

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

Summary

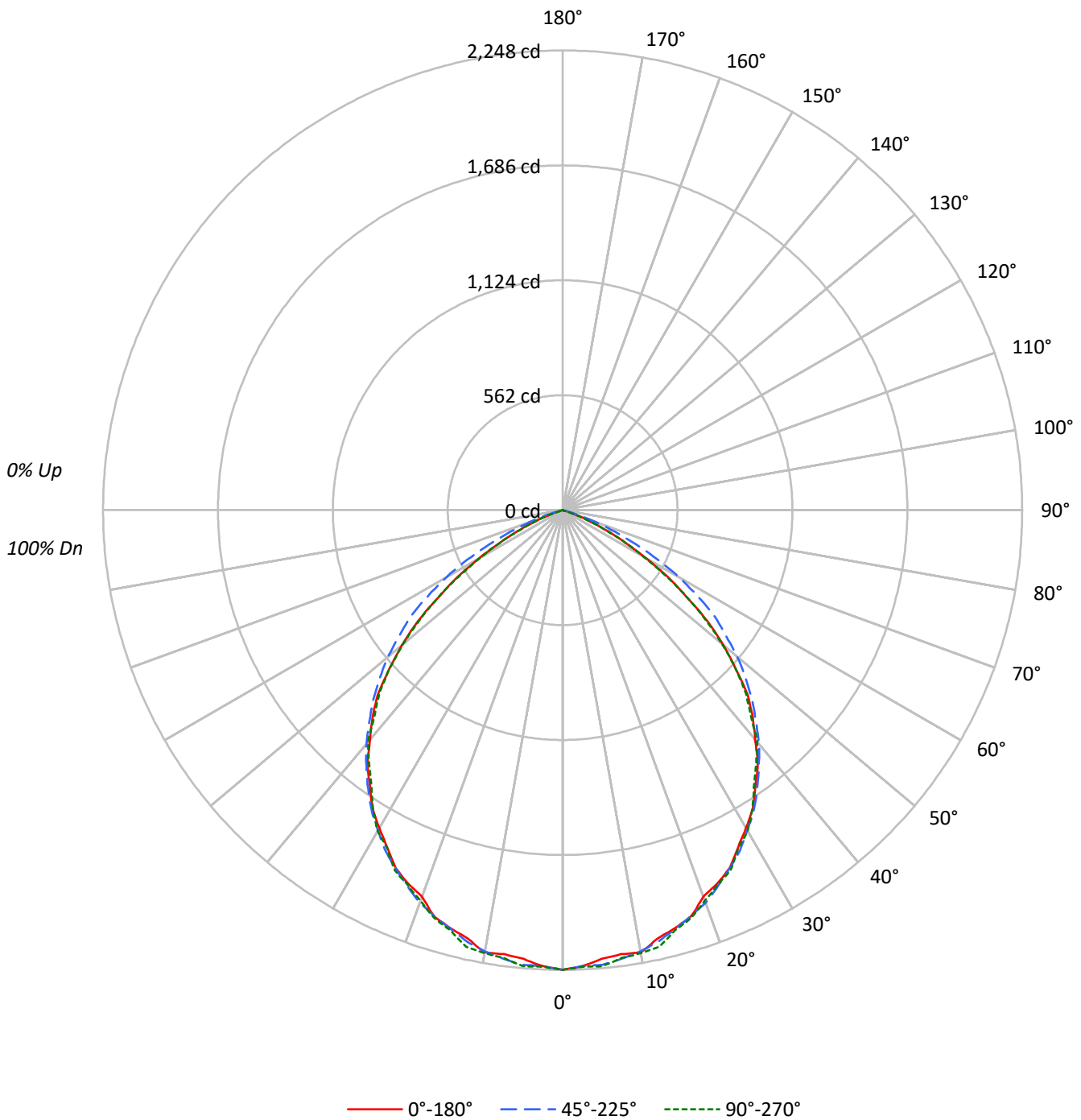
Lumens per Lamp: N/A
 Luminaire Lumens: 4801.0 lumens
 Efficiency: N/A
 Efficacy: 75.1 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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°	216859	216859	216859
5°	213358	216137	216757
10°	215198	214580	215511
15°	211433	211742	212382
20°	206513	209788	208813
25°	205624	205624	206976
30°	199891	201317	201674
35°	193649	195545	192153
40°	184565	188180	186568
45°	174677	178607	172944
50°	153833	167253	152872
55°	124586	153050	125141
60°	91163	126902	89329
65°	55411	90366	53950
70°	21610	48665	20735
75°	2386	13123	2386
80°	1834	1834	1834
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	212.1	4.4
10°-20°	600.3	12.5
20°-30°	890.7	18.6
30°-40°	1032.1	21.5
40°-50°	989.5	20.6
50°-60°	727.6	15.2
60°-70°	314.2	6.5
70°-80°	33.9	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°	1703.2	35.5
0°-40°	2735.3	57.0
0°-60°	4452.4	92.7
0°-90°	4801.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4801.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2248	2248	2248	2248	2248	
5°	2203	2225	2232	2235	2238	210
15°	2117	2129	2120	2123	2126	597
25°	1931	1928	1931	1935	1944	884
35°	1644	1654	1660	1657	1631	1028
45°	1280	1283	1309	1290	1267	973
55°	741	817	910	814	744	666
65°	243	303	396	300	236	249
75°	6	10	35	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°	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5
2.5°	2231.5	2257.0	2260.3	2244.2	2237.9	2228.3	2250.6	2234.7	2241.1	2234.7	2231.5
5°	2202.8	2231.5	2234.7	2234.7	2228.3	2225.1	2234.7	2231.5	2228.3	2222.0	2231.5
7.5°	2190.1	2205.9	2222.0	2202.8	2212.3	2209.2	2231.5	2222.0	2218.7	2218.7	2212.3
10°	2196.4	2193.2	2205.9	2186.8	2193.2	2186.8	2205.9	2205.9	2199.6	2193.2	2190.1
12.5°	2145.3	2170.8	2170.8	2167.7	2161.3	2151.6	2170.8	2183.7	2164.4	2164.4	2161.3
15°	2116.6	2123.0	2126.1	2126.1	2123.0	2129.4	2138.9	2126.1	2129.4	2113.3	2119.7
17.5°	2084.7	2071.9	2081.4	2075.0	2078.3	2084.7	2097.4	2097.4	2078.3	2075.0	2081.4
