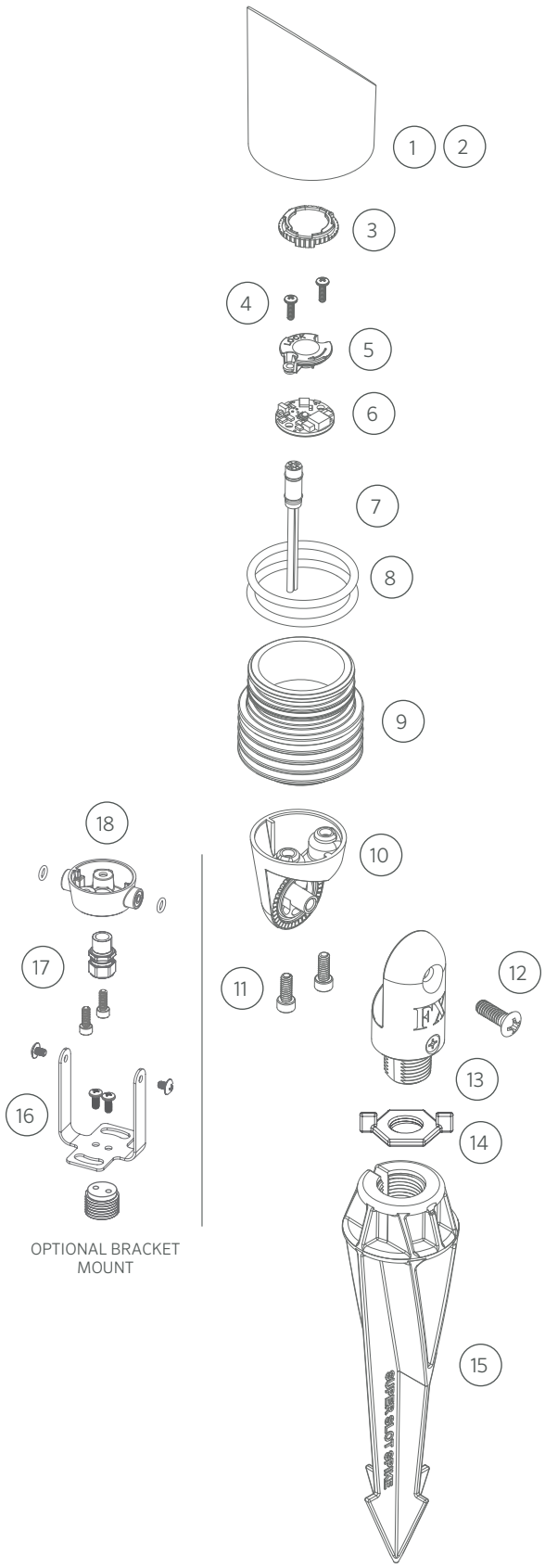
DESIGNER | UP LIGHT | FB

Replacement Parts

ITEM	DESCRIPTION		PART #
1	Shroud		†
2	Lens		†
1-2	Lens Cap Assembly	Clear	FB-LC-XX*
		Frosted	FB-LF-XX*
3	Beam Angle Lens		See LED Chart
4	Screw, #4-40 x ⅜"		See LED Chart
5	Reflector		See LED Chart
6	LED Board		See LED Chart
7	Socket, 10' (3 m)		†
8	O-Ring		250010280039
9	Body		†
10	Base		†
11	Screw, #10-24 x ⅜"		250013940000
12	Screw, ¼"-20 x ¾"		250010290000
13	Knuckle		†
12-13	Knuckle Subassembly		KFM-050-XX*
14	Lock Ring		250030410000SP
15	Super Slot Spike		753900
16	Stainless Steel Bracket		250026820000
17	Strain Relief Connector		250026840000
18	Bracket Mount Knuckle Base		†
16-18	Bracket Mount Assembly		BM-050-XX*

**XX = Finish code*
†This part is not serviceable. Contact Customer Support or a local distributor to order a complete product.



2nd Gen LED Chart

DESCRIPTION	PART #
LED Replacement Kits (Board, Reflector, Screws, Beam Angle Lenses)	
1 LED Up Light Kit (2700K)	KIT-1LED-RD-W
3 LED Up Light Kit (2700K)	KIT-3LED-RD-W
ZD 1 LED Up Light Kit (2700K)	KIT-ZD-1LED-RD-W
ZD 3 LED Up Light Kit (2700K)	KIT-ZD-3LED-RD-W
ZDC 3 LED Kit, Medium	ZDC-KIT-M
Reflectors	
1 LED Reflector	770000
3 LED Reflector	770700
ZDC 3 LED Reflector, Medium	250022050000
Screws	
1 LED/3 LED Screw, #4-40 x ⅜" (Qty Req: 2)	762400

Beam Angle Lens Chart

DESCRIPTION	PART #
Round Beam Angle Lenses	
1 LED Spot Lens (20°)	770600
1 LED Flood Lens (35°)	1LED-FL-LENS
1 LED Wide Flood Lens (60°)	1LED-WFL-LENS
3 LED Spot Lens (20°)	771300
3 LED Flood Lens (35°)	3LED-FL-LENS
3 LED Wide Flood Lens (60°)	3LED-WFL-LENS

1st Gen LED Chart

DESCRIPTION	PART #
LED Replacement Kits (Board, Reflector, Screws, Color Filters)	
1 LED Up Light Kit (3900K)	1LED-UL-KIT
3 LED Up Light Kit (3900K)	3LED-UL-KIT
ZD 1 LED Up Light Kit (3900K)	ZD-1LED-UL-KIT
ZD 3 LED Up Light Kit (3900K)	ZD-3LED-UL-KIT
ZD 3 LED T Up Light Kit (TURTLE)	ZD-3LED-T-KIT
Color Filter Lenses Only	
1 LED Color Filter, Amber	770100
1 LED Color Filter, Blue	770101
1 LED Color Filter, Green	770102
3 LED Color Filter, Amber	770800
3 LED Color Filter, Blue	770801
3 LED Color Filter, Green	770802
Optics Kits (Reflector, Screws, Color Filters)	
1 LED Optics Kit	1LED-OPTICS-KIT
3 LED Optics Kit	3LED-OPTICS-KIT

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NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L112211301 **Issue Date: 11/21/2022**

Report Prepared For: FX Luminaire / Lumascape
1940 Diamond Street

Model Number: FB-1LED-FW-fl / dAXS5-1LED-FL-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: 11/21/22

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

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NVLAP TESTING
NVLAP LAB CODE 200927-0

General Information	
Manufacturer:	FX Luminaire / Lumascape
Model Number:	FB-1LED-FW-fl / dAXS5-1LED-FL-WT
Driver Model Number:	N/A

Test Summary	
Total Lumens:	114.00
Efficacy:	62.62
Color Redering Index:	83.0
Correlated Color Temperature:	2609
Input Voltage (VAC/60Hz):	12.00
Input Current (Amp):	0.1793
Input Power (W):	1.82
Input Power Factor:	0.8464
Current ATHD (%):	50.6%

Test Condition	
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:15

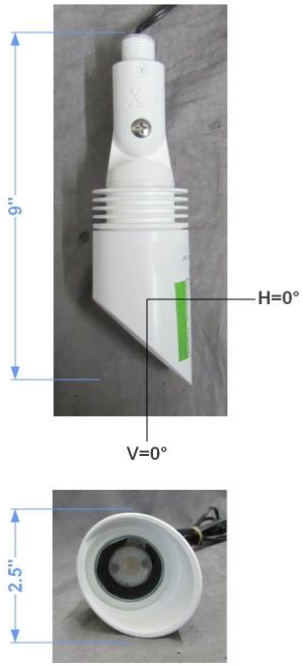


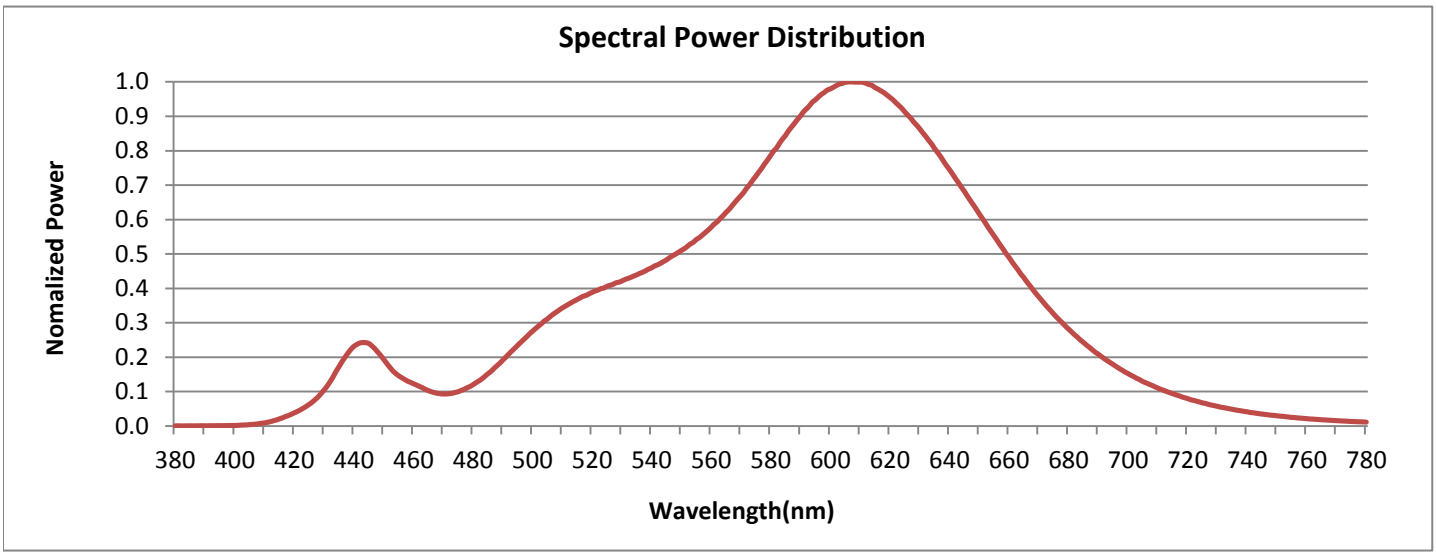
FIG. 1 LUMINAIRE

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Report No: L112211301

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Colorimetry Test Results

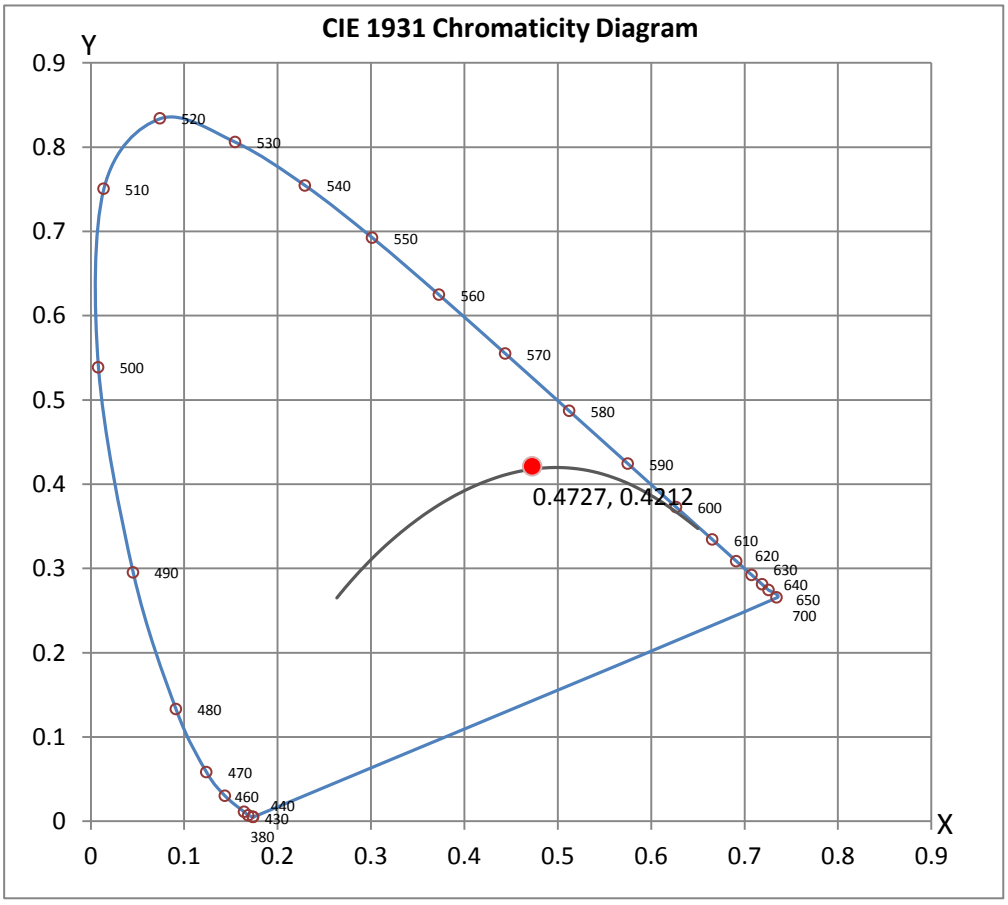


CRI & CCT

x	0.4727
y	0.4212
u'	0.2660
v'	0.5332
CRI	83.00
CCT	2609
Duv	0.00287

R Values

R1	80.72
R2	90.29
R3	97.61
R4	83.13
R5	81.92
R6	91.07
R7	82.44
R8	56.73
R9	5.68
R10	79.57
R11	84.29
R12	79.34
R13	82.67
R14	99.24
R15	71.41



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NVLAP TESTING
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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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www.lightlaboratory.com

Photometric Test Report

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211301.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L112211301
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 11/21/2022
[MANUFAC] FX Luminaire / Lumascape
[LUMCAT] FB-1LED-FW-fl / dAXS5-1LED-FL-WT
[LUMINAIRE] Lumiled, 1LED, 2700K, Flood (35Â°)
[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	4 H x 4 V
Maximum Candela	244
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	32.8
Vertical Beam Angle (50%)	33.1
Horizontal Field Angle (10%)	65.3
Vertical Field Angle (10%)	64.5
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	44
Beam Efficiency	N.A.
Field Lumens	92
Field Efficiency	N.A.
Spill Lumens	22
Luminaire Lumens	114
Total Efficiency	N.A.
Total Luminaire Watts	1.82
Ballast Factor	1.00

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Results derived from content of manufacturers photometric file.

