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Report No: L021606506

Date: 3/4/2016



NVLAP LAB CODE 200927-0

Report No: L021606506

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

Model Number: 1043-X-MF-30-20W-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-MF-30-20W-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: 3/3/16 - 3/4/16

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-MF-30-20W-MV-ND
Driver Model Number:	ERP ESS030W-1750-14
Total Lumens:	1188.40
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.17
Input Power (W):	19.73
Input Power Factor:	0.98
Current ATHD @ 120V(%):	14%
Current ATHD @ 277V(%):	N/A
Efficacy:	60
Color Rendering Index (CRI):	82
Correlated Color Temperature (K):	3060
Chromaticity Coordinate x:	0.4331
Chromaticity Coordinate y:	0.4035
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:55
Total Operating Time (Hours):	1:55
Off State Power(W):	0.00

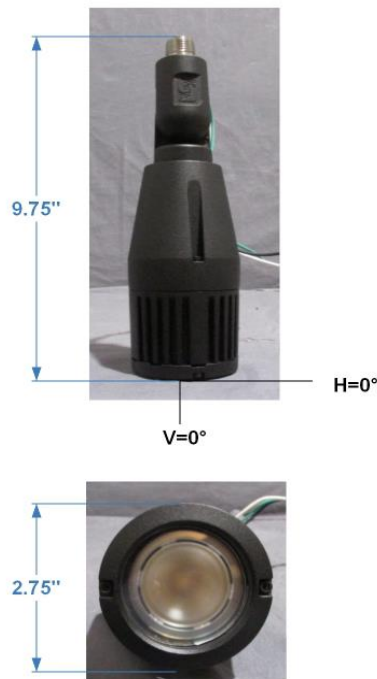
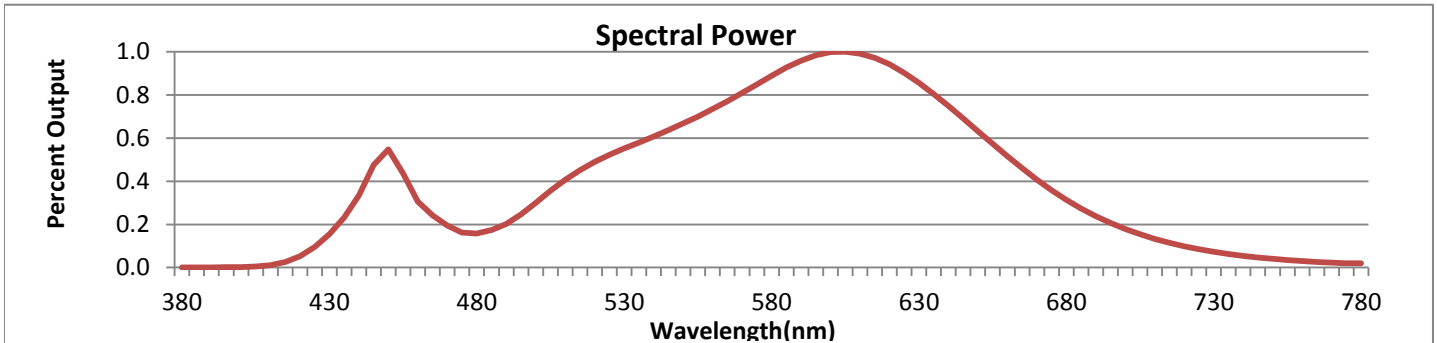


