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Test #: L02130803

Date: 2/13/2013



NVLAP LAB CODE 200927-0

Test Report: L02130803

Model Number: H-16044

Report Prepared For: HI-LITE MFG
 13450 MONTE VISTA AVE, CHINO, CA. 91710

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 H-16044. Received in working and undamaged condition. No modifications were necessary.

Sample Arrival Date: 2/13/13

Date of Tests: 2/13/13 - 2/18/13

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:	HI-LITE MFG
Model Number:	H-16044
LAMPCAT:	N/A
Driver Model Number:	THOMAS RESEARCH PRODUCTS TRC-040S105DS
Total Lumens:	1326.42
Input Voltage (VAC):	120.00
Input Current (Amp):	0.29
Input Power (W):	37.09
Input Power Factor:	0.9951
Total Harmonic Distortion @ 120V(%):	8.4%
Total Harmonic Distortion @ 277V(%):	N/A
Efficacy:	35.76
Color Rendering Index (CRI):	65.50
Correlated Color Temperature (K):	4004
Chromaticity Coordinate x:	0.3850
Chromaticity Coordinate y:	0.3941
Ambient Temperature (°F):	77.0
Stabilization Time (Hours):	1:35
Total Operating Time (Hours):	2:25

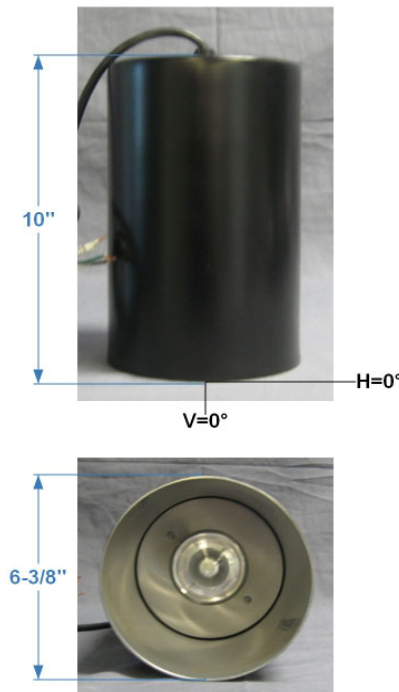
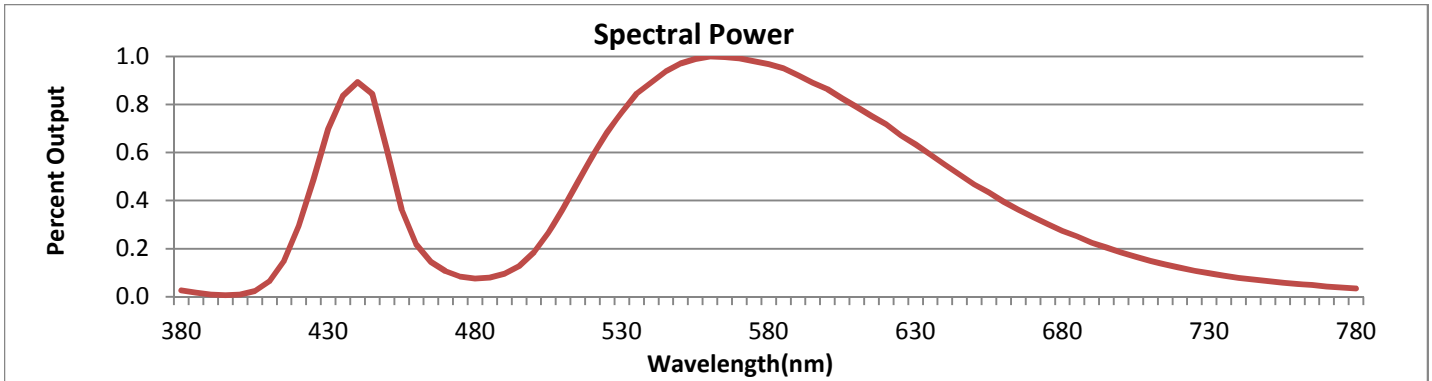


