



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

Report No: L051503006

Date: 5/21/2015



NVLAP LAB CODE 200927-0

**Report No:** L051503006

**Report Prepared For:** USTE, dba Vista Professional Outdoor Lighting  
 1625 Surveyor Ave., Simi Valley CA 93063

**Model Number:** 3106-X-9.5-W-SP

**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 3106-X-9.5-W-SP . Received in working and undamaged condition. No modifications were necessary.

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

**Sample Arrival Date:** 5/15/15

**Date of Tests:** 5/19/15 - 5/19/15

**Seasoning of Sample:** No seasoning was performed in accordance with IESNA LM-79.

**Equipment List**

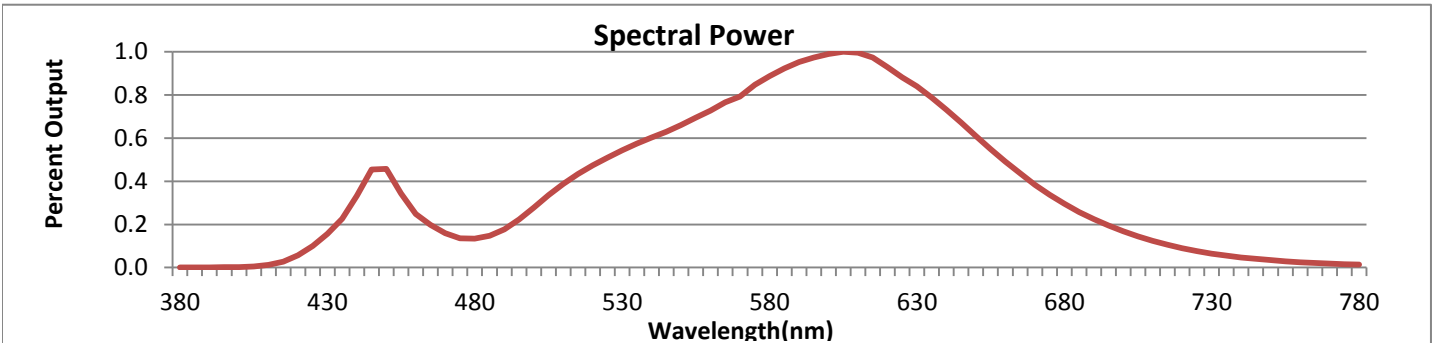
Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	11/10/15
Xitron Power Analysis System	2503AH	MT-EL01	10/20/15
BK Precision DC Power Supply	1747	PSDC-04	01/08/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	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**

<b>Manufacturer:</b>	USTE, dba Vista Professional Outdoor I
<b>Model Number:</b>	3106-X-9.5-W-SP
<b>Driver Model Number:</b>	N/A
<b>Total Lumens:</b>	566.04
<b>Input Voltage (VAC/60Hz):</b>	12.00
<b>Input Current (Amp):</b>	0.76
<b>Input Power (W):</b>	7.42
<b>Input Power Factor:</b>	0.82
<b>Current ATHD @ 12V(%):</b>	35%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	76
<b>Color Rendering Index (CRI):</b>	82
<b>Correlated Color Temperature (K):</b>	3050
<b>Chromaticity Coordinate x:</b>	0.4361
<b>Chromaticity Coordinate y:</b>	0.4084
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:50
<b>Total Operating Time (Hours):</b>	1:50
<b>Off State Power(W):</b>	0.00

