



8165 E Kaiser Blvd. Anaheim, CA 92808  
www.lightlaboratory.com

Report No: L111605704

Date: 12/5/2016



NVLAP LAB CODE 200927-0

**Report No:** L111605704

**Report Prepared For:** Hunter Industries  
1775 La Costa Meadows Dr. San Marcos, CA 92708

**Model Number:** LOLED35WWFLSBS

**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 LOLED35WWFLSBS . Received in working and undamaged condition. No modifications were necessary.

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

**Sample Arrival Date:** 11/29/16

**Date of Tests:** 11/30/16 - 12/5/16

**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-GB	2/10/17
Xitron Power Analyzer	2802	MT-EL02-2	12/22/16
BK PRECISION	1747	PS-DC04	12/8/16
Fluke Digital Thermometer	52k/J	MT-TP02-GB	12/8/16
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

<b>Manufacturer:</b>	Hunter Industries
<b>Model Number:</b>	LOLED35WWFLSBS
<b>Driver Model Number:</b>	N/A
<b>Total Lumens:</b>	282.48
<b>Input Voltage (VAC/60Hz):</b>	12.00
<b>Input Current (Amp):</b>	0.45
<b>Input Power (W):</b>	4.94
<b>Input Power Factor:</b>	0.92
<b>Current ATHD @ 12V(%):</b>	38%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	57
<b>Color Rendering Index (CRI):</b>	81
<b>Correlated Color Temperature (K):</b>	2653
<b>Chromaticity Coordinate x:</b>	0.4652
<b>Chromaticity Coordinate y:</b>	0.4140
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:45
<b>Total Operating Time (Hours):</b>	2:00
<b>Off State Power(W):</b>	0.00

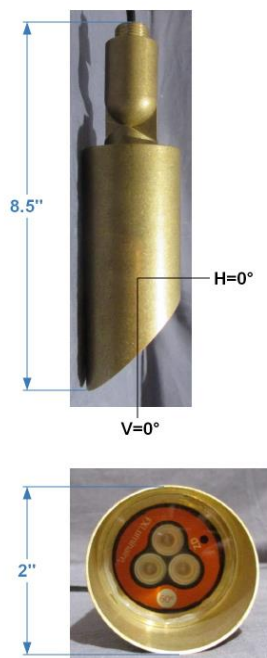
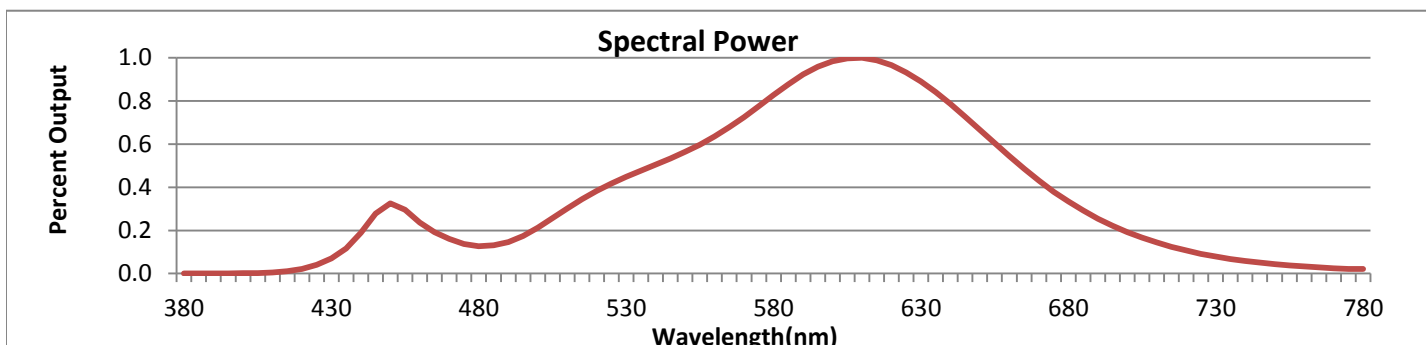


