



8165 E Kaiser Blvd. Anaheim, CA 92808  
 p. 714.282.2270  
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Test #: L061402505

Date: 6/16/2014



NVLAP LAB CODE 200927-0

**Test Report:** L061402505

**Model Number:** LED MV120V R38 22W 3.5K 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 3.5K 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 L051409110.

**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.

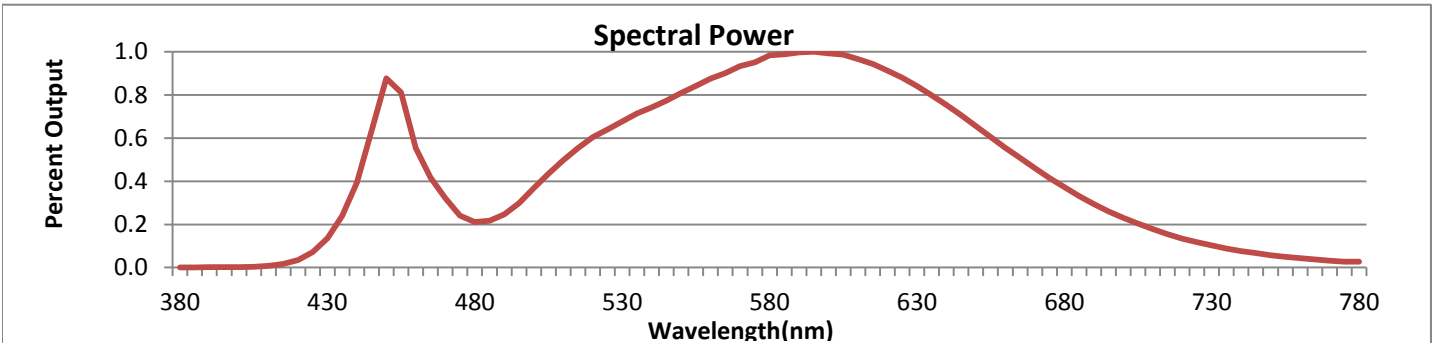
**LM-79 Test Summary**

<b>Manufacturer:</b>	Moon Visions Lighting
<b>Model Number:</b>	LED MV120V R38 22W 3.5K FL
<b>LAMPCAT:</b>	N/A
<b>Driver Model Number:</b>	N/A
<b>Total Lumens:</b>	1683.72
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.16
<b>Input Power (W):</b>	18.89
<b>Input Power Factor:</b>	0.96
<b>Total Harmonic Distortion @ 120V(%):</b>	20%
<b>Total Harmonic Distortion @ 277V(%):</b>	N/A
<b>Efficacy:</b>	89
<b>Color Rendering Index (CRI):</b>	82
<b>Correlated Color Temperature (K):</b>	3551
<b>Chromaticity Coordinate x:</b>	0.4035
<b>Chromaticity Coordinate y:</b>	0.3921
<b>Ambient Temperature (°F):</b>	77.0
<b>Stabilization Time (Hours):</b>	0:40
<b>Total Operating Time (Hours):</b>	1:40
<b>Off State Power(W):</b>	0.00



