

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 FEU4C759030 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 FEU4C759030 F4LC-CSSQ-MMS
 Description: 4 INCH 7500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MMS FINISH
 Light Source: -
 Ballast/Driver: -

Summary

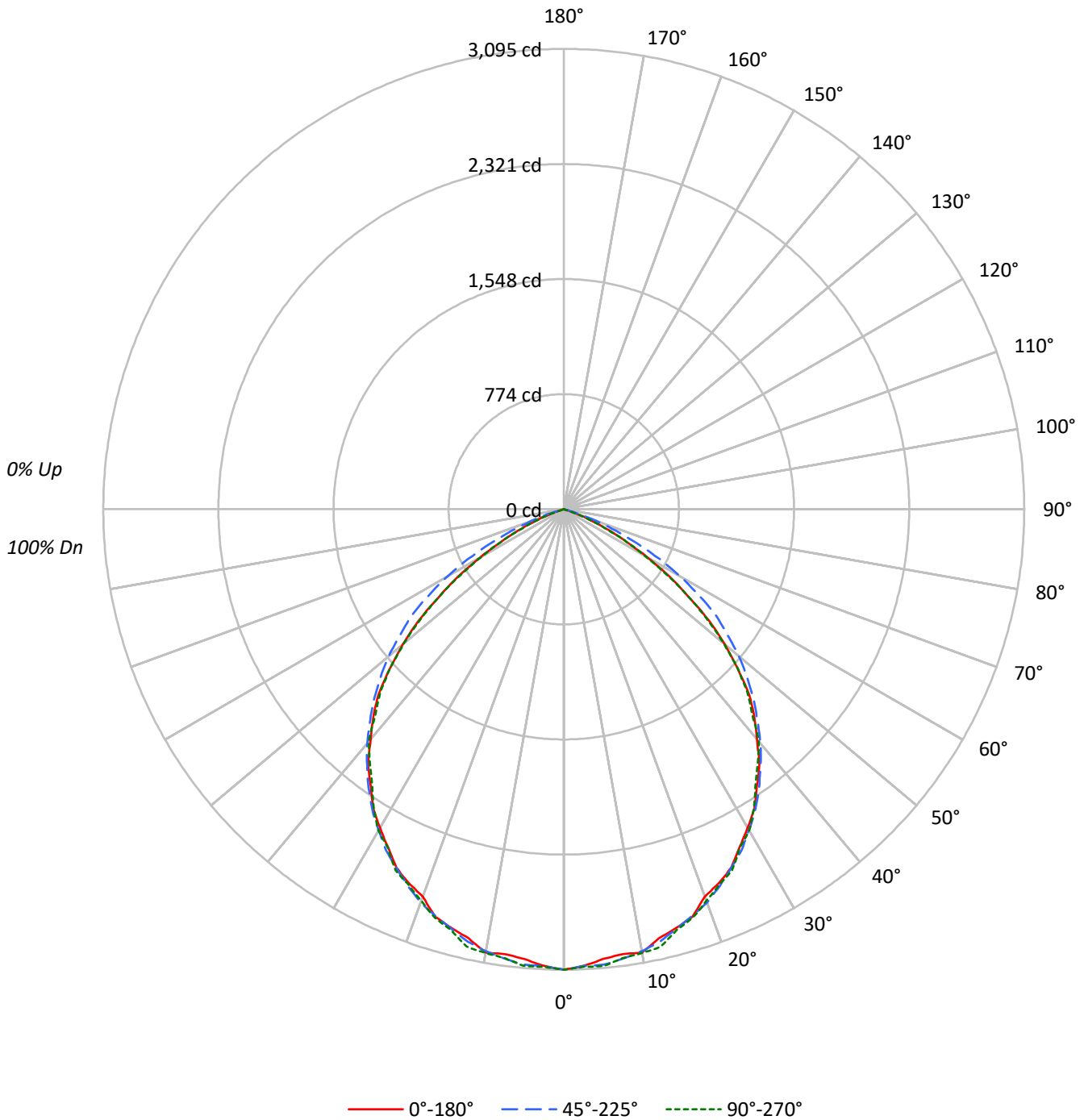
Lumens per Lamp: N/A
 Luminaire Lumens: 6612.0 lumens
 Efficiency: N/A
 Efficacy: 81.1 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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	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°	298662	298662	298662
5°	293846	297662	298515
10°	296382	295519	296803
15°	291187	291617	292496
20°	284417	288925	287580
25°	283183	283183	285057
30°	275286	277247	277748
35°	266703	269306	264630
40°	254194	259157	256953
45°	240572	245975	238170
50°	211865	230344	210544
55°	171588	210784	172345
60°	125551	174780	123023
65°	76302	124476	74293
70°	29763	67002	28550
75°	3281	18044	3281
80°	2500	2500	2500
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	292.2	4.4
10°-20°	826.8	12.5
20°-30°	1226.7	18.6
30°-40°	1421.4	21.5
40°-50°	1362.8	20.6
50°-60°	1002.0	15.2
60°-70°	432.8	6.5
70°-80°	46.7	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°	2345.6	35.5
0°-40°	3767.0	57.0
0°-60°	6131.9	92.7
0°-90°	6612.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6612.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3095	3095	3095	3095	3095	
5°	3034	3064	3073	3078	3082	289
15°	2915	2933	2919	2924	2928	822
25°	2660	2656	2660	2664	2678	1218
35°	2264	2278	2286	2282	2247	1416
45°	1763	1768	1803	1776	1745	1340
55°	1020	1126	1253	1121	1024	918
65°	334	418	545	413	325	344
75°	9	13	48	9	9	27
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°	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3
2.5°	3073.2	3108.4	3112.9	3090.8	3082.0	3068.9	3099.6	3077.7	3086.5	3077.7	3073.2
5°	3033.8	3073.2	3077.7	3077.7	3068.9	3064.4	3077.7	3073.2	3068.9	3060.1	3073.2
7.5°	3016.2	3038.1	3060.1	3033.8	3046.9	3042.5	3073.2	3060.1	3055.6	3055.6	3046.9
10°	3025.0	3020.5	3038.1	3011.7	3020.5	3011.7	3038.1	3038.1	3029.3	3020.5	3016.2
12.5°	2954.5	2989.6	2989.6	2985.3	2976.5	2963.3	2989.6	3007.4	2980.8	2980.8	2976.5
