

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 FEU4C559030 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 FEU4C559030 F4LC-CSSQ-MW
 Description: 4 INCH 5500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MW FINISH
 Light Source: -
 Ballast/Driver: -

Summary

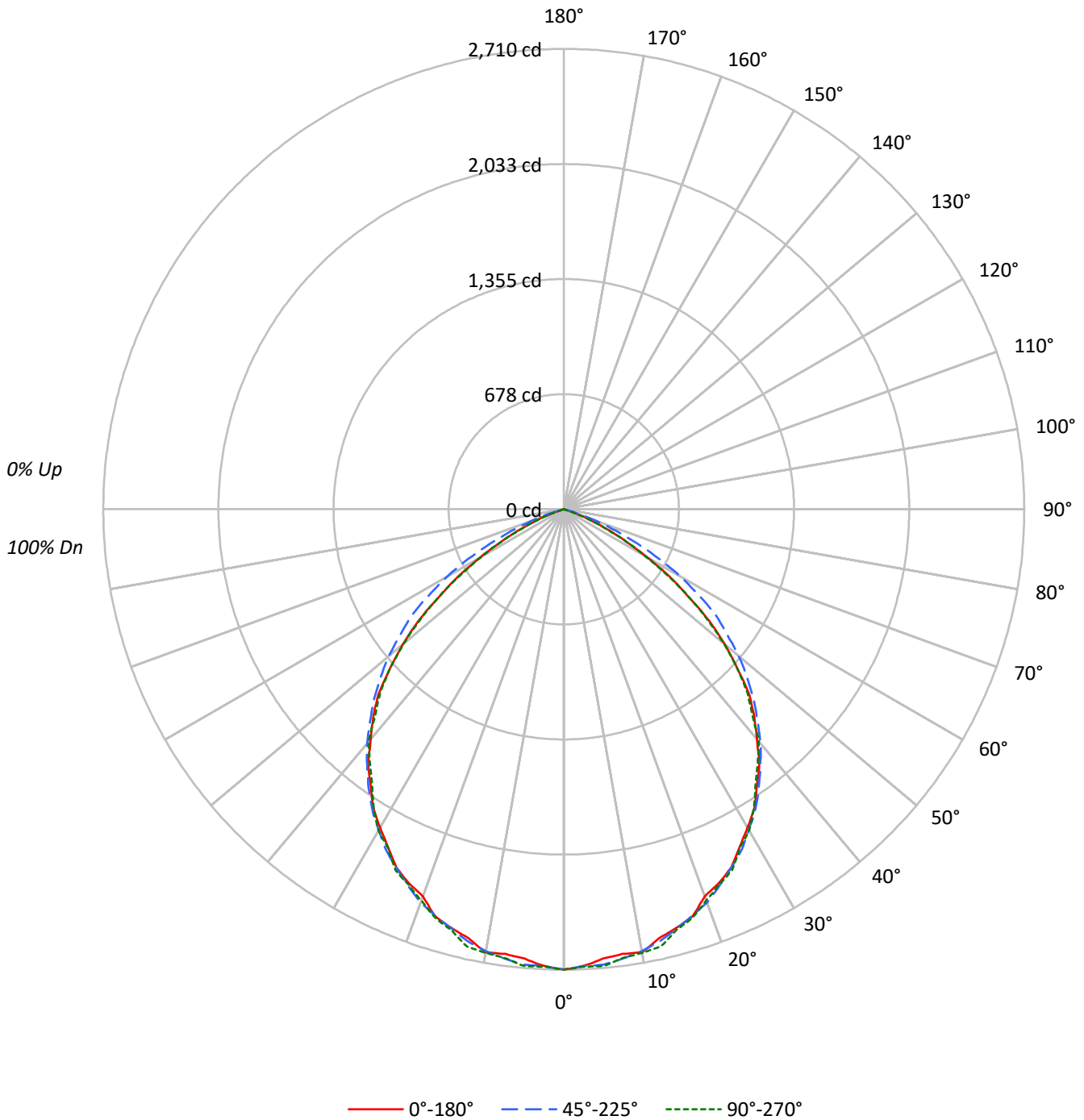
Lumens per Lamp: N/A
 Luminaire Lumens: 5788.0 lumens
 Efficiency: N/A
 Efficacy: 90.6 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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°	261437	261437	261437
5°	257224	260566	261312
10°	259444	258690	259816
15°	254896	255276	256045
20°	248971	252925	251744
25°	247890	247890	249530
30°	240981	242697	243132
35°	233462	235736	231648
40°	222516	226862	224922
45°	210592	215327	208491
50°	185461	201628	184305
55°	150207	184524	150863
60°	109901	152993	107701
65°	66781	108951	65023
70°	26039	58652	24995
75°	2871	15807	2871
80°	2167	2167	2167
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	255.8	4.4
10°-20°	723.7	12.5
20°-30°	1073.8	18.6
30°-40°	1244.3	21.5
40°-50°	1193.0	20.6
50°-60°	877.2	15.2
60°-70°	378.8	6.5
70°-80°	40.9	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°	2053.3	35.5
0°-40°	3297.6	57.0
0°-60°	5367.7	92.7
0°-90°	5788.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5788.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2710	2710	2710	2710	2710	
5°	2656	2682	2690	2694	2698	253
15°	2552	2567	2556	2559	2563	719
25°	2328	2325	2328	2332	2344	1066
35°	1982	1994	2001	1997	1967	1239
45°	1543	1547	1578	1555	1528	1173
55°	893	985	1097	981	897	804
65°	292	366	477	362	285	301
75°	8	12	42	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°	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5
2.5°	2690.2	2721.0	2724.9	2705.6	2697.9	2686.5	2713.3	2694.2	2701.8	2694.2	2690.2
5°	2655.7	2690.2	2694.2	2694.2	2686.5	2682.5	2694.2	2690.2	2686.5	2678.8	2690.2
7.5°	2640.3	2659.5	2678.8	2655.7	2667.1	2663.4	2690.2	2678.8	2674.8	2674.8	2667.1
10°	2648.0	2644.1	2659.5	2636.4	2644.1	2636.4	2659.5	2659.5	2651.8	2644.1	2640.3
12.5°	2586.3	2617.1	2617.1	2613.3	2605.6	2594.0	2617.1	2632.6	2609.4	2609.4	2605.6
15°	2551.7	2559.4	2563.2	2563.2	2559.4	2567.1	2578.6	2563.2	2567.1	2547.8	2555.5
