



8165 E Kaiser Blvd. Anaheim, CA 92808
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Test #: L061402507

Date: 6/16/2014



NVLAP LAB CODE 200927-0

Test Report: L061402507

Model Number: LED MV120V R38 22W 5K NFL

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 NFL. 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 L051409112.

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 NFL
LAMPCAT:	N/A
Driver Model Number:	N/A
Total Lumens:	1913.60
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.16
Input Power (W):	18.81
Input Power Factor:	0.95
Total Harmonic Distortion @ 120V(%):	20%
Total Harmonic Distortion @ 277V(%):	N/A
Efficacy:	102
Color Rendering Index (CRI):	84
Correlated Color Temperature (K):	5262
Chromaticity Coordinate x:	0.3384
Chromaticity Coordinate y:	0.3505
Ambient Temperature (°F):	77.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	1:20
Off State Power(W):	0.00

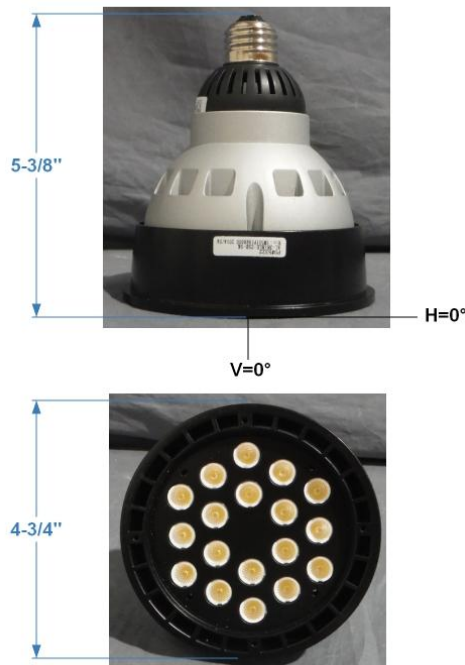
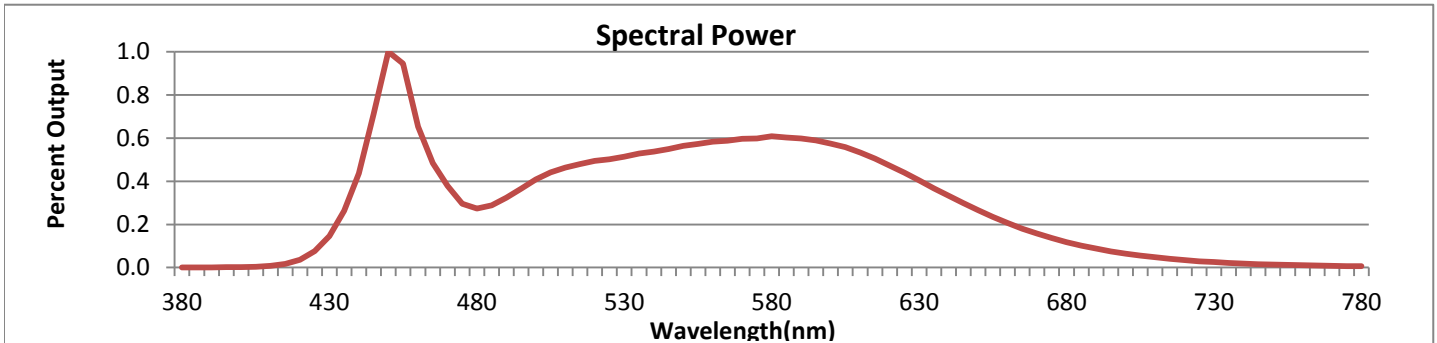


