

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: **FLDSQ4C25D010 FEU4C259050 F4LC-SQ-LI**

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: FLDSQ4C25D010 FEU4C259050 F4LC-SQ-LI
 Description: 4 INCH 2500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

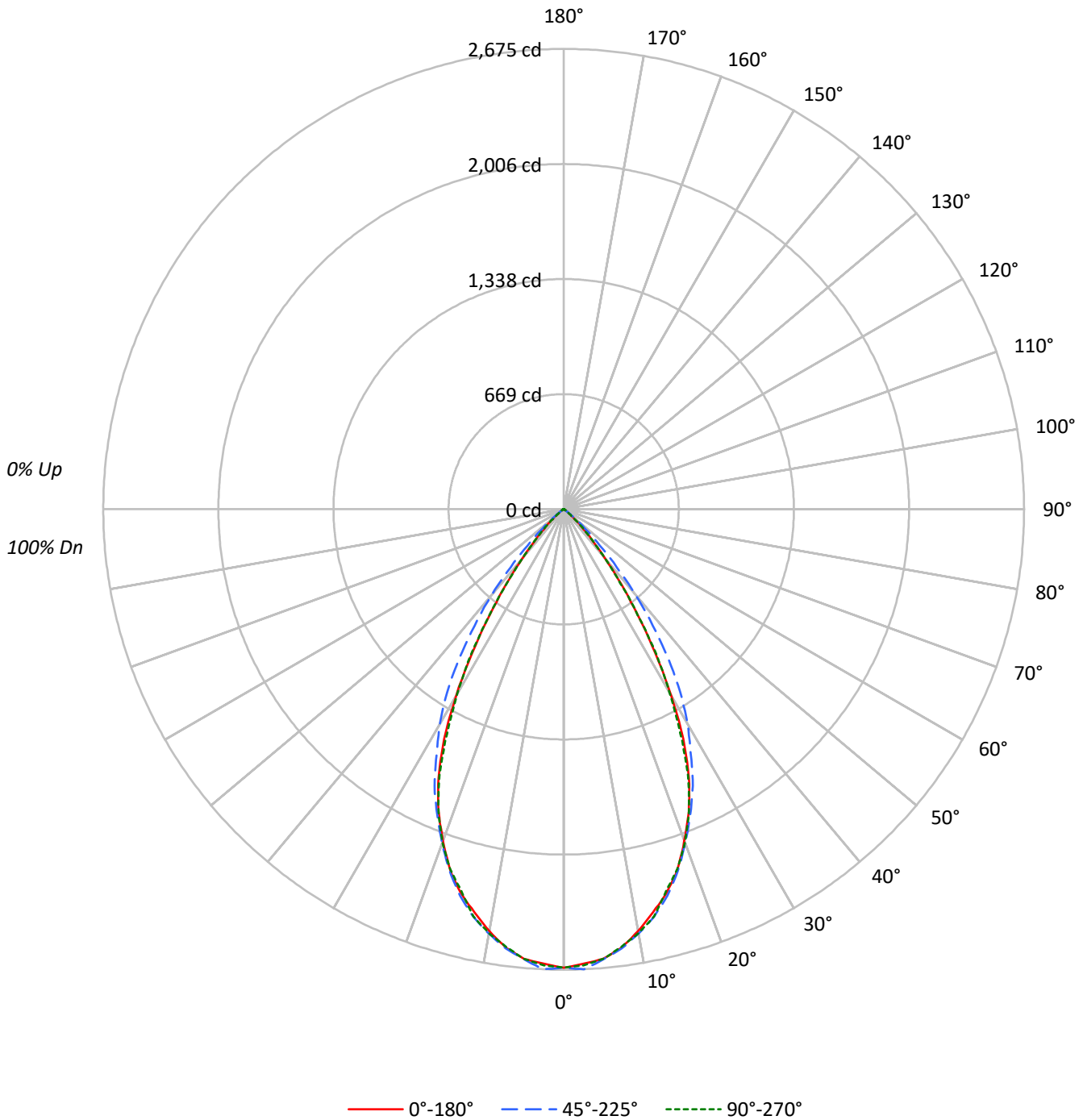
Lumens per Lamp: N/A
 Luminaire Lumens: 2459.0 lumens
 Efficiency: N/A
 Efficacy: 78.1 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 31.5
 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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95				93	
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88				87	
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82				80	
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76				75	
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71				69	
6	87	78	72	68	86	77	71	67	76	71	67	74	70	66	73	69	66				64	
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62				60	
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58				56	
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54				53	
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51				50	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	256998	256998	256998
5°	254047	254377	254047
10°	243885	245375	245051
15°	230562	232250	229384
20°	210415	211975	211462
25°	183224	188984	181957
30°	139325	160249	137253
35°	87696	124576	88497
40°	47322	82275	46466
45°	22392	40637	22160
50°	8391	15236	8391
55°	3987	4845	3701
60°	2605	2296	2605
65°	1553	1553	1553
70°	959	1439	959
75°	634	634	634
80°	945	945	945
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	246.9	10.0
10°-20°	647.2	26.3
20°-30°	790.6	32.2
30°-40°	553.0	22.5
40°-50°	181.2	7.4
50°-60°	28.8	1.2
60°-70°	7.9	0.3
70°-80°	2.6	0.1
80°-90°	0.7	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°	1684.8	68.5
0°-40°	2237.7	91.0
0°-60°	2447.8	99.5
0°-90°	2459.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2459.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2664	2664	2664	2664	2664	
5°	2623	2624	2626	2610	2623	246
15°	2308	2317	2325	2310	2296	644
25°	1721	1747	1775	1743	1709	773
35°	744	879	1058	866	751	475
45°	164	202	298	200	162	138
