.4
 Back: Low=173.8, Medium=345.0, High=75.6, Very High=6.4
 Uplight: Low=0.0, High=0.0

BUG Rating : B1-U0-G0