FIG. 1 LUMINAIRE



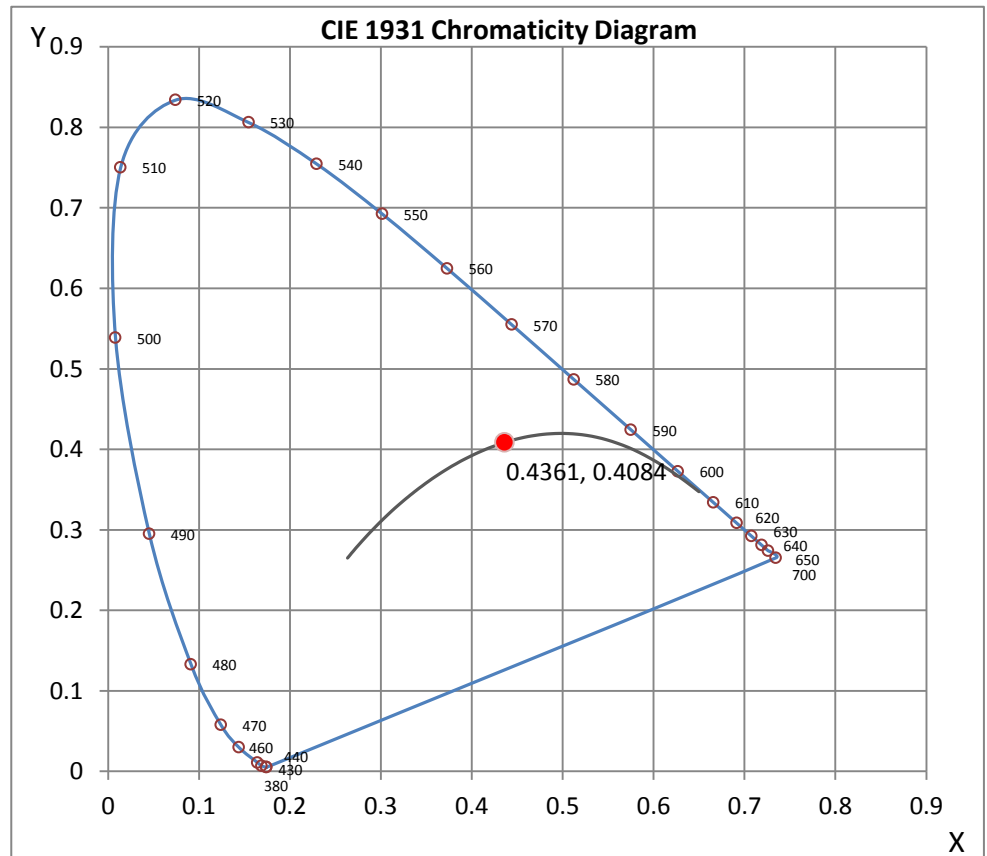
Wavelength	W/m <sup>2</sup> nm	440	0.3336	510	0.3884	580	0.8879	650	0.6107	720	0.0888
380	0.0009	450	0.4583	520	0.4742	590	0.9534	660	0.4912	730	0.0649
390	0.0011	460	0.2487	530	0.5429	600	0.9898	670	0.3837	740	0.0471
400	0.0026	470	0.1594	540	0.6027	610	0.9963	680	0.2961	750	0.0341
410	0.0123	480	0.1338	550	0.6607	620	0.9296	690	0.2242	760	0.0245
420	0.0564	490	0.1769	560	0.7274	630	0.8397	700	0.1677	770	0.0180
430	0.1560	500	0.2782	570	0.7927	640	0.7315	710	0.1238	780	0.0132

**CRI & CCT**

x	0.4361
y	0.4084
u'	0.2482
v'	0.5229
CRI	81.50
CCT	3050
Duv	0.00183

**R Values**

R1	79.94
R2	87.19
R3	93.75
R4	81.43
R5	79.02
R6	82.99
R7	85.50
R8	62.32
R9	10.01
R10	69.95
R11	79.96
R12	64.31
R13	81.14
R14	95.94



\*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 : L051503006.IES**

### DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L051503006  
[TESTLAB] LIGHT LABORATORY, INC.  
[ISSUEDATE] 5/21/2015  
[MANUFAC] USTE, DBA VISTA PROFESSIONAL OUTDOOR LIGHTING  
[LUMCAT] 3106-X-9.5-W-SP  
[LUMINAIRE] 6"DIA. X 2-3/4"H. LED ACCENT  
[MORE] CLEAR LENS  
[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, 7.42W  
[TEST PROCEDURE] IESNA:LM-79-08

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

### CHARACTERISTICS

NEMA Type	3 H x 3 V
Maximum Candela	4220
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	14.3
Vertical Beam Angle (50%)	14.3
Horizontal Field Angle (10%)	30.5
Vertical Field Angle (10%)	30.5
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	141
Beam Efficiency	N.A.
Field Lumens	315
Field Efficiency	N.A.
Spill Lumens	251
Luminaire Lumens	566
Total Efficiency	N.A.
Total Luminaire Watts	7.42
Ballast Factor	1.00

