

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: **FLDSQ4C45D010 FEU4C459040 F4LC-SQ-WH**

Issue Date: 12/13/2022

Tested By:

Approved By:



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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: FLDSQ4C45D010 FEU4C459040 F4LC-SQ-WH
 Description: 4 INCH 4500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

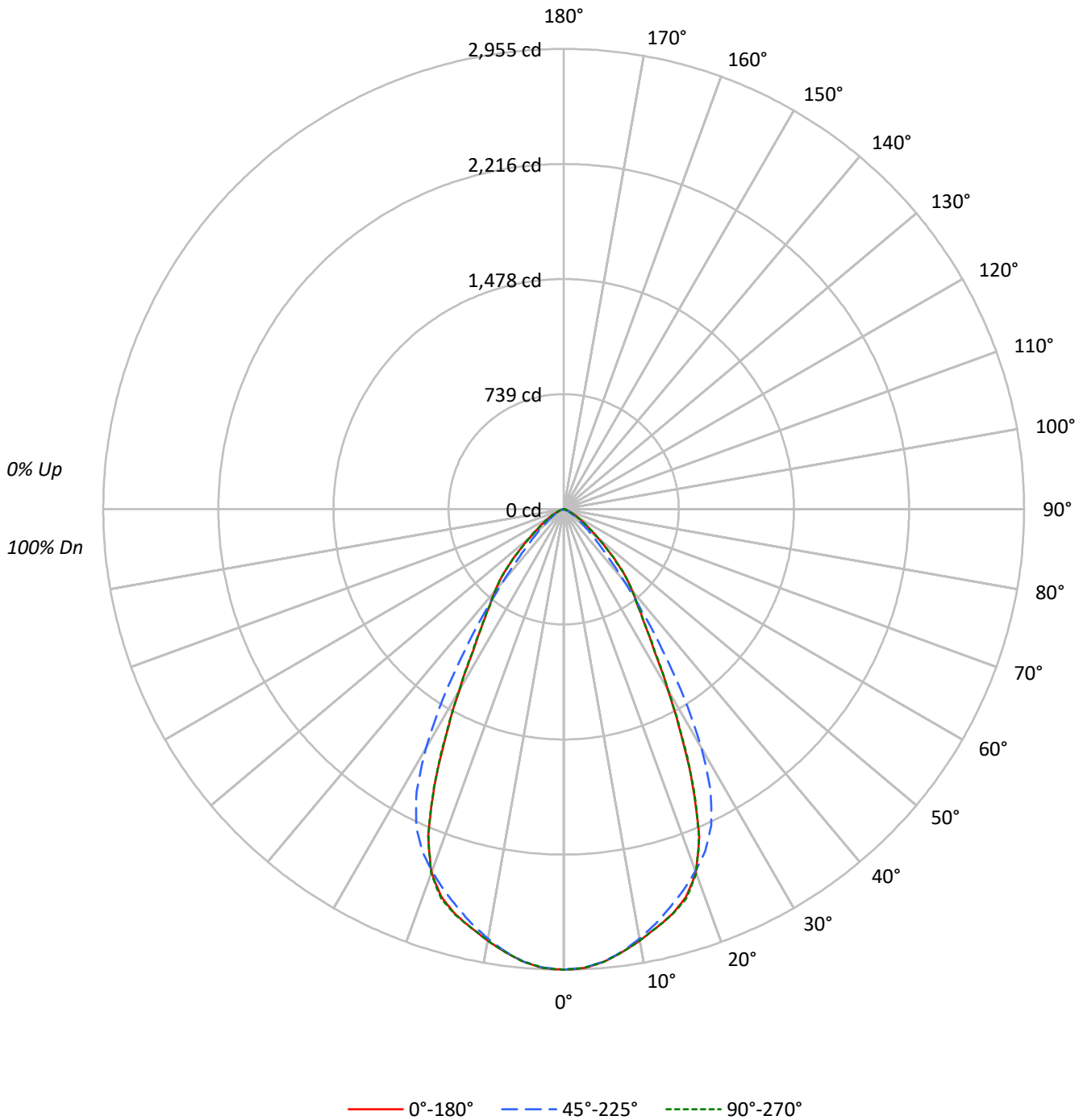
Lumens per Lamp: N/A
 Luminaire Lumens: 3128.0 lumens
 Efficiency: N/A
 Efficacy: 63.1 lumens/watt
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 49.6
 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

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Luminous Intensity Polar Plot