FIG. 1 LUMINAIRE



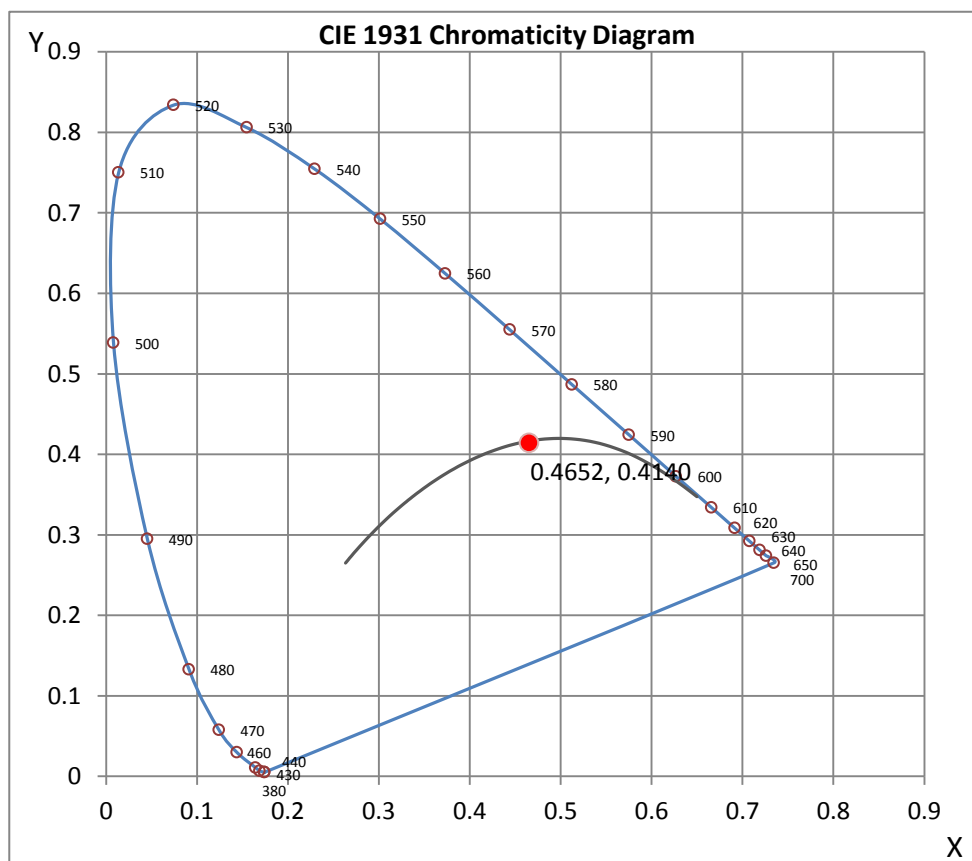
Wavelength	W/m <sup>2</sup> nm	440	0.1895	510	0.3022	580	0.8285	650	0.6661	720	0.1066
380	0.0006	450	0.3249	520	0.3830	590	0.9228	660	0.5455	730	0.0786
390	0.0007	460	0.2365	530	0.4480	600	0.9847	670	0.4307	740	0.0583
400	0.0014	470	0.1603	540	0.5048	610	1.0000	680	0.3345	750	0.0436
410	0.0046	480	0.1272	550	0.5640	620	0.9672	690	0.2544	760	0.0328
420	0.0214	490	0.1466	560	0.6354	630	0.8907	700	0.1924	770	0.0247
430	0.0700	500	0.2129	570	0.7253	640	0.7863	710	0.1440	780	0.0214

**CRI & CCT**

x	0.4652
y	0.4140
u'	0.2644
v'	0.5294
CRI	81.40
CCT	2653
Duv	0.00083

**R Values**

R1	79.57
R2	89.14
R3	96.95
R4	79.11
R5	78.51
R6	86.12
R7	83.24
R8	58.75
R9	9.27
R10	74.60
R11	77.09
R12	67.65
R13	81.49
R14	98.06