**IES FLOOD REPORT**  
**PHOTOMETRIC FILENAME : L051503006.IES**

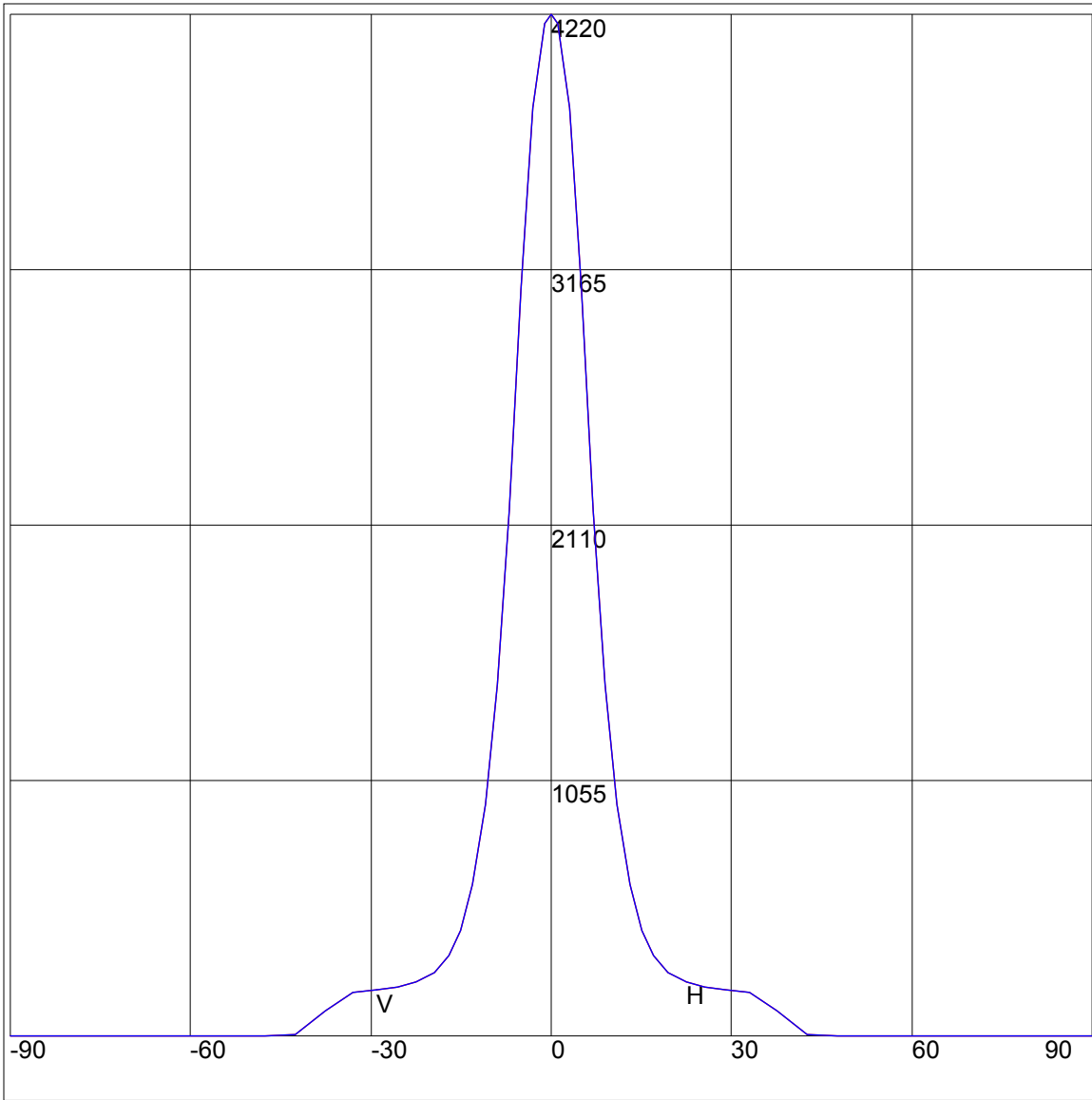
**AXIAL CANDELA**

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	0	85	0
75	0	75	0
65	1	65	1
55	5	55	5
47.5	5	47.5	5
42.5	6	42.5	6
37.5	108	37.5	108
33	181	33	181
29	192	29	192
25.5	206	25.5	206
22.5	225	22.5	225
19.5	266	19.5	266
17	334	17	334
15	436	15	436
13	625	13	625
11	958	11	958
9	1456	9	1456
7	2171	7	2171
5	3086	5	3086
3	3832	3	3832
1	4181	1	4181
0	4220	0	4220
-1	4181	-1	4181
-3	3832	-3	3832
-5	3086	-5	3086
-7	2171	-7	2171
-9	1456	-9	1456
-11	958	-11	958
-13	625	-13	625
-15	436	-15	436
-17	334	-17	334
-19.5	266	-19.5	266
-22.5	225	-22.5	225
-25.5	206	-25.5	206
-29	192	-29	192
-33	181	-33	181
-37.5	108	-37.5	108
-42.5	6	-42.5	6
-47.5	5	-47.5	5
-55	5	-55	5
-65	1	-65	1
-75	0	-75	0
-85	0	-85	0
-90	0	-90	0