FIG.1 LUMINAIRE

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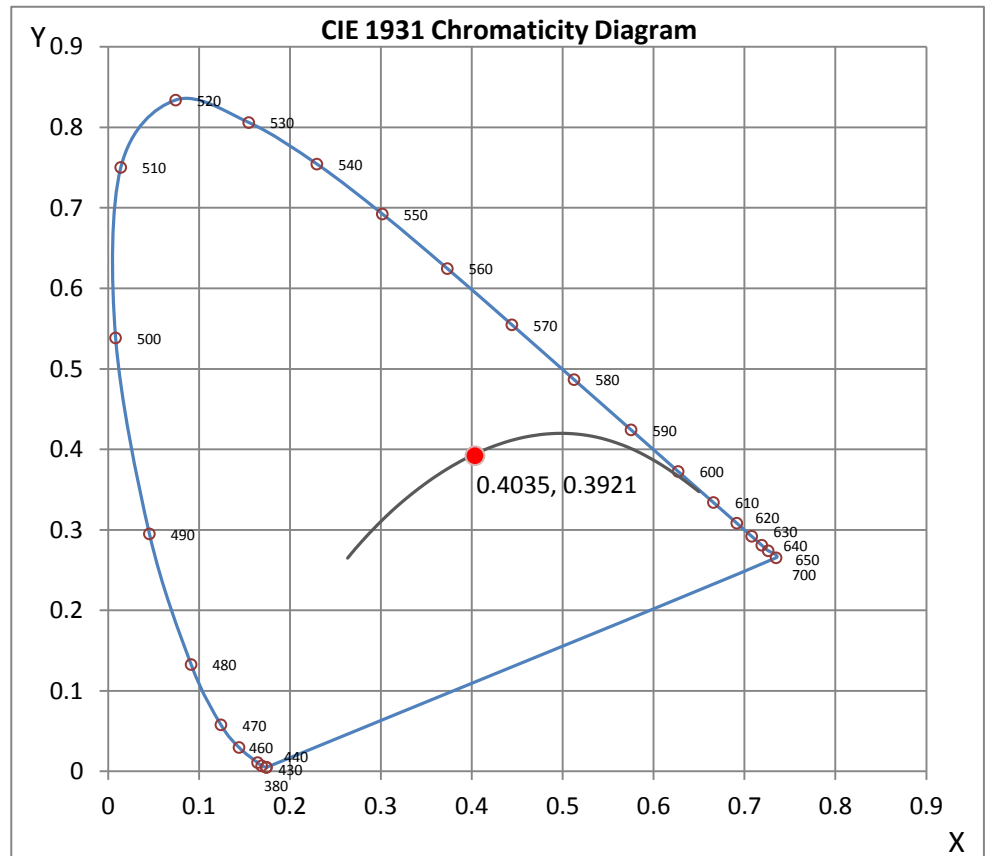
Wavelength	W/m <sup>2</sup> nm	440	0.0099	510	0.0126	580	0.0248	650	0.0165	720	0.0034
380	0.0000	450	0.0221	520	0.0152	590	0.0252	660	0.0140	730	0.0026
390	0.0000	460	0.0140	530	0.0171	600	0.0250	670	0.0116	740	0.0019
400	0.0001	470	0.0081	540	0.0187	610	0.0244	680	0.0094	750	0.0015
410	0.0002	480	0.0053	550	0.0204	620	0.0230	690	0.0074	760	0.0011
420	0.0009	490	0.0062	560	0.0221	630	0.0212	700	0.0058	770	0.0008
430	0.0034	500	0.0093	570	0.0236	640	0.0190	710	0.0045	780	0.0007

**CRI & CCT**

x	0.4035
y	0.3921
u'	0.2340
v'	0.5116
CRI	81.80
CCT	3551
Duv	0.00101

**R Values**

R1	80.04
R2	87.12
R3	92.33
R4	80.53
R5	78.94
R6	81.14
R7	87.44
R8	67.23
R9	17.72
R10	68.97
R11	77.65
R12	57.31
R13	81.29
R14	95.32



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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*

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## Photometric Test Report

### IES FLOOD REPORT

PHOTOMETRIC FILENAME : L061402505.IES

### DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L061402505  
[TESTLAB] LIGHT LABORATORY, INC.  
[ISSUEDATE] 6/16/2014  
[MANUFAC] MOON VISIONS LIGHTING  
[LUMCAT] LED MV120V R38 22W 3.5K 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 L051409110  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120VAC, 18.89W  
[TEST PROCEDURE] IESNA:LM-79-08

