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Report No: L021606502

Date: 3/3/2016



NVLAP LAB CODE 200927-0

Report No: L021606502

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

Model Number: 1043-X-NS-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-NS-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: 2/25/16

Date of Tests: 3/2/16 - 3/3/16

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-S1	11/18/16
Xitron Power Analyzer	2503AH	MT-EL01	11/30/16
ITECH DC Power Supply	IT6122	PSDC-03-S1	11/17/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/24/16
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 Li ghting
Model Number:	1043-X-NS-30-16W-MV-ND
Driver Model Number:	ERP ESS020W-1400-14
Total Lumens:	1034.72
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.13
Input Power (W):	15.62
Input Power Factor:	0.98
Current ATHD @ 120V(%):	8%
Current ATHD @ 277V(%):	N/A
Efficacy:	66
Color Rendering Index (CRI):	82
Correlated Color Temperature (K):	2959
Chromaticity Coordinate x:	0.4434
Chromaticity Coordinate y:	0.4122
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:50
Total Operating Time (Hours):	2:05
Off State Power(W):	0.00

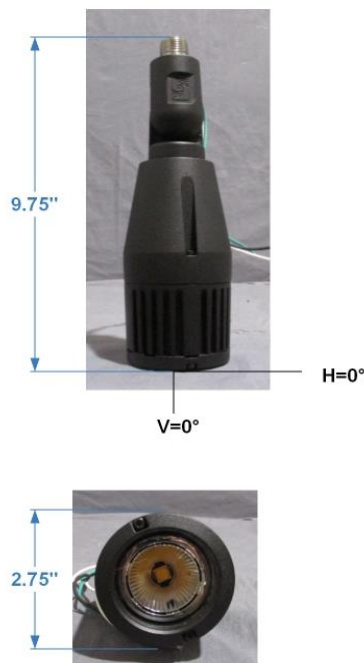
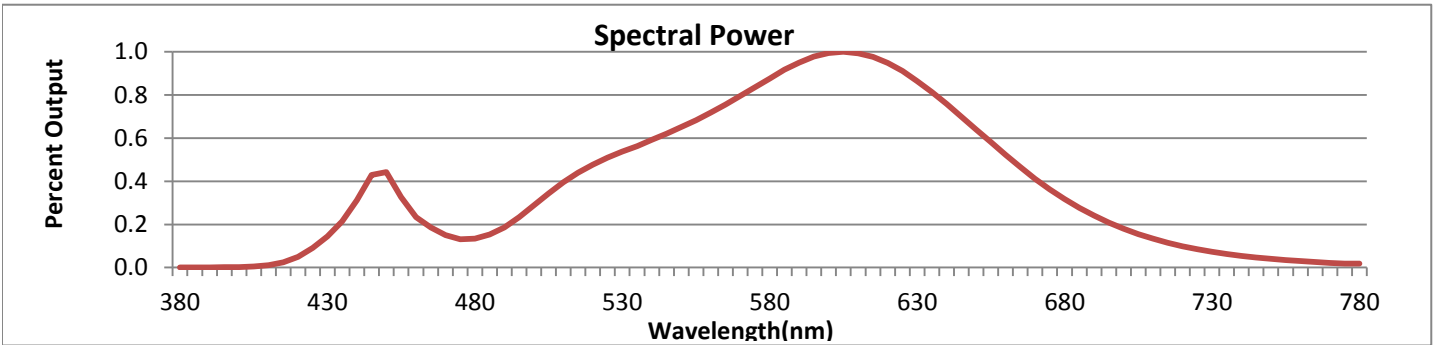


