



8165 E Kaiser Blvd. Anaheim, CA 92808  
www.lightlaboratory.com

Report No: L022211203



**Report No:** L022211203

**Issue Date:** 2/23/2022

**Report Prepared For:** FX Luminaire / Lumascape  
1940 Diamond Street, San Marcos, CA, 92078

**Model Number:** LC-9LED-FW / dFRS11a-9LED-WT

**Test:** Photometric/Colorimetric/Electrical Test

**Standards Used:** Appropriate part or all test guidelines were used for test performed:

*IESNA LM79: 2019* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products

*ANSI NEMA ANSLG C78.377: 2017* Specification of the Chromaticity of Solid State Lighting Products

*ANSI C82.77-10:2014* Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

**Description of Sample:** Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

**Special Test Condition:** Fixture is tested with no special conditions.

**Date of Tests:** 2/21/22

**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-S4	4/7/23
HP Power Supply	6032A	PS-DC05-S2	--
Fluke Digital Thermometer	52K/J	MT-TP05	3/17/23
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

### General Information

<b>Manufacturer:</b>	FX Luminaire / Lumascape
<b>Model Number:</b>	LC-9LED-FW / dFRS11a-9LED-WT
<b>Driver Model Number:</b>	N/A

### Test Summary

<b>Total Lumens:</b>	811.00
<b>Efficacy:</b>	72.91
<b>Color Redering Index:</b>	83.5
<b>Correlated Color Temperature:</b>	2635
<b>Input Voltage (VDC):</b>	12.00
<b>Input Current (Amp):</b>	1.0206
<b>Input Power (W):</b>	11.12
<b>Input Power Factor:</b>	0.9081
<b>Current ATHD (%):</b>	38.5%

### Test Condition

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:55
<b>Total Operating Time (Hours):</b>	1:20

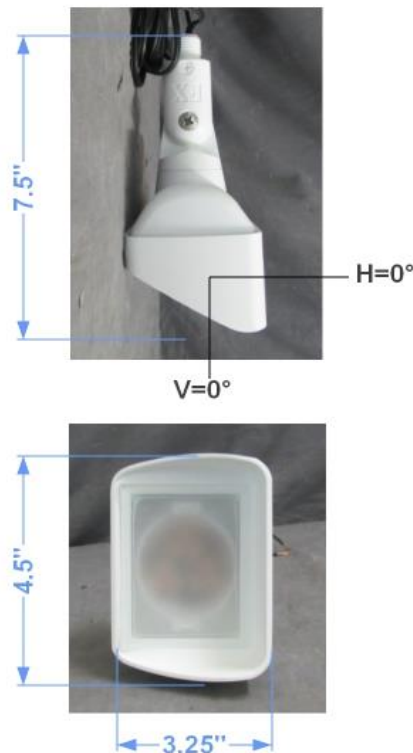
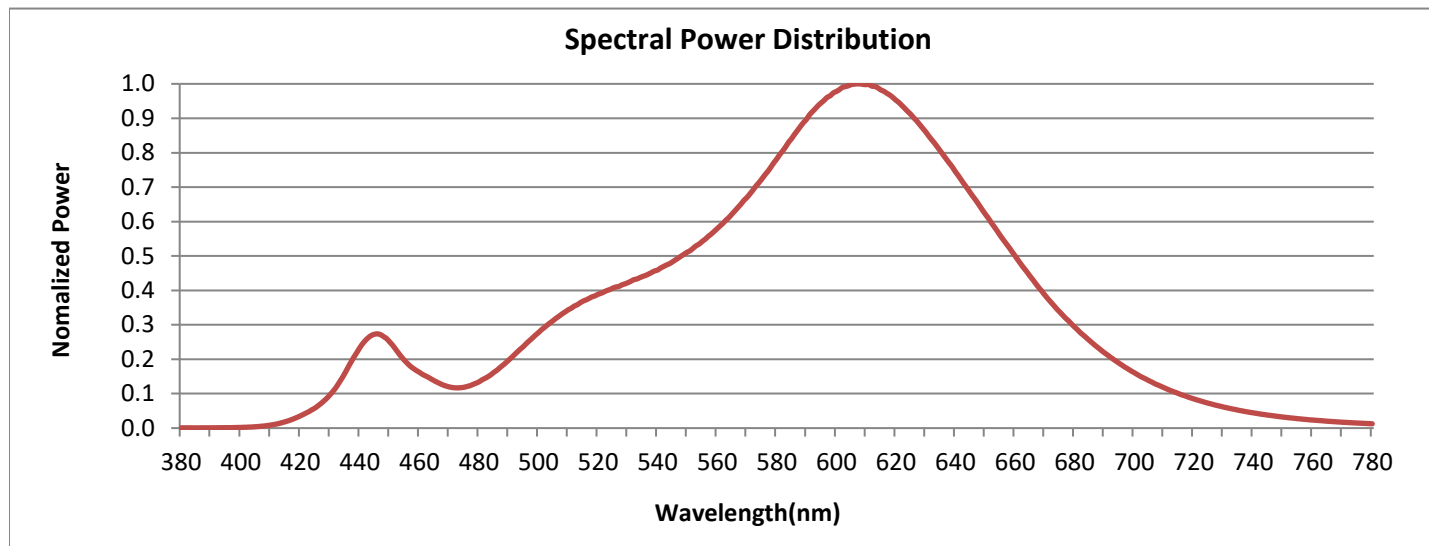


