

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 FEU4C559035 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 FEU4C559035 F4LC-SQ-LI  
 Description: 4 INCH 5500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

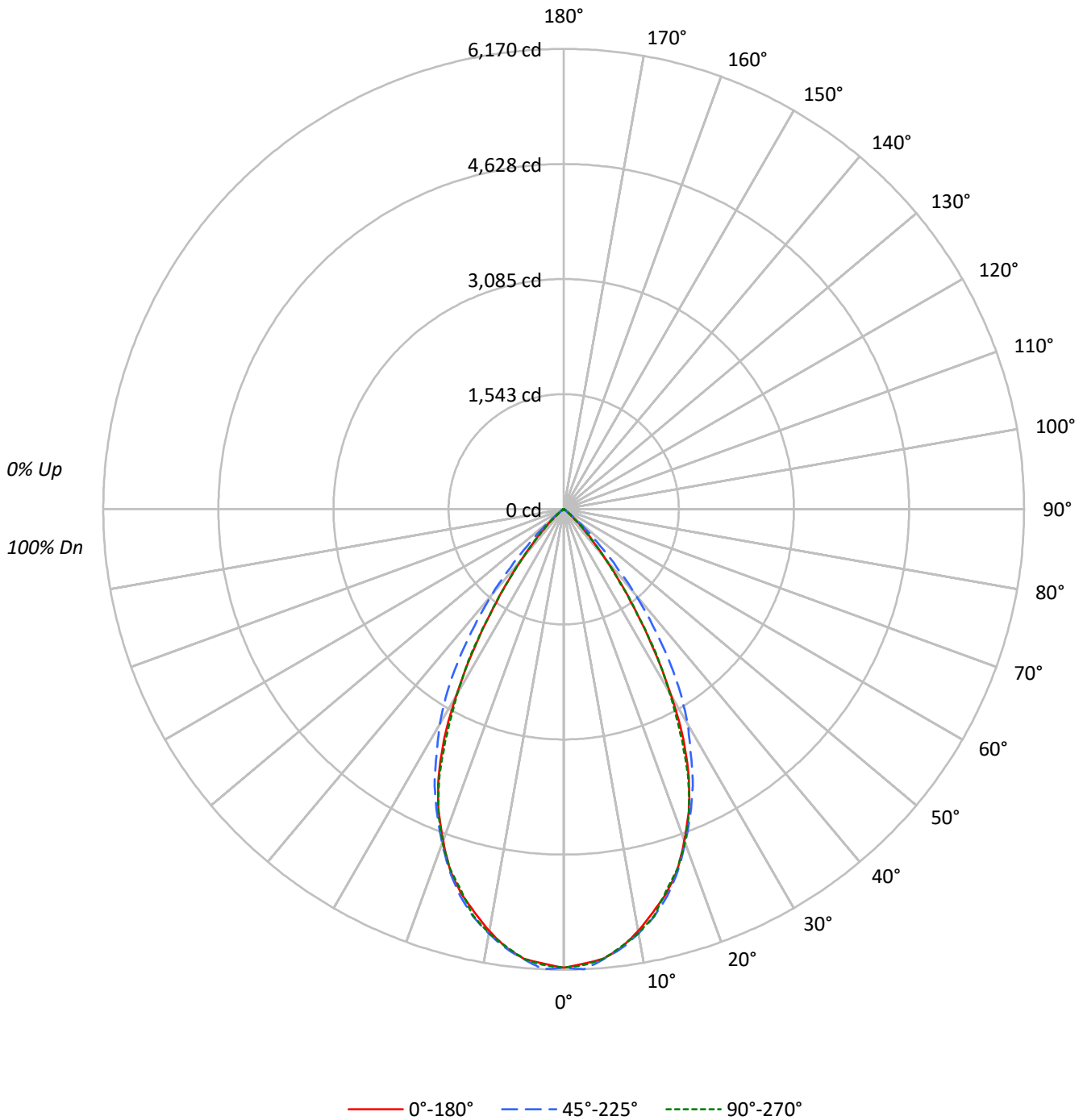
Lumens per Lamp: N/A  
 Luminaire Lumens: 5671.0 lumens  
 Efficiency: N/A  
 Efficacy: 88.7 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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°	592693	592693	592693
5°	585881	586637	585881
10°	562449	565898	565134
15°	531739	535634	529002
20°	485272	488876	487675
25°	422544	435841	419627
30°	321312	369577	316543
35°	202259	287304	204097
40°	109117	189742	107152
45°	51649	93732	51116
50°	19334	35141	19334
55°	9185	11170	8546
60°	6021	5288	6021
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°	569.5	10.0
10°-20°	1492.6	26.3
20°-30°	1823.3	32.2
30°-40°	1275.3	22.5
40°-50°	417.9	7.4
50°-60°	66.4	1.2
60°-70°	18.1	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°	3885.4	68.5
0°-40°	5160.7	91.0
0°-60°	5645.1	99.5
0°-90°	5671.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5671.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6143	6143	6143	6143	6143	
5°	6049	6051	6057	6020	6049	567
15°	5323	5345	5362	5327	5296	1485
25°	3969	4029	4094	4020	3942	1783
35°	1717	2027	2439	1996	1733	1096
45°	378	466	687	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#  
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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	6142.6	6142.6	6142.6	6142.6	6142.6	6142.6	6142.6	6142.6	6142.6	6142.6	6142.6
2.5°	6095.8	6138.8	6127.0	6154.4	6154.4	6123.1	6130.9	6142.6	6158.2	6170.0	6076.2
5°	6048.9	6088.0	6052.8	6091.8	6068.4	6033.3	6091.8	6060.6	6080.1	6056.7	6072.3
7.5°	5924.1	5986.5	5916.3	5963.1	5947.5	5927.9	5951.3	5943.5	5955.3	5935.7	5892.9
10°	5740.6	5791.4	5744.6	5810.9	5779.6	5760.2	5779.6	5799.2	5795.2	5775.8	5799.2
12.5°	5529.9	5588.4	5565.0	5604.0	5568.9	5568.9	5615.8	5604.0	5608.0	5592.4	5619.6
15°	5323.1	5366.1	5330.9	5381.7	5366.1	5323.1	5342.5	5342.5	5373.9	5362.1	5330.9
17.5°	5065.5	5100.6	5061.6	5073.3	5057.7	5049.9	5131.8	5077.2	5108.4	5085.0	5089.0
20°	4726.0	4741.6	4729.8	4761.1	4741.6	4765.0	4757.2	4749.4	4749.4	4761.1	4733.8
22.5°	4382.5	4382.5	4394.3	4402.1	4417.7	4394.3	4441.1	4402.1	4405.9	4433.3	4425.5
25°	3968.9	3957.1	3984.5	4023.5	4039.2	4019.6	4082.0	4050.8	4074.2	4093.8	4050.8
27.5°	3465.5	3465.5	3492.8	3559.2	3570.8	3594.2	3680.0	3680.0	3711.3	3684.0	3715.2
