

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 FEU4C759040 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 FEU4C759040 F4LC-CSSQ-MW  
 Description: 4 INCH 7500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MW FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

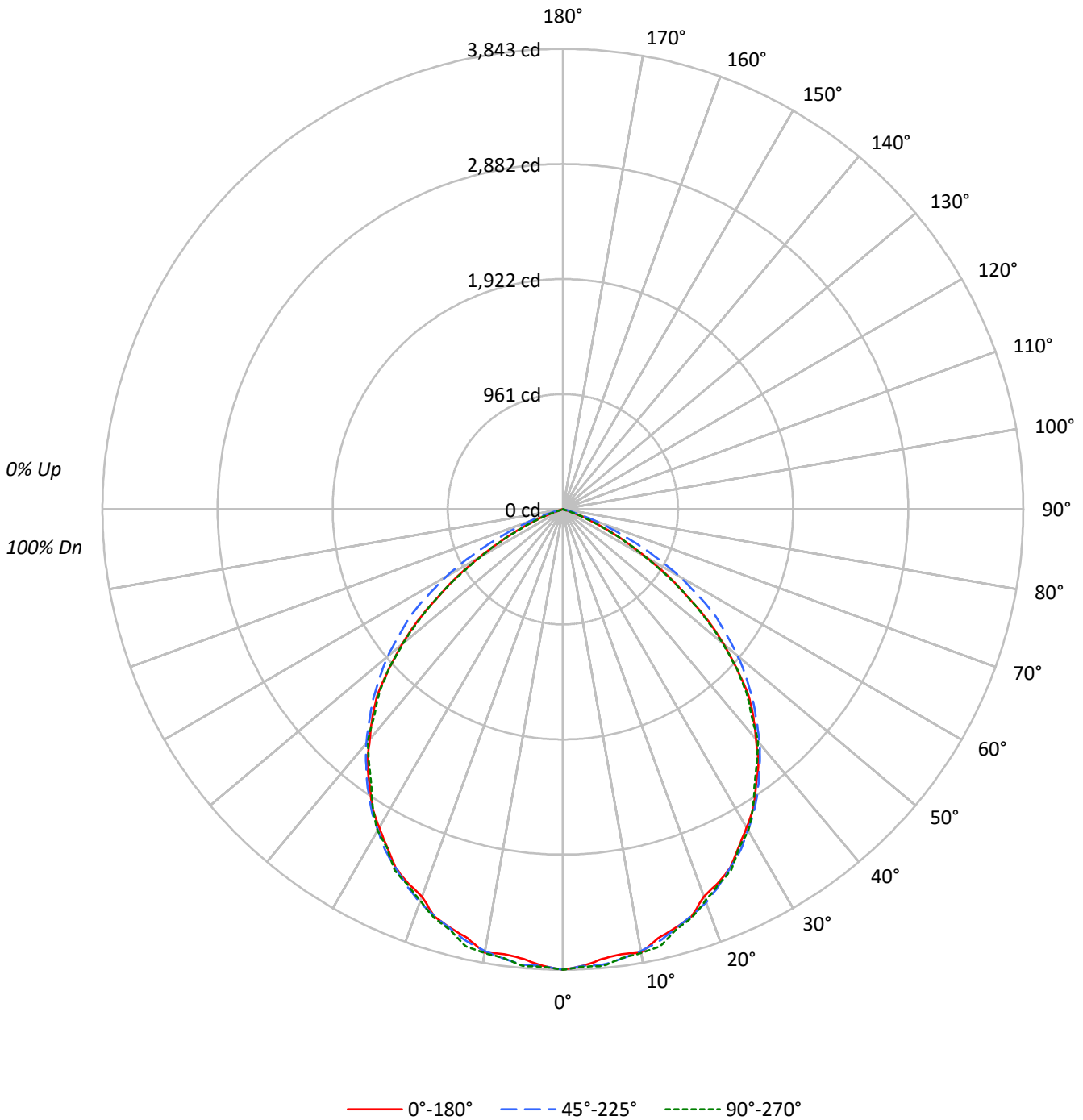
Lumens per Lamp: N/A  
 Luminaire Lumens: 8209.0 lumens  
 Efficiency: N/A  
 Efficacy: 100.7 lumens/watt  
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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°	370797	370797	370797
5°	364814	369560	370615
10°	367964	366896	368483
15°	361522	362051	363140
20°	353111	358717	357044
25°	351586	351586	353907
30°	341779	344219	344832
35°	331123	334350	328543
40°	315586	321758	319012
45°	298675	305388	295700
50°	263038	285975	261402
55°	213021	261688	213963
60°	155887	217004	152742
65°	94727	154522	92238
70°	36957	83196	35434
75°	4064	22406	4064
80°	3112	3112	3112
85°	0	0	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	362.7	4.4
10°-20°	1026.4	12.5
20°-30°	1523.0	18.6
30°-40°	1764.7	21.5
40°-50°	1692.0	20.6
50°-60°	1244.0	15.2
60°-70°	537.3	6.5
70°-80°	58.0	0.7
80°-90°	0.8	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°	2912.2	35.5
0°-40°	4676.9	57.0
0°-60°	7612.9	92.7
0°-90°	8209.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8209.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3843	3843	3843	3843	3843	
5°	3766	3805	3816	3821	3826	359
15°	3619	3641	3624	3630	3635	1020
25°	3302	3297	3302	3308	3324	1512
35°	2811	2828	2838	2833	2789	1758
45°	2189	2194	2238	2205	2167	1664
55°	1266	1397	1556	1392	1272	1140
65°	415	518	677	513	404	427
75°	11	16	60	11	11	34
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°	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9
2.5°	3815.5	3859.1	3864.7	3837.3	3826.4	3810.1	3848.2	3821.1	3832.0	3821.1	3815.5
5°	3766.5	3815.5	3821.1	3821.1	3810.1	3804.6	3821.1	3815.5	3810.1	3799.2	3815.5
7.5°	3744.7	3771.8	3799.2	3766.5	3782.8	3777.4	3815.5	3799.2	3793.7	3793.7	3782.8
10°	3755.6	3750.0	3771.8	3739.1	3750.0	3739.1	3771.8	3771.8	3760.9	3750.0	3744.7
12.5°	3668.1	3711.7	3711.7	3706.4	3695.5	3679.0	3711.7	3733.8	3700.8	3700.8	3695.5
15°	3619.1	3630.0	3635.3	3635.3	3630.0	3640.9	3657.2	3635.3	3640.9	3613.5	3624.4