FIG. 1 LUMINAIRE

## Colorimetry Test Results

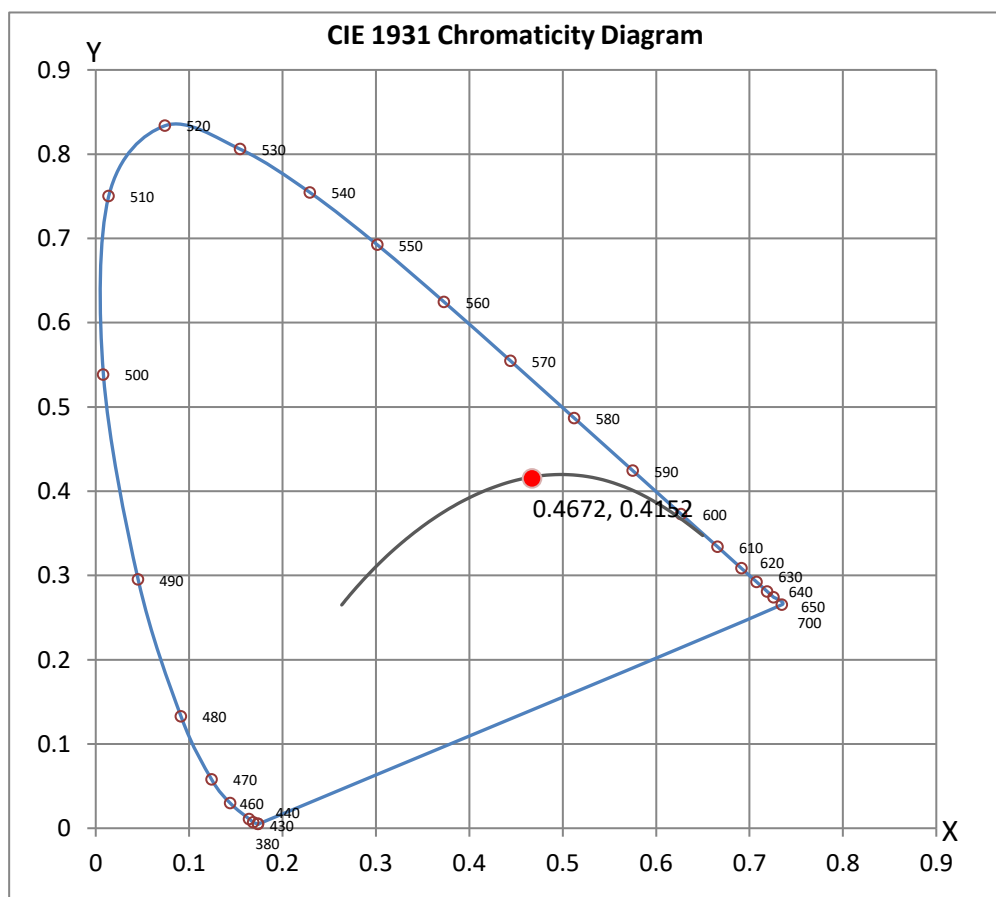


## CRI & CCT

x	0.4672
y	0.4152
u'	0.2652
v'	0.5302
CRI	83.50
CCT	2635
Duv	0.00112

## R Values

R1	81.75
R2	91.37
R3	96.70
R4	83.32
R5	83.03
R6	92.27
R7	82.07
R8	57.67
R9	8.75
R10	81.75
R11	84.50
R12	81.51
R13	83.87
R14	98.82
R15	72.90



## 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:

The results related only to the samples as received and tested. This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government.

Report Prepared by : Kujan Modi

Test Report Reviewed by:



Steve Kang  
Quality Assurance

*\*Attached are photometric data reports.*



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## Photometric Test Report

### IES FLOOD REPORT

PHOTOMETRIC FILENAME : L022211203.IES

### DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L022211203  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 2/23/2022  
[MANUFAC] FX Luminaire / Lumascape  
[LUMCAT] LC-9LED-FW / dFRS11a-9LED-WT  
[LUMINAIRE] Lumiled, 9LED, 2700K  
[BALLASTCAT] N/A  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 12VAC  
[TEST PROCEDURE] IESNA:LM-79-08

