



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

Report No: L022211205



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Issue Date: 2/23/2022

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

Model Number: PB-3LED-FW / dFRS9a-3LED-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

Manufacturer:	FX Luminaire / Lumascape
Model Number:	PB-3LED-FW / dFRS9a-3LED-WT
Driver Model Number:	N/A

Test Summary

Total Lumens:	265.00
Efficacy:	68.34
Color Redering Index:	83.7
Correlated Color Temperature:	2611
Input Voltage (VDC):	12.00
Input Current (Amp):	0.3543
Input Power (W):	3.88
Input Power Factor:	0.9120
Current ATHD (%):	39.3%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	1:00

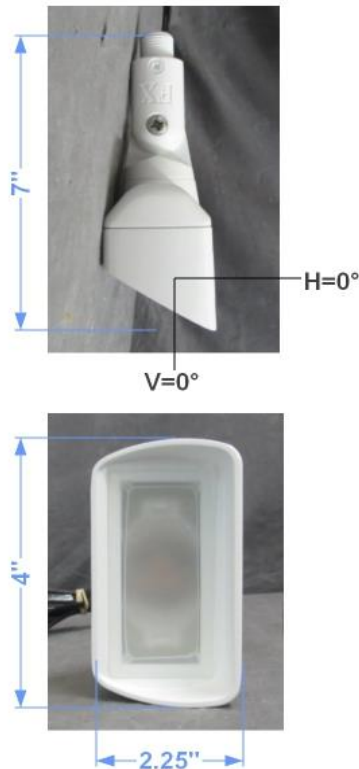
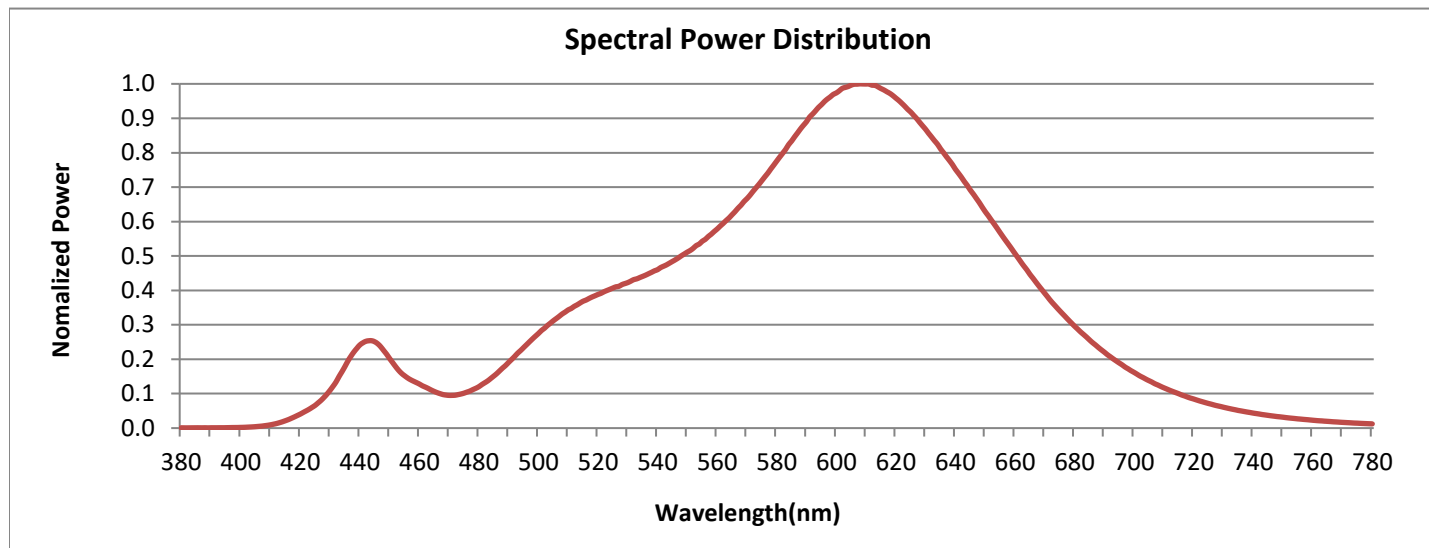


