

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: **FLDSQ4C30D010 FEU4C309030 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: FLDSQ4C30D010 FEU4C309030 F4LC-SQ-LI
 Description: 4 INCH 3000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

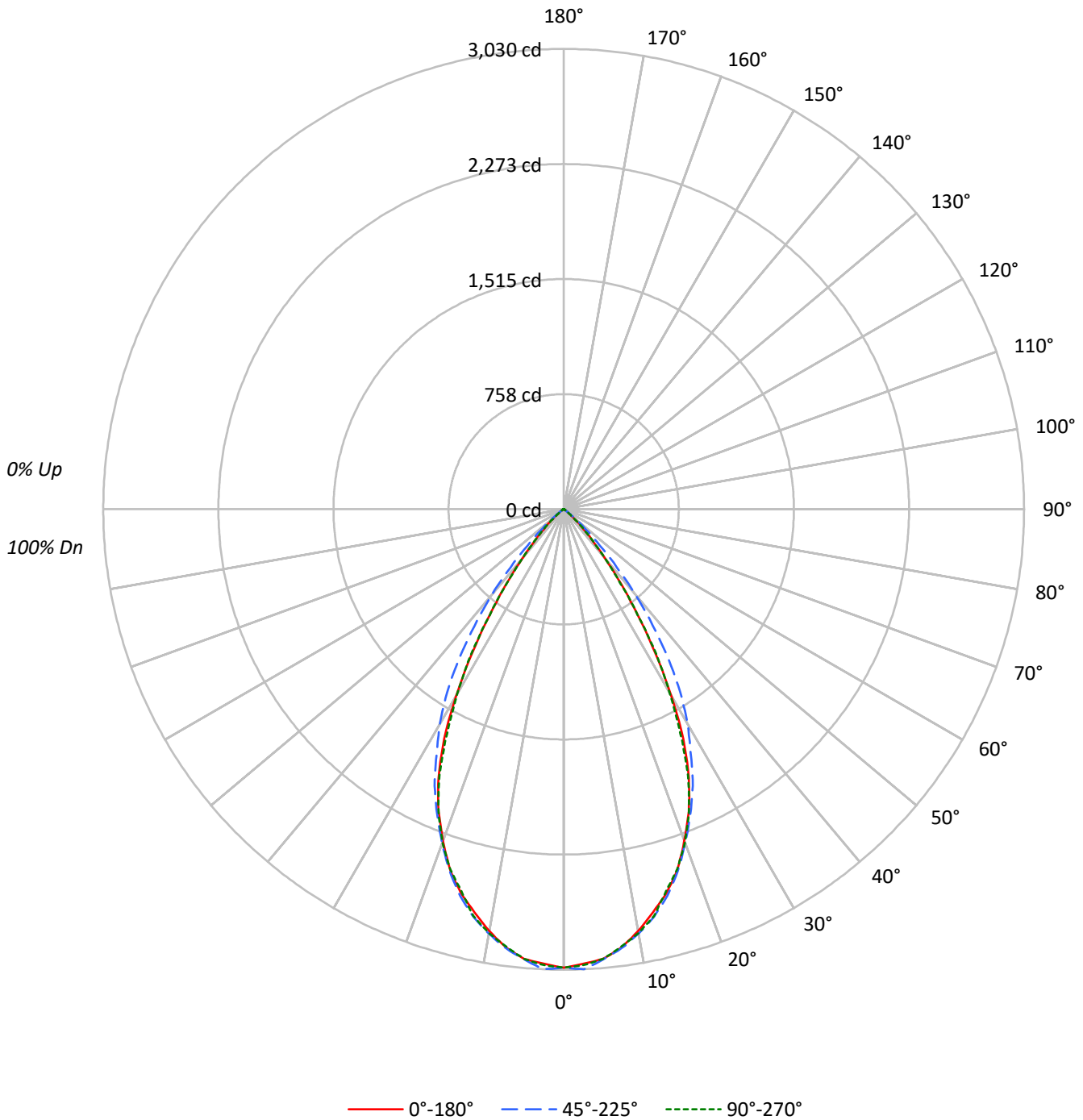
Lumens per Lamp: N/A
 Luminaire Lumens: 2785.1 lumens
 Efficiency: N/A
 Efficacy: 88.1 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 31.6
 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				
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°	291068	291068	291068
5°	287725	288093	287725
10°	276218	277913	277531
15°	261129	263047	259791
20°	238313	240079	239494
25°	207508	214035	206082
30°	157798	181496	155447
35°	99322	141090	100229
40°	53595	93183	52625
45°	25367	46027	25094
50°	9502	17263	9502
55°	4508	5484	4189
60°	2953	2605	2953
65°	1758	1758	1758
70°	1072	1636	1072
75°	746	746	746
80°	1111	1111	1111
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	279.7	10.0
10°-20°	733.0	26.3
20°-30°	895.4	32.2
30°-40°	626.3	22.5
40°-50°	205.2	7.4
50°-60°	32.6	1.2
60°-70°	8.9	0.3
70°-80°	3.0	0.1
80°-90°	0.8	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°	1908.1	68.5
0°-40°	2534.4	91.0
0°-60°	2772.3	99.5
0°-90°	2785.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2785.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3017	3017	3017	3017	3017	
5°	2971	2972	2974	2956	2971	279
15°	2614	2625	2633	2616	2601	729
25°	1949	1979	2010	1974	1936	876
35°	843	996	1198	980	851	538
45°	186	229	337	226	184	156
55°	27	29	33	29	25	27
65°	8	10	8	10	8	9
75°	2	2	2	2	2	3
85°	0	0	0	0	0	1
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C30D010 FEU4C309030 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3016.6	3016.6	3016.6	3016.6	3016.6	3016.6	3016.6	3016.6	3016.6	3016.6	3016.6
2.5°	2993.6	3014.7	3008.9	3022.4	3022.4	3007.0	3010.9	3016.6	3024.3	3030.0	2984.0
