

Scaled data based on original data using
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: P646217

Luminaire Tested: **FLDSQ4C50D010 FEU4C509030 F4LC-CSSQ-MMS-D2W**

Issue Date: 12/13/2022

Test Information

Test Method: LM-79-08
Report Number: P646217
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P209253)
Test Lab: INNOVATION CENTER
Issue Date: 12/13/2022
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FLDSQ4C50D010 FEU4C509030 F4LC-CSSQ-MMS-D2W
Description: 4 INCH 5000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MMS FINISH, DIM TO WARM
Light Source: -
Ballast/Driver: -

Summary

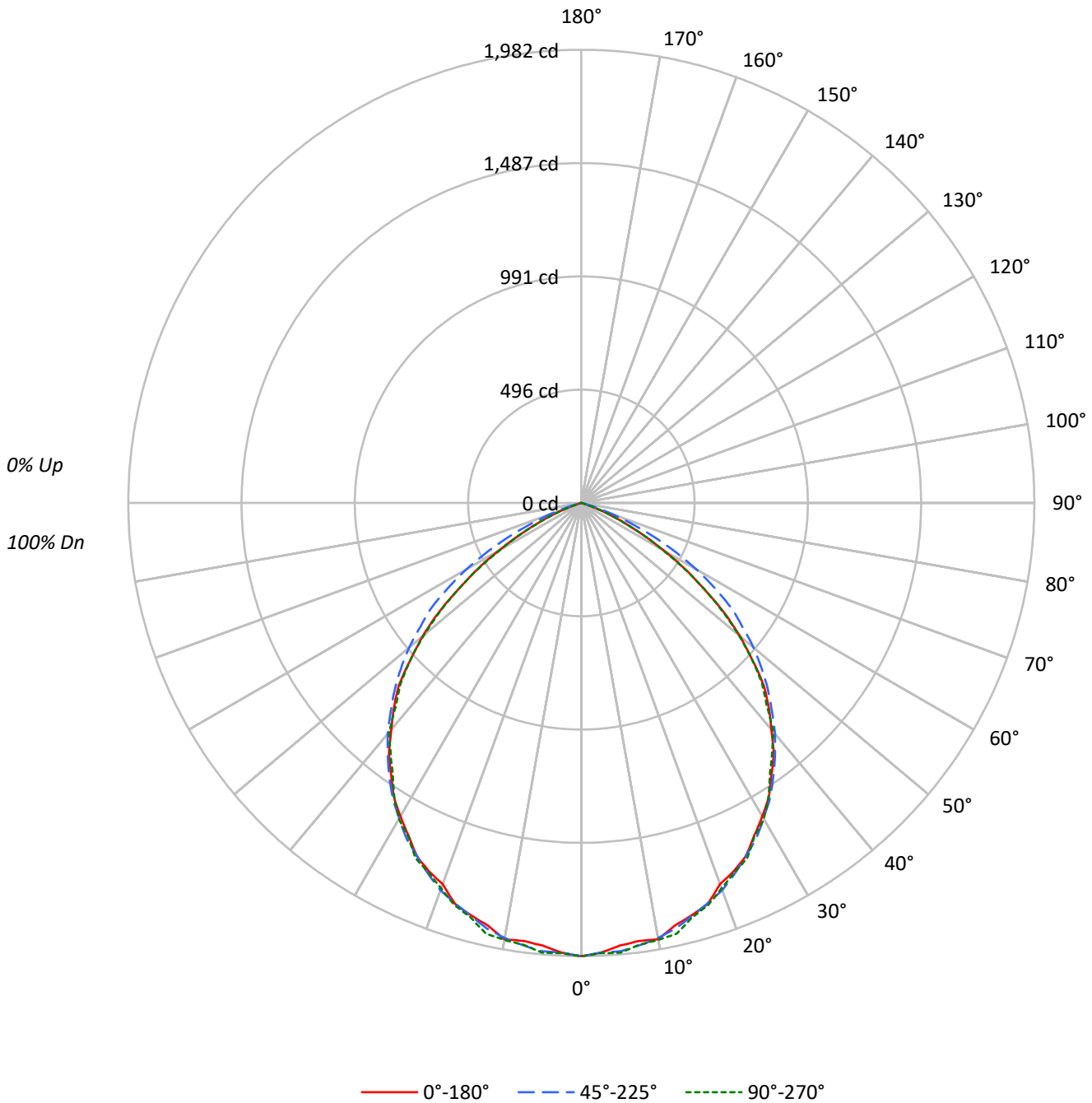
Lumens per Lamp: N/A
Luminaire Lumens: 4235.0 lumens
Efficiency: N/A
Efficacy: 72.5 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 58.4
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



