



8165 E Kaiser Blvd. Anaheim, CA 92808
 p. 714.282.2270
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Test #: L061402506

Date: 6/16/2014



NVLAP LAB CODE 200927-0

Test Report: L061402506

Model Number: LED MV120V R38 22W 5K FL

Report Prepared For: Moon Visions Lighting
 780 S. Floyd Rd., Suite 2B, Richardson, TX 75080

Test: Electrical and Photometric tests as required by the IESNA test standards.

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. Fixture catalog number is LED MV120V R38 22W 5K FL. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Photometry (IES file) and LM-79 report is from the previous Light Laboratory test L051409111.

Sample Arrival Date: 5/16/14

Date of Tests: 6/3/14 - 6/9/14

Seasoning of Sample SSL: 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	01/04/15
Xitron Power Analysis System	2503AH	MT-EL01	01/09/15
BK Precision DC Power Supply	1747	PSDC-04	01/08/15
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/04/15
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.

LM-79 Test Summary

Manufacturer:	Moon Visions Lighting
Model Number:	LED MV120V R38 22W 5K FL
LAMPCAT:	N/A
Driver Model Number:	N/A
Total Lumens:	1897.58
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.17
Input Power (W):	19.33
Input Power Factor:	0.96
Total Harmonic Distortion @ 120V(%):	20%
Total Harmonic Distortion @ 277V(%):	N/A
Efficacy:	98
Color Rendering Index (CRI):	84
Correlated Color Temperature (K):	5176
Chromaticity Coordinate x:	0.3406
Chromaticity Coordinate y:	0.3527
Ambient Temperature (°F):	77.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:10
Off State Power(W):	0.00

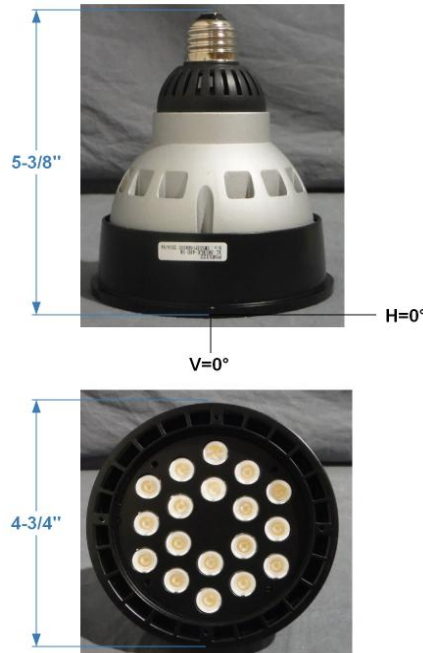
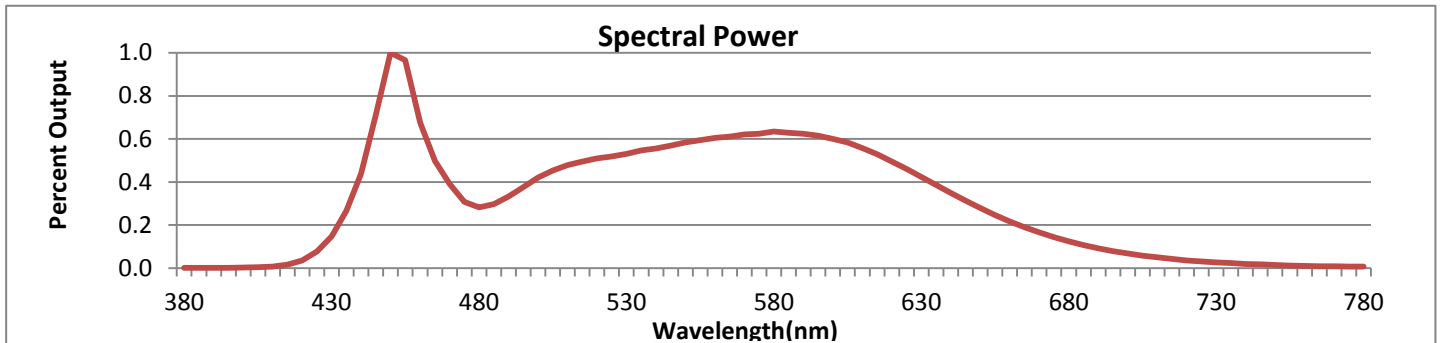


