



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

Report No: L111407103

Date: 12/9/2014



NVLAP LAB CODE 200927-0

**Report No:** L111407103

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

**Model Number:** CCSL18336

**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 CCSL18336. Received in working and undamaged condition. No modifications were necessary.

**Testing Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 12/4/14

**Date of Tests:** 12/8/14 - 12/9/14

**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.

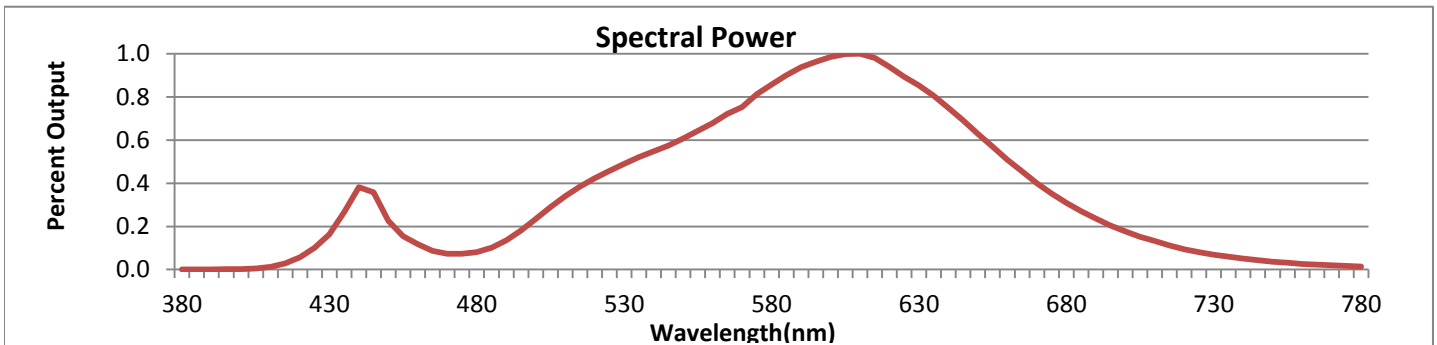
**Test Summary**

<b>Manufacturer:</b>	Cast Lighting
<b>Model Number:</b>	CCSL18336
<b>Driver Model Number:</b>	N/A
<b>Total Lumens:</b>	152.94
<b>Input Voltage (VAC/60Hz):</b>	12.00
<b>Input Current (Amp):</b>	0.25
<b>Input Power (W):</b>	2.69
<b>Input Power Factor:</b>	0.88
<b>Current ATHD @ 12V(%):</b>	53%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	57
<b>Color Rendering Index (CRI):</b>	80
<b>Correlated Color Temperature (K):</b>	2794
<b>Chromaticity Coordinate x:</b>	0.4583
<b>Chromaticity Coordinate y:</b>	0.4199
<b>Ambient Temperature (°F):</b>	77.0
<b>Stabilization Time (Hours):</b>	0:35
<b>Total Operating Time (Hours):</b>	1:50
<b>Off State Power(W):</b>	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.



