

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-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: FLDSQ4C75D010 FEU4C759030 F4LC-CSSQ-MW  
 Description: 4 INCH 7500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MW FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

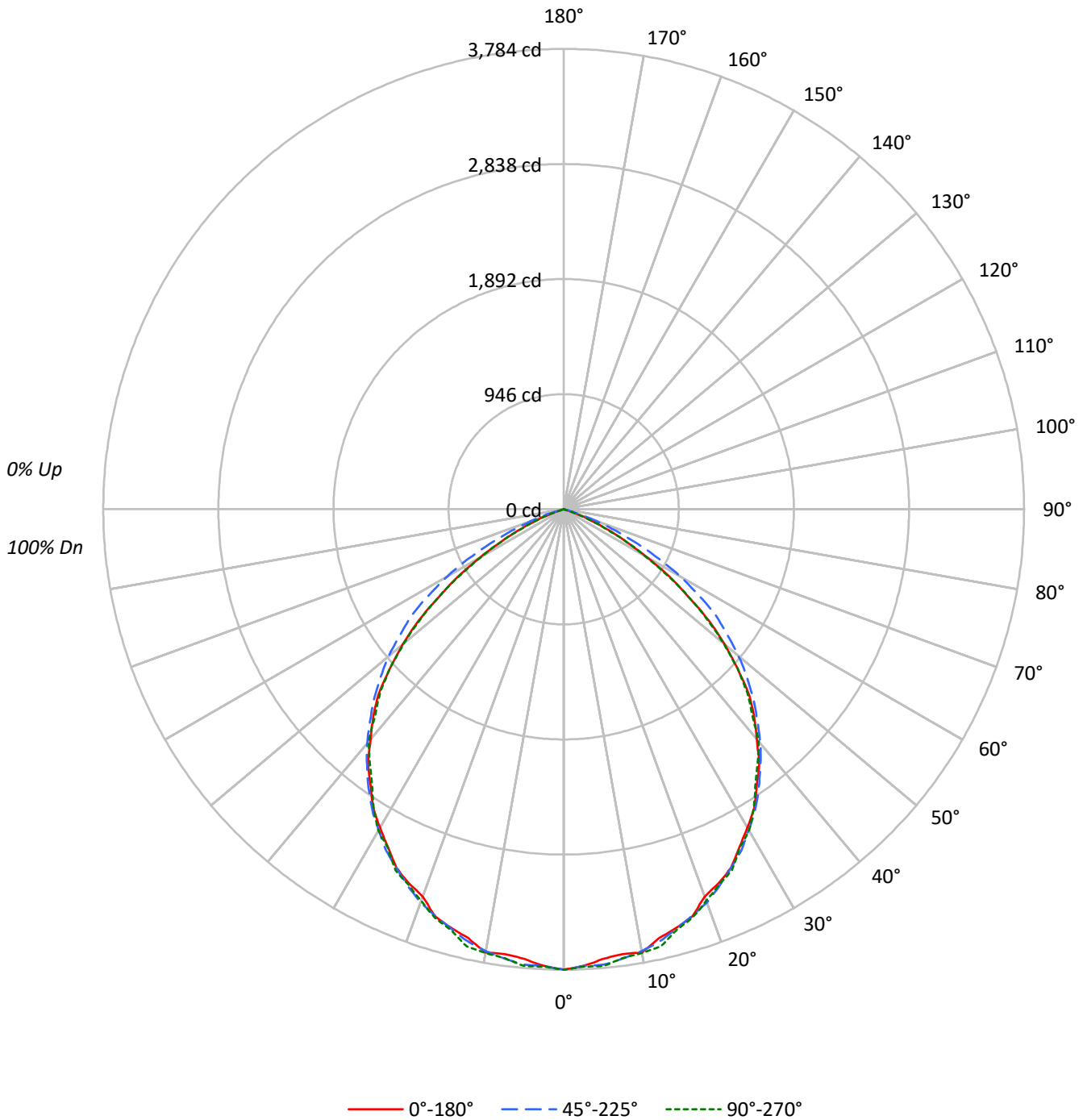
Lumens per Lamp: N/A  
 Luminaire Lumens: 8083.0 lumens  
 Efficiency: N/A  
 Efficacy: 99.2 lumens/watt  
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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°	365104	365104	365104
5°	359215	363884	364930
10°	362311	361262	362830
15°	355967	356497	357566
20°	347689	353203	351560
25°	346188	346188	348477
30°	336531	338927	339540
35°	326034	329215	323502
40°	310737	316820	314112
45°	294090	300708	291156
50°	259000	281576	257379
55°	209758	257684	210683
60°	153495	213665	150407
65°	93266	152147	90823
70°	36365	81898	34898
75°	3989	22070	3989
80°	3056	3056	3056
85°	0	0	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	357.2	4.4
10°-20°	1010.7	12.5
20°-30°	1499.6	18.6
30°-40°	1737.6	21.5
40°-50°	1666.0	20.6
50°-60°	1224.9	15.2
60°-70°	529.1	6.5
70°-80°	57.1	0.7
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°	2867.5	35.5
0°-40°	4605.1	57.0
0°-60°	7496.1	92.7
0°-90°	8083.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8083.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3784	3784	3784	3784	3784	
5°	3709	3746	3757	3762	3768	354
15°	3564	3585	3569	3574	3580	1004
25°	3252	3246	3252	3257	3273	1489
35°	2768	2784	2795	2789	2746	1731
45°	2155	2161	2204	2171	2134	1638
55°	1247	1376	1532	1371	1252	1122
65°	408	510	666	505	398	420
75°	11	16	59	11	11	33
85°	0	0	0	0	0	1
90°	0	0	0	0	0	

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C75D010 FEU4C759030 F4LC-CSSQ-MW

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9
2.5°	3756.9	3799.9	3805.4	3778.4	3767.7	3751.7	3789.2	3762.4	3773.2	3762.4	3756.9
5°	3708.7	3756.9	3762.4	3762.4	3751.7	3746.2	3762.4	3756.9	3751.7	3740.9	3756.9
7.5°	3687.2	3714.0	3740.9	3708.7	3724.7	3719.4	3756.9	3740.9	3735.4	3735.4	3724.7
10°	3697.9	3692.5	3714.0	3681.7	3692.5	3681.7	3714.0	3714.0	3703.2	3692.5	3687.2
12.5°	3611.8	3654.7	3654.7	3649.5	3638.7	3622.5	3654.7	3676.4	3644.0	3644.0	3638.7
