

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: **FLDSQ4C25D010 FEU4C259035 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: FLDSQ4C25D010 FEU4C259035 F4LC-SQ-LI
 Description: 4 INCH 2500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

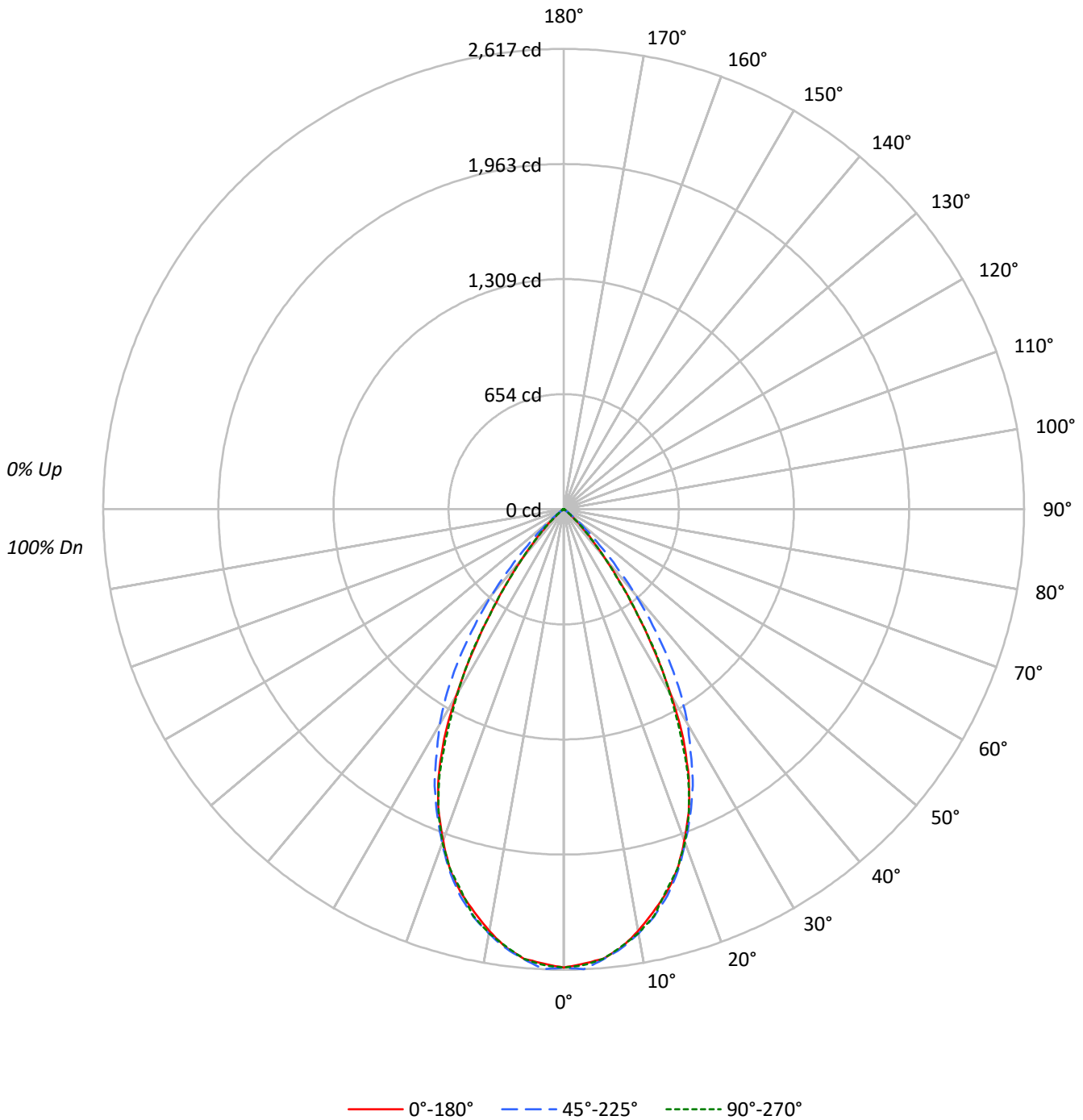
Lumens per Lamp: N/A
 Luminaire Lumens: 2405.0 lumens
 Efficiency: N/A
 Efficacy: 76.3 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 31.5
 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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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20				
RC	80					70					50					30				
RW	70	50	30	10	70	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°	251354	251354	251354
5°	248468	248788	248468
10°	238526	239986	239662
15°	225498	227156	224339
20°	205794	207324	206821
25°	179200	184832	177965
30°	136261	156729	134245
35°	85776	121843	86553
40°	46277	80462	45445
45°	21901	39750	21669
50°	8196	14906	8196
55°	3903	4744	3617
60°	2547	2239	2547
65°	1507	1507	1507
70°	931	1411	931
75°	634	634	634
80°	945	945	945
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.5	10.0
10°-20°	633.0	26.3
20°-30°	773.3	32.2
30°-40°	540.8	22.5
40°-50°	177.2	7.4
50°-60°	28.2	1.2
60°-70°	7.7	0.3
70°-80°	2.6	0.1
80°-90°	0.7	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°	1647.8	68.5
0°-40°	2188.6	91.0
0°-60°	2394.0	99.5
0°-90°	2405.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2405.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2605	2605	2605	2605	2605	
5°	2565	2566	2569	2553	2565	241
15°	2257	2267	2274	2259	2246	630
25°	1683	1709	1736	1705	1672	756
35°	728	860	1034	847	735	465
45°	160	198	291	195	159	135
55°	23	25	28	25	22	23
65°	7	8	7	8	7	7
75°	2	2	2	2	2	2
85°	0	0	0	0	0	1
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°	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0
2.5°	2585.1	2603.4	2598.4	2610.0	2610.0	2596.7	2600.1	2605.0	2611.6	2616.6	2576.8
