

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: **FLDSQ4C35D010 FEU4C359027 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: FLDSQ4C35D010 FEU4C359027 F4LC-SQ-LI
Description: 4 INCH 3500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS
AND F4LC-SQ TRIM WITH LI FINISH
Light Source: -
Ballast/Driver: -

Summary

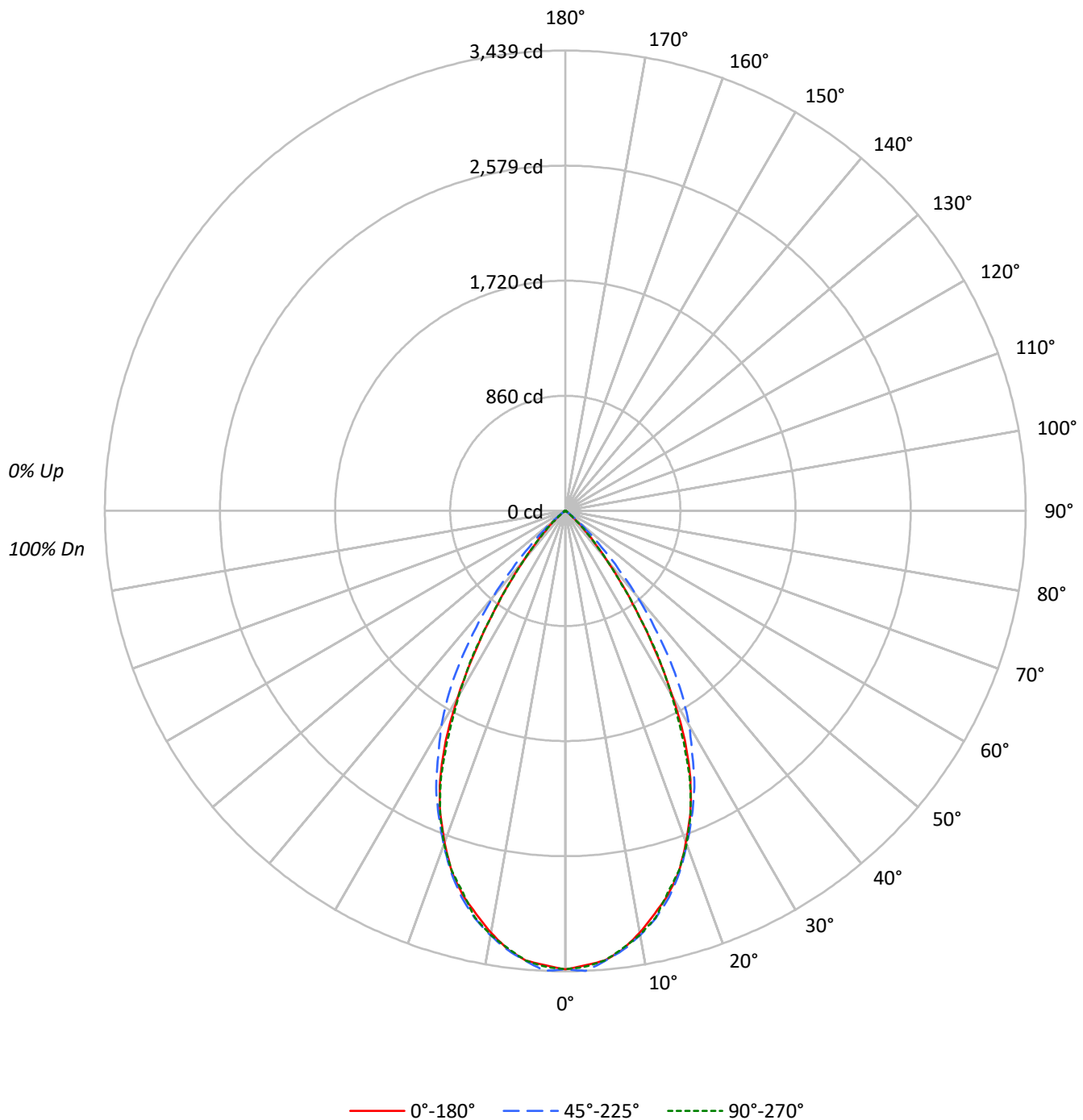
Lumens per Lamp: N/A
Luminaire Lumens: 3161.0 lumens
Efficiency: N/A
Efficacy: 78.2 lumens/watt
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 40.4
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

