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Report No: L021606605

Date: 3/3/2016



NVLAP LAB CODE 200927-0

**Report No:** L021606605

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

**Model Number:** RK94-B-MF-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-MF-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**

<b>Manufacturer:</b>	Vista Professional Outdoor Lighting
<b>Model Number:</b>	RK94-B-MF-30-C-MV-CX-ND
<b>Driver Model Number:</b>	ERP ESS030W-0620-42
<b>Total Lumens:</b>	1766.30
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.22
<b>Input Power (W):</b>	25.69
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	10%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	69
<b>Color Rendering Index (CRI):</b>	85
<b>Correlated Color Temperature (K):</b>	3059
<b>Chromaticity Coordinate x:</b>	0.4331
<b>Chromaticity Coordinate y:</b>	0.4033
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:30
<b>Total Operating Time (Hours):</b>	1:00
<b>Off State Power(W):</b>	0.00

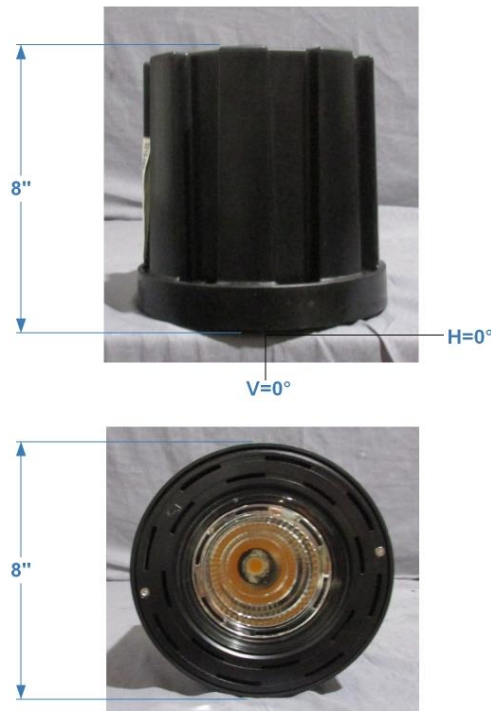
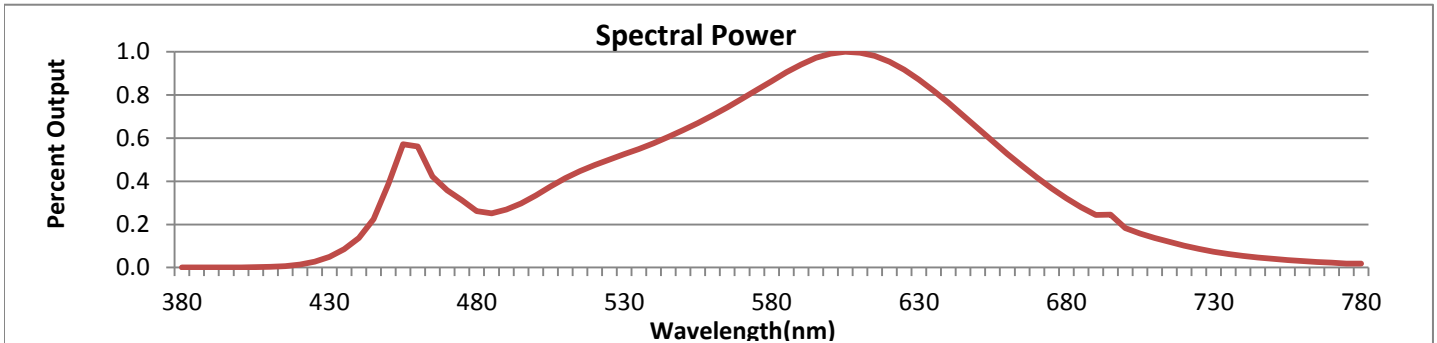