FIG. 1 LUMINAIRE

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



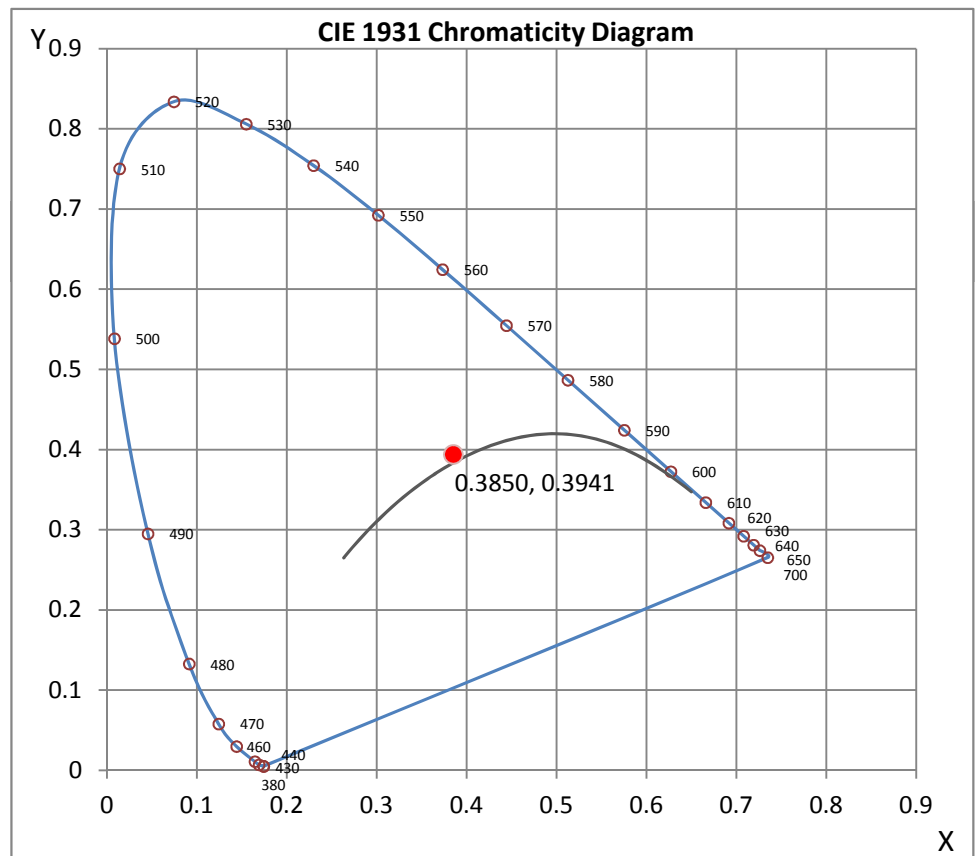
Wavelength	W/m ² nm	440	0.0967	510	0.0397	580	0.1049	650	0.0506	720	0.0131
380	0.0029	450	0.0660	520	0.0632	590	0.0998	660	0.0428	730	0.0107
390	0.0009	460	0.0237	530	0.0832	600	0.0936	670	0.0359	740	0.0085
400	0.0010	470	0.0115	540	0.0966	610	0.0856	680	0.0297	750	0.0070
410	0.0070	480	0.0082	550	0.1052	620	0.0777	690	0.0244	760	0.0057
420	0.0318	490	0.0103	560	0.1083	630	0.0686	700	0.0198	770	0.0046
430	0.0756	500	0.0201	570	0.1075	640	0.0595	710	0.0161	780	0.0038

CRI & CCT

x	0.3850
y	0.3941
u'	0.2213
v'	0.5097
CRI	65.50
CCT	4004
Duv	0.00661

R Values

R1	63.21
R2	70.09
R3	74.71
R4	66.77
R5	61.42
R6	56.83
R7	77.23
R8	54.07
R9	-30.12
R10	28.64
R11	60.21
R12	29.73
R13	63.36
R14	84.99



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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.

