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Report No: L01505002

Date: 1/26/2015



NVLAP LAB CODE 200927-0

Report No: L011505002

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

Model Number: CTLED141

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 CTLED141. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 1/21/15

Date of Tests: 1/21/15 - 1/26/15

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	11/10/15
Xitron Power Analysis System	2503AH	MT-EL01	10/20/15
BK Precision DC Power Supply	1747	PSDC-04	01/08/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/05/16
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:	CTLED141
Driver Model Number:	N/A
Total Lumens:	157.18
Input Voltage (VAC/60Hz):	12.00
Input Current (Amp):	0.37
Input Power (W):	4.10
Input Power Factor:	0.93
Current ATHD @ 12V(%):	39%
Current ATHD @ 277V(%):	N/A
Efficacy:	38
Color Rendering Index (CRI):	81
Correlated Color Temperature (K):	2559
Chromaticity Coordinate x:	0.4656
Chromaticity Coordinate y:	0.4025
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	2:00
Off State Power(W):	0.00

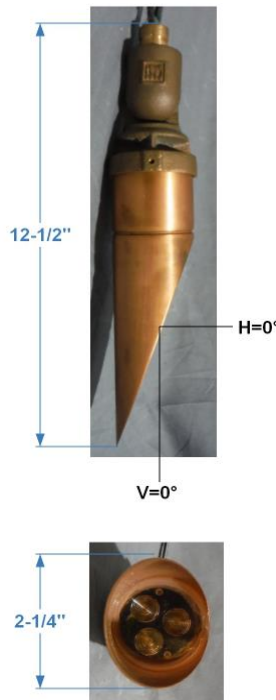
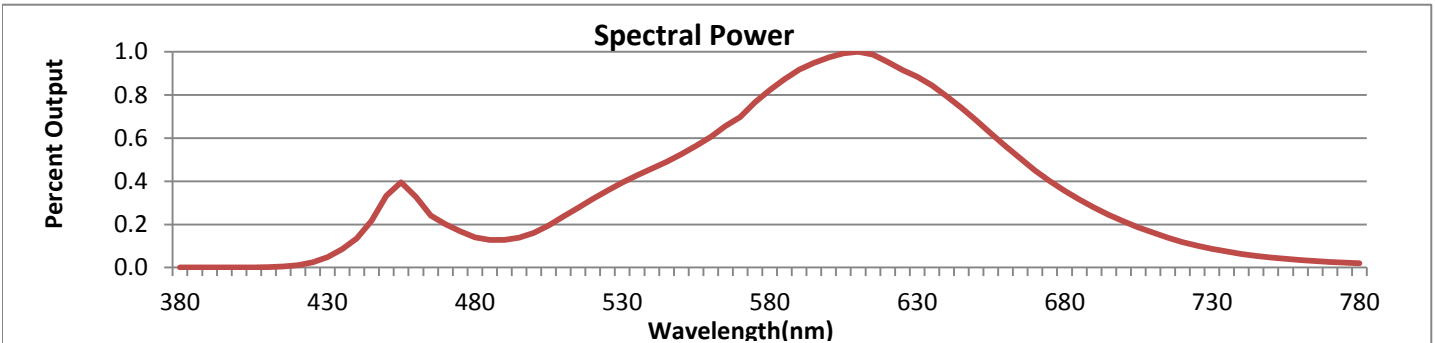