FIG. 1 LUMINAIRE

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



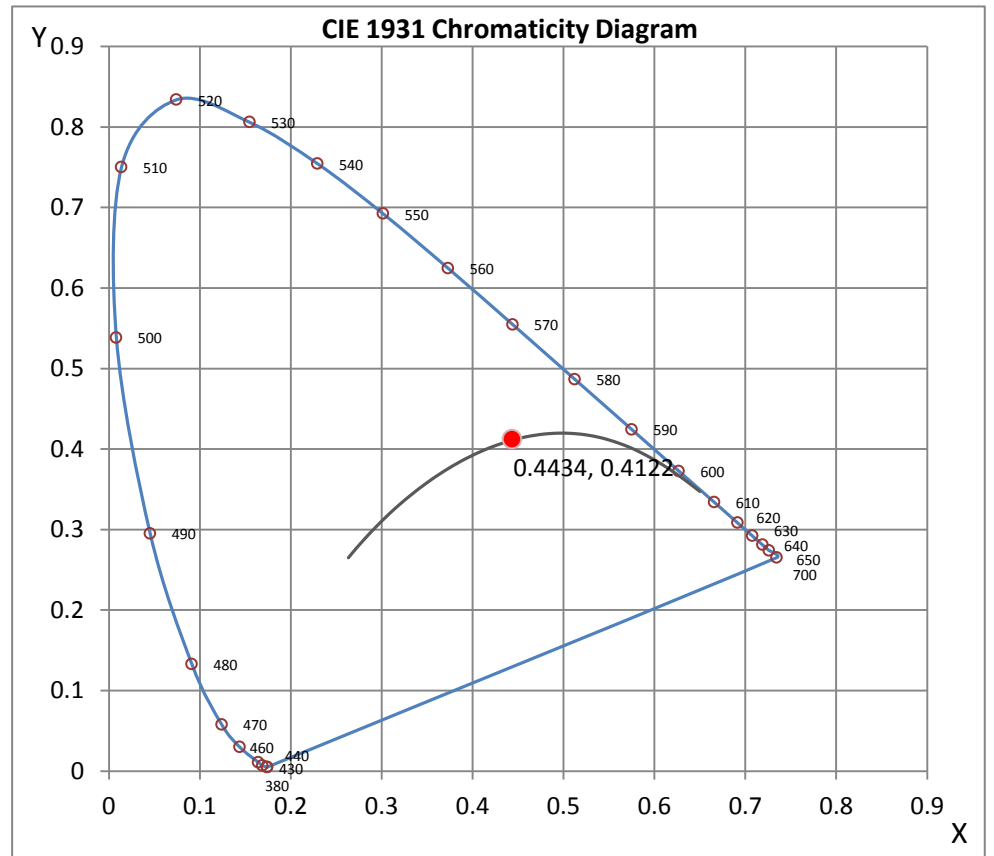
Wavelength	W/m ² nm	440	0.0040	510	0.0050	580	0.0111	650	0.0081	720	0.0013
380	0.0000	450	0.0056	520	0.0061	590	0.0121	660	0.0066	730	0.0009
390	0.0000	460	0.0030	530	0.0068	600	0.0127	670	0.0052	740	0.0007
400	0.0000	470	0.0019	540	0.0075	610	0.0126	680	0.0040	750	0.0005
410	0.0001	480	0.0017	550	0.0083	620	0.0121	690	0.0031	760	0.0004
420	0.0006	490	0.0024	560	0.0091	630	0.0110	700	0.0023	770	0.0003
430	0.0018	500	0.0037	570	0.0101	640	0.0096	710	0.0017	780	0.0002

CRI & CCT

x	0.4434
y	0.4122
u'	0.2512
v'	0.5255
CRI	81.60
CCT	2959
Duv	0.00233

R Values

R1	79.72
R2	87.44
R3	94.79
R4	81.27
R5	78.94
R6	83.56
R7	85.38
R8	61.73
R9	10.01
R10	70.98
R11	79.91
R12	65.34
R13	81.01
R14	96.60



*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 : L021606502.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L021606502
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 3/3/2016
[MANUFAC] VISTA PROFESSIONAL OUTDOOR LIGHTING
[LUMCAT] 1043-X-NS-30-16W-MV-ND
[LUMINAIRE] 2.75"DIA. X 9.75"H. LED ACCENT LUMINAIRE
[MORE] NS DISTRIBUTION
[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, 15.62W
[TEST PROCEDURE] IESNA:LM-79-08

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

CHARACTERISTICS

NEMA Type	4 H x 4 V
Maximum Candela	4627
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	19.4
Vertical Beam Angle (50%)	19.4
Horizontal Field Angle (10%)	49.1
Vertical Field Angle (10%)	49.1
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	280
Beam Efficiency	N.A.
Field Lumens	732
Field Efficiency	N.A.
Spill Lumens	304
Luminaire Lumens	1035
Total Efficiency	N.A.
Total Luminaire Watts	15.62
Ballast Factor	1.00