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211301.IES

AXIAL CANDELA

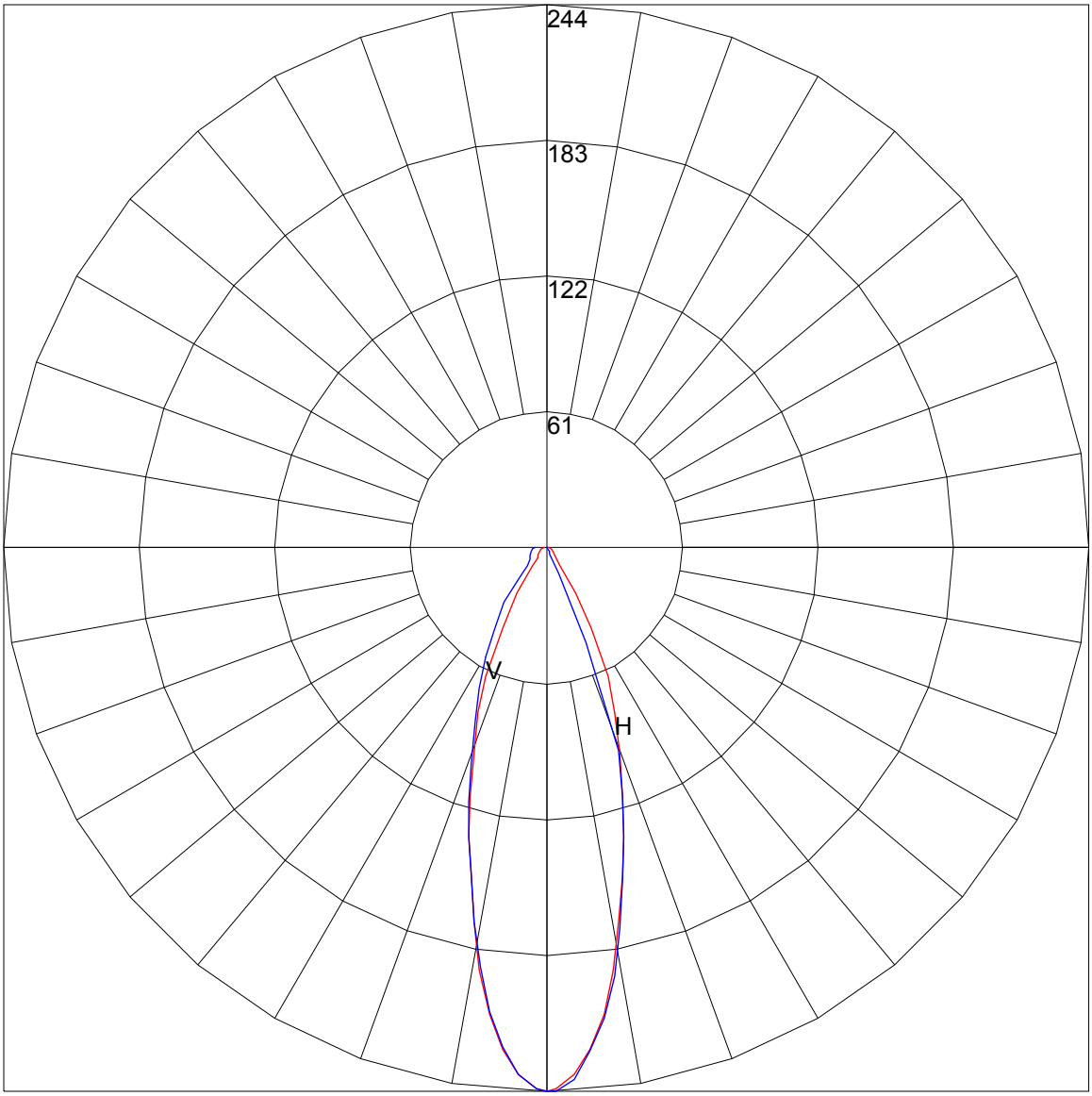
DEG.	HOR.	DEG.	VERT.
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85	1	85	0
75	2	75	0
65	3	65	0
55	4	55	0
47.5	5	47.5	0
42.5	6	42.5	1
37.5	10	37.5	2
33	24	33	2
29	41	29	3
25.5	64	25.5	13
22.5	80	22.5	46
19.5	98	19.5	97
17	117	17	117
15	134	15	135
13	151	13	153
11	171	11	174
9	192	9	195
7	211	7	213
5	226	5	227
3	237	3	239
1	243	1	244
0	244	0	244
-1	243	-1	243
-3	237	-3	237
-5	226	-5	225
-7	211	-7	210
-9	192	-9	191
-11	171	-11	171
-13	151	-13	151
-15	134	-15	135
-17	117	-17	119
-19.5	98	-19.5	102
-22.5	80	-22.5	84
-25.5	64	-25.5	70
-29	41	-29	56
-33	24	-33	43
-37.5	10	-37.5	31
-42.5	6	-42.5	18
-47.5	5	-47.5	12
-55	4	-55	9
-65	3	-65	8
-75	2	-75	7
-85	1	-85	6
-90	1	-90	5

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IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211301.IES

AXIAL CANDELA DISPLAY

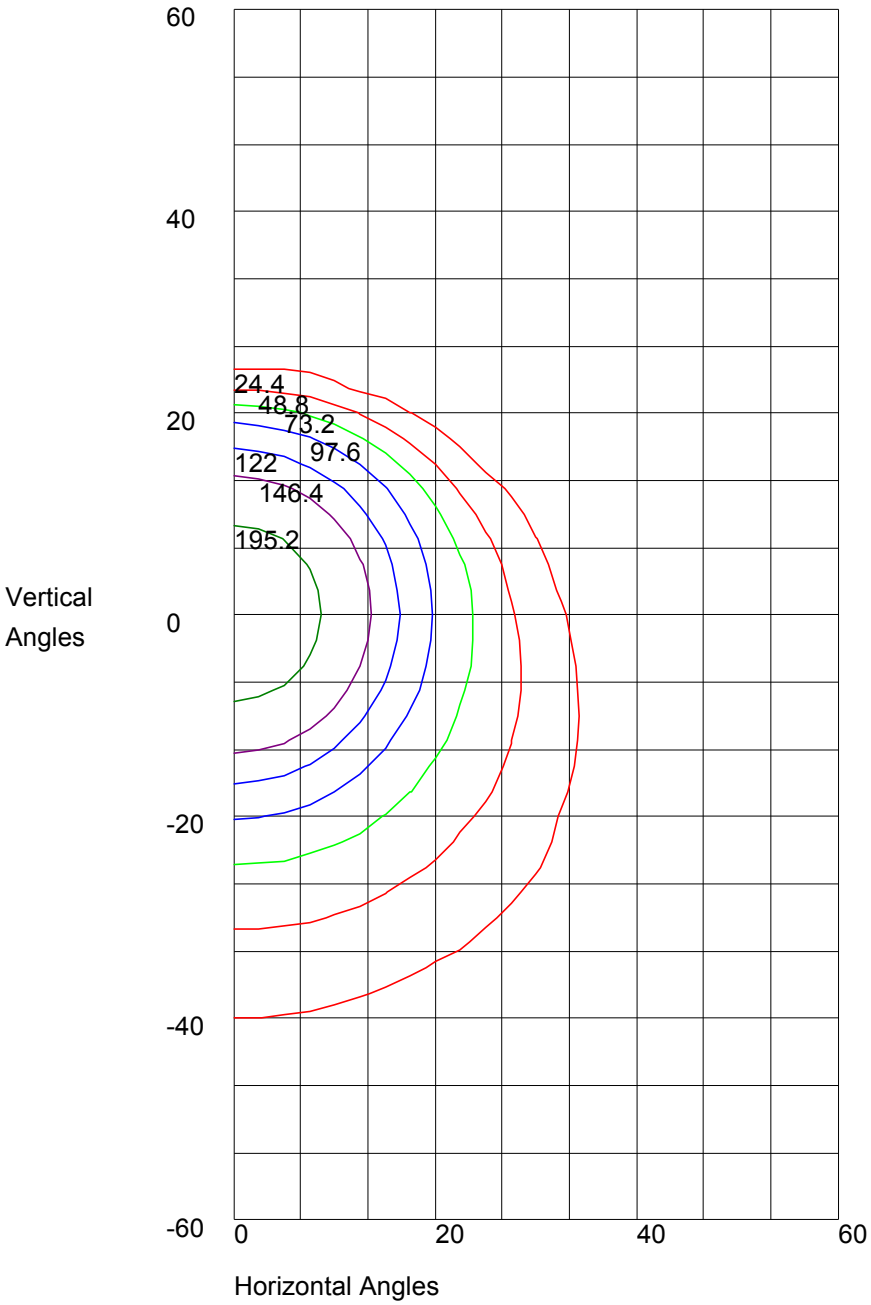


Maximum Candela = 244 Located At Horizontal Angle = 0, Vertical Angle = 0
H - Horizontal Axial Candela
V - Vertical Axial Candela

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Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211301.IES

ISOCANDELA CURVES



Maximum Candela = 244 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 122
10% Maximum Candela = 24.4

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Results derived from content of manufacturers photometric file.

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NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L112211302 **Issue Date: 11/21/2022**

Report Prepared For: FX Luminaire / Lumascape
1940 Diamond Street

Model Number: FB-1LED-FW-wf / dAXS5-1LED-WF-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: 11/21/22

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

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NVLAP TESTING
NVLAP LAB CODE 200927-0

General Information	
Manufacturer:	FX Luminaire / Lumascape
Model Number:	FB-1LED-FW-wf / dAXS5-1LED-WF-WT
Driver Model Number:	N/A

Test Summary	
Total Lumens:	109.00
Efficacy:	60.16
Color Redering Index:	83.1
Correlated Color Temperature:	2608
Input Voltage (VAC/60Hz):	12.01
Input Current (Amp):	0.1783
Input Power (W):	1.81
Input Power Factor:	0.8462
Current ATHD (%):	50.6%