FIG. 1 LUMINAIRE

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



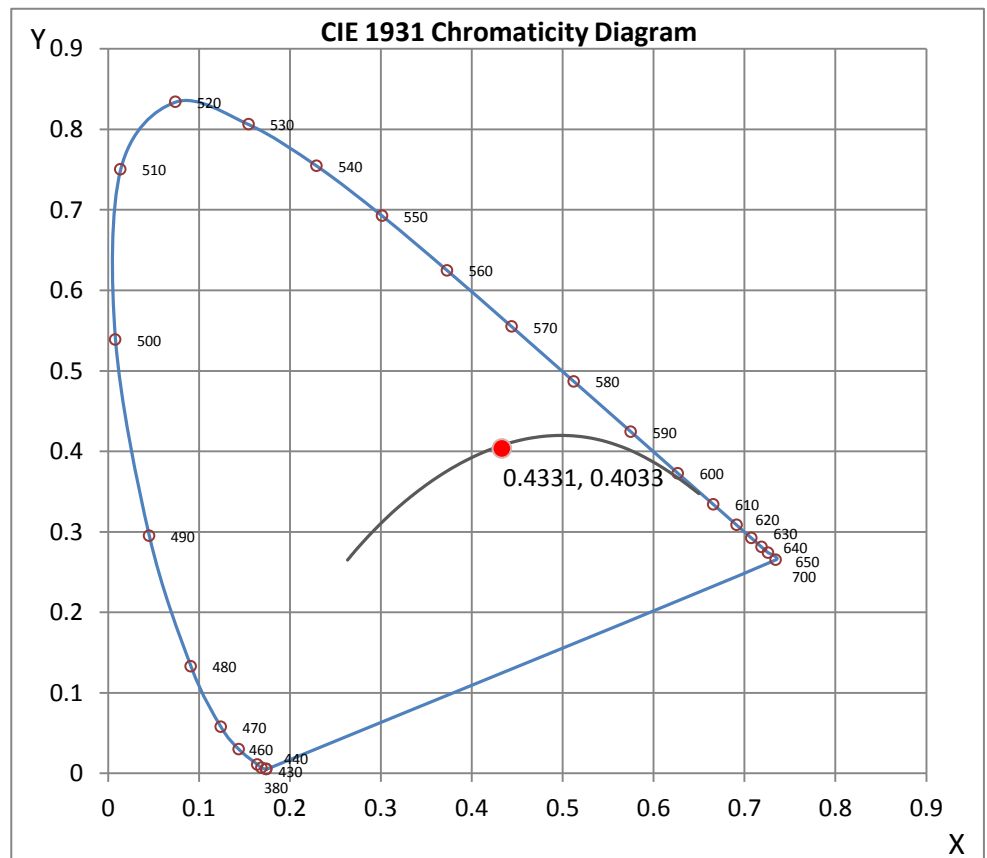
Wavelength	W/m <sup>2</sup> nm	440	0.0029	510	0.0088	580	0.0183	650	0.0137	720	0.0021
380	0.0000	450	0.0082	520	0.0101	590	0.0199	660	0.0112	730	0.0016
390	0.0000	460	0.0119	530	0.0111	600	0.0210	670	0.0088	740	0.0011
400	0.0000	470	0.0076	540	0.0122	610	0.0211	680	0.0068	750	0.0008
410	0.0001	480	0.0055	550	0.0135	620	0.0202	690	0.0052	760	0.0006
420	0.0003	490	0.0057	560	0.0150	630	0.0185	700	0.0039	770	0.0005
430	0.0010	500	0.0071	570	0.0166	640	0.0162	710	0.0029	780	0.0004

**CRI & CCT**

x	0.4331
y	0.4033
u'	0.2484
v'	0.5205
CRI	85.20
CCT	3059
Duv	0.00023

**R Values**

R1	84.57
R2	93.87
R3	96.04
R4	82.17
R5	84.12
R6	92.14
R7	84.32
R8	64.71
R9	21.90
R10	84.99
R11	81.26
R12	71.66
R13	87.05
R14	98.66



\*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 : JEFF AHN

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 : L021606605.IES

### DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L021606605  
[TESTLAB] LIGHT LABORATORY, INC.  
[ISSUEDATE] 3/3/2016  
[MANUFAC] VISTA PROFESSIONAL OUTDOOR LIGHTING  
[LUMCAT] RK94-B-MF-30-C-MV-CX-ND  
[LUMINAIRE] 8"DIA. X 8"H. LED Ingrade, MF 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, 25.69W  
[TEST PROCEDURE] IESNA:LM-79-08

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

### CHARACTERISTICS

NEMA Type	3 H x 3 V
Maximum Candela	15317
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	15.6
Vertical Beam Angle (50%)	15.6
Horizontal Field Angle (10%)	31.2
Vertical Field Angle (10%)	31.2
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	581
Beam Efficiency	N.A.
Field Lumens	1246
Field Efficiency	N.A.
Spill Lumens	521
Luminaire Lumens	1766
Total Efficiency	N.A.
Total Luminaire Watts	25.69
Ballast Factor	1.00

