

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 FEU4C559027 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 FEU4C559027 F4LC-SQ-LI
 Description: 4 INCH 5500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

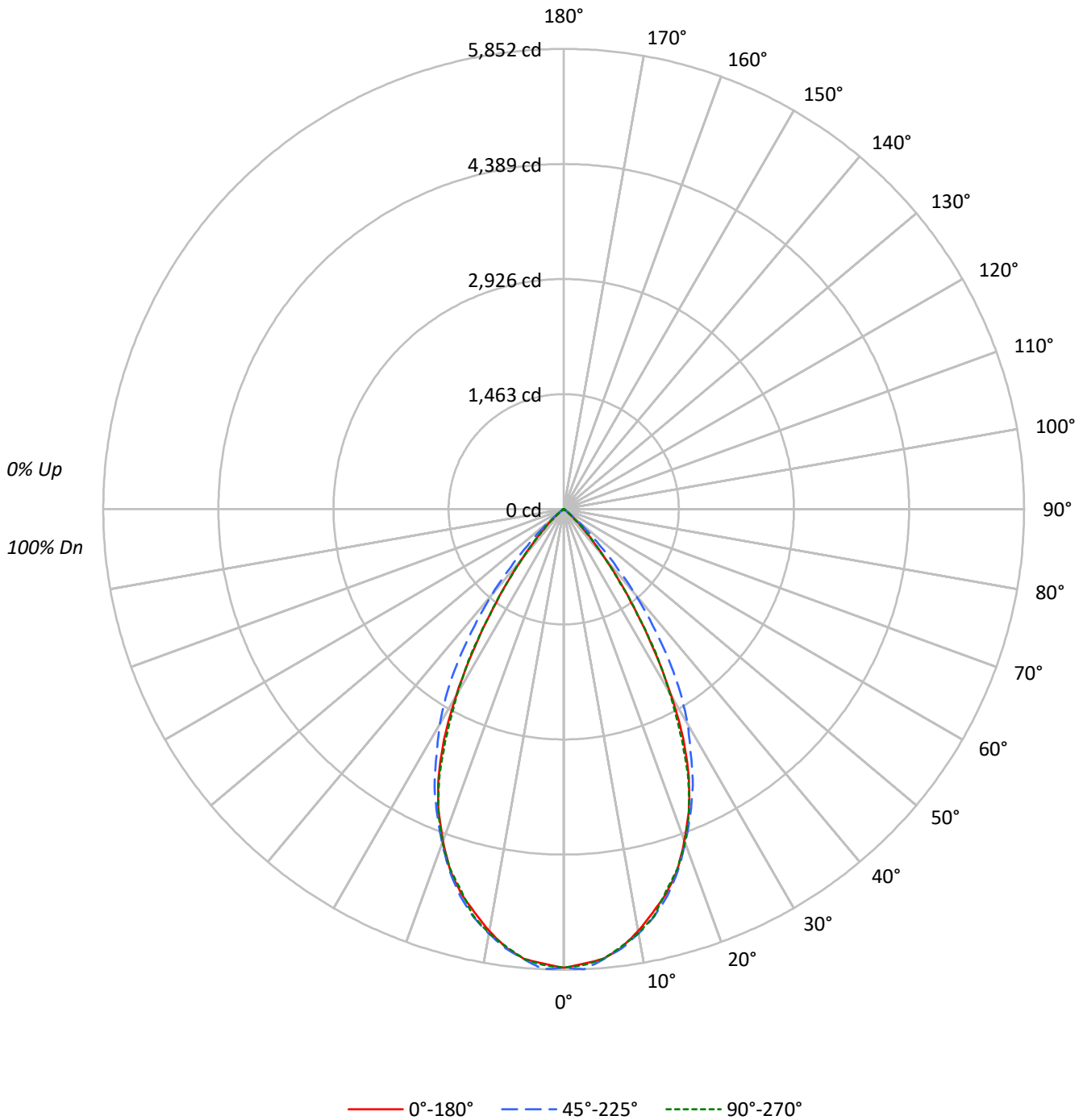
Lumens per Lamp: N/A
 Luminaire Lumens: 5379.0 lumens
 Efficiency: N/A
 Efficacy: 84.2 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	562173	562173	562173
5°	555720	556436	555720
10°	533487	536759	536034
15°	504358	508054	501761
20°	460290	463699	462569
25°	400793	413399	398025
30°	304767	350547	300243
35°	191847	272510	193590
40°	103499	179968	101635
45°	49001	88901	48483
50°	18343	33339	18343
55°	8714	10598	8108
60°	5712	5017	5712
65°	3379	3379	3379
70°	2088	3160	2088
75°	1417	1417	1417
80°	2111	2111	2111
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	540.2	10.0
10°-20°	1415.7	26.3
20°-30°	1729.5	32.2
30°-40°	1209.6	22.5
40°-50°	396.4	7.4
50°-60°	63.0	1.2
60°-70°	17.2	0.3
70°-80°	5.8	0.1
80°-90°	1.6	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°	3685.4	68.5
0°-40°	4895.0	91.0
0°-60°	5354.4	99.5
0°-90°	5379.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5379.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5826	5826	5826	5826	5826	
5°	5738	5739	5745	5710	5738	538
15°	5049	5069	5086	5053	5023	1408
25°	3765	3822	3883	3813	3739	1691
35°	1629	1923	2314	1893	1644	1039
45°	359	442	652	437	355	301
55°	52	56	63	56	48	51
65°	15	19	15	19	15	16
75°	4	4	4	4	4	5
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°	5826.3	5826.3	5826.3	5826.3	5826.3	5826.3	5826.3	5826.3	5826.3	5826.3	5826.3
2.5°	5781.9	5822.7	5811.5	5837.5	5837.5	5807.9	5815.3	5826.3	5841.1	5852.3	5763.3
5°	5737.5	5774.5	5741.1	5778.1	5755.9	5722.7	5778.1	5748.5	5767.1	5744.9	5759.7
7.5°	5619.0	5678.3	5611.6	5656.1	5641.3	5622.7	5644.9	5637.5	5648.7	5630.1	5589.4
10°	5445.0	5493.2	5448.8	5511.7	5482.0	5463.6	5482.0	5500.6	5496.8	5478.4	5500.6
12.5°	5245.2	5300.6	5278.4	5315.4	5282.2	5282.2	5326.6	5315.4	5319.2	5304.4	5330.2