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

### CHARACTERISTICS

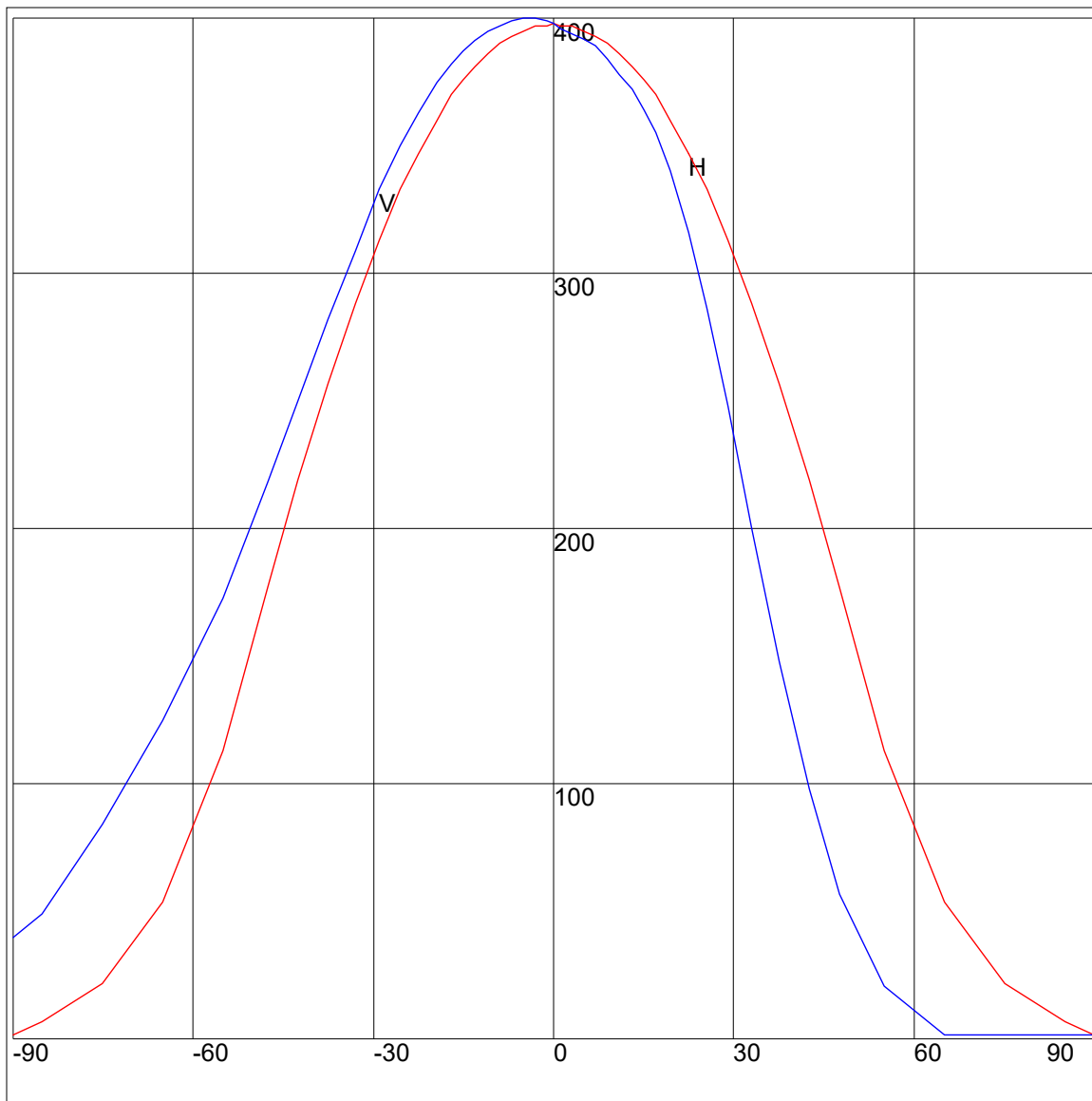
NEMA Type	7 H x 7 V
Maximum Candela	400
Maximum Candela Angle	-1H -5V
Horizontal Beam Angle (50%)	90.2
Vertical Beam Angle (50%)	83.5
Horizontal Field Angle (10%)	139.7
Vertical Field Angle (10%)	141.0
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	522
Beam Efficiency	N.A.
Field Lumens	783
Field Efficiency	N.A.
Spill Lumens	29
Luminaire Lumens	811
Total Efficiency	N.A.
Total Luminaire Watts	11.12
Ballast Factor	1.00

**IES FLOOD REPORT**  
**PHOTOMETRIC FILENAME : L022211203.IES**

**AXIAL CANDELA**

DEG.	HOR.	DEG.	VERT.
90	2	90	2
85	7	85	2
75	22	75	2
65	54	65	2
55	113	55	21
47.5	177	47.5	57
42.5	219	42.5	98
37.5	257	37.5	148
33	288	33	200
29	313	29	248
25.5	333	25.5	286
22.5	347	22.5	316
19.5	360	19.5	340
17	370	17	355
15	376	15	364
13	381	13	372
11	386	11	378
9	390	9	384
7	393	7	389
5	395	5	392
3	397	3	394
1	397	1	396
0	398	0	398
-1	397	-1	399
-3	397	-3	400
-5	395	-5	400
-7	393	-7	399
-9	390	-9	397
-11	386	-11	395
-13	381	-13	391
-15	376	-15	387
-17	370	-17	382
-19.5	360	-19.5	375
-22.5	347	-22.5	363
-25.5	333	-25.5	350
-29	313	-29	333
-33	288	-33	309
-37.5	257	-37.5	282
-42.5	219	-42.5	250
-47.5	177	-47.5	218
-55	113	-55	173
-65	54	-65	125
-75	22	-75	84
-85	7	-85	49
-90	2	-90	40

