

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 FEU4C759050 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 FEU4C759050 F4LC-CSSQ-MMS  
 Description: 4 INCH 7500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MMS FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

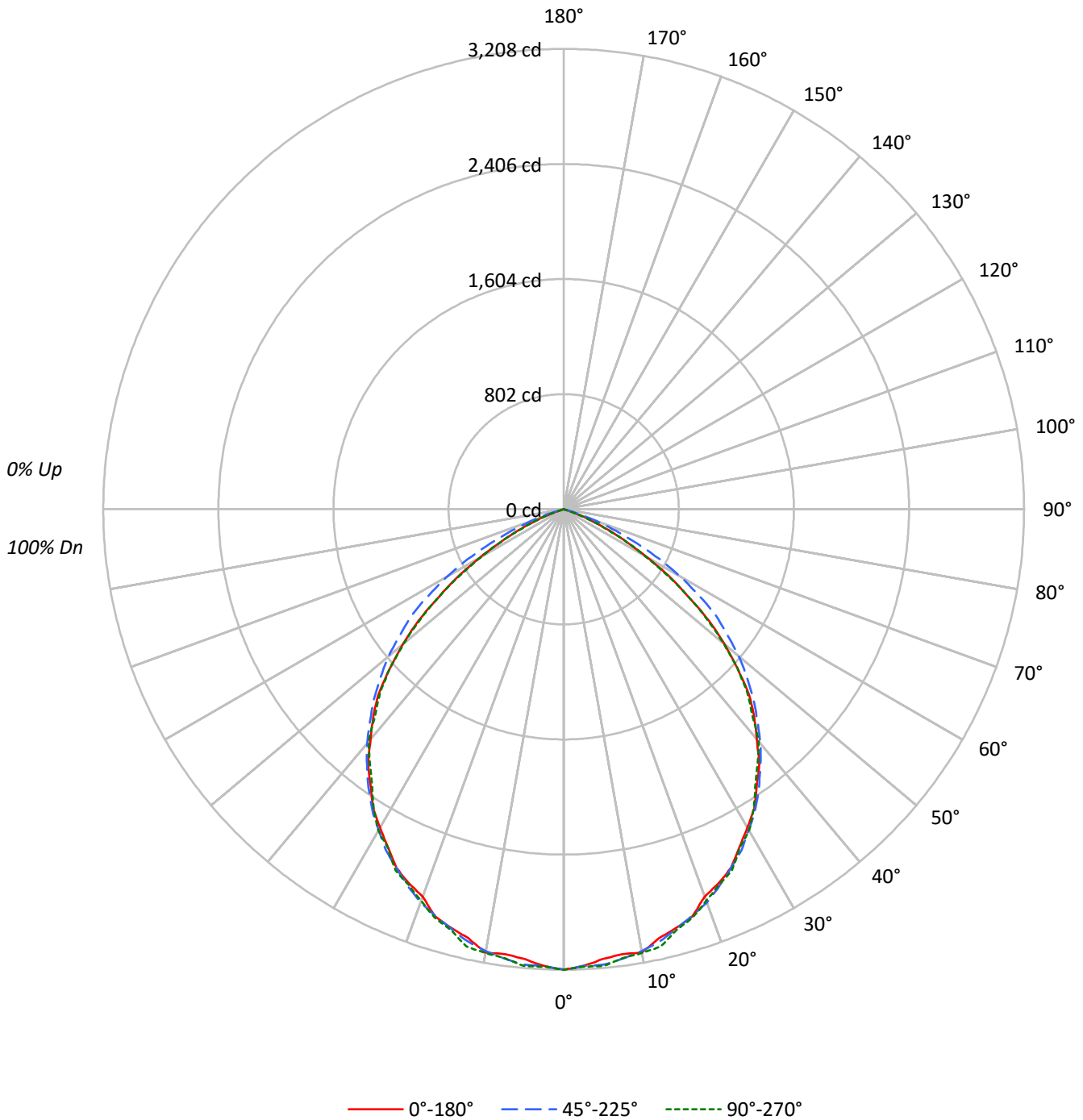
Lumens per Lamp: N/A  
 Luminaire Lumens: 6853.0 lumens  
 Efficiency: N/A  
 Efficacy: 84.1 lumens/watt  
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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



TEST NUMBER: P#

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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°	309546	309546	309546
5°	304549	308510	309392
10°	307179	306287	307620
15°	301796	302245	303154
20°	294778	299460	298063
25°	293510	293510	295447
30°	285325	287352	287876
35°	276421	279118	274277
40°	263452	268604	266312
45°	249346	254941	246849
50°	219581	238735	218215
55°	177846	218472	178619
60°	130125	181148	127520
65°	79087	128996	77010
70°	30835	69457	29594
75°	3393	18715	3393
80°	2556	2556	2556
85°	0	0	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	302.8	4.4
10°-20°	856.9	12.5
20°-30°	1271.4	18.6
30°-40°	1473.2	21.5
40°-50°	1412.5	20.6
50°-60°	1038.5	15.2
60°-70°	448.6	6.5
70°-80°	48.4	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°	2431.1	35.5
0°-40°	3904.4	57.0
0°-60°	6355.4	92.7
0°-90°	6853.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6853.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3208	3208	3208	3208	3208	
5°	3144	3176	3185	3190	3194	300
15°	3021	3040	3026	3030	3035	852
25°	2757	2752	2757	2762	2775	1262
35°	2347	2360	2370	2365	2328	1467
45°	1827	1832	1868	1841	1809	1389
55°	1057	1166	1299	1162	1062	951
65°	346	433	565	428	337	356
75°	9	14	50	9	9	28
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°	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1
2.5°	3185.2	3221.7	3226.3	3203.5	3194.3	3180.8	3212.6	3189.9	3199.0	3189.9	3185.2
5°	3144.3	3185.2	3189.9	3189.9	3180.8	3176.1	3189.9	3185.2	3180.8	3171.7	3185.2
7.5°	3126.1	3148.8	3171.7	3144.3	3157.9	3153.4	3185.2	3171.7	3167.0	3167.0	3157.9
10°	3135.2	3130.6	3148.8	3121.5	3130.6	3121.5	3148.8	3148.8	3139.7	3130.6	3126.1
12.5°	3062.2	3098.6	3098.6	3094.1	3085.0	3071.3	3098.6	3117.0	3089.5	3089.5	3085.0