15°	2915.0	2923.8	2928.1	2928.1	2923.8	2932.6	2945.7	2928.1	2932.6	2910.5	2919.3
17.5°	2871.1	2853.5	2866.6	2857.8	2862.3	2871.1	2888.6	2888.6	2862.3	2857.8	2866.6
20°	2769.9	2822.6	2827.1	2800.7	2805.0	2805.0	2835.9	2809.5	2827.1	2805.0	2813.8
22.5°	2721.4	2756.6	2761.1	2725.9	2747.8	2721.4	2752.3	2712.7	2756.6	2725.9	2739.0
25°	2659.9	2655.6	2668.7	2651.1	2655.6	2655.6	2677.5	2659.9	2673.2	2655.6	2659.9
27.5°	2558.9	2594.1	2589.6	2572.0	2580.8	2576.5	2620.4	2572.0	2598.4	2576.5	2585.3
30°	2470.8	2501.7	2492.9	2475.3	2475.3	2462.1	2510.5	2497.2	2492.9	2492.9	2488.4
32.5°	2382.9	2387.4	2378.6	2382.9	2387.4	2369.8	2409.3	2391.7	2387.4	2391.7	2396.2
35°	2264.2	2264.2	2273.0	2259.9	2277.5	2277.5	2312.6	2290.6	2286.3	2273.0	2286.3
37.5°	2158.7	2145.6	2149.9	2149.9	2158.7	2167.5	2185.1	2176.3	2176.3	2163.2	2172.0
40°	2018.1	2009.3	2022.4	2022.4	2035.7	2035.7	2053.2	2044.4	2057.5	2057.5	2057.5
42.5°	1895.0	1895.0	1886.2	1899.3	1903.8	1899.3	1930.2	1925.7	1930.2	1921.4	1925.7
45°	1763.0	1763.0	1754.2	1749.9	1771.8	1767.5	1802.6	1789.4	1806.9	1798.2	1802.6
47.5°	1582.7	1604.8	1591.5	1604.8	1631.1	1635.6	1657.5	1648.7	1666.3	1653.2	1670.8
50°	1411.4	1411.4	1424.5	1442.1	1468.4	1472.9	1499.3	1516.9	1525.7	1530.0	1534.5
52.5°	1231.1	1226.6	1239.9	1261.8	1283.9	1301.4	1327.8	1354.2	1371.8	1398.1	1384.9
55°	1020.0	1028.8	1042.0	1068.4	1103.6	1125.5	1147.5	1182.7	1213.5	1226.6	1253.0
57.5°	839.7	830.9	839.7	874.9	914.5	932.1	962.9	998.1	1042.0	1068.4	1077.2
60°	650.6	655.1	663.9	694.8	725.4	751.8	765.1	822.1	861.8	888.1	905.7
62.5°	479.3	488.1	496.9	523.3	553.9	576.0	597.9	646.3	681.5	707.9	725.4
65°	334.2	338.5	351.8	364.9	395.7	417.6	435.2	474.8	510.0	532.1	545.2
67.5°	206.7	211.0	219.7	237.5	259.4	277.0	294.6	320.9	351.8	373.7	378.1
70°	105.5	110.0	114.3	127.5	145.1	153.9	167.0	189.1	211.0	228.5	237.5
72.5°	35.2	35.2	39.6	48.4	57.2	66.0	70.3	92.4	110.0	118.8	123.1
75°	8.8	8.8	8.8	8.8	8.8	13.3	13.3	26.4	35.2	43.9	48.4
77.5°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	8.8	8.8
80°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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°	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3	3095.3
2.5°	3095.3	3086.5	3082.0	3086.5	3086.5	3082.0	3095.3	3112.9	3134.8	3077.7