5°	2565.3	2581.8	2566.9	2583.4	2573.5	2558.7	2583.4	2570.2	2578.5	2568.6	2575.2
7.5°	2512.3	2538.8	2509.0	2528.9	2522.3	2513.9	2523.9	2520.6	2525.6	2517.3	2499.1
10°	2434.5	2456.1	2436.2	2464.3	2451.1	2442.8	2451.1	2459.4	2457.7	2449.4	2459.4
12.5°	2345.2	2370.0	2360.0	2376.6	2361.7	2361.7	2381.6	2376.6	2378.3	2371.6	2383.2
15°	2257.4	2275.7	2260.8	2282.3	2275.7	2257.4	2265.7	2265.7	2279.0	2274.0	2260.8
17.5°	2148.2	2163.1	2146.5	2151.5	2144.9	2141.6	2176.3	2153.2	2166.4	2156.5	2158.2
20°	2004.2	2010.9	2005.9	2019.1	2010.9	2020.8	2017.5	2014.2	2014.2	2019.1	2007.6
22.5°	1858.6	1858.6	1863.6	1866.9	1873.5	1863.6	1883.4	1866.9	1868.5	1880.1	1876.8
25°	1683.2	1678.2	1689.8	1706.3	1713.0	1704.6	1731.1	1717.9	1727.8	1736.1	1717.9
27.5°	1469.7	1469.7	1481.2	1509.4	1514.3	1524.3	1560.7	1560.7	1573.9	1562.3	1575.6
30°	1223.0	1241.3	1256.1	1292.5	1304.1	1325.7	1363.7	1382.0	1411.7	1406.7	1400.1
32.5°	969.8	994.7	996.3	1034.4	1065.8	1102.2	1153.5	1196.6	1218.1	1233.0	1216.4
35°	728.2	743.1	756.4	782.8	835.8	883.8	930.1	986.4	1024.5	1034.4	1019.5
37.5°	532.9	536.2	549.5	574.3	614.0	660.4	716.6	777.8	817.6	832.5	815.9
40°	367.4	370.7	377.3	398.9	432.0	465.1	509.8	572.6	609.1	638.8	617.3
42.5°	246.6	249.9	256.5	273.1	291.3	322.7	357.5	397.2	432.0	445.2	433.6
45°	160.5	160.5	163.8	175.5	185.4	210.2	235.0	259.8	283.0	291.3	283.0
47.5°	94.3	96.0	99.3	107.6	119.1	129.1	147.3	163.8	170.5	177.1	173.8
50°	54.6	54.6	59.6	64.6	72.8	79.4	86.0	92.7	96.0	99.3	96.0
52.5°	29.8	31.5	33.1	34.8	38.1	44.7	49.6	49.6	51.3	52.9	51.3
55°	23.2	23.2	23.2	23.2	24.9	24.9	24.9	26.5	26.5	28.2	26.5
57.5°	16.5	16.5	16.5	18.2	18.2	18.2	16.5	16.5	16.5	16.5	16.5
60°	13.2	13.2	13.2	13.2	13.2	13.2	13.2	11.6	11.6	11.6	11.6
62.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
65°	6.6	6.6	8.3	8.3	8.3	8.3	8.3	6.6	6.6	6.6	6.6
67.5°	5.0	5.0	5.0	5.0	6.6	6.6	5.0	5.0	5.0	5.0	5.0
70°	3.3	3.3	3.3	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
