

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: **FLDSQ4C60D010 FEU4C609035 F4LC-SQ-LI**

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: FLDSQ4C60D010 FEU4C609035 F4LC-SQ-LI
 Description: 4 INCH 6000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

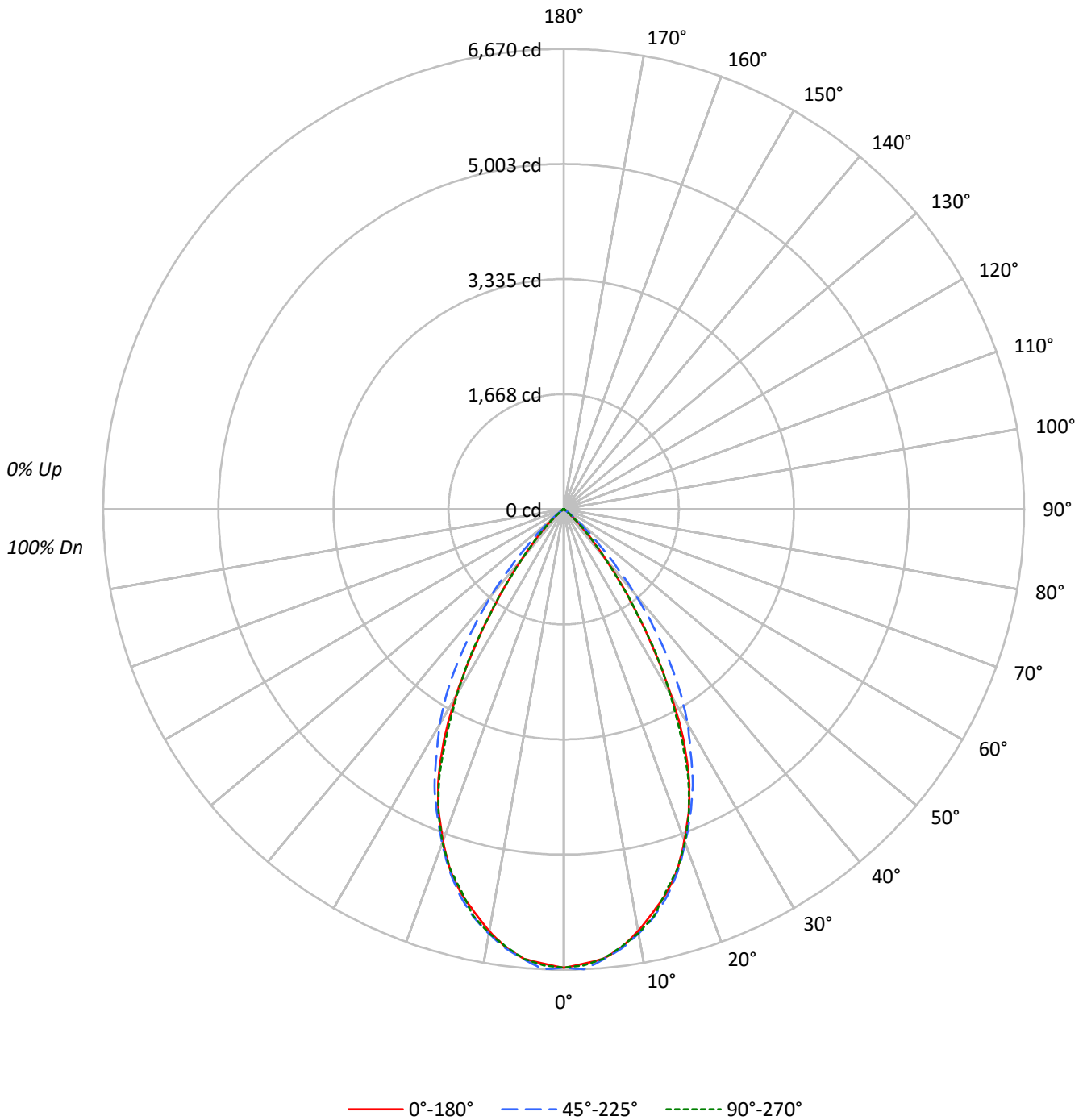
Lumens per Lamp: N/A
 Luminaire Lumens: 6131.0 lumens
 Efficiency: N/A
 Efficacy: 85.2 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 72
 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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93				
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87				
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80				
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75				
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69				
6	87	78	72	68	86	77	71	67	76	71	67	74	70	66	73	69	66	64				
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60				
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56				
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53				
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	640763	640763	640763
5°	633409	634223	633409
10°	608077	611800	610977
15°	574862	579078	571905
20°	524640	528521	527238
25°	456825	471187	453663
30°	347383	399559	342214
35°	218668	310615	220646
40°	117972	205134	115843
45°	55851	101332	55265
50°	20910	37993	20910
55°	9942	12078	9235
60°	6503	5712	6503
65°	3858	3858	3858
70°	2370	3583	2370
75°	1603	1603	1603
80°	2389	2389	2389
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	615.7	10.0
10°-20°	1613.6	26.3
20°-30°	1971.2	32.2
30°-40°	1378.7	22.5
40°-50°	451.8	7.4
50°-60°	71.8	1.2
60°-70°	19.6	0.3
70°-80°	6.6	0.1
80°-90°	1.8	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°	4200.6	68.5
0°-40°	5579.3	91.0
0°-60°	6103.0	99.5
0°-90°	6131.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6131.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6641	6641	6641	6641	6641	
5°	6540	6542	6548	6508	6540	613
15°	5755	5778	5797	5759	5725	1605
25°	4291	4356	4426	4346	4261	1927
35°	1856	2192	2637	2158	1873	1185
45°	409	504	743	498	405	343
55°	59	63	72	63	55	58
65°	17	21	17	21	17	19
75°	4	4	4	4	4	6
85°	0	0	0	0	0	2
90°	0	0	0	0	0	