FIG.1 LUMINAIRE

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



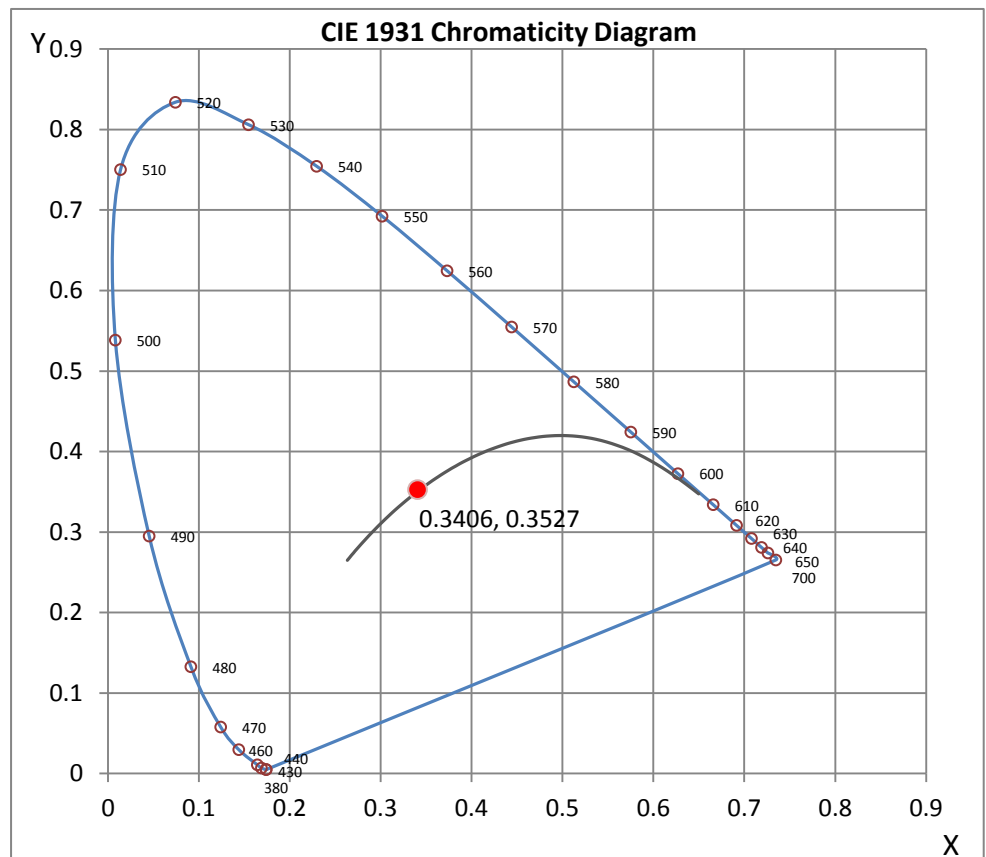
Wavelength	W/m ² nm	440	0.0179	510	0.0195	580	0.0259	650	0.0114	720	0.0015
380	0.0000	450	0.0408	520	0.0208	590	0.0255	660	0.0088	730	0.0011
390	0.0000	460	0.0275	530	0.0216	600	0.0245	670	0.0068	740	0.0008
400	0.0001	470	0.0159	540	0.0227	610	0.0227	680	0.0051	750	0.0006
410	0.0003	480	0.0115	550	0.0238	620	0.0202	690	0.0038	760	0.0004
420	0.0015	490	0.0136	560	0.0247	630	0.0173	700	0.0028	770	0.0003
430	0.0060	500	0.0172	570	0.0253	640	0.0142	710	0.0020	780	0.0003

CRI & CCT

x	0.3406
y	0.3527
u'	0.2080
v'	0.4845
CRI	83.50
CCT	5176
Duv	0.00240

R Values

R1	81.65
R2	89.48
R3	94.12
R4	82.76
R5	82.47
R6	84.76
R7	86.58
R8	66.56
R9	6.40
R10	74.87
R11	82.21
R12	63.87
R13	83.86
R14	96.83



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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 : Wilson Khounlavong

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*

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



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Photometric Test Report

IES FLOOD REPORT

PHOTOMETRIC FILENAME : L061402506.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L061402506
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 6/16/2014
[MANUFAC] MOON VISIONS LIGHTING
[LUMCAT] LED MV120V R38 22W 5K FL
[LUMINAIRE] 4-3/4"DIA. X 5-3/8"H. LED LAMP
[MORE] NO LENS
[LAMPPOSITION] 0,0
[LAMPCAT] N/A
[OTHER] CANDELA AND ELECTRICAL VALUES ARE FROM
[MORE] LIGHT LABORATORY TEST L051409111
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 19.33W
[TEST PROCEDURE] IESNA:LM-79-08