20°	2011.2	2049.5	2052.8	2033.6	2036.8	2036.8	2059.2	2040.0	2052.8	2036.8	2043.1
22.5°	1976.1	2001.6	2004.8	1979.3	1995.2	1976.1	1998.5	1969.7	2001.6	1979.3	1988.8
25°	1931.4	1928.2	1937.8	1925.0	1928.2	1928.2	1944.1	1931.4	1941.0	1928.2	1931.4
27.5°	1858.0	1883.6	1880.3	1867.6	1873.9	1870.8	1902.7	1867.6	1886.7	1870.8	1877.2
30°	1794.1	1816.5	1810.1	1797.3	1797.3	1787.7	1822.9	1813.2	1810.1	1810.1	1806.9
32.5°	1730.3	1733.5	1727.1	1730.3	1733.5	1720.8	1749.4	1736.7	1733.5	1736.7	1739.9
35°	1644.0	1644.0	1650.4	1640.9	1653.7	1653.7	1679.2	1663.2	1660.1	1650.4	1660.1
37.5°	1567.5	1557.9	1561.1	1561.1	1567.5	1573.8	1586.6	1580.2	1580.2	1570.7	1577.1
40°	1465.3	1459.0	1468.5	1468.5	1478.1	1478.1	1490.9	1484.5	1494.0	1494.0	1494.0
42.5°	1376.0	1376.0	1369.6	1379.1	1382.4	1379.1	1401.5	1398.3	1401.5	1395.1	1398.3
45°	1280.1	1280.1	1273.7	1270.6	1286.5	1283.4	1308.9	1299.3	1312.0	1305.6	1308.9
47.5°	1149.2	1165.2	1155.6	1165.2	1184.4	1187.6	1203.5	1197.1	1209.9	1200.4	1213.2
50°	1024.8	1024.8	1034.3	1047.1	1066.2	1069.5	1088.6	1101.4	1107.8	1110.9	1114.2
52.5°	893.9	890.7	900.3	916.2	932.2	945.0	964.1	983.3	996.0	1015.2	1005.5
55°	740.6	747.0	756.6	775.8	801.3	817.2	833.2	858.8	881.2	890.7	909.8
57.5°	609.7	603.3	609.7	635.2	664.0	676.8	699.2	724.7	756.6	775.8	782.2
60°	472.4	475.7	482.1	504.5	526.7	545.9	555.5	596.9	625.7	644.9	657.6
62.5°	348.0	354.4	360.8	379.9	402.2	418.2	434.1	469.3	494.8	514.0	526.7
65°	242.7	245.8	255.4	264.9	287.3	303.2	316.0	344.8	370.3	386.3	395.8
67.5°	150.1	153.2	159.6	172.5	188.3	201.1	213.9	233.0	255.4	271.3	274.6
70°	76.6	79.8	83.0	92.6	105.4	111.8	121.3	137.3	153.2	165.9	172.5
72.5°	25.5	25.5	28.8	35.2	41.5	47.9	51.1	67.1	79.8	86.2	89.4
75°	6.4	6.4	6.4	6.4	6.4	9.6	9.6	19.1	25.5	31.9	35.2
77.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	6.4	6.4
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°	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5	2247.5
2.5°	2247.5	2241.1	2237.9	2241.1	2241.1	2237.9	2247.5	2260.3	2276.2	2234.7
5°	2244.2	2237.9	2244.2	2225.1	2234.7	2228.3	2241.1	2237.9	2250.6	2237.9
