

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: **FLDSQ4C80D010 FEU4C809027 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: FLDSQ4C80D010 FEU4C809027 F4LC-SQ-LI
 Description: 4 INCH 8000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

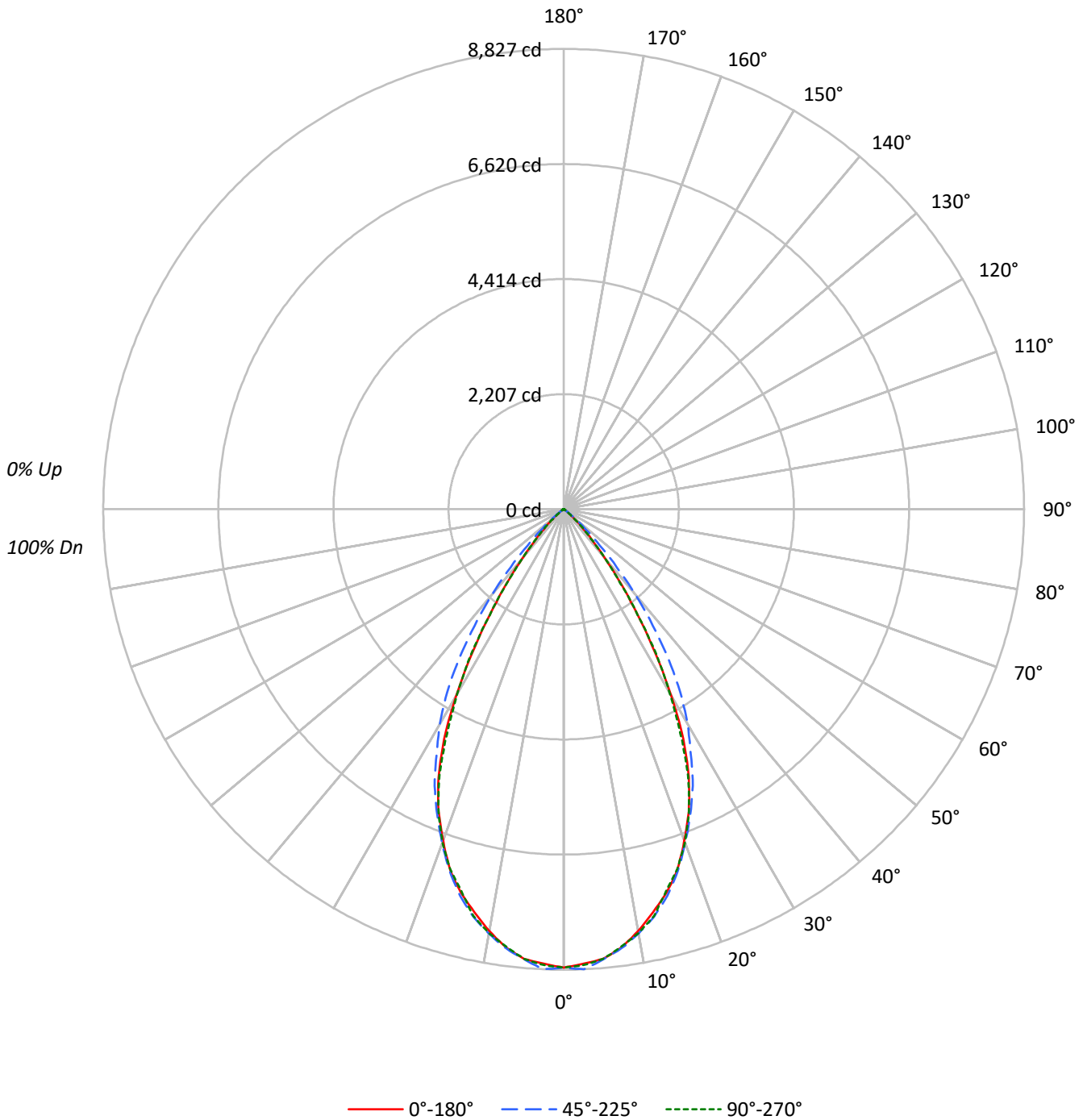
Lumens per Lamp: N/A
 Luminaire Lumens: 8113.0 lumens
 Efficiency: N/A
 Efficacy: 90.6 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 89.5
 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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CATALOG NUMBER: FLDSQ4C80D010 FEU4C809027 F4LC-SQ-LI

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				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°	847906	847906	847906
5°	838175	839251	838175
10°	804649	809577	808490
15°	760703	766277	756787
20°	694239	699383	697679
25°	604501	623515	600328
30°	459679	528724	452849
35°	289354	411021	291981
40°	156111	271438	153303
45°	73905	134082	73127
50°	27665	50272	27665
55°	13138	15981	12230
60°	8626	7565	8626
65°	5091	5091	5091
70°	3160	4768	3160
75°	2125	2125	2125
80°	3167	3167	3167
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	814.8	10.0
10°-20°	2135.3	26.3
20°-30°	2608.5	32.2
30°-40°	1824.4	22.5
40°-50°	597.9	7.4
50°-60°	95.1	1.2
60°-70°	26.0	0.3
70°-80°	8.7	0.1
80°-90°	2.4	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°	5558.5	68.5
0°-40°	7383.0	91.0
0°-60°	8075.9	99.5
0°-90°	8113.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8113.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8788	8788	8788	8788	8788	
5°	8654	8656	8665	8612	8654	812
15°	7615	7646	7671	7621	7576	2124
25°	5678	5764	5857	5750	5639	2551
35°	2456	2900	3489	2856	2479	1568
45°	542	667	983	659	536	454
55°	78	84	95	84	73	77
65°	22	28	22	28	22	25
75°	6	6	6	6	6	8
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°	8787.6	8787.6	8787.6	8787.6	8787.6	8787.6	8787.6	8787.6	8787.6	8787.6	8787.6
2.5°	8720.7	8782.2	8765.3	8804.5	8804.5	8759.8	8771.0	8787.6	8810.0	8826.8	8692.6
5°	8653.7	8709.5	8659.1	8715.0	8681.5	8631.3	8715.0	8670.3	8698.3	8664.8	8687.2
7.5°	8475.1	8564.4	8463.9	8530.9	8508.5	8480.5	8514.0	8502.9	8519.7	8491.7	8430.4