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

CHARACTERISTICS

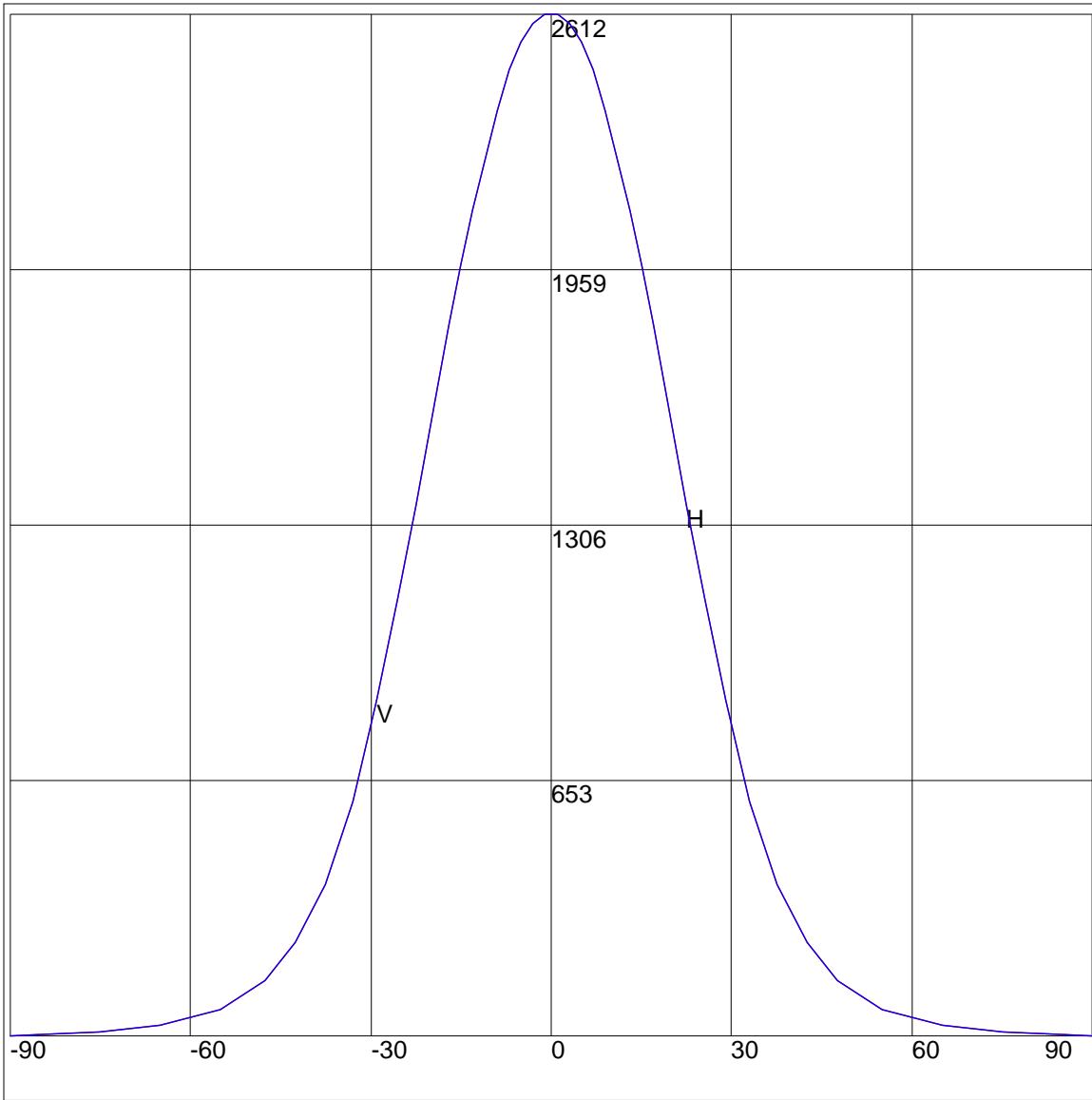
NEMA Type	5 H x 5 V
Maximum Candela	2612
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	46.3
Vertical Beam Angle (50%)	46.3
Horizontal Field Angle (10%)	83.6
Vertical Field Angle (10%)	83.6
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	950
Beam Efficiency	N.A.
Field Lumens	1677
Field Efficiency	N.A.
Spill Lumens	220
Luminaire Lumens	1898
Total Efficiency	N.A.
Total Luminaire Watts	19.33
Ballast Factor	1.00

