

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: **FLDSQ4C75D010 FEU4C759027 F4LC-CSSQ-MMS**

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: FLDSQ4C75D010 FEU4C759027 F4LC-CSSQ-MMS
 Description: 4 INCH 7500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MMS FINISH
 Light Source: -
 Ballast/Driver: -

Summary

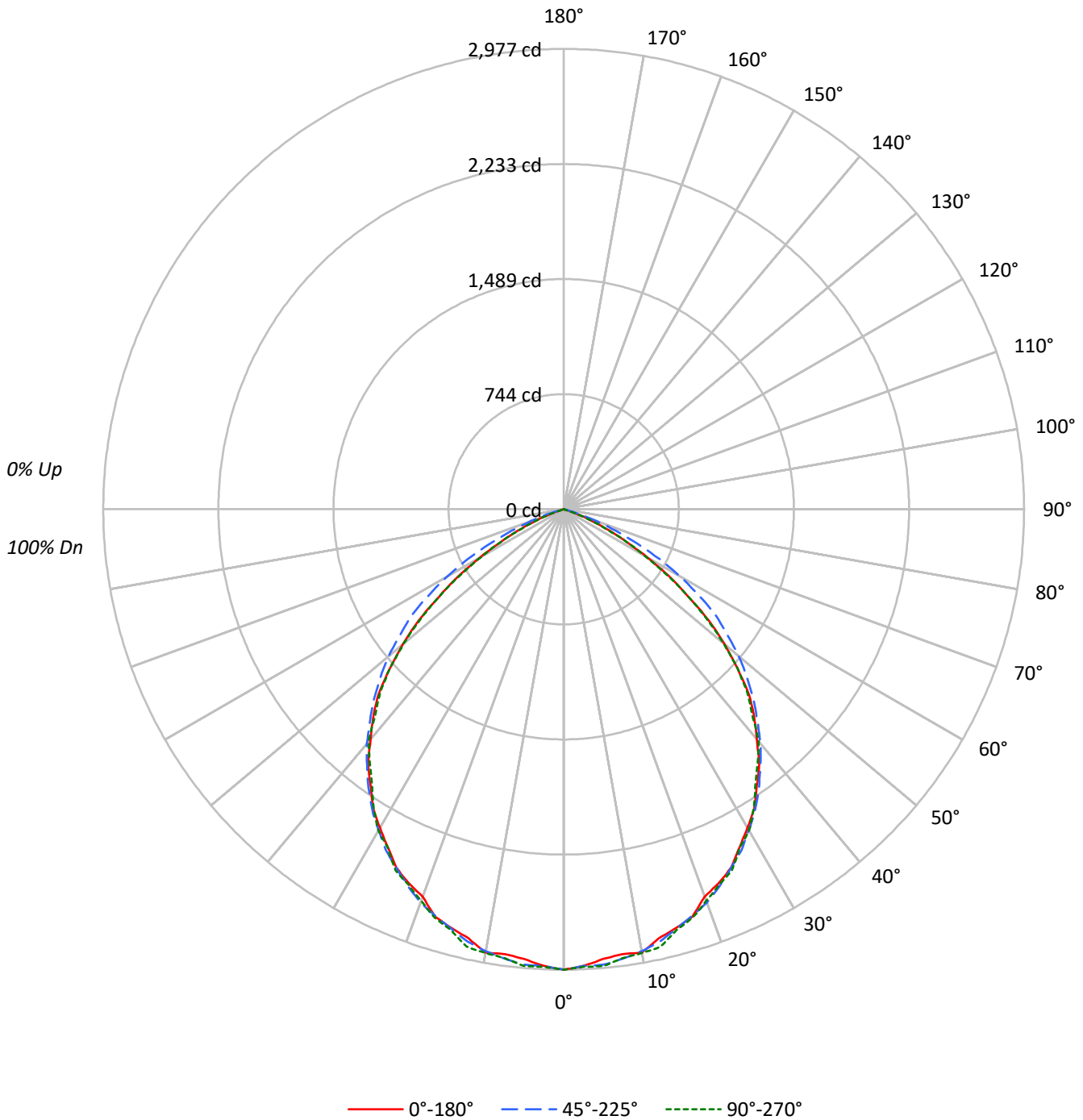
Lumens per Lamp: N/A
 Luminaire Lumens: 6360.0 lumens
 Efficiency: N/A
 Efficacy: 78.0 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 81.5
 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					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	111	108	104	101	109	105	102	100	101	99	96	97	95	94	94	92	91	89				89
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77				77
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67				67
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59				59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52				52
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46				46
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41				41
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37				37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33				33
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	31				31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	287276	287276	287276
5°	282640	286320	287134
10°	285085	284252	285487
15°	280089	280499	281348
20°	273574	277917	276624
25°	272387	272387	274197
30°	264802	266685	267164
35°	256537	259035	254547
40°	244508	249282	247153
45°	231402	236601	229096
50°	203789	221562	202513
55°	165044	202743	165767
60°	120765	168122	118334
65°	73402	119727	71462
70°	28635	64463	27450
75°	3169	17373	3169
80°	2389	2389	2389
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	281.0	4.4
10°-20°	795.2	12.5
20°-30°	1180.0	18.6
30°-40°	1367.2	21.5
40°-50°	1310.9	20.6
50°-60°	963.8	15.2
60°-70°	416.3	6.5
70°-80°	44.9	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°	2256.2	35.5
0°-40°	3623.5	57.0
0°-60°	5898.2	92.7
0°-90°	6360.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6360.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2977	2977	2977	2977	2977	
5°	2918	2948	2956	2960	2964	278
15°	2804	2821	2808	2812	2816	790
25°	2558	2554	2558	2563	2576	1171
35°	2178	2191	2199	2195	2161	1362
45°	1696	1700	1734	1709	1679	1289
55°	981	1083	1205	1078	985	883
65°	322	402	524	398	313	330
75°	8	13	47	8	8	26
85°	0	0	0	0	0	1
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3
