

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

Summary

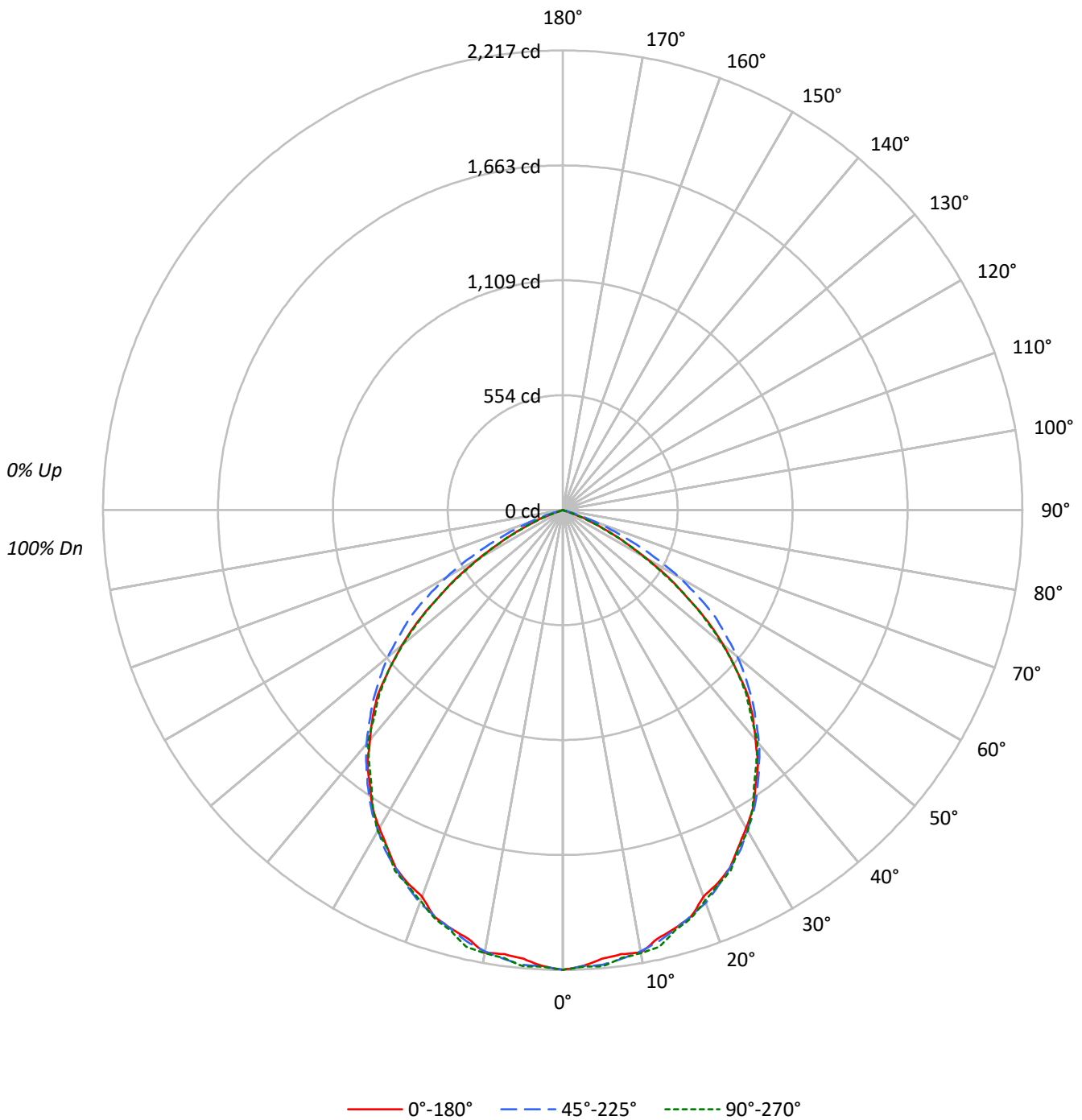
Lumens per Lamp: N/A
 Luminaire Lumens: 4735.0 lumens
 Efficiency: N/A
 Efficacy: 74.1 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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°	213877	213877	213877
5°	210423	213164	213774
10°	212239	211621	212542
15°	208526	208836	209465
20°	203679	206903	205948
25°	202792	202792	204134
30°	197139	198543	198899
35°	190987	192848	189514
40°	182033	185598	184011
45°	172276	176151	170556
50°	151716	164956	150771
55°	122870	150947	123409
60°	89908	125165	88114
65°	54635	89133	53197
70°	21300	47988	20453
75°	2349	12936	2349
80°	1778	1778	1778
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.2	4.4
10°-20°	592.1	12.5
20°-30°	878.5	18.6
30°-40°	1017.9	21.5
40°-50°	975.9	20.6
50°-60°	717.6	15.2
60°-70°	309.9	6.5
70°-80°	33.5	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°	1679.8	35.5
0°-40°	2697.7	57.0
0°-60°	4391.2	92.7
0°-90°	4735.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4735.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2217	2217	2217	2217	2217	
5°	2172	2194	2201	2204	2207	207
15°	2088	2100	2091	2094	2097	588
25°	1905	1902	1905	1908	1917	872
35°	1621	1631	1637	1634	1609	1014
45°	1262	1266	1291	1272	1250	960
55°	730	806	897	803	734	657
65°	239	299	390	296	233	246
75°	6	10	35	6	6	19
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°	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6
2.5°	2200.8	2226.0	2229.2	2213.4	2207.1	2197.7	2219.7	2204.0	2210.3	2204.0	2200.8
5°	2172.5	2200.8	2204.0	2204.0	2197.7	2194.5	2204.0	2200.8	2197.7	2191.4	2200.8
7.5°	2159.9	2175.6	2191.4	2172.5	2181.9	2178.8	2200.8	2191.4	2188.2	2188.2	2181.9
10°	2166.2	2163.0	2175.6	2156.7	2163.0	2156.7	2175.6	2175.6	2169.3	2163.0	2159.9
12.5°	2115.8	2140.9	2140.9	2137.9	2131.6	2122.1	2140.9	2153.7	2134.6	2134.6	2131.6
15°	2087.5	2093.8	2096.9	2096.9	2093.8	2100.1	2109.5	2096.9	2100.1	2084.3	2090.6
17.5°	2056.0	2043.4	2052.8	2046.5	2049.7	2056.0	2068.6	2068.6	2049.7	2046.5	2052.8
20°	1983.6	2021.3	2024.5	2005.7	2008.8	2008.8	2030.8	2012.0	2024.5	2008.8	2015.0