15°	3021.2	3030.4	3034.8	3034.8	3030.4	3039.5	3053.0	3034.8	3039.5	3016.6	3025.7
17.5°	2975.7	2957.5	2971.1	2961.9	2966.6	2975.7	2993.9	2993.9	2966.6	2961.9	2971.1
20°	2870.8	2925.5	2930.1	2902.8	2907.3	2907.3	2939.3	2911.9	2930.1	2907.3	2916.4
22.5°	2820.6	2857.1	2861.7	2825.3	2848.0	2820.6	2852.6	2811.5	2857.1	2825.3	2838.9
25°	2756.9	2752.4	2766.0	2747.8	2752.4	2752.4	2775.1	2756.9	2770.6	2752.4	2756.9
27.5°	2652.2	2688.6	2684.0	2665.8	2674.9	2670.4	2716.0	2665.8	2693.1	2670.4	2679.5
30°	2560.9	2592.9	2583.8	2565.6	2565.6	2551.8	2602.0	2588.2	2583.8	2583.8	2579.1
32.5°	2469.8	2474.4	2465.3	2469.8	2474.4	2456.2	2497.1	2478.9	2474.4	2478.9	2483.6
35°	2346.7	2346.7	2355.8	2342.3	2360.5	2360.5	2396.9	2374.1	2369.6	2355.8	2369.6
37.5°	2237.4	2223.8	2228.3	2228.3	2237.4	2246.5	2264.7	2255.6	2255.6	2242.0	2251.2
40°	2091.6	2082.5	2096.1	2096.1	2109.9	2109.9	2128.1	2119.0	2132.5	2132.5	2132.5
42.5°	1964.1	1964.1	1955.0	1968.6	1973.2	1968.6	2000.5	1995.9	2000.5	1991.4	1995.9
45°	1827.3	1827.3	1818.1	1813.7	1836.4	1831.9	1868.3	1854.6	1872.8	1863.7	1868.3
47.5°	1640.4	1663.3	1649.5	1663.3	1690.6	1695.2	1717.9	1708.8	1727.0	1713.5	1731.7
50°	1462.8	1462.8	1476.4	1494.6	1522.0	1526.6	1553.9	1572.2	1581.3	1585.7	1590.4
52.5°	1276.0	1271.3	1285.1	1307.8	1330.7	1348.9	1376.2	1403.5	1421.8	1449.1	1435.3
55°	1057.2	1066.3	1080.0	1107.4	1143.8	1166.5	1189.4	1225.8	1257.8	1271.3	1298.7
57.5°	870.3	861.2	870.3	906.7	947.8	966.1	998.0	1034.5	1080.0	1107.4	1116.5
60°	674.3	679.0	688.1	720.1	751.9	779.2	793.0	852.1	893.2	920.5	938.7
62.5°	496.8	505.9	515.0	542.3	574.1	597.0	619.7	669.9	706.3	733.7	751.9
65°	346.4	350.8	364.6	378.2	410.1	432.8	451.1	492.1	528.6	551.4	565.0
67.5°	214.2	218.6	227.8	246.2	268.8	287.1	305.3	332.6	364.6	387.3	391.9
70°	109.3	114.0	118.4	132.2	150.4	159.5	173.1	196.0	218.6	236.9	246.2
72.5°	36.4	36.4	41.1	50.2	59.3	68.4	72.9	95.7	114.0	123.1	127.5
75°	9.1	9.1	9.1	9.1	9.1	13.8	13.8	27.3	36.4	45.6	50.2
77.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	9.1	9.1
80°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
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°	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1	3208.1
2.5°	3208.1	3199.0	3194.3	3199.0	3199.0	3194.3	3208.1	3226.3	3249.0	3189.9
