

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P#

Luminaire Tested: **FLDSQ4C90D010 FEU4C909035 F4LC-SQ-WLI**

Issue Date: 12/13/2022

Tested By:

Approved By:



Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.



Test Information

Test Method: LM-79-08
 Report Number: P#
 Test Lab: INNOVATION CENTER
 Issue Date: 12/13/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: FAIL-SAFE
 Catalog Number: FLDSQ4C90D010 FEU4C909035 F4LC-SQ-WLI
 Description: 4 INCH 9000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

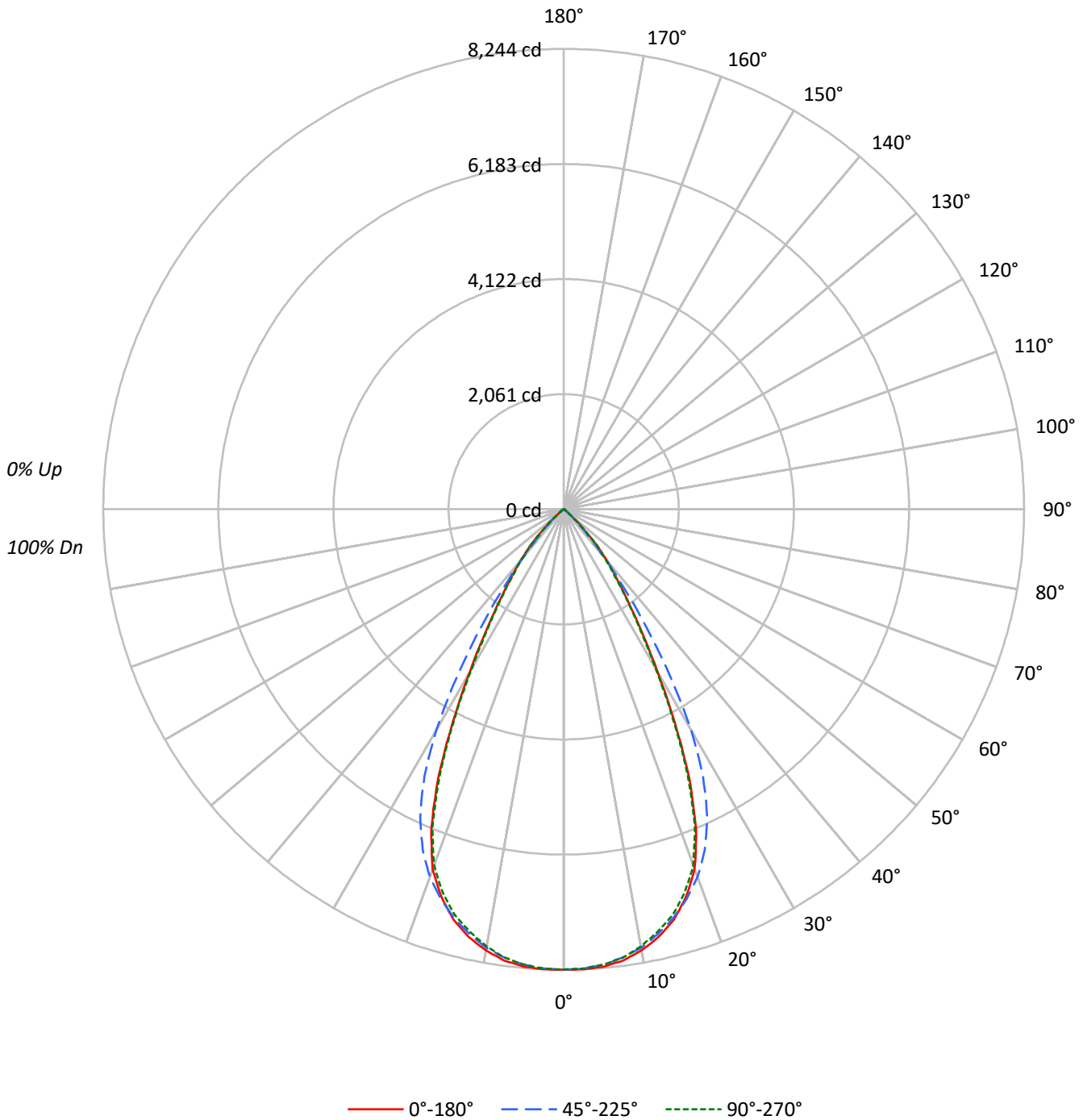
Lumens per Lamp: N/A
 Luminaire Lumens: 7379.0 lumens
 Efficiency: N/A
 Efficacy: 76.0 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 97.1
 Input Voltage (V):
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 25 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	GONIO 1 IN0055	4/22/2021	10/22/2021
Power Meter	XITRON 2801 IN0197	12/1/2020	12/1/2021
AC Power Source	CHROMA 61505 IN0196	12/1/2020	12/1/2021
DC Power Supply	AGILENT E3634A IN0198	11/30/2020	11/30/2021
Room Thermometer	ONSET IN0143	12/1/2020	12/1/2021