2.5°	2956.1	2989.9	2994.2	2973.0	2964.5	2951.9	2981.5	2960.4	2968.9	2960.4	2956.1
5°	2918.1	2956.1	2960.4	2960.4	2951.9	2947.6	2960.4	2956.1	2951.9	2943.5	2956.1
7.5°	2901.2	2922.3	2943.5	2918.1	2930.7	2926.6	2956.1	2943.5	2939.2	2939.2	2930.7
10°	2909.7	2905.4	2922.3	2896.9	2905.4	2896.9	2922.3	2922.3	2913.8	2905.4	2901.2
12.5°	2841.9	2875.7	2875.7	2871.5	2863.1	2850.3	2875.7	2892.8	2867.2	2867.2	2863.1
15°	2803.9	2812.4	2816.5	2816.5	2812.4	2820.8	2833.4	2816.5	2820.8	2799.6	2808.0
17.5°	2761.6	2744.7	2757.3	2748.9	2753.2	2761.6	2778.5	2778.5	2753.2	2748.9	2757.3
20°	2664.3	2715.0	2719.4	2694.0	2698.1	2698.1	2727.8	2702.4	2719.4	2698.1	2706.6
22.5°	2617.7	2651.5	2655.9	2622.0	2643.1	2617.7	2647.4	2609.3	2651.5	2622.0	2634.6
25°	2558.5	2554.4	2567.0	2550.1	2554.4	2554.4	2575.5	2558.5	2571.3	2554.4	2558.5
27.5°	2461.4	2495.2	2490.9	2474.0	2482.4	2478.3	2520.6	2474.0	2499.4	2478.3	2486.8
30°	2376.7	2406.4	2397.9	2381.0	2381.0	2368.2	2414.8	2402.0	2397.9	2397.9	2393.6
32.5°	2292.1	2296.4	2288.0	2292.1	2296.4	2279.5	2317.5	2300.6	2296.4	2300.6	2304.9
35°	2177.9	2177.9	2186.4	2173.8	2190.7	2190.7	2224.5	2203.3	2199.1	2186.4	2199.1
37.5°	2076.4	2063.8	2068.0	2068.0	2076.4	2084.9	2101.8	2093.4	2093.4	2080.8	2089.2
40°	1941.2	1932.7	1945.3	1945.3	1958.1	1958.1	1975.0	1966.5	1979.1	1979.1	1979.1
42.5°	1822.8	1822.8	1814.3	1826.9	1831.2	1826.9	1856.6	1852.3	1856.6	1848.2	1852.3
45°	1695.8	1695.8	1687.3	1683.2	1704.3	1700.1	1733.9	1721.2	1738.1	1729.6	1733.9
47.5°	1522.4	1543.6	1530.8	1543.6	1569.0	1573.3	1594.3	1585.9	1602.8	1590.2	1607.1
50°	1357.6	1357.6	1370.2	1387.1	1412.5	1416.8	1442.2	1459.1	1467.5	1471.7	1476.0
52.5°	1184.2	1179.9	1192.6	1213.7	1234.9	1251.8	1277.2	1302.6	1319.5	1344.8	1332.1
55°	981.1	989.6	1002.3	1027.7	1061.5	1082.6	1103.8	1137.6	1167.3	1179.9	1205.2
57.5°	807.7	799.2	807.7	841.5	879.6	896.6	926.2	960.1	1002.3	1027.7	1036.1
60°	625.8	630.1	638.6	668.3	697.8	723.1	735.9	790.8	828.9	854.3	871.2
62.5°	461.0	469.5	478.0	503.3	532.8	554.0	575.1	621.7	655.5	680.9	697.8
65°	321.5	325.6	338.4	351.0	380.6	401.7	418.6	456.7	490.6	511.8	524.4
67.5°	198.8	202.9	211.4	228.5	249.5	266.4	283.3	308.7	338.4	359.4	363.7
70°	101.5	105.8	109.9	122.7	139.6	148.0	160.6	181.9	202.9	219.8	228.5
72.5°	33.8	33.8	38.1	46.6	55.0	63.5	67.6	88.9	105.8	114.2	118.4
75°	8.5	8.5	8.5	8.5	8.5	12.8	12.8	25.4	33.8	42.3	46.6
77.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	8.5	8.5
80°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
