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Report No: L021606604

Date: 3/3/2016



NVLAP LAB CODE 200927-0

Report No: L021606604

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

Model Number: RK94-B-NS-30-C-MV-CX-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 RK94-B-NS-30-C-MV-CX-ND .
 Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 2/22/16

Date of Tests: 2/29/16 - 2/29/16

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 Lighting
Model Number:	RK94-B-NS-30-C-MV-CX-ND
Driver Model Number:	ERP ESS030W-0620-42
Total Lumens:	1737.56
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.21
Input Power (W):	25.40
Input Power Factor:	0.99
Current ATHD @ 120V(%):	12%
Current ATHD @ 277V(%):	N/A
Efficacy:	68
Color Rendering Index (CRI):	84
Correlated Color Temperature (K):	3082
Chromaticity Coordinate x:	0.4315
Chromaticity Coordinate y:	0.4025
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:05
Off State Power(W):	0.00

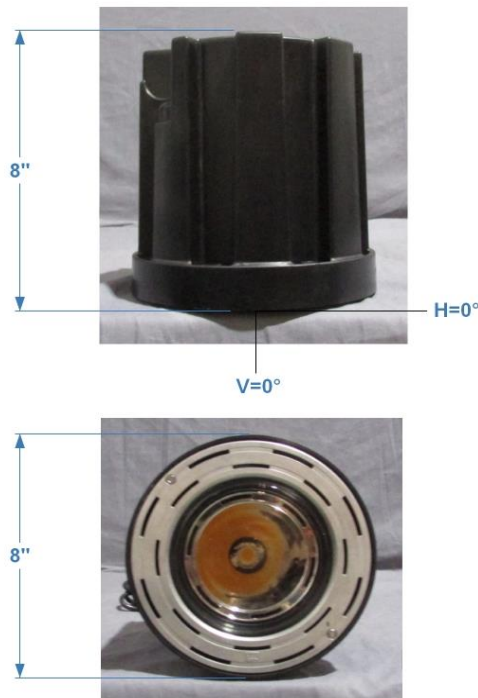
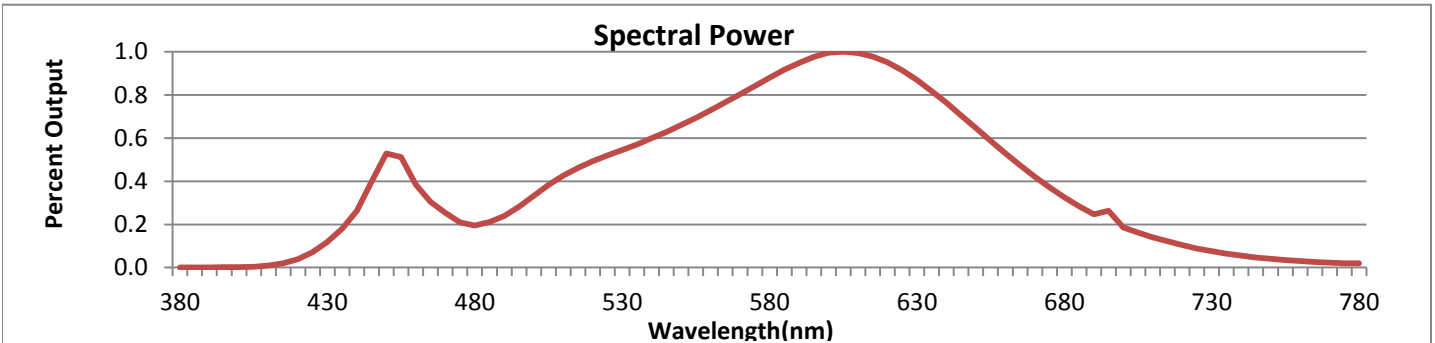