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 : L02130803.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L02130803
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 2/18/2013
 [MANUFAC] HI-LITE MFG
 [LUMCAT] H-16044
 [LUMINAIRE] 6-3/8"DIA. X 10"H. PENDANT CYLINDER LUMINAIRE
 [MORE] 30W LED WITH SEMI-SPECULAR REFLECTOR, RIBBED GLASSLENS
 [BALLASTCAT] THOMAS RESEARCH PRODUCTS TRC-040S105DS
 [BALLAST] INPUT: 100-277VAC, 50/60HZ, 0.48A OUTPUT: 12-36VDC, 1.05A, 38Wmax
 [LAMPPOSITION] 0,0
 [LAMP] N/A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [_INPUT] 120VAC, 37.09W
 [_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	1326
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	36
Total Luminaire Watts	37.09
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	595.04
Maximum Candela Angle	0H 45V
Maximum Candela (<90 Degrees Vertical)	595.04
Maximum Candela Angle (<90 Degrees Vertical)	0H 45V
Maximum Candela At 90 Degrees Vertical	0 (0.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	21.46 (1.6% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

IES ROAD REPORT
PHOTOMETRIC FILENAME : L02130803.IES

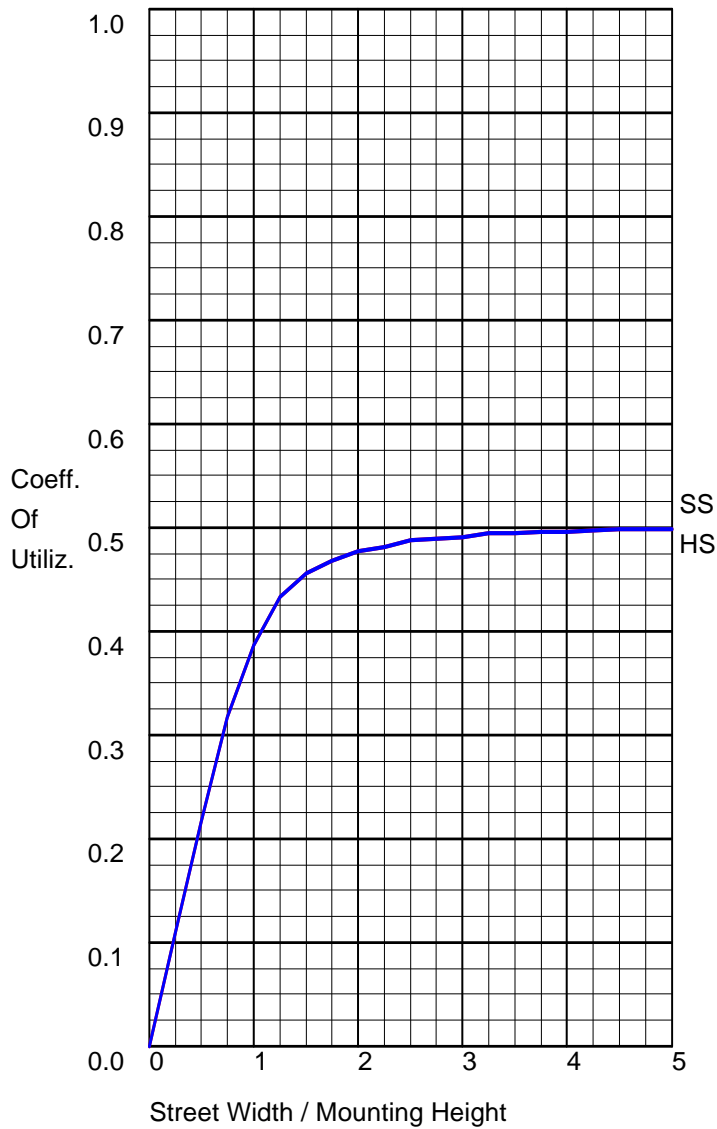
LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	115.5	N.A.	8.7
FM - Front-Medium (30-60)	457.1	N.A.	34.4
FH - Front-High (60-80)	86.3	N.A.	6.5
FVH - Front-Very High (80-90)	5.0	N.A.	0.4
BL - Back-Low (0-30)	115.5	N.A.	8.7
BM - Back-Medium (30-60)	457.1	N.A.	34.4
BH - Back-High (60-80)	86.3	N.A.	6.5
BVH - Back-Very High (80-90)	5.0	N.A.	0.4
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	1327.8	N.A.	100.0
BUG Rating	B1-U0-G0		