10°	8212.6	8285.3	8218.3	8313.1	8268.4	8240.6	8268.4	8296.4	8290.7	8262.9	8296.4
12.5°	7911.2	7994.8	7961.3	8017.1	7967.0	7967.0	8034.0	8017.1	8022.8	8000.5	8039.5
15°	7615.2	7676.7	7626.4	7699.1	7676.7	7615.2	7643.0	7643.0	7687.9	7671.0	7626.4
17.5°	7246.8	7297.0	7241.1	7258.0	7235.7	7224.5	7341.6	7263.5	7308.1	7274.6	7280.3
20°	6761.1	6783.4	6766.6	6811.2	6783.4	6816.9	6805.7	6794.6	6794.6	6811.2	6772.3
22.5°	6269.7	6269.7	6286.5	6297.7	6320.0	6286.5	6353.5	6297.7	6303.2	6342.3	6331.2
25°	5678.0	5661.1	5700.3	5756.1	5778.5	5750.4	5839.7	5795.1	5828.6	5856.6	5795.1
27.5°	4957.8	4957.8	4996.8	5091.8	5108.4	5141.9	5264.7	5264.7	5309.4	5270.4	5315.1
30°	4125.8	4187.3	4237.4	4360.2	4399.4	4472.1	4600.4	4661.9	4762.3	4745.5	4723.2
32.5°	3271.6	3355.5	3361.0	3489.4	3595.4	3718.2	3891.3	4036.5	4109.1	4159.3	4103.5
35°	2456.5	2506.8	2551.5	2640.8	2819.4	2981.4	3137.7	3327.5	3456.0	3489.4	3439.1
37.5°	1797.8	1809.0	1853.6	1937.2	2071.2	2227.7	2417.5	2623.9	2758.1	2808.2	2752.4
40°	1239.4	1250.6	1272.9	1345.6	1457.2	1568.8	1719.7	1931.8	2054.6	2155.0	2082.4
42.5°	831.8	843.0	865.3	921.1	982.6	1088.6	1205.9	1339.9	1457.2	1501.9	1462.7
45°	541.6	541.6	552.7	591.9	625.4	709.0	792.8	876.5	954.6	982.6	954.6
47.5°	318.3	323.7	334.9	362.9	401.9	435.4	496.9	552.7	575.0	597.4	586.2
50°	184.3	184.3	200.9	217.8	245.6	267.9	290.3	312.6	323.7	334.9	323.7
52.5°	100.5	106.2	111.6	117.3	128.5	150.8	167.5	167.5	173.1	178.6	173.1
55°	78.1	78.1	78.1	78.1	83.8	83.8	83.8	89.3	89.3	95.0	89.3
57.5°	55.8	55.8	55.8	61.5	61.5	61.5	55.8	55.8	55.8	55.8	55.8
60°	44.7	44.7	44.7	44.7	44.7	44.7	44.7	39.2	39.2	39.2	39.2
62.5°	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
65°	22.3	22.3	28.0	28.0	28.0	28.0	28.0	22.3	22.3	22.3	22.3
67.5°	16.9	16.9	16.9	16.9	22.3	22.3	16.9	16.9	16.9	16.9	16.9
70°	11.2	11.2	11.2	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9
72.5°	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
75°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
77.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