Test Condition	
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	1:20

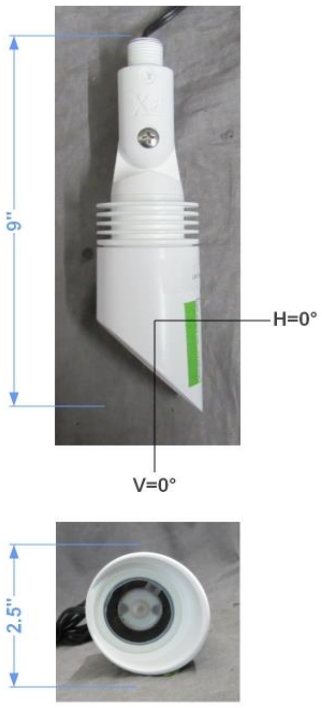


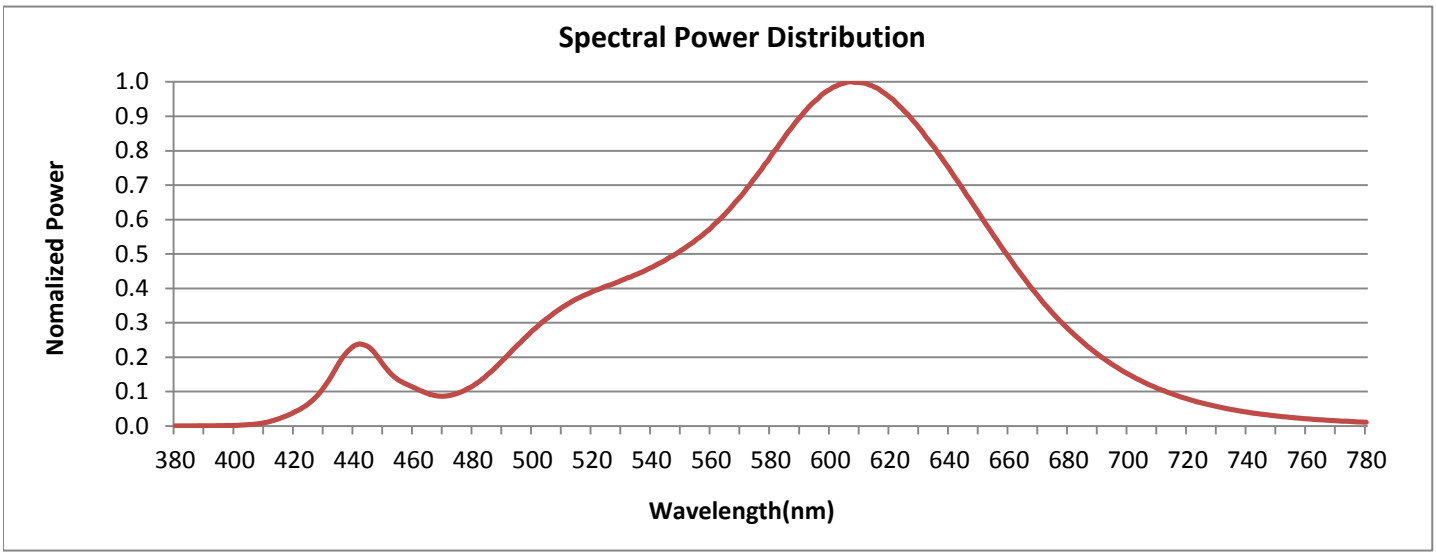
FIG. 1 LUMINAIRE

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Report No: L112211302

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NVLAP LAB CODE 200927-0

Colorimetry Test Results

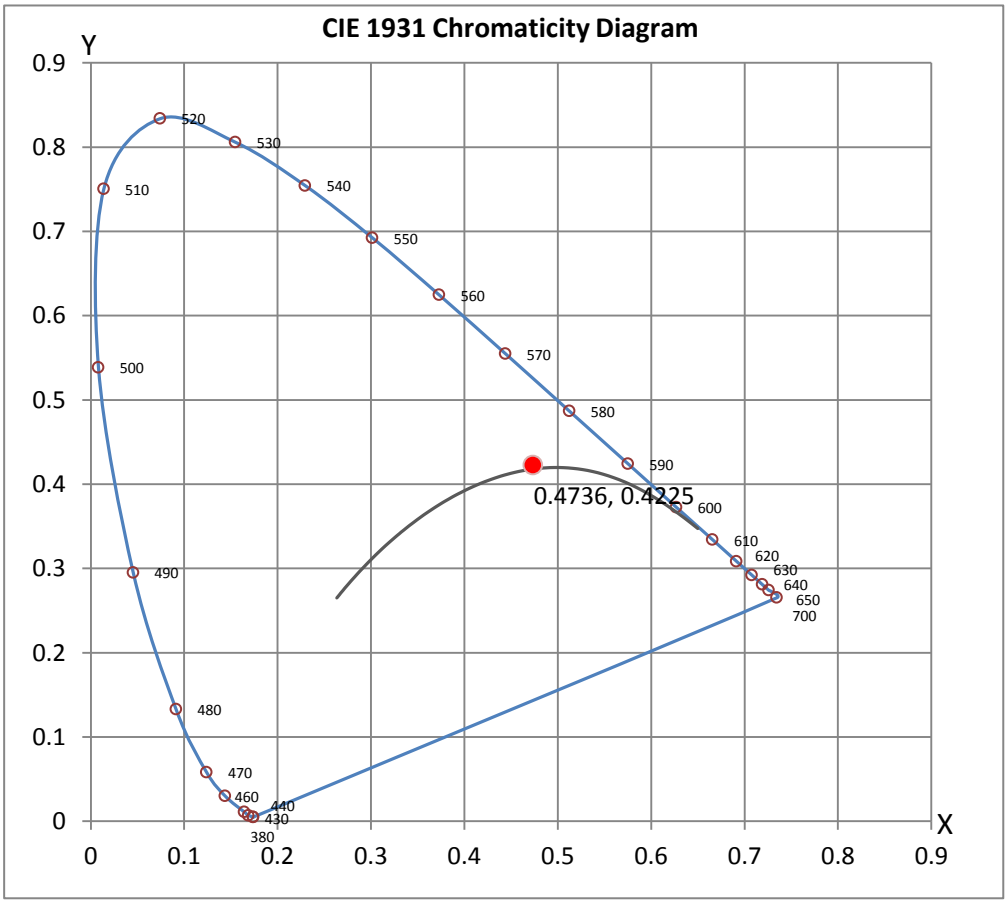


CRI & CCT

x	0.4736
y	0.4225
u'	0.2660
v'	0.5338
CRI	83.10
CCT	2608
Duv	0.00327

R Values

R1	80.76
R2	90.13
R3	97.95
R4	83.47
R5	81.96
R6	90.91
R7	82.74
R8	56.99
R9	5.87
R10	79.23
R11	84.71
R12	79.07
R13	82.64
R14	99.40
R15	71.39



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NVLAP TESTING
NVLAP LAB CODE 200927-0

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 : L112211302.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L112211302
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 11/21/2022
[MANUFAC] FX Luminaire / Lumascape
[LUMCAT] FB-1LED-FW-wf / dAXS5-1LED-WF-WT
[LUMINAIRE] Lumiled, 1LED, 2700K, Wide Flood (60Â°)
[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	5 H x 5 V
Maximum Candela	130
Maximum Candela Angle	-3H -7V
Horizontal Beam Angle (50%)	55.9
Vertical Beam Angle (50%)	50.6
Horizontal Field Angle (10%)	77.5
Vertical Field Angle (10%)	76.5
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	67
Beam Efficiency	N.A.
Field Lumens	91
Field Efficiency	N.A.
Spill Lumens	18
Luminaire Lumens	109
Total Efficiency	N.A.
Total Luminaire Watts	1.81
Ballast Factor	1.00

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Results derived from content of manufacturers photometric file.

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211302.IES

AXIAL CANDELA

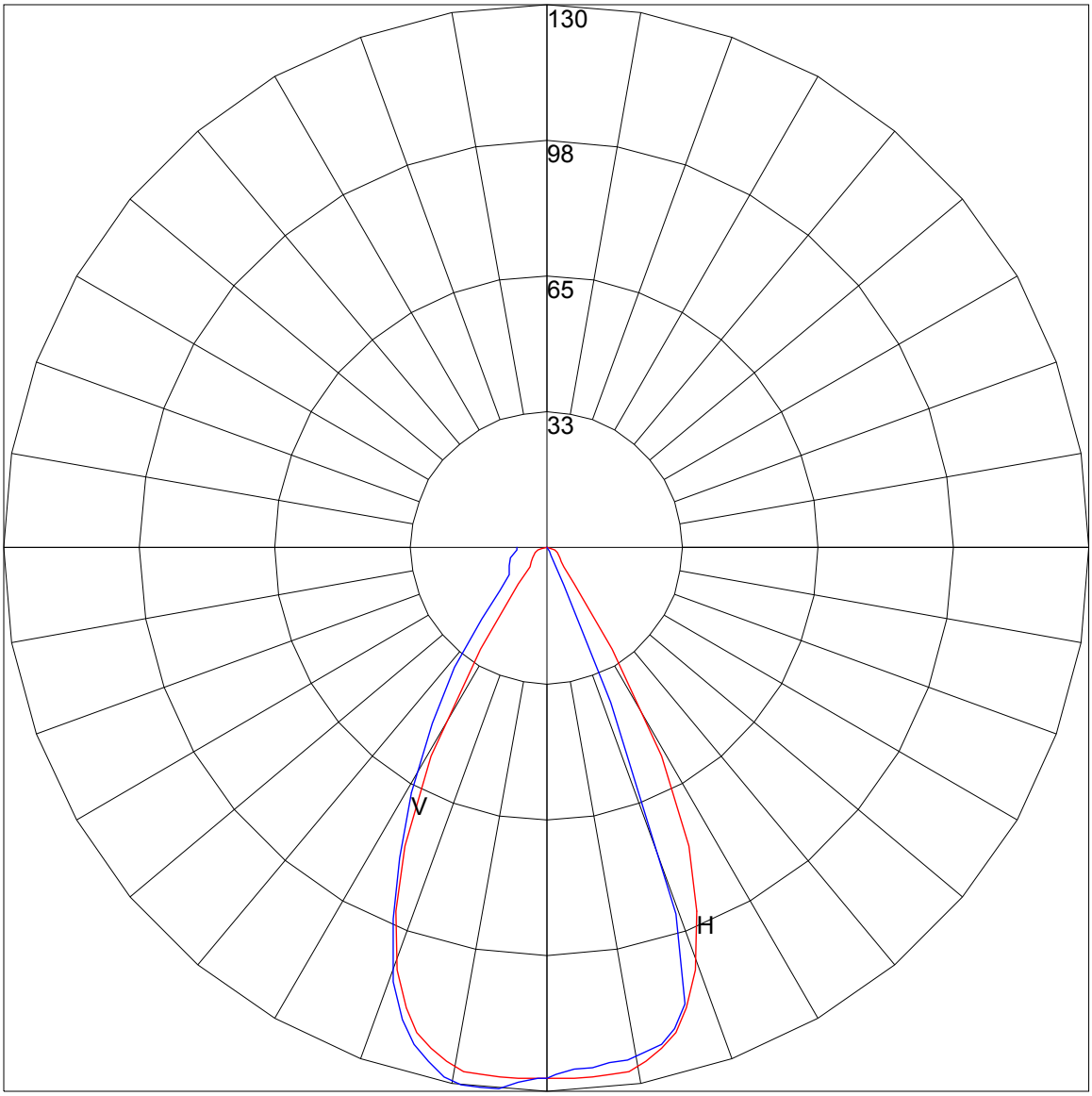
DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	1	85	0
75	2	75	0
65	3	65	0
55	4	55	0
47.5	5	47.5	0
42.5	6	42.5	1
37.5	11	37.5	1
33	29	33	2
29	57	29	2
25.5	79	25.5	10
22.5	94	22.5	40
19.5	107	19.5	93
17	115	17	114
15	120	15	119
13	123	13	122
11	125	11	123
9	127	9	124
7	127	7	124
5	127	5	125
3	127	3	125
1	127	1	126
0	127	0	127
-1	127	-1	127
-3	127	-3	128
-5	127	-5	130
-7	127	-7	130
-9	127	-9	130
-11	125	-11	129
-13	123	-13	126
-15	120	-15	123
-17	115	-17	118
-19.5	107	-19.5	110
-22.5	94	-22.5	96
-25.5	79	-25.5	82
-29	57	-29	67
-33	29	-33	50
-37.5	11	-37.5	36
-42.5	6	-42.5	23
-47.5	5	-47.5	15
-55	4	-55	11
-65	3	-65	10
-75	2	-75	9
-85	1	-85	7
-90	0	-90	7

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Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211302.IES

