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Report No: L111407109

Date: 12/9/2014



NVLAP LAB CODE 200927-0

Report No: L111407109

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

Model Number: CCDL1

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 CCDL1 . 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

Manufacturer:	Cast Lighting
Model Number:	CCDL1
Driver Model Number:	N/A
Total Lumens:	89.40
Input Voltage (VAC/60Hz):	12.00
Input Current (Amp):	0.27
Input Power (W):	2.88
Input Power Factor:	0.88
Current ATHD @ 12V(%):	53%
Current ATHD @ 277V(%):	N/A
Efficacy:	31
Color Rendering Index (CRI):	82
Correlated Color Temperature (K):	2787
Chromaticity Coordinate x:	0.4480
Chromaticity Coordinate y:	0.3997
Ambient Temperature (°F):	77.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	1:35
Off State Power(W):	0.00

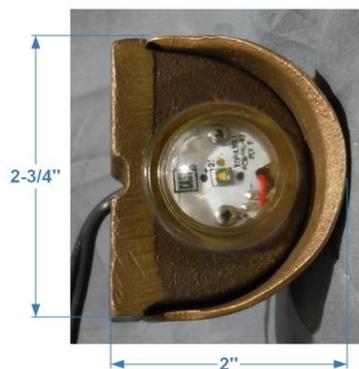
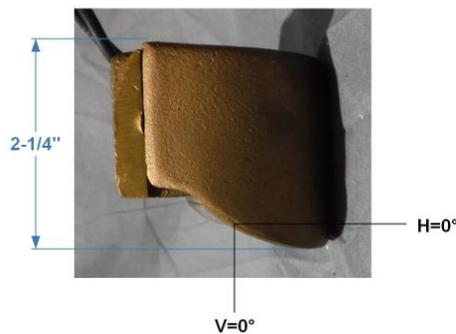
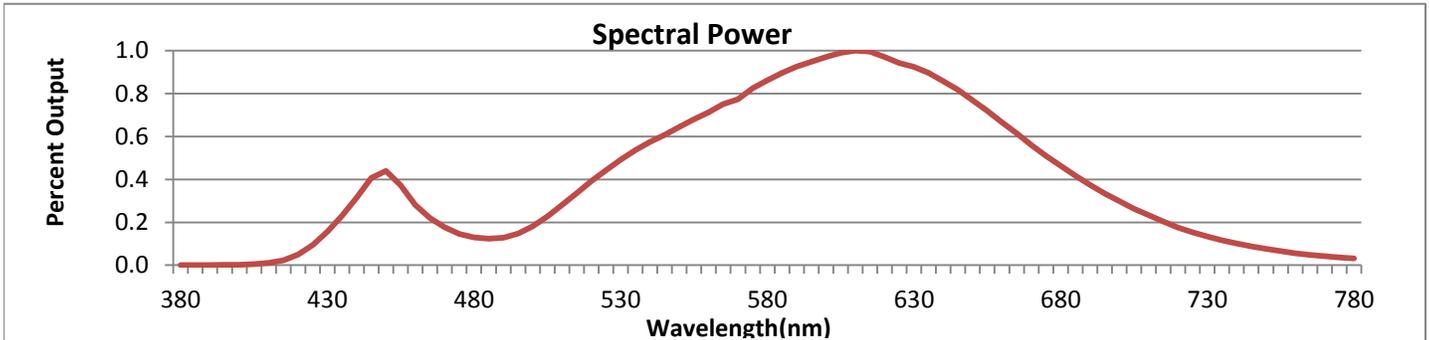