TEST NUMBER: P#
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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	6640.8	6640.8	6640.8	6640.8	6640.8	6640.8	6640.8	6640.8	6640.8	6640.8	6640.8
2.5°	6590.2	6636.7	6624.0	6653.6	6653.6	6619.8	6628.3	6640.8	6657.7	6670.4	6569.0
5°	6539.6	6581.8	6543.7	6585.9	6560.6	6522.7	6585.9	6552.2	6573.3	6548.0	6564.9
7.5°	6404.6	6472.1	6396.2	6446.8	6429.9	6408.7	6434.1	6425.6	6438.4	6417.2	6370.9
10°	6206.3	6261.2	6210.6	6282.2	6248.4	6227.4	6248.4	6269.6	6265.3	6244.3	6269.6
12.5°	5978.5	6041.7	6016.4	6058.5	6020.7	6020.7	6071.3	6058.5	6062.8	6046.0	6075.4
15°	5754.8	5801.3	5763.3	5818.2	5801.3	5754.8	5775.8	5775.8	5809.8	5797.0	5763.3
17.5°	5476.4	5514.3	5472.1	5484.9	5468.0	5459.6	5548.1	5489.0	5522.7	5497.4	5501.7
20°	5109.4	5126.2	5113.5	5147.2	5126.2	5151.5	5143.1	5134.7	5134.7	5147.2	5117.8
22.5°	4738.0	4738.0	4750.7	4759.2	4776.0	4750.7	4801.3	4759.2	4763.3	4792.9	4784.5
25°	4290.9	4278.1	4307.7	4349.9	4366.8	4345.6	4413.1	4379.4	4404.7	4425.8	4379.4
27.5°	3746.6	3746.6	3776.1	3847.9	3860.4	3885.7	3978.5	3978.5	4012.3	3982.8	4016.6
30°	3117.9	3164.3	3202.2	3295.0	3324.6	3379.6	3476.5	3523.0	3598.9	3586.2	3569.3
32.5°	2472.4	2535.7	2539.9	2637.0	2717.0	2809.8	2940.7	3050.4	3105.3	3143.2	3101.0
35°	1856.4	1894.4	1928.1	1995.6	2130.6	2253.0	2371.1	2514.6	2611.7	2637.0	2598.9
37.5°	1358.6	1367.0	1400.8	1464.0	1565.2	1683.5	1826.9	1982.9	2084.3	2122.2	2080.0
40°	936.6	945.1	961.9	1016.8	1101.2	1185.6	1299.5	1459.8	1552.6	1628.6	1573.7
42.5°	628.6	637.0	653.9	696.1	742.6	822.6	911.3	1012.5	1101.2	1135.0	1105.3
45°	409.3	409.3	417.7	447.3	472.6	535.8	599.2	662.3	721.4	742.6	721.4
47.5°	240.5	244.7	253.1	274.3	303.7	329.0	375.5	417.7	434.6	451.4	443.0
50°	139.3	139.3	151.9	164.6	185.6	202.5	219.3	236.2	244.7	253.1	244.7
52.5°	75.9	80.2	84.4	88.7	97.1	114.0	126.5	126.5	130.8	135.0	130.8
55°	59.1	59.1	59.1	59.1	63.4	63.4	63.4	67.5	67.5	71.8	67.5
57.5°	42.2	42.2	42.2	46.5	46.5	46.5	42.2	42.2	42.2	42.2	42.2
60°	33.7	33.7	33.7	33.7	33.7	33.7	33.7	29.6	29.6	29.6	29.6
62.5°	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3
65°	16.9	16.9	21.2	21.2	21.2	21.2	21.2	16.9	16.9	16.9	16.9