FIG. 1 LUMINAIRE

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



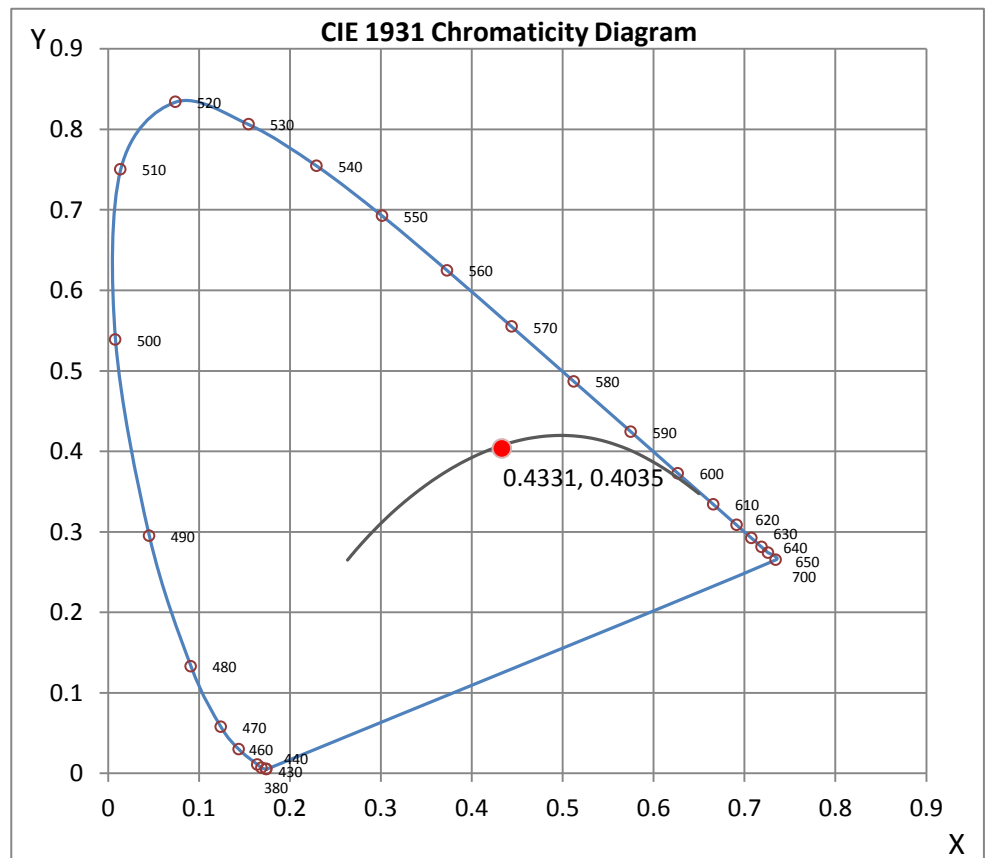
Wavelength	W/m ² nm	440	0.0048	510	0.0059	580	0.0128	650	0.0091	720	0.0014
380	0.0000	450	0.0079	520	0.0071	590	0.0139	660	0.0075	730	0.0011
390	0.0000	460	0.0044	530	0.0080	600	0.0144	670	0.0059	740	0.0008
400	0.0000	470	0.0028	540	0.0088	610	0.0143	680	0.0045	750	0.0006
410	0.0002	480	0.0023	550	0.0096	620	0.0136	690	0.0034	760	0.0004
420	0.0008	490	0.0029	560	0.0106	630	0.0124	700	0.0026	770	0.0003
430	0.0022	500	0.0043	570	0.0117	640	0.0108	710	0.0019	780	0.0003

CRI & CCT

x	0.4331
y	0.4035
u'	0.2483
v'	0.5206
CRI	82.10
CCT	3060
Duv	0.00031

R Values

R1	80.46
R2	88.31
R3	94.94
R4	81.18
R5	79.79
R6	84.44
R7	85.03
R8	62.48
R9	11.92
R10	72.57
R11	79.67
R12	66.51
R13	81.94
R14	96.77



*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 : L021606506.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L021606506
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 3/3/2016
[MANUFAC] VISTA PROFESSIONAL OUTDOOR LIGHTING
[LUMCAT] 1043-X-MF-30-20W-MV-ND
[LUMINAIRE] 2.75"DIA. X 9.75"H. LED ACCENT LUMINAIRE
[MORE] MF DISTRIBUTION
[BALLASTCAT] ERP ESS030W-1750-14
[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, 19.73W
[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	3042
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	29.0
Vertical Beam Angle (50%)	29.0
Horizontal Field Angle (10%)	68.0
Vertical Field Angle (10%)	68.0
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	439
Beam Efficiency	N.A.
Field Lumens	1010
Field Efficiency	N.A.
Spill Lumens	179
Luminaire Lumens	1188
Total Efficiency	N.A.
Total Luminaire Watts	19.73
Ballast Factor	1.00