30°	2883.9	2926.9	2962.0	3047.8	3075.2	3126.0	3215.7	3258.6	3328.9	3317.1	3301.5
32.5°	2286.9	2345.5	2349.3	2439.1	2513.2	2599.0	2720.1	2821.5	2872.3	2907.3	2868.3
35°	1717.1	1752.3	1783.5	1845.9	1970.8	2084.0	2193.2	2325.9	2415.7	2439.1	2403.9
37.5°	1256.7	1264.5	1295.7	1354.1	1447.8	1557.2	1689.8	1834.1	1927.9	1963.0	1923.9
40°	866.3	874.1	889.8	940.6	1018.6	1096.6	1202.0	1350.3	1436.1	1506.4	1455.6
42.5°	581.4	589.2	604.8	643.9	686.9	760.9	842.9	936.6	1018.6	1049.8	1022.4
45°	378.5	378.5	386.3	413.7	437.1	495.6	554.2	612.7	667.3	686.9	667.3
47.5°	222.5	226.3	234.1	253.7	280.9	304.3	347.3	386.3	402.0	417.6	409.8
50°	128.8	128.8	140.5	152.2	171.7	187.3	202.9	218.5	226.3	234.1	226.3
52.5°	70.2	74.2	78.0	82.0	89.8	105.4	117.1	117.1	121.0	124.9	121.0
55°	54.6	54.6	54.6	54.6	58.6	58.6	58.6	62.4	62.4	66.4	62.4
57.5°	39.0	39.0	39.0	43.0	43.0	43.0	39.0	39.0	39.0	39.0	39.0
60°	31.2	31.2	31.2	31.2	31.2	31.2	31.2	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°	6142.6	6142.6	6142.6	6142.6	6142.6	6142.6	6142.6	6142.6
2.5°	6142.6	6076.2	6084.0	6119.2	6099.6	6119.2	6115.3	6115.3
5°	6076.2	6056.7	6025.5	6013.7	6037.2	6088.0	6080.1	6048.9
7.5°	5951.3	5900.7	5935.7	5951.3	5931.9	5963.1	5978.7	5912.3
10°	5803.0	5783.6	5775.8	5783.6	5775.8	5807.0	5768.0	5768.0
12.5°	5592.4	5561.1	5561.1	5608.0	5580.6	5557.2	5588.4	5584.5
15°	5381.7	5319.1	5319.1	5334.7	5346.5	5330.9	5334.7	5295.7
17.5°	5069.4	5049.9	5022.5	5065.5	5077.2	5061.6	5073.3	5053.8
20°	4776.7	4776.7	4726.0	4745.4	4761.1	4772.8	4780.6	4749.4
22.5°	4402.1	4409.9	4374.7	4413.7	4425.5	4386.5	4394.3	4386.5
25°	4058.6	4054.8	4027.4	4011.8	4019.6	4004.0	4000.1	3941.5
27.5°	3680.0	3641.0	3582.6	3598.2	3531.8	3477.1	3477.1	3387.3
30°	3270.3	3204.0	3126.0	3047.8	2989.4	2926.9	2891.7	2841.1
32.5°	2790.3	2700.6	2603.0	2497.6	2431.3	2337.7	2286.9	2314.3
35°	2314.3	2181.5	2048.8	1943.5	1841.9	1787.3	1724.9	1732.7
37.5°	1853.7	1666.4	1549.4	1436.1	1350.3	1280.1	1252.7	1244.9
40°	1354.1	1205.9	1088.8	1006.8	948.4	893.7	862.5	850.7
42.5°	936.6	831.3	737.5	671.3	632.2	597.0	581.4	577.6
45°	608.8	546.4	484.0	437.1	405.9	382.5	378.5	374.6
47.5°	382.5	351.2	312.1	277.1	249.7	234.1	222.5	222.5
50°	218.5	206.9	187.3	167.9	152.2	144.4	132.7	128.8
52.5°	117.1	117.1	109.2	93.6	82.0	74.2	74.2	70.2
55°	62.4	62.4	58.6	58.6	54.6	54.6	54.6	50.8
57.5°	39.0	39.0	43.0	43.0	39.0	39.0	39.0	39.0
60°	27.4	31.2	31.2	31.2	31.2	31.2	31.2	31.2
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)