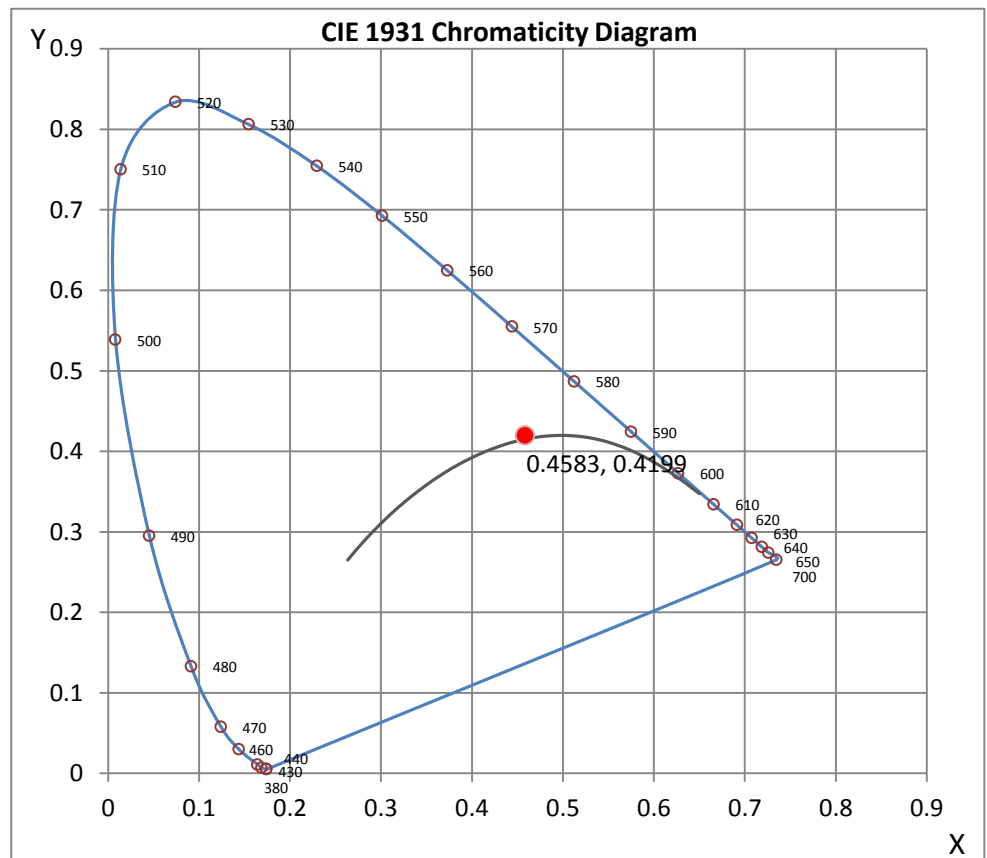
Wavelength	W/m <sup>2</sup> nm	440	0.3812	510	0.3408	580	0.8586	650	0.6303	720	0.0946
380	0.0006	450	0.2254	520	0.4239	590	0.9377	660	0.5096	730	0.0694
390	0.0009	460	0.1181	530	0.4909	600	0.9852	670	0.3997	740	0.0505
400	0.0026	470	0.0729	540	0.5477	610	1.0000	680	0.3094	750	0.0367
410	0.0130	480	0.0802	550	0.6071	620	0.9391	690	0.2360	760	0.0264
420	0.0576	490	0.1353	560	0.6781	630	0.8544	700	0.1772	770	0.0195
430	0.1637	500	0.2352	570	0.7525	640	0.7495	710	0.1320	780	0.0144

**CRI & CCT**

x	0.4583
y	0.4199
u'	0.2574
v'	0.5306
CRI	80.00
CCT	2794
Duv	0.00356

**R Values**

R1	78.10
R2	85.54
R3	93.21
R4	80.56
R5	76.96
R6	81.13
R7	84.69
R8	59.60
R9	5.46
R10	66.92
R11	79.43
R12	62.25
R13	79.07
R14	95.56



\*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: 8*



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## Photometric Test Report

### IES FLOOD REPORT

PHOTOMETRIC FILENAME : L111407103.IES

### DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L111407103  
[TESTLAB] LIGHT LABORATORY, INC.  
[ISSUEDATE] 12/09/2014  
[MANUFAC] CAST LIGHTING  
[LUMCAT] CCSL18336  
[LUMINAIRE] 2"DIA. X 12-1/2"H. LED LUMINAIRE  
[MORE] CLEAR LENS  
[BALLASTCAT] N.A.  
[BALLAST] 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, 2.69W  
[TEST PROCEDURE] IESNA:LM-79-08

