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

NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L061805911 **Issue Date: 7/10/2018**

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

Model Number: 1059-X-NS-30-E-MV-ND-LSF

Test: Photometric/Electrical Test

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

Testing Condition: Total lumens and electricals are generated from light laboratory report L061805909 by using driver output current ratio of 0.68.

Sample Arrival Date: 6/28/18

Date of Tests: 7/10/18 - 7/10/18

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-S4	1/9/19
BK PRECISION	1747	PS-DC04	1/10/19
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/19
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.

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Test Summary	
Manufacturer:	USTE, dba Vista Professional Outdoor Lighting
Model Number:	1059-X-NS-30-E-MV-ND-LSF
Driver Model Number:	THOMAS RESEARCH PRODUCTS PLED96W-054-C1750-D(1190mA)
Total Lumens:	2743.04
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.42
Input Power (W):	49.93
Input Power Factor:	1.00
Current ATHD @ 120V(%):	5%
Current ATHD @ 277V(%):	N/A
Efficacy:	54.94
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:00
Total Operating Time (Hours):	1:35

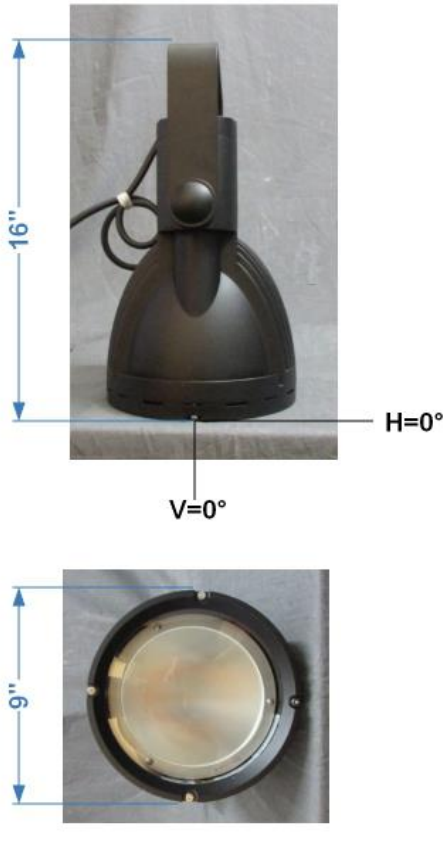

FIG.1 LUMINAIRE

*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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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: 7*

*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 : L061805911.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L061805911
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 7/10/2018
[MANUFAC] USTE, dba Vista Professional Outdoor Lighting
[LUMCAT] 1059-X-NS-30-E-MV-ND-LSF
[LUMINAIRE] LED Floodlight, NS Distribution, Linear Spread Filter
[BALLASTCAT] THOMAS RESEARCH PRODUCTS PLED96W-054-C1750-D(1190mA)
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[TEST CONDITION] CANDELA VALUES AND ELECTRICALS ARE GENERATED FROM LIGHT LABORATORY
[MORE] REPORT L061805909 BY USING DRIVER OUTPUT CURRENT RATIO OF 0.68.
[INPUT] 120VAC, 49.93W
[TEST PROCEDURE] IESNA:LM-79-08

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

CHARACTERISTICS

NEMA Type	3 H x 4 V
Maximum Candela	9612
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	14.8
Vertical Beam Angle (50%)	35.6
Horizontal Field Angle (10%)	45.0
Vertical Field Angle (10%)	69.3
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	846
Beam Efficiency	N.A.
Field Lumens	2019
Field Efficiency	N.A.
Spill Lumens	724
Luminaire Lumens	2743
Total Efficiency	N.A.
Total Luminaire Watts	49.93
Ballast Factor	1.00