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L061402506.IES

AXIAL CANDELA

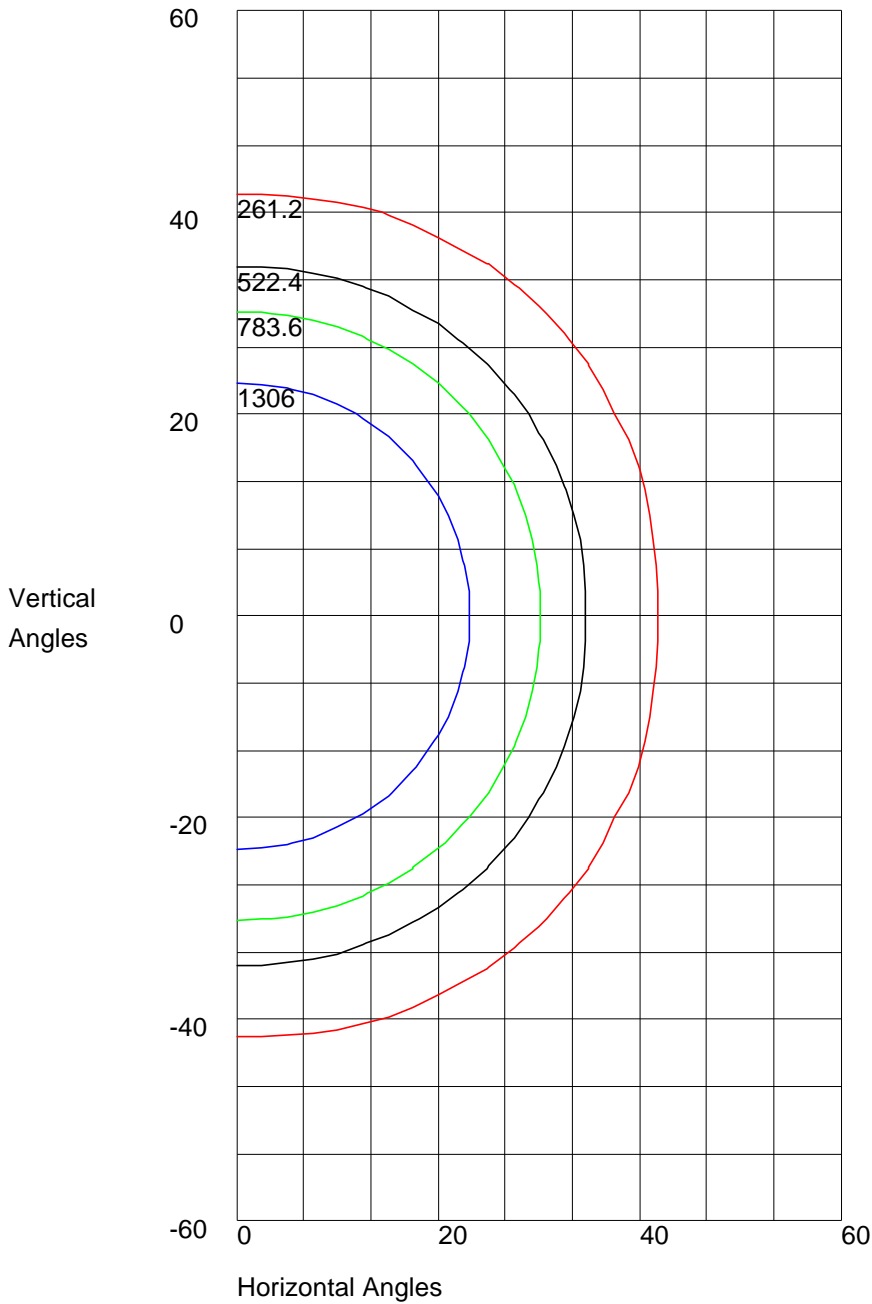
DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	5	85	5
75	10	75	10
65	28	65	28
55	68	55	68
47.5	142	47.5	142
42.5	240	42.5	240
37.5	389	37.5	389
33	600	33	600
29	861	29	861
25.5	1117	25.5	1117
22.5	1358	22.5	1358
19.5	1616	19.5	1616
17	1818	17	1818
15	1968	15	1968
13	2110	13	2110
11	2245	11	2245
9	2368	9	2368
7	2470	7	2470
5	2542	5	2542
3	2587	3	2587
1	2611	1	2611
0	2612	0	2612
-1	2611	-1	2611
-3	2587	-3	2587
-5	2542	-5	2542
-7	2470	-7	2470
-9	2368	-9	2368
-11	2245	-11	2245
-13	2110	-13	2110
-15	1968	-15	1968
-17	1818	-17	1818
-19.5	1616	-19.5	1616
-22.5	1358	-22.5	1358
-25.5	1117	-25.5	1117
-29	861	-29	861
-33	600	-33	600
-37.5	389	-37.5	389
-42.5	240	-42.5	240
-47.5	142	-47.5	142
-55	68	-55	68
-65	28	-65	28
-75	10	-75	10
-85	5	-85	5
-90	0	-90	0

AXIAL CANDELA DISPLAY



Maximum Candela = 2612 Located At Horizontal Angle = 0, Vertical Angle = 0
H - Horizontal Axial Candela
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 2612 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 1306
10% Maximum Candela = 261.2