FIG. 1 LUMINAIRE

Colorimetry Test Results

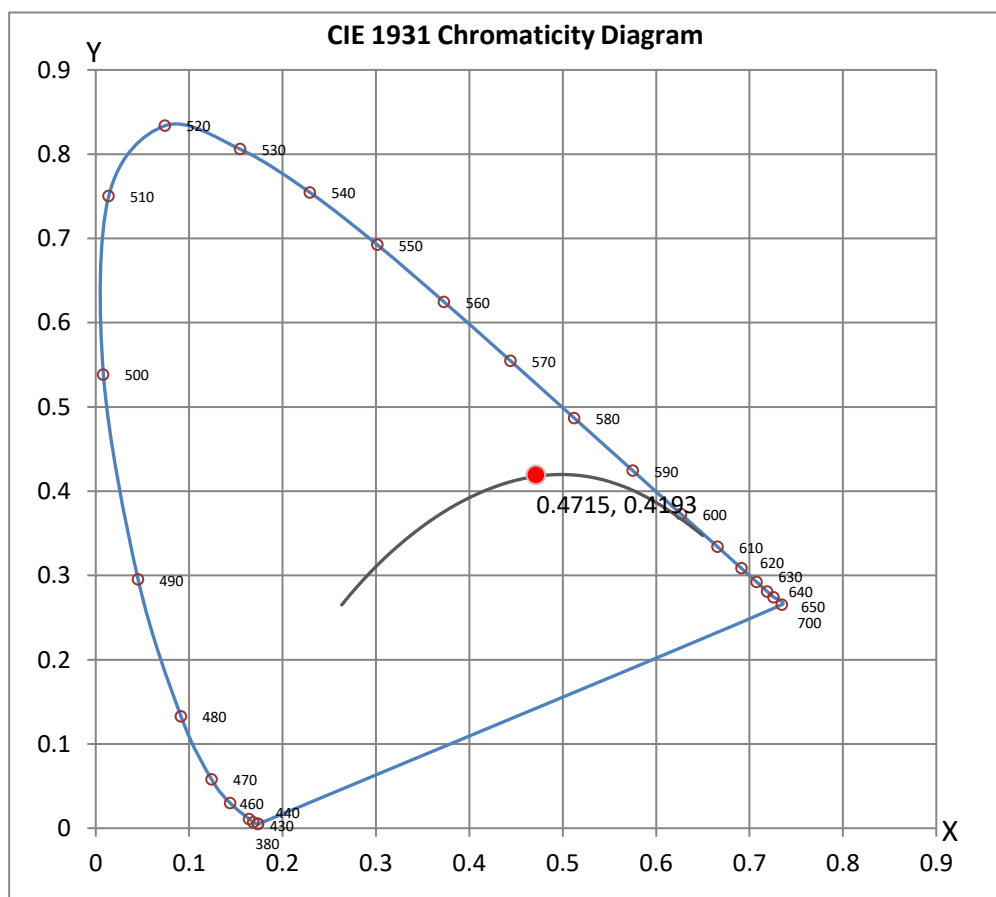


CRI & CCT

x	0.4715
y	0.4193
u'	0.2661
v'	0.5324
CRI	83.70
CCT	2611
Duv	0.00228

R Values

R1	81.63
R2	90.70
R3	97.84
R4	83.96
R5	82.78
R6	91.49
R7	82.92
R8	58.25
R9	9.13
R10	80.29
R11	85.23
R12	80.23
R13	83.50
R14	99.35
R15	72.66





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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:

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 : Kunjan 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 : L022211205.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L022211205
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 2/23/2022
[MANUFAC] FX Luminaire / Lumascape
[LUMCAT] PB-3LED-FW / dFRS9a-3LED-WT
[LUMINAIRE] Lumiled, 3LED, 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

