

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: **FLDSQ4C55D010 FEU4C559040 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: FLDSQ4C55D010 FEU4C559040 F4LC-SQ-LI  
 Description: 4 INCH 5500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

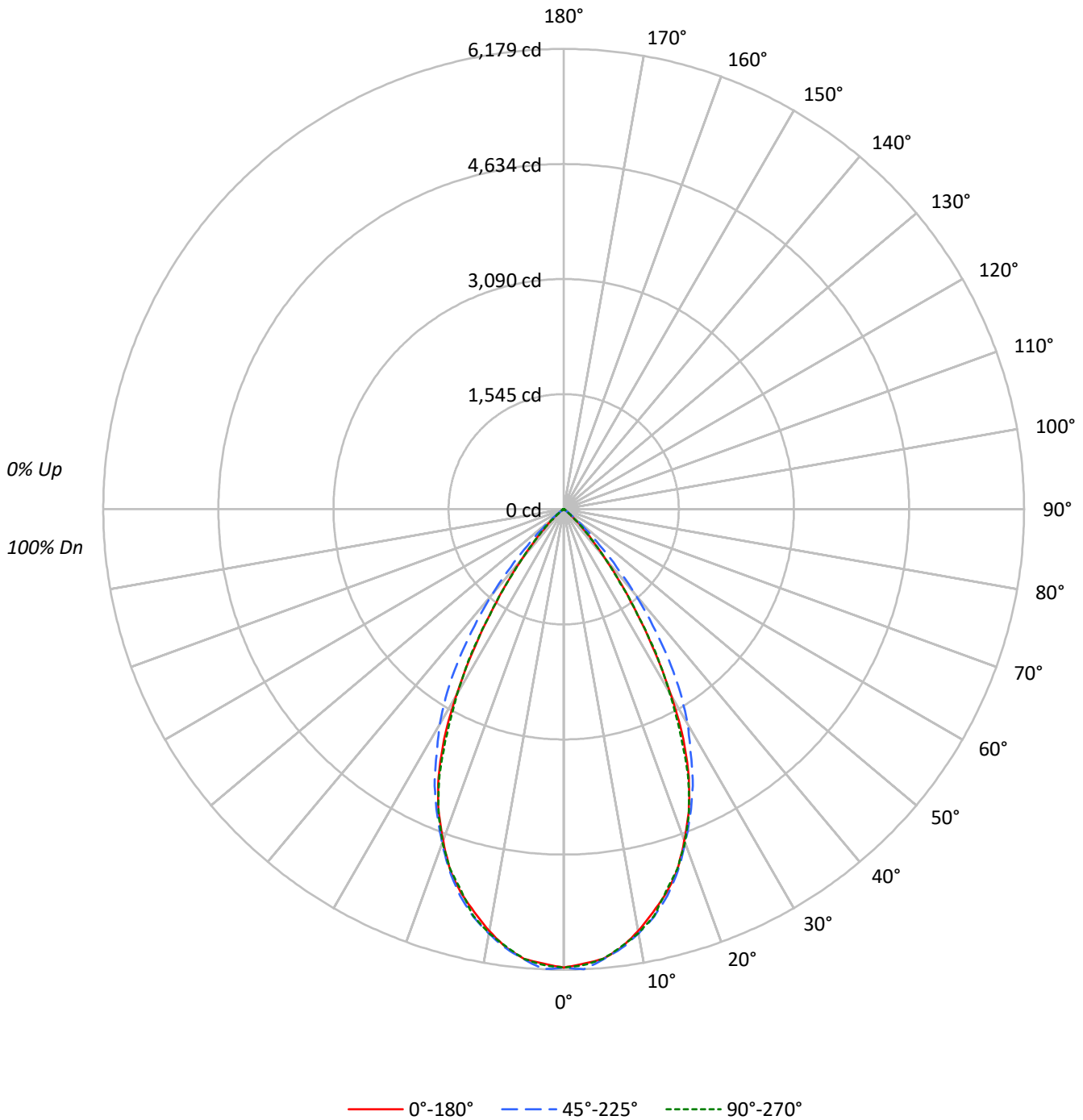
Lumens per Lamp: N/A  
 Luminaire Lumens: 5679.0 lumens  
 Efficiency: N/A  
 Efficacy: 88.9 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 63.9  
 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°	593522	593522	593522
5°	586714	587470	586714
10°	563243	566701	565927
15°	532488	536384	529741
20°	485960	489564	488363
25°	423140	436459	420223
30°	321769	370101	316989
35°	202542	287717	204379
40°	109281	190007	107303
45°	51730	93854	51185
50°	19364	35186	19364
55°	9202	11187	8563
60°	6040	5288	6040
65°	3562	3562	3562
70°	2200	3329	2200
75°	1491	1491	1491
80°	2223	2223	2223
85°	0	0	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	570.3	10.0
10°-20°	1494.7	26.3
20°-30°	1825.9	32.2
30°-40°	1277.1	22.5
40°-50°	418.5	7.4
50°-60°	66.6	1.2
60°-70°	18.2	0.3
70°-80°	6.1	0.1
80°-90°	1.7	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°	3890.9	68.5
0°-40°	5168.0	91.0
0°-60°	5653.1	99.5
0°-90°	5679.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5679.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6151	6151	6151	6151	6151	
5°	6058	6059	6065	6028	6058	568
15°	5331	5352	5370	5334	5303	1487
25°	3974	4035	4100	4025	3947	1785
35°	1720	2030	2443	1999	1735	1097
45°	379	467	688	461	375	318
55°	55	59	66	59	51	54
65°	16	20	16	20	16	17
75°	4	4	4	4	4	6
85°	0	0	0	0	0	2
90°	0	0	0	0	0	

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C55D010 FEU4C559040 F4LC-SQ-LI

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	6151.2	6151.2	6151.2	6151.2	6151.2	6151.2	6151.2	6151.2	6151.2	6151.2	6151.2
2.5°	6104.4	6147.4	6135.6	6163.0	6163.0	6131.8	6139.6	6151.2	6166.9	6178.7	6084.7
5°	6057.5	6096.5	6061.3	6100.4	6076.9	6041.8	6100.4	6069.1	6088.7	6065.3	6080.9
7.5°	5932.4	5995.0	5924.6	5971.5	5955.9	5936.3	5959.7	5951.9	5963.7	5944.1	5901.2