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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	113	111	108	106	111	108	106	104	104	103	101		101	99	98		97
2	108	103	99	95	105	101	97	94	98	95	92		95	92	90		92
3	102	96	91	87	100	94	90	86	92	88	84		89	86	83		87
4	97	89	84	79	95	88	83	79	86	81	78		84	80	77		82
5	92	83	77	73	90	82	77	73	81	76	72		79	75	71		77
6	87	78	72	68	86	77	71	67	76	71	67		74	70	66		73
7	83	73	67	63	81	73	67	63	71	66	62		70	65	62		69
8	79	69	63	59	77	68	62	58	67	62	58		66	61	58		65
9	75	65	59	55	74	64	59	55	63	58	55		63	58	54		62
10	71	61	55	51	70	61	55	51	60	55	51		59	54	51		58

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	330368	330368	330368
5°	326574	326991	326574
10°	313508	315428	315007
15°	296391	298559	294863
20°	270493	272496	271828
25°	235530	242940	233901
30°	179101	205997	176438
35°	112738	160149	113763
40°	60825	105766	59729
45°	28792	52249	28492
50°	10778	19589	10778
55°	5114	6224	4761
60°	3358	2953	3358
65°	1986	1986	1986
70°	1213	1862	1213
75°	820	820	820
80°	1222	1222	1222
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	317.4	10.0
10°-20°	832.0	26.3
20°-30°	1016.3	32.2
30°-40°	710.8	22.5
40°-50°	233.0	7.4
50°-60°	37.0	1.2
60°-70°	10.1	0.3
70°-80°	3.4	0.1
80°-90°	0.9	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°	2165.7	68.5
0°-40°	2876.6	91.0
0°-60°	3146.6	99.5
0°-90°	3161.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3161.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3424	3424	3424	3424	3424	
5°	3372	3373	3376	3355	3372	316
15°	2967	2979	2989	2969	2952	828
25°	2212	2246	2282	2240	2197	994
35°	957	1130	1360	1113	966	611
45°	211	260	383	257	209	177
55°	30	33	37	33	28	30
65°	9	11	9	11	9	10
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: FLDSQ4C35D010 FEU4C359027 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3423.9	3423.9	3423.9	3423.9	3423.9	3423.9	3423.9	3423.9	3423.9	3423.9	3423.9
2.5°	3397.8	3421.7	3415.2	3430.4	3430.4	3413.0	3417.4	3423.9	3432.6	3439.1	3386.8
5°	3371.7	3393.4	3373.8	3395.5	3382.5	3363.0	3395.5	3378.1	3389.1	3376.0	3384.7
7.5°	3302.1	3336.9	3297.7	3323.8	3315.1	3304.2	3317.2	3312.9	3319.5	3308.5	3284.7
10°	3199.8	3228.1	3202.0	3239.0	3221.6	3210.7	3221.6	3232.5	3230.3	3219.4	3232.5
12.5°	3082.4	3114.9	3101.9	3123.6	3104.1	3104.1	3130.2	3123.6	3125.9	3117.2	3132.3
15°	2967.1	2991.0	2971.4	2999.7	2991.0	2967.1	2977.9	2977.9	2995.4	2988.8	2971.4
17.5°	2823.5	2843.0	2821.3	2827.9	2819.2	2814.8	2860.4	2830.0	2847.4	2834.4	2836.6
20°	2634.3	2643.0	2636.4	2653.8	2643.0	2656.0	2651.7	2647.3	2647.3	2653.8	2638.6
22.5°	2442.8	2442.8	2449.4	2453.7	2462.4	2449.4	2475.5	2453.7	2455.8	2471.1	2466.8
25°	2212.3	2205.7	2221.0	2242.7	2251.4	2240.5	2275.3	2257.9	2270.9	2281.9	2257.9
27.5°	1931.7	1931.7	1946.9	1983.9	1990.3	2003.4	2051.2	2051.2	2068.6	2053.5	2070.9
30°	1607.5	1631.5	1651.0	1698.8	1714.1	1742.4	1792.4	1816.4	1855.5	1848.9	1840.2