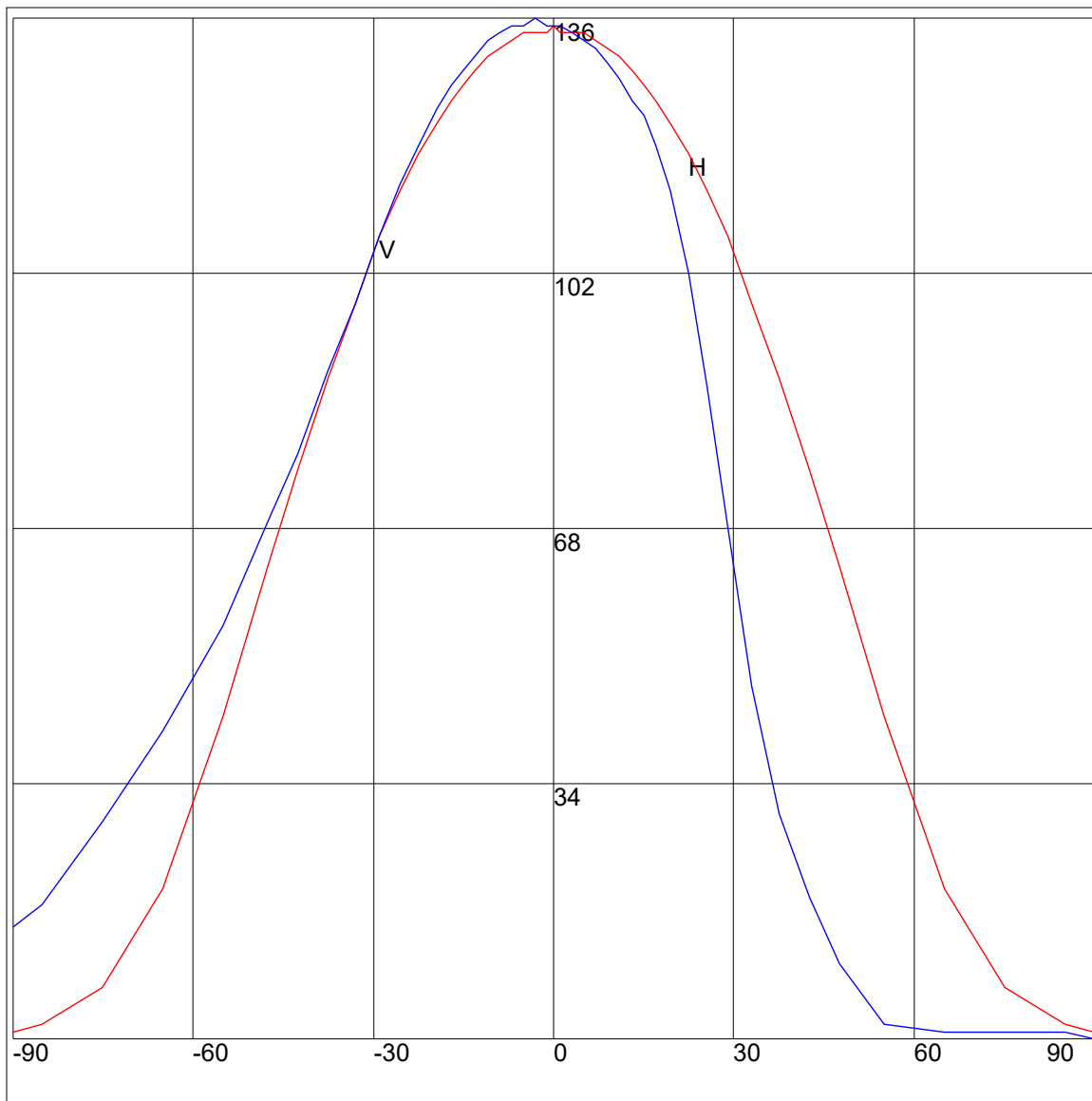
NEMA Type	7 H x 5 V
Maximum Candela	136
Maximum Candela Angle	0H -3V
Horizontal Beam Angle (50%)	91.9
Vertical Beam Angle (50%)	77.0
Horizontal Field Angle (10%)	140.6
Vertical Field Angle (10%)	91.0
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	168
Beam Efficiency	N.A.
Field Lumens	257
Field Efficiency	N.A.
Spill Lumens	7
Luminaire Lumens	265
Total Efficiency	N.A.
Total Luminaire Watts	3.88
Ballast Factor	1.00

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L022211205.IES

AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	1	90	0
85	2	85	1
75	7	75	1
65	20	65	1
55	43	55	2
47.5	63	47.5	10
42.5	76	42.5	19
37.5	88	37.5	30
33	98	33	47
29	107	29	68
25.5	113	25.5	87
22.5	118	22.5	102
19.5	122	19.5	113
17	125	17	119
15	127	15	123
13	129	13	125
11	131	11	128
9	132	9	130
7	133	7	132
5	134	5	133
3	134	3	134
1	134	1	135
0	135	0	135
-1	134	-1	135
-3	134	-3	136
-5	134	-5	135
-7	133	-7	135
-9	132	-9	134
-11	131	-11	133
-13	129	-13	131
-15	127	-15	129
-17	125	-17	127
-19.5	122	-19.5	124
-22.5	118	-22.5	119
-25.5	113	-25.5	114
-29	107	-29	107
-33	98	-33	98
-37.5	88	-37.5	89
-42.5	76	-42.5	78
-47.5	63	-47.5	69
-55	43	-55	55
-65	20	-65	41
-75	7	-75	29
-85	2	-85	18
-90	1	-90	15