FIG.1 LUMINAIRE

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



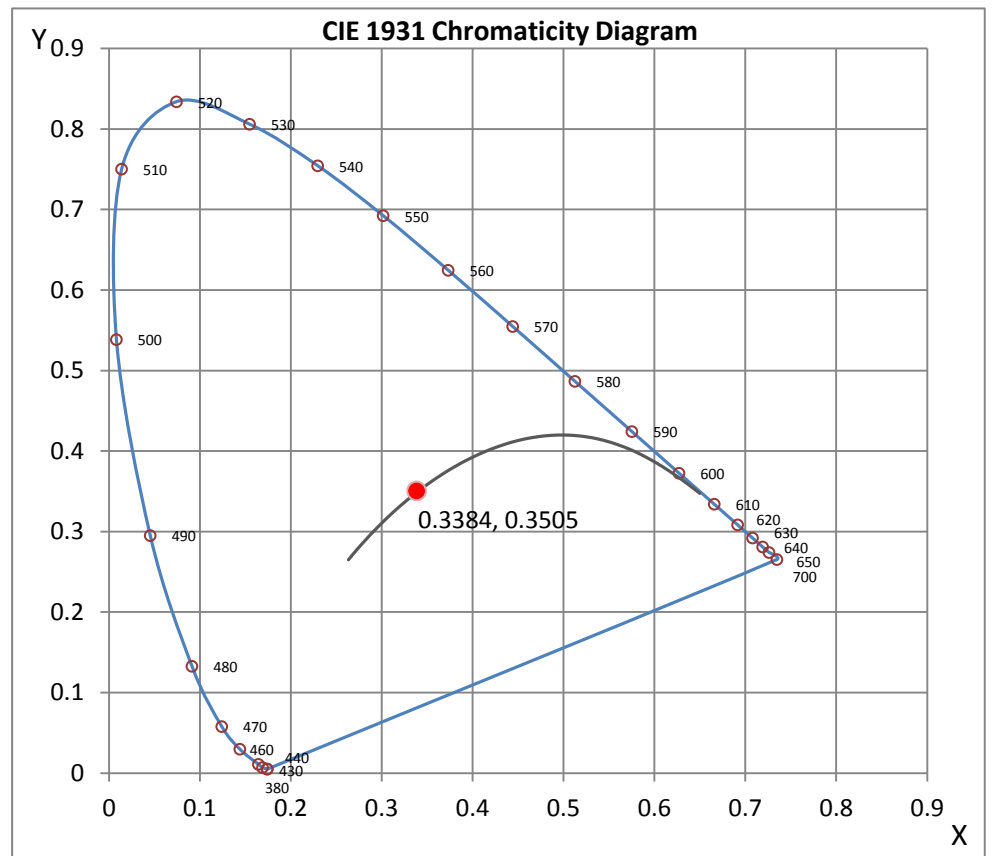
Wavelength	W/m ² nm	440	0.0183	510	0.0194	580	0.0255	650	0.0111	720	0.0014
380	0.0000	450	0.0418	520	0.0207	590	0.0250	660	0.0086	730	0.0011
390	0.0000	460	0.0273	530	0.0215	600	0.0241	670	0.0066	740	0.0008
400	0.0001	470	0.0158	540	0.0225	610	0.0223	680	0.0049	750	0.0006
410	0.0003	480	0.0114	550	0.0236	620	0.0198	690	0.0037	760	0.0004
420	0.0015	490	0.0135	560	0.0244	630	0.0169	700	0.0027	770	0.0003
430	0.0061	500	0.0171	570	0.0250	640	0.0139	710	0.0020	780	0.0003

CRI & CCT

x	0.3384
y	0.3505
u'	0.2073
v'	0.4831
CRI	83.70
CCT	5262
Duv	0.00222

R Values

R1	81.85
R2	89.45
R3	93.92
R4	83.03
R5	82.67
R6	84.64
R7	86.76
R8	67.07
R9	7.14
R10	74.73
R11	82.54
R12	63.70
R13	84.01
R14	96.70



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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 : L061402507.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L061402507
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 6/16/2014
[MANUFAC] MOON VISIONS LIGHTING
[LUMCAT] LED MV120V R38 22W 5K NFL
[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 L051409112
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 18.81W
[TEST PROCEDURE] IESNA:LM-79-08