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L021606502.IES

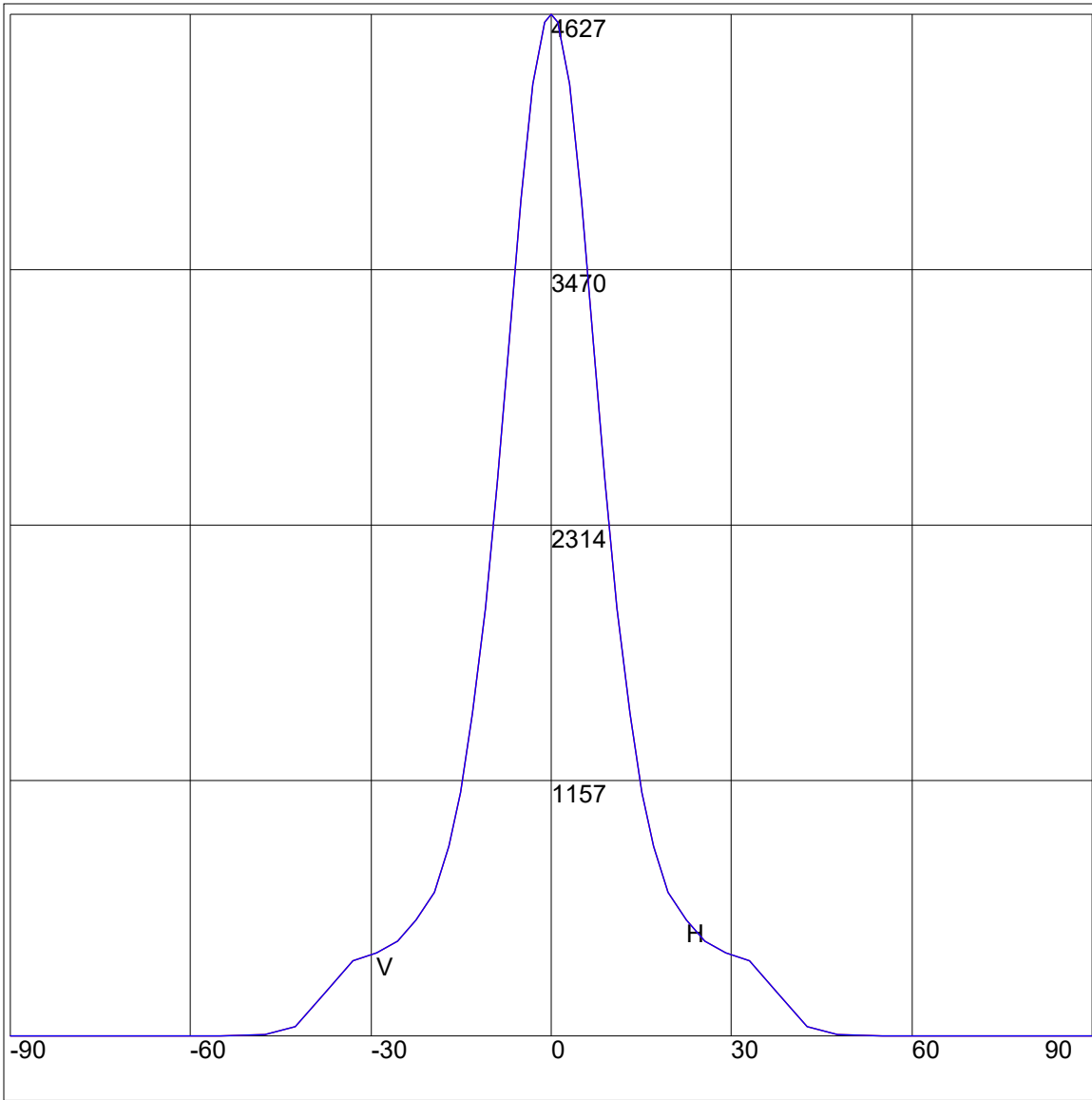
AXIAL CANDELA

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	10	47.5	10
42.5	42	42.5	42
37.5	199	37.5	199
33	340	33	340
29	380	29	380
25.5	432	25.5	432
22.5	529	22.5	529
19.5	654	19.5	654
17	859	17	859
15	1107	15	1107
13	1464	13	1464
11	1941	11	1941
9	2509	9	2509
7	3148	7	3148
5	3788	5	3788
3	4311	3	4311
1	4594	1	4594
0	4627	0	4627
-1	4594	-1	4594
-3	4311	-3	4311
-5	3788	-5	3788
-7	3148	-7	3148
-9	2509	-9	2509
-11	1941	-11	1941
-13	1464	-13	1464
-15	1107	-15	1107
-17	859	-17	859
-19.5	654	-19.5	654
-22.5	529	-22.5	529
-25.5	432	-25.5	432
-29	380	-29	380
-33	340	-33	340
-37.5	199	-37.5	199
-42.5	42	-42.5	42
-47.5	10	-47.5	10
-55	5	-55	5
-65	1	-65	1
-75	0	-75	0
-85	0	-85	0
-90	0	-90	0

