

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

Summary

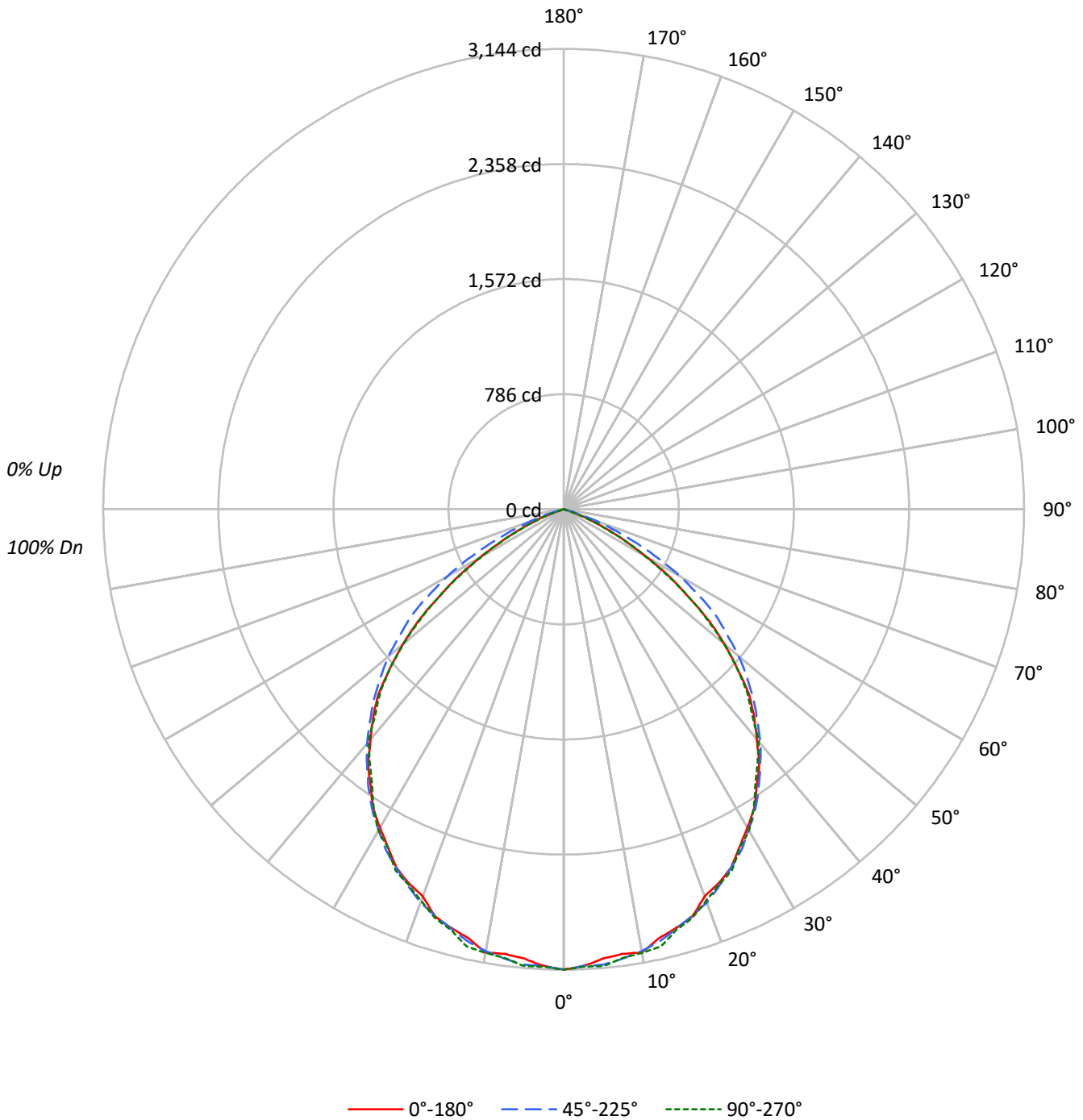
Lumens per Lamp: N/A
 Luminaire Lumens: 6715.0 lumens
 Efficiency: N/A
 Efficacy: 82.4 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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°	303313	303313	303313
5°	298418	302302	303164
10°	300996	300124	301427
15°	295722	296162	297051
20°	288843	293432	292067
25°	287601	287601	289496
30°	279576	281570	282071
35°	270861	273499	268752
40°	258149	263200	260946
45°	244324	249810	241882
50°	215168	233932	213832
55°	174262	214064	175019
60°	127520	177501	124953
65°	77489	126394	75457
70°	30214	68046	28973
75°	3318	18342	3318
80°	2556	2556	2556
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	296.7	4.4
10°-20°	839.6	12.5
20°-30°	1245.8	18.6
30°-40°	1443.5	21.5
40°-50°	1384.0	20.6
50°-60°	1017.6	15.2
60°-70°	439.5	6.5
70°-80°	47.5	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°	2382.2	35.5
0°-40°	3825.7	57.0
0°-60°	6227.4	92.7
0°-90°	6715.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6715.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3144	3144	3144	3144	3144	
5°	3081	3112	3121	3126	3130	294
15°	2960	2978	2965	2969	2974	834
25°	2701	2697	2701	2706	2719	1237
35°	2300	2313	2322	2317	2282	1438
45°	1790	1795	1831	1804	1773	1361
55°	1036	1143	1272	1139	1040	932
65°	339	424	554	420	330	349
75°	9	14	49	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°	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5
2.5°	3121.1	3156.8	3161.4	3138.9	3130.0	3116.7	3147.9	3125.6	3134.6	3125.6	3121.1
5°	3081.0	3121.1	3125.6	3125.6	3116.7	3112.2	3125.6	3121.1	3116.7	3107.8	3121.1
7.5°	3063.2	3085.4	3107.8	3081.0	3094.3	3089.9	3121.1	3107.8	3103.2	3103.2	3094.3
10°	3072.1	3067.5	3085.4	3058.6	3067.5	3058.6	3085.4	3085.4	3076.5	3067.5	3063.2
12.5°	3000.5	3036.2	3036.2	3031.8	3022.9	3009.4	3036.2	3054.2	3027.3	3027.3	3022.9
15°	2960.4	2969.3	2973.7	2973.7	2969.3	2978.3	2991.6	2973.7	2978.3	2955.9	2964.8
17.5°	2915.8	2897.9	2911.2	2902.3	2906.8	2915.8	2933.6	2933.6	2906.8	2902.3	2911.2
