



8165 E Kaiser Blvd. Anaheim, CA 92808
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Report No: L051503009

Date: 5/21/2015



NVLAP LAB CODE 200927-0

Report No: L051503009

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

Model Number: 3106-X-4.5-W-VNS

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-4.5-W-VNS . 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: 5/20/15 - 5/21/15

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:	USTE, dba Vista Professional Outdoor I
Model Number:	3106-X-4.5-W-VNS
Driver Model Number:	N/A
Total Lumens:	134.98
Input Voltage (VAC/60Hz):	12.00
Input Current (Amp):	0.38
Input Power (W):	4.06
Input Power Factor:	0.88
Current ATHD @ 12V(%):	39%
Current ATHD @ 277V(%):	N/A
Efficacy:	33
Color Rendering Index (CRI):	84
Correlated Color Temperature (K):	3068
Chromaticity Coordinate x:	0.4342
Chromaticity Coordinate y:	0.4066
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:30
Off State Power(W):	0.00

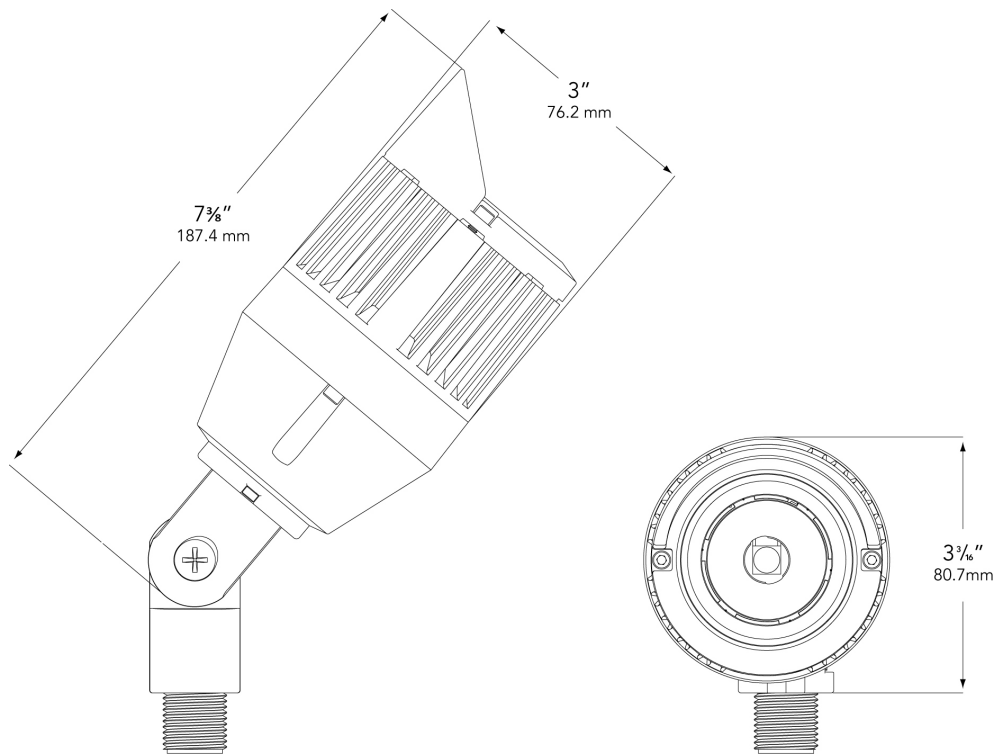
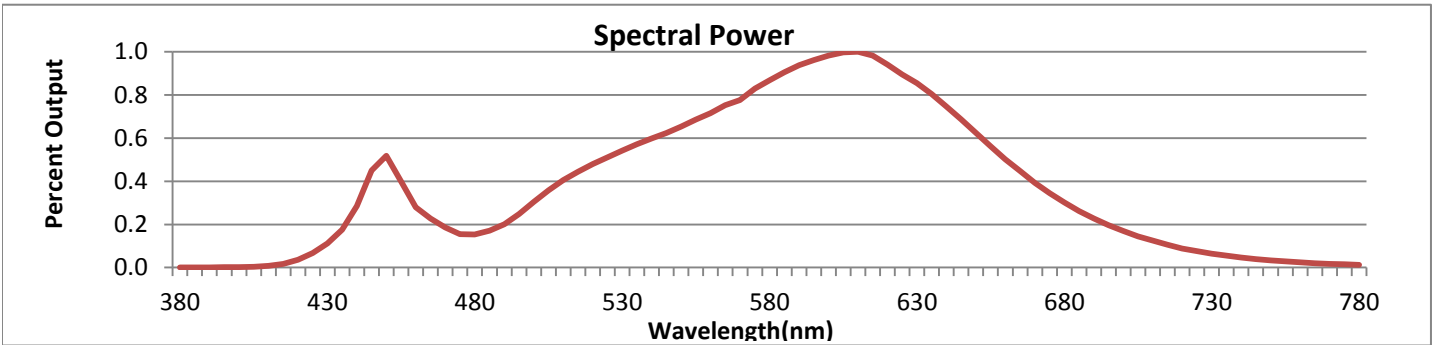


