

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 FEU4C359050 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 FEU4C359050 F4LC-SQ-LI
Description: 4 INCH 3500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS
AND F4LC-SQ TRIM WITH LI FINISH
Light Source: -
Ballast/Driver: -

Summary

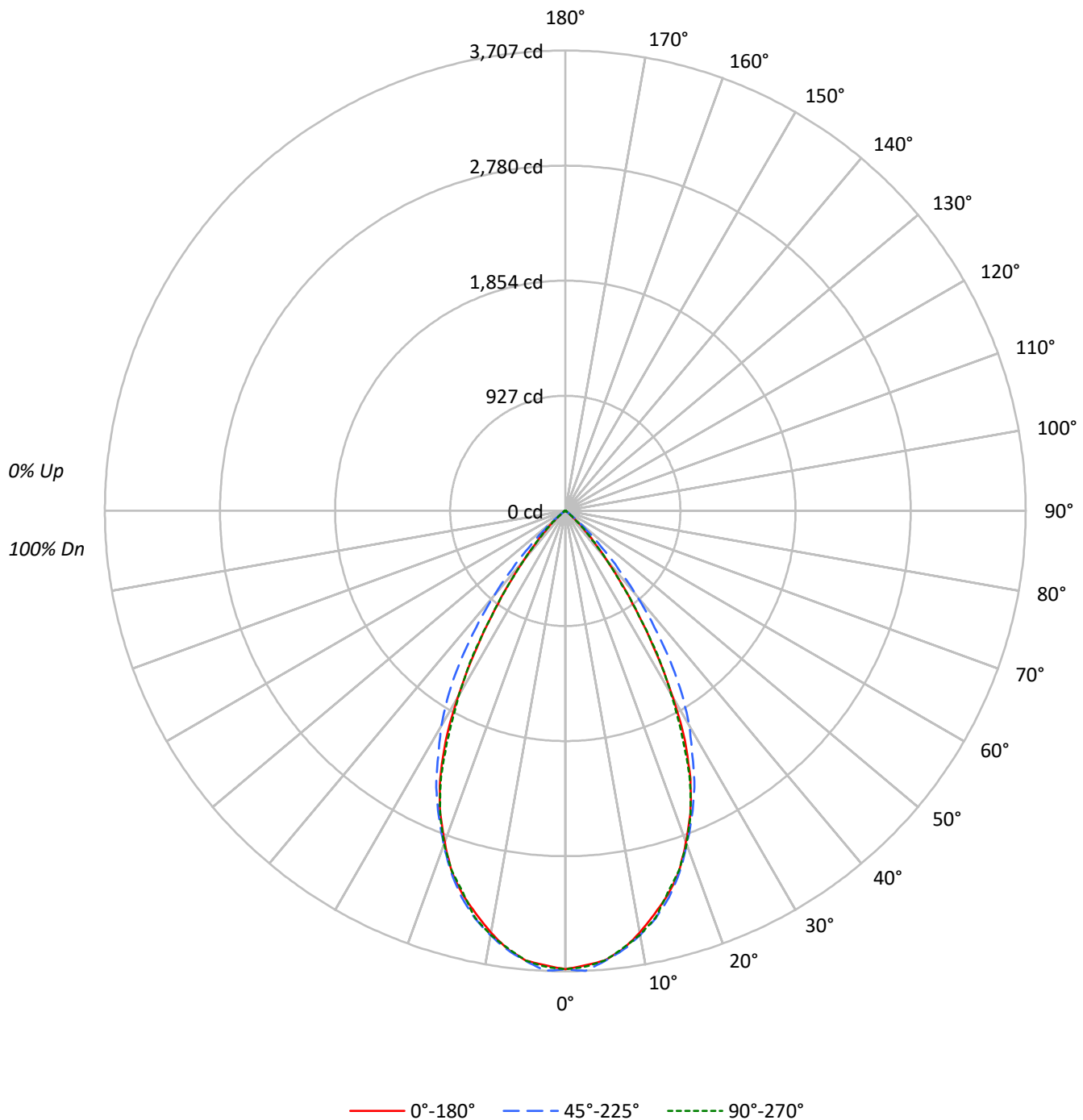
Lumens per Lamp: N/A
Luminaire Lumens: 3407.0 lumens
Efficiency: N/A
Efficacy: 84.3 lumens/watt
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 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		0
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		100
1	113	111	108	106	111	108	106	104	104	103	101		101	99	98		93
2	108	103	99	95	105	101	97	94	98	95	92		95	92	90		87
3	102	96	91	87	100	94	90	86	92	88	84		89	86	83		80
4	97	89	84	79	95	88	83	79	86	81	78		84	80	77		75
5	92	83	77	73	90	82	77	73	81	76	72		79	75	71		69
6	87	78	72	68	86	77	71	67	76	71	67		74	70	66		64
7	83	73	67	63	81	73	67	63	71	66	62		70	65	62		60
8	79	69	63	59	77	68	62	58	67	62	58		66	61	58		56
9	75	65	59	55	74	64	59	55	63	58	55		63	58	54		53
10	71	61	55	51	70	61	55	51	60	55	51		59	54	51		50