8165 E Kaiser Blvd. Anaheim, CA 92808  
www.lightlaboratory.com

Report No: L111605704

Date: 12/5/2016



NVLAP LAB CODE 200927-0

## 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*

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



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

## Photometric Test Report

### IES FLOOD REPORT

PHOTOMETRIC FILENAME : L111605704.IES

### DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L111605704  
[TESTLAB] LIGHT LABORATORY, INC.  
[ISSUEDATE] 12/5/2016  
[MANUFAC] HUNTER INDUSTRIES  
[LUMCAT] LOLED35WWFLSBS  
[LUMINAIRE] 35 WARM WIDE FLOOD LONG SHROUD UPLIGHT  
[BALLASTCAT] 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, 4.94W  
[TEST PROCEDURE] IESNA:LM-79-08

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

### CHARACTERISTICS

NEMA Type	5 H x 5 V
Maximum Candela	408.05
Maximum Candela Angle	-5H -1V
Horizontal Beam Angle (50%)	47.2
Vertical Beam Angle (50%)	46.2
Horizontal Field Angle (10%)	73.8
Vertical Field Angle (10%)	73.5
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	166
Beam Efficiency	N.A.
Field Lumens	246
Field Efficiency	N.A.
Spill Lumens	35
Luminaire Lumens	281
Total Efficiency	N.A.
Total Luminaire Watts	4.94
Ballast Factor	1.00