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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°	191289	191289	191289
5°	188204	190654	191197
10°	189831	189283	190106
15°	186510	186779	187349
20°	182167	185063	184200
25°	181382	181382	182575
30°	176327	177574	177898
35°	170821	172493	169502
40°	162812	165999	164576
45°	154086	157552	152544
50°	135700	147528	134859
55°	109900	135016	110388
60°	80414	111946	78793
65°	48882	79727	47580
70°	19071	42910	18281
75°	2088	11557	2088
80°	1611	1611	1611
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.1	4.4
10°-20°	529.5	12.5
20°-30°	785.7	18.6
30°-40°	910.4	21.5
40°-50°	872.9	20.6
50°-60°	641.8	15.2
60°-70°	277.2	6.5
70°-80°	29.9	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
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0°-30°	1502.4	35.5
0°-40°	2412.8	57.0
0°-60°	3927.5	92.7
0°-90°	4235.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4235.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1982	1982	1982	1982	1982	
5°	1943	1963	1968	1971	1974	185
15°	1867	1878	1870	1873	1876	526
25°	1704	1701	1704	1707	1715	780
35°	1450	1459	1464	1462	1439	907
45°	1129	1132	1155	1138	1118	858
55°	653	721	803	718	656	588
65°	214	268	349	265	208	220
75°	6	8	31	6	6	17
85°	0	0	0	0	0	0
90°	0	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°	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5
2.5°	1968.4	1990.9	1993.8	1979.7	1974.0	1965.6	1985.3	1971.3	1976.9	1971.3	1968.4
5°	1943.1	1968.4	1971.3	1971.3	1965.6	1962.8	1971.3	1968.4	1965.6	1960.0	1968.4
7.5°	1931.9	1945.9	1960.0	1943.1	1951.5	1948.8	1968.4	1960.0	1957.1	1957.1	1951.5
10°	1937.5	1934.6	1945.9	1929.0	1934.6	1929.0	1945.9	1945.9	1940.3	1934.6	1931.9
12.5°	1892.3	1914.9	1914.9	1912.1	1906.5	1898.0	1914.9	1926.2	1909.2	1909.2	1906.5
15°	1867.1	1872.7	1875.5	1875.5	1872.7	1878.3	1886.7	1875.5	1878.3	1864.2	1869.8
17.5°	1838.9	1827.7	1836.0	1830.4	1833.3	1838.9	1850.2	1850.2	1833.3	1830.4	1836.0
20°	1774.1	1807.9	1810.8	1793.9	1796.6	1796.6	1816.4	1799.5	1810.8	1796.6	1802.3
22.5°	1743.1	1765.6	1768.5	1746.0	1760.0	1743.1	1762.9	1737.5	1765.6	1746.0	1754.4
25°	1703.7	1700.9	1709.3	1698.1	1700.9	1700.9	1714.9	1703.7	1712.2	1700.9	1703.7
27.5°	1639.0	1661.5	1658.6	1647.4	1653.0	1650.3	1678.4	1647.4	1664.3	1650.3	1655.9
30°	1582.6	1602.3	1596.7	1585.5	1585.5	1577.0	1608.0	1599.5	1596.7	1596.7	1593.8
32.5°	1526.3	1529.2	1523.5	1526.3	1529.2	1517.9	1543.2	1531.9	1529.2	1531.9	1534.8
35°	1450.2	1450.2	1455.9	1447.5	1458.7	1458.7	1481.2	1467.1	1464.4	1455.9	1464.4
37.5°	1382.7	1374.3	1377.0	1377.0	1382.7	1388.3	1399.6	1393.9	1393.9	1385.5	1391.2
40°	1292.6	1287.0	1295.3	1295.3	1303.8	1303.8	1315.1	1309.5	1317.9	1317.9	1317.9
42.5°	1213.8	1213.8	1208.1	1216.5	1219.4	1216.5	1236.3	1233.4	1236.3	1230.7	1233.4
45°	1129.2	1129.2	1123.6	1120.8	1134.8	1132.1	1154.6	1146.1	1157.4	1151.7	1154.6
47.5°	1013.7	1027.9	1019.4	1027.9	1044.8	1047.6	1061.6	1056.0	1067.3	1058.9	1070.1
50°	904.0	904.0	912.4	923.7	940.5	943.4	960.3	971.6	977.2	980.0	982.8
52.5°	788.5	785.7	794.2	808.2	822.3	833.6	850.5	867.4	878.6	895.5	887.0