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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	113	110	107	105	110	108	105	103	104	102	100		100	98	97		96	95	94	92
2	107	101	97	93	104	99	95	92	96	93	90		93	90	88		90	88	86	84
3	101	93	88	84	98	92	87	83	89	85	82		87	83	80		85	82	79	77
4	95	87	80	76	93	85	80	75	83	78	74		81	77	74		79	76	73	71
5	89	80	74	69	88	79	73	69	78	72	68		76	71	68		74	70	67	66
6	85	75	68	64	83	74	68	63	72	67	63		71	66	63		70	65	62	61
7	80	70	63	59	79	69	63	59	68	62	58		67	62	58		65	61	58	56
8	76	65	59	55	74	65	59	54	64	58	54		63	58	54		62	57	54	52
9	72	61	55	51	71	61	55	51	60	54	51		59	54	50		58	54	50	49
10	68	58	52	48	67	57	51	47	57	51	47		56	51	47		55	50	47	46

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	285163	285163	285163
5°	282553	282369	282456
10°	275316	274219	275316
15°	268691	263846	268961
20°	254752	253797	255225
25°	208967	238436	210053
30°	149007	196983	149219
35°	107473	130524	107802
40°	86167	75839	86167
45°	65744	44253	65240
50°	43367	28266	43232
55°	29170	18976	28850
60°	19607	12949	19780
65°	13402	9155	13196
70°	8943	6573	8943
75°	5890	4846	5890
80°	4167	3612	4167
85°	3100	3100	3100

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	274.7	8.8
10°-20°	749.1	23.9
20°-30°	936.5	29.9
30°-40°	630.0	20.1
40°-50°	332.7	10.6
50°-60°	135.2	4.3
60°-70°	50.1	1.6
70°-80°	16.2	0.5
80°-90°	3.5	0.1
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°	1960.3	62.7
0°-40°	2590.3	82.8
0°-60°	3058.2	97.8
0°-90°	3128.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3128.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2955	2955	2955	2955	2955	
5°	2917	2914	2915	2915	2916	275
15°	2690	2667	2641	2666	2692	754
25°	1963	2073	2240	2076	1973	883
35°	912	958	1108	960	915	587
45°	482	458	324	456	478	369
55°	173	145	113	145	172	161
65°	59	48	40	48	58	61
75°	16	14	13	14	16	18
85°	3	3	3	3	3	4
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2955.4	2955.4	2955.4	2955.4	2955.4
2.5°	2947.9	2946.1	2945.1	2945.1	2946.1
5°	2917.2	2914.4	2915.3	2915.3	2916.2
7.5°	2867.8	2866.8	2864.0	2867.8	2867.8
10°	2810.0	2805.3	2798.8	2806.3	2810.0
12.5°	2750.3	2736.4	2725.2	2736.4	2750.3
15°	2689.8	2667.4	2641.3	2666.5	2692.5
17.5°	2610.5	2588.2	2559.3	2592.8	2618.0
20°	2481.0	2482.8	2471.7	2481.0	2485.6
22.5°	2273.1	2315.1	2373.8	2316.0	2266.6
25°	1962.8	2072.8	2239.6	2076.5	1973.0
27.5°	1630.1	1769.9	2042.9	1778.3	1640.3
30°	1337.4	1461.4	1768.0	1469.8	1339.3
32.5°	1083.0	1175.3	1437.1	1186.4	1095.1
35°	912.4	958.1	1108.1	960.0	915.2
37.5°	781.9	781.9	823.0	785.7	778.2
40°	684.1	654.3	602.1	653.3	684.1
42.5°	592.8	548.0	437.1	546.2	594.6
45°	481.8	457.6	324.3	455.7	478.1
47.5°	370.0	353.2	244.2	351.4	372.8
50°	288.9	262.8	188.3	261.0	288.0
52.5°	221.8	193.9	145.4	193.9	220.0
55°	173.4	145.4	112.8	145.4	171.5
57.5°	133.3	110.9	85.7	109.0	132.3
60°	101.6	82.9	67.1	82.9	102.5
62.5°	77.4	63.4	51.3	62.4	76.4
65°	58.7	47.5	40.1	47.5	57.8
67.5°	42.9	35.4	30.8	35.4	43.8
70°	31.7	27.0	23.3	26.1	31.7
72.5°	23.3	19.6	17.7	19.6	23.3
75°	15.8	14.0	13.0	14.0	15.8
77.5°	11.2	10.3	9.3	10.3	11.2
80°	7.5	6.5	6.5	7.5	7.5
82.5°	4.7	4.7	4.7	4.7	4.7
85°	2.8	2.8	2.8	2.8	2.8
87.5°	1.9	1.9	1.9	1.9	1.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)