CANDELA TABULATION

Vert. Angles	Horizontal Angles
	<u>0</u>
0.0	198.61
5.0	204.62
15.0	235.50
25.0	299.03
35.0	434.97
45.0	595.04
55.0	230.08
60.0	147.94
62.5	134.07
65.0	120.63
67.5	106.56
70.0	91.00
72.5	70.54
75.0	46.24
77.5	31.15
80.0	21.46
82.5	13.82
85.0	7.96
87.5	4.00
90.0	0.00

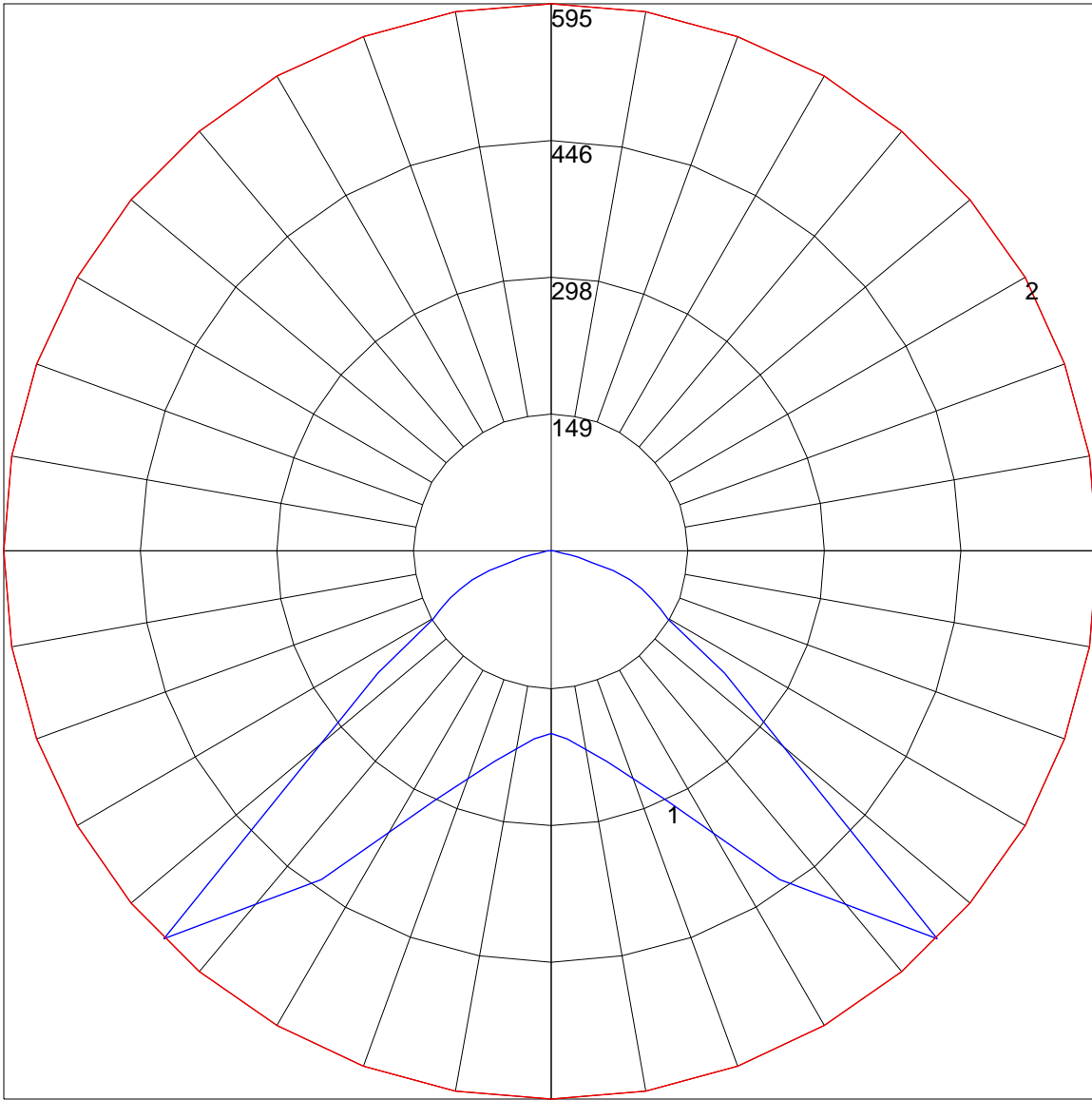
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