FIG. 1 LUMINAIRE

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



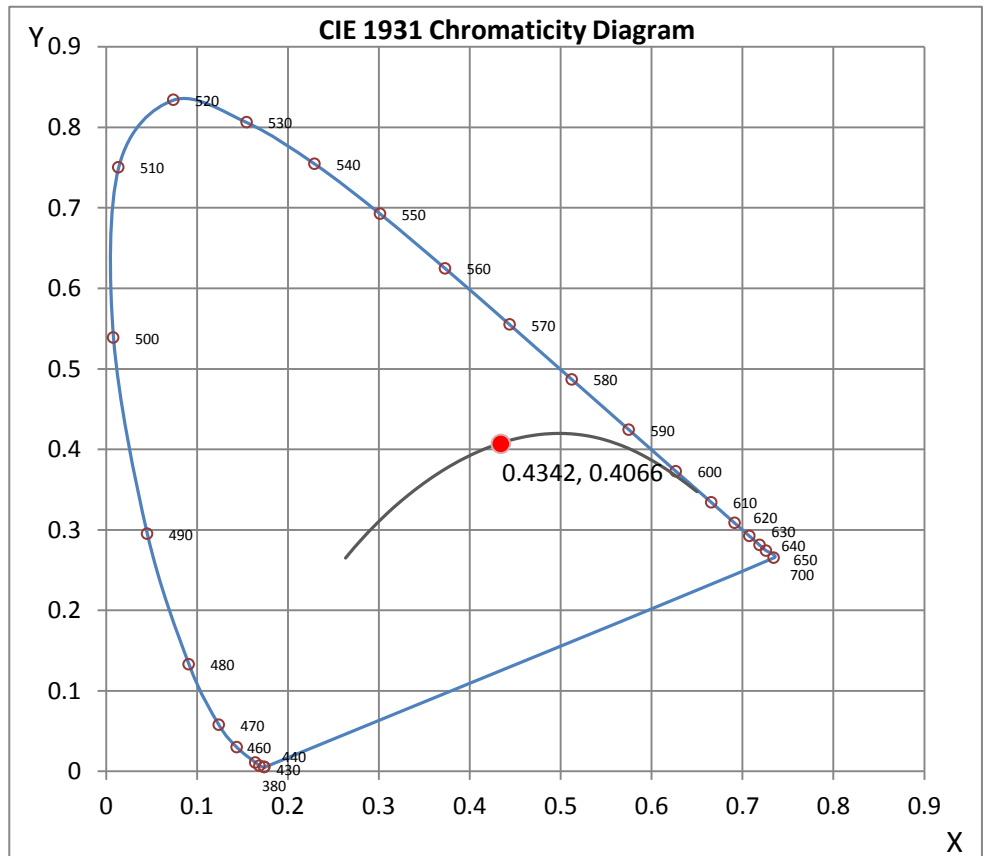
Wavelength	W/m ² nm	440	0.2853	510	0.4058	580	0.8693	650	0.6247	720	0.0885
380	0.0008	450	0.5187	520	0.4801	590	0.9379	660	0.5019	730	0.0644
390	0.0009	460	0.2797	530	0.5417	600	0.9828	670	0.3919	740	0.0464
400	0.0017	470	0.1860	540	0.5979	610	1.0000	680	0.3013	750	0.0334
410	0.0074	480	0.1539	550	0.6535	620	0.9413	690	0.2276	760	0.0239
420	0.0355	490	0.2014	560	0.7154	630	0.8551	700	0.1692	770	0.0174
430	0.1124	500	0.3044	570	0.7762	640	0.7473	710	0.1247	780	0.0127