TEST NUMBER: P#
CATALOG NUMBER: FLDSQ4C90D010 FEU4C909035 F4LC-SQ-WLI

Luminous Intensity Polar Plot



TEST NUMBER: P#

CATALOG NUMBER: FLDSQ4C90D010 FEU4C909035 F4LC-SQ-WLI

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20			
RC	80				70				50				30				10	0		
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	114	111	108	106	111	109	106	104	105	103	101		101	100	98		97	96	95	94
2	108	103	99	96	106	102	98	95	98	95	93		95	93	91		93	91	89	87
3	103	96	91	88	101	95	90	87	92	89	85		90	87	84		88	85	83	81
4	98	90	85	80	96	89	84	80	87	82	79		85	81	78		83	80	77	76
5	93	84	79	74	91	84	78	74	82	77	73		80	76	73		79	75	72	71
6	88	79	73	69	87	79	73	69	77	72	68		76	71	68		74	71	68	66
7	84	75	69	65	82	74	68	64	73	68	64		71	67	64		70	66	63	62
8	80	70	64	60	79	70	64	60	69	64	60		68	63	60		67	63	59	58
9	76	66	61	57	75	66	60	57	65	60	56		64	60	56		63	59	56	55
10	72	63	57	53	71	62	57	53	62	57	53		61	56	53		60	56	53	52

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	795310	795310	795310
5°	796149	792478	792478
10°	785681	781046	778636
15°	760183	756597	751482
20°	704024	719385	696251
25°	566068	647108	558604
30°	373622	507376	364764
35°	233521	304667	229281
40°	152408	141198	146438
45°	73386	56329	69251
50°	18479	22456	17338
55°	10194	9235	9875
60°	6947	5847	6581
65°	4749	4315	4749
70°	3752	3216	3752
75°	2833	2833	2833
80°	2111	3167	3167
85°	2103	4207	4207

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C90D010 FEU4C909035 F4LC-SQ-WLI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	775.2	10.5
10°-20°	2116.9	28.7
20°-30°	2522.7	34.2
30°-40°	1428.5	19.4
40°-50°	441.6	6.0
50°-60°	61.4	0.8
60°-70°	20.9	0.3
70°-80°	8.4	0.1
80°-90°	3.5	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	5414.7	73.4
0°-40°	6843.2	92.7
0°-60°	7346.2	99.6
0°-90°	7379.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7379.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8242	8242	8242	8242	8242	
5°	8220	8201	8182	8176	8182	778
15°	7610	7597	7574	7544	7523	2122
25°	5317	5628	6078	5637	5247	2371
35°	1982	2162	2586	2168	1946	1290
45°	538	627	413	610	508	444
55°	61	61	55	59	59	60
65°	21	21	19	21	21	22
75°	8	8	8	8	8	8
85°	2	4	4	4	4	3
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C90D010 FEU4C909035 F4LC-SQ-WLI

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	8242.5	8242.5	8242.5	8242.5	8242.5
2.5°	8244.4	8231.1	8227.3	8223.5	8231.1
5°	8219.8	8200.8	8181.9	8176.2	8181.9
7.5°	8149.7	8130.8	8098.6	8091.0	8096.7
10°	8019.0	8002.0	7971.7	7954.7	7947.1
12.5°	7846.7	7818.3	7789.9	7771.0	7752.1
15°	7610.0	7596.8	7574.1	7543.8	7522.9
17.5°	7282.5	7301.4	7314.7	7254.1	7199.2
20°	6856.4	6926.5	7006.0	6882.9	6780.7
22.5°	6191.8	6392.5	6595.1	6362.2	6135.0
25°	5317.0	5627.5	6078.2	5637.0	5246.9
27.5°	4296.4	4690.2	5400.3	4692.1	4239.6
30°	3353.4	3758.6	4553.9	3705.6	3273.9
32.5°	2575.2	2878.1	3557.9	2832.7	2520.3
35°	1982.5	2162.4	2586.5	2168.1	1946.5
37.5°	1541.3	1632.2	1740.1	1600.0	1495.9
40°	1210.0	1213.7	1121.0	1194.8	1162.6
42.5°	897.5	893.7	689.2	871.0	876.7
45°	537.8	626.8	412.8	609.7	507.5
47.5°	255.6	354.1	248.1	335.2	236.7
50°	123.1	170.4	149.6	159.1	115.5
52.5°	83.3	87.1	85.2	83.3	79.5
55°	60.6	60.6	54.9	58.7	58.7
57.5°	45.4	45.4	39.8	43.6	43.6
60°	36.0	34.1	30.3	34.1	34.1
62.5°	26.5	26.5	22.7	26.5	26.5
65°	20.8	20.8	18.9	20.8	20.8
67.5°	17.0	17.0	13.3	17.0	15.1
70°	13.3	13.3	11.4	13.3	13.3
72.5°	9.5	9.5	9.5	9.5	9.5
75°	7.6	7.6	7.6	7.6	7.6
77.5°	5.7	5.7	5.7	5.7	5.7
80°	3.8	3.8	5.7	5.7	5.7
82.5°	3.8	3.8	3.8	3.8	3.8
85°	1.9	3.8	3.8	3.8	3.8
87.5°	1.9	1.9	3.8	3.8	3.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)