

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 FEU4C559030 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 FEU4C559030 F4LC-SQ-LI
 Description: 4 INCH 5500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

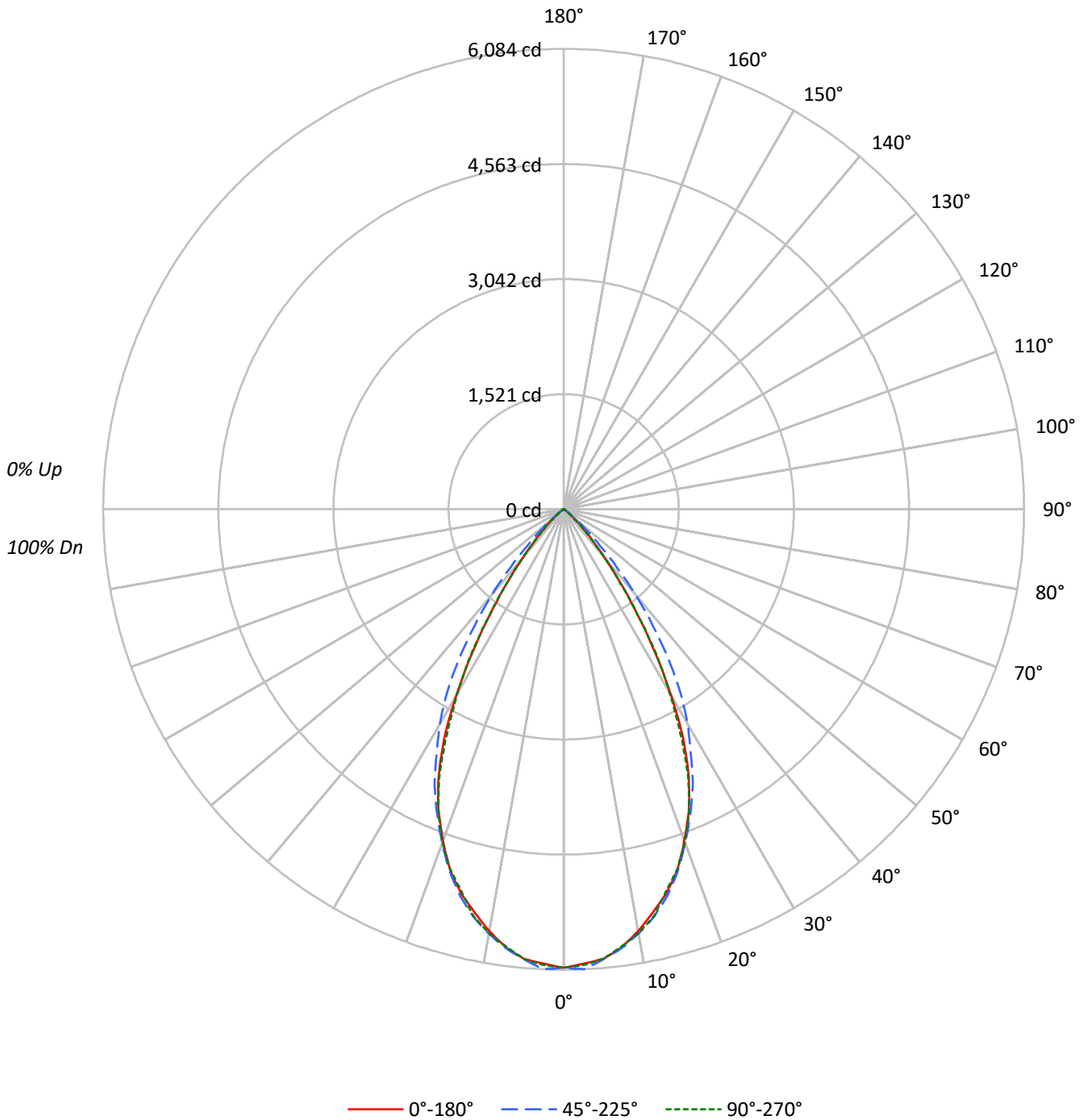
Lumens per Lamp: N/A
 Luminaire Lumens: 5592.0 lumens
 Efficiency: N/A
 Efficacy: 87.5 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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°	584433	584433	584433
5°	577726	578472	577726
10°	554611	558020	557266
15°	524327	528172	521629
20°	478516	482058	480888
25°	416656	429762	413782
30°	316844	364430	312131
35°	199444	283300	201246
40°	107605	187097	105666
45°	50939	92422	50393
50°	19064	34645	19064
55°	9067	11019	8428
60°	5944	5210	5944
65°	3516	3516	3516
70°	2172	3273	2172
75°	1454	1454	1454
80°	2167	2167	2167
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	561.6	10.0
10°-20°	1471.8	26.3
20°-30°	1797.9	32.2
30°-40°	1257.5	22.5
40°-50°	412.1	7.4
50°-60°	65.5	1.2
60°-70°	17.9	0.3
70°-80°	6.0	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°	3831.3	68.5
0°-40°	5088.8	91.0
0°-60°	5566.5	99.5
0°-90°	5592.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5592.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6057	6057	6057	6057	6057	
5°	5965	5967	5972	5936	5965	559
15°	5249	5270	5287	5253	5222	1464
25°	3914	3973	4037	3964	3887	1758
35°	1693	1999	2405	1968	1708	1080
45°	373	460	677	454	369	313
55°	54	58	66	58	50	53
65°	15	19	15	19	15	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°	6057.0	6057.0	6057.0	6057.0	6057.0	6057.0	6057.0	6057.0	6057.0	6057.0	6057.0
2.5°	6010.8	6053.2	6041.6	6068.6	6068.6	6037.8	6045.5	6057.0	6072.4	6084.0	5991.5
5°	5964.7	6003.1	5968.4	6006.9	5983.8	5949.3	6006.9	5976.1	5995.4	5972.4	5987.8
7.5°	5841.6	5903.1	5833.9	5880.0	5864.6	5845.3	5868.4	5860.7	5872.3	5853.0	5810.8
10°	5660.6	5710.7	5664.6	5729.9	5699.1	5680.0	5699.1	5718.4	5714.5	5695.4	5718.4
12.5°	5452.9	5510.5	5487.4	5525.9	5491.4	5491.4	5537.5	5525.9	5529.8	5514.4	5541.3
