

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 FEU4C309050 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 FEU4C309050 F4LC-SQ-LI
 Description: 4 INCH 3000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

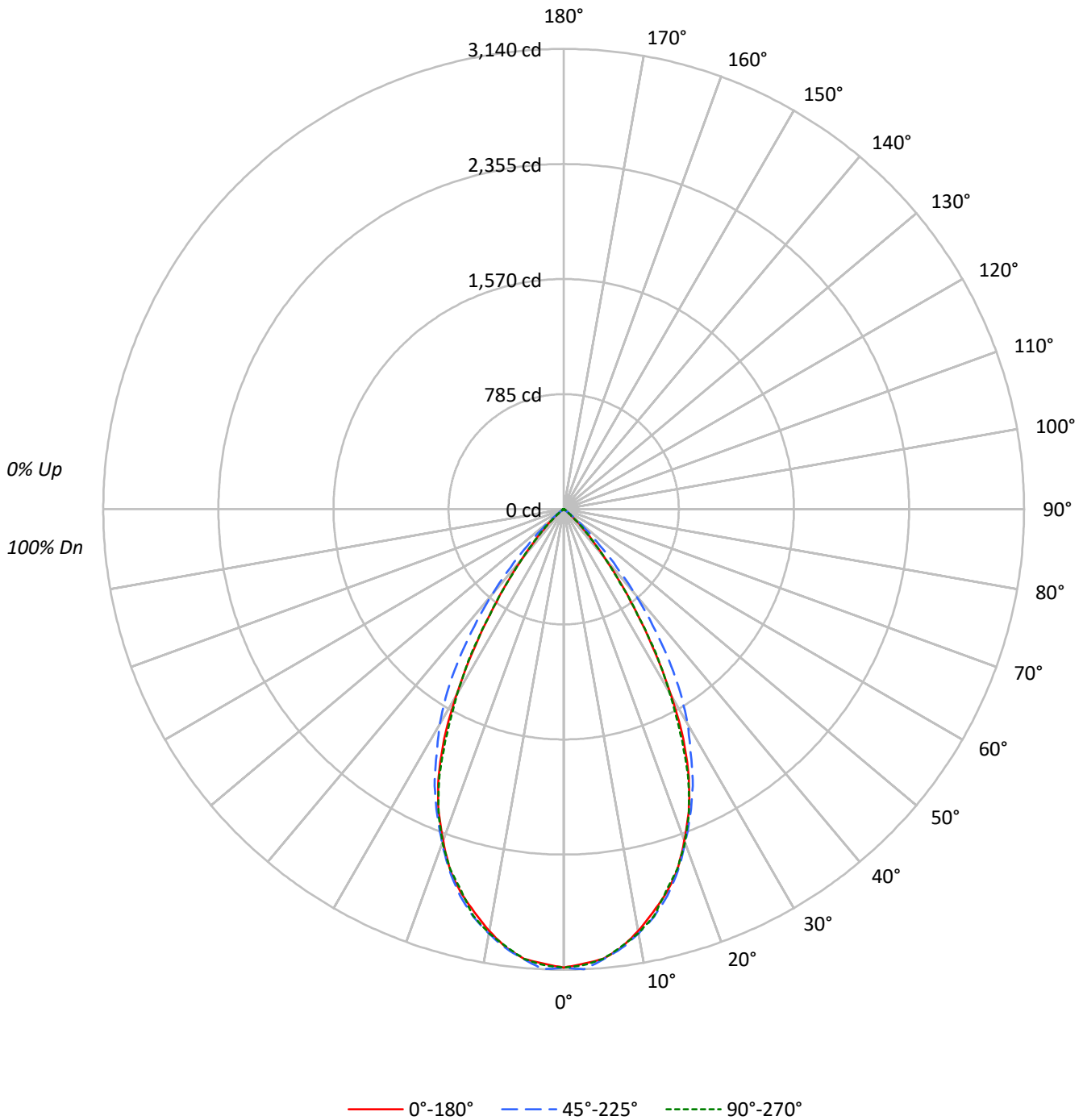
Lumens per Lamp: N/A
 Luminaire Lumens: 2886.0 lumens
 Efficiency: N/A
 Efficacy: 91.3 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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°	301624	301624	301624
5°	298156	298544	298156
10°	286231	287985	287603
15°	270599	272587	269211
20°	246959	248787	248181
25°	215035	221796	213556
30°	163514	188081	161085
35°	102926	146214	103868
40°	55535	96559	54527
45°	26281	47691	26008
50°	9847	17878	9847
55°	4677	5686	4357
60°	3068	2682	3068
65°	1804	1804	1804
70°	1128	1693	1128
75°	746	746	746
80°	1111	1111	1111
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	289.8	10.0
10°-20°	759.6	26.3
20°-30°	927.9	32.2
30°-40°	649.0	22.5
40°-50°	212.7	7.4
50°-60°	33.8	1.2
60°-70°	9.2	0.3
70°-80°	3.1	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°	1977.3	68.5
0°-40°	2626.3	91.0
0°-60°	2872.8	99.5
0°-90°	2886.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2886.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3126	3126	3126	3126	3126	
5°	3078	3079	3082	3063	3078	289
15°	2709	2720	2729	2711	2695	756
25°	2020	2051	2083	2046	2006	907
35°	874	1032	1241	1016	882	558
45°	193	237	350	234	191	162
55°	28	30	34	30	26	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 FEU4C309050 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3126.0	3126.0	3126.0	3126.0	3126.0	3126.0	3126.0	3126.0	3126.0	3126.0	3126.0
2.5°	3102.2	3124.0	3118.0	3132.0	3132.0	3116.1	3120.1	3126.0	3133.9	3139.9	3092.2
5°	3078.3	3098.2	3080.3	3100.1	3088.2	3070.4	3100.1	3084.3	3094.2	3082.3	3090.2