FIG. 1 LUMINAIRE

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



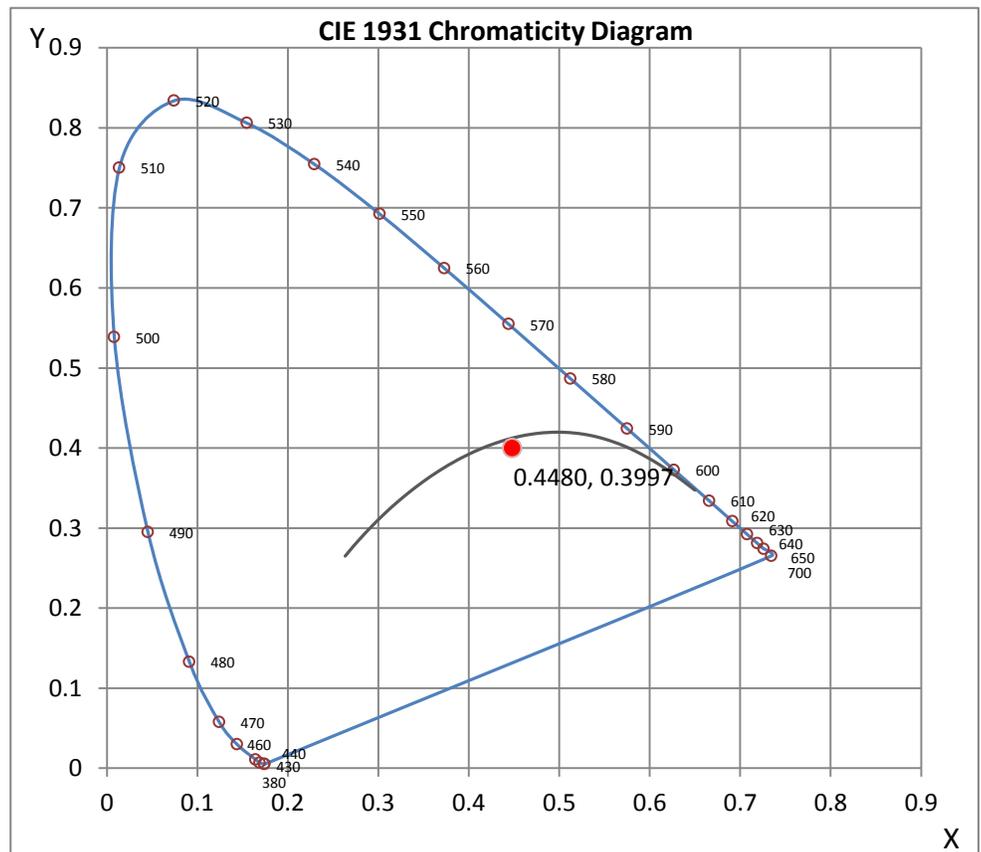
Wavelength	W/m ² nm	440	0.3148	510	0.2809	580	0.8625	650	0.7694	720	0.1755
380	0.0008	450	0.4394	520	0.3921	590	0.9260	660	0.6663	730	0.1340
390	0.0011	460	0.2817	530	0.4916	600	0.9709	670	0.5594	740	0.1012
400	0.0023	470	0.1767	540	0.5742	610	1.0000	680	0.4635	750	0.0757
410	0.0103	480	0.1294	550	0.6444	620	0.9705	690	0.3752	760	0.0556
420	0.0499	490	0.1284	560	0.7133	630	0.9246	700	0.2980	770	0.0419
430	0.1558	500	0.1817	570	0.7739	640	0.8578	710	0.2338	780	0.0311

CRI & CCT

x	0.4480
y	0.3997
u'	0.2597
v'	0.5213
CRI	82.30
CCT	2787
Duv	-0.00304

R Values

R1	81.83
R2	88.43
R3	91.83
R4	80.22
R5	79.49
R6	82.62
R7	86.17
R8	67.94
R9	28.00
R10	70.76
R11	76.22
R12	64.23
R13	82.88
R14	94.44



*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 : L111407109.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L111407109
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUE DATE] 12/09/2014
[MANUFAC] CAST LIGHTING
[LUMCAT] CCDL1
[LUMINAIRE] 2"L. X 2-3/4"W. X 2-1/4"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, 2.88W
[TEST PROCEDURE] IESNA:LM-79-08