AXIAL CANDELA DISPLAY

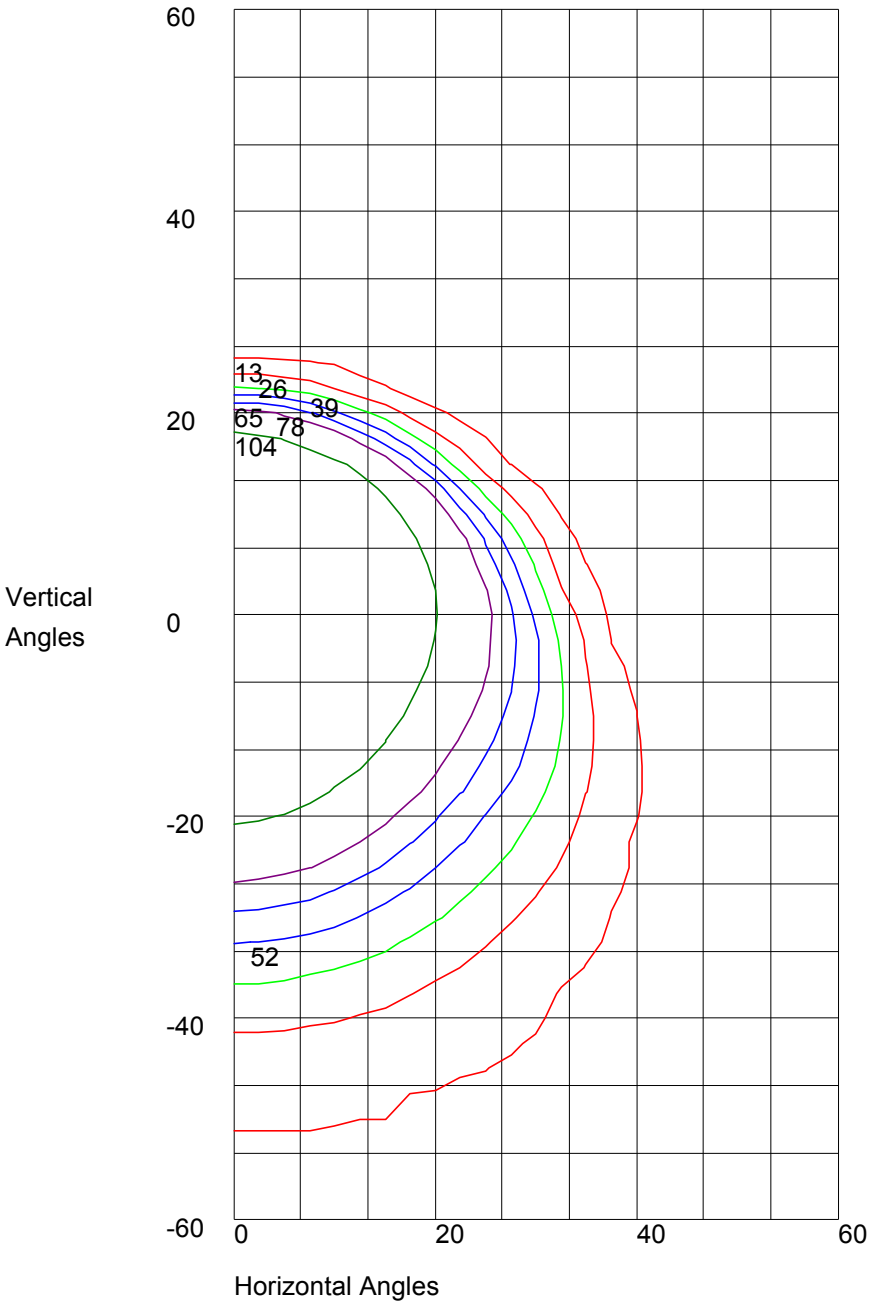


Maximum Candela = 130 Located At Horizontal Angle =-3, Vertical Angle =-7
H - Horizontal Axial Candela
V - Vertical Axial Candela

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Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211302.IES

ISOCANDELA CURVES



Maximum Candela = 130 Located At Horizontal Angle =-3, Vertical Angle =-7
50% Maximum Candela = 65
10% Maximum Candela = 13

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Results derived from content of manufacturers photometric file.

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NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L112211304 **Issue Date: 11/21/2022**

Report Prepared For: FX Luminaire / Lumascape
1940 Diamond Street

Model Number: FB-3LED-FW-wf / dAXS5-3LED-WF-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: 11/21/22

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

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

NVLAP TESTING
NVLAP LAB CODE 200927-0

General Information	
Manufacturer:	FX Luminaire / Lumascape
Model Number:	FB-3LED-FW-wf / dAXS5-3LED-WF-WT
Driver Model Number:	N/A

Test Summary	
Total Lumens:	269.00
Efficacy:	70.23
Color Redering Index:	83.0
Correlated Color Temperature:	2603
Input Voltage (VAC/60Hz):	12.01
Input Current (Amp):	0.3497
Input Power (W):	3.83
Input Power Factor:	0.9118
Current ATHD (%):	39.6%

Test Condition	
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:15

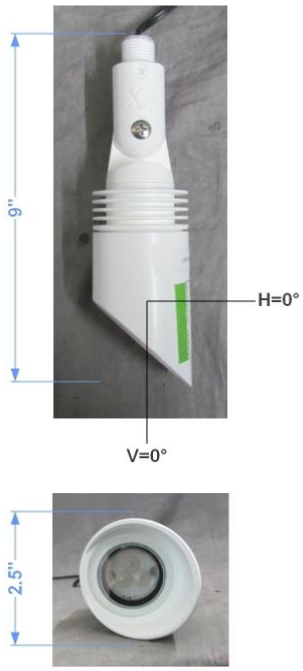


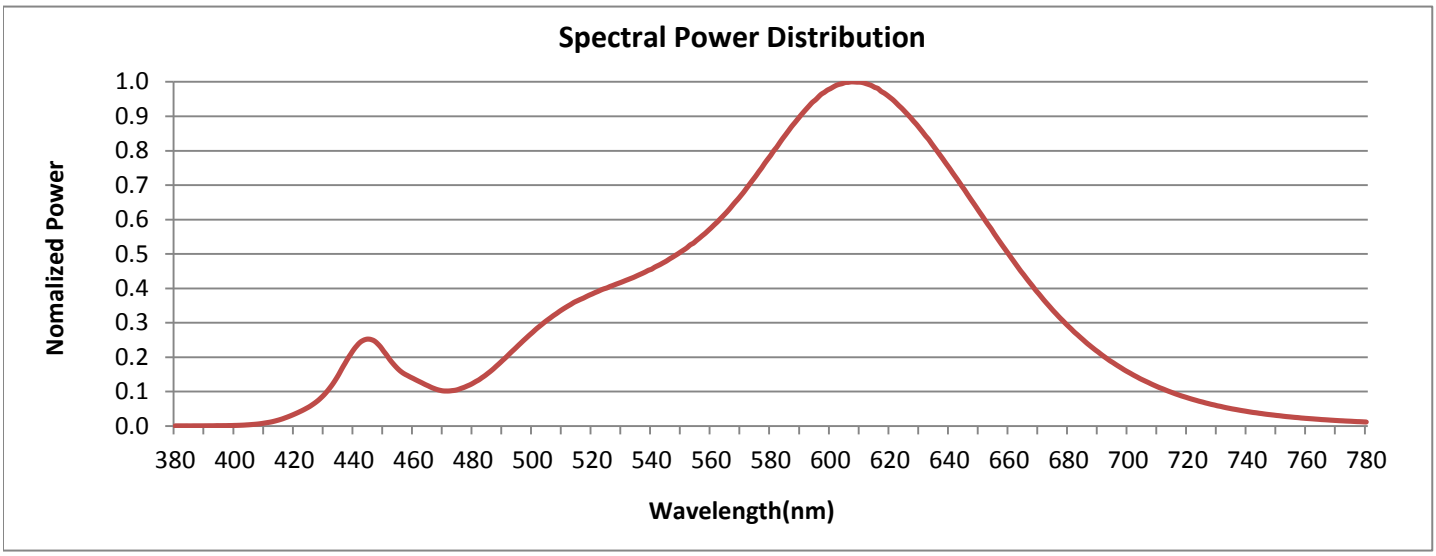
FIG. 1 LUMINAIRE

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Report No: L112211304

NVLAP TESTING
NVLAP LAB CODE 200927-0

Colorimetry Test Results

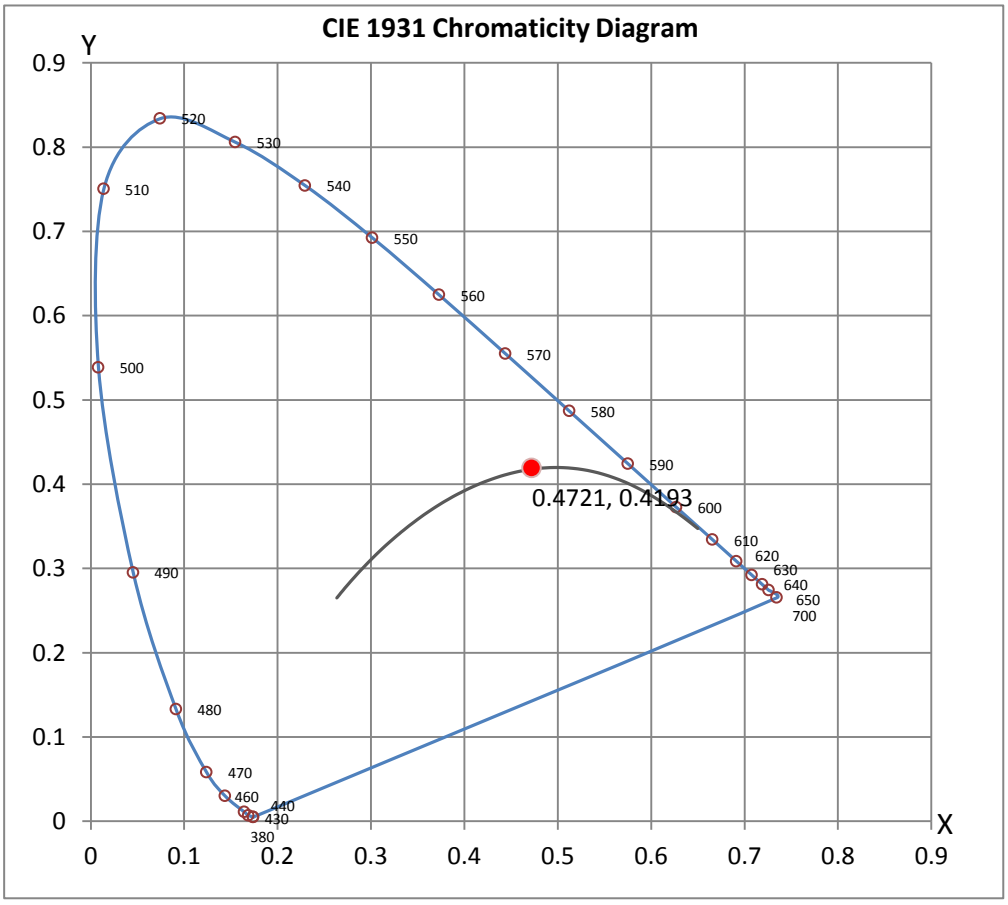


CRI & CCT

x	0.4721
y	0.4193
u'	0.2664
v'	0.5325
CRI	83.00
CCT	2603
Duv	0.00224

R Values

R1	80.86
R2	90.65
R3	97.11
R4	82.84
R5	82.07
R6	91.45
R7	82.13
R8	56.78
R9	6.47
R10	80.33
R11	83.91
R12	79.86
R13	82.91
R14	99.01
R15	71.74



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NVLAP TESTING
NVLAP LAB CODE 200927-0

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 : L112211304.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L112211304
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 11/21/2022
[MANUFAC] FX Luminaire / Lumascape
[LUMCAT] FB-3LED-FW-wf / dAXS5-3LED-WF-WT
[LUMINAIRE] Lumiled, 3LED, 2700K, Wide Flood (60Â°)
[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	5 H x 5 V
Maximum Candela	335
Maximum Candela Angle	0H -7V
Horizontal Beam Angle (50%)	50.9
Vertical Beam Angle (50%)	47.7
Horizontal Field Angle (10%)	79.5
Vertical Field Angle (10%)	77.1
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	156
Beam Efficiency	N.A.
Field Lumens	224
Field Efficiency	N.A.
Spill Lumens	45
Luminaire Lumens	269
Total Efficiency	N.A.
Total Luminaire Watts	3.83
Ballast Factor	1.00

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Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211304.IES