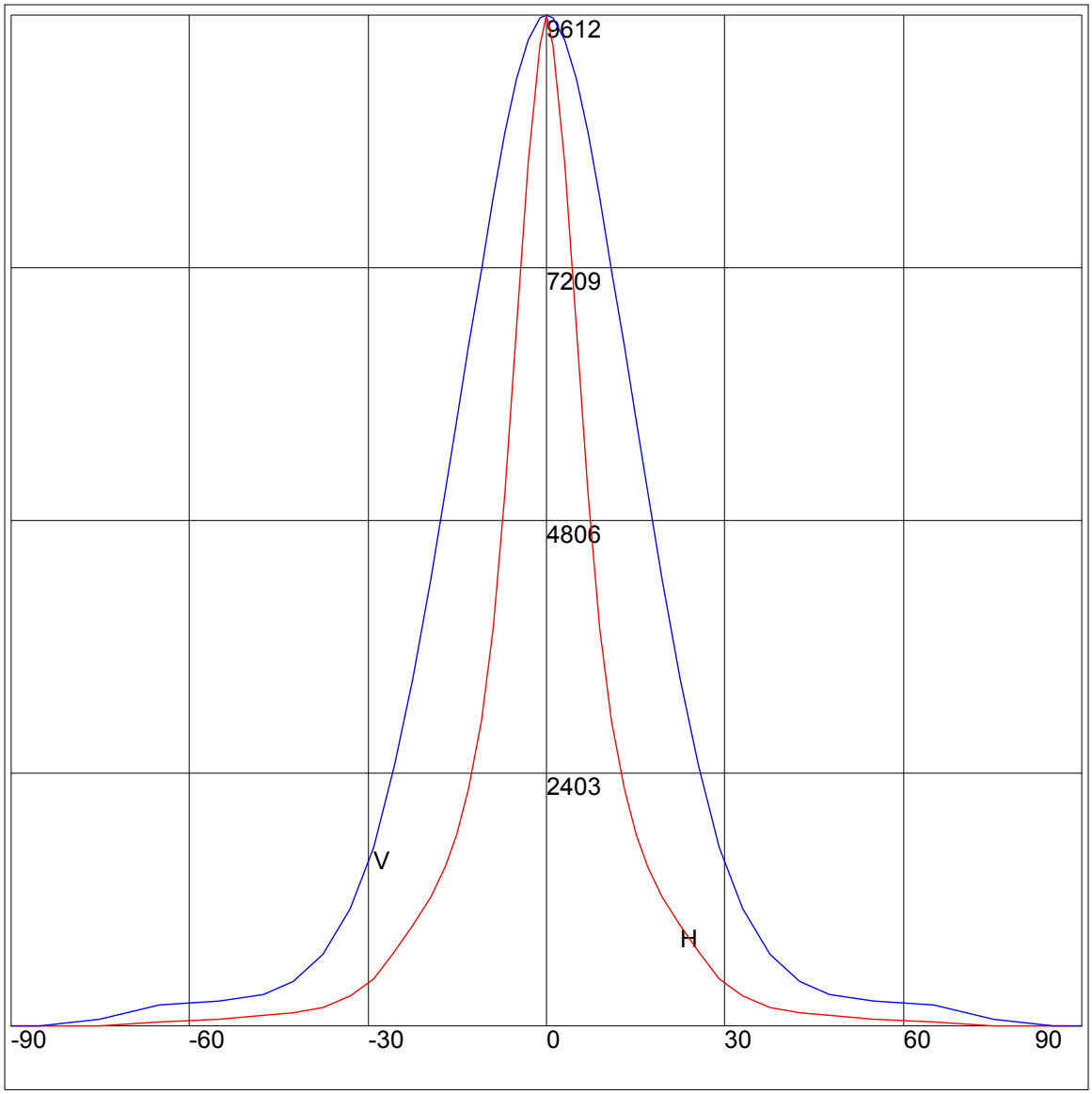
IES FLOOD REPORT
PHOTOMETRIC FILENAME : L061805911.IES

AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	1	85	1
75	9	75	65
65	37	65	203
55	71	55	244
47.5	99	47.5	302
42.5	126	42.5	423
37.5	179	37.5	685
33	285	33	1119
29	456	29	1702
25.5	709	25.5	2477
22.5	959	22.5	3296
19.5	1233	19.5	4253
17	1515	17	5078
15	1820	15	5758
13	2254	13	6464
11	2898	11	7189
9	3785	9	7883
7	5072	7	8503
5	6647	5	9002
3	8218	3	9377
1	9331	1	9592
0	9612	0	9612
-1	9331	-1	9592
-3	8218	-3	9377
-5	6647	-5	9002
-7	5072	-7	8503
-9	3785	-9	7883
-11	2898	-11	7189
-13	2254	-13	6464
-15	1820	-15	5758
-17	1515	-17	5078
-19.5	1233	-19.5	4253
-22.5	959	-22.5	3296
-25.5	709	-25.5	2477
-29	456	-29	1702
-33	285	-33	1119
-37.5	179	-37.5	685
-42.5	126	-42.5	423
-47.5	99	-47.5	302
-55	71	-55	244
-65	37	-65	203
-75	9	-75	65
-85	1	-85	1
-90	0	-90	0