15°	5248.9	5291.3	5256.6	5306.7	5291.3	5248.9	5268.1	5268.1	5299.0	5287.4	5256.6
17.5°	4995.0	5029.5	4991.1	5002.7	4987.3	4979.6	5060.3	5006.4	5037.2	5014.1	5018.1
20°	4660.2	4675.6	4663.9	4694.7	4675.6	4698.7	4691.0	4683.3	4683.3	4694.7	4667.9
22.5°	4321.5	4321.5	4333.1	4340.8	4356.2	4333.1	4379.2	4340.8	4344.5	4371.5	4363.9
25°	3913.6	3902.0	3929.0	3967.5	3982.9	3963.6	4025.1	3994.4	4017.4	4036.7	3994.4
27.5°	3417.2	3417.2	3444.1	3509.6	3521.0	3544.1	3628.8	3628.8	3659.6	3632.7	3663.5
30°	2843.8	2886.1	2920.7	3005.3	3032.4	3082.4	3170.9	3213.3	3282.5	3270.9	3255.5
32.5°	2255.0	2312.8	2316.6	2405.1	2478.2	2562.8	2682.2	2782.2	2832.3	2866.8	2828.4
35°	1693.2	1727.9	1758.6	1820.2	1943.3	2055.0	2162.7	2293.5	2382.1	2405.1	2370.4
37.5°	1239.2	1246.9	1277.6	1335.3	1427.6	1535.5	1666.3	1808.6	1901.1	1935.6	1897.1
40°	854.3	862.0	877.4	927.4	1004.4	1081.3	1185.3	1331.5	1416.1	1485.4	1435.3
42.5°	573.3	581.0	596.4	634.9	677.3	750.3	831.2	923.5	1004.4	1035.2	1008.2
45°	373.3	373.3	381.0	408.0	431.1	488.7	546.5	604.1	658.0	677.3	658.0
47.5°	219.4	223.1	230.8	250.2	277.0	300.1	342.5	381.0	396.4	411.7	404.1
50°	127.0	127.0	138.5	150.1	169.3	184.7	200.1	215.5	223.1	230.8	223.1
52.5°	69.3	73.2	76.9	80.9	88.6	104.0	115.4	115.4	119.3	123.1	119.3
55°	53.9	53.9	53.9	53.9	57.8	57.8	57.8	61.6	61.6	65.5	61.6
57.5°	38.5	38.5	38.5	42.4	42.4	42.4	38.5	38.5	38.5	38.5	38.5
60°	30.8	30.8	30.8	30.8	30.8	30.8	30.8	27.0	27.0	27.0	27.0
62.5°	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1
65°	15.4	15.4	19.3	19.3	19.3	19.3	19.3	15.4	15.4	15.4	15.4
67.5°	11.6	11.6	11.6	11.6	15.4	15.4	11.6	11.6	11.6	11.6	11.6
70°	7.7	7.7	7.7	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
72.5°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
75°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
77.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
80°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	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°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
