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Report No: L091502201
Date: 9/10/2015



NVLAP LAB CODE 200927-0

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

Model Number: 1043-X-WF-30-16W-MV-ND

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 1043-X-WF-30-16W-MV-ND. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 9/8/15

Date of Tests: 9/9/15 - 9/10/15

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.

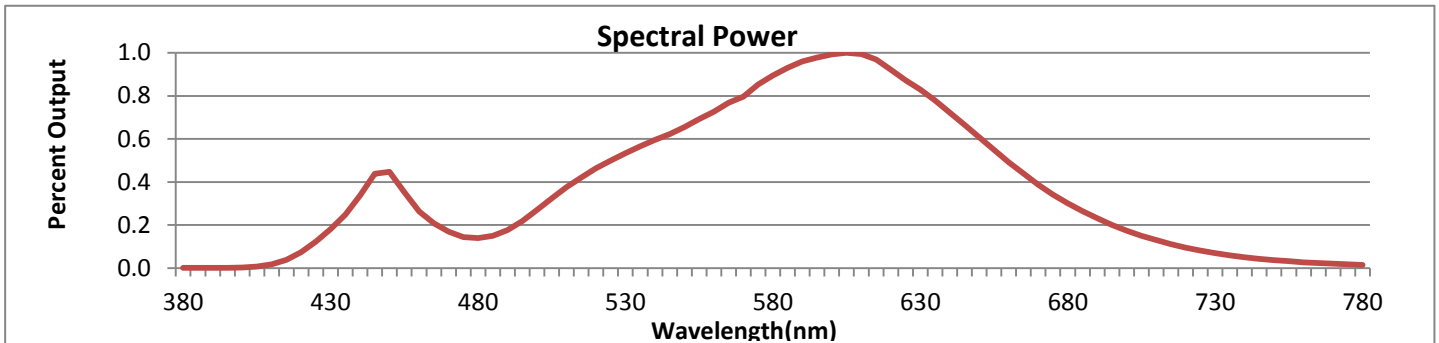
Test Summary

Manufacturer:	Vista Professional Outdoor Lighting
Model Number:	1043-X-WF-30-16W-MV-ND
Driver Model Number:	ERP ESS020W-1400-14
Total Lumens:	957.14
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.13
Input Power (W):	15.28
Input Power Factor:	0.98
Current ATHD @ 120V(%):	10%
Current ATHD @ 277V(%):	N/A
Efficacy:	63
Color Rendering Index (CRI):	81
Correlated Color Temperature (K):	3044
Chromaticity Coordinate x:	0.4352
Chromaticity Coordinate y:	0.4058
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:05
Total Operating Time (Hours):	2:05
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.