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

CHARACTERISTICS

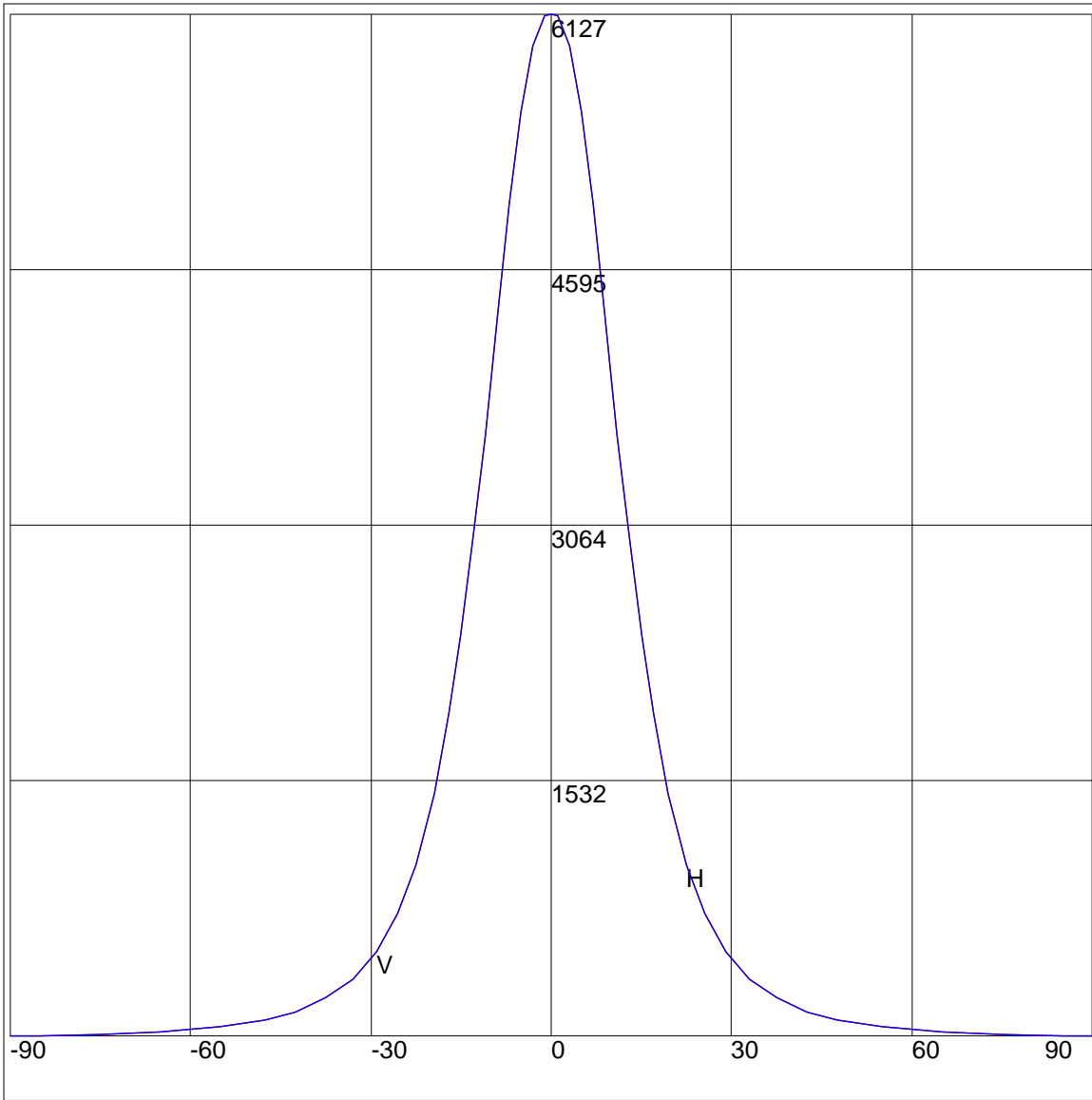
NEMA Type	4 H x 4 V
Maximum Candela	6127
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	25.4
Vertical Beam Angle (50%)	25.4
Horizontal Field Angle (10%)	54.9
Vertical Field Angle (10%)	54.9
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	684
Beam Efficiency	N.A.
Field Lumens	1435
Field Efficiency	N.A.
Spill Lumens	478
Luminaire Lumens	1914
Total Efficiency	N.A.
Total Luminaire Watts	18.81
Ballast Factor	1.00

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L061402507.IES

AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	5	85	5
75	11	75	11
65	29	65	29
55	59	55	59
47.5	101	47.5	101
42.5	149	42.5	149
37.5	231	37.5	231
33	343	33	343
29	512	29	512
25.5	740	25.5	740
22.5	1030	22.5	1030
19.5	1458	19.5	1458
17	1937	17	1937
15	2406	15	2406
13	2964	13	2964
11	3608	11	3608
9	4315	9	4315
7	4991	7	4991
5	5542	5	5542
3	5937	3	5937
1	6120	1	6120
0	6127	0	6127
-1	6120	-1	6120
-3	5937	-3	5937
-5	5542	-5	5542
-7	4991	-7	4991
-9	4315	-9	4315
-11	3608	-11	3608
-13	2964	-13	2964
-15	2406	-15	2406
-17	1937	-17	1937
-19.5	1458	-19.5	1458
-22.5	1030	-22.5	1030
-25.5	740	-25.5	740
-29	512	-29	512
-33	343	-33	343
-37.5	231	-37.5	231
-42.5	149	-42.5	149
-47.5	101	-47.5	101
-55	59	-55	59
-65	29	-65	29
-75	11	-75	11
-85	5	-85	5
-90	0	-90	0