32.5°	1274.7	1307.4	1309.5	1359.6	1400.8	1448.7	1516.2	1572.7	1601.0	1620.5	1598.8
35°	957.1	976.7	994.1	1028.9	1098.5	1161.6	1222.5	1296.5	1346.5	1359.6	1339.9
37.5°	700.5	704.8	722.2	754.8	807.0	868.0	941.9	1022.3	1074.6	1094.1	1072.4
40°	482.9	487.2	495.9	524.3	567.8	611.3	670.0	752.7	800.5	839.7	811.3
42.5°	324.1	328.4	337.1	358.9	382.9	424.1	469.8	522.0	567.8	585.2	569.9
45°	211.0	211.0	215.4	230.6	243.7	276.2	308.9	341.5	371.9	382.9	371.9
47.5°	124.0	126.1	130.5	141.4	156.6	169.6	193.6	215.4	224.0	232.7	228.4
50°	71.8	71.8	78.3	84.9	95.7	104.4	113.1	121.8	126.1	130.5	126.1
52.5°	39.1	41.4	43.5	45.7	50.1	58.8	65.2	65.2	67.5	69.6	67.5
55°	30.4	30.4	30.4	30.4	32.7	32.7	32.7	34.8	34.8	37.0	34.8
57.5°	21.7	21.7	21.7	24.0	24.0	24.0	21.7	21.7	21.7	21.7	21.7
60°	17.4	17.4	17.4	17.4	17.4	17.4	17.4	15.3	15.3	15.3	15.3
62.5°	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
65°	8.7	8.7	10.9	10.9	10.9	10.9	10.9	8.7	8.7	8.7	8.7
67.5°	6.6	6.6	6.6	6.6	8.7	8.7	6.6	6.6	6.6	6.6	6.6
70°	4.3	4.3	4.3	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
72.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	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°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	3423.9	3423.9	3423.9	3423.9	3423.9	3423.9	3423.9	3423.9
2.5°	3423.9	3386.8	3391.2	3410.8	3399.9	3410.8	3408.7	3408.7
5°	3386.8	3376.0	3358.6	3352.0	3365.1	3393.4	3389.1	3371.7
7.5°	3317.2	3289.0	3308.5	3317.2	3306.4	3323.8	3332.5	3295.5
10°	3234.6	3223.8	3219.4	3223.8	3219.4	3236.8	3215.1	3215.1
12.5°	3117.2	3099.8	3099.8	3125.9	3110.6	3097.5	3114.9	3112.8
15°	2999.7	2964.8	2964.8	2973.5	2980.1	2971.4	2973.5	2951.8
17.5°	2825.7	2814.8	2799.6	2823.5	2830.0	2821.3	2827.9	2817.0
20°	2662.5	2662.5	2634.3	2645.1	2653.8	2660.4	2664.7	2647.3
22.5°	2453.7	2458.1	2438.4	2460.2	2466.8	2445.0	2449.4	2445.0
25°	2262.2	2260.1	2244.8	2236.1	2240.5	2231.8	2229.7	2197.0
27.5°	2051.2	2029.5	1996.9	2005.6	1968.6	1938.2	1938.2	1888.1
30°	1822.8	1785.9	1742.4	1698.8	1666.3	1631.5	1611.8	1583.6
32.5°	1555.3	1505.3	1450.9	1392.1	1355.2	1303.0	1274.7	1290.0
35°	1290.0	1215.9	1142.0	1083.3	1026.7	996.2	961.4	965.8
37.5°	1033.3	928.9	863.6	800.5	752.7	713.5	698.2	693.9
40°	754.8	672.1	606.9	561.2	528.6	498.2	480.8	474.2
42.5°	522.0	463.4	411.1	374.2	352.4	332.8	324.1	322.0
45°	339.4	304.6	269.8	243.7	226.3	213.2	211.0	208.8
47.5°	213.2	195.7	174.0	154.5	139.2	130.5	124.0	124.0
50°	121.8	115.3	104.4	93.6	84.9	80.5	73.9	71.8
52.5°	65.2	65.2	60.9	52.2	45.7	41.4	41.4	39.1
55°	34.8	34.8	32.7	32.7	30.4	30.4	30.4	28.3
57.5°	21.7	21.7	24.0	24.0	21.7	21.7	21.7	21.7
60°	15.3	17.4	17.4	17.4	17.4	17.4	17.4	17.4
62.5°	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
65°	8.7	10.9	10.9	10.9	10.9	8.7	8.7	8.7
67.5°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
70°	6.6	6.6	6.6	6.6	6.6	4.3	4.3	4.3
72.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)