

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 FEU4C559050 F4LC-DFSSQ-MW**

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 FEU4C559050 F4LC-DFSSQ-MW
 Description: 4 INCH 5500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-DFSSQ TRIM WITH MW FINISH
 Light Source: -
 Ballast/Driver: -

Summary

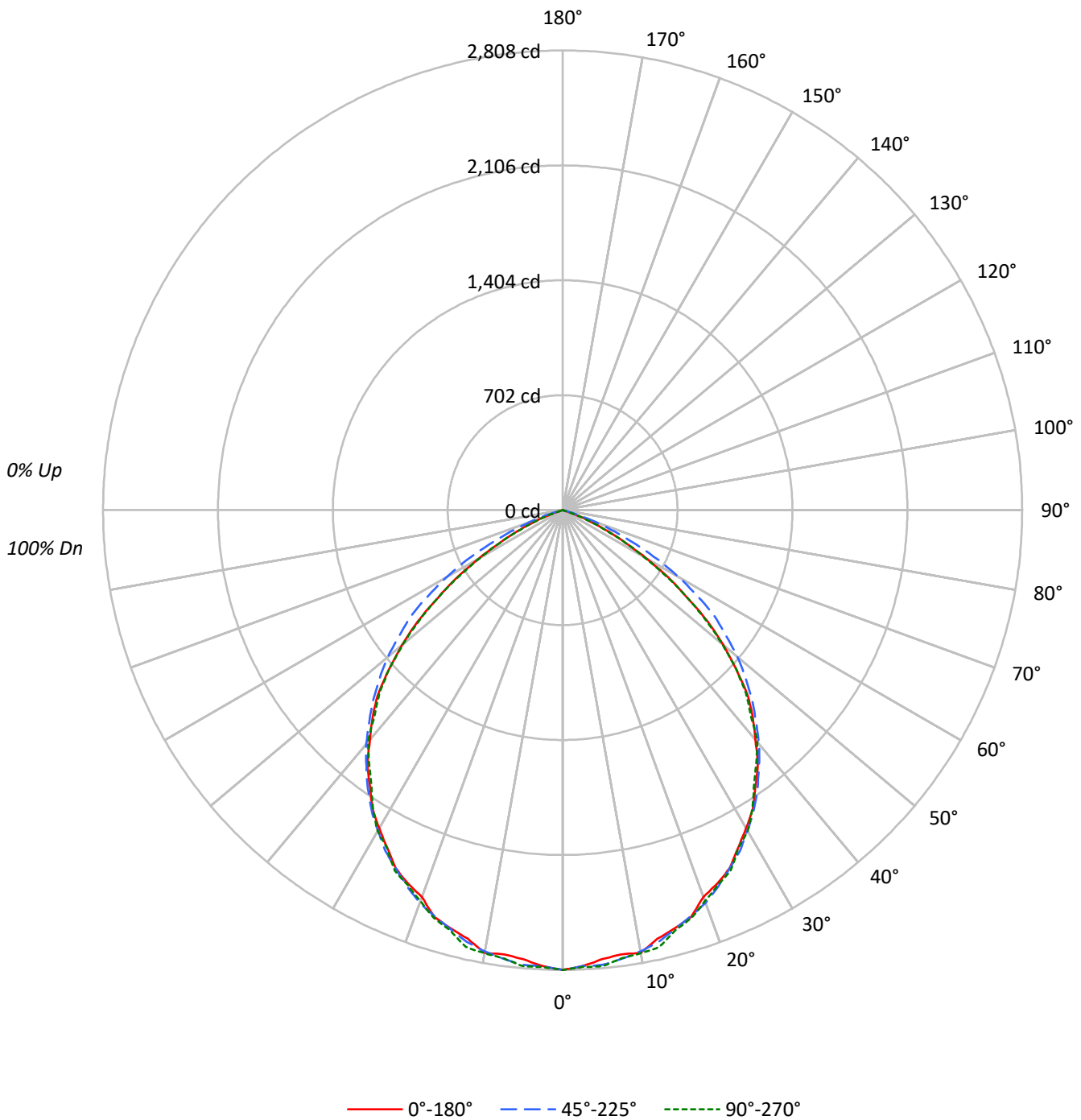
Lumens per Lamp: N/A
 Luminaire Lumens: 5999.0 lumens
 Efficiency: N/A
 Efficacy: 93.9 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	108	104	101	109	105	102	100	101	99	96	97	95	94	94	92	91	89
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	270970	270970	270970
5°	266600	270068	270843
10°	268899	268115	269281
15°	264196	264586	265375
20°	258048	262145	260924
25°	256929	256929	258632
30°	249772	251543	252000
35°	241978	244334	240094
40°	230628	235137	233122
45°	218261	223174	216092
50°	192216	208983	191030
55°	155674	191236	156364
60°	113915	158570	111618
65°	69224	112923	67398
70°	26998	60796	25898
75°	2982	16366	2982
80°	2278	2278	2278
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	265.1	4.4
10°-20°	750.1	12.5
20°-30°	1113.0	18.6
30°-40°	1289.6	21.5
40°-50°	1236.5	20.6
50°-60°	909.1	15.2
60°-70°	392.7	6.5
70°-80°	42.4	0.7
80°-90°	0.6	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°	2128.2	35.5
0°-40°	3417.8	57.0
0°-60°	5563.4	92.7
0°-90°	5999.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5999.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2808	2808	2808	2808	2808	
5°	2752	2780	2788	2792	2796	263
15°	2645	2661	2649	2653	2657	745
25°	2413	2409	2413	2417	2429	1105
35°	2054	2066	2074	2070	2038	1285
45°	1600	1604	1636	1612	1584	1216
55°	925	1021	1137	1017	930	833
65°	303	379	495	375	295	312
75°	8	12	44	8	8	25
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°	22.5°	25°	30°	35°	40°	45°
0°	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3
2.5°	2788.3	2820.2	2824.3	2804.3	2796.3	2784.4	2812.2	2792.4	2800.3	2792.4	2788.3
5°	2752.5	2788.3	2792.4	2792.4	2784.4	2780.3	2792.4	2788.3	2784.4	2776.4	2788.3
7.5°	2736.5	2756.4	2776.4	2752.5	2764.4	2760.5	2788.3	2776.4	2772.4	2772.4	2764.4
10°	2744.5	2740.5	2756.4	2732.5	2740.5	2732.5	2756.4	2756.4	2748.4	2740.5	2736.5
12.5°	2680.6	2712.5	2712.5	2708.6	2700.6	2688.5	2712.5	2728.6	2704.5	2704.5	2700.6
