

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 FEU4C909050 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: FLDSQ4C90D010 FEU4C909050 F4LC-SQ-WH
 Description: 4 INCH 9000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

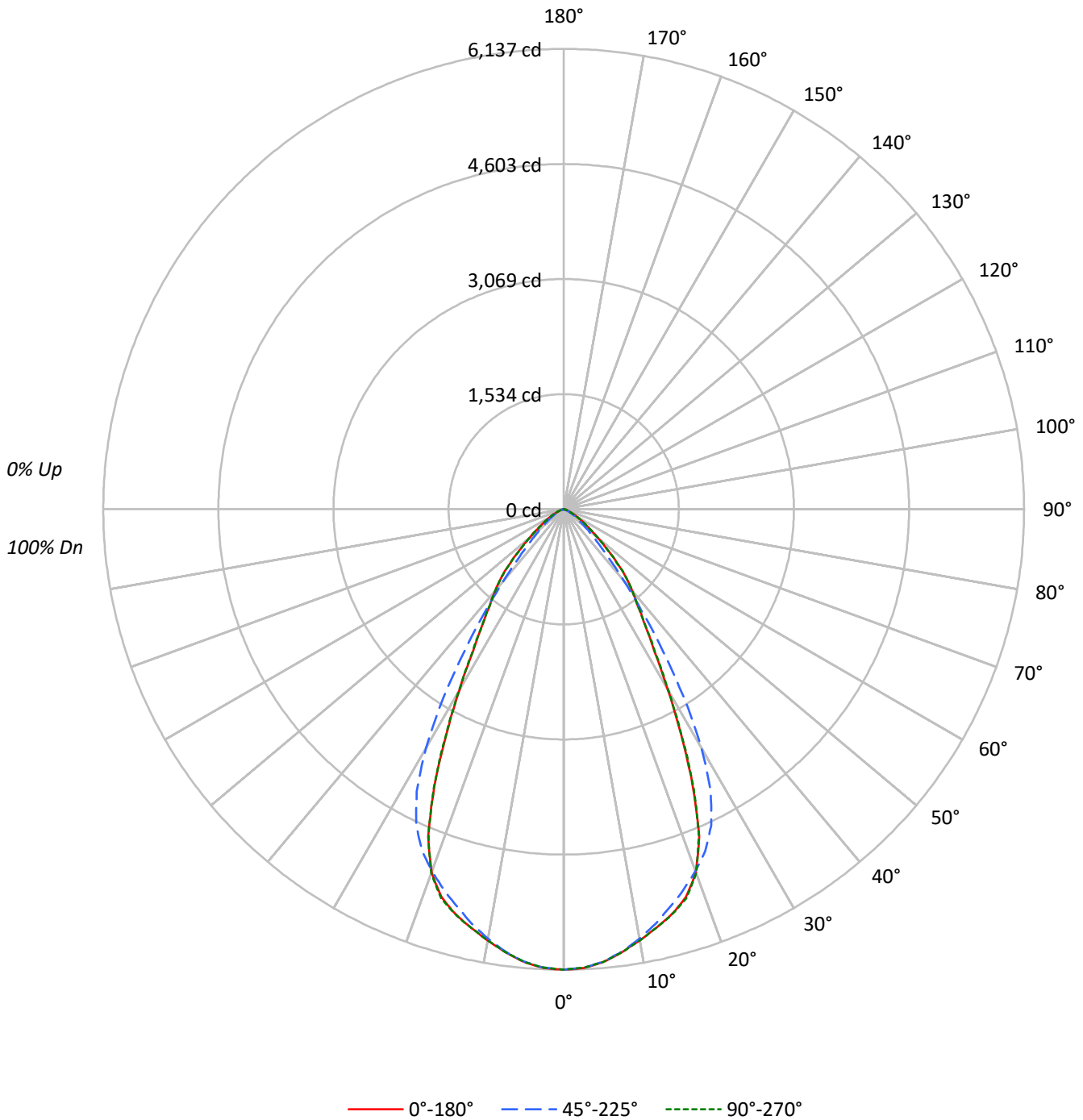
Lumens per Lamp: N/A
 Luminaire Lumens: 6495.0 lumens
 Efficiency: N/A
 Efficacy: 66.9 lumens/watt
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 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

