

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 FEU4C559050 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: FLDSQ4C55D010 FEU4C559050 F4LC-CSSQ-MMS  
 Description: 4 INCH 5500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MMS FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

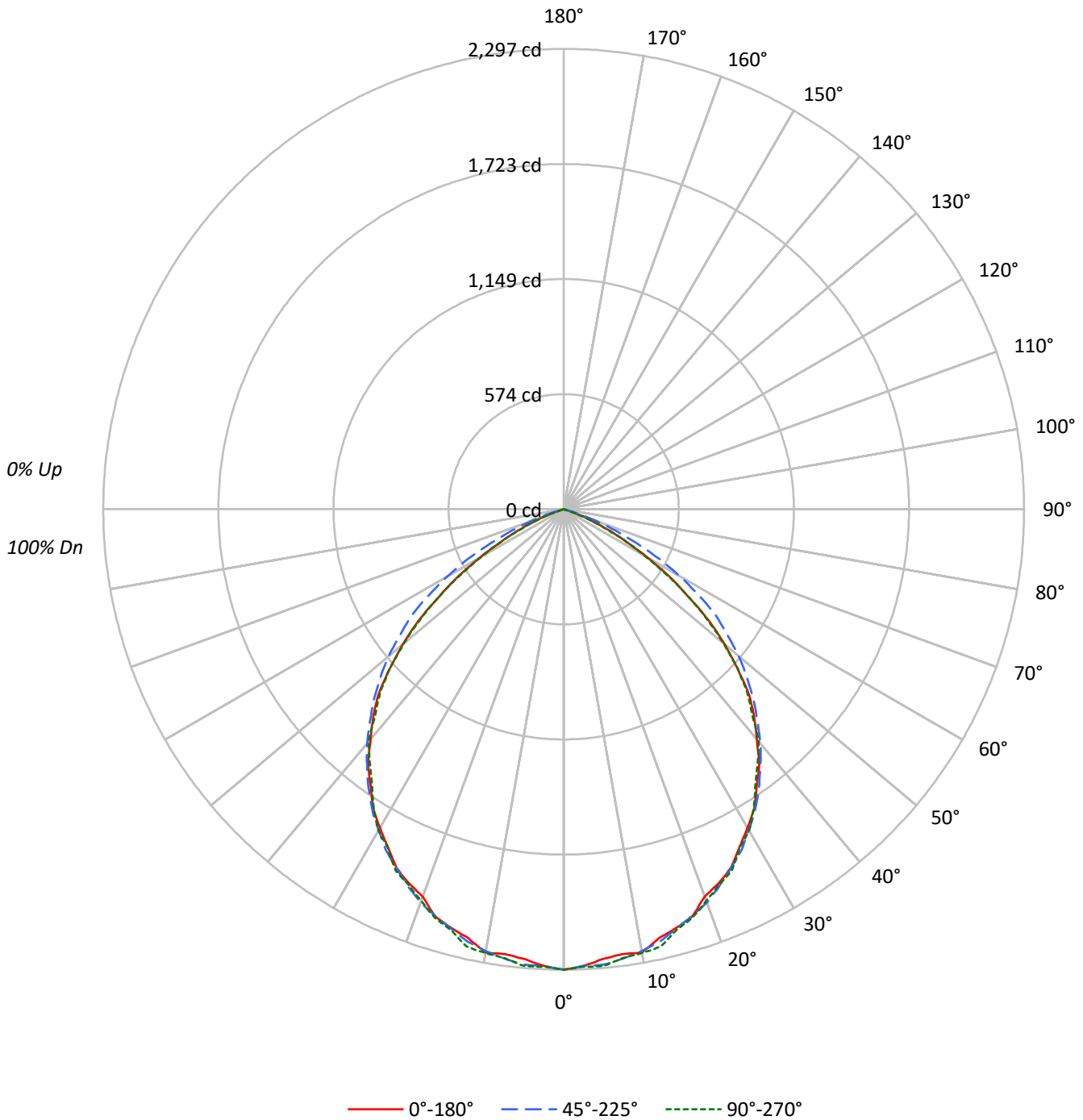
Lumens per Lamp: N/A  
 Luminaire Lumens: 4907.0 lumens  
 Efficiency: N/A  
 Efficacy: 76.8 lumens/watt  
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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	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°	221645	221645	221645
5°	218075	220903	221542
10°	219949	219313	220263
15°	216098	216417	217067
20°	211072	214419	213423
25°	210159	210159	211554
30°	204303	205763	206130
35°	197925	199856	196393
40°	188646	192337	190687
45°	178539	182551	176751
50°	157225	170945	156250
55°	127345	156431	127900
60°	93189	129720	91298
65°	56621	92375	55137
70°	22090	49737	21187
75°	2423	13384	2423
80°	1834	1834	1834
85°	0	0	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	216.8	4.4
10°-20°	613.6	12.5
20°-30°	910.4	18.6
30°-40°	1054.9	21.5
40°-50°	1011.4	20.6
50°-60°	743.6	15.2
60°-70°	321.2	6.5
70°-80°	34.7	0.7
80°-90°	0.4	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°	1740.8	35.5
0°-40°	2795.7	57.0
0°-60°	4550.7	92.7
0°-90°	4907.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4907.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2297	2297	2297	2297	2297	
5°	2252	2274	2281	2284	2287	215
15°	2163	2176	2166	2170	2173	610
25°	1974	1971	1974	1977	1987	904
35°	1680	1690	1697	1693	1667	1051
45°	1308	1312	1338	1318	1295	995
55°	757	835	930	832	760	681
65°	248	310	405	307	242	255
75°	6	10	36	6	6	20
85°	0	0	0	0	0	0
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°	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1
2.5°	2280.7	2306.8	2310.2	2293.8	2287.3	2277.5	2300.3	2284.1	2290.6	2284.1	2280.7
5°	2251.5	2280.7	2284.1	2284.1	2277.5	2274.2	2284.1	2280.7	2277.5	2271.0	2280.7
7.5°	2238.4	2254.7	2271.0	2251.5	2261.2	2258.0	2280.7	2271.0	2267.7	2267.7	2261.2
10°	2244.9	2241.6	2254.7	2235.1	2241.6	2235.1	2254.7	2254.7	2248.1	2241.6	2238.4
12.5°	2192.6	2218.7	2218.7	2215.5	2209.0	2199.1	2218.7	2231.9	2212.2	2212.2	2209.0