15°	3563.5	3574.3	3579.5	3579.5	3574.3	3585.0	3601.0	3579.5	3585.0	3558.0	3568.8
17.5°	3509.8	3488.3	3504.3	3493.6	3499.0	3509.8	3531.3	3531.3	3499.0	3493.6	3504.3
20°	3386.1	3450.6	3456.1	3423.8	3429.1	3429.1	3466.8	3434.6	3456.1	3429.1	3439.8
22.5°	3326.9	3369.9	3375.4	3332.4	3359.1	3326.9	3364.6	3316.2	3369.9	3332.4	3348.4
25°	3251.7	3246.4	3262.4	3240.9	3246.4	3246.4	3273.2	3251.7	3267.9	3246.4	3251.7
27.5°	3128.2	3171.2	3165.7	3144.2	3155.0	3149.7	3203.4	3144.2	3176.5	3149.7	3160.5
30°	3020.5	3058.3	3047.5	3026.0	3026.0	3009.8	3069.0	3052.8	3047.5	3047.5	3042.0
32.5°	2913.1	2918.6	2907.8	2913.1	2918.6	2897.1	2945.3	2923.8	2918.6	2923.8	2929.3
35°	2767.9	2767.9	2778.7	2762.7	2784.1	2784.1	2827.1	2800.2	2794.9	2778.7	2794.9
37.5°	2639.0	2623.0	2628.2	2628.2	2639.0	2649.7	2671.2	2660.5	2660.5	2644.5	2655.2
40°	2467.0	2456.3	2472.3	2472.3	2488.5	2488.5	2510.0	2499.3	2515.3	2515.3	2515.3
42.5°	2316.6	2316.6	2305.9	2321.9	2327.4	2321.9	2359.6	2354.1	2359.6	2348.8	2354.1
45°	2155.2	2155.2	2144.5	2139.2	2166.0	2160.7	2203.7	2187.5	2208.9	2198.2	2203.7
47.5°	1934.8	1961.8	1945.6	1961.8	1994.0	1999.5	2026.3	2015.5	2037.0	2021.0	2042.5
50°	1725.4	1725.4	1741.4	1762.9	1795.1	1800.6	1832.9	1854.3	1865.1	1870.4	1875.8
52.5°	1505.0	1499.5	1515.8	1542.5	1569.5	1591.0	1623.2	1655.4	1676.9	1709.2	1692.9
55°	1246.9	1257.6	1273.9	1306.1	1349.1	1375.8	1402.8	1445.8	1483.5	1499.5	1531.8
57.5°	1026.5	1015.8	1026.5	1069.5	1118.0	1139.4	1177.2	1220.1	1273.9	1306.1	1316.9
60°	795.4	800.9	811.6	849.3	886.8	919.1	935.3	1005.0	1053.5	1085.7	1107.2
62.5°	585.9	596.7	607.4	639.7	677.2	704.1	730.9	790.1	833.1	865.3	886.8
65°	408.5	413.8	430.0	446.0	483.8	510.5	532.0	580.5	623.5	650.4	666.4
67.5°	252.6	257.9	268.6	290.3	317.1	338.6	360.1	392.3	430.0	456.8	462.3
70°	128.9	134.4	139.7	155.9	177.4	188.2	204.2	231.1	257.9	279.4	290.3
72.5°	43.0	43.0	48.5	59.2	70.0	80.7	86.0	112.9	134.4	145.2	150.4
75°	10.7	10.7	10.7	10.7	10.7	16.2	16.2	32.2	43.0	53.7	59.2
77.5°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	10.7	10.7
80°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
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°	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9	3783.9
2.5°	3783.9	3773.2	3767.7	3773.2	3773.2	3767.7	3783.9	3805.4	3832.2	3762.4