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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	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92	92	92
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84	84	84
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77	77	77
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71	71	71
5	89	80	74	69	88	79	73	69	78	72	68	76	71	68	74	70	67	66	66	66
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61	61	61
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56	56	56
8	76	65	59	55	74	65	59	54	64	58	54	63	58	54	62	57	54	52	52	52
9	72	61	55	51	71	61	55	51	60	54	51	59	54	50	58	54	50	49	49	49
10	68	58	52	48	67	57	51	47	57	51	47	56	51	47	55	50	47	46	46	46

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	592114	592114	592114
5°	586685	586307	586501
10°	571669	569386	571669
15°	557900	547851	558480
20°	528963	526981	529959
25°	433904	495088	436161
30°	309402	409018	309836
35°	223167	271038	223850
40°	178910	157459	178910
45°	136524	91903	135473
50°	90051	58678	89766
55°	60544	39398	59904
60°	40699	26882	41085
65°	27831	18996	27397
70°	18563	13654	18563
75°	12265	10103	12265
80°	8613	7501	8613
85°	6421	6421	6421

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	570.4	8.8
10°-20°	1555.5	23.9
20°-30°	1944.5	29.9
30°-40°	1308.1	20.1
40°-50°	690.7	10.6
50°-60°	280.7	4.3
60°-70°	104.1	1.6
70°-80°	33.6	0.5
80°-90°	7.3	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°	4070.5	62.7
0°-40°	5378.6	82.8
0°-60°	6350.0	97.8
0°-90°	6495.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6495.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6137	6137	6137	6137	6137	
5°	6057	6051	6053	6053	6055	571
15°	5585	5539	5484	5537	5591	1565
25°	4076	4304	4650	4312	4097	1834
35°	1895	1989	2301	1993	1900	1219
45°	1000	950	674	946	993	767
55°	360	302	234	302	356	334
65°	122	99	83	99	120	126
75°	33	29	27	29	33	38
85°	6	6	6	6	6	7
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6136.6	6136.6	6136.6	6136.6	6136.6
2.5°	6121.1	6117.2	6115.3	6115.3	6117.2
5°	6057.2	6051.4	6053.3	6053.3	6055.3
7.5°	5954.6	5952.7	5946.9	5954.6	5954.6
10°	5834.7	5825.0	5811.4	5826.9	5834.7
12.5°	5710.8	5681.8	5658.6	5681.8	5710.8
15°	5585.0	5538.6	5484.4	5536.6	5590.8
17.5°	5420.5	5374.1	5314.1	5383.8	5436.0
20°	5151.5	5155.4	5132.2	5151.5	5161.2
22.5°	4720.0	4807.1	4929.0	4809.0	4706.4
25°	4075.6	4303.9	4650.3	4311.6	4096.8
27.5°	3384.7	3675.0	4242.0	3692.4	3406.0
30°	2777.0	3034.4	3671.1	3051.8	2780.9
32.5°	2248.7	2440.3	2984.1	2463.5	2273.9
35°	1894.6	1989.4	2301.0	1993.3	1900.4
37.5°	1623.6	1623.6	1708.8	1631.4	1615.9
40°	1420.4	1358.5	1250.1	1356.6	1420.4
42.5°	1230.8	1137.9	907.6	1134.0	1234.7
45°	1000.5	950.2	673.5	946.3	992.8
47.5°	768.3	733.4	507.0	729.6	774.1
50°	599.9	545.7	390.9	541.9	598.0
52.5°	460.6	402.5	301.9	402.5	456.7
55°	359.9	301.9	234.2	301.9	356.1
57.5°	276.7	230.3	178.0	226.4	274.8
60°	210.9	172.2	139.3	172.2	212.9
62.5°	160.6	131.6	106.4	129.7	158.7
65°	121.9	98.7	83.2	98.7	120.0
67.5°	89.0	73.5	63.9	73.5	91.0
70°	65.8	56.1	48.4	54.2	65.8
72.5°	48.4	40.6	36.8	40.6	48.4
75°	32.9	29.0	27.1	29.0	32.9
77.5°	23.2	21.3	19.4	21.3	23.2
80°	15.5	13.5	13.5	15.5	15.5
82.5°	9.7	9.7	9.7	9.7	9.7
85°	5.8	5.8	5.8	5.8	5.8
87.5°	3.9	3.9	3.9	3.9	3.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)