55°	24	25	29	25	22	23
65°	7	8	7	8	7	8
75°	2	2	2	2	2	2
85°	0	0	0	0	0	1
90°	0	0	0	0	0	

TEST NUMBER: P#
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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2663.5	2663.5	2663.5	2663.5	2663.5	2663.5	2663.5	2663.5	2663.5	2663.5	2663.5
2.5°	2643.2	2661.8	2656.7	2668.6	2668.6	2655.1	2658.4	2663.5	2670.2	2675.4	2634.7
5°	2622.9	2639.8	2624.5	2641.5	2631.3	2616.1	2641.5	2627.9	2636.4	2626.3	2633.0
7.5°	2568.7	2595.8	2565.4	2585.7	2578.9	2570.4	2580.5	2577.2	2582.3	2573.8	2555.2
10°	2489.2	2511.2	2490.9	2519.6	2506.1	2497.7	2506.1	2514.6	2512.9	2504.4	2514.6
12.5°	2397.8	2423.2	2413.0	2429.9	2414.7	2414.7	2435.0	2429.9	2431.7	2424.9	2436.7
15°	2308.1	2326.8	2311.5	2333.5	2326.8	2308.1	2316.6	2316.6	2330.2	2325.0	2311.5
17.5°	2196.5	2211.7	2194.7	2199.9	2193.1	2189.7	2225.2	2201.5	2215.0	2204.9	2206.6
20°	2049.2	2056.0	2050.9	2064.4	2056.0	2066.2	2062.8	2059.4	2059.4	2064.4	2052.6
22.5°	1900.3	1900.3	1905.4	1908.8	1915.6	1905.4	1925.7	1908.8	1910.4	1922.3	1918.9
25°	1721.0	1715.9	1727.7	1744.6	1751.4	1742.9	1770.0	1756.5	1766.6	1775.1	1756.5
27.5°	1502.7	1502.7	1514.5	1543.3	1548.3	1558.5	1595.7	1595.7	1609.2	1597.4	1611.0
30°	1250.5	1269.1	1284.3	1321.6	1333.4	1355.5	1394.3	1413.0	1443.4	1438.3	1431.6
32.5°	991.6	1017.0	1018.7	1057.6	1089.7	1127.0	1179.4	1223.4	1245.5	1260.6	1243.7
35°	744.5	759.8	773.3	800.4	854.5	903.6	951.0	1008.5	1047.5	1057.6	1042.4
37.5°	544.9	548.3	561.8	587.2	627.8	675.2	732.7	795.3	836.0	851.2	834.2
40°	375.7	379.0	385.8	407.8	441.7	475.5	521.2	585.5	622.7	653.2	631.2
42.5°	252.1	255.5	262.3	279.2	297.8	329.9	365.5	406.1	441.7	455.2	443.3
45°	164.1	164.1	167.5	179.4	189.6	214.9	240.3	265.7	289.3	297.8	289.3
47.5°	96.5	98.1	101.5	110.0	121.8	132.0	150.6	167.5	174.3	181.1	177.7
50°	55.9	55.9	60.9	66.0	74.4	81.2	88.0	94.7	98.1	101.5	98.1
52.5°	30.5	32.2	33.8	35.6	38.9	45.7	50.8	50.8	52.5	54.1	52.5
55°	23.7	23.7	23.7	23.7	25.4	25.4	25.4	27.1	27.1	28.8	27.1
57.5°	16.9	16.9	16.9	18.6	18.6	18.6	16.9	16.9	16.9	16.9	16.9
60°	13.5	13.5	13.5	13.5	13.5	13.5	13.5	11.9	11.9	11.9	11.9
62.5°	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
65°	6.8	6.8	8.5	8.5	8.5	8.5	8.5	6.8	6.8	6.8	6.8