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

### CHARACTERISTICS

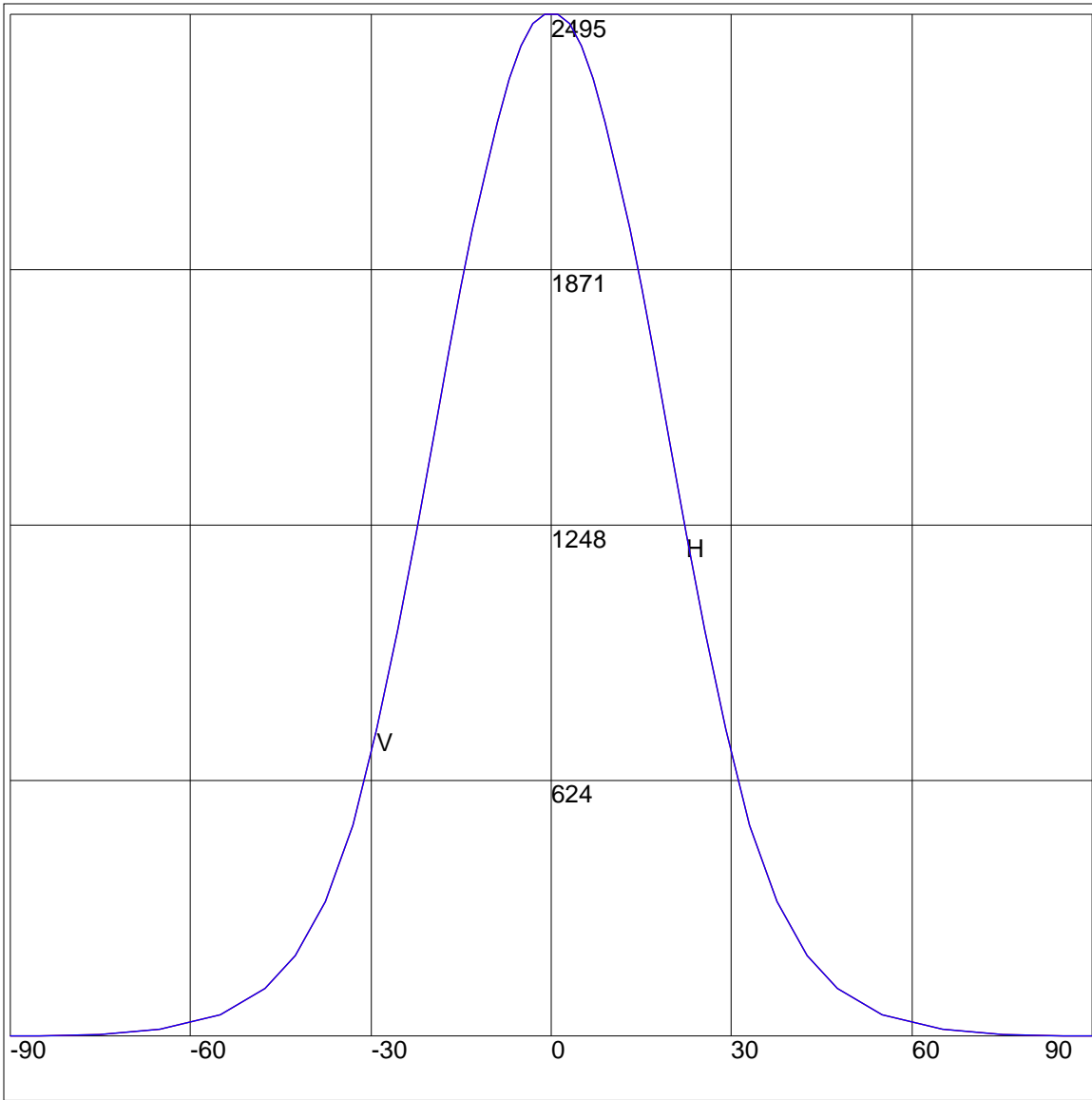
NEMA Type	5 H x 5 V
Maximum Candela	2495
Maximum Candela Angle	-1H 0V
Horizontal Beam Angle (50%)	44.5
Vertical Beam Angle (50%)	44.5
Horizontal Field Angle (10%)	81.1
Vertical Field Angle (10%)	81.1
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	845
Beam Efficiency	N.A.
Field Lumens	1488
Field Efficiency	N.A.
Spill Lumens	196
Luminaire Lumens	1684
Total Efficiency	N.A.
Total Luminaire Watts	18.89
Ballast Factor	1.00