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L061805911.IES

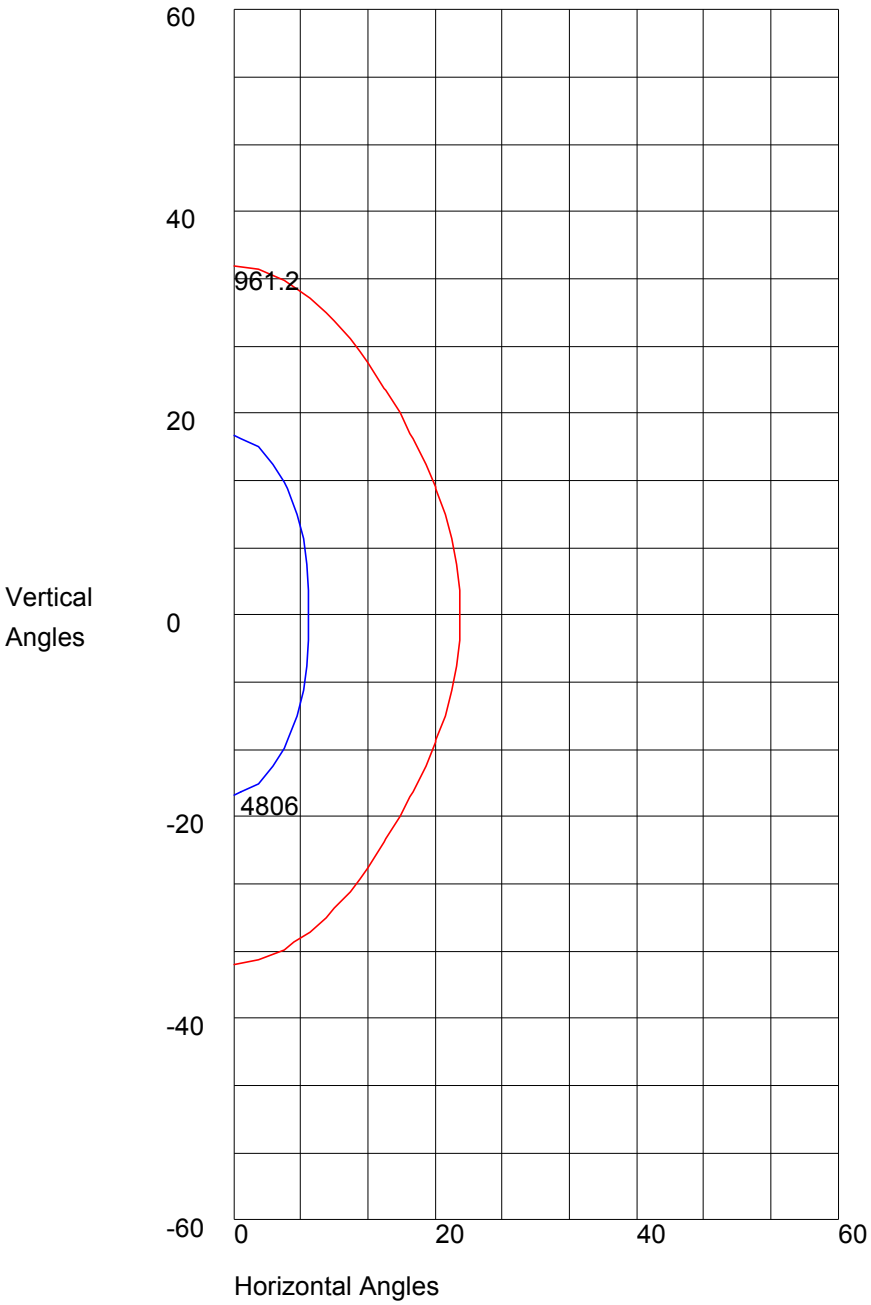
AXIAL CANDELA DISPLAY



Maximum Candela = 9612 Located At Horizontal Angle = 0, Vertical Angle = 0
H - Horizontal Axial Candela
V - Vertical Axial Candela

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L061805911.IES

ISOCANDELA CURVES



Maximum Candela = 9612 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 4806
10% Maximum Candela = 961.2