5°	3203.5	3194.3	3203.5	3176.1	3189.9	3180.8	3199.0	3194.3	3212.6	3194.3
7.5°	3189.9	3171.7	3176.1	3162.5	3180.8	3157.9	3171.7	3199.0	3180.8	3153.4
10°	3144.3	3135.2	3167.0	3121.5	3112.4	3130.6	3167.0	3139.7	3130.6	3139.7
12.5°	3098.6	3098.6	3112.4	3075.9	3080.4	3089.5	3107.7	3089.5	3098.6	3121.5
15°	3048.6	3039.5	3062.2	3034.8	3030.4	3021.2	3039.5	3039.5	3048.6	3034.8
17.5°	2989.3	2975.7	2975.7	2966.6	2961.9	2984.8	2993.9	2998.4	3003.0	2984.8
20°	2916.4	2911.9	2925.5	2911.9	2916.4	2921.0	2921.0	2911.9	2952.8	2902.8
22.5°	2838.9	2852.6	2834.4	2825.3	2834.4	2843.5	2843.5	2848.0	2838.9	2829.8
25°	2761.5	2770.6	2775.1	2747.8	2761.5	2747.8	2779.7	2784.2	2766.0	2775.1
27.5°	2693.1	2679.5	2674.9	2656.7	2665.8	2661.3	2665.8	2665.8	2693.1	2656.7
30°	2588.2	2574.7	2579.1	2565.6	2570.0	2565.6	2570.0	2570.0	2588.2	2583.8
32.5°	2488.0	2474.4	2478.9	2465.3	2465.3	2469.8	2460.7	2460.7	2474.4	2465.3
35°	2392.3	2360.5	2364.9	2360.5	2364.9	2346.7	2346.7	2342.3	2351.4	2328.5
37.5°	2255.6	2242.0	2237.4	2232.9	2237.4	2228.3	2237.4	2223.8	2237.4	2219.2
40°	2132.5	2123.4	2128.1	2100.7	2100.7	2105.2	2096.1	2091.6	2096.1	2114.3
42.5°	2009.6	1991.4	1982.3	1973.2	1977.7	1964.1	1959.4	1950.3	1959.4	1941.2
45°	1863.7	1863.7	1859.2	1836.4	1841.0	1841.0	1822.8	1804.6	1809.0	1809.0
47.5°	1731.7	1722.6	1717.9	1695.2	1690.6	1686.1	1667.7	1654.2	1654.2	1640.4
50°	1585.7	1576.6	1563.1	1540.2	1531.1	1503.7	1490.2	1472.0	1453.7	1453.7
52.5°	1449.1	1417.1	1398.9	1362.4	1348.9	1335.1	1298.7	1285.1	1271.3	1257.8
55°	1285.1	1257.8	1221.3	1180.2	1162.0	1139.2	1102.7	1075.4	1057.2	1061.8
57.5°	1125.6	1080.0	1043.6	988.9	966.1	952.3	915.9	879.4	861.2	861.2
60°	929.6	893.2	847.6	797.4	779.2	756.5	710.8	688.1	674.3	660.8
62.5°	742.8	715.4	674.3	610.6	597.0	574.1	542.3	515.0	501.2	501.2
65°	555.9	528.6	492.1	446.6	428.4	410.1	382.8	355.5	341.7	337.3
67.5°	391.9	359.9	328.2	291.7	278.0	268.8	241.5	223.3	214.2	209.5
70°	236.9	218.6	196.0	168.6	154.9	145.8	127.5	114.0	109.3	104.9
72.5°	123.1	109.3	91.1	72.9	63.8	54.7	45.6	36.4	32.0	32.0
75°	45.6	36.4	22.9	13.8	9.1	9.1	9.1	9.1	9.1	9.1
77.5°	9.1	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
80°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
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)