22.5°	1948.9	1974.1	1977.3	1952.1	1967.8	1948.9	1971.0	1942.6	1974.1	1952.1	1961.5
25°	1904.8	1901.7	1911.1	1898.5	1901.7	1901.7	1917.4	1904.8	1914.3	1901.7	1904.8
27.5°	1832.5	1857.7	1854.5	1841.9	1848.2	1845.1	1876.6	1841.9	1860.8	1845.1	1851.4
30°	1769.4	1791.5	1785.2	1772.6	1772.6	1763.1	1797.8	1788.3	1785.2	1785.2	1782.0
32.5°	1706.5	1709.7	1703.4	1706.5	1709.7	1697.1	1725.4	1712.8	1709.7	1712.8	1716.0
35°	1621.4	1621.4	1627.7	1618.4	1630.9	1630.9	1656.1	1640.3	1637.2	1627.7	1637.2
37.5°	1545.9	1536.5	1539.6	1539.6	1545.9	1552.2	1564.8	1558.5	1558.5	1549.1	1555.4
40°	1445.2	1438.9	1448.3	1448.3	1457.8	1457.8	1470.4	1464.1	1473.5	1473.5	1473.5
42.5°	1357.1	1357.1	1350.8	1360.1	1363.4	1360.1	1382.2	1379.0	1382.2	1375.9	1379.0
45°	1262.5	1262.5	1256.2	1253.1	1268.8	1265.7	1290.9	1281.4	1294.0	1287.7	1290.9
47.5°	1133.4	1149.2	1139.7	1149.2	1168.1	1171.3	1187.0	1180.7	1193.3	1183.9	1196.5
50°	1010.7	1010.7	1020.1	1032.7	1051.6	1054.8	1073.7	1086.3	1092.6	1095.6	1098.9
52.5°	881.6	878.4	887.9	903.6	919.4	932.0	950.9	969.8	982.3	1001.2	991.7
55°	730.4	736.7	746.2	765.1	790.3	806.0	821.8	846.9	869.0	878.4	897.3
57.5°	601.3	595.0	601.3	626.5	654.9	667.5	689.6	714.8	746.2	765.1	771.4
60°	465.9	469.1	475.4	497.5	519.5	538.4	547.9	588.7	617.1	636.0	648.6
62.5°	343.2	349.5	355.8	374.7	396.7	412.5	428.2	462.8	488.0	506.9	519.5
65°	239.3	242.4	251.9	261.3	283.4	299.1	311.6	340.0	365.2	381.0	390.4
67.5°	148.0	151.1	157.4	170.1	185.8	198.3	210.9	229.8	251.9	267.6	270.8
70°	75.5	78.7	81.8	91.3	103.9	110.2	119.6	135.4	151.1	163.7	170.1
72.5°	25.2	25.2	28.4	34.7	41.0	47.3	50.4	66.2	78.7	85.0	88.1
75°	6.3	6.3	6.3	6.3	6.3	9.5	9.5	18.9	25.2	31.5	34.7
77.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	6.3	6.3
80°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
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°	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6	2216.6
2.5°	2216.6	2210.3	2207.1	2210.3	2210.3	2207.1	2216.6	2229.2	2244.9	2204.0
5°	2213.4	2207.1	2213.4	2194.5	2204.0	2197.7	2210.3	2207.1	2219.7	2207.1