20°	2813.0	2866.6	2871.1	2844.4	2848.7	2848.7	2880.1	2853.3	2871.1	2848.7	2857.7
22.5°	2763.8	2799.6	2804.1	2768.4	2790.6	2763.8	2795.2	2754.9	2799.6	2768.4	2781.7
25°	2701.4	2697.0	2710.3	2692.4	2697.0	2697.0	2719.2	2701.4	2714.8	2697.0	2701.4
27.5°	2598.8	2634.5	2629.9	2612.1	2621.0	2616.6	2661.3	2612.1	2638.9	2616.6	2625.6
30°	2509.3	2540.7	2531.7	2513.9	2513.9	2500.4	2549.6	2536.1	2531.7	2531.7	2527.2
32.5°	2420.1	2424.6	2415.7	2420.1	2424.6	2406.8	2446.8	2429.0	2424.6	2429.0	2433.5
35°	2299.5	2299.5	2308.4	2295.1	2312.9	2312.9	2348.7	2326.2	2321.9	2308.4	2321.9
37.5°	2192.3	2179.0	2183.4	2183.4	2192.3	2201.3	2219.1	2210.2	2210.2	2196.9	2205.8
40°	2049.5	2040.6	2053.9	2053.9	2067.4	2067.4	2085.2	2076.3	2089.6	2089.6	2089.6
42.5°	1924.5	1924.5	1915.6	1928.9	1933.5	1928.9	1960.2	1955.7	1960.2	1951.3	1955.7
45°	1790.5	1790.5	1781.5	1777.2	1799.4	1795.0	1830.7	1817.2	1835.1	1826.2	1830.7
47.5°	1607.4	1629.8	1616.3	1629.8	1656.6	1661.1	1683.3	1674.4	1692.3	1679.0	1696.8
50°	1433.4	1433.4	1446.7	1464.5	1491.3	1495.9	1522.7	1540.5	1549.4	1553.8	1558.4
52.5°	1250.3	1245.7	1259.2	1281.4	1303.9	1321.7	1348.5	1375.3	1393.1	1419.9	1406.4
55°	1035.9	1044.8	1058.3	1085.1	1120.8	1143.0	1165.4	1201.1	1232.4	1245.7	1272.5
57.5°	852.8	843.9	852.8	888.5	928.7	946.6	977.9	1013.6	1058.3	1085.1	1094.0
60°	660.8	665.3	674.2	705.6	736.7	763.5	777.0	834.9	875.2	902.0	919.8
62.5°	486.8	495.7	504.6	531.4	562.6	585.0	607.2	656.4	692.1	718.9	736.7
65°	339.4	343.8	357.3	370.6	401.9	424.1	442.0	482.2	517.9	540.3	553.6
67.5°	209.9	214.2	223.2	241.2	263.4	281.3	299.1	325.9	357.3	379.5	384.0
70°	107.1	111.7	116.0	129.5	147.4	156.3	169.6	192.0	214.2	232.1	241.2
72.5°	35.7	35.7	40.3	49.2	58.1	67.0	71.4	93.8	111.7	120.6	125.0
75°	8.9	8.9	8.9	8.9	8.9	13.5	13.5	26.8	35.7	44.6	49.2
77.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	8.9	8.9
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°	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5	3143.5
2.5°	3143.5	3134.6	3130.0	3134.6	3134.6	3130.0	3143.5	3161.4	3183.6	3125.6
5°	3138.9	3130.0	3138.9	3112.2	3125.6	3116.7	3134.6	3130.0	3147.9	3130.0