67.5°	12.7	12.7	12.7	12.7	16.9	16.9	12.7	12.7	12.7	12.7	12.7
70°	8.4	8.4	8.4	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
72.5°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
75°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
77.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
80°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	6640.8	6640.8	6640.8	6640.8	6640.8	6640.8	6640.8	6640.8
2.5°	6640.8	6569.0	6577.5	6615.5	6594.3	6615.5	6611.4	6611.4
5°	6569.0	6548.0	6514.3	6501.5	6526.9	6581.8	6573.3	6539.6
7.5°	6434.1	6379.3	6417.2	6434.1	6413.0	6446.8	6463.7	6391.9
10°	6273.8	6252.7	6244.3	6252.7	6244.3	6278.1	6235.9	6235.9
12.5°	6046.0	6012.2	6012.2	6062.8	6033.2	6007.9	6041.7	6037.5
15°	5818.2	5750.5	5750.5	5767.4	5780.1	5763.3	5767.4	5725.2
17.5°	5480.6	5459.6	5429.9	5476.4	5489.0	5472.1	5484.9	5463.7
20°	5164.1	5164.1	5109.4	5130.4	5147.2	5160.0	5168.4	5134.7
22.5°	4759.2	4767.6	4729.6	4771.7	4784.5	4742.3	4750.7	4742.3
25°	4387.8	4383.7	4354.0	4337.2	4345.6	4328.7	4324.6	4261.2
27.5°	3978.5	3936.4	3873.2	3890.0	3818.2	3759.2	3759.2	3662.1
30°	3535.5	3463.9	3379.6	3295.0	3231.8	3164.3	3126.3	3071.5
32.5°	3016.6	2919.7	2814.1	2700.2	2628.5	2527.3	2472.4	2502.0
35°	2502.0	2358.4	2215.0	2101.2	1991.3	1932.3	1864.8	1873.2
37.5°	2004.1	1801.6	1675.1	1552.6	1459.8	1383.9	1354.3	1345.9
40°	1464.0	1303.7	1177.1	1088.5	1025.3	966.2	932.5	919.7
42.5°	1012.5	898.7	797.3	725.7	683.5	645.5	628.6	624.5
45°	658.2	590.7	523.2	472.6	438.9	413.6	409.3	405.0
47.5°	413.6	379.6	337.5	299.6	270.0	253.1	240.5	240.5
50°	236.2	223.6	202.5	181.5	164.6	156.2	143.4	139.3
52.5°	126.5	126.5	118.1	101.2	88.7	80.2	80.2	75.9
55°	67.5	67.5	63.4	63.4	59.1	59.1	59.1	54.9
57.5°	42.2	42.2	46.5	46.5	42.2	42.2	42.2	42.2
60°	29.6	33.7	33.7	33.7	33.7	33.7	33.7	33.7
62.5°	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3
65°	16.9	21.2	21.2	21.2	21.2	16.9	16.9	16.9
67.5°	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
70°	12.7	12.7	12.7	12.7	12.7	8.4	8.4	8.4
72.5°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
75°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
77.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
80°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)