80°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7	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°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
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°	8787.6	8787.6	8787.6	8787.6	8787.6	8787.6	8787.6	8787.6
2.5°	8787.6	8692.6	8703.8	8754.2	8726.1	8754.2	8748.7	8748.7
5°	8692.6	8664.8	8620.2	8603.3	8636.8	8709.5	8698.3	8653.7
7.5°	8514.0	8441.6	8491.7	8514.0	8486.2	8530.9	8553.2	8458.2
10°	8301.9	8274.1	8262.9	8274.1	8262.9	8307.6	8251.8	8251.8
12.5°	8000.5	7955.8	7955.8	8022.8	7983.6	7950.1	7994.8	7989.3
15°	7699.1	7609.5	7609.5	7631.9	7648.7	7626.4	7631.9	7576.0
17.5°	7252.3	7224.5	7185.3	7246.8	7263.5	7241.1	7258.0	7230.0
20°	6833.5	6833.5	6761.1	6788.9	6811.2	6828.1	6839.2	6794.6
22.5°	6297.7	6308.8	6258.5	6314.3	6331.2	6275.4	6286.5	6275.4
25°	5806.3	5800.8	5761.6	5739.3	5750.4	5728.1	5722.6	5638.8
27.5°	5264.7	5208.9	5125.3	5147.6	5052.6	4974.4	4974.4	4846.0
30°	4678.5	4583.7	4472.1	4360.2	4276.6	4187.3	4136.9	4064.5
32.5°	3991.8	3863.5	3723.9	3573.1	3478.3	3344.3	3271.6	3310.8
35°	3310.8	3120.8	2931.0	2780.4	2635.1	2556.9	2467.6	2478.8
37.5°	2651.9	2384.0	2216.6	2054.6	1931.8	1831.3	1792.1	1781.0
40°	1937.2	1725.1	1557.7	1440.3	1356.7	1278.6	1233.9	1217.1
42.5°	1339.9	1189.3	1055.1	960.3	904.5	854.1	831.8	826.3
45°	871.0	781.7	692.4	625.4	580.7	547.2	541.6	535.9
47.5°	547.2	502.4	446.6	396.4	357.2	334.9	318.3	318.3
50°	312.6	295.9	267.9	240.1	217.8	206.6	189.8	184.3
52.5°	167.5	167.5	156.3	134.0	117.3	106.2	106.2	100.5
55°	89.3	89.3	83.8	83.8	78.1	78.1	78.1	72.7
57.5°	55.8	55.8	61.5	61.5	55.8	55.8	55.8	55.8
60°	39.2	44.7	44.7	44.7	44.7	44.7	44.7	44.7
62.5°	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
65°	22.3	28.0	28.0	28.0	28.0	22.3	22.3	22.3
67.5°	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9
70°	16.9	16.9	16.9	16.9	16.9	11.2	11.2	11.2
72.5°	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
75°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
77.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
80°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
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°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)