15°	5049.0	5089.8	5056.4	5104.6	5089.8	5049.0	5067.4	5067.4	5097.2	5086.0	5056.4
17.5°	4804.7	4838.0	4800.9	4812.1	4797.3	4789.9	4867.6	4815.7	4845.4	4823.1	4826.9
20°	4482.7	4497.5	4486.3	4515.9	4497.5	4519.7	4512.3	4504.9	4504.9	4515.9	4490.1
22.5°	4156.8	4156.8	4168.0	4175.4	4190.2	4168.0	4212.4	4175.4	4179.1	4205.0	4197.6
25°	3764.6	3753.4	3779.4	3816.4	3831.2	3812.6	3871.8	3842.2	3864.4	3883.0	3842.2
27.5°	3287.1	3287.1	3312.9	3375.9	3386.9	3409.1	3490.6	3490.6	3520.2	3494.3	3523.9
30°	2735.4	2776.2	2809.5	2890.9	2916.8	2965.0	3050.1	3090.9	3157.5	3146.3	3131.5
32.5°	2169.1	2224.7	2228.3	2313.5	2383.8	2465.2	2580.0	2676.2	2724.4	2757.6	2720.6
35°	1628.7	1662.0	1691.7	1750.9	1869.3	1976.7	2080.3	2206.1	2291.3	2313.5	2280.2
37.5°	1192.0	1199.4	1229.0	1284.4	1373.2	1477.0	1602.8	1739.7	1828.7	1861.9	1824.9
40°	821.7	829.1	843.9	892.1	966.1	1040.2	1140.2	1280.8	1362.2	1428.8	1380.6
42.5°	551.5	558.9	573.7	610.7	651.5	721.7	799.5	888.3	966.1	995.7	969.8
45°	359.1	359.1	366.5	392.4	414.6	470.1	525.7	581.1	632.9	651.5	632.9
47.5°	211.0	214.6	222.1	240.6	266.5	288.7	329.4	366.5	381.3	396.1	388.7
50°	122.2	122.2	133.2	144.4	162.8	177.6	192.4	207.2	214.6	222.1	214.6
52.5°	66.6	70.4	74.0	77.8	85.2	100.0	111.0	111.0	114.8	118.4	114.8
55°	51.8	51.8	51.8	51.8	55.6	55.6	55.6	59.2	59.2	63.0	59.2
57.5°	37.0	37.0	37.0	40.8	40.8	40.8	37.0	37.0	37.0	37.0	37.0
60°	29.6	29.6	29.6	29.6	29.6	29.6	29.6	26.0	26.0	26.0	26.0
62.5°	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2
65°	14.8	14.8	18.6	18.6	18.6	18.6	18.6	14.8	14.8	14.8	14.8
67.5°	11.2	11.2	11.2	11.2	14.8	14.8	11.2	11.2	11.2	11.2	11.2
70°	7.4	7.4	7.4	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
72.5°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
75°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
77.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
80°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	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°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