17.5°	3564.5	3542.7	3558.9	3548.0	3553.6	3564.5	3586.3	3586.3	3553.6	3548.0	3558.9
20°	3438.9	3504.4	3509.9	3477.2	3482.5	3482.5	3520.8	3488.1	3509.9	3482.5	3493.5
22.5°	3378.8	3422.4	3428.0	3384.3	3411.5	3378.8	3417.1	3367.8	3422.4	3384.3	3400.6
25°	3302.4	3297.0	3313.3	3291.5	3297.0	3297.0	3324.2	3302.4	3318.8	3297.0	3302.4
27.5°	3177.0	3220.6	3215.1	3193.2	3204.2	3198.8	3253.4	3193.2	3226.0	3198.8	3209.7
30°	3067.6	3105.9	3095.0	3073.2	3073.2	3056.7	3116.8	3100.4	3095.0	3095.0	3089.5
32.5°	2958.5	2964.1	2953.2	2958.5	2964.1	2942.2	2991.2	2969.4	2964.1	2969.4	2975.0
35°	2811.1	2811.1	2822.0	2805.7	2827.5	2827.5	2871.2	2843.8	2838.5	2822.0	2838.5
37.5°	2680.1	2663.9	2669.2	2669.2	2680.1	2691.0	2712.9	2701.9	2701.9	2685.7	2696.6
40°	2505.5	2494.6	2510.9	2510.9	2527.3	2527.3	2549.2	2538.2	2554.5	2554.5	2554.5
42.5°	2352.7	2352.7	2341.8	2358.1	2363.6	2358.1	2396.4	2390.8	2396.4	2385.5	2390.8
45°	2188.8	2188.8	2177.9	2172.6	2199.7	2194.4	2238.0	2221.6	2243.4	2232.5	2238.0
47.5°	1965.0	1992.4	1975.9	1992.4	2025.1	2030.7	2057.9	2046.9	2068.8	2052.5	2074.3
50°	1752.3	1752.3	1768.6	1790.4	1823.1	1828.7	1861.4	1883.2	1894.2	1899.5	1905.1
52.5°	1528.5	1522.9	1539.4	1566.6	1593.9	1615.8	1648.5	1681.2	1703.1	1735.8	1719.3
55°	1266.3	1277.3	1293.7	1326.5	1370.1	1397.3	1424.7	1468.3	1506.6	1522.9	1555.6
57.5°	1042.5	1031.6	1042.5	1086.2	1135.4	1157.2	1195.5	1239.2	1293.7	1326.5	1337.4
60°	807.8	813.3	824.3	862.6	900.6	933.4	949.9	1020.7	1069.9	1102.6	1124.5
62.5°	595.1	606.0	616.9	649.6	687.7	715.1	742.3	802.4	846.1	878.8	900.6
65°	414.9	420.3	436.7	453.0	491.3	518.5	540.3	589.5	633.2	660.6	676.8
67.5°	256.6	261.9	272.8	294.9	322.0	343.9	365.7	398.4	436.7	463.9	469.5
70°	131.0	136.5	141.9	158.3	180.2	191.1	207.3	234.7	261.9	283.7	294.9
72.5°	43.7	43.7	49.2	60.1	71.0	82.0	87.3	114.7	136.5	147.4	152.8
75°	10.9	10.9	10.9	10.9	10.9	16.5	16.5	32.7	43.7	54.6	60.1
77.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	10.9	10.9
80°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
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°	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9	3842.9
2.5°	3842.9	3832.0	3826.4	3832.0	3832.0	3826.4	3842.9	3864.7	3891.9	3821.1