15°	2644.8	2652.7	2656.6	2656.6	2652.7	2660.7	2672.6	2656.6	2660.7	2640.7	2648.7
17.5°	2604.9	2588.9	2600.8	2592.8	2596.9	2604.9	2620.8	2620.8	2596.9	2592.8	2600.8
20°	2513.1	2560.9	2565.0	2541.1	2545.0	2545.0	2573.0	2549.0	2565.0	2545.0	2553.0
22.5°	2469.1	2501.0	2505.1	2473.2	2493.1	2469.1	2497.1	2461.2	2501.0	2473.2	2485.1
25°	2413.3	2409.4	2421.3	2405.3	2409.4	2409.4	2429.3	2413.3	2425.4	2409.4	2413.3
27.5°	2321.7	2353.6	2349.5	2333.6	2341.5	2337.6	2377.5	2333.6	2357.5	2337.6	2345.6
30°	2241.8	2269.8	2261.8	2245.8	2245.8	2233.8	2277.7	2265.7	2261.8	2261.8	2257.7
32.5°	2162.0	2166.1	2158.1	2162.0	2166.1	2150.1	2185.9	2170.0	2166.1	2170.0	2174.1
35°	2054.3	2054.3	2062.3	2050.4	2066.3	2066.3	2098.2	2078.2	2074.3	2062.3	2074.3
37.5°	1958.6	1946.7	1950.6	1950.6	1958.6	1966.6	1982.5	1974.5	1974.5	1962.6	1970.6
40°	1831.0	1823.0	1834.9	1834.9	1846.9	1846.9	1862.9	1854.9	1866.8	1866.8	1866.8
42.5°	1719.3	1719.3	1711.4	1723.2	1727.3	1723.2	1751.2	1747.2	1751.2	1743.3	1747.2
45°	1599.5	1599.5	1591.6	1587.7	1607.5	1603.6	1635.5	1623.5	1639.4	1631.4	1635.5
47.5°	1436.0	1456.0	1444.0	1456.0	1479.9	1484.0	1503.8	1495.9	1511.8	1499.9	1515.9
50°	1280.5	1280.5	1292.4	1308.4	1332.3	1336.4	1360.3	1376.2	1384.2	1388.1	1392.2
52.5°	1117.0	1112.9	1125.0	1144.8	1164.8	1180.8	1204.7	1228.6	1244.6	1268.5	1256.5
55°	925.4	933.4	945.4	969.4	1001.3	1021.1	1041.1	1073.0	1101.0	1112.9	1136.8
57.5°	761.9	753.9	761.9	793.8	829.7	845.7	873.7	905.6	945.4	969.4	977.3
60°	590.3	594.4	602.4	630.3	658.2	682.1	694.1	745.9	781.9	805.8	821.7
62.5°	434.9	442.9	450.8	474.8	502.6	522.6	542.5	586.4	618.3	642.2	658.2
65°	303.2	307.1	319.2	331.0	359.0	378.9	394.8	430.8	462.7	482.7	494.6
67.5°	187.5	191.4	199.4	215.5	235.3	251.3	267.2	291.2	319.2	339.0	343.1
70°	95.7	99.8	103.7	115.7	131.7	139.6	151.5	171.5	191.4	207.4	215.5
72.5°	31.9	31.9	36.0	43.9	51.9	59.9	63.8	83.8	99.8	107.7	111.7
75°	8.0	8.0	8.0	8.0	8.0	12.0	12.0	23.9	31.9	39.9	43.9
77.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	8.0	8.0
80°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
82.5°	0.0	0.0	0.0	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	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3	2808.3
2.5°	2808.3	2800.3	2796.3	2800.3	2800.3	2796.3	2808.3	2824.3	2844.1	2792.4