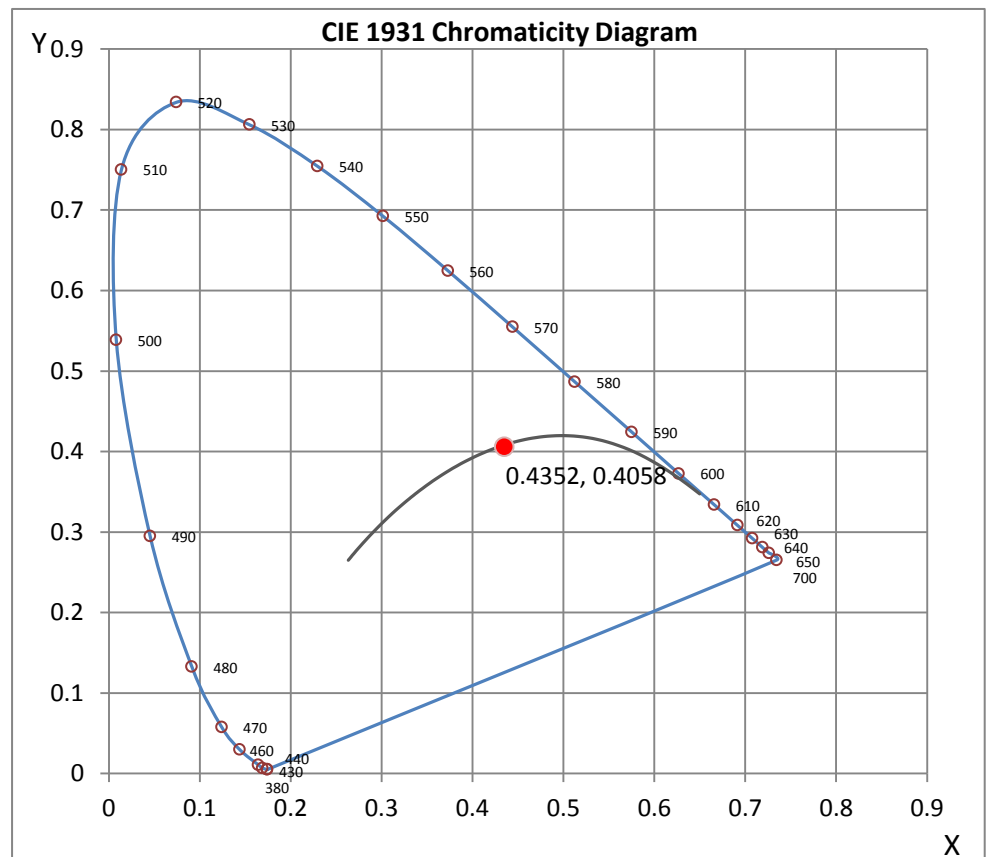
Wavelength	W/m ² nm	440	0.3373	510	0.3760	580	0.8948	650	0.6076	720	0.0942
380	0.0009	450	0.4477	520	0.4632	590	0.9601	660	0.4916	730	0.0699
390	0.0011	460	0.2633	530	0.5340	600	0.9925	670	0.3876	740	0.0509
400	0.0031	470	0.1687	540	0.5957	610	0.9944	680	0.3013	750	0.0373
410	0.0173	480	0.1393	550	0.6560	620	0.9215	690	0.2311	760	0.0269
420	0.0733	490	0.1765	560	0.7272	630	0.8288	700	0.1742	770	0.0201
430	0.1806	500	0.2698	570	0.7963	640	0.7221	710	0.1302	780	0.0148

CRI & CCT

x	0.4352
y	0.4058
u'	0.2487
v'	0.5218
CRI	80.90
CCT	3044
Duv	0.00093

R Values

R1	79.21
R2	87.08
R3	93.96
R4	80.30
R5	78.33
R6	82.72
R7	84.72
R8	61.05
R9	7.75
R10	69.65
R11	78.44
R12	64.69
R13	80.57
R14	96.10



*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.

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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 : L091502201.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L091502201
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 9/10/2015
 [MANUFAC] VISTA PROFESSIONAL OUTDOOR LIGHTING
 [LUMCAT] 1043-X-WF-30-16W-MV-ND
 [LUMINAIRE] LED ACCENT, WF DISTRIBUTION
 [MORE] SIZE: 2.75"DIA. X 8"H.
 [BALLASTCAT] ERP ESS020W-1400-14
 [LAMPPOSITION] 0,0
 [LAMPCAT] N/A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 120VAC, 15.28W
 [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	1505
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	44.0
Vertical Beam Angle (50%)	44.0
Horizontal Field Angle (10%)	76.4
Vertical Field Angle (10%)	76.4
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	521
Beam Efficiency	N.A.
Field Lumens	873
Field Efficiency	N.A.
Spill Lumens	84
Luminaire Lumens	957
Total Efficiency	N.A.
Total Luminaire Watts	15.28
Ballast Factor	1.00