5°	2970.6	2989.8	2972.5	2991.6	2980.1	2962.9	2991.6	2976.3	2985.9	2974.4	2982.1
7.5°	2909.3	2939.9	2905.5	2928.4	2920.8	2911.2	2922.7	2918.8	2924.6	2915.0	2894.0
10°	2819.2	2844.1	2821.1	2853.7	2838.4	2828.8	2838.4	2848.0	2846.0	2836.5	2848.0
12.5°	2715.7	2744.4	2732.9	2752.1	2734.9	2734.9	2757.9	2752.1	2754.0	2746.4	2759.8
15°	2614.1	2635.2	2618.0	2642.9	2635.2	2614.1	2623.7	2623.7	2639.1	2633.3	2618.0
17.5°	2487.7	2504.9	2485.7	2491.5	2483.8	2480.0	2520.2	2493.4	2508.7	2497.2	2499.2
20°	2320.9	2328.6	2322.8	2338.1	2328.6	2340.1	2336.3	2332.4	2332.4	2338.1	2324.8
22.5°	2152.2	2152.2	2158.0	2161.8	2169.5	2158.0	2181.0	2161.8	2163.7	2177.2	2173.3
25°	1949.1	1943.3	1956.8	1975.9	1983.6	1974.0	2004.6	1989.3	2000.8	2010.4	1989.3
27.5°	1701.9	1701.9	1715.3	1747.9	1753.6	1765.1	1807.2	1807.2	1822.6	1809.2	1824.5
30°	1416.3	1437.4	1454.6	1496.8	1510.2	1535.2	1579.2	1600.3	1634.8	1629.0	1621.3
32.5°	1123.1	1151.9	1153.7	1197.8	1234.2	1276.4	1335.8	1385.6	1410.6	1427.8	1408.6
35°	843.2	860.5	875.9	906.5	967.8	1023.4	1077.1	1142.2	1186.3	1197.8	1180.6
37.5°	617.1	621.0	636.3	665.0	711.0	764.7	829.9	900.7	946.8	964.0	944.8
40°	425.5	429.3	437.0	461.9	500.2	538.5	590.3	663.1	705.3	739.8	714.8
42.5°	285.5	289.4	297.0	316.2	337.3	373.7	414.0	459.9	500.2	515.6	502.1
45°	185.9	185.9	189.7	203.2	214.7	243.4	272.2	300.9	327.7	337.3	327.7
47.5°	109.3	111.1	115.0	124.6	138.0	149.5	170.6	189.7	197.4	205.1	201.2
50°	63.3	63.3	69.0	74.8	84.3	92.0	99.6	107.3	111.1	115.0	111.1
52.5°	34.5	36.4	38.3	40.3	44.1	51.8	57.5	57.5	59.4	61.3	59.4
55°	26.8	26.8	26.8	26.8	28.8	28.8	28.8	30.7	30.7	32.6	30.7
57.5°	19.2	19.2	19.2	21.1	21.1	21.1	19.2	19.2	19.2	19.2	19.2
60°	15.3	15.3	15.3	15.3	15.3	15.3	15.3	13.5	13.5	13.5	13.5
62.5°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
65°	7.7	7.7	9.6	9.6	9.6	9.6	9.6	7.7	7.7	7.7	7.7
67.5°	5.8	5.8	5.8	5.8	7.7	7.7	5.8	5.8	5.8	5.8	5.8
