

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: **FLDSQ4C55D010 FEU4C559035 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: FLDSQ4C55D010 FEU4C559035 F4LC-CSSQ-MW
 Description: 4 INCH 5500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MW FINISH
 Light Source: -
 Ballast/Driver: -

Summary

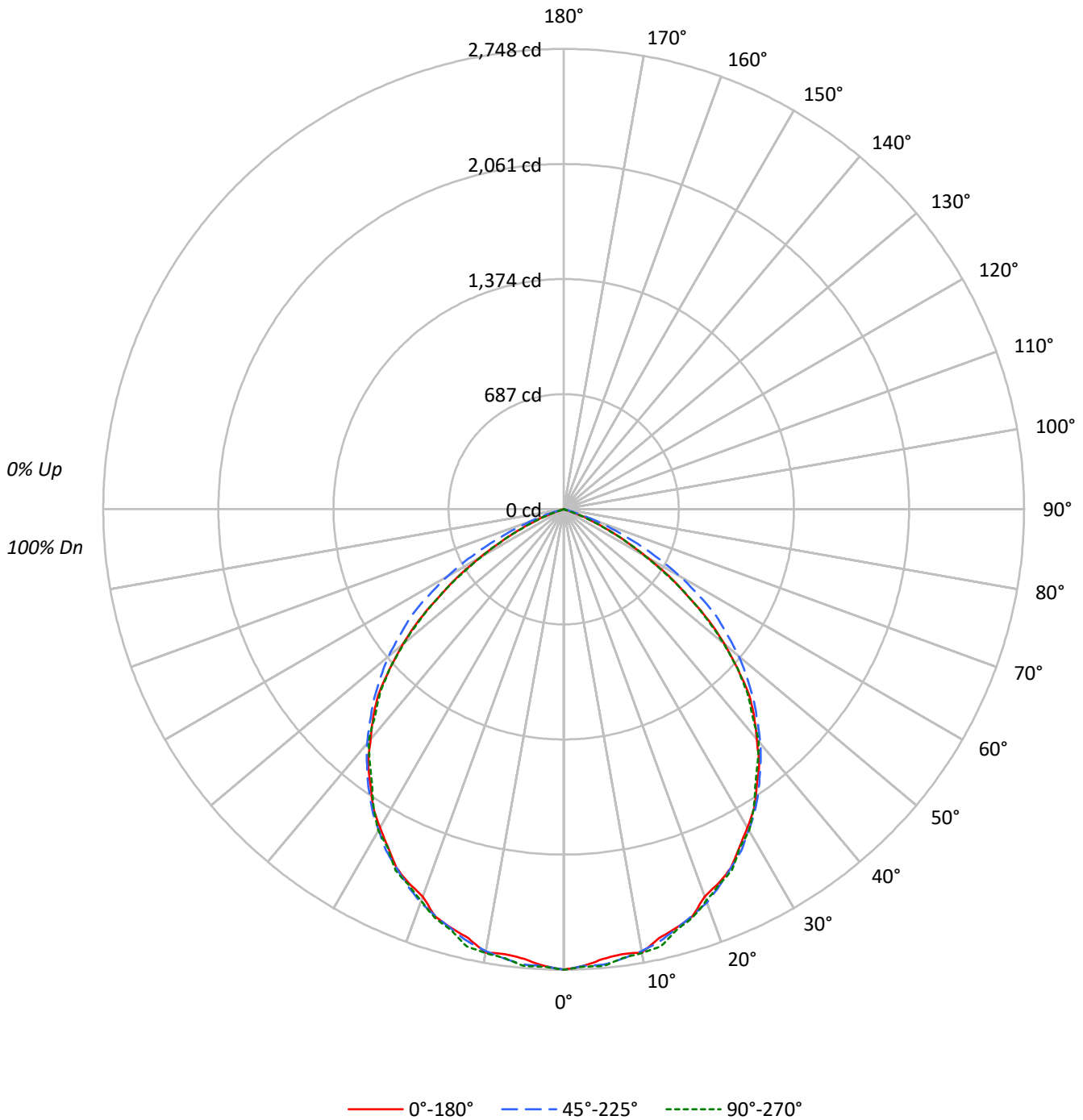
Lumens per Lamp: N/A
 Luminaire Lumens: 5870.0 lumens
 Efficiency: N/A
 Efficacy: 91.9 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 63.9
 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	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°	265142	265142	265142
5°	260866	264256	265012
10°	263118	262354	263491
15°	258512	258892	259671
20°	252493	256508	255307
25°	251403	251403	253064
30°	244402	246140	246585
35°	236772	239081	234935
40°	225665	230074	228109
45°	213581	218370	211438
50°	188088	204495	186917
55°	152326	187132	152999
60°	111464	155173	109225
65°	67740	110503	65959
70°	26406	59470	25334
75°	2908	16031	2908
80°	2223	2223	2223
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	259.4	4.4
10°-20°	734.0	12.5
20°-30°	1089.1	18.6
30°-40°	1261.9	21.5
40°-50°	1209.9	20.6
50°-60°	889.6	15.2
60°-70°	384.2	6.5
70°-80°	41.5	0.7
80°-90°	0.5	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°	2082.4	35.5
0°-40°	3344.3	57.0
0°-60°	5443.8	92.7
0°-90°	5870.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5870.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2748	2748	2748	2748	2748	
5°	2693	2720	2728	2732	2736	257
15°	2588	2604	2592	2596	2600	729
25°	2361	2358	2361	2365	2377	1081
35°	2010	2022	2030	2026	1994	1257
45°	1565	1569	1600	1577	1550	1190
55°	906	999	1112	995	910	815
65°	297	371	484	367	289	305
75°	8	12	43	8	8	24
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°	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9
2.5°	2728.3	2759.6	2763.5	2744.0	2736.1	2724.5	2751.8	2732.3	2740.1	2732.3	2728.3
5°	2693.3	2728.3	2732.3	2732.3	2724.5	2720.5	2732.3	2728.3	2724.5	2716.7	2728.3
7.5°	2677.7	2697.1	2716.7	2693.3	2704.9	2701.1	2728.3	2716.7	2712.7	2712.7	2704.9
10°	2685.5	2681.5	2697.1	2673.7	2681.5	2673.7	2697.1	2697.1	2689.3	2681.5	2677.7
12.5°	2622.9	2654.1	2654.1	2650.3	2642.5	2630.7	2654.1	2669.9	2646.3	2646.3	2642.5