AXIAL CANDELA DISPLAY

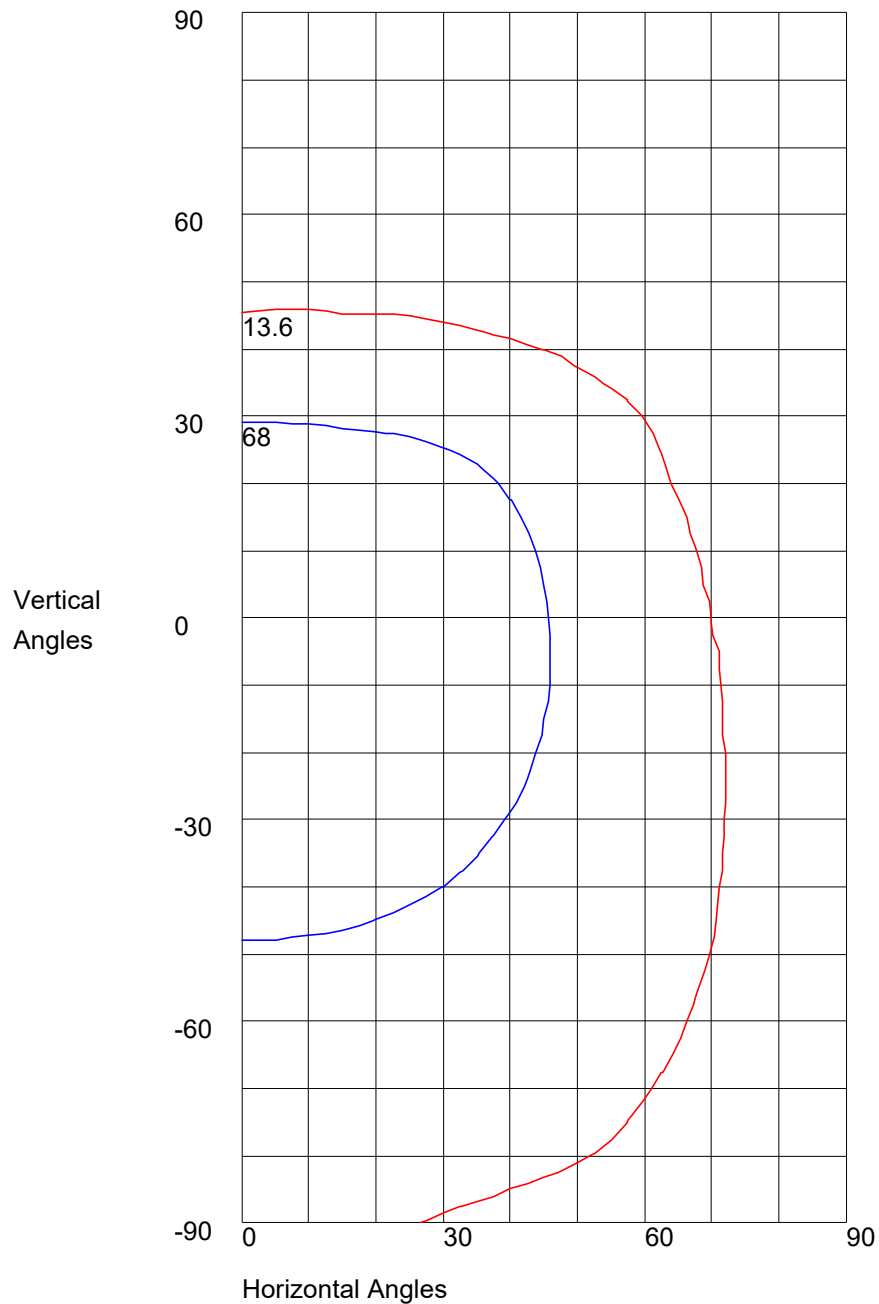


Maximum Candela = 136 Located At Horizontal Angle = 0, Vertical Angle = -3

H - Horizontal Axial Candela

V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 136 Located At Horizontal Angle = 0, Vertical Angle = -3
50% Maximum Candela = 68
10% Maximum Candela = 13.6