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L021606506.IES

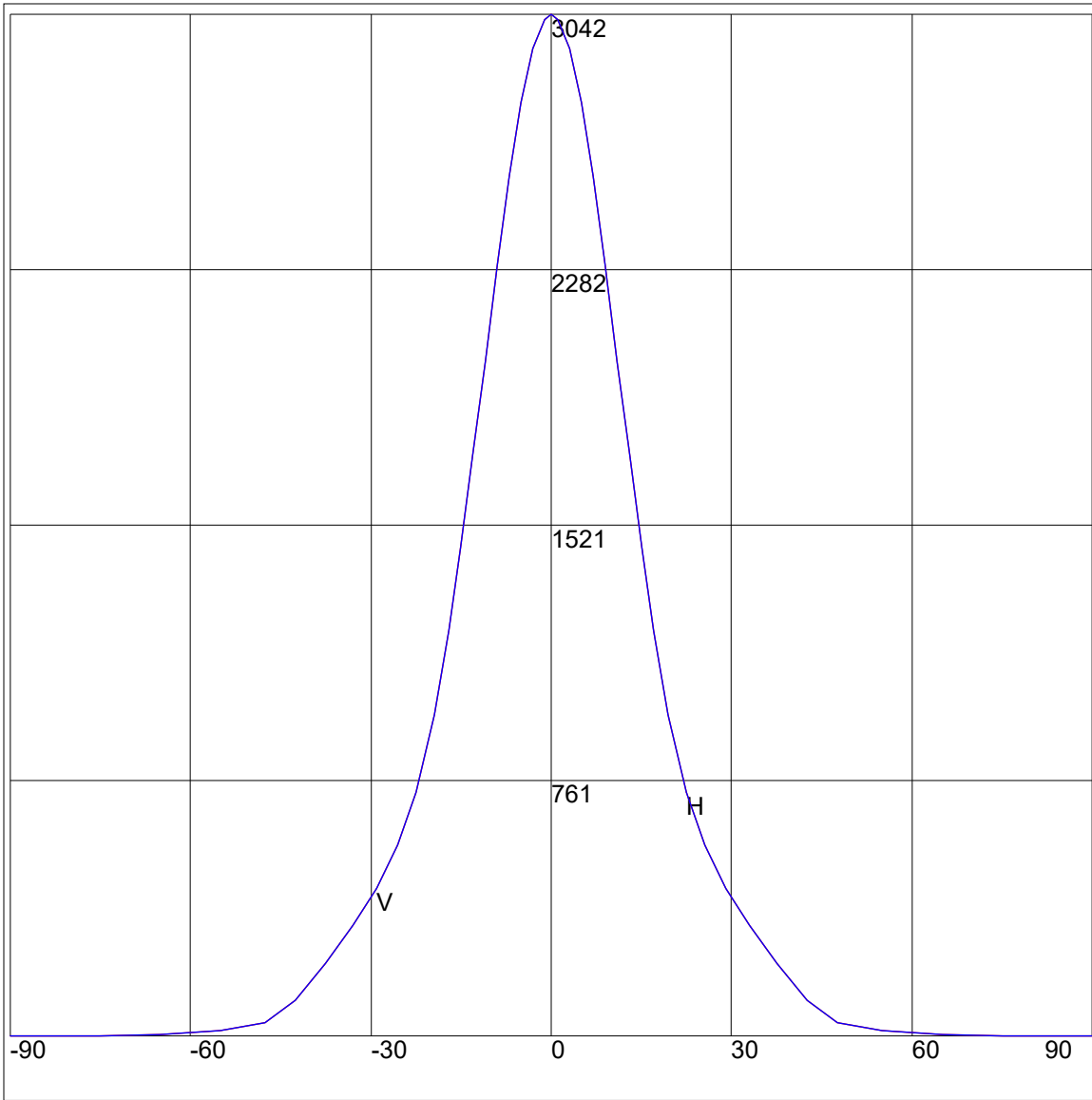
AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	0	85	0
75	1	75	1
65	7	65	7
55	16	55	16
47.5	41	47.5	41
42.5	107	42.5	107
37.5	217	37.5	217
33	329	33	329
29	440	29	440
25.5	568	25.5	568
22.5	727	22.5	727
19.5	956	19.5	956
17	1210	17	1210
15	1454	15	1454
13	1725	13	1725
11	2013	11	2013
9	2297	9	2297
7	2560	7	2560
5	2779	5	2779
3	2940	3	2940
1	3027	1	3027
0	3042	0	3042
-1	3027	-1	3027
-3	2940	-3	2940
-5	2779	-5	2779
-7	2560	-7	2560
-9	2297	-9	2297
-11	2013	-11	2013
-13	1725	-13	1725
-15	1454	-15	1454
-17	1210	-17	1210
-19.5	956	-19.5	956
-22.5	727	-22.5	727
-25.5	568	-25.5	568
-29	440	-29	440
-33	329	-33	329
-37.5	217	-37.5	217
-42.5	107	-42.5	107
-47.5	41	-47.5	41
-55	16	-55	16
-65	7	-65	7
-75	1	-75	1
-85	0	-85	0
-90	0	-90	0