7.5°	2204.0	2191.4	2194.5	2185.1	2197.7	2181.9	2191.4	2210.3	2197.7	2178.8
10°	2172.5	2166.2	2188.2	2156.7	2150.4	2163.0	2188.2	2169.3	2163.0	2169.3
12.5°	2140.9	2140.9	2150.4	2125.3	2128.4	2134.6	2147.2	2134.6	2140.9	2156.7
15°	2106.4	2100.1	2115.8	2096.9	2093.8	2087.5	2100.1	2100.1	2106.4	2096.9
17.5°	2065.4	2056.0	2056.0	2049.7	2046.5	2062.3	2068.6	2071.7	2074.9	2062.3
20°	2015.0	2012.0	2021.3	2012.0	2015.0	2018.3	2018.3	2012.0	2040.2	2005.7
22.5°	1961.5	1971.0	1958.4	1952.1	1958.4	1964.7	1964.7	1967.8	1961.5	1955.2
25°	1908.0	1914.3	1917.4	1898.5	1908.0	1898.5	1920.6	1923.7	1911.1	1917.4
27.5°	1860.8	1851.4	1848.2	1835.6	1841.9	1838.8	1841.9	1841.9	1860.8	1835.6
30°	1788.3	1778.9	1782.0	1772.6	1775.7	1772.6	1775.7	1775.7	1788.3	1785.2
32.5°	1719.1	1709.7	1712.8	1703.4	1703.4	1706.5	1700.2	1700.2	1709.7	1703.4
35°	1652.9	1630.9	1634.0	1630.9	1634.0	1621.4	1621.4	1618.4	1624.7	1608.9
37.5°	1558.5	1549.1	1545.9	1542.8	1545.9	1539.6	1545.9	1536.5	1545.9	1533.3
40°	1473.5	1467.2	1470.4	1451.5	1451.5	1454.6	1448.3	1445.2	1448.3	1460.9
42.5°	1388.5	1375.9	1369.7	1363.4	1366.4	1357.1	1353.9	1347.6	1353.9	1341.3
45°	1287.7	1287.7	1284.6	1268.8	1272.0	1272.0	1259.4	1246.8	1249.9	1249.9
47.5°	1196.5	1190.2	1187.0	1171.3	1168.1	1165.0	1152.3	1142.9	1142.9	1133.4
50°	1095.6	1089.4	1080.0	1064.2	1057.9	1039.0	1029.6	1017.0	1004.4	1004.4
52.5°	1001.2	979.1	966.5	941.4	932.0	922.5	897.3	887.9	878.4	869.0
55°	887.9	869.0	843.9	815.5	802.9	787.1	761.9	743.0	730.4	733.6
57.5°	777.7	746.2	721.1	683.3	667.5	658.0	632.8	607.6	595.0	595.0
60°	642.3	617.1	585.7	551.0	538.4	522.7	491.1	475.4	465.9	456.6
62.5°	513.2	494.3	465.9	421.9	412.5	396.7	374.7	355.8	346.3	346.3
65°	384.1	365.2	340.0	308.6	296.0	283.4	264.5	245.6	236.1	233.0
67.5°	270.8	248.7	226.7	201.6	192.1	185.8	166.9	154.3	148.0	144.8
70°	163.7	151.1	135.4	116.5	107.0	100.7	88.1	78.7	75.5	72.5
72.5°	85.0	75.5	62.9	50.4	44.1	37.8	31.5	25.2	22.1	22.1
75°	31.5	25.2	15.8	9.5	6.3	6.3	6.3	6.3	6.3	6.3
77.5°	6.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
80°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
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)