10°	5748.7	5799.6	5752.7	5819.0	5787.8	5768.3	5787.8	5807.4	5803.4	5784.0	5807.4
12.5°	5537.7	5596.3	5572.8	5611.9	5576.8	5576.8	5623.7	5611.9	5615.9	5600.2	5627.5
15°	5330.6	5373.6	5338.4	5389.3	5373.6	5330.6	5350.0	5350.0	5381.4	5369.6	5338.4
17.5°	5072.7	5107.8	5068.7	5080.5	5064.9	5057.1	5139.0	5084.3	5115.6	5092.1	5096.1
20°	4732.7	4748.3	4736.5	4767.8	4748.3	4771.8	4763.9	4756.1	4756.1	4767.8	4740.5
22.5°	4388.7	4388.7	4400.5	4408.3	4423.9	4400.5	4447.4	4408.3	4412.1	4439.6	4431.7
25°	3974.5	3962.7	3990.1	4029.2	4044.8	4025.2	4087.8	4056.5	4079.9	4099.6	4056.5
27.5°	3470.4	3470.4	3497.7	3564.2	3575.8	3599.3	3685.2	3685.2	3716.5	3689.2	3720.5
30°	2888.0	2931.1	2966.1	3052.1	3079.5	3130.4	3220.2	3263.2	3333.6	3321.8	3306.1
32.5°	2290.1	2348.8	2352.6	2442.6	2516.7	2602.7	2723.9	2825.5	2876.4	2911.4	2872.4
35°	1719.5	1754.7	1786.0	1848.5	1973.5	2086.9	2196.3	2329.2	2419.1	2442.6	2407.3
37.5°	1258.4	1266.3	1297.5	1356.0	1449.8	1559.4	1692.2	1836.7	1930.6	1965.7	1926.7
40°	867.6	875.4	891.0	941.9	1020.0	1098.2	1203.7	1352.2	1438.2	1508.5	1457.6
42.5°	582.3	590.1	605.7	644.8	687.8	762.0	844.1	937.9	1020.0	1051.3	1023.9
45°	379.1	379.1	386.9	414.3	437.8	496.3	555.0	613.5	668.2	687.8	668.2
47.5°	222.8	226.6	234.4	254.0	281.3	304.8	347.8	386.9	402.5	418.2	410.3
50°	129.0	129.0	140.7	152.5	171.9	187.5	203.2	218.8	226.6	234.4	226.6
52.5°	70.3	74.3	78.1	82.1	89.9	105.6	117.2	117.2	121.2	125.0	121.2
55°	54.7	54.7	54.7	54.7	58.7	58.7	58.7	62.5	62.5	66.5	62.5
57.5°	39.1	39.1	39.1	43.1	43.1	43.1	39.1	39.1	39.1	39.1	39.1
60°	31.3	31.3	31.3	31.3	31.3	31.3	31.3	27.4	27.4	27.4	27.4
62.5°	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4
65°	15.6	15.6	19.6	19.6	19.6	19.6	19.6	15.6	15.6	15.6	15.6
67.5°	11.8	11.8	11.8	11.8	15.6	15.6	11.8	11.8	11.8	11.8	11.8
70°	7.8	7.8	7.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
72.5°	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
75°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
77.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