Note: Candela values converted from Type-C to Type-B

### CHARACTERISTICS

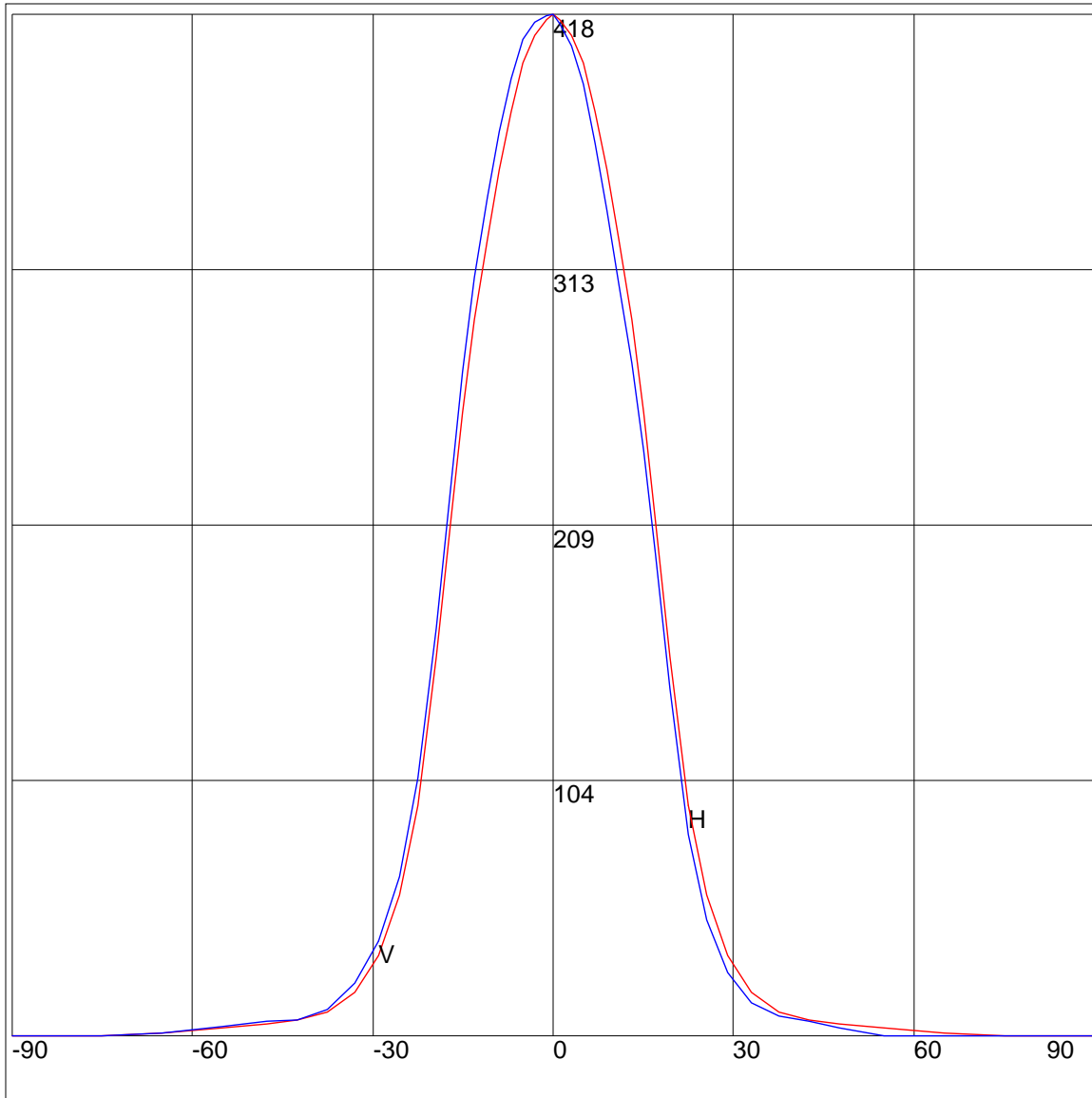
NEMA Type	4 H x 4 V
Maximum Candela	417.99
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	34.1
Vertical Beam Angle (50%)	34.1
Horizontal Field Angle (10%)	55.6
Vertical Field Angle (10%)	55.1
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	85
Beam Efficiency	N.A.
Field Lumens	131
Field Efficiency	N.A.
Spill Lumens	22
Luminaire Lumens	153
Total Efficiency	N.A.
Total Luminaire Watts	2.69
Ballast Factor	1.00