17.5°	2513.3	2497.9	2509.3	2501.6	2505.6	2513.3	2528.6	2528.6	2505.6	2501.6	2509.3
20°	2424.7	2470.9	2474.8	2451.7	2455.5	2455.5	2482.5	2459.4	2474.8	2455.5	2463.2
22.5°	2382.3	2413.1	2417.0	2386.2	2405.4	2382.3	2409.3	2374.6	2413.1	2386.2	2397.7
25°	2328.4	2324.7	2336.1	2320.7	2324.7	2324.7	2343.8	2328.4	2340.1	2324.7	2328.4
27.5°	2240.0	2270.8	2266.9	2251.5	2259.2	2255.4	2293.9	2251.5	2274.6	2255.4	2263.1
30°	2162.9	2189.9	2182.2	2166.8	2166.8	2155.2	2197.6	2186.0	2182.2	2182.2	2178.3
32.5°	2086.0	2089.9	2082.2	2086.0	2089.9	2074.5	2109.1	2093.7	2089.9	2093.7	2097.6
35°	1982.0	1982.0	1989.7	1978.3	1993.6	1993.6	2024.4	2005.1	2001.3	1989.7	2001.3
37.5°	1889.7	1878.2	1882.0	1882.0	1889.7	1897.4	1912.8	1905.1	1905.1	1893.6	1901.3
40°	1766.6	1758.9	1770.4	1770.4	1782.0	1782.0	1797.4	1789.7	1801.1	1801.1	1801.1
42.5°	1658.9	1658.9	1651.2	1662.6	1666.6	1662.6	1689.6	1685.7	1689.6	1681.9	1685.7
45°	1543.3	1543.3	1535.6	1531.8	1551.0	1547.2	1578.0	1566.4	1581.8	1574.1	1578.0
47.5°	1385.5	1404.8	1393.2	1404.8	1427.9	1431.8	1451.0	1443.3	1458.6	1447.2	1462.6
50°	1235.5	1235.5	1247.0	1262.4	1285.4	1289.4	1312.5	1327.8	1335.5	1339.3	1343.2
52.5°	1077.7	1073.8	1085.4	1104.5	1123.9	1139.2	1162.3	1185.4	1200.8	1223.9	1212.3
55°	892.9	900.6	912.2	935.3	966.0	985.2	1004.5	1035.3	1062.3	1073.8	1096.9
57.5°	735.1	727.4	735.1	765.8	800.5	815.9	842.9	873.7	912.2	935.3	943.0
60°	569.5	573.5	581.2	608.2	635.0	658.1	669.7	719.7	754.4	777.5	792.8
62.5°	419.6	427.3	435.0	458.1	484.9	504.2	523.4	565.8	596.6	619.6	635.0
65°	292.5	296.3	307.9	319.4	346.4	365.6	381.0	415.7	446.4	465.7	477.2
67.5°	180.9	184.7	192.4	207.9	227.1	242.5	257.8	280.9	307.9	327.1	331.0
70°	92.3	96.3	100.0	111.6	127.0	134.7	146.2	165.5	184.7	200.1	207.9
72.5°	30.8	30.8	34.7	42.4	50.1	57.8	61.6	80.9	96.3	104.0	107.7
75°	7.7	7.7	7.7	7.7	7.7	11.6	11.6	23.1	30.8	38.5	42.4
77.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	7.7	7.7
80°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
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°	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5	2709.5
2.5°	2709.5	2701.8	2697.9	2701.8	2701.8	2697.9	2709.5	2724.9	2744.1	2694.2