ZONAL LUMEN SUMMARY

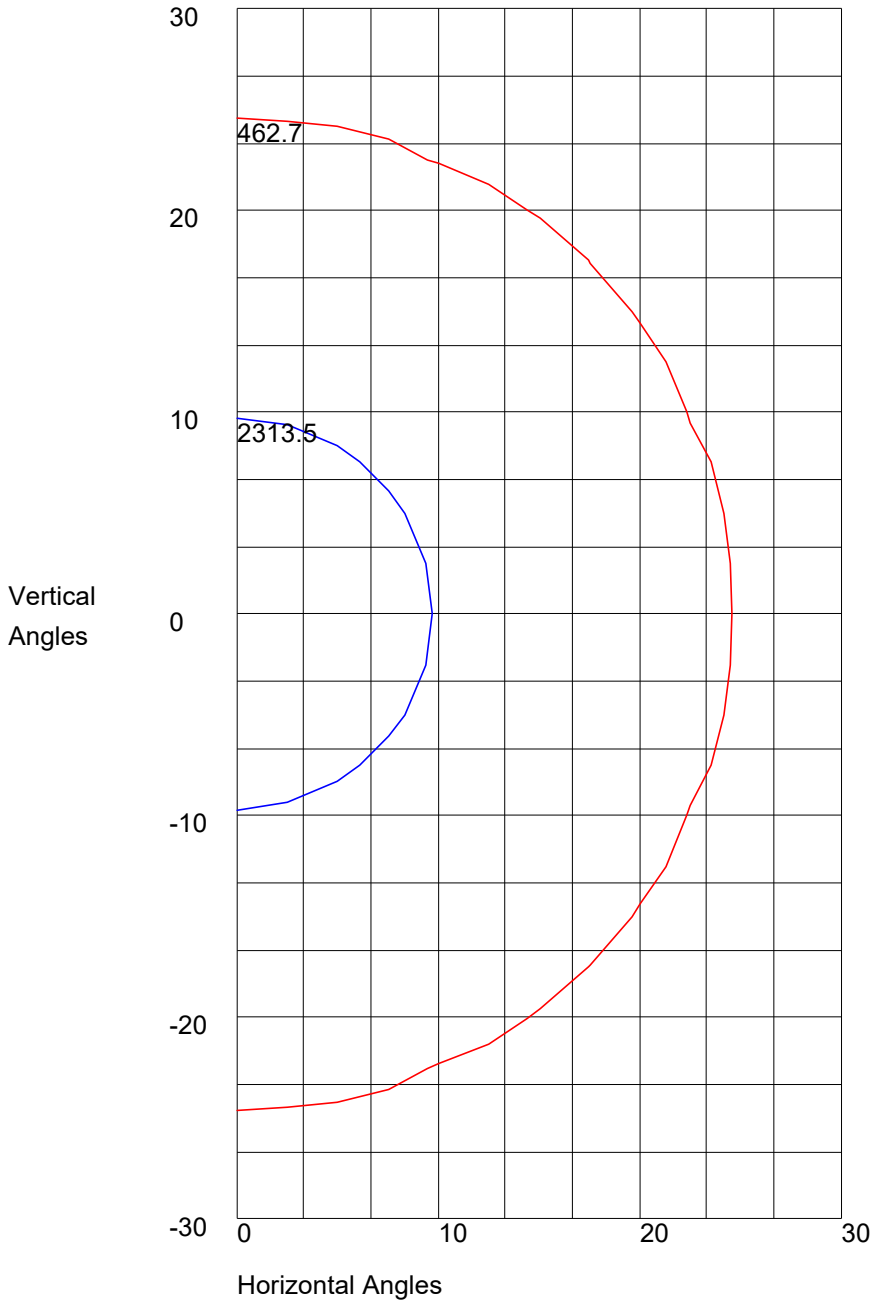
Zone	%
0-20	60.8
0-30	81.3
0-40	97.6
0-60	99.9
0-80	100
0-90	100
10-90	70.2
20-40	36.8
20-50	38.6
40-70	2.4
60-80	0.1
70-80	0
80-90	0
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

AXIAL CANDELA DISPLAY



Maximum Candela = 4627 Located At Horizontal Angle = 0, Vertical Angle = 0
H - Horizontal Axial Candela
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 4627 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 2313.5
10% Maximum Candela = 462.7