**IES FLOOD REPORT**  
**PHOTOMETRIC FILENAME : L111407103.IES**

**AXIAL CANDELA**

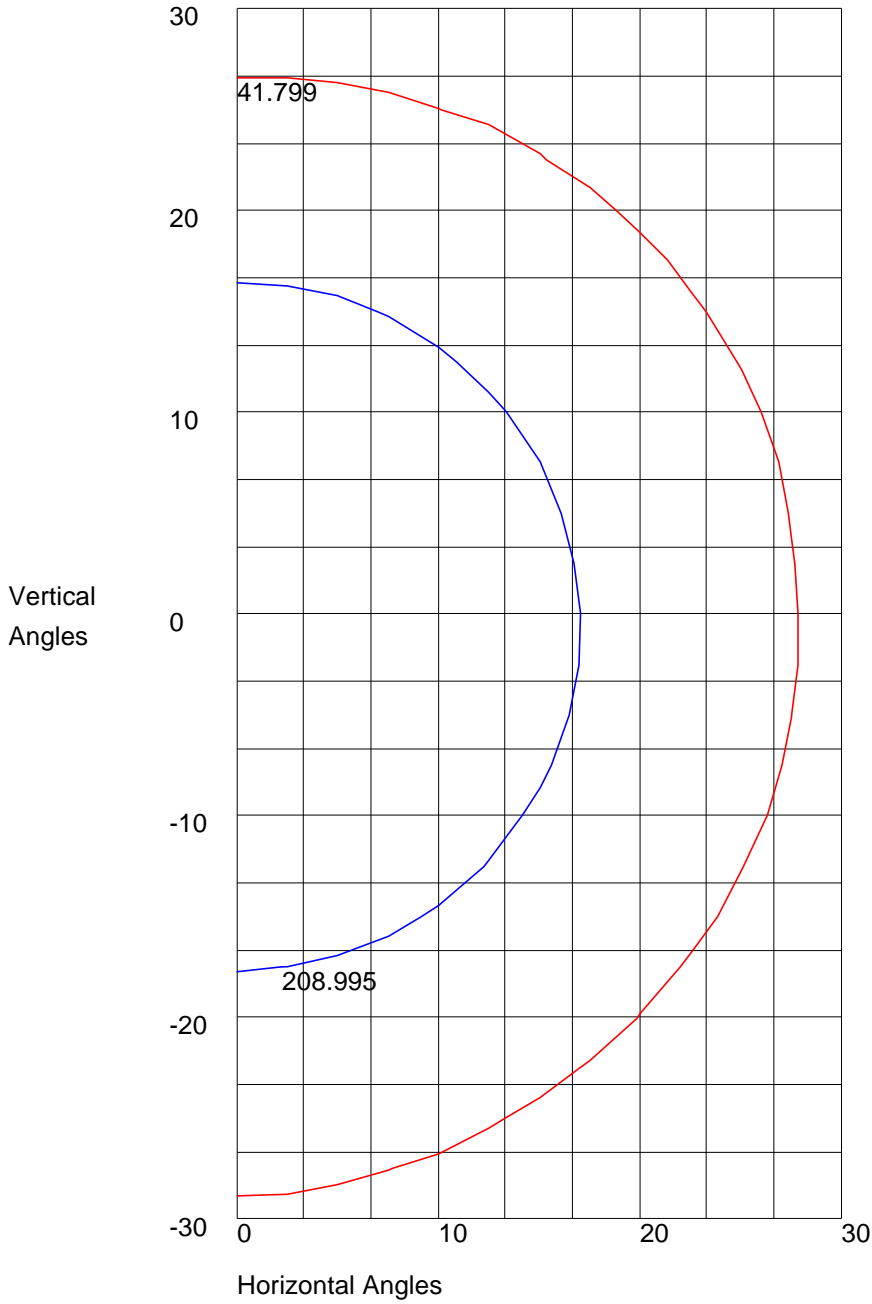
DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	0	85	0
75	.08	75	0
65	1.17	65	0
55	3.44	55	.5
47.5	5.28	47.5	3.69
42.5	6.54	42.5	6.04
37.5	9.98	37.5	8.22
33	17.95	33	13.74
29	33.24	29	25.94
25.5	57.81	25.5	47.56
22.5	94.51	22.5	82.52
19.5	155.08	19.5	142.59
17	210.54	17	197.19
15	254.95	15	239.51
13	293.13	13	275.17
11	326.14	11	307.77
9	354.42	9	337.77
7	378.29	7	365.21
5	398.02	5	389.63
3	409.49	3	405.23
1	415.74	1	414.45
0	417.99	0	417.99
-1	415.74	-1	417.28
-3	409.49	-3	414.53
-5	398.02	-5	407.75
-7	378.29	-7	391.81
-9	354.42	-9	370.2
-11	326.14	-11	343.06
-13	293.13	-13	310.34
-15	254.95	-15	271.72
-17	210.54	-17	224.67
-19.5	155.08	-19.5	167.06
-22.5	94.51	-22.5	105.84
-25.5	57.81	-25.5	65.3
-29	33.24	-29	38.97
-33	17.95	-33	21.56
-37.5	9.98	-37.5	11.07
-42.5	6.54	-42.5	6.88
-47.5	5.28	-47.5	6.21
-55	3.44	-55	4.03
-65	1.17	-65	1.34
-75	.08	-75	.5
-85	0	-85	.17
-90	0	-90	.17

AXIAL CANDELA DISPLAY



Maximum Candela = 417.99 Located At Horizontal Angle = 0, Vertical Angle = 0  
H - Horizontal Axial Candela  
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 417.99 Located At Horizontal Angle = 0, Vertical Angle = 0  
50% Maximum Candela = 208.995  
10% Maximum Candela = 41.799