AXIAL CANDELA

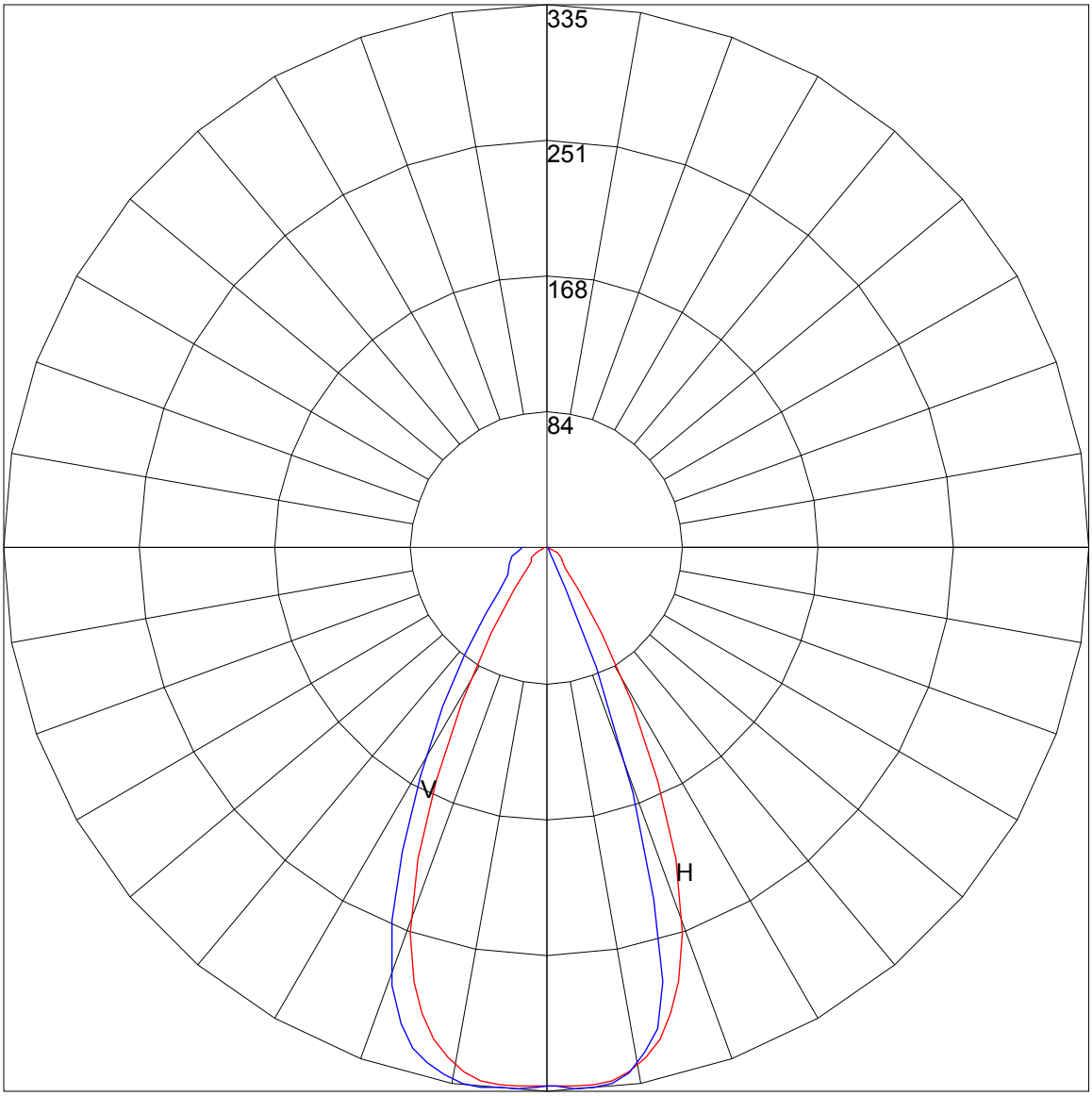
DEG.	HOR.	DEG.	VERT.
90	1	90	1
85	2	85	1
75	4	75	1
65	7	65	1
55	11	55	1
47.5	13	47.5	1
42.5	17	42.5	1
37.5	32	37.5	3
33	63	33	5
29	108	29	7
25.5	159	25.5	27
22.5	208	22.5	80
19.5	252	19.5	160
17	280	17	227
15	297	15	277
13	311	13	304
11	320	11	317
9	327	9	328
7	331	7	333
5	332	5	334
3	332	3	334
1	332	1	332
0	332	0	332
-1	332	-1	333
-3	332	-3	334
-5	332	-5	334
-7	331	-7	335
-9	327	-9	334
-11	320	-11	331
-13	311	-13	326
-15	297	-15	319
-17	280	-17	307
-19.5	252	-19.5	286
-22.5	208	-22.5	249
-25.5	159	-25.5	207
-29	108	-29	161
-33	63	-33	117
-37.5	32	-37.5	83
-42.5	17	-42.5	55
-47.5	13	-47.5	40
-55	11	-55	29
-65	7	-65	25
-75	4	-75	22
-85	2	-85	17
-90	1	-90	15

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Results derived from content of manufacturers photometric file.

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211304.IES

AXIAL CANDELA DISPLAY

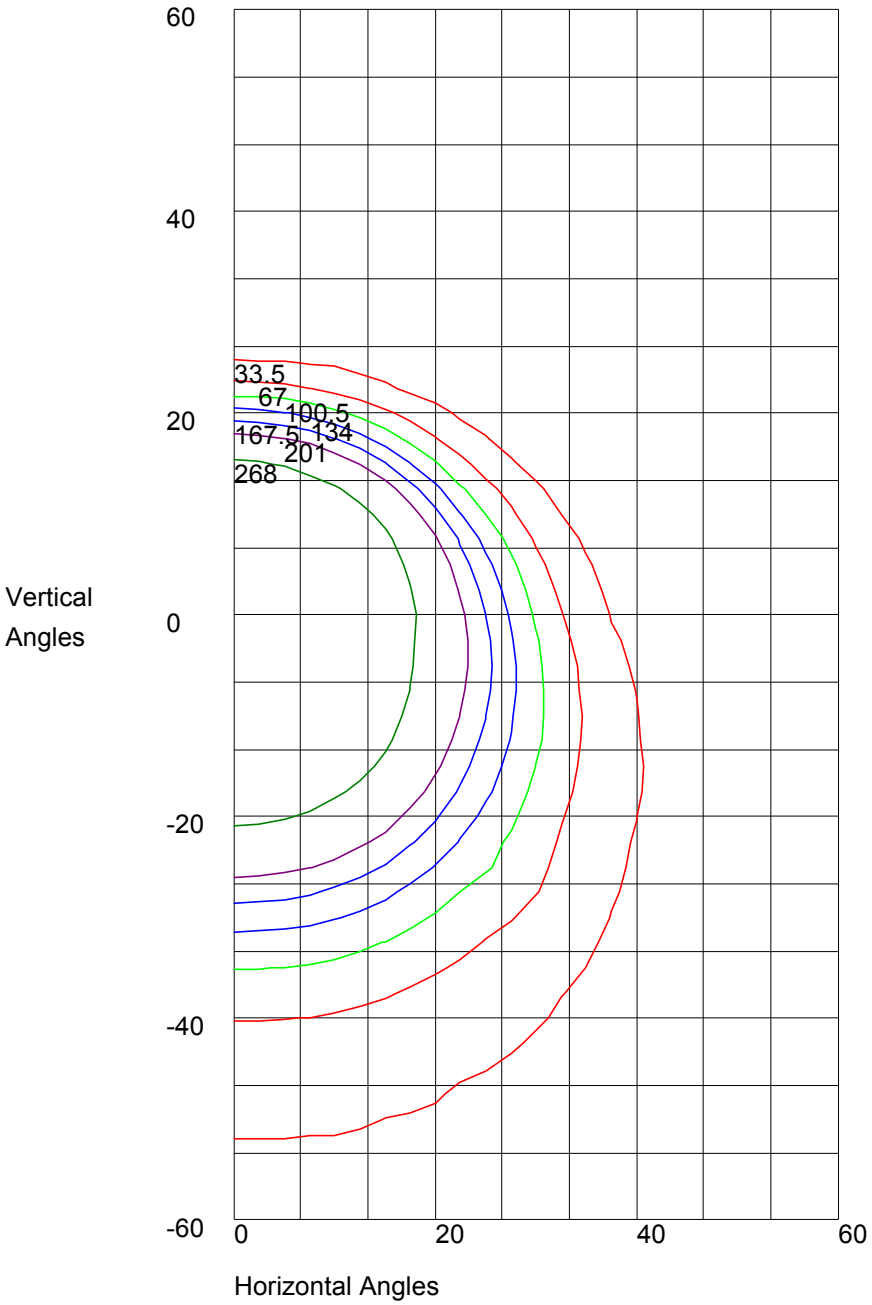


Maximum Candela = 335 Located At Horizontal Angle = 0, Vertical Angle =-7
H - Horizontal Axial Candela
V - Vertical Axial Candela

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IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211304.IES

ISOCANDELA CURVES



Maximum Candela = 335 Located At Horizontal Angle = 0, Vertical Angle =-7
50% Maximum Candela = 167.5
10% Maximum Candela = 33.5

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NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L112211303 **Issue Date: 11/21/2022**

Report Prepared For: FX Luminaire / Lumascape
1940 Diamond Street

Model Number: FB-3LED-FW-fl / dAXS5-3LED-FL-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: 11/21/22

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

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NVLAP TESTING
NVLAP LAB CODE 200927-0

General Information	
Manufacturer:	FX Luminaire / Lumascape
Model Number:	FB-3LED-FW-fl / dAXS5-3LED-FL-WT
Driver Model Number:	N/A

Test Summary	
Total Lumens:	282.00
Efficacy:	71.82
Color Redering Index:	83.1
Correlated Color Temperature:	2601
Input Voltage (VAC/60Hz):	12.00
Input Current (Amp):	0.3585
Input Power (W):	3.93
Input Power Factor:	0.9127
Current ATHD (%):	39.4%

Test Condition	
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:15

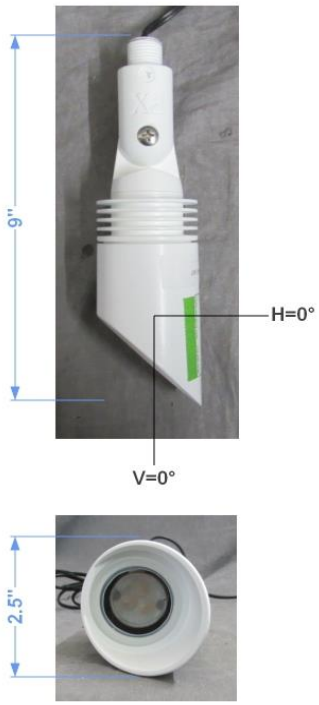


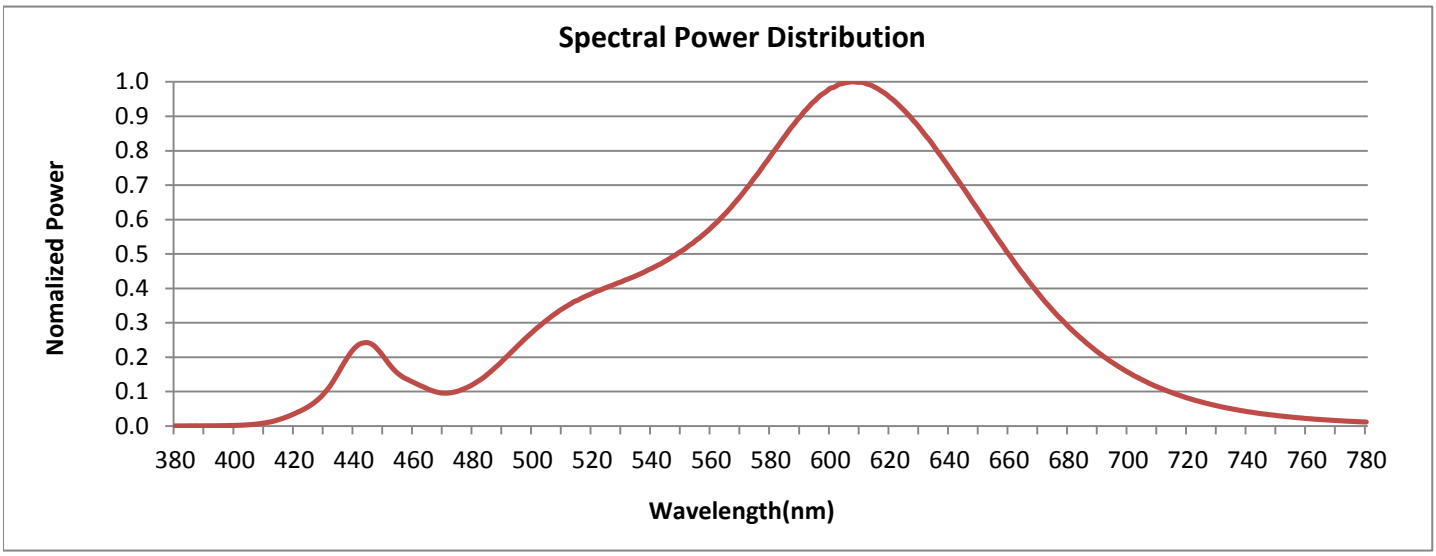
FIG. 1 LUMINAIRE

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Report No: L112211303

NVLAP TESTING
NVLAP LAB CODE 200927-0

Colorimetry Test Results

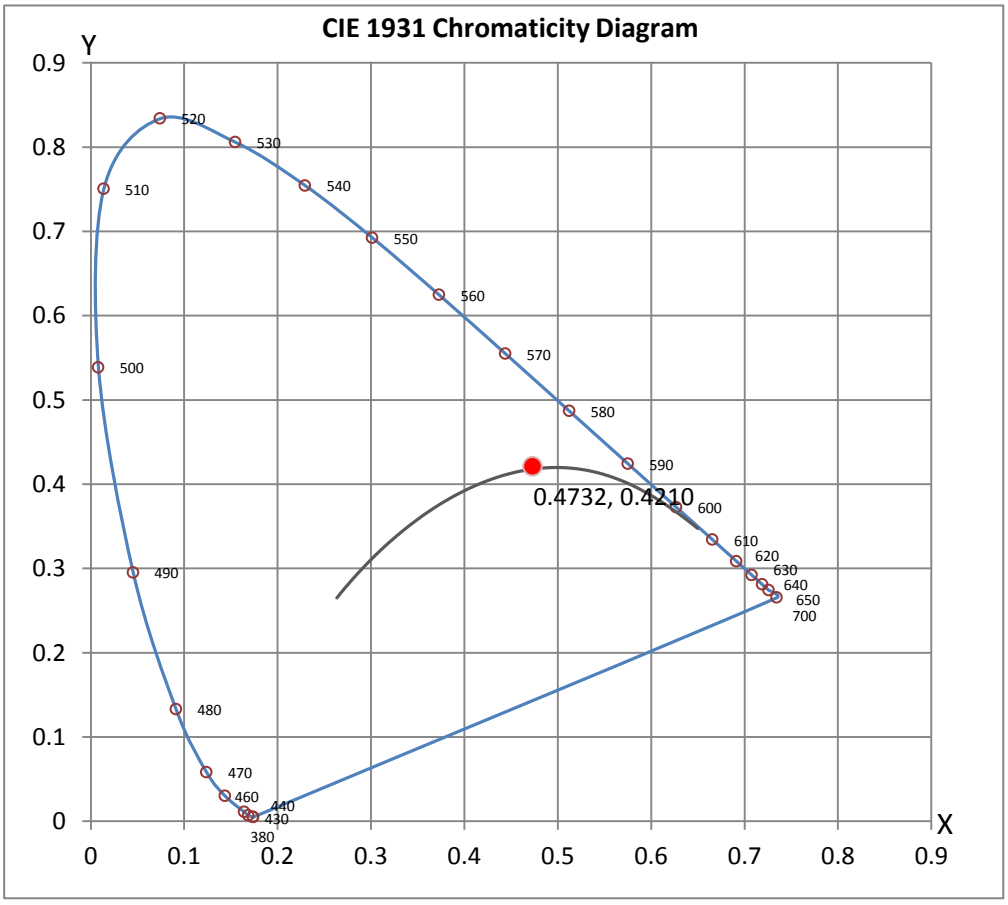


CRI & CCT

x	0.4732
y	0.4210
u'	0.2664
v'	0.5332
CRI	83.10
CCT	2601
Duv	0.00277

R Values

R1	80.81
R2	90.42
R3	97.50
R4	83.08
R5	82.00
R6	91.20
R7	82.45
R8	56.96
R9	6.44
R10	79.85
R11	84.18
R12	79.44
R13	82.78
R14	99.20
R15	71.62