**IES FLOOD REPORT**  
**PHOTOMETRIC FILENAME : L111605704.IES**

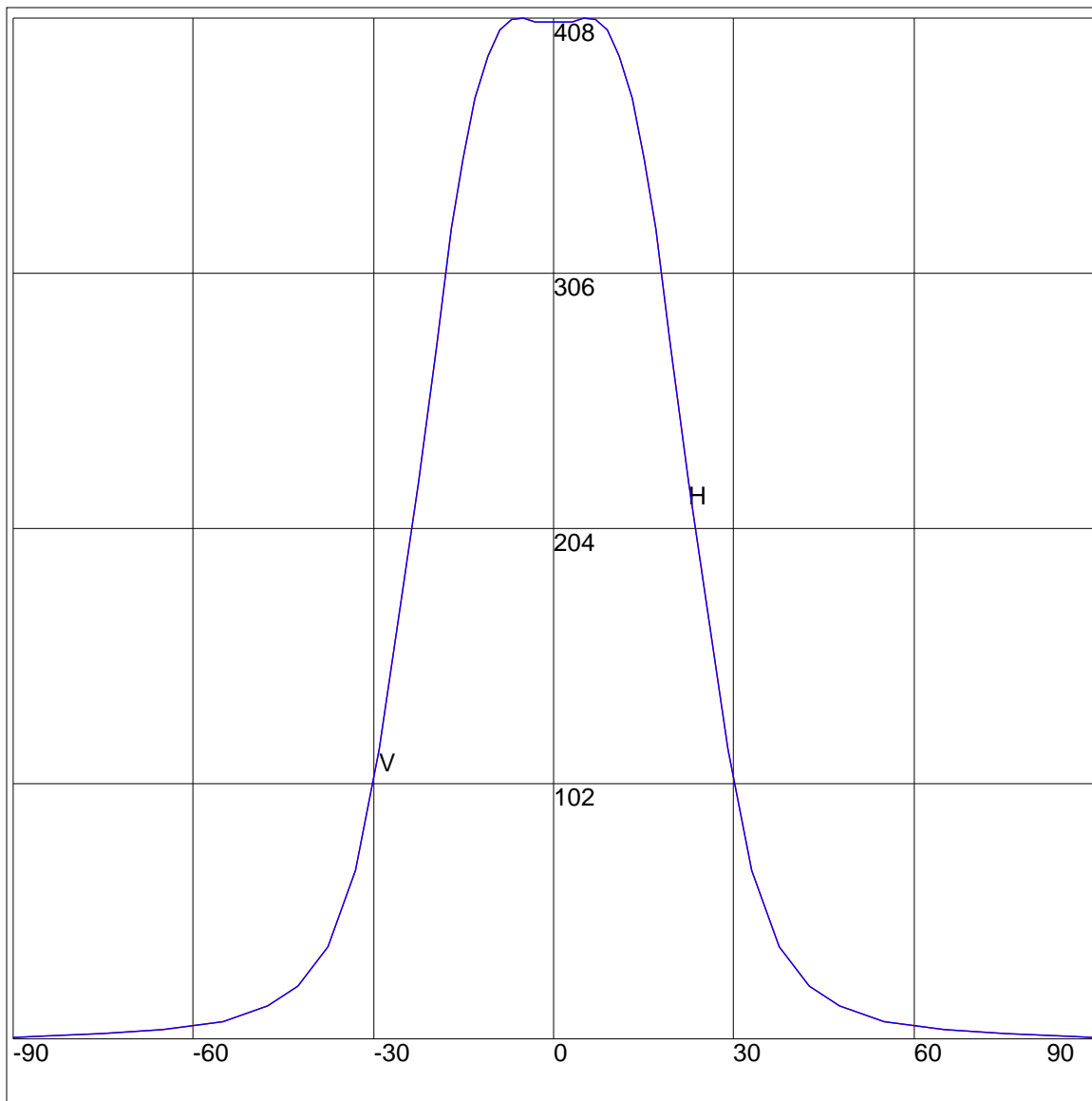
**AXIAL CANDELA**

DEG.	HOR.	DEG.	VERT.
90	.99	90	.99
85	1.32	85	1.32
75	2.27	75	2.27
65	3.75	65	3.75
55	7.25	55	7.25
47.5	13.63	47.5	13.63
42.5	21.03	42.5	21.03
37.5	36.78	37.5	36.78
33	67.44	33	67.44
29	115.72	29	115.72
25.5	172.61	25.5	172.61
22.5	222.69	22.5	222.69
19.5	277.89	19.5	277.89
17	324.06	17	324.06
15	351.72	15	351.72
13	375.95	13	375.95
11	392.76	11	392.76
9	403.14	9	403.14
7	407.5	7	407.5
5	408.05	5	408.05
3	406.65	3	406.65
1	406.42	1	406.42
0	406.7	0	406.7
-1	406.42	-1	406.42
-3	406.65	-3	406.65
-5	408.05	-5	408.05
-7	407.5	-7	407.5
-9	403.14	-9	403.14
-11	392.76	-11	392.76
-13	375.95	-13	375.95
-15	351.72	-15	351.72
-17	324.06	-17	324.06
-19.5	277.89	-19.5	277.89
-22.5	222.69	-22.5	222.69
-25.5	172.61	-25.5	172.61
-29	115.72	-29	115.72
-33	67.44	-33	67.44
-37.5	36.78	-37.5	36.78
-42.5	21.03	-42.5	21.03
-47.5	13.63	-47.5	13.63
-55	7.25	-55	7.25
-65	3.75	-65	3.75
-75	2.27	-75	2.27
-85	1.32	-85	1.32
-90	.99	-90	.99

**ZONAL LUMEN SUMMARY**

Zone	%
0-20	45.9
0-30	74.7
0-40	87.3
0-60	95.6
0-80	98.6
0-90	99.5
10-90	88.3
20-40	41.4
20-50	47.3
40-70	10.2
60-80	2.9
70-80	1.1
80-90	0.9
90-110	0.4
90-120	0.5
90-130	0.5
90-150	0.5
90-180	0.5
110-180	0.1
0-180	100