15°	2163.3	2169.8	2173.0	2173.0	2169.8	2176.4	2186.1	2173.0	2176.4	2160.0	2166.5
17.5°	2130.7	2117.7	2127.4	2120.9	2124.2	2130.7	2143.8	2143.8	2124.2	2120.9	2127.4
20°	2055.6	2094.8	2098.1	2078.5	2081.7	2081.7	2104.6	2085.0	2098.1	2081.7	2088.2
22.5°	2019.7	2045.8	2049.1	2023.0	2039.3	2019.7	2042.6	2013.2	2045.8	2023.0	2032.7
25°	1974.0	1970.8	1980.5	1967.5	1970.8	1970.8	1987.1	1974.0	1983.9	1970.8	1974.0
27.5°	1899.1	1925.2	1921.8	1908.8	1915.3	1912.1	1944.7	1908.8	1928.4	1912.1	1918.6
30°	1833.7	1856.6	1850.1	1837.0	1837.0	1827.2	1863.1	1853.3	1850.1	1850.1	1846.8
32.5°	1768.5	1771.8	1765.3	1768.5	1771.8	1758.7	1788.0	1775.0	1771.8	1775.0	1778.3
35°	1680.3	1680.3	1686.9	1677.1	1690.2	1690.2	1716.3	1699.9	1696.7	1686.9	1696.7
37.5°	1602.1	1592.3	1595.5	1595.5	1602.1	1608.6	1621.6	1615.1	1615.1	1605.4	1611.9
40°	1497.7	1491.2	1500.9	1500.9	1510.7	1510.7	1523.8	1517.3	1527.0	1527.0	1527.0
42.5°	1406.4	1406.4	1399.8	1409.6	1412.9	1409.6	1432.5	1429.1	1432.5	1425.9	1429.1
45°	1308.4	1308.4	1301.9	1298.7	1314.9	1311.7	1337.8	1328.0	1341.0	1334.5	1337.8
47.5°	1174.6	1191.0	1181.1	1191.0	1210.5	1213.9	1230.1	1223.6	1236.6	1226.9	1240.0
50°	1047.4	1047.4	1057.2	1070.2	1089.8	1093.1	1112.7	1125.7	1132.3	1135.4	1138.8
52.5°	913.7	910.3	920.2	936.4	952.8	965.8	985.4	1005.0	1018.0	1037.6	1027.7
55°	757.0	763.5	773.3	792.9	819.0	835.2	851.6	877.7	900.6	910.3	929.9
57.5°	623.2	616.6	623.2	649.3	678.7	691.7	714.6	740.7	773.3	792.9	799.4
60°	482.9	486.2	492.7	515.6	538.4	557.9	567.8	610.1	639.5	659.1	672.2
62.5°	355.7	362.2	368.8	388.3	411.1	427.5	443.7	479.7	505.8	525.3	538.4
65°	248.0	251.2	261.1	270.8	293.7	309.9	323.0	352.4	378.5	394.9	404.6
67.5°	153.4	156.6	163.1	176.3	192.5	205.5	218.6	238.2	261.1	277.3	280.6
70°	78.3	81.6	84.8	94.7	107.7	114.2	123.9	140.3	156.6	169.6	176.3
72.5°	26.1	26.1	29.4	35.9	42.5	49.0	52.2	68.6	81.6	88.1	91.3
75°	6.5	6.5	6.5	6.5	6.5	9.8	9.8	19.6	26.1	32.6	35.9
77.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	6.5	6.5
80°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
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°	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1	2297.1
2.5°	2297.1	2290.6	2287.3	2290.6	2290.6	2287.3	2297.1	2310.2	2326.4	2284.1