15°	2587.9	2595.7	2599.5	2599.5	2595.7	2603.5	2615.1	2599.5	2603.5	2583.9	2591.7
17.5°	2548.9	2533.3	2544.9	2537.1	2541.1	2548.9	2564.5	2564.5	2541.1	2537.1	2544.9
20°	2459.0	2505.9	2509.8	2486.4	2490.3	2490.3	2517.6	2494.2	2509.8	2490.3	2498.1
22.5°	2416.0	2447.3	2451.2	2420.0	2439.5	2416.0	2443.4	2408.2	2447.3	2420.0	2431.7
25°	2361.4	2357.6	2369.2	2353.6	2357.6	2357.6	2377.0	2361.4	2373.2	2357.6	2361.4
27.5°	2271.8	2303.0	2299.0	2283.4	2291.2	2287.4	2326.4	2283.4	2306.8	2287.4	2295.2
30°	2193.6	2221.0	2213.2	2197.5	2197.5	2185.8	2228.8	2217.0	2213.2	2213.2	2209.2
32.5°	2115.5	2119.5	2111.7	2115.5	2119.5	2103.9	2138.9	2123.3	2119.5	2123.3	2127.3
35°	2010.1	2010.1	2017.9	2006.3	2021.9	2021.9	2053.1	2033.5	2029.7	2017.9	2029.7
37.5°	1916.5	1904.8	1908.7	1908.7	1916.5	1924.3	1939.9	1932.1	1932.1	1920.4	1928.2
40°	1791.6	1783.8	1795.4	1795.4	1807.2	1807.2	1822.8	1815.0	1826.6	1826.6	1826.6
42.5°	1682.4	1682.4	1674.6	1686.2	1690.2	1686.2	1713.6	1709.6	1713.6	1705.8	1709.6
45°	1565.2	1565.2	1557.3	1553.5	1573.0	1569.1	1600.3	1588.6	1604.2	1596.4	1600.3
47.5°	1405.1	1424.7	1412.9	1424.7	1448.1	1452.1	1471.5	1463.7	1479.3	1467.7	1483.3
50°	1253.0	1253.0	1264.6	1280.2	1303.7	1307.6	1331.0	1346.7	1354.5	1358.3	1362.3
52.5°	1093.0	1089.0	1100.8	1120.2	1139.8	1155.4	1178.8	1202.2	1217.8	1241.2	1229.4
55°	905.5	913.3	925.1	948.5	979.7	999.2	1018.7	1050.0	1077.4	1089.0	1112.4
57.5°	745.5	737.7	745.5	776.7	811.9	827.5	854.9	886.1	925.1	948.5	956.3
60°	577.6	581.6	589.4	616.8	644.0	667.4	679.2	729.9	765.1	788.5	804.1
62.5°	425.5	433.3	441.1	464.5	491.8	511.4	530.8	573.8	605.0	628.4	644.0
65°	296.7	300.5	312.3	323.9	351.3	370.7	386.4	421.5	452.8	472.3	484.0
67.5°	183.5	187.3	195.1	210.8	230.3	245.9	261.5	284.9	312.3	331.7	335.7
70°	93.6	97.6	101.4	113.2	128.8	136.6	148.3	167.9	187.3	202.9	210.8
72.5°	31.2	31.2	35.2	43.0	50.8	58.6	62.4	82.0	97.6	105.4	109.3
75°	7.8	7.8	7.8	7.8	7.8	11.8	11.8	23.4	31.2	39.0	43.0
77.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	7.8	7.8
80°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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°	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9	2747.9
2.5°	2747.9	2740.1	2736.1	2740.1	2740.1	2736.1	2747.9	2763.5	2783.0	2732.3