AXIAL CANDELA DISPLAY

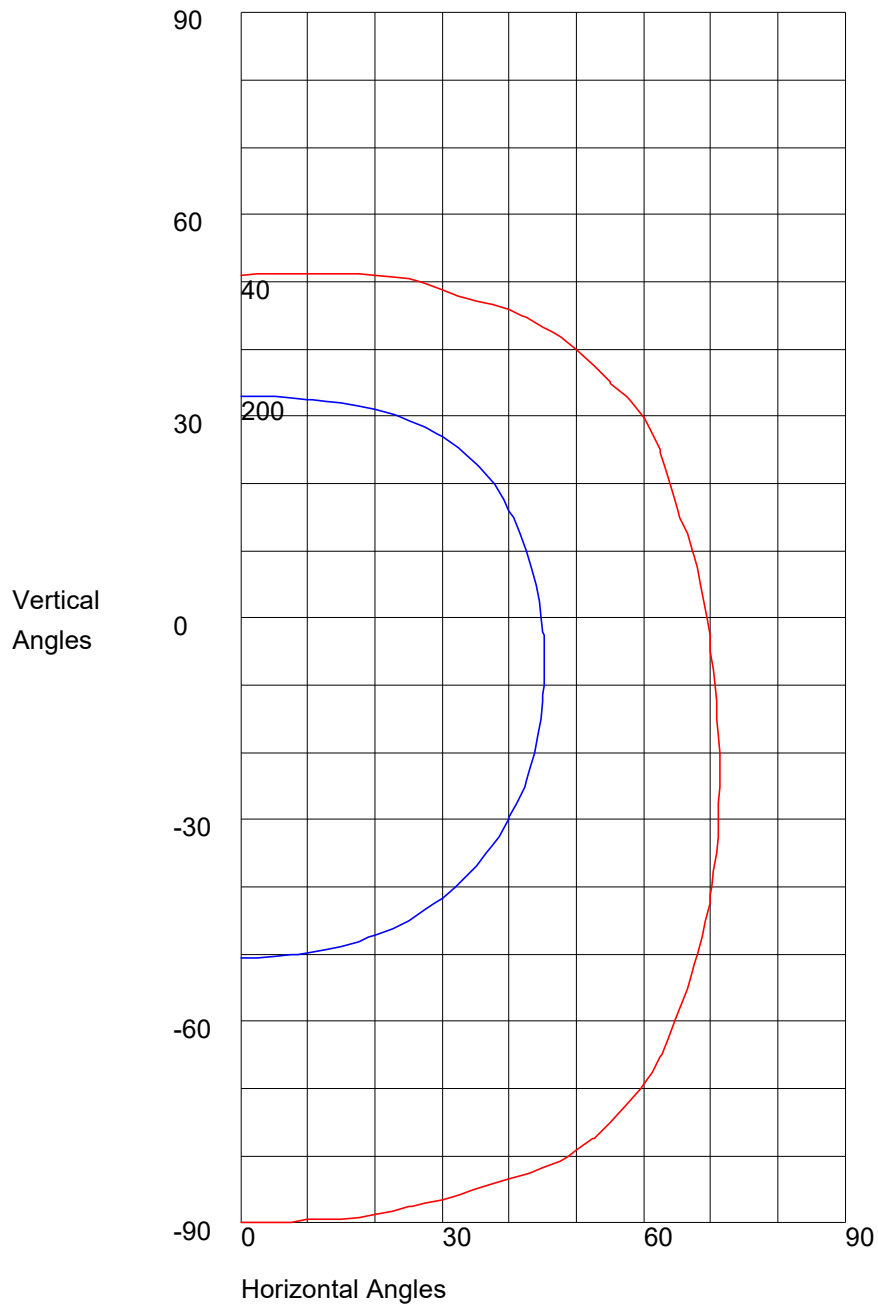


Maximum Candela = 400 Located At Horizontal Angle =-1, Vertical Angle =-5

H - Horizontal Axial Candela

V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 400 Located At Horizontal Angle =-1, Vertical Angle =-5  
50% Maximum Candela = 200  
10% Maximum Candela = 40