5°	3090.8	3082.0	3090.8	3064.4	3077.7	3068.9	3086.5	3082.0	3099.6	3082.0
7.5°	3077.7	3060.1	3064.4	3051.3	3068.9	3046.9	3060.1	3086.5	3068.9	3042.5
10°	3033.8	3025.0	3055.6	3011.7	3002.9	3020.5	3055.6	3029.3	3020.5	3029.3
12.5°	2989.6	2989.6	3002.9	2967.7	2972.0	2980.8	2998.4	2980.8	2989.6	3011.7
15°	2941.4	2932.6	2954.5	2928.1	2923.8	2915.0	2932.6	2932.6	2941.4	2928.1
17.5°	2884.1	2871.1	2871.1	2862.3	2857.8	2879.8	2888.6	2892.9	2897.4	2879.8
20°	2813.8	2809.5	2822.6	2809.5	2813.8	2818.3	2818.3	2809.5	2849.0	2800.7
22.5°	2739.0	2752.3	2734.7	2725.9	2734.7	2743.5	2743.5	2747.8	2739.0	2730.2
25°	2664.4	2673.2	2677.5	2651.1	2664.4	2651.1	2682.0	2686.3	2668.7	2677.5
27.5°	2598.4	2585.3	2580.8	2563.2	2572.0	2567.7	2572.0	2572.0	2598.4	2563.2
30°	2497.2	2484.1	2488.4	2475.3	2479.6	2475.3	2479.6	2479.6	2497.2	2492.9
32.5°	2400.5	2387.4	2391.7	2378.6	2378.6	2382.9	2374.2	2374.2	2387.4	2378.6
35°	2308.1	2277.5	2281.8	2277.5	2281.8	2264.2	2264.2	2259.9	2268.7	2246.6
37.5°	2176.3	2163.2	2158.7	2154.4	2158.7	2149.9	2158.7	2145.6	2158.7	2141.1
40°	2057.5	2048.8	2053.2	2026.9	2026.9	2031.2	2022.4	2018.1	2022.4	2040.0
42.5°	1939.0	1921.4	1912.6	1903.8	1908.1	1895.0	1890.5	1881.7	1890.5	1873.0
45°	1798.2	1798.2	1793.8	1771.8	1776.3	1776.3	1758.7	1741.1	1745.4	1745.4
47.5°	1670.8	1662.0	1657.5	1635.6	1631.1	1626.8	1609.1	1596.0	1596.0	1582.7
50°	1530.0	1521.2	1508.1	1486.0	1477.2	1450.9	1437.8	1420.2	1402.6	1402.6
52.5°	1398.1	1367.3	1349.7	1314.5	1301.4	1288.2	1253.0	1239.9	1226.6	1213.5
55°	1239.9	1213.5	1178.4	1138.7	1121.2	1099.1	1063.9	1037.6	1020.0	1024.5
57.5°	1086.0	1042.0	1006.9	954.1	932.1	918.8	883.7	848.5	830.9	830.9
60°	896.9	861.8	817.8	769.4	751.8	729.9	685.8	663.9	650.6	637.5
62.5°	716.6	690.3	650.6	589.1	576.0	553.9	523.3	496.9	483.6	483.6
65°	536.4	510.0	474.8	430.9	413.3	395.7	369.4	343.0	329.7	325.4
67.5°	378.1	347.3	316.6	281.5	268.2	259.4	233.0	215.4	206.7	202.2
70°	228.5	211.0	189.1	162.7	149.4	140.6	123.1	110.0	105.5	101.2
72.5°	118.8	105.5	87.9	70.3	61.5	52.7	43.9	35.2	30.9	30.9
75°	43.9	35.2	22.1	13.3	8.8	8.8	8.8	8.8	8.8	8.8
77.5°	8.8	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
80°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)