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NVLAP TESTING
NVLAP LAB CODE 200927-0

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^{o}C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25^{o}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^{o}C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25^{o}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.*

LIGHT LABORATORY INC.
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www.lightlaboratory.com

Photometric Test Report

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211303.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L112211303
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 11/21/2022
[MANUFAC] FX Luminaire / Lumascape
[LUMCAT] FB-3LED-FW-fl / dAXS5-3LED-FL-WT
[LUMINAIRE] Lumiled, 3LED, 2700K, Flood (35Â°)
[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	4 H x 4 V
Maximum Candela	567
Maximum Candela Angle	0H -1V
Horizontal Beam Angle (50%)	35.5
Vertical Beam Angle (50%)	35.3
Horizontal Field Angle (10%)	66.1
Vertical Field Angle (10%)	63.5
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	119
Beam Efficiency	N.A.
Field Lumens	219
Field Efficiency	N.A.
Spill Lumens	62
Luminaire Lumens	282
Total Efficiency	N.A.
Total Luminaire Watts	3.92
Ballast Factor	1.00

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Results derived from content of manufacturers photometric file.

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AXIAL CANDELA

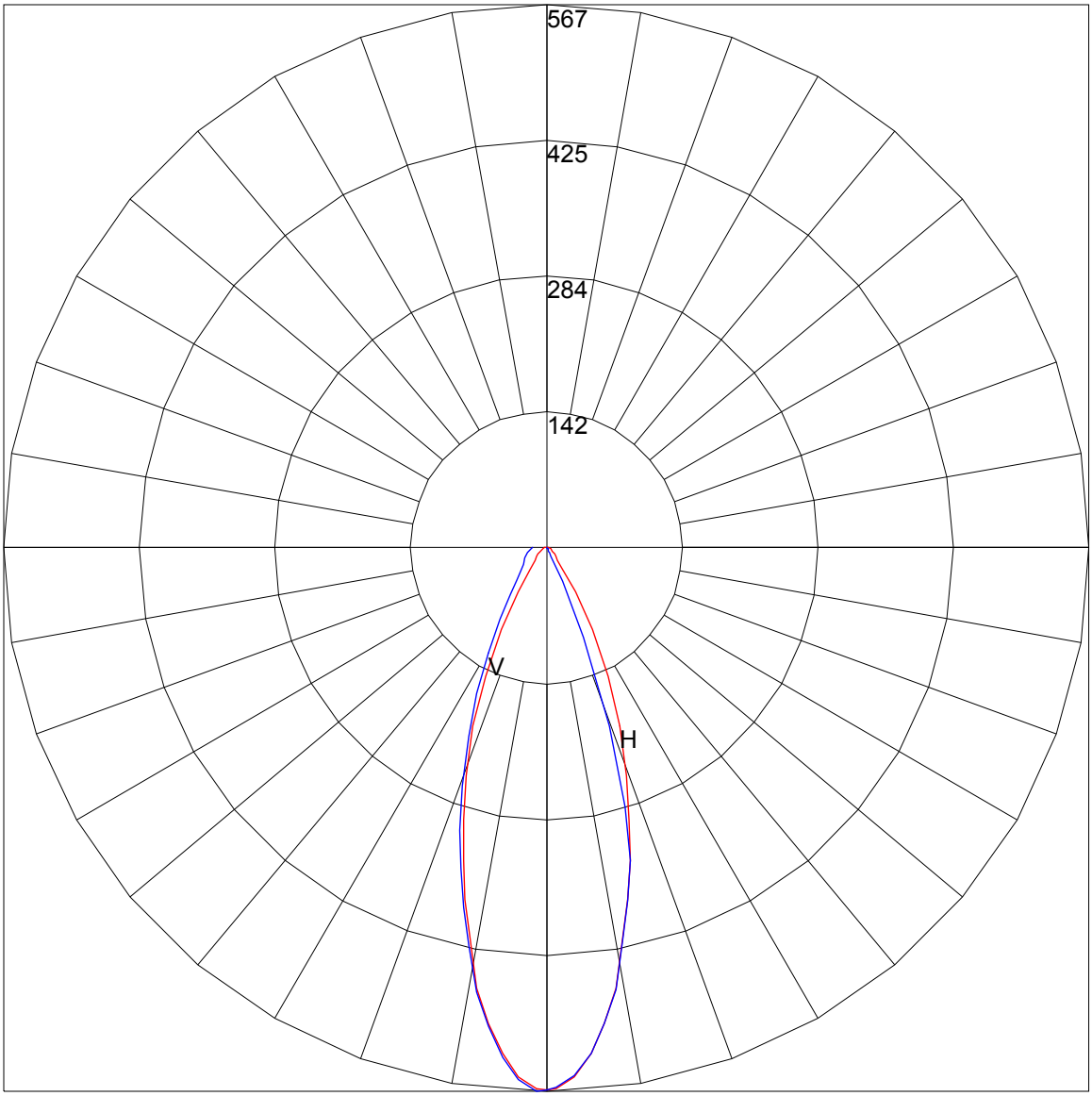
DEG.	HOR.	DEG.	VERT.
90	1	90	1
85	2	85	1
75	4	75	1
65	7	65	1
55	11	55	1
47.5	14	47.5	1
42.5	17	42.5	2
37.5	28	37.5	4
33	55	33	6
29	98	29	10
25.5	149	25.5	38
22.5	202	22.5	101
19.5	252	19.5	198
17	297	17	282
15	337	15	337
13	377	13	378
11	416	11	418
9	465	9	466
7	500	7	500
5	530	5	529
3	553	3	552
1	564	1	563
0	566	0	566
-1	564	-1	567
-3	553	-3	556
-5	530	-5	533
-7	500	-7	503
-9	465	-9	469
-11	416	-11	422
-13	377	-13	385
-15	337	-15	346
-17	297	-17	308
-19.5	252	-19.5	264
-22.5	202	-22.5	213
-25.5	149	-25.5	169
-29	98	-29	126
-33	55	-33	89
-37.5	28	-37.5	61
-42.5	17	-42.5	45
-47.5	14	-47.5	36
-55	11	-55	29
-65	7	-65	25
-75	4	-75	21
-85	2	-85	16
-90	1	-90	14

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Results derived from content of manufacturers photometric file.

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211303.IES

AXIAL CANDELA DISPLAY

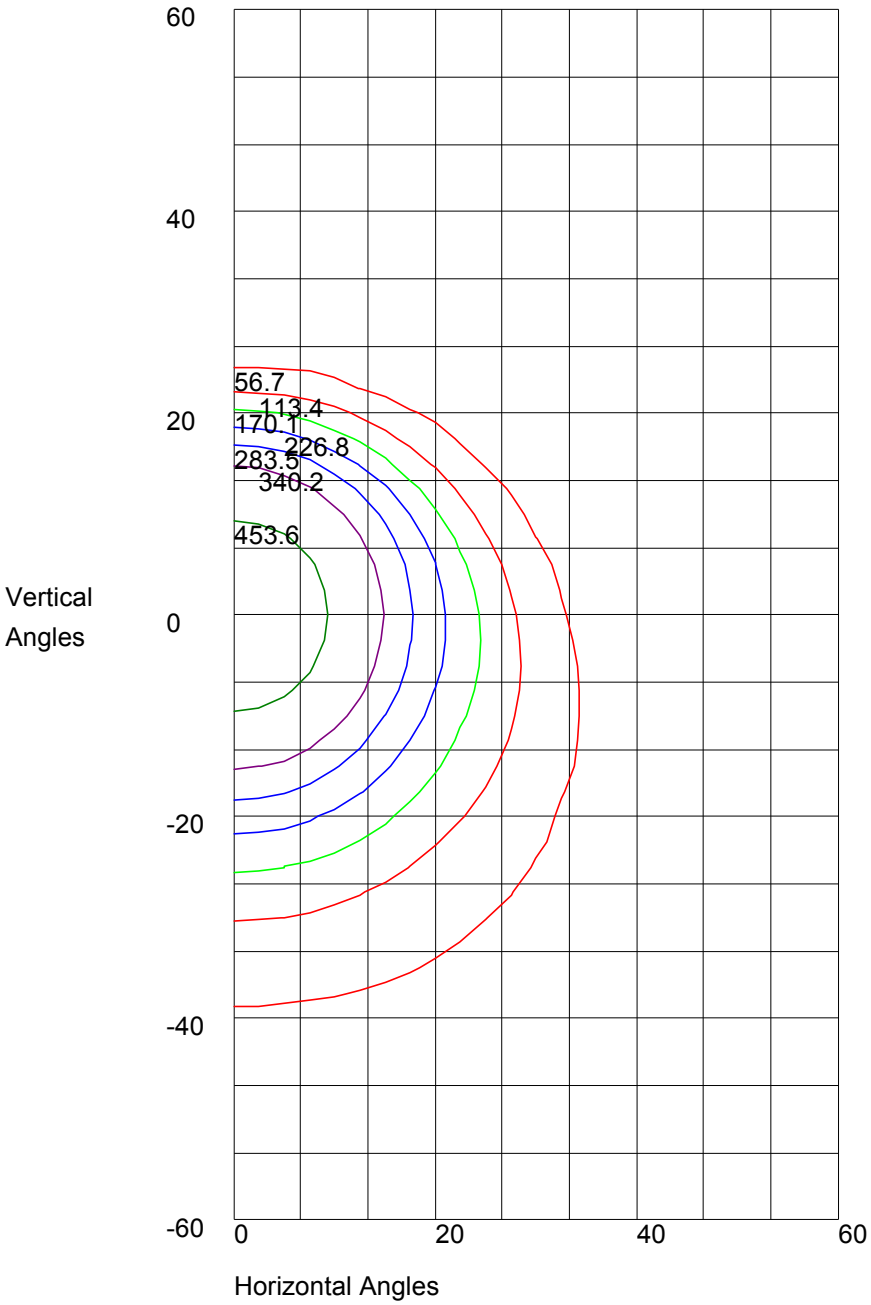


Maximum Candela = 567 Located At Horizontal Angle = 0, Vertical Angle =-1
H - Horizontal Axial Candela
V - Vertical Axial Candela

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Results derived from content of manufacturers photometric file.