CRI & CCT

x	0.4342
y	0.4066
u'	0.2477
v'	0.5220
CRI	83.80
CCT	3068
Duv	0.00139

R Values

R1	82.55
R2	89.34
R3	95.25
R4	83.67
R5	81.86
R6	86.15
R7	86.45
R8	65.15
R9	17.53
R10	74.80
R11	82.86
R12	67.85
R13	83.86
R14	96.84



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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:

Test Report Reviewed by:

Jeff Ahn
 Engineering Manager

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.



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Photometric Test Report

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L051503009.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L051503009
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 5/21/2015
 [MANUFAC] USTE, DBA VISTA PROFESSIONAL OUTDOOR LIGHTING
 [LUMCAT] 3106-X-4.5-W-VNS
 [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, 4.06W
 [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	1379
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	15.7
Vertical Beam Angle (50%)	15.7
Horizontal Field Angle (10%)	30.6
Vertical Field Angle (10%)	30.6
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	55
Beam Efficiency	N.A.
Field Lumens	112
Field Efficiency	N.A.
Spill Lumens	23
Luminaire Lumens	135
Total Efficiency	N.A.
Total Luminaire Watts	4.06
Ballast Factor	1.00

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L051503009.IES

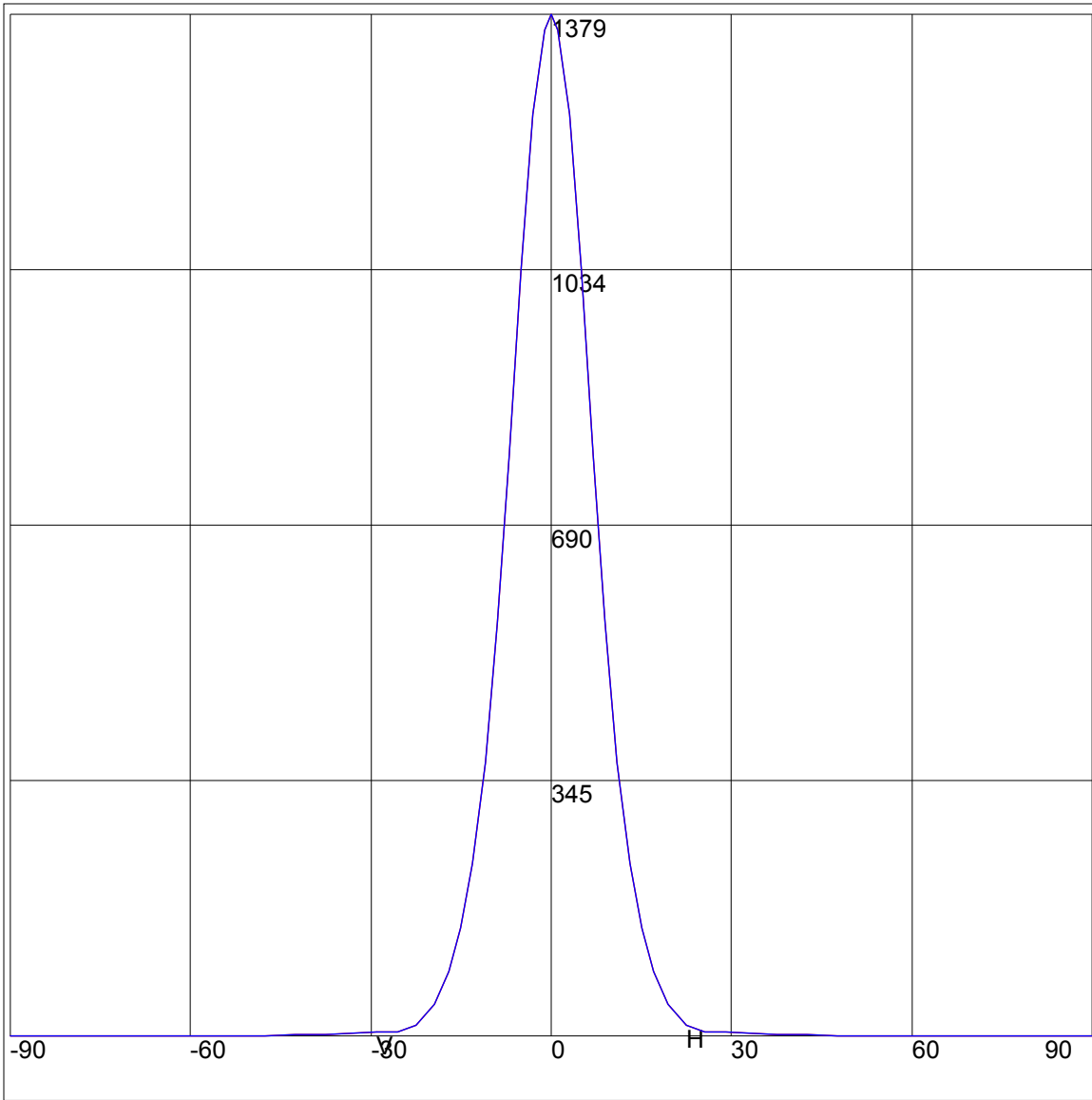
AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	0	85	0
75	0	75	0
65	0	65	0
55	1	55	1
47.5	1	47.5	1
42.5	2	42.5	2
37.5	3	37.5	3
33	5	33	5
29	6	29	6
25.5	7	25.5	7
22.5	15	22.5	15
19.5	44	19.5	44
17	88	17	88
15	146	15	146
13	233	13	233
11	371	11	371
9	559	9	559
7	784	7	784
5	1032	5	1032
3	1244	3	1244
1	1357	1	1357
0	1379	0	1379
-1	1357	-1	1357
-3	1244	-3	1244
-5	1032	-5	1032
-7	784	-7	784
-9	559	-9	559
-11	371	-11	371
-13	233	-13	233
-15	146	-15	146
-17	88	-17	88
-19.5	44	-19.5	44
-22.5	15	-22.5	15
-25.5	7	-25.5	7
-29	6	-29	6
-33	5	-33	5
-37.5	3	-37.5	3
-42.5	2	-42.5	2
-47.5	1	-47.5	1
-55	1	-55	1
-65	0	-65	0
-75	0	-75	0
-85	0	-85	0
-90	0	-90	0