FIG. 1 LUMINAIRE

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



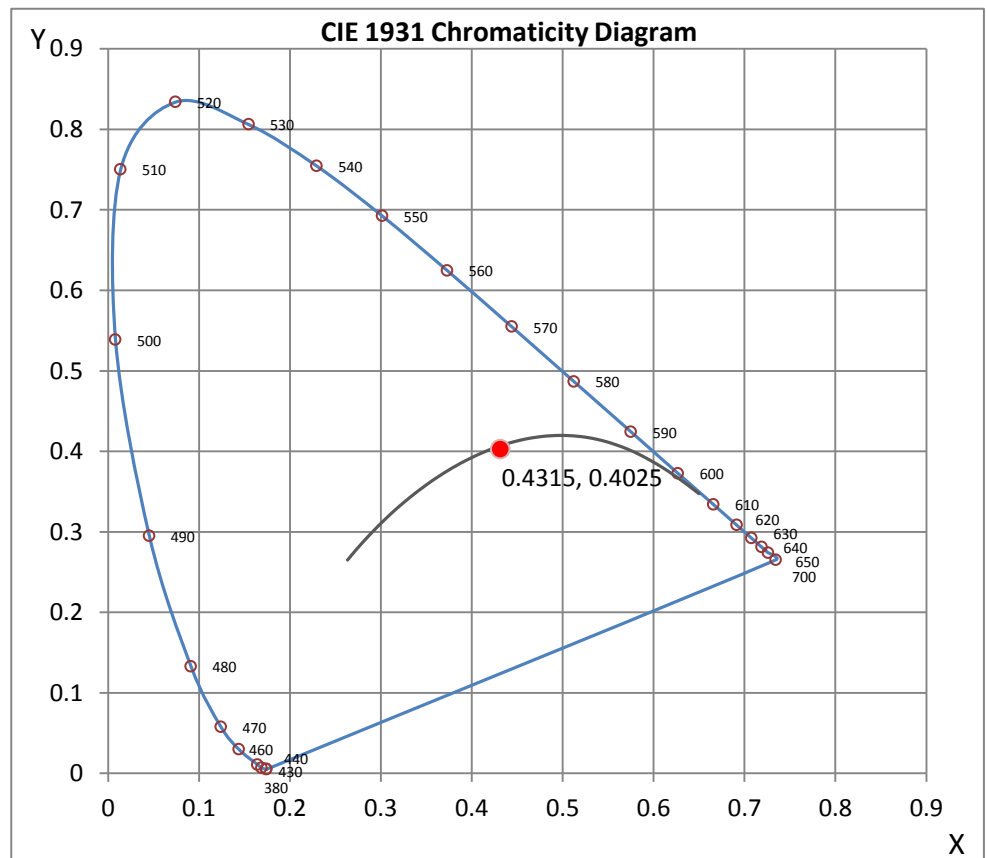
Wavelength	W/m ² nm	440	0.0057	510	0.0092	580	0.0190	650	0.0140	720	0.0022
380	0.0000	450	0.0115	520	0.0107	590	0.0205	660	0.0115	730	0.0016
390	0.0000	460	0.0083	530	0.0118	600	0.0215	670	0.0091	740	0.0012
400	0.0000	470	0.0055	540	0.0130	610	0.0215	680	0.0070	750	0.0009
410	0.0002	480	0.0042	550	0.0143	620	0.0206	690	0.0053	760	0.0007
420	0.0009	490	0.0052	560	0.0158	630	0.0188	700	0.0040	770	0.0005
430	0.0026	500	0.0072	570	0.0174	640	0.0165	710	0.0030	780	0.0004

CRI & CCT

x	0.4315
y	0.4025
u'	0.2477
v'	0.5200
CRI	84.20
CCT	3082
Duv	0.00014

R Values

R1	82.75
R2	90.75
R3	96.80
R4	82.75
R5	82.38
R6	87.98
R7	85.65
R8	64.71
R9	18.57
R10	78.21
R11	81.65
R12	70.60
R13	84.50
R14	98.14



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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 : JEFF AHN

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*

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Photometric Test Report

IES FLOOD REPORT

PHOTOMETRIC FILENAME : L021606604.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L021606604
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 3/3/2016
[MANUFAC] VISTA PROFESSIONAL OUTDOOR LIGHTING
[LUMCAT] RK94-B-NS-30-C-MV-CX-ND
[LUMINAIRE] 8"DIA. X 8"H. LED Ingrade, NS Distribution
[BALLASTCAT] ERP ESS030W-0620-42
[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, 25.40W
[TEST PROCEDURE] IESNA:LM-79-08

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

CHARACTERISTICS

NEMA Type	2 H x 2 V
Maximum Candela	32342
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	8.7
Vertical Beam Angle (50%)	8.7
Horizontal Field Angle (10%)	20.2
Vertical Field Angle (10%)	20.2
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	364
Beam Efficiency	N.A.
Field Lumens	962
Field Efficiency	N.A.
Spill Lumens	775
Luminaire Lumens	1738
Total Efficiency	N.A.
Total Luminaire Watts	25.4
Ballast Factor	1.00