5°	2293.8	2287.3	2293.8	2274.2	2284.1	2277.5	2290.6	2287.3	2300.3	2287.3
7.5°	2284.1	2271.0	2274.2	2264.5	2277.5	2261.2	2271.0	2290.6	2277.5	2258.0
10°	2251.5	2244.9	2267.7	2235.1	2228.6	2241.6	2267.7	2248.1	2241.6	2248.1
12.5°	2218.7	2218.7	2228.6	2202.5	2205.7	2212.2	2225.2	2212.2	2218.7	2235.1
15°	2182.9	2176.4	2192.6	2173.0	2169.8	2163.3	2176.4	2176.4	2182.9	2173.0
17.5°	2140.4	2130.7	2130.7	2124.2	2120.9	2137.2	2143.8	2147.0	2150.3	2137.2
20°	2088.2	2085.0	2094.8	2085.0	2088.2	2091.6	2091.6	2085.0	2114.3	2078.5
22.5°	2032.7	2042.6	2029.5	2023.0	2029.5	2036.1	2036.1	2039.3	2032.7	2026.2
25°	1977.3	1983.9	1987.1	1967.5	1977.3	1967.5	1990.4	1993.6	1980.5	1987.1
27.5°	1928.4	1918.6	1915.3	1902.3	1908.8	1905.6	1908.8	1908.8	1928.4	1902.3
30°	1853.3	1843.6	1846.8	1837.0	1840.2	1837.0	1840.2	1840.2	1853.3	1850.1
32.5°	1781.5	1771.8	1775.0	1765.3	1765.3	1768.5	1761.9	1761.9	1771.8	1765.3
35°	1713.0	1690.2	1693.4	1690.2	1693.4	1680.3	1680.3	1677.1	1683.7	1667.3
37.5°	1615.1	1605.4	1602.1	1598.9	1602.1	1595.5	1602.1	1592.3	1602.1	1589.0
40°	1527.0	1520.5	1523.8	1504.2	1504.2	1507.4	1500.9	1497.7	1500.9	1513.9
42.5°	1439.0	1425.9	1419.4	1412.9	1416.1	1406.4	1403.0	1396.5	1403.0	1390.0
45°	1334.5	1334.5	1331.3	1314.9	1318.2	1318.2	1305.2	1292.1	1295.3	1295.3
47.5°	1240.0	1233.4	1230.1	1213.9	1210.5	1207.3	1194.2	1184.4	1184.4	1174.6
50°	1135.4	1128.9	1119.2	1102.8	1096.3	1076.7	1067.0	1054.0	1040.9	1040.9
52.5°	1037.6	1014.7	1001.7	975.6	965.8	956.0	929.9	920.2	910.3	900.6
55°	920.2	900.6	874.5	845.1	832.0	815.7	789.6	770.0	757.0	760.3
57.5°	806.0	773.3	747.2	708.1	691.7	681.9	655.8	629.7	616.6	616.6
60°	665.6	639.5	606.9	571.0	557.9	541.7	509.0	492.7	482.9	473.1
62.5°	531.8	512.3	482.9	437.2	427.5	411.1	388.3	368.8	358.9	358.9
65°	398.1	378.5	352.4	319.8	306.7	293.7	274.1	254.5	244.7	241.5
67.5°	280.6	257.7	235.0	208.9	199.0	192.5	172.9	159.9	153.4	150.0
70°	169.6	156.6	140.3	120.7	110.9	104.4	91.3	81.6	78.3	75.1
72.5°	88.1	78.3	65.2	52.2	45.7	39.1	32.6	26.1	22.9	22.9
75°	32.6	26.1	16.4	9.8	6.5	6.5	6.5	6.5	6.5	6.5
77.5°	6.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
80°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
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)