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

CHARACTERISTICS

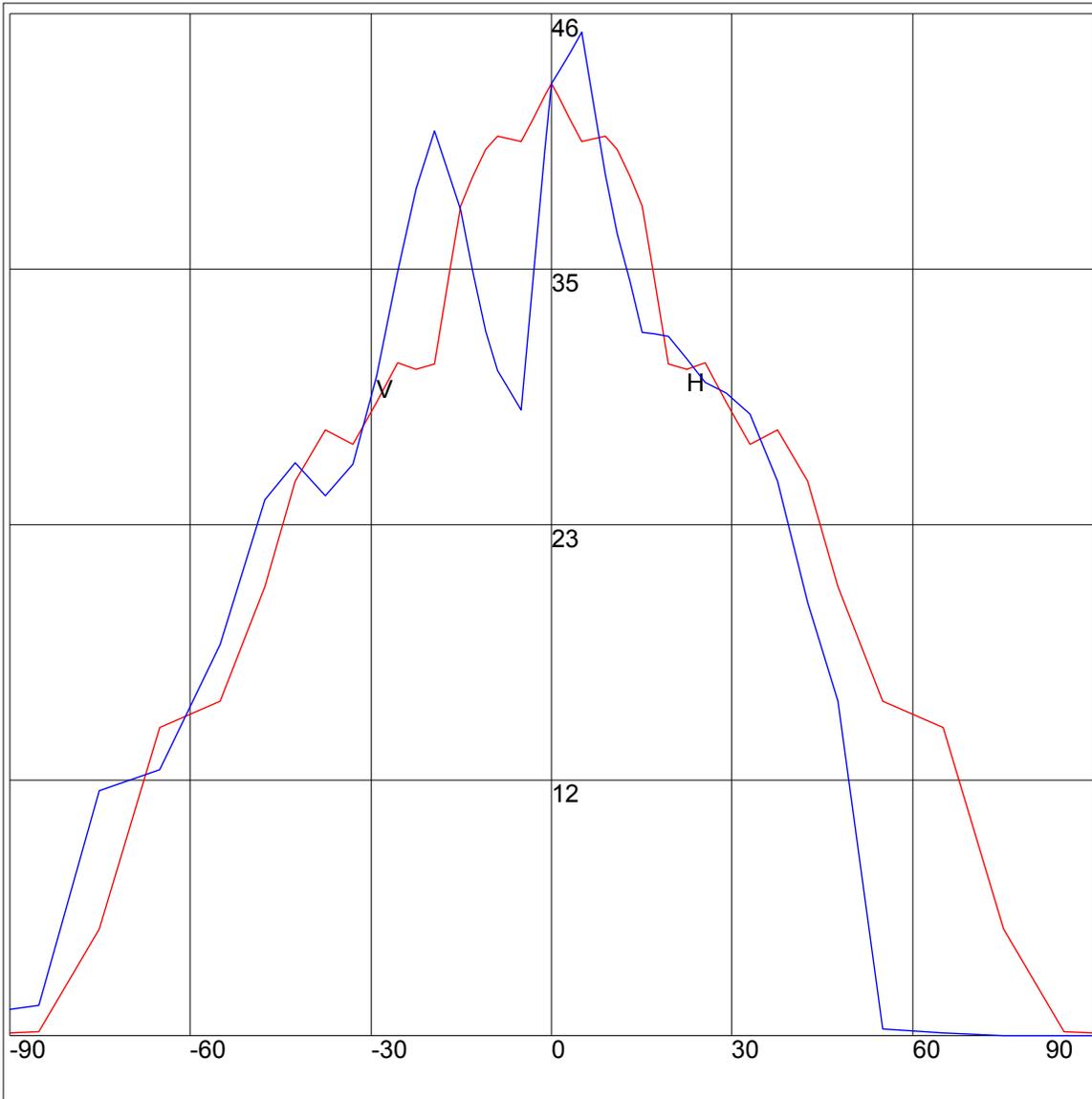
NEMA Type	7 H x 7 V
Maximum Candela	46
Maximum Candela Angle	-1H 5V
Horizontal Beam Angle (50%)	87.9
Vertical Beam Angle (50%)	88.4
Horizontal Field Angle (10%)	148.3
Vertical Field Angle (10%)	134.5
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	52
Beam Efficiency	N.A.
Field Lumens	87
Field Efficiency	N.A.
Spill Lumens	1
Luminaire Lumens	89
Total Efficiency	N.A.
Total Luminaire Watts	2.88
Ballast Factor	1.00

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PHOTOMETRIC FILENAME : L111407109.IES