AXIAL CANDELA DISPLAY

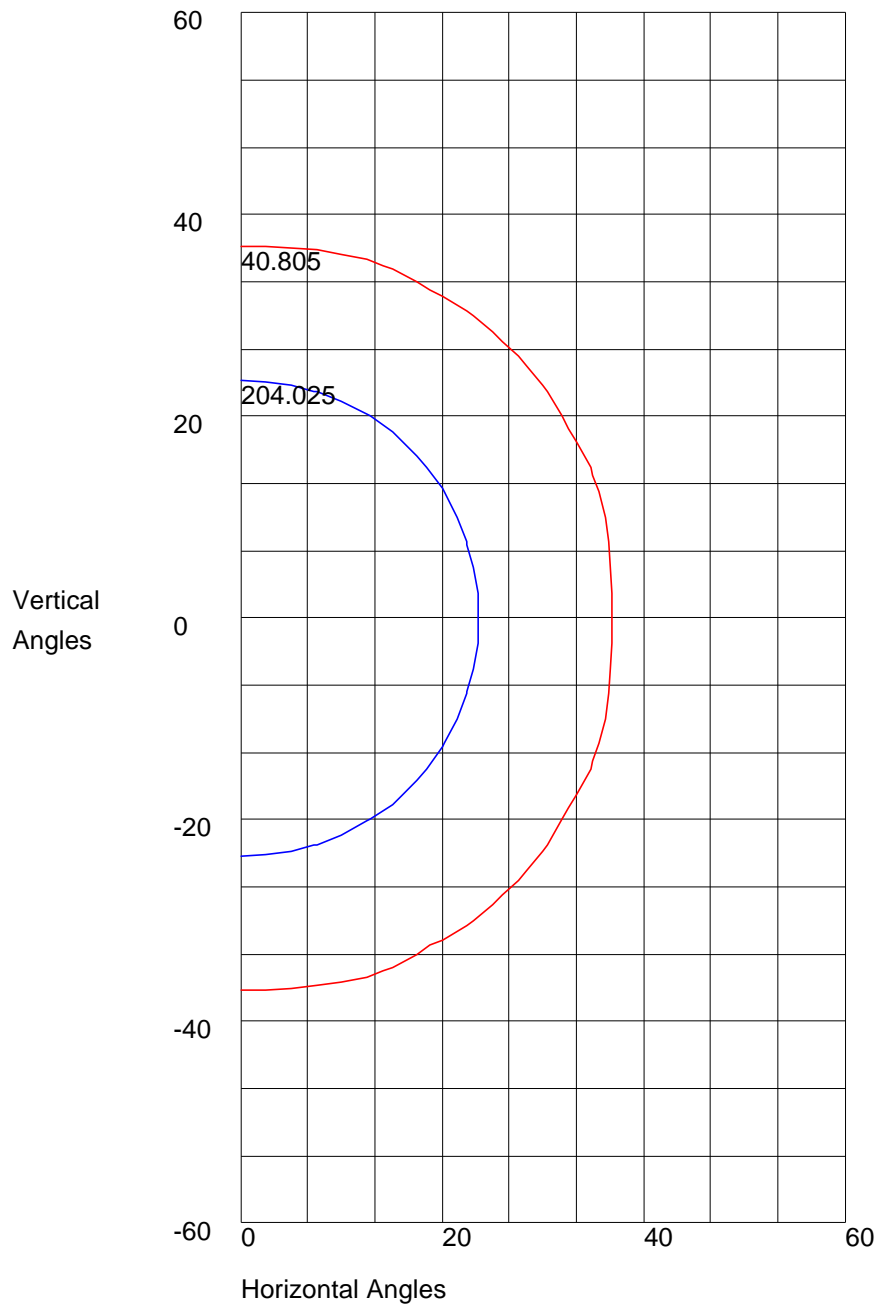


Maximum Candela = 408.05 Located At Horizontal Angle = -5, Vertical Angle = -1

H - Horizontal Axial Candela

V - Vertical Axial Candela

### ISOCANDELA CURVES



Maximum Candela = 408.05 Located At Horizontal Angle = -5, Vertical Angle = -1  
50% Maximum Candela = 204.025  
10% Maximum Candela = 40.805