5°	2804.3	2796.3	2804.3	2780.3	2792.4	2784.4	2800.3	2796.3	2812.2	2796.3
7.5°	2792.4	2776.4	2780.3	2768.4	2784.4	2764.4	2776.4	2800.3	2784.4	2760.5
10°	2752.5	2744.5	2772.4	2732.5	2724.5	2740.5	2772.4	2748.4	2740.5	2748.4
12.5°	2712.5	2712.5	2724.5	2692.6	2696.5	2704.5	2720.4	2704.5	2712.5	2732.5
15°	2668.7	2660.7	2680.6	2656.6	2652.7	2644.8	2660.7	2660.7	2668.7	2656.6
17.5°	2616.8	2604.9	2604.9	2596.9	2592.8	2612.9	2620.8	2624.7	2628.8	2612.9
20°	2553.0	2549.0	2560.9	2549.0	2553.0	2557.0	2557.0	2549.0	2584.9	2541.1
22.5°	2485.1	2497.1	2481.2	2473.2	2481.2	2489.2	2489.2	2493.1	2485.1	2477.1
25°	2417.4	2425.4	2429.3	2405.3	2417.4	2405.3	2433.3	2437.2	2421.3	2429.3
27.5°	2357.5	2345.6	2341.5	2325.6	2333.6	2329.7	2333.6	2333.6	2357.5	2325.6
30°	2265.7	2253.8	2257.7	2245.8	2249.8	2245.8	2249.8	2249.8	2265.7	2261.8
32.5°	2178.0	2166.1	2170.0	2158.1	2158.1	2162.0	2154.0	2154.0	2166.1	2158.1
35°	2094.2	2066.3	2070.2	2066.3	2070.2	2054.3	2054.3	2050.4	2058.3	2038.3
37.5°	1974.5	1962.6	1958.6	1954.7	1958.6	1950.6	1958.6	1946.7	1958.6	1942.6
40°	1866.8	1858.8	1862.9	1839.0	1839.0	1842.9	1834.9	1831.0	1834.9	1850.8
42.5°	1759.2	1743.3	1735.3	1727.3	1731.2	1719.3	1715.3	1707.3	1715.3	1699.3
45°	1631.4	1631.4	1627.5	1607.5	1611.6	1611.6	1595.6	1579.7	1583.6	1583.6
47.5°	1515.9	1507.9	1503.8	1484.0	1479.9	1476.0	1459.9	1448.0	1448.0	1436.0
50°	1388.1	1380.2	1368.3	1348.3	1340.3	1316.4	1304.5	1288.5	1272.6	1272.6
52.5°	1268.5	1240.5	1224.6	1192.7	1180.8	1168.7	1136.8	1125.0	1112.9	1101.0
55°	1125.0	1101.0	1069.1	1033.2	1017.2	997.2	965.3	941.4	925.4	929.5
57.5°	985.3	945.4	913.5	865.7	845.7	833.6	801.7	769.8	753.9	753.9
60°	813.8	781.9	742.0	698.1	682.1	662.2	622.2	602.4	590.3	578.4
62.5°	650.2	626.3	590.3	534.5	522.6	502.6	474.8	450.8	438.8	438.8
65°	486.6	462.7	430.8	390.9	375.0	359.0	335.1	311.2	299.1	295.2
67.5°	343.1	315.1	287.3	255.4	243.3	235.3	211.4	195.5	187.5	183.4
70°	207.4	191.4	171.5	147.6	135.6	127.6	111.7	99.8	95.7	91.8
72.5°	107.7	95.7	79.8	63.8	55.8	47.9	39.9	31.9	28.0	28.0
75°	39.9	31.9	20.0	12.0	8.0	8.0	8.0	8.0	8.0	8.0
77.5°	8.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
80°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
82.5°	0.0	0.0	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	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)