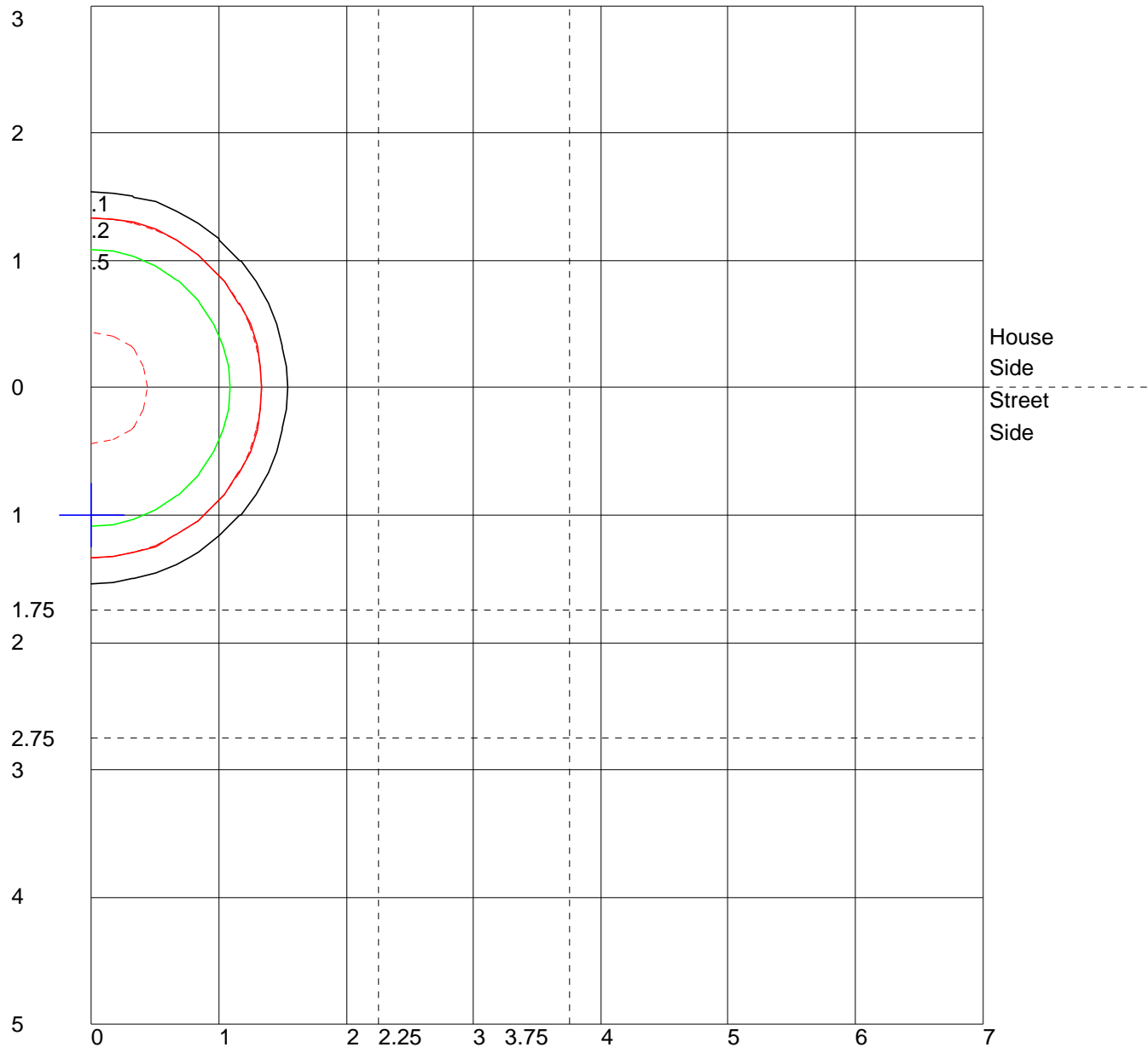
	Lumens	Percent Of Luminaire
Downward Street Side	663.2	50.0
Downward House Side	663.2	50.0
Downward Total	1326.4	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	1326.4	100.0