5°	2705.6	2697.9	2705.6	2682.5	2694.2	2686.5	2701.8	2697.9	2713.3	2697.9
7.5°	2694.2	2678.8	2682.5	2671.1	2686.5	2667.1	2678.8	2701.8	2686.5	2663.4
10°	2655.7	2648.0	2674.8	2636.4	2628.7	2644.1	2674.8	2651.8	2644.1	2651.8
12.5°	2617.1	2617.1	2628.7	2597.9	2601.7	2609.4	2624.8	2609.4	2617.1	2636.4
15°	2574.8	2567.1	2586.3	2563.2	2559.4	2551.7	2567.1	2567.1	2574.8	2563.2
17.5°	2524.7	2513.3	2513.3	2505.6	2501.6	2520.9	2528.6	2532.4	2536.3	2520.9
20°	2463.2	2459.4	2470.9	2459.4	2463.2	2467.1	2467.1	2459.4	2493.9	2451.7
22.5°	2397.7	2409.3	2393.9	2386.2	2393.9	2401.6	2401.6	2405.4	2397.7	2390.0
25°	2332.4	2340.1	2343.8	2320.7	2332.4	2320.7	2347.7	2351.5	2336.1	2343.8
27.5°	2274.6	2263.1	2259.2	2243.8	2251.5	2247.7	2251.5	2251.5	2274.6	2243.8
30°	2186.0	2174.5	2178.3	2166.8	2170.6	2166.8	2170.6	2170.6	2186.0	2182.2
32.5°	2101.4	2089.9	2093.7	2082.2	2082.2	2086.0	2078.3	2078.3	2089.9	2082.2
35°	2020.5	1993.6	1997.4	1993.6	1997.4	1982.0	1982.0	1978.3	1986.0	1966.6
37.5°	1905.1	1893.6	1889.7	1885.9	1889.7	1882.0	1889.7	1878.2	1889.7	1874.3
40°	1801.1	1793.4	1797.4	1774.3	1774.3	1778.0	1770.4	1766.6	1770.4	1785.7
42.5°	1697.3	1681.9	1674.2	1666.6	1670.3	1658.9	1654.9	1647.2	1654.9	1639.5
45°	1574.1	1574.1	1570.3	1551.0	1554.9	1554.9	1539.5	1524.1	1527.9	1527.9
47.5°	1462.6	1454.9	1451.0	1431.8	1427.9	1424.1	1408.6	1397.1	1397.1	1385.5
50°	1339.3	1331.6	1320.1	1300.8	1293.1	1270.1	1258.6	1243.2	1227.8	1227.8
52.5°	1223.9	1196.9	1181.5	1150.7	1139.2	1127.6	1096.9	1085.4	1073.8	1062.3
55°	1085.4	1062.3	1031.5	996.8	981.4	962.1	931.3	908.3	892.9	896.8
57.5°	950.7	912.2	881.4	835.2	815.9	804.3	773.5	742.8	727.4	727.4
60°	785.1	754.4	715.9	673.5	658.1	639.0	600.3	581.2	569.5	558.1
62.5°	627.3	604.2	569.5	515.7	504.2	484.9	458.1	435.0	423.4	423.4
65°	469.5	446.4	415.7	377.2	361.8	346.4	323.3	300.2	288.6	284.8
67.5°	331.0	304.0	277.2	246.4	234.8	227.1	204.0	188.6	180.9	177.0
70°	200.1	184.7	165.5	142.4	130.8	123.1	107.7	96.3	92.3	88.6
72.5°	104.0	92.3	76.9	61.6	53.9	46.2	38.5	30.8	27.0	27.0
75°	38.5	30.8	19.3	11.6	7.7	7.7	7.7	7.7	7.7	7.7
77.5°	7.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
80°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
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)