AXIAL CANDELA

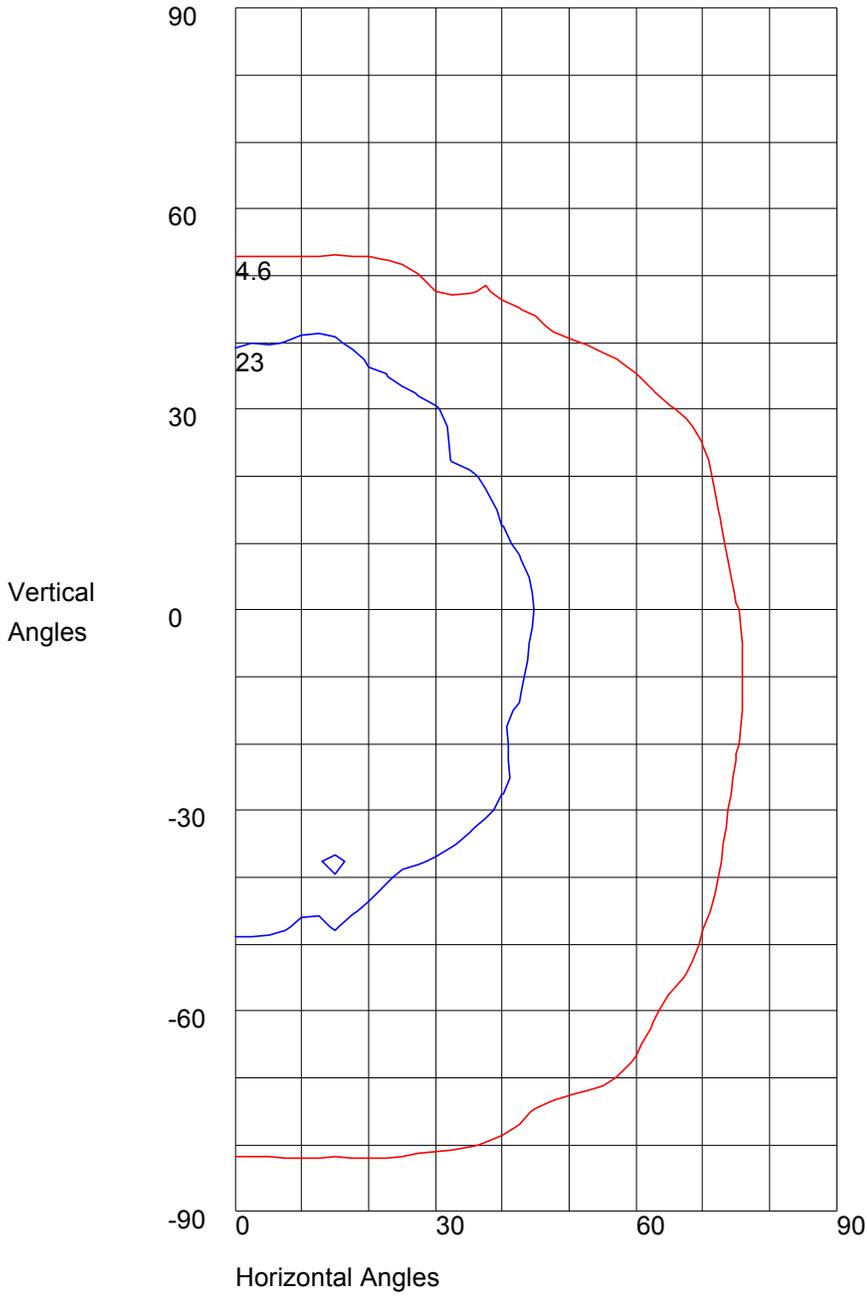
DEG.	HOR.	DEG.	VERT.
90	.17	90	0
85	.22	85	0
75	4.84	75	0
65	13.88	65	.17
55	15.05	55	.31
47.5	20.23	47.5	15.1
42.5	24.98	42.5	19.49
37.5	27.27	37.5	24.97
33	26.6	33	27.97
29	28.54	29	28.93
25.5	30.29	25.5	29.44
22.5	29.99	22.5	30.49
19.5	30.22	19.5	31.49
17	34.19	17	31.6
15	37.36	15	31.68
13	38.64	13	33.89
11	39.91	11	36.1
9	40.49	9	38.79
7	40.36	7	41.98
5	40.24	5	45.16
3	41.29	3	44.24
1	42.34	1	43.33
0	42.87	0	42.87
-1	42.34	-1	39.92
-3	41.29	-3	34.03
-5	40.24	-5	28.14
-7	40.36	-7	29.03
-9	40.49	-9	29.92
-11	39.91	-11	31.73
-13	38.64	-13	34.45
-15	37.36	-15	37.17
-17	34.19	-17	38.76
-19.5	30.22	-19.5	40.75
-22.5	29.99	-22.5	38.11
-25.5	30.29	-25.5	34.4
-29	28.54	-29	29.69
-33	26.6	-33	25.72
-37.5	27.27	-37.5	24.29
-42.5	24.98	-42.5	25.81
-47.5	20.23	-47.5	24.13
-55	15.05	-55	17.64
-65	13.88	-65	12.01
-75	4.84	-75	11.05
-85	.22	-85	1.41
-90	.17	-90	1.24

AXIAL CANDELA DISPLAY



Maximum Candela = 46 Located At Horizontal Angle = -1, Vertical Angle = 5
H - Horizontal Axial Candela
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 46 Located At Horizontal Angle = -1, Vertical Angle = 5
50% Maximum Candela = 23
10% Maximum Candela = 4.6