72.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
75°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	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°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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°	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0
2.5°	2605.0	2576.8	2580.1	2595.1	2586.8	2595.1	2593.4	2593.4
5°	2576.8	2568.6	2555.3	2550.4	2560.3	2581.8	2578.5	2565.3
7.5°	2523.9	2502.4	2517.3	2523.9	2515.6	2528.9	2535.5	2507.3
10°	2461.0	2452.8	2449.4	2452.8	2449.4	2462.7	2446.1	2446.1
12.5°	2371.6	2358.4	2358.4	2378.3	2366.7	2356.7	2370.0	2368.3
15°	2282.3	2255.8	2255.8	2262.4	2267.4	2260.8	2262.4	2245.8
17.5°	2149.9	2141.6	2130.0	2148.2	2153.2	2146.5	2151.5	2143.2
20°	2025.7	2025.7	2004.2	2012.5	2019.1	2024.1	2027.4	2014.2
22.5°	1866.9	1870.2	1855.3	1871.8	1876.8	1860.3	1863.6	1860.3
25°	1721.2	1719.6	1708.0	1701.3	1704.6	1698.0	1696.4	1671.6
27.5°	1560.7	1544.1	1519.3	1525.9	1497.8	1474.6	1474.6	1436.5
30°	1386.9	1358.8	1325.7	1292.5	1267.7	1241.3	1226.3	1204.9
32.5°	1183.3	1145.3	1103.9	1059.2	1031.1	991.4	969.8	981.5
35°	981.5	925.1	868.9	824.2	781.1	758.0	731.5	734.8
37.5°	786.1	706.7	657.1	609.1	572.6	542.9	531.3	527.9
40°	574.3	511.4	461.8	427.0	402.2	379.0	365.8	360.8
42.5°	397.2	352.5	312.8	284.7	268.1	253.2	246.6	245.0
45°	258.2	231.7	205.2	185.4	172.2	162.2	160.5	158.8
47.5°	162.2	148.9	132.4	117.5	105.9	99.3	94.3	94.3
50°	92.7	87.7	79.4	71.2	64.6	61.3	56.3	54.6
52.5°	49.6	49.6	46.3	39.7	34.8	31.5	31.5	29.8
55°	26.5	26.5	24.9	24.9	23.2	23.2	23.2	21.5
57.5°	16.5	16.5	18.2	18.2	16.5	16.5	16.5	16.5
60°	11.6	13.2	13.2	13.2	13.2	13.2	13.2	13.2
62.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
65°	6.6	8.3	8.3	8.3	8.3	6.6	6.6	6.6
67.5°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
70°	5.0	5.0	5.0	5.0	5.0	3.3	3.3	3.3
72.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
75°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)