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L021606604.IES

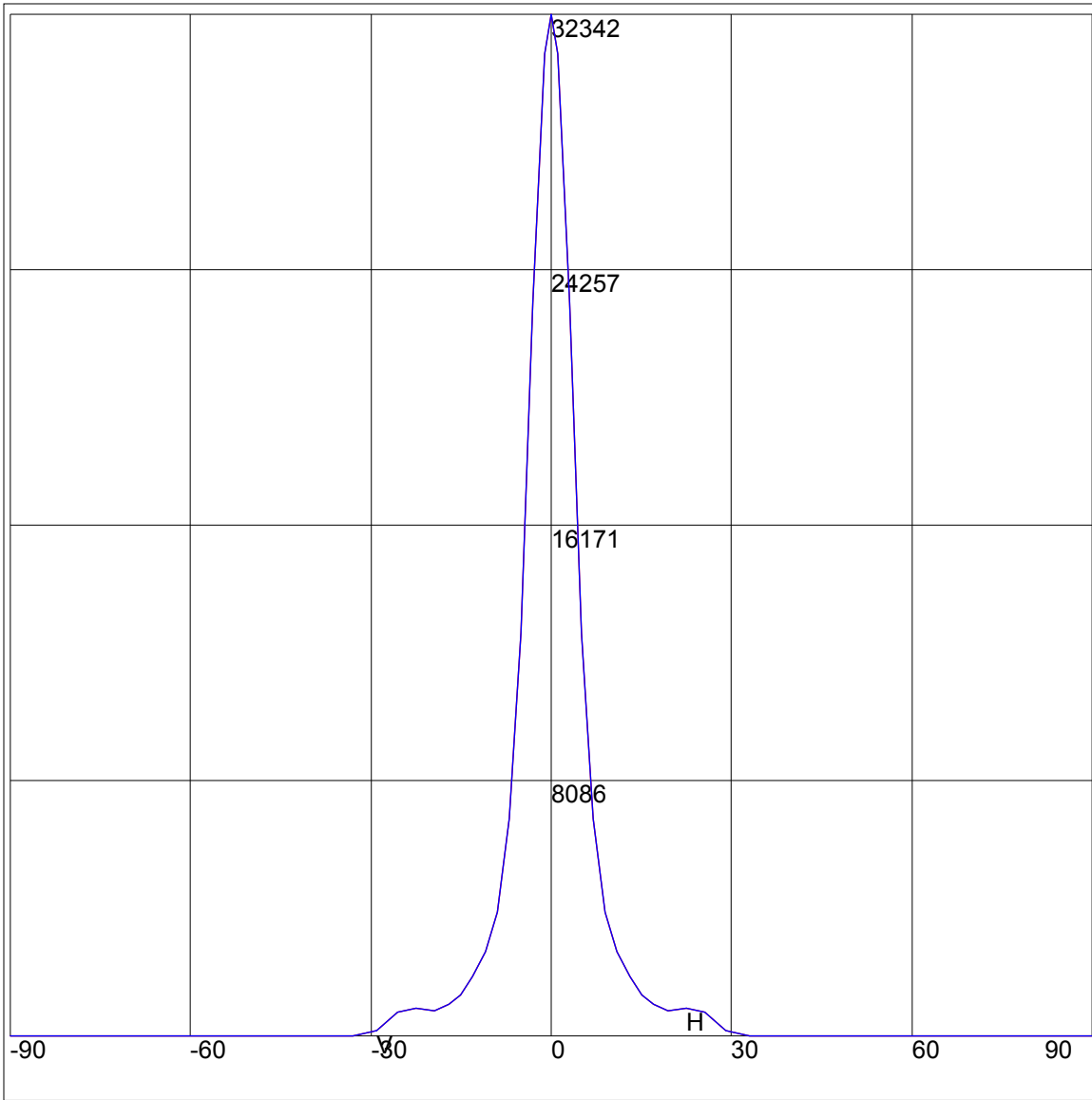
AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	9	85	9
75	10	75	10
65	11	65	11
55	12	55	12
47.5	13	47.5	13
42.5	15	42.5	15
37.5	19	37.5	19
33	35	33	35
29	171	29	171
25.5	782	25.5	782
22.5	874	22.5	874
19.5	826	19.5	826
17	1003	17	1003
15	1331	15	1331
13	1907	13	1907
11	2675	11	2675
9	3938	9	3938
7	6900	7	6900
5	12772	5	12772
3	23220	3	23220
1	31085	1	31085
0	32342	0	32342
-1	31085	-1	31085
-3	23220	-3	23220
-5	12772	-5	12772
-7	6900	-7	6900
-9	3938	-9	3938
-11	2675	-11	2675
-13	1907	-13	1907
-15	1331	-15	1331
-17	1003	-17	1003
-19.5	826	-19.5	826
-22.5	874	-22.5	874
-25.5	782	-25.5	782
-29	171	-29	171
-33	35	-33	35
-37.5	19	-37.5	19
-42.5	15	-42.5	15
-47.5	13	-47.5	13
-55	12	-55	12
-65	11	-65	11
-75	10	-75	10
-85	9	-85	9
-90	0	-90	0