7.5°	3014.8	3046.6	3010.8	3034.6	3026.7	3016.7	3028.7	3024.7	3030.7	3020.7	2998.9
10°	2921.4	2947.3	2923.5	2957.2	2941.3	2931.4	2941.3	2951.3	2949.2	2939.3	2951.3
12.5°	2814.2	2844.0	2832.0	2851.9	2834.1	2834.1	2857.9	2851.9	2853.9	2846.0	2859.8
15°	2708.9	2730.8	2712.9	2738.8	2730.8	2708.9	2718.8	2718.8	2734.8	2728.8	2712.9
17.5°	2577.9	2595.7	2575.9	2581.8	2573.9	2569.9	2611.6	2583.8	2599.7	2587.8	2589.8
20°	2405.1	2413.0	2407.0	2422.9	2413.0	2424.9	2421.0	2417.0	2417.0	2422.9	2409.1
22.5°	2230.3	2230.3	2236.3	2240.2	2248.2	2236.3	2260.1	2240.2	2242.2	2256.1	2252.2
25°	2019.8	2013.8	2027.7	2047.6	2055.5	2045.6	2077.3	2061.5	2073.4	2083.3	2061.5
27.5°	1763.6	1763.6	1777.5	1811.3	1817.2	1829.1	1872.8	1872.8	1888.7	1874.8	1890.7
30°	1467.6	1489.5	1507.4	1551.0	1565.0	1590.8	1636.5	1658.3	1694.1	1688.1	1680.1
32.5°	1163.8	1193.6	1195.6	1241.3	1279.0	1322.7	1384.2	1435.9	1461.7	1479.6	1459.7
35°	873.8	891.7	907.6	939.4	1002.9	1060.6	1116.2	1183.7	1229.4	1241.3	1223.4
37.5°	639.5	643.5	659.4	689.1	736.8	792.5	860.0	933.4	981.1	999.0	979.1
40°	440.9	444.9	452.8	478.7	518.4	558.1	611.7	687.2	730.9	766.6	740.8
42.5°	295.9	299.9	307.8	327.7	349.5	387.2	429.0	476.6	518.4	534.2	520.3
45°	192.6	192.6	196.6	210.6	222.5	252.2	282.0	311.8	339.6	349.5	339.6
47.5°	113.2	115.2	119.1	129.1	143.0	154.9	176.8	196.6	204.6	212.5	208.5
50°	65.6	65.6	71.5	77.5	87.4	95.3	103.3	111.2	115.2	119.1	115.2
52.5°	35.7	37.8	39.7	41.7	45.7	53.7	59.6	59.6	61.6	63.5	61.6
55°	27.8	27.8	27.8	27.8	29.8	29.8	29.8	31.8	31.8	33.8	31.8
57.5°	19.9	19.9	19.9	21.9	21.9	21.9	19.9	19.9	19.9	19.9	19.9
60°	15.9	15.9	15.9	15.9	15.9	15.9	15.9	13.9	13.9	13.9	13.9
62.5°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
65°	7.9	7.9	10.0	10.0	10.0	10.0	10.0	7.9	7.9	7.9	7.9
67.5°	6.0	6.0	6.0	6.0	7.9	7.9	6.0	6.0	6.0	6.0	6.0
70°	4.0	4.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