**IES FLOOD REPORT**  
**PHOTOMETRIC FILENAME : L021606605.IES**

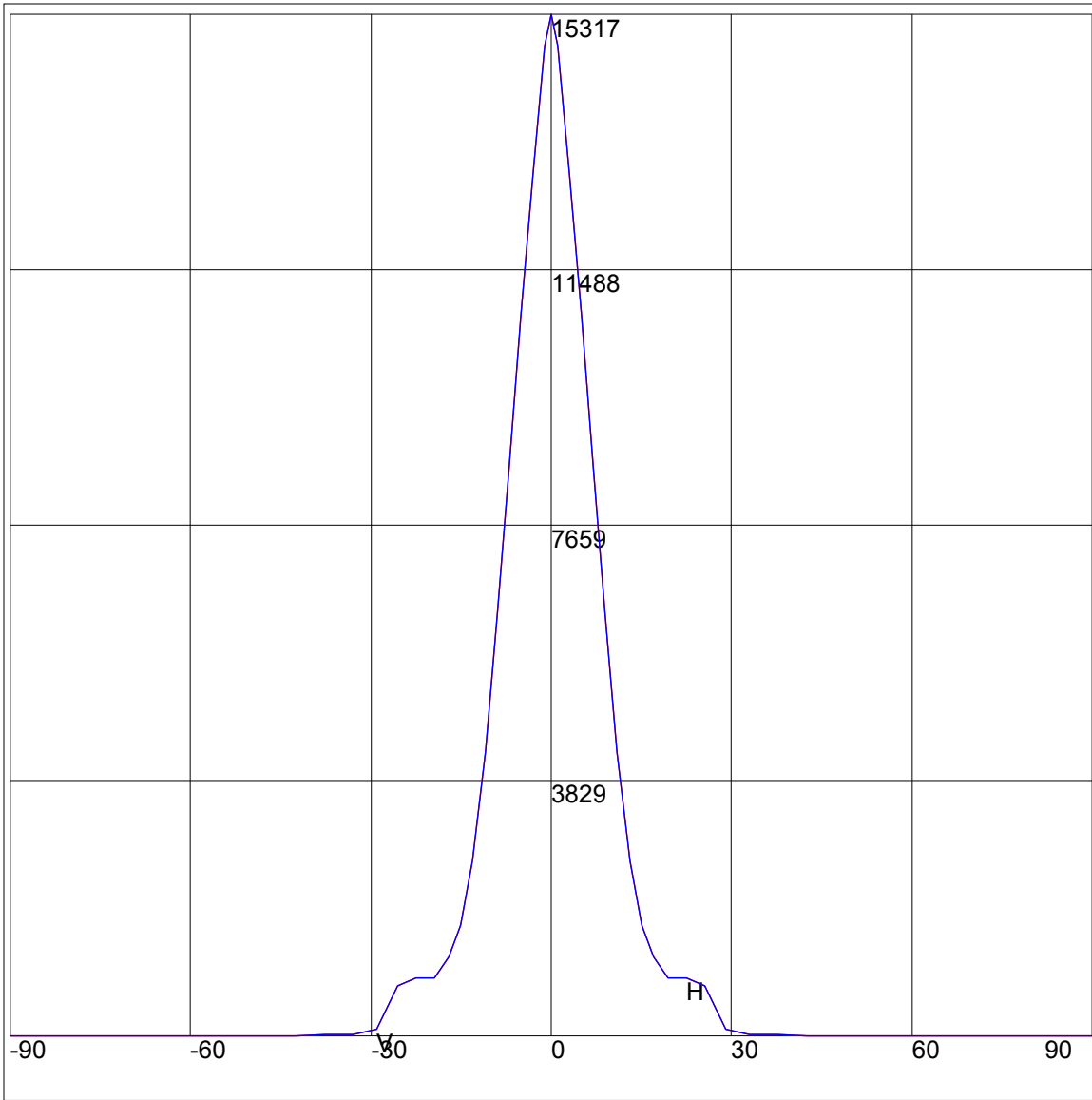
**AXIAL CANDELA**

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	9	85	9
75	10	75	10
65	11	65	11
55	13	55	13
47.5	16	47.5	16
42.5	19	42.5	19
37.5	23	37.5	23
33	35	33	35
29	108	29	108
25.5	755	25.5	755
22.5	882	22.5	882
19.5	881	19.5	881
17	1189	17	1189
15	1676	15	1676
13	2625	13	2625
11	4266	11	4266
9	6336	9	6336
7	8548	7	8548
5	10813	5	10813
3	12883	3	12883
1	14838	1	14838
0	15317	0	15317
-1	14838	-1	14838
-3	12883	-3	12883
-5	10813	-5	10813
-7	8548	-7	8548
-9	6336	-9	6336
-11	4266	-11	4266
-13	2625	-13	2625
-15	1676	-15	1676
-17	1189	-17	1189
-19.5	881	-19.5	881
-22.5	882	-22.5	882
-25.5	755	-25.5	755
-29	108	-29	108
-33	35	-33	35
-37.5	23	-37.5	23
-42.5	19	-42.5	19
-47.5	16	-47.5	16
-55	13	-55	13
-65	11	-65	11
-75	10	-75	10
-85	9	-85	9
-90	0	-90	0