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°	6057.0	6057.0	6057.0	6057.0	6057.0	6057.0	6057.0	6057.0
2.5°	6057.0	5991.5	5999.2	6033.9	6014.6	6033.9	6030.2	6030.2
5°	5991.5	5972.4	5941.6	5930.0	5953.1	6003.1	5995.4	5964.7
7.5°	5868.4	5818.5	5853.0	5868.4	5849.2	5880.0	5895.4	5829.9
10°	5722.2	5703.0	5695.4	5703.0	5695.4	5726.1	5687.7	5687.7
12.5°	5514.4	5483.7	5483.7	5529.8	5502.8	5479.7	5510.5	5506.8
15°	5306.7	5245.0	5245.0	5260.4	5272.0	5256.6	5260.4	5221.9
17.5°	4998.7	4979.6	4952.6	4995.0	5006.4	4991.1	5002.7	4983.4
20°	4710.1	4710.1	4660.2	4679.3	4694.7	4706.3	4714.0	4683.3
22.5°	4340.8	4348.5	4313.8	4352.2	4363.9	4325.4	4333.1	4325.4
25°	4002.0	3998.3	3971.3	3955.9	3963.6	3948.2	3944.4	3886.6
27.5°	3628.8	3590.3	3532.7	3548.1	3482.6	3428.7	3428.7	3340.1
30°	3224.7	3159.4	3082.4	3005.3	2947.7	2886.1	2851.4	2801.5
32.5°	2751.4	2663.0	2566.7	2462.8	2397.5	2305.1	2255.0	2282.0
35°	2282.0	2151.1	2020.3	1916.5	1816.3	1762.4	1700.9	1708.5
37.5°	1827.9	1643.2	1527.8	1416.1	1331.5	1262.2	1235.2	1227.5
40°	1335.3	1189.1	1073.6	992.8	935.1	881.3	850.5	838.9
42.5°	923.5	819.7	727.2	661.9	623.4	588.7	573.3	569.6
45°	600.3	538.8	477.2	431.1	400.3	377.2	373.3	369.3
47.5°	377.2	346.3	307.8	273.2	246.2	230.8	219.4	219.4
50°	215.5	204.0	184.7	165.5	150.1	142.4	130.8	127.0
52.5°	115.4	115.4	107.7	92.3	80.9	73.2	73.2	69.3
55°	61.6	61.6	57.8	57.8	53.9	53.9	53.9	50.1
57.5°	38.5	38.5	42.4	42.4	38.5	38.5	38.5	38.5
60°	27.0	30.8	30.8	30.8	30.8	30.8	30.8	30.8
62.5°	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1
65°	15.4	19.3	19.3	19.3	19.3	15.4	15.4	15.4
67.5°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
70°	11.6	11.6	11.6	11.6	11.6	7.7	7.7	7.7
72.5°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
75°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
77.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
80°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
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°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)