IES FLOOD REPORT  
PHOTOMETRIC FILENAME : L061402505.IES

AXIAL CANDELA

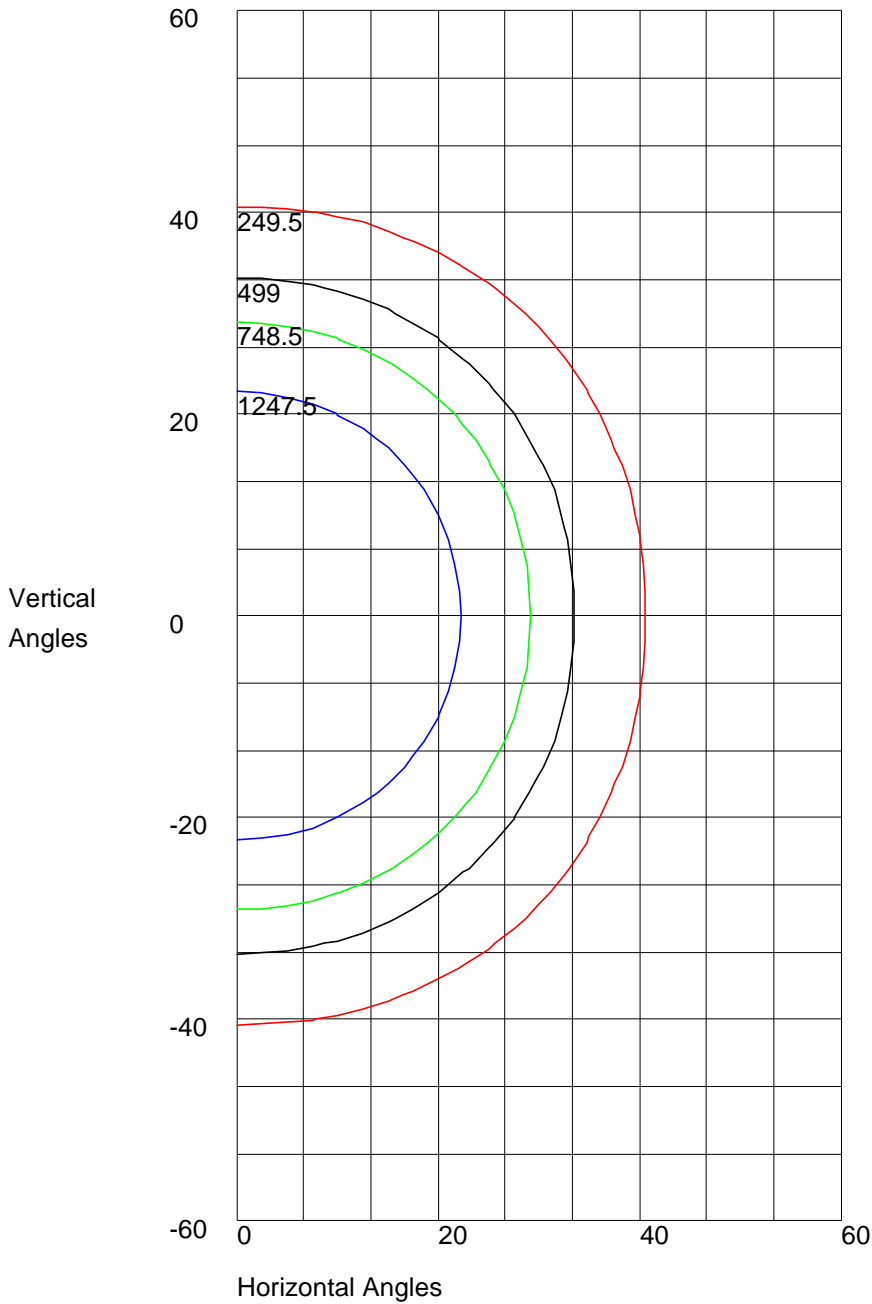
DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	0	85	0
75	5	75	5
65	19	65	19
55	54	55	54
47.5	118	47.5	118
42.5	198	42.5	198
37.5	329	37.5	329
33	516	33	516
29	751	29	751
25.5	992	25.5	992
22.5	1226	22.5	1226
19.5	1474	19.5	1474
17	1673	17	1673
15	1826	15	1826
13	1972	13	1972
11	2109	11	2109
9	2233	9	2233
7	2339	7	2339
5	2419	5	2419
3	2472	3	2472
1	2495	1	2495
0	2494	0	2494
-1	2495	-1	2495
-3	2472	-3	2472
-5	2419	-5	2419
-7	2339	-7	2339
-9	2233	-9	2233
-11	2109	-11	2109
-13	1972	-13	1972
-15	1826	-15	1826
-17	1673	-17	1673
-19.5	1474	-19.5	1474
-22.5	1226	-22.5	1226
-25.5	992	-25.5	992
-29	751	-29	751
-33	516	-33	516
-37.5	329	-37.5	329
-42.5	198	-42.5	198
-47.5	118	-47.5	118
-55	54	-55	54
-65	19	-65	19
-75	5	-75	5
-85	0	-85	0
-90	0	-90	0

AXIAL CANDELA DISPLAY



Maximum Candela = 2495 Located At Horizontal Angle = -1, Vertical Angle = 0  
H - Horizontal Axial Candela  
V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 2495 Located At Horizontal Angle = -1, Vertical Angle = 0  
50% Maximum Candela = 1247.5  
10% Maximum Candela = 249.5