**ZONAL LUMEN SUMMARY**

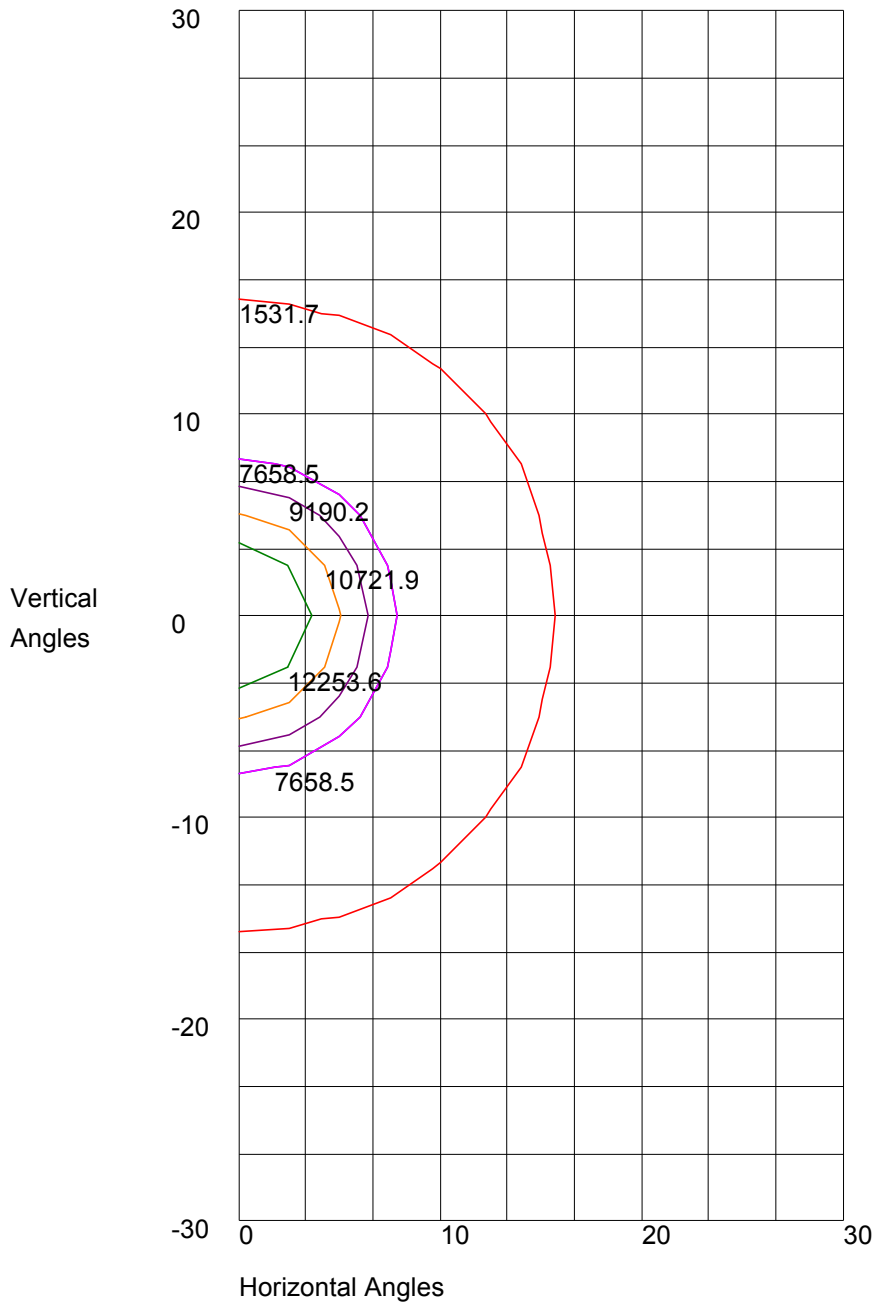
Zone	%
0-20	79
0-30	95.3
0-40	96.7
0-60	98
0-80	99.3
0-90	100
10-90	57.6
20-40	17.7
20-50	18.5
40-70	2
60-80	1.3
70-80	0.6
80-90	0.7
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

AXIAL CANDELA DISPLAY



Maximum Candela = 15317 Located At Horizontal Angle = 0, Vertical Angle = 0  
H - Horizontal Axial Candela  
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 15317 Located At Horizontal Angle = 0, Vertical Angle = 0  
50% Maximum Candela = 7658.5  
10% Maximum Candela = 1531.7