FIG. 1 LUMINAIRE

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



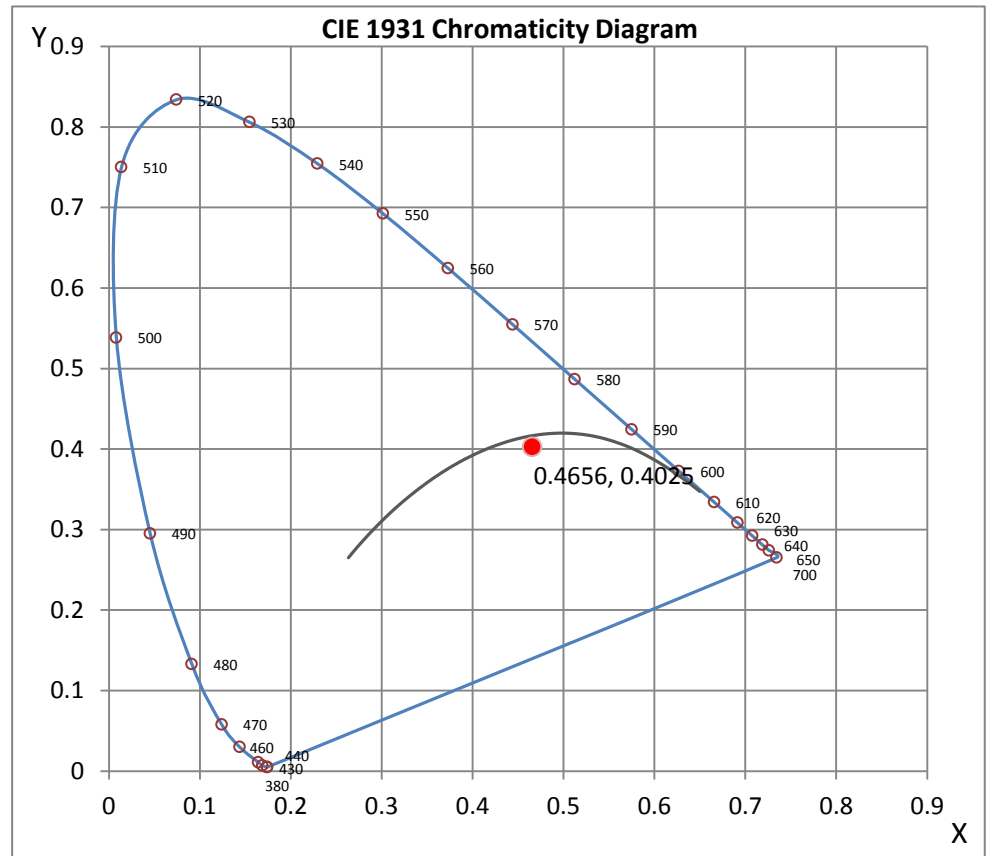
Wavelength	W/m ² nm	440	0.1361	510	0.2358	580	0.8229	650	0.6827	720	0.1179
380	0.0006	450	0.3334	520	0.3180	590	0.9172	660	0.5626	730	0.0870
390	0.0007	460	0.3269	530	0.3936	600	0.9743	670	0.4509	740	0.0635
400	0.0008	470	0.2010	540	0.4591	610	1.0000	680	0.3566	750	0.0469
410	0.0022	480	0.1396	550	0.5251	620	0.9532	690	0.2782	760	0.0346
420	0.0114	490	0.1281	560	0.6058	630	0.8854	700	0.2139	770	0.0261
430	0.0485	500	0.1609	570	0.6974	640	0.7942	710	0.1618	780	0.0197

CRI & CCT

x	0.4656
y	0.4025
u'	0.2700
v'	0.5251
CRI	80.90
CCT	2559
Duv	-0.00338

R Values

R1	79.75
R2	90.99
R3	95.90
R4	76.09
R5	78.40
R6	87.98
R7	80.73
R8	57.64
R9	11.71
R10	77.95
R11	72.56
R12	70.08
R13	82.31
R14	98.43



*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 : L011505002.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L011505002
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 1/26/2015
[MANUFAC] CAST LIGHTING
[LUMCAT] CTLED141
[LUMINAIRE] 2-1/4"DIA. X 12-1/2"H. LED DOWN LIGHT
[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, 4.10W
[TEST PROCEDURE] IESNA:LM-79-08