7.5°	3125.6	3107.8	3112.2	3098.9	3116.7	3094.3	3107.8	3134.6	3116.7	3089.9
10°	3081.0	3072.1	3103.2	3058.6	3049.7	3067.5	3103.2	3076.5	3067.5	3076.5
12.5°	3036.2	3036.2	3049.7	3014.0	3018.3	3027.3	3045.1	3027.3	3036.2	3058.6
15°	2987.2	2978.3	3000.5	2973.7	2969.3	2960.4	2978.3	2978.3	2987.2	2973.7
17.5°	2929.1	2915.8	2915.8	2906.8	2902.3	2924.7	2933.6	2938.0	2942.6	2924.7
20°	2857.7	2853.3	2866.6	2853.3	2857.7	2862.2	2862.2	2853.3	2893.4	2844.4
22.5°	2781.7	2795.2	2777.3	2768.4	2777.3	2786.2	2786.2	2790.6	2781.7	2772.8
25°	2705.9	2714.8	2719.2	2692.4	2705.9	2692.4	2723.8	2728.1	2710.3	2719.2
27.5°	2638.9	2625.6	2621.0	2603.2	2612.1	2607.7	2612.1	2612.1	2638.9	2603.2
30°	2536.1	2522.8	2527.2	2513.9	2518.3	2513.9	2518.3	2518.3	2536.1	2531.7
32.5°	2437.9	2424.6	2429.0	2415.7	2415.7	2420.1	2411.1	2411.1	2424.6	2415.7
35°	2344.1	2312.9	2317.3	2312.9	2317.3	2299.5	2299.5	2295.1	2304.0	2281.6
37.5°	2210.2	2196.9	2192.3	2188.0	2192.3	2183.4	2192.3	2179.0	2192.3	2174.5
40°	2089.6	2080.7	2085.2	2058.4	2058.4	2062.8	2053.9	2049.5	2053.9	2071.7
42.5°	1969.2	1951.3	1942.4	1933.5	1937.8	1924.5	1920.0	1911.1	1920.0	1902.1
45°	1826.2	1826.2	1821.8	1799.4	1803.9	1803.9	1786.1	1768.2	1772.6	1772.6
47.5°	1696.8	1687.9	1683.3	1661.1	1656.6	1652.2	1634.2	1620.8	1620.8	1607.4
50°	1553.8	1544.9	1531.6	1509.2	1500.2	1473.5	1460.2	1442.3	1424.5	1424.5
52.5°	1419.9	1388.6	1370.7	1335.0	1321.7	1308.2	1272.5	1259.2	1245.7	1232.4
55°	1259.2	1232.4	1196.7	1156.5	1138.6	1116.2	1080.5	1053.7	1035.9	1040.4
57.5°	1102.9	1058.3	1022.6	969.0	946.6	933.1	897.4	861.7	843.9	843.9
60°	910.9	875.2	830.6	781.4	763.5	741.3	696.5	674.2	660.8	647.5
62.5°	727.8	701.0	660.8	598.3	585.0	562.6	531.4	504.6	491.2	491.2
65°	544.7	517.9	482.2	437.6	419.7	401.9	375.1	348.3	334.8	330.5
67.5°	384.0	352.7	321.5	285.8	272.4	263.4	236.7	218.8	209.9	205.3
70°	232.1	214.2	192.0	165.2	151.8	142.8	125.0	111.7	107.1	102.7
72.5°	120.6	107.1	89.3	71.4	62.5	53.6	44.6	35.7	31.3	31.3
75°	44.6	35.7	22.4	13.5	8.9	8.9	8.9	8.9	8.9	8.9
77.5°	8.9	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)