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L091502201.IES

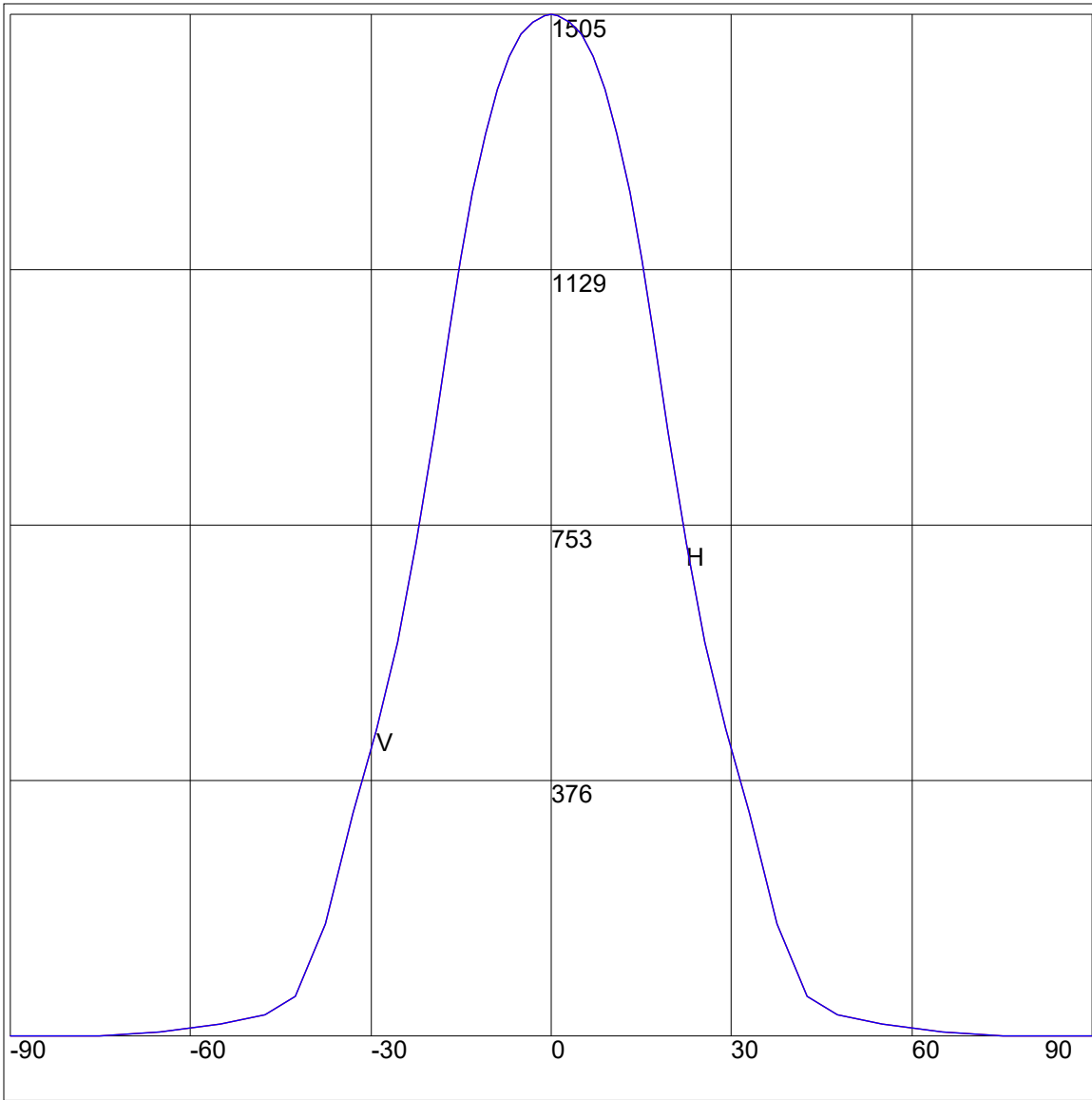
AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	0	85	0
75	1	75	1
65	7	65	7
55	18	55	18
47.5	32	47.5	32
42.5	59	42.5	59
37.5	166	37.5	166
33	329	33	329
29	453	29	453
25.5	581	25.5	581
22.5	725	22.5	725
19.5	891	19.5	891
17	1034	17	1034
15	1144	15	1144
13	1244	13	1244
11	1329	11	1329
9	1395	9	1395
7	1443	7	1443
5	1475	5	1475
3	1494	3	1494
1	1503	1	1503
0	1505	0	1505
-1	1503	-1	1503
-3	1494	-3	1494
-5	1475	-5	1475
-7	1443	-7	1443
-9	1395	-9	1395
-11	1329	-11	1329
-13	1244	-13	1244
-15	1144	-15	1144
-17	1034	-17	1034
-19.5	891	-19.5	891
-22.5	725	-22.5	725
-25.5	581	-25.5	581
-29	453	-29	453
-33	329	-33	329
-37.5	166	-37.5	166
-42.5	59	-42.5	59
-47.5	32	-47.5	32
-55	18	-55	18
-65	7	-65	7
-75	1	-75	1
-85	0	-85	0
-90	0	-90	0