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°	5826.3	5826.3	5826.3	5826.3	5826.3	5826.3	5826.3	5826.3
2.5°	5826.3	5763.3	5770.7	5804.1	5785.5	5804.1	5800.5	5800.5
5°	5763.3	5744.9	5715.3	5704.1	5726.3	5774.5	5767.1	5737.5
7.5°	5644.9	5596.8	5630.1	5644.9	5626.4	5656.1	5670.9	5607.9
10°	5504.2	5485.8	5478.4	5485.8	5478.4	5508.0	5471.0	5471.0
12.5°	5304.4	5274.8	5274.8	5319.2	5293.2	5271.0	5300.6	5297.0
15°	5104.6	5045.2	5045.2	5060.0	5071.2	5056.4	5060.0	5023.0
17.5°	4808.3	4789.9	4763.9	4804.7	4815.7	4800.9	4812.1	4793.5
20°	4530.7	4530.7	4482.7	4501.1	4515.9	4527.1	4534.5	4504.9
22.5°	4175.4	4182.8	4149.4	4186.5	4197.6	4160.6	4168.0	4160.6
25°	3849.6	3846.0	3820.0	3805.2	3812.6	3797.8	3794.2	3738.6
27.5°	3490.6	3453.5	3398.1	3412.9	3349.9	3298.1	3298.1	3212.9
30°	3101.9	3039.0	2965.0	2890.9	2835.4	2776.2	2742.8	2694.8
32.5°	2646.6	2561.6	2469.0	2369.0	2306.1	2217.3	2169.1	2195.1
35°	2195.1	2069.1	1943.3	1843.5	1747.1	1695.3	1636.1	1643.5
37.5°	1758.3	1580.6	1469.6	1362.2	1280.8	1214.2	1188.2	1180.8
40°	1284.4	1143.8	1032.8	955.0	899.5	847.7	818.1	806.9
42.5°	888.3	788.5	699.5	636.7	599.7	566.3	551.5	547.9
45°	577.5	518.3	459.1	414.6	385.0	362.8	359.1	355.3
47.5°	362.8	333.1	296.1	262.8	236.9	222.1	211.0	211.0
50°	207.2	196.2	177.6	159.2	144.4	137.0	125.8	122.2
52.5°	111.0	111.0	103.6	88.8	77.8	70.4	70.4	66.6
55°	59.2	59.2	55.6	55.6	51.8	51.8	51.8	48.2
57.5°	37.0	37.0	40.8	40.8	37.0	37.0	37.0	37.0
60°	26.0	29.6	29.6	29.6	29.6	29.6	29.6	29.6
62.5°	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2
65°	14.8	18.6	18.6	18.6	18.6	14.8	14.8	14.8
67.5°	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
70°	11.2	11.2	11.2	11.2	11.2	7.4	7.4	7.4
72.5°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
75°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
77.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
80°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
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°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)