5°	2744.0	2736.1	2744.0	2720.5	2732.3	2724.5	2740.1	2736.1	2751.8	2736.1
7.5°	2732.3	2716.7	2720.5	2708.9	2724.5	2704.9	2716.7	2740.1	2724.5	2701.1
10°	2693.3	2685.5	2712.7	2673.7	2665.9	2681.5	2712.7	2689.3	2681.5	2689.3
12.5°	2654.1	2654.1	2665.9	2634.7	2638.5	2646.3	2661.9	2646.3	2654.1	2673.7
15°	2611.3	2603.5	2622.9	2599.5	2595.7	2587.9	2603.5	2603.5	2611.3	2599.5
17.5°	2560.5	2548.9	2548.9	2541.1	2537.1	2556.7	2564.5	2568.3	2572.3	2556.7
20°	2498.1	2494.2	2505.9	2494.2	2498.1	2502.0	2502.0	2494.2	2529.3	2486.4
22.5°	2431.7	2443.4	2427.8	2420.0	2427.8	2435.6	2435.6	2439.5	2431.7	2423.9
25°	2365.4	2373.2	2377.0	2353.6	2365.4	2353.6	2381.0	2384.8	2369.2	2377.0
27.5°	2306.8	2295.2	2291.2	2275.6	2283.4	2279.6	2283.4	2283.4	2306.8	2275.6
30°	2217.0	2205.4	2209.2	2197.5	2201.4	2197.5	2201.4	2201.4	2217.0	2213.2
32.5°	2131.1	2119.5	2123.3	2111.7	2111.7	2115.5	2107.7	2107.7	2119.5	2111.7
35°	2049.1	2021.9	2025.7	2021.9	2025.7	2010.1	2010.1	2006.3	2014.1	1994.5
37.5°	1932.1	1920.4	1916.5	1912.6	1916.5	1908.7	1916.5	1904.8	1916.5	1900.9
40°	1826.6	1818.8	1822.8	1799.4	1799.4	1803.2	1795.4	1791.6	1795.4	1811.0
42.5°	1721.4	1705.8	1698.0	1690.2	1694.0	1682.4	1678.4	1670.6	1678.4	1662.8
45°	1596.4	1596.4	1592.5	1573.0	1576.9	1576.9	1561.3	1545.7	1549.5	1549.5
47.5°	1483.3	1475.5	1471.5	1452.1	1448.1	1444.3	1428.5	1416.9	1416.9	1405.1
50°	1358.3	1350.5	1338.8	1319.3	1311.5	1288.0	1276.4	1260.8	1245.2	1245.2
52.5°	1241.2	1213.8	1198.2	1167.0	1155.4	1143.6	1112.4	1100.8	1089.0	1077.4
55°	1100.8	1077.4	1046.1	1010.9	995.3	975.8	944.5	921.1	905.5	909.5
57.5°	964.1	925.1	893.9	847.1	827.5	815.7	784.5	753.3	737.7	737.7
60°	796.3	765.1	726.0	683.0	667.4	648.0	608.8	589.4	577.6	566.0
62.5°	636.2	612.8	577.6	523.0	511.4	491.8	464.5	441.1	429.3	429.3
65°	476.2	452.8	421.5	382.5	366.9	351.3	327.9	304.5	292.7	288.9
67.5°	335.7	308.3	281.1	249.9	238.1	230.3	206.9	191.3	183.5	179.5
70°	202.9	187.3	167.9	144.4	132.7	124.9	109.3	97.6	93.6	89.8
72.5°	105.4	93.6	78.0	62.4	54.6	46.8	39.0	31.2	27.4	27.4
75°	39.0	31.2	19.6	11.8	7.8	7.8	7.8	7.8	7.8	7.8
77.5°	7.8	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
80°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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)