5°	3837.3	3826.4	3837.3	3804.6	3821.1	3810.1	3832.0	3826.4	3848.2	3826.4
7.5°	3821.1	3799.2	3804.6	3788.3	3810.1	3782.8	3799.2	3832.0	3810.1	3777.4
10°	3766.5	3755.6	3793.7	3739.1	3728.2	3750.0	3793.7	3760.9	3750.0	3760.9
12.5°	3711.7	3711.7	3728.2	3684.5	3689.9	3700.8	3722.6	3700.8	3711.7	3739.1
15°	3651.8	3640.9	3668.1	3635.3	3630.0	3619.1	3640.9	3640.9	3651.8	3635.3
17.5°	3580.8	3564.5	3564.5	3553.6	3548.0	3575.4	3586.3	3591.7	3597.2	3575.4
20°	3493.5	3488.1	3504.4	3488.1	3493.5	3499.0	3499.0	3488.1	3537.1	3477.2
22.5°	3400.6	3417.1	3395.2	3384.3	3395.2	3406.2	3406.2	3411.5	3400.6	3389.7
25°	3307.9	3318.8	3324.2	3291.5	3307.9	3291.5	3329.8	3335.1	3313.3	3324.2
27.5°	3226.0	3209.7	3204.2	3182.3	3193.2	3187.9	3193.2	3193.2	3226.0	3182.3
30°	3100.4	3084.1	3089.5	3073.2	3078.5	3073.2	3078.5	3078.5	3100.4	3095.0
32.5°	2980.3	2964.1	2969.4	2953.2	2953.2	2958.5	2947.6	2947.6	2964.1	2953.2
35°	2865.6	2827.5	2832.9	2827.5	2832.9	2811.1	2811.1	2805.7	2816.6	2789.2
37.5°	2701.9	2685.7	2680.1	2674.8	2680.1	2669.2	2680.1	2663.9	2680.1	2658.3
40°	2554.5	2543.6	2549.2	2516.4	2516.4	2521.8	2510.9	2505.5	2510.9	2532.7
42.5°	2407.3	2385.5	2374.5	2363.6	2369.0	2352.7	2347.2	2336.2	2347.2	2325.3
45°	2232.5	2232.5	2227.1	2199.7	2205.3	2205.3	2183.5	2161.6	2167.0	2167.0
47.5°	2074.3	2063.4	2057.9	2030.7	2025.1	2019.8	1997.7	1981.5	1981.5	1965.0
50°	1899.5	1888.6	1872.3	1844.9	1834.0	1801.3	1785.0	1763.2	1741.4	1741.4
52.5°	1735.8	1697.5	1675.7	1632.0	1615.8	1599.3	1555.6	1539.4	1522.9	1506.6
55°	1539.4	1506.6	1463.0	1413.8	1391.9	1364.6	1320.9	1288.2	1266.3	1271.9
57.5°	1348.3	1293.7	1250.1	1184.6	1157.2	1140.7	1097.1	1053.4	1031.6	1031.6
60°	1113.6	1069.9	1015.3	955.2	933.4	906.2	851.4	824.3	807.8	791.5
62.5°	889.7	857.0	807.8	731.4	715.1	687.7	649.6	616.9	600.4	600.4
65°	665.9	633.2	589.5	535.0	513.1	491.3	458.6	425.8	409.3	404.0
67.5°	469.5	431.2	393.1	349.4	333.0	322.0	289.3	267.5	256.6	251.0
70°	283.7	261.9	234.7	202.0	185.5	174.6	152.8	136.5	131.0	125.6
72.5°	147.4	131.0	109.1	87.3	76.4	65.5	54.6	43.7	38.3	38.3
75°	54.6	43.7	27.4	16.5	10.9	10.9	10.9	10.9	10.9	10.9
77.5°	10.9	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
80°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
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)