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L112211303.IES

ISOCANDELA CURVES



Maximum Candela = 567 Located At Horizontal Angle = 0, Vertical Angle =-1
50% Maximum Candela = 283.5
10% Maximum Candela = 56.7

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NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L042211303 **Issue Date: 4/26/2022**

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

Model Number: FB-ZDC-FW (All LEDs On)

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: 4/25/22

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

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NVLAP TESTING
NVLAP LAB CODE 200927-0

General Information	
Manufacturer:	FX Luminaire / Lumascape
Model Number:	FB-ZDC-FW (All LEDs On)
Driver Model Number:	N/A

Test Summary	
Total Lumens:	214.78
Efficacy:	22.80
Color Redering Index:	13.8
Correlated Color Temperature:	8856
Input Voltage (VAC/60Hz):	12.01
Input Current (Amp):	0.8670
Input Power (W):	9.42
Input Power Factor:	0.9049
Current ATHD (%):	32.4%

Test Condition	
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:35
Total Operating Time (Hours):	2:20

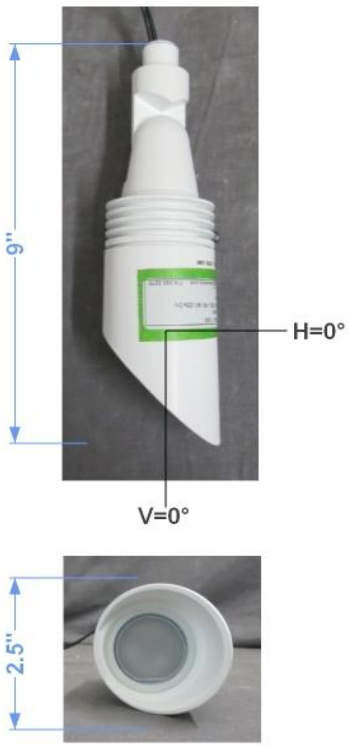
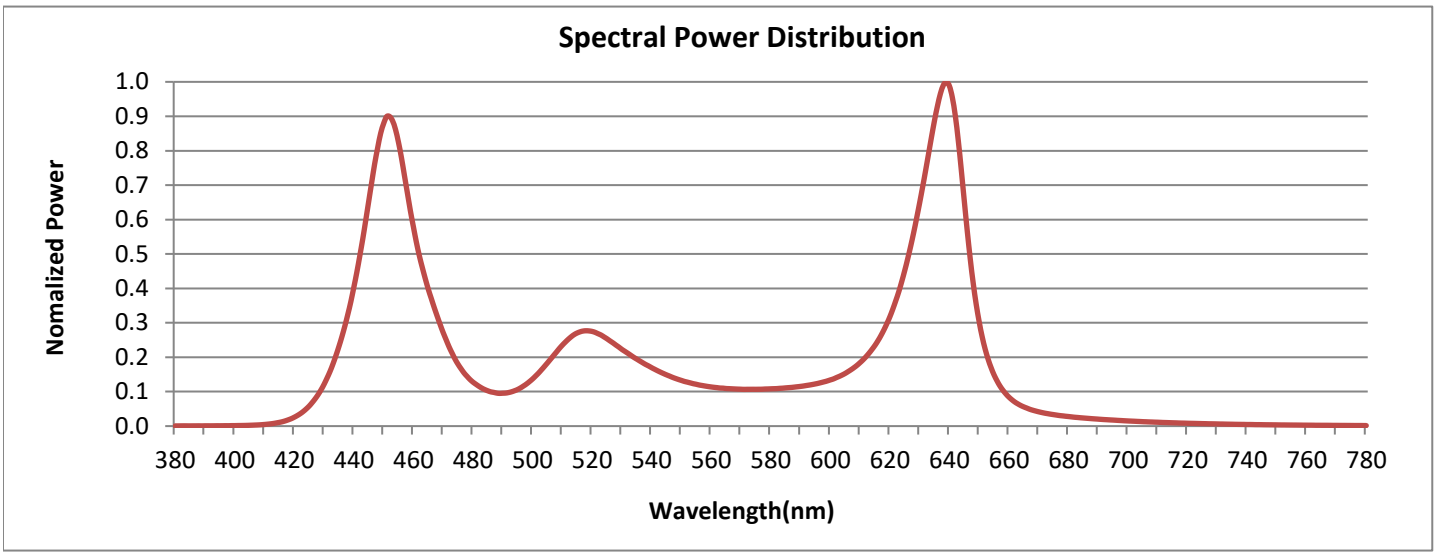


FIG. 1 LUMINAIRE

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Report No: L042211303
NVLAP TESTING
NVLAP LAB CODE 200927-0

Colorimetry Test Results

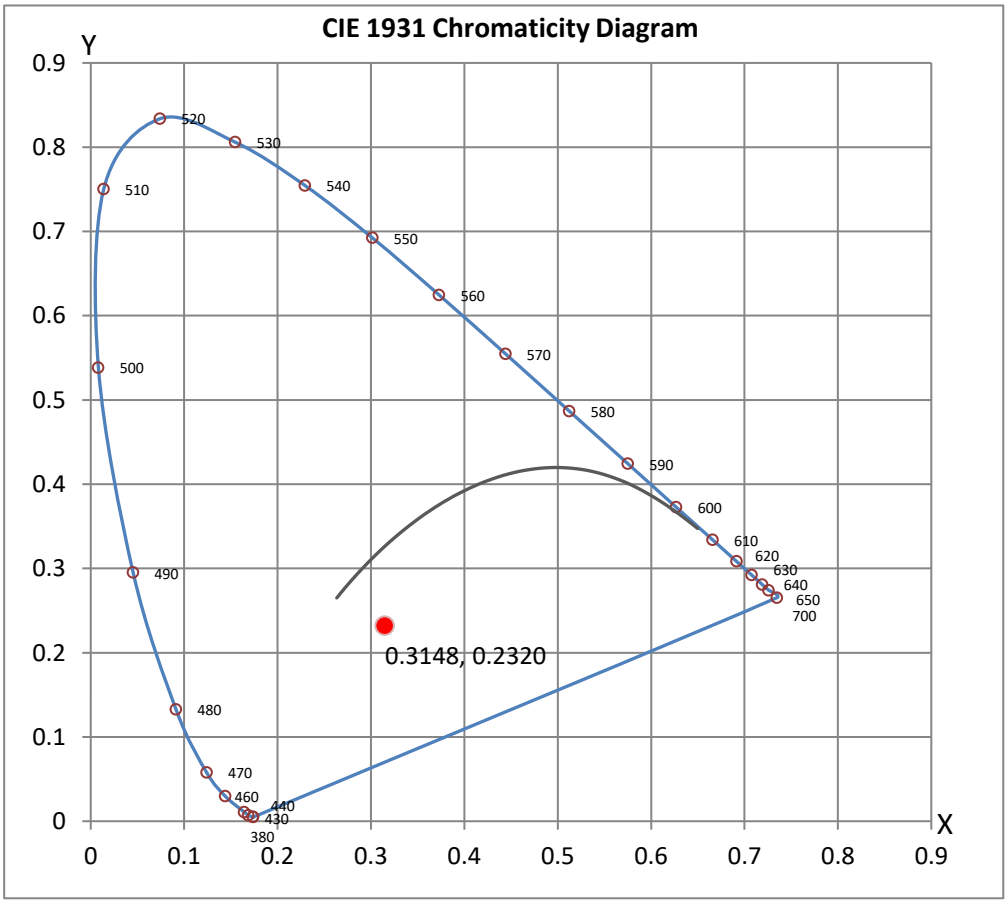


CRI & CCT

x	0.3148
y	0.2320
u'	0.2443
v'	0.4051
CRI	13.80
CCT	8856
Duv	-0.05874

R Values

R1	-12.82
R2	43.01
R3	62.16
R4	-13.67
R5	-0.79
R6	38.44
R7	52.59
R8	-58.15
R9	-301.80
R10	-10.72
R11	-39.68
R12	31.36
R13	-2.89
R14	69.67
R15	-46.25



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

NVLAP TESTING
NVLAP LAB CODE 200927-0

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^{o}C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25^{o}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^{o}C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25^{o}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.*

LIGHT LABORATORY INC.
8165 E Kaiser Blvd. Anaheim, CA 92808
p. 714.282.2270
f. 714.676.5558

Report No: L121506111
Date: 1/8/2016

NVLAP LAB CODE 200927-0

Report No: **L121506111**

Report Prepared For: Hunter Industries / FX Luminaire
1775 La Costa Meadows Dr

Model Number: **FB-ZDC-BZ**

Test: Electrical and Photometric tests

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. Catalog number is FB-ZDC-BZ. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 12/21/15

Date of Tests: 1/4/16 - 1/7/16

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-S1	11/18/16
Xitron Power Analyzer	2503AH	MT-EL01	11/30/16
ITECH DC Power Supply	IT6122	PSDC-03-S1	11/17/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/24/16
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.

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Report No: L121506111
Date: 1/8/2016
NVLAP LAB CODE 200927-0

Test Summary	
Manufacturer:	Hunter Industries / FX Luminaire
Model Number:	FB-ZDC-BZ
Driver Model Number:	N/A
Total Lumens:	90.63
Input Voltage (VAC/60Hz):	12.00
Input Current (Amp):	0.29
Input Power (W):	3.26
Input Power Factor:	0.92
Current ATHD @ 120V(%):	39%
Current ATHD @ 277V(%):	N/A
Efficacy:	28
Color Rendering Index (CRI):	81
Correlated Color Temperature (K):	3911
Chromaticity Coordinate x:	0.3867
Chromaticity Coordinate y:	0.3870
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:00
Total Operating Time (Hours):	1:45
Off State Power(W):	0.00

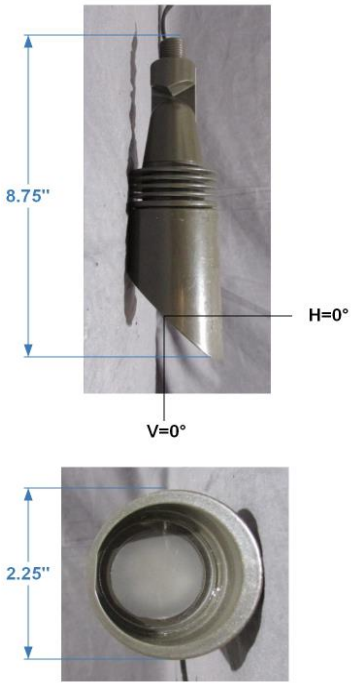


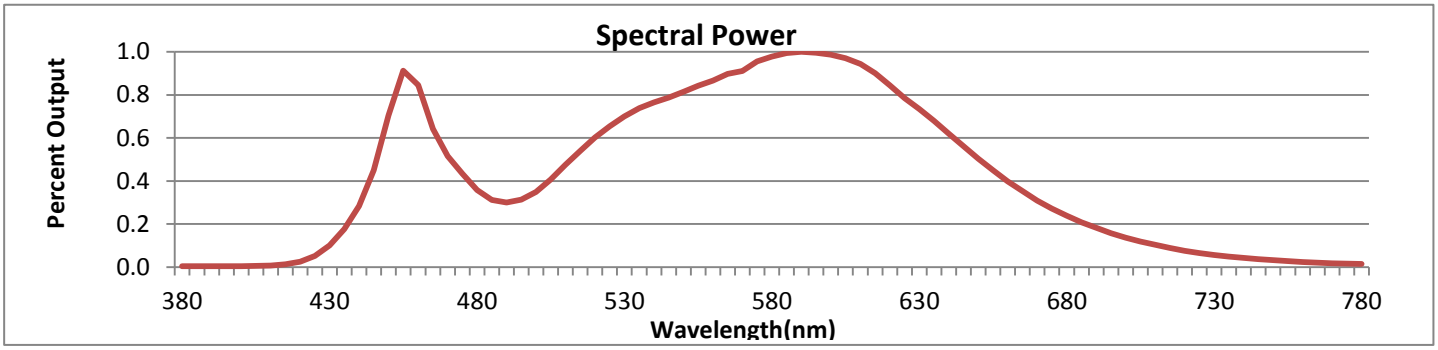
FIG. 1 LUMINAIRE

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

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Report No: L121506111
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NVLAP LAB CODE 200927-0



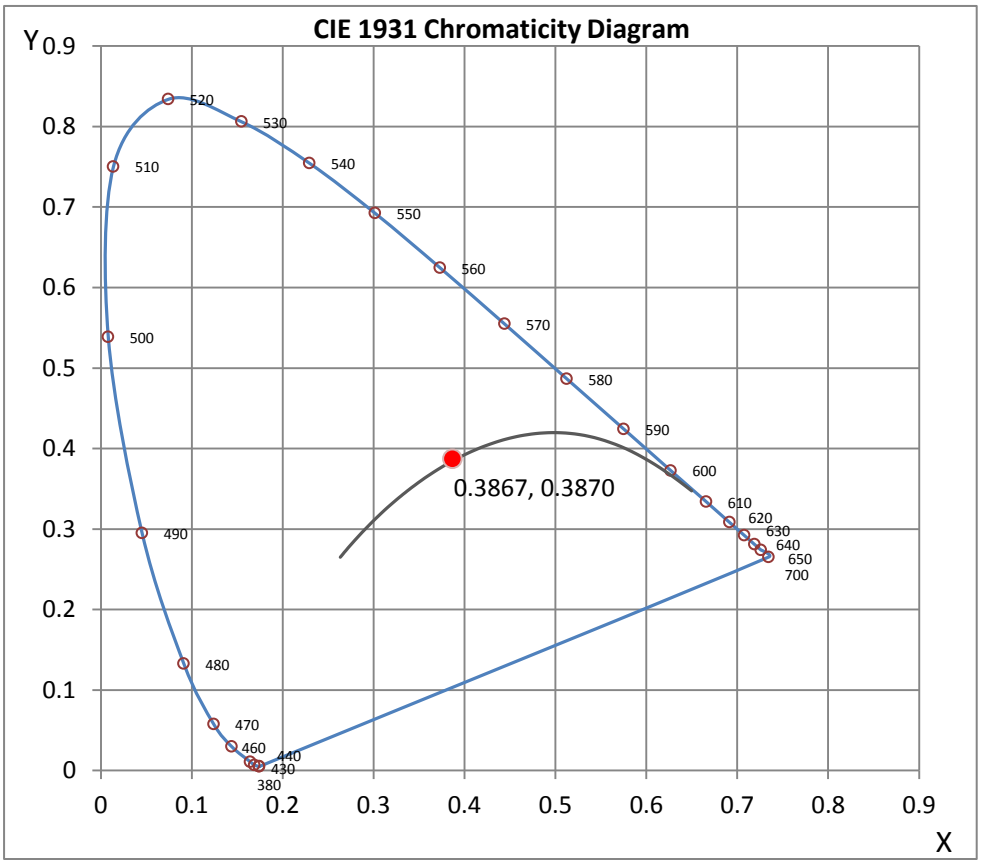
Wavelength	W/m²nm	440	0.2833	510	0.4748	580	0.9786	650	0.5042	720	0.0758
380	0.0049	450	0.7038	520	0.6012	590	1.0000	660	0.3985	730	0.0567
390	0.0039	460	0.8453	530	0.7004	600	0.9865	670	0.3092	740	0.0425
400	0.0041	470	0.5156	540	0.7660	610	0.9434	680	0.2384	750	0.0318
410	0.0068	480	0.3575	550	0.8150	620	0.8435	690	0.1820	760	0.0238
420	0.0251	490	0.3007	560	0.8670	630	0.7343	700	0.1372	770	0.0182
430	0.1005	500	0.3491	570	0.9105	640	0.6202	710	0.1034	780	0.0141