ZONAL LUMEN SUMMARY

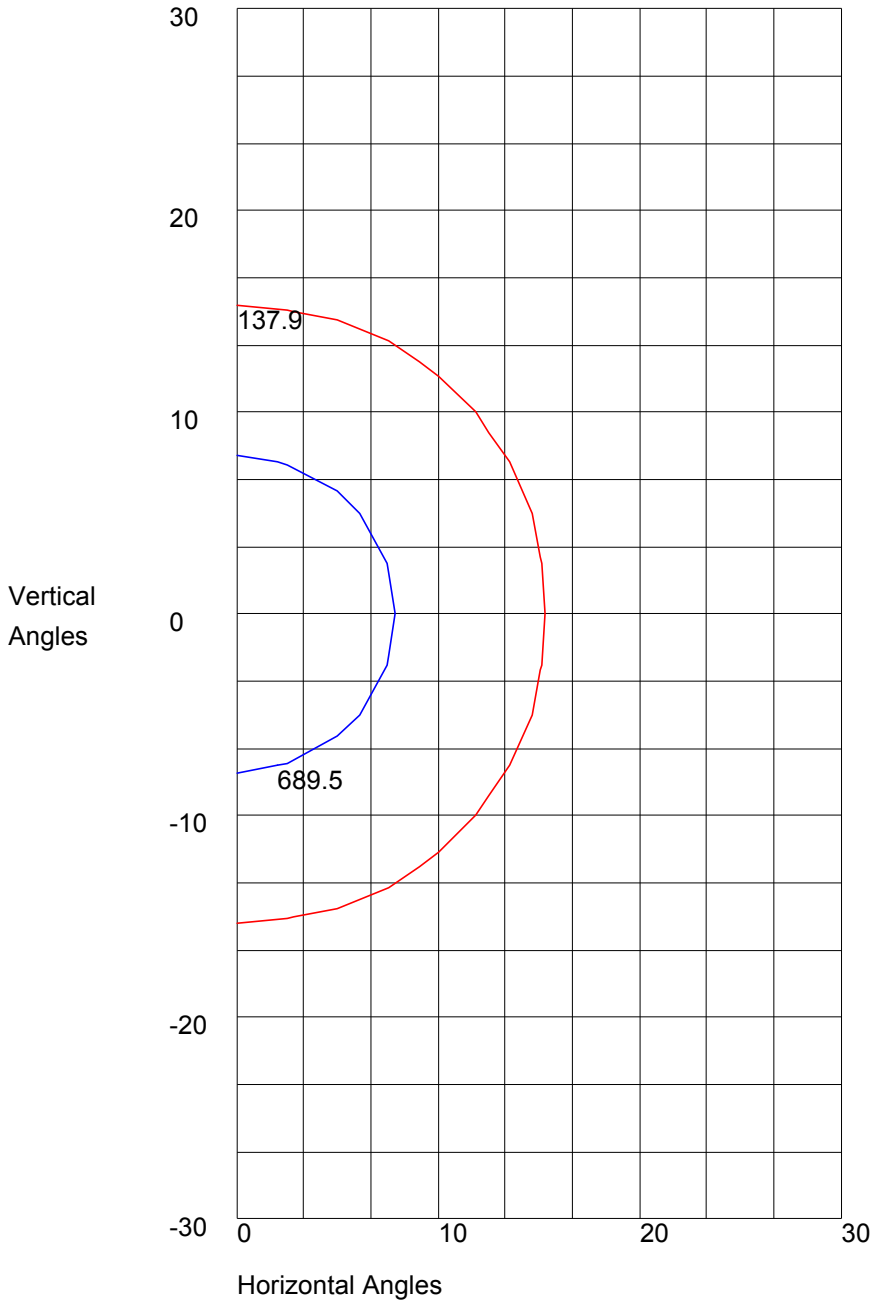
Zone	%
0-20	91.8
0-30	96.3
0-40	98.1
0-60	99.6
0-80	100
0-90	100
10-90	48.3
20-40	6.3
20-50	7.3
40-70	1.9
60-80	0.3
70-80	0
80-90	0
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

AXIAL CANDELA DISPLAY



Maximum Candela = 1379 Located At Horizontal Angle = 0, Vertical Angle = 0
H - Horizontal Axial Candela
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 1379 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 689.5
10% Maximum Candela = 137.9