80°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	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°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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°	6151.2	6151.2	6151.2	6151.2	6151.2	6151.2	6151.2	6151.2
2.5°	6151.2	6084.7	6092.6	6127.8	6108.2	6127.8	6124.0	6124.0
5°	6084.7	6065.3	6034.0	6022.2	6045.7	6096.5	6088.7	6057.5
7.5°	5959.7	5909.0	5944.1	5959.7	5940.2	5971.5	5987.1	5920.6
10°	5811.2	5791.8	5784.0	5791.8	5784.0	5815.2	5776.1	5776.1
12.5°	5600.2	5569.0	5569.0	5615.9	5588.4	5565.0	5596.3	5592.4
15°	5389.3	5326.6	5326.6	5342.2	5354.0	5338.4	5342.2	5303.1
17.5°	5076.5	5057.1	5029.6	5072.7	5084.3	5068.7	5080.5	5060.9
20°	4783.4	4783.4	4732.7	4752.1	4767.8	4779.6	4787.4	4756.1
22.5°	4408.3	4416.1	4380.9	4419.9	4431.7	4392.7	4400.5	4392.7
25°	4064.3	4060.5	4033.1	4017.4	4025.2	4009.6	4005.8	3947.1
27.5°	3685.2	3646.2	3587.6	3603.3	3536.8	3482.1	3482.1	3392.1
30°	3274.9	3208.5	3130.4	3052.1	2993.6	2931.1	2895.8	2845.1
32.5°	2794.2	2704.4	2606.7	2501.1	2434.8	2341.0	2290.1	2317.5
35°	2317.5	2184.5	2051.7	1946.3	1844.5	1789.8	1727.3	1735.1
37.5°	1856.3	1668.8	1551.6	1438.2	1352.2	1281.9	1254.5	1246.6
40°	1356.0	1207.6	1090.4	1008.2	949.7	895.0	863.7	851.9
42.5°	937.9	832.5	738.5	672.2	633.1	597.9	582.3	578.4
45°	609.7	547.2	484.7	437.8	406.5	383.1	379.1	375.1
47.5°	383.1	351.7	312.6	277.5	250.1	234.4	222.8	222.8
50°	218.8	207.2	187.5	168.1	152.5	144.6	132.8	129.0
52.5°	117.2	117.2	109.4	93.8	82.1	74.3	74.3	70.3
55°	62.5	62.5	58.7	58.7	54.7	54.7	54.7	50.9
57.5°	39.1	39.1	43.1	43.1	39.1	39.1	39.1	39.1
60°	27.4	31.3	31.3	31.3	31.3	31.3	31.3	31.3
62.5°	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4
65°	15.6	19.6	19.6	19.6	19.6	15.6	15.6	15.6
67.5°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
70°	11.8	11.8	11.8	11.8	11.8	7.8	7.8	7.8
72.5°	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
75°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
77.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
80°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)