CRI & CCT

x	0.3867
y	0.3870
u'	0.2251
v'	0.5069
CRI	81.00
CCT	3911
Duv	0.00295

R Values

R1	79.01
R2	88.72
R3	94.75
R4	77.17
R5	77.47
R6	83.12
R7	85.43
R8	61.96
R9	3.21
R10	71.29
R11	73.63
R12	54.68
R13	81.54
R14	96.80



*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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Test Methods

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Report Prepared by : Keyur Patel

Test Report Released by:

Jeff Ahn
Engineering Manager

Test Report Reviewed by:

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 : L121506111.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121506111
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 1/7/2016
[MANUFAC] HUNTER INDUSTRIES/FX LUMINAIRE
[LUMCAT] FB-ZDC-BZ
[LUMINAIRE] 2.25"DIA. X 8.75"H. LED FIXTURE
[BALLASTCAT] N.A.
[LAMPPOSITION] 0,0
[LAMPCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 12VAC, 3.26W
[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	120.25
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	49.6
Vertical Beam Angle (50%)	48.1
Horizontal Field Angle (10%)	80.8
Vertical Field Angle (10%)	82.3
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	52
Beam Efficiency	N.A.
Field Lumens	82
Field Efficiency	N.A.
Spill Lumens	8
Luminaire Lumens	90
Total Efficiency	N.A.
Total Luminaire Watts	3.26
Ballast Factor	1.00

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Results derived from content of manufacturers photometric file.

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L121506111.IES

AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	.15	90	0
85	.19	85	0
75	.31	75	0
65	.65	65	0
55	1.6	55	0
47.5	4.05	47.5	.16
42.5	8.37	42.5	.26
37.5	17.15	37.5	.67
33	29.86	33	2.69
29	44.08	29	8.9
25.5	57.28	25.5	21.76
22.5	69.25	22.5	39.98
19.5	81.04	19.5	59.63
17	89.55	17	76.05
15	96.35	15	89.19
13	101.37	13	96.32
11	106.38	11	103.45
9	110.59	9	108.91
7	113.98	7	112.7
5	117.38	5	116.49
3	118.53	3	117.99
1	119.68	1	119.5
0	120.25	0	120.25
-1	119.68	-1	120.02
-3	118.53	-3	119.57
-5	117.38	-5	119.11
-7	113.98	-7	116.08
-9	110.59	-9	113.05
-11	106.38	-11	109.42
-13	101.37	-13	105.19
-15	96.35	-15	100.97
-17	89.55	-17	95.75
-19.5	81.04	-19.5	89.23
-22.5	69.25	-22.5	79.92
-25.5	57.28	-25.5	70.28
-29	44.08	-29	58.96
-33	29.86	-33	46.87
-37.5	17.15	-37.5	35.58
-42.5	8.37	-42.5	25.93
-47.5	4.05	-47.5	18.62
-55	1.6	-55	11.17
-65	.65	-65	5.98
-75	.31	-75	3.16
-85	.19	-85	1.36
-90	.15	-90	.75

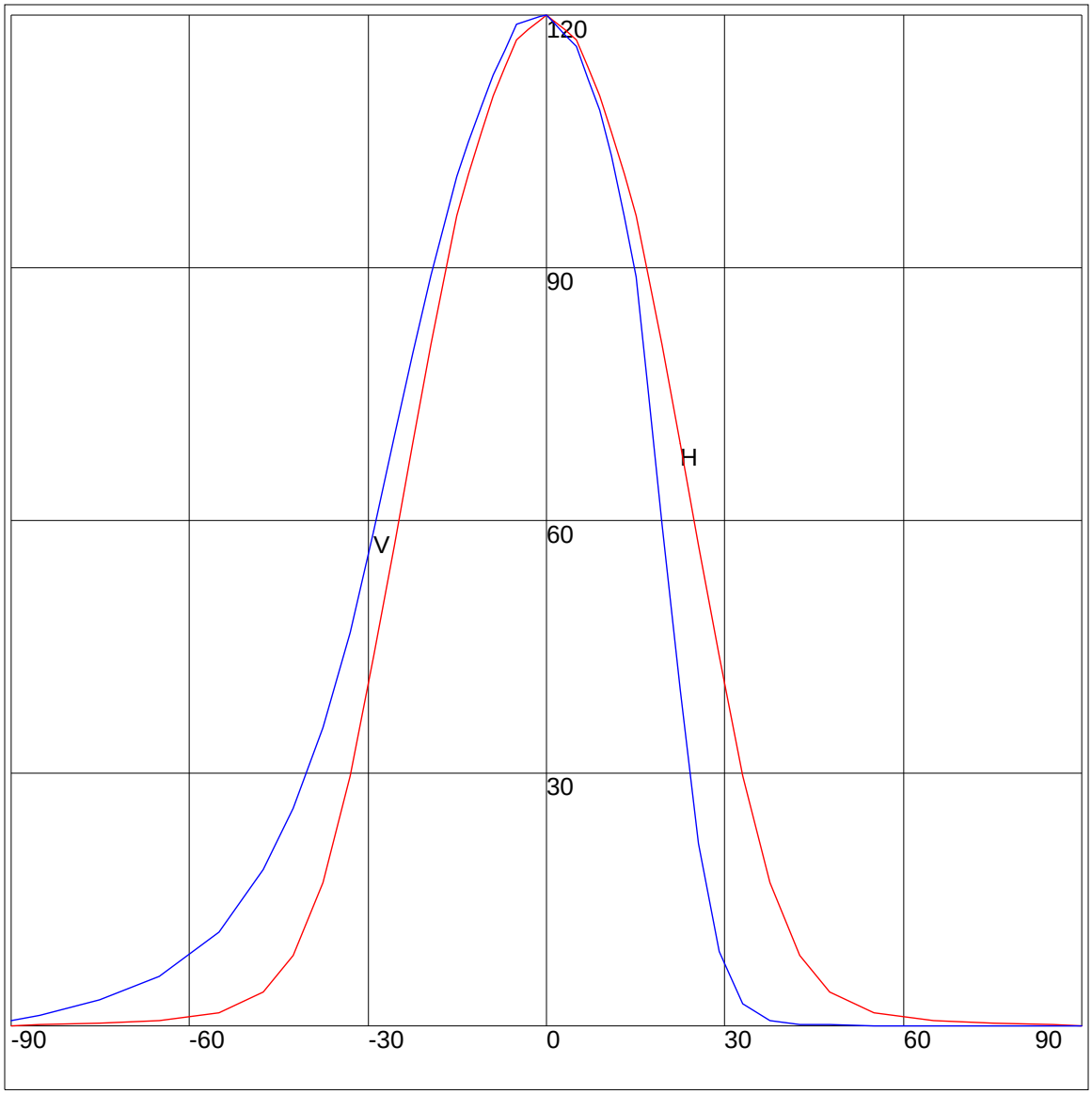
ZONAL LUMEN SUMMARY

Zone	%
0-20	41.1
0-30	68.4
0-40	83.9
0-60	95.9
0-80	99
0-90	99.5
10-90	87.4
20-40	42.8
20-50	50.7
40-70	14.1
60-80	3.1
70-80	1
80-90	0.5
90-110	0.4
90-120	0.4
90-130	0.5
90-150	0.5
90-180	0.5
110-180	0.1
0-180	100

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AXIAL CANDELA DISPLAY

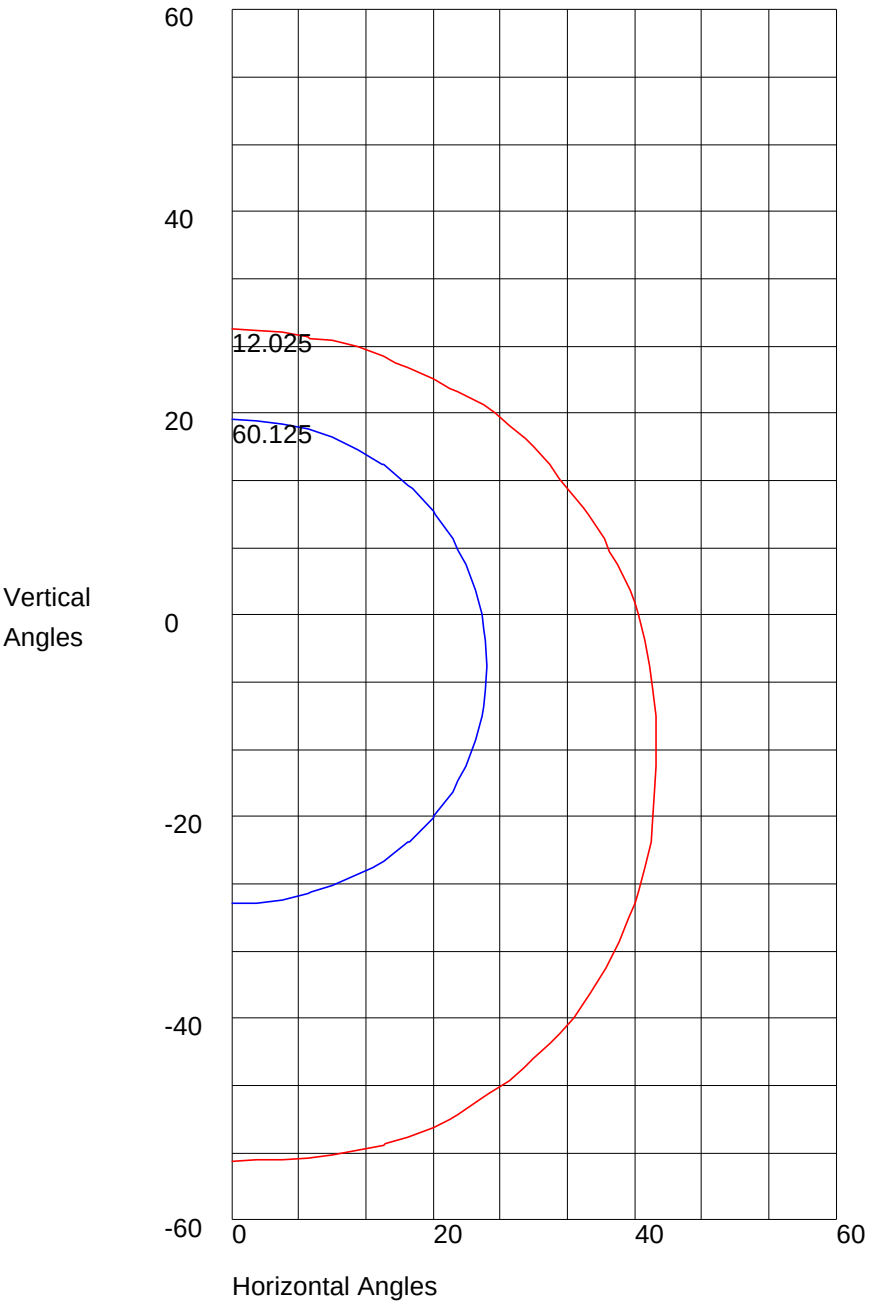


Maximum Candela = 120.25 Located At Horizontal Angle = 0, Vertical Angle = 0
H - Horizontal Axial Candela
V - Vertical Axial Candela

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IES FLOOD REPORT
PHOTOMETRIC FILENAME : L121506111.IES

ISOCANDELA CURVES



Maximum Candela = 120.25 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 60.125
10% Maximum Candela = 12.025

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