ZONAL LUMEN SUMMARY

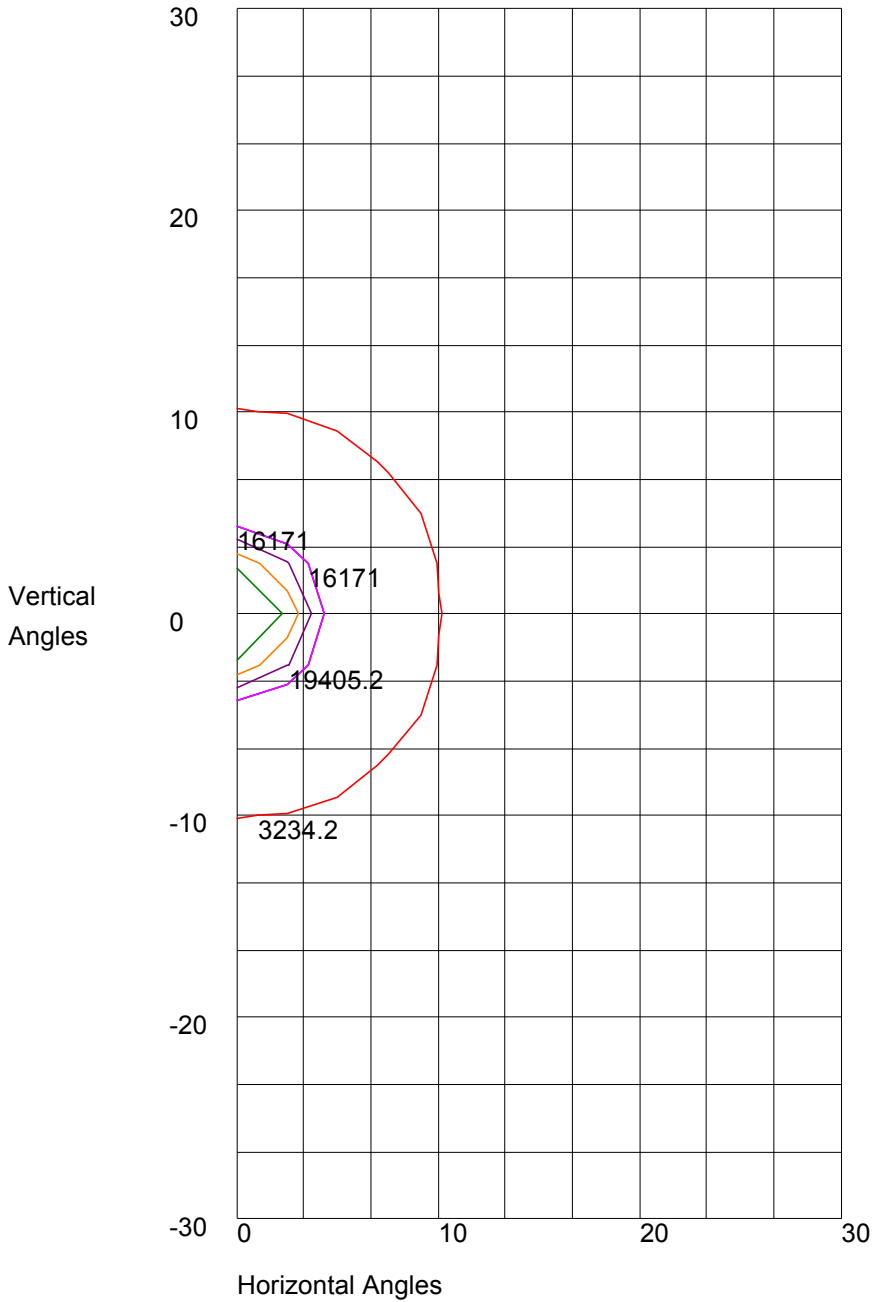
Zone	%
0-20	78.3
0-30	95.2
0-40	96.9
0-60	98
0-80	99.3
0-90	100
10-90	48.3
20-40	18.6
20-50	19.3
40-70	1.7
60-80	1.2
70-80	0.6
80-90	0.7
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

AXIAL CANDELA DISPLAY



Maximum Candela = 32342 Located At Horizontal Angle = 0, Vertical Angle = 0
H - Horizontal Axial Candela
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 32342 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 16171
10% Maximum Candela = 3234.2