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

CHARACTERISTICS

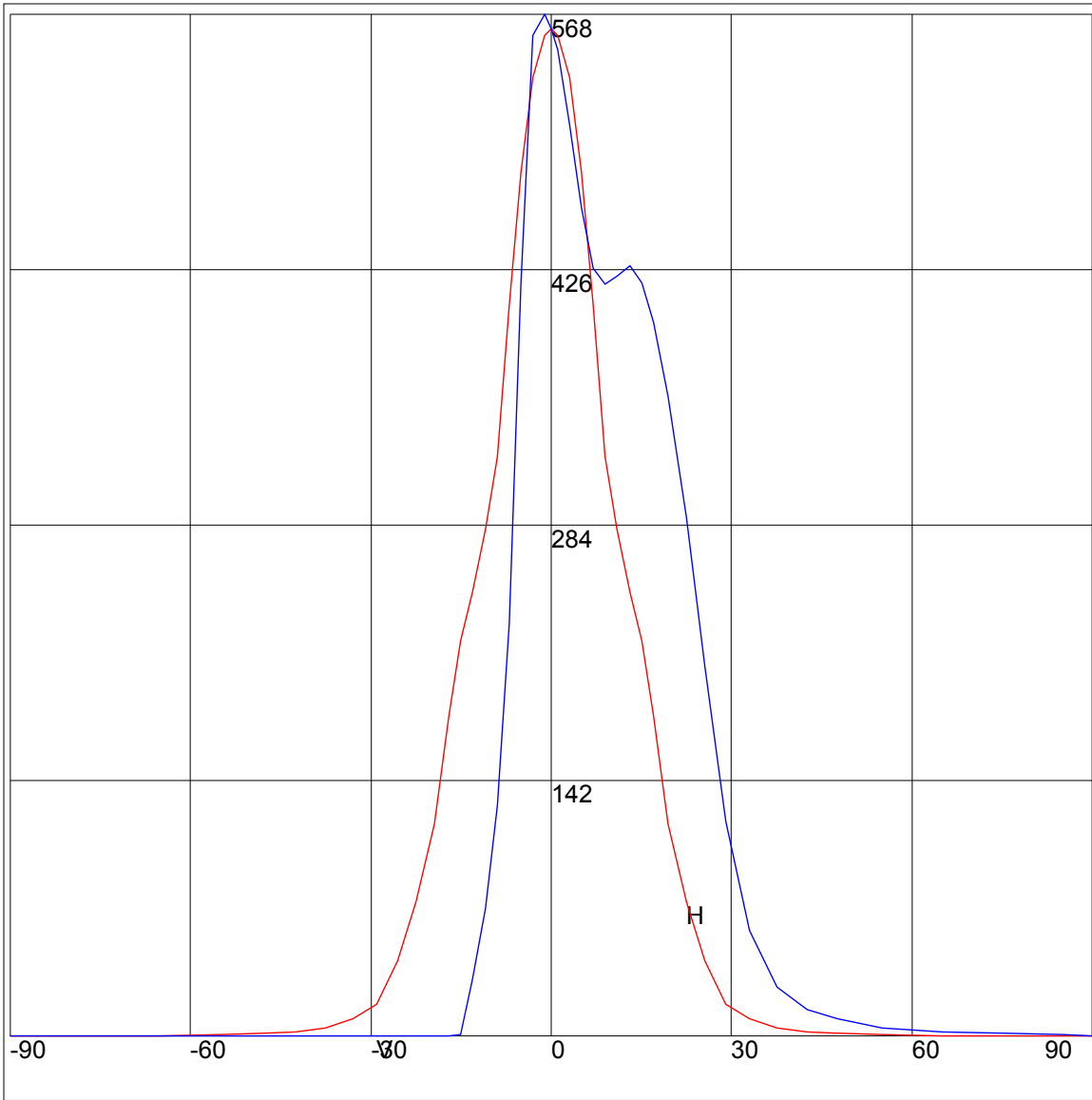
NEMA Type	4 H x 3 V
Maximum Candela	567.67
Maximum Candela Angle	0H -1V
Horizontal Beam Angle (50%)	20.4
Vertical Beam Angle (50%)	29.1
Horizontal Field Angle (10%)	46.9
Vertical Field Angle (10%)	45.0
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	87
Beam Efficiency	N.A.
Field Lumens	139
Field Efficiency	N.A.
Spill Lumens	18
Luminaire Lumens	157
Total Efficiency	N.A.
Total Luminaire Watts	4.1
Ballast Factor	1.00

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PHOTOMETRIC FILENAME : L011505002.IES