7.5°	2234.7	2222.0	2225.1	2215.6	2228.3	2212.3	2222.0	2241.1	2228.3	2209.2
10°	2202.8	2196.4	2218.7	2186.8	2180.4	2193.2	2218.7	2199.6	2193.2	2199.6
12.5°	2170.8	2170.8	2180.4	2154.9	2158.0	2164.4	2177.2	2164.4	2170.8	2186.8
15°	2135.7	2129.4	2145.3	2126.1	2123.0	2116.6	2129.4	2129.4	2135.7	2126.1
17.5°	2094.2	2084.7	2084.7	2078.3	2075.0	2091.1	2097.4	2100.6	2103.8	2091.1
20°	2043.1	2040.0	2049.5	2040.0	2043.1	2046.4	2046.4	2040.0	2068.7	2033.6
22.5°	1988.8	1998.5	1985.7	1979.3	1985.7	1992.1	1992.1	1995.2	1988.8	1982.4
25°	1934.6	1941.0	1944.1	1925.0	1934.6	1925.0	1947.4	1950.5	1937.8	1944.1
27.5°	1886.7	1877.2	1873.9	1861.2	1867.6	1864.4	1867.6	1867.6	1886.7	1861.2
30°	1813.2	1803.7	1806.9	1797.3	1800.5	1797.3	1800.5	1800.5	1813.2	1810.1
32.5°	1743.0	1733.5	1736.7	1727.1	1727.1	1730.3	1723.9	1723.9	1733.5	1727.1
35°	1676.0	1653.7	1656.8	1653.7	1656.8	1644.0	1644.0	1640.9	1647.3	1631.3
37.5°	1580.2	1570.7	1567.5	1564.3	1567.5	1561.1	1567.5	1557.9	1567.5	1554.7
40°	1494.0	1487.6	1490.9	1471.7	1471.7	1474.8	1468.5	1465.3	1468.5	1481.2
42.5°	1407.9	1395.1	1388.7	1382.4	1385.5	1376.0	1372.7	1366.3	1372.7	1360.0
45°	1305.6	1305.6	1302.5	1286.5	1289.8	1289.8	1277.0	1264.2	1267.4	1267.4
47.5°	1213.2	1206.8	1203.5	1187.6	1184.4	1181.3	1168.4	1158.9	1158.9	1149.2
50°	1110.9	1104.5	1095.0	1079.0	1072.6	1053.5	1044.0	1031.2	1018.4	1018.4
52.5°	1015.2	992.8	980.0	954.5	945.0	935.3	909.8	900.3	890.7	881.2
55°	900.3	881.2	855.6	826.8	814.1	798.1	772.5	753.4	740.6	743.9
57.5°	788.5	756.6	731.1	692.8	676.8	667.2	641.6	616.1	603.3	603.3
60°	651.3	625.7	593.8	558.7	545.9	530.0	498.0	482.1	472.4	462.9
62.5°	520.4	501.2	472.4	427.7	418.2	402.2	379.9	360.8	351.2	351.2
65°	389.5	370.3	344.8	312.9	300.1	287.3	268.2	249.0	239.4	236.3
67.5°	274.6	252.2	229.9	204.4	194.7	188.3	169.2	156.4	150.1	146.8
70°	165.9	153.2	137.3	118.1	108.5	102.1	89.4	79.8	76.6	73.5
72.5°	86.2	76.6	63.8	51.1	44.7	38.3	31.9	25.5	22.4	22.4
75°	31.9	25.5	16.0	9.6	6.4	6.4	6.4	6.4	6.4	6.4
77.5°	6.4	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)