POLAR GRAPH



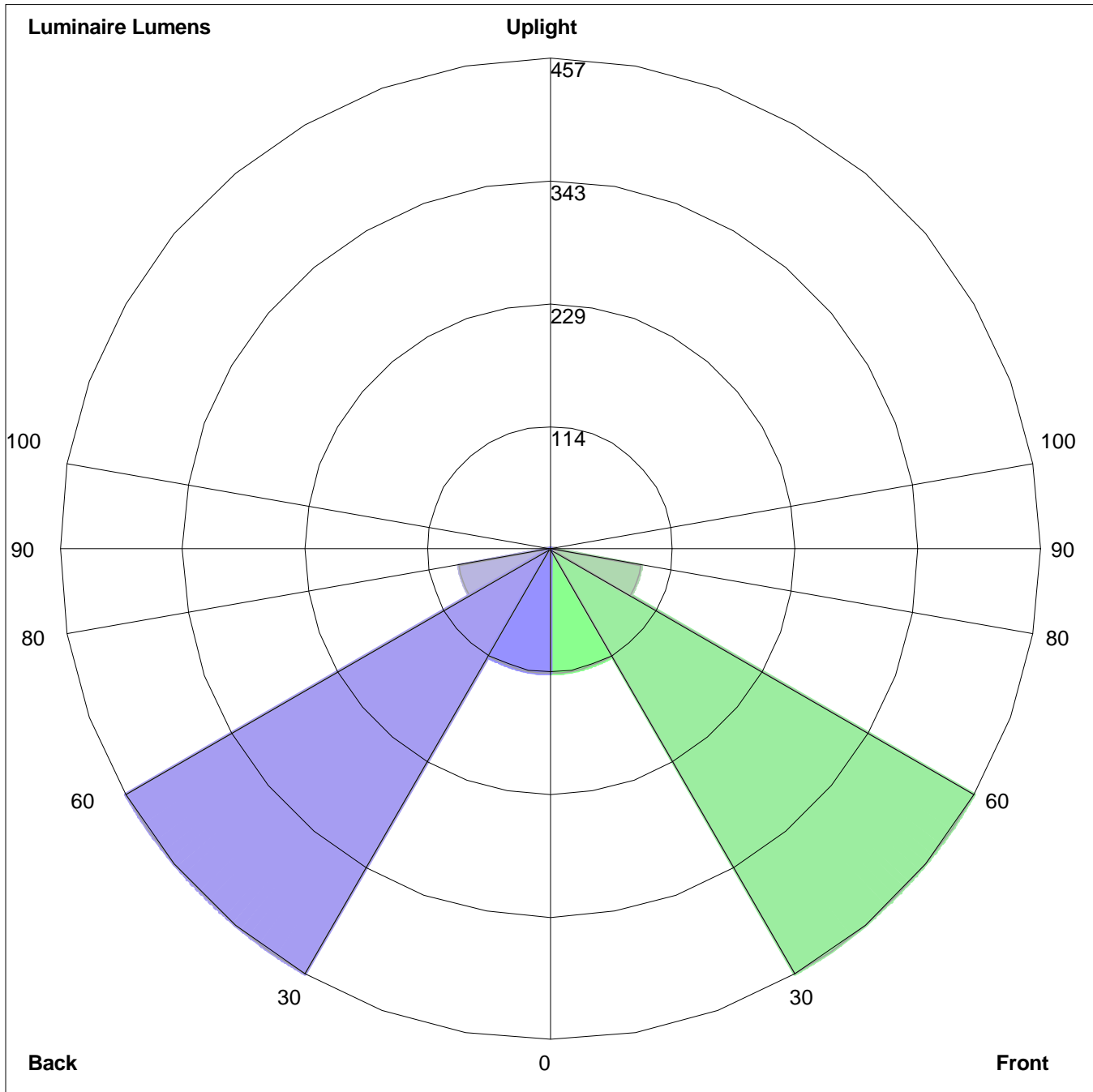
Maximum Candela = 595.04 Located At Horizontal Angle = 0, Vertical Angle = 45
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (45) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height
 Values Based On 18 Foot Mounting Height
 1/2 Maximum Candela Trace Shown As Dashed Curve
 (+) = Maximum Candela Point

LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=115.5, Medium=457.1, High=86.3, Very High=5.0
Back: Low=115.5, Medium=457.1, High=86.3, Very High=5.0
Uplight: Low=0.0, High=0.0

BUG Rating : B1-U0-G0