ZONAL LUMEN SUMMARY

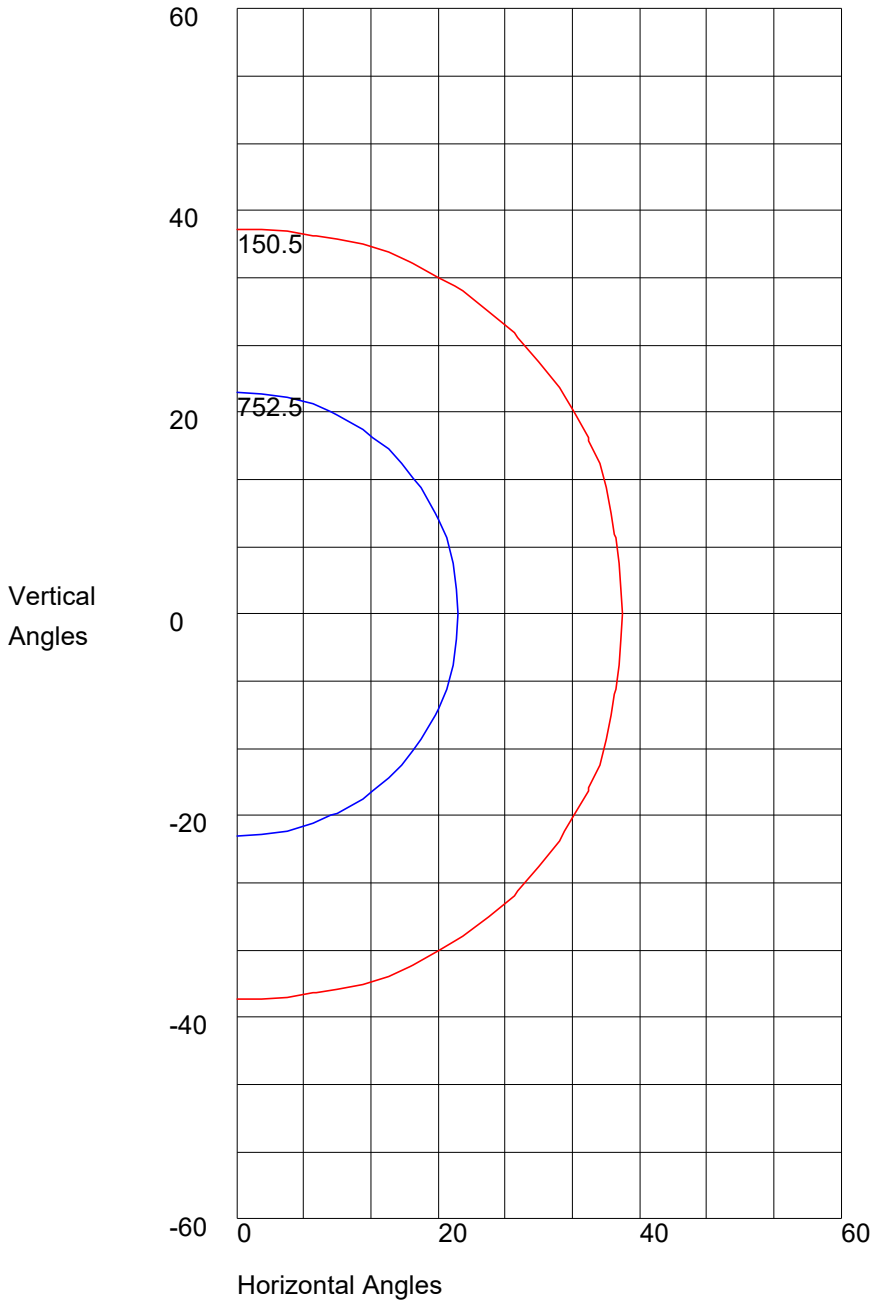
Zone	%
0-20	45.4
0-30	74
0-40	90.6
0-60	98.3
0-80	99.9
0-90	100
10-90	88.3
20-40	45.2
20-50	51.2
40-70	8.9
60-80	1.7
70-80	0.4
80-90	0.1
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

AXIAL CANDELA DISPLAY



Maximum Candela = 1505 Located At Horizontal Angle = 0, Vertical Angle = 0
H - Horizontal Axial Candela
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 1505 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 752.5
10% Maximum Candela = 150.5