ZONAL LUMEN SUMMARY

Zone	%
0-20	53
0-30	76.1
0-40	89.9
0-60	98.7
0-80	100
0-90	100
10-90	82.8
20-40	36.9
20-50	44.2
40-70	9.7
60-80	1.3
70-80	0.3
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

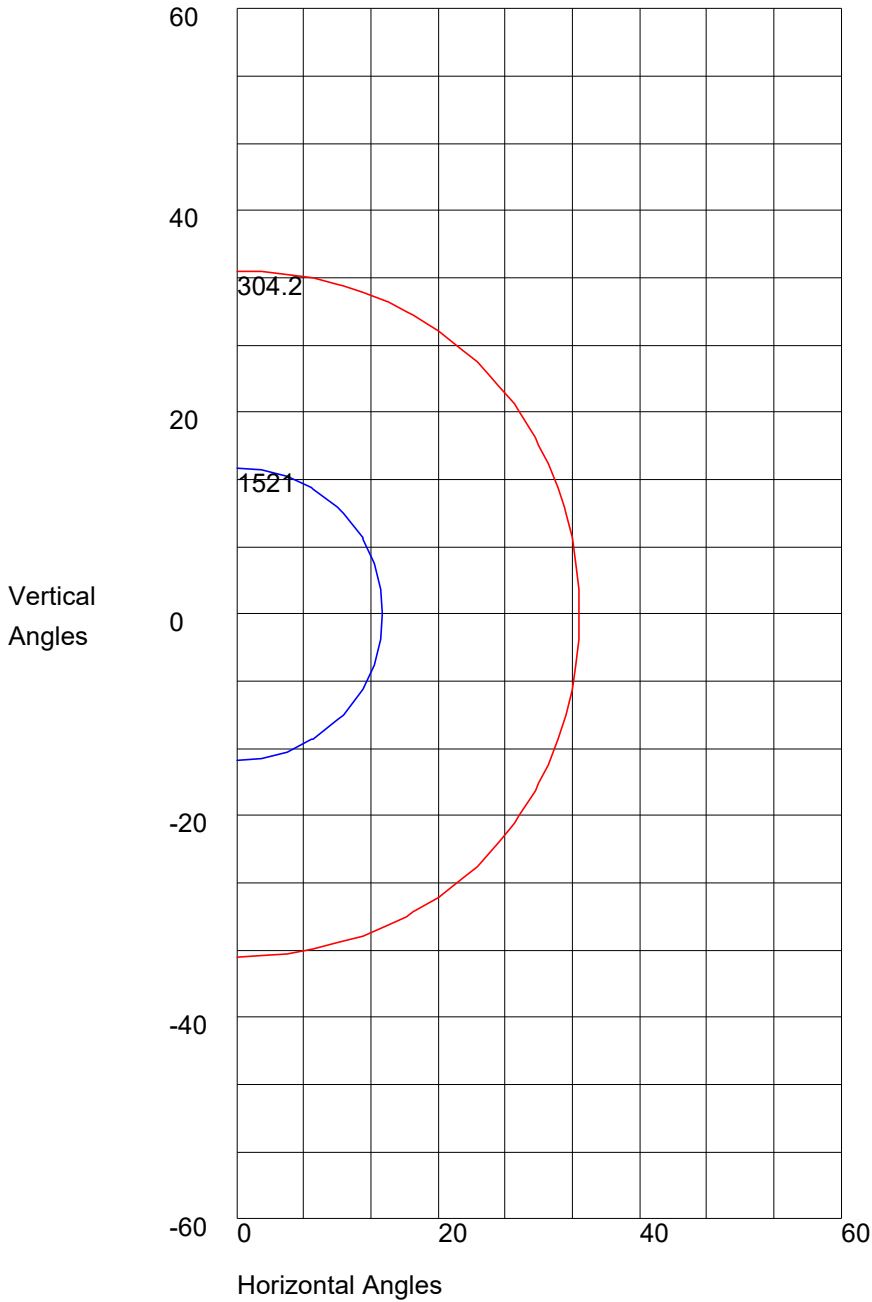


Maximum Candela = 3042 Located At Horizontal Angle = 0, Vertical Angle = 0

H - Horizontal Axial Candela

V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 3042 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 1521
10% Maximum Candela = 304.2