**ZONAL LUMEN SUMMARY**

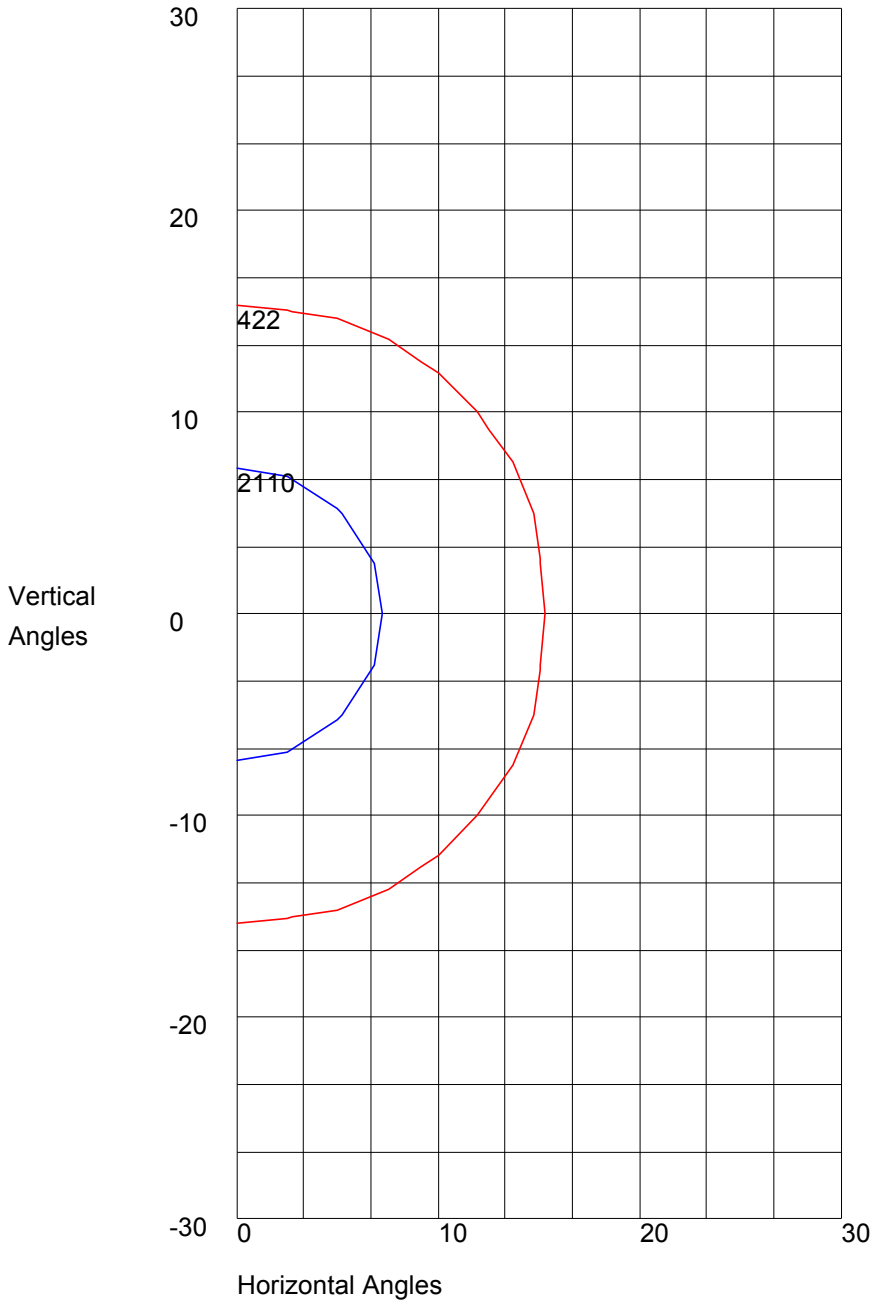
Zone	%
0-20	63.9
0-30	80.2
0-40	94.9
0-60	99.4
0-80	100
0-90	100
10-90	64.2
20-40	31
20-50	34.9
40-70	5
60-80	0.6
70-80	0.1
80-90	0
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

AXIAL CANDELA DISPLAY



Maximum Candela = 4220 Located At Horizontal Angle = 0, Vertical Angle = 0  
H - Horizontal Axial Candela  
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 4220 Located At Horizontal Angle = 0, Vertical Angle = 0  
50% Maximum Candela = 2110  
10% Maximum Candela = 422