67.5°	5.1	5.1	5.1	5.1	6.8	6.8	5.1	5.1	5.1	5.1	5.1
70°	3.4	3.4	3.4	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
72.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
75°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	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°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	2663.5	2663.5	2663.5	2663.5	2663.5	2663.5	2663.5	2663.5
2.5°	2663.5	2634.7	2638.1	2653.3	2644.8	2653.3	2651.7	2651.7
5°	2634.7	2626.3	2612.7	2607.6	2617.8	2639.8	2636.4	2622.9
7.5°	2580.5	2558.6	2573.8	2580.5	2572.1	2585.7	2592.4	2563.6
10°	2516.3	2507.8	2504.4	2507.8	2504.4	2518.0	2501.1	2501.1
12.5°	2424.9	2411.4	2411.4	2431.7	2419.8	2409.6	2423.2	2421.5
15°	2333.5	2306.4	2306.4	2313.2	2318.3	2311.5	2313.2	2296.3
17.5°	2198.1	2189.7	2177.8	2196.5	2201.5	2194.7	2199.9	2191.4
20°	2071.2	2071.2	2049.2	2057.7	2064.4	2069.5	2072.9	2059.4
22.5°	1908.8	1912.2	1896.9	1913.8	1918.9	1902.0	1905.4	1902.0
25°	1759.8	1758.2	1746.3	1739.5	1742.9	1736.2	1734.5	1709.1
27.5°	1595.7	1578.8	1553.4	1560.2	1531.4	1507.7	1507.7	1468.8
30°	1418.0	1389.3	1355.5	1321.6	1296.2	1269.1	1253.9	1231.9
32.5°	1209.9	1171.0	1128.7	1083.0	1054.2	1013.6	991.6	1003.5
35°	1003.5	945.9	888.4	842.7	798.7	775.0	747.9	751.3
37.5°	803.8	722.6	671.8	622.7	585.5	555.1	543.2	539.8
40°	587.2	522.9	472.1	436.6	411.2	387.5	374.0	368.9
42.5°	406.1	360.5	319.8	291.1	274.1	258.9	252.1	250.5
45°	264.0	236.9	209.9	189.6	176.0	165.9	164.1	162.4
47.5°	165.9	152.3	135.3	120.2	108.3	101.5	96.5	96.5
50°	94.7	89.7	81.2	72.8	66.0	62.6	57.5	55.9
52.5°	50.8	50.8	47.4	40.6	35.6	32.2	32.2	30.5
55°	27.1	27.1	25.4	25.4	23.7	23.7	23.7	22.0
57.5°	16.9	16.9	18.6	18.6	16.9	16.9	16.9	16.9
60°	11.9	13.5	13.5	13.5	13.5	13.5	13.5	13.5
62.5°	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
65°	6.8	8.5	8.5	8.5	8.5	6.8	6.8	6.8
67.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
70°	5.1	5.1	5.1	5.1	5.1	3.4	3.4	3.4
72.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
75°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	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
87.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)