72.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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°	3126.0	3126.0	3126.0	3126.0	3126.0	3126.0	3126.0	3126.0
2.5°	3126.0	3092.2	3096.2	3114.1	3104.1	3114.1	3112.1	3112.1
5°	3092.2	3082.3	3066.4	3060.4	3072.3	3098.2	3094.2	3078.3
7.5°	3028.7	3002.9	3020.7	3028.7	3018.8	3034.6	3042.6	3008.8
10°	2953.2	2943.3	2939.3	2943.3	2939.3	2955.2	2935.4	2935.4
12.5°	2846.0	2830.1	2830.1	2853.9	2840.0	2828.1	2844.0	2842.0
15°	2738.8	2706.9	2706.9	2714.8	2720.8	2712.9	2714.8	2695.0
17.5°	2579.8	2569.9	2556.0	2577.9	2583.8	2575.9	2581.8	2571.9
20°	2430.9	2430.9	2405.1	2415.0	2422.9	2428.9	2432.9	2417.0
22.5°	2240.2	2244.2	2226.3	2246.2	2252.2	2232.3	2236.3	2232.3
25°	2065.4	2063.5	2049.5	2041.6	2045.6	2037.6	2035.7	2005.9
27.5°	1872.8	1852.9	1823.2	1831.1	1797.3	1769.5	1769.5	1723.8
30°	1664.3	1630.5	1590.8	1551.0	1521.3	1489.5	1471.6	1445.8
32.5°	1420.0	1374.4	1324.7	1271.0	1237.3	1189.7	1163.8	1177.7
35°	1177.7	1110.2	1042.6	989.1	937.4	909.6	877.8	881.8
37.5°	943.4	848.1	788.5	730.9	687.2	651.4	637.5	633.5
40°	689.1	613.7	554.1	512.4	482.6	454.8	438.9	432.9
42.5°	476.6	423.1	375.3	341.6	321.7	303.8	295.9	293.9
45°	309.8	278.1	246.3	222.5	206.6	194.7	192.6	190.6
47.5°	194.7	178.7	158.8	141.0	127.1	119.1	113.2	113.2
50°	111.2	105.3	95.3	85.4	77.5	73.5	67.5	65.6
52.5°	59.6	59.6	55.6	47.7	41.7	37.8	37.8	35.7
55°	31.8	31.8	29.8	29.8	27.8	27.8	27.8	25.9
57.5°	19.9	19.9	21.9	21.9	19.9	19.9	19.9	19.9
60°	13.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
62.5°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
65°	7.9	10.0	10.0	10.0	10.0	7.9	7.9	7.9
67.5°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
70°	6.0	6.0	6.0	6.0	6.0	4.0	4.0	4.0
72.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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)