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°	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3	2977.3
2.5°	2977.3	2968.9	2964.5	2968.9	2968.9	2964.5	2977.3	2994.2	3015.3	2960.4
5°	2973.0	2964.5	2973.0	2947.6	2960.4	2951.9	2968.9	2964.5	2981.5	2964.5
7.5°	2960.4	2943.5	2947.6	2935.0	2951.9	2930.7	2943.5	2968.9	2951.9	2926.6
10°	2918.1	2909.7	2939.2	2896.9	2888.5	2905.4	2939.2	2913.8	2905.4	2913.8
12.5°	2875.7	2875.7	2888.5	2854.6	2858.8	2867.2	2884.1	2867.2	2875.7	2896.9
15°	2829.3	2820.8	2841.9	2816.5	2812.4	2803.9	2820.8	2820.8	2829.3	2816.5
17.5°	2774.2	2761.6	2761.6	2753.2	2748.9	2770.1	2778.5	2782.7	2787.0	2770.1
20°	2706.6	2702.4	2715.0	2702.4	2706.6	2710.9	2710.9	2702.4	2740.4	2694.0
22.5°	2634.6	2647.4	2630.5	2622.0	2630.5	2638.9	2638.9	2643.1	2634.6	2626.2
25°	2562.9	2571.3	2575.5	2550.1	2562.9	2550.1	2579.8	2583.9	2567.0	2575.5
27.5°	2499.4	2486.8	2482.4	2465.5	2474.0	2469.8	2474.0	2474.0	2499.4	2465.5
30°	2402.0	2389.4	2393.6	2381.0	2385.1	2381.0	2385.1	2385.1	2402.0	2397.9
32.5°	2309.0	2296.4	2300.6	2288.0	2288.0	2292.1	2283.7	2283.7	2296.4	2288.0
35°	2220.2	2190.7	2194.8	2190.7	2194.8	2177.9	2177.9	2173.8	2182.2	2161.0
37.5°	2093.4	2080.8	2076.4	2072.3	2076.4	2068.0	2076.4	2063.8	2076.4	2059.5
40°	1979.1	1970.7	1975.0	1949.6	1949.6	1953.8	1945.3	1941.2	1945.3	1962.2
42.5°	1865.1	1848.2	1839.7	1831.2	1835.4	1822.8	1818.5	1810.0	1818.5	1801.6
45°	1729.6	1729.6	1725.5	1704.3	1708.6	1708.6	1691.7	1674.7	1678.9	1678.9
47.5°	1607.1	1598.7	1594.3	1573.3	1569.0	1564.8	1547.8	1535.2	1535.2	1522.4
50°	1471.7	1463.2	1450.6	1429.4	1420.9	1395.6	1383.0	1366.1	1349.1	1349.1
52.5°	1344.8	1315.2	1298.3	1264.4	1251.8	1239.1	1205.2	1192.6	1179.9	1167.3
55°	1192.6	1167.3	1133.5	1095.3	1078.4	1057.2	1023.4	998.0	981.1	985.4
57.5°	1044.6	1002.3	968.5	917.8	896.6	883.8	850.0	816.2	799.2	799.2
60°	862.7	828.9	786.6	740.1	723.1	702.1	659.7	638.6	625.8	613.2
62.5°	689.3	664.0	625.8	566.6	554.0	532.8	503.3	478.0	465.2	465.2
65°	515.9	490.6	456.7	414.5	397.5	380.6	355.3	329.9	317.1	313.0
67.5°	363.7	334.1	304.5	270.7	258.0	249.5	224.1	207.2	198.8	194.5
70°	219.8	202.9	181.9	156.5	143.7	135.3	118.4	105.8	101.5	97.3
72.5°	114.2	101.5	84.5	67.6	59.2	50.7	42.3	33.8	29.7	29.7
75°	42.3	33.8	21.2	12.8	8.5	8.5	8.5	8.5	8.5	8.5
77.5°	8.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
80°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
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)