AXIAL CANDELA DISPLAY

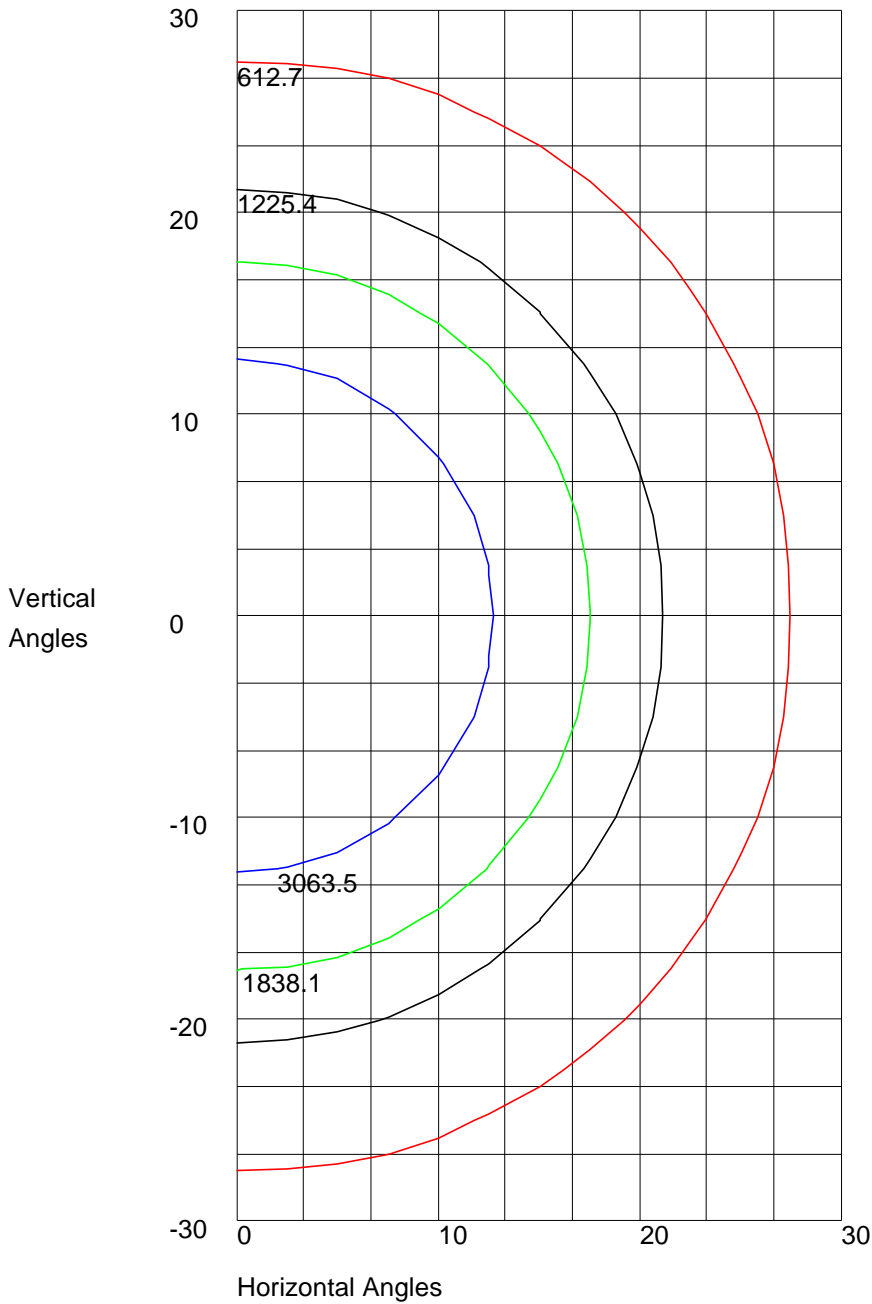


Maximum Candela = 6127 Located At Horizontal Angle = 0, Vertical Angle = 0

H - Horizontal Axial Candela

V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 6127 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 3063.5
10% Maximum Candela = 612.7