55°	653.3	658.9	667.4	684.3	706.8	720.9	735.0	757.5	777.3	785.7	802.6
57.5°	537.8	532.2	537.8	560.4	585.7	597.0	616.8	639.3	667.4	684.3	690.0
60°	416.7	419.6	425.2	445.0	464.6	481.5	490.0	526.6	552.0	568.9	580.1
62.5°	307.0	312.6	318.3	335.2	354.8	368.9	383.0	414.0	436.5	453.4	464.6
65°	214.1	216.8	225.3	233.7	253.5	267.5	278.7	304.1	326.7	340.8	349.2
67.5°	132.4	135.1	140.8	152.1	166.1	177.4	188.7	205.6	225.3	239.3	242.2
70°	67.6	70.4	73.2	81.7	93.0	98.6	107.0	121.1	135.1	146.4	152.1
72.5°	22.5	22.5	25.4	31.0	36.7	42.3	45.0	59.2	70.4	76.1	78.8
75°	5.6	5.6	5.6	5.6	5.6	8.5	8.5	16.9	22.5	28.2	31.0
77.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	5.6	5.6
80°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
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°	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5	1982.5
2.5°	1982.5	1976.9	1974.0	1976.9	1976.9	1974.0	1982.5	1993.8	2007.8	1971.3
5°	1979.7	1974.0	1979.7	1962.8	1971.3	1965.6	1976.9	1974.0	1985.3	1974.0
7.5°	1971.3	1960.0	1962.8	1954.4	1965.6	1951.5	1960.0	1976.9	1965.6	1948.8
10°	1943.1	1937.5	1957.1	1929.0	1923.4	1934.6	1957.1	1940.3	1934.6	1940.3
12.5°	1914.9	1914.9	1923.4	1900.8	1903.6	1909.2	1920.5	1909.2	1914.9	1929.0
15°	1884.0	1878.3	1892.3	1875.5	1872.7	1867.1	1878.3	1878.3	1884.0	1875.5
17.5°	1847.3	1838.9	1838.9	1833.3	1830.4	1844.5	1850.2	1852.9	1855.8	1844.5
20°	1802.3	1799.5	1807.9	1799.5	1802.3	1805.1	1805.1	1799.5	1824.8	1793.9
22.5°	1754.4	1762.9	1751.6	1746.0	1751.6	1757.2	1757.2	1760.0	1754.4	1748.7
25°	1706.6	1712.2	1714.9	1698.1	1706.6	1698.1	1717.8	1720.6	1709.3	1714.9
27.5°	1664.3	1655.9	1653.0	1641.8	1647.4	1644.6	1647.4	1647.4	1664.3	1641.8
30°	1599.5	1591.1	1593.8	1585.5	1588.2	1585.5	1588.2	1588.2	1599.5	1596.7
32.5°	1537.5	1529.2	1531.9	1523.5	1523.5	1526.3	1520.7	1520.7	1529.2	1523.5
35°	1478.4	1458.7	1461.5	1458.7	1461.5	1450.2	1450.2	1447.5	1453.1	1439.0
37.5°	1393.9	1385.5	1382.7	1379.9	1382.7	1377.0	1382.7	1374.3	1382.7	1371.4
40°	1317.9	1312.2	1315.1	1298.2	1298.2	1301.0	1295.3	1292.6	1295.3	1306.6
42.5°	1241.9	1230.7	1225.0	1219.4	1222.2	1213.8	1210.9	1205.3	1210.9	1199.6
45°	1151.7	1151.7	1149.0	1134.8	1137.7	1137.7	1126.4	1115.2	1117.9	1117.9
47.5°	1070.1	1064.5	1061.6	1047.6	1044.8	1042.0	1030.6	1022.2	1022.2	1013.7
50°	980.0	974.3	965.9	951.8	946.2	929.3	920.9	909.6	898.4	898.4
52.5°	895.5	875.7	864.5	842.0	833.6	825.1	802.6	794.2	785.7	777.3
55°	794.2	777.3	754.8	729.4	718.1	704.0	681.5	664.6	653.3	656.2
57.5°	695.6	667.4	644.9	611.1	597.0	588.5	566.0	543.5	532.2	532.2
60°	574.5	552.0	523.8	492.8	481.5	467.5	439.3	425.2	416.7	408.3
62.5°	459.0	442.1	416.7	377.3	368.9	354.8	335.2	318.3	309.8	309.8
65°	343.5	326.7	304.1	276.0	264.7	253.5	236.6	219.7	211.2	208.4
67.5°	242.2	222.4	202.8	180.3	171.8	166.1	149.3	138.0	132.4	129.5
70°	146.4	135.1	121.1	104.2	95.7	90.1	78.8	70.4	67.6	64.8
72.5°	76.1	67.6	56.3	45.0	39.4	33.8	28.2	22.5	19.8	19.8
75°	28.2	22.5	14.1	8.5	5.6	5.6	5.6	5.6	5.6	5.6
77.5°	5.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
80°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
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)