5°	3778.4	3767.7	3778.4	3746.2	3762.4	3751.7	3773.2	3767.7	3789.2	3767.7
7.5°	3762.4	3740.9	3746.2	3730.2	3751.7	3724.7	3740.9	3773.2	3751.7	3719.4
10°	3708.7	3697.9	3735.4	3681.7	3671.0	3692.5	3735.4	3703.2	3692.5	3703.2
12.5°	3654.7	3654.7	3671.0	3628.0	3633.3	3644.0	3665.5	3644.0	3654.7	3681.7
15°	3595.7	3585.0	3611.8	3579.5	3574.3	3563.5	3585.0	3585.0	3595.7	3579.5
17.5°	3525.8	3509.8	3509.8	3499.0	3493.6	3520.5	3531.3	3536.5	3542.0	3520.5
20°	3439.8	3434.6	3450.6	3434.6	3439.8	3445.3	3445.3	3434.6	3482.8	3423.8
22.5°	3348.4	3364.6	3343.1	3332.4	3343.1	3353.9	3353.9	3359.1	3348.4	3337.6
25°	3257.2	3267.9	3273.2	3240.9	3257.2	3240.9	3278.7	3283.9	3262.4	3273.2
27.5°	3176.5	3160.5	3155.0	3133.5	3144.2	3139.0	3144.2	3144.2	3176.5	3133.5
30°	3052.8	3036.8	3042.0	3026.0	3031.3	3026.0	3031.3	3031.3	3052.8	3047.5
32.5°	2934.6	2918.6	2923.8	2907.8	2907.8	2913.1	2902.3	2902.3	2918.6	2907.8
35°	2821.7	2784.1	2789.4	2784.1	2789.4	2767.9	2767.9	2762.7	2773.4	2746.4
37.5°	2660.5	2644.5	2639.0	2633.7	2639.0	2628.2	2639.0	2623.0	2639.0	2617.5
40°	2515.3	2504.6	2510.0	2477.8	2477.8	2483.1	2472.3	2467.0	2472.3	2493.8
42.5°	2370.3	2348.8	2338.1	2327.4	2332.6	2316.6	2311.1	2300.4	2311.1	2289.6
45°	2198.2	2198.2	2192.9	2166.0	2171.4	2171.4	2149.9	2128.5	2133.7	2133.7
47.5°	2042.5	2031.7	2026.3	1999.5	1994.0	1988.8	1967.1	1951.1	1951.1	1934.8
50°	1870.4	1859.6	1843.6	1816.6	1805.9	1773.6	1757.6	1736.1	1714.6	1714.6
52.5°	1709.2	1671.5	1650.0	1607.0	1591.0	1574.7	1531.8	1515.8	1499.5	1483.5
55°	1515.8	1483.5	1440.5	1392.1	1370.6	1343.6	1300.6	1268.4	1246.9	1252.4
57.5°	1327.6	1273.9	1230.9	1166.4	1139.4	1123.2	1080.2	1037.3	1015.8	1015.8
60°	1096.5	1053.5	999.8	940.6	919.1	892.3	838.4	811.6	795.4	779.4
62.5°	876.1	843.8	795.4	720.2	704.1	677.2	639.7	607.4	591.2	591.2
65°	655.7	623.5	580.5	526.7	505.3	483.8	451.5	419.3	403.1	397.8
67.5°	462.3	424.6	387.0	344.1	327.8	317.1	284.9	263.4	252.6	247.1
70°	279.4	257.9	231.1	198.9	182.7	171.9	150.4	134.4	128.9	123.7
72.5°	145.2	128.9	107.5	86.0	75.2	64.5	53.7	43.0	37.7	37.7
75°	53.7	43.0	27.0	16.2	10.7	10.7	10.7	10.7	10.7	10.7
77.5°	10.7	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
80°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
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)