70°	3.8	3.8	3.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
72.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	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°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	3016.6	3016.6	3016.6	3016.6	3016.6	3016.6	3016.6	3016.6
2.5°	3016.6	2984.0	2987.8	3005.1	2995.5	3005.1	3003.2	3003.2
5°	2984.0	2974.4	2959.1	2953.3	2964.8	2989.8	2985.9	2970.6
7.5°	2922.7	2897.8	2915.0	2922.7	2913.1	2928.4	2936.1	2903.5
10°	2849.8	2840.3	2836.5	2840.3	2836.5	2851.8	2832.6	2832.6
12.5°	2746.4	2731.0	2731.0	2754.0	2740.6	2729.1	2744.4	2742.5
15°	2642.9	2612.2	2612.2	2619.8	2625.6	2618.0	2619.8	2600.7
17.5°	2489.5	2480.0	2466.5	2487.7	2493.4	2485.7	2491.5	2481.9
20°	2345.8	2345.8	2320.9	2330.5	2338.1	2343.9	2347.7	2332.4
22.5°	2161.8	2165.7	2148.4	2167.6	2173.3	2154.2	2158.0	2154.2
25°	1993.2	1991.3	1977.8	1970.2	1974.0	1966.3	1964.4	1935.7
27.5°	1807.2	1788.1	1759.4	1767.0	1734.4	1707.6	1707.6	1663.5
30°	1606.0	1573.5	1535.2	1496.8	1468.1	1437.4	1420.1	1395.2
32.5°	1370.3	1326.3	1278.3	1226.5	1194.0	1148.0	1123.1	1136.5
35°	1136.5	1071.3	1006.2	954.5	904.6	877.7	847.1	850.9
37.5°	910.3	818.4	760.9	705.3	663.1	628.6	615.2	611.4
40°	665.0	592.2	534.7	494.4	465.7	438.9	423.6	417.8
42.5°	459.9	408.2	362.2	329.6	310.5	293.2	285.5	283.7
45°	299.0	268.3	237.7	214.7	199.4	187.9	185.9	183.9
47.5°	187.9	172.5	153.3	136.1	122.6	115.0	109.3	109.3
50°	107.3	101.6	92.0	82.4	74.8	70.9	65.1	63.3
52.5°	57.5	57.5	53.7	46.0	40.3	36.4	36.4	34.5
55°	30.7	30.7	28.8	28.8	26.8	26.8	26.8	24.9
57.5°	19.2	19.2	21.1	21.1	19.2	19.2	19.2	19.2
60°	13.5	15.3	15.3	15.3	15.3	15.3	15.3	15.3
62.5°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
65°	7.7	9.6	9.6	9.6	9.6	7.7	7.7	7.7
67.5°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
70°	5.8	5.8	5.8	5.8	5.8	3.8	3.8	3.8
72.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)