AXIAL CANDELA

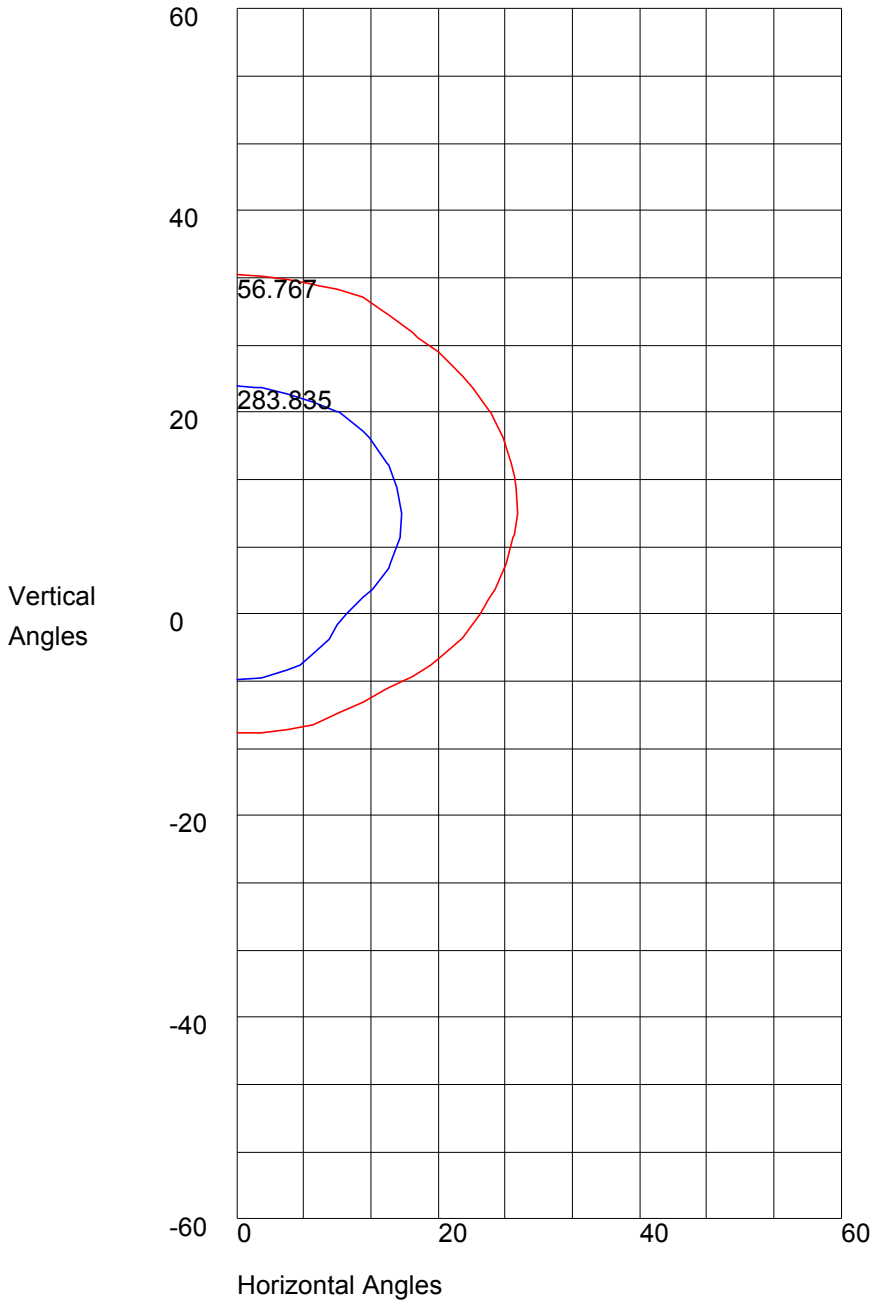
DEG.	HOR.	DEG.	VERT.
90	0	90	.68
85	0	85	1.02
75	.09	75	1.53
65	.42	65	2.55
55	.85	55	5.09
47.5	1.7	47.5	10.18
42.5	2.63	42.5	15.1
37.5	4.92	37.5	27.32
33	9.84	33	58.89
29	18.16	29	119.81
25.5	41.66	25.5	205.69
22.5	74.59	22.5	288.33
19.5	118.37	19.5	355.54
17	178.11	17	396.61
15	219.6	15	418.5
13	247.01	13	428
11	281.63	11	422.4
9	322.27	9	418.16
7	405.77	7	426.3
5	479.85	5	459.91
3	532.79	3	506.24
1	556.21	1	547.64
0	559.44	0	559.44
-1	556.21	-1	567.67
-3	532.79	-3	556.13
-5	479.85	-5	418.67
-7	405.77	-7	229.1
-9	322.27	-9	128.64
-11	281.63	-11	70.94
-13	247.01	-13	31.91
-15	219.6	-15	1.02
-17	178.11	-17	.51
-19.5	118.37	-19.5	0
-22.5	74.59	-22.5	0
-25.5	41.66	-25.5	0
-29	18.16	-29	0
-33	9.84	-33	0
-37.5	4.92	-37.5	0
-42.5	2.63	-42.5	0
-47.5	1.7	-47.5	0
-55	.85	-55	0
-65	.42	-65	0
-75	.09	-75	0
-85	0	-85	0
-90	0	-90	0

AXIAL CANDELA DISPLAY



Maximum Candela = 567.67 Located At Horizontal Angle = 0, Vertical Angle = -1
H - Horizontal Axial Candela
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 567.67 Located At Horizontal Angle = 0, Vertical Angle = -1
50% Maximum Candela = 283.835
10% Maximum Candela = 56.767