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	356073	356073	356073
5°	351990	352435	351990
10°	337904	339982	339521
15°	319457	321794	317808
20°	291543	293699	292981
25°	253852	261837	252106
30°	193039	222029	190176
35°	121513	172611	122621
40°	65561	113991	64377
45°	31030	56302	30703
50°	11619	21105	11619
55°	5518	6712	5131
60°	3628	3184	3628
65°	2146	2146	2146
70°	1326	2003	1326
75°	895	895	895
80°	1334	1334	1334
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	342.2	10.0
10°-20°	896.7	26.3
20°-30°	1095.4	32.2
30°-40°	766.2	22.5
40°-50°	251.1	7.4
50°-60°	39.9	1.2
60°-70°	10.9	0.3
70°-80°	3.7	0.1
80°-90°	1.0	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°	2334.3	68.5
0°-40°	3100.4	91.0
0°-60°	3391.4	99.5
0°-90°	3407.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3407.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3690	3690	3690	3690	3690	
5°	3634	3635	3639	3616	3634	341
15°	3198	3211	3221	3200	3182	892
25°	2384	2421	2459	2415	2368	1071
35°	1032	1218	1465	1199	1041	658
45°	227	280	413	277	225	191
55°	33	35	40	35	30	32
65°	9	12	9	12	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 FEU4C359050 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3690.3	3690.3	3690.3	3690.3	3690.3	3690.3	3690.3	3690.3	3690.3	3690.3	3690.3
2.5°	3662.2	3688.0	3680.9	3697.4	3697.4	3678.6	3683.3	3690.3	3699.7	3706.8	3650.4
5°	3634.1	3657.5	3636.4	3659.8	3645.7	3624.7	3659.8	3641.0	3652.8	3638.7	3648.1
7.5°	3559.0	3596.5	3554.4	3582.5	3573.1	3561.3	3575.4	3570.7	3577.8	3566.0	3540.3
10°	3448.8	3479.3	3451.2	3491.0	3472.3	3460.6	3472.3	3484.0	3481.6	3470.0	3484.0
12.5°	3322.2	3357.4	3343.3	3366.7	3345.7	3345.7	3373.8	3366.7	3369.1	3359.8	3376.1
15°	3198.0	3223.8	3202.7	3233.2	3223.8	3198.0	3209.6	3209.6	3228.5	3221.4	3202.7
17.5°	3043.3	3064.3	3040.9	3047.9	3038.6	3033.9	3083.1	3050.2	3069.0	3054.9	3057.3
20°	2839.3	2848.7	2841.6	2860.3	2848.7	2862.7	2858.0	2853.3	2853.3	2860.3	2844.0
22.5°	2632.9	2632.9	2640.0	2644.7	2654.0	2640.0	2668.1	2644.7	2647.0	2663.4	2658.7
25°	2384.4	2377.4	2393.8	2417.2	2426.6	2414.9	2452.4	2433.6	2447.7	2459.4	2433.6
27.5°	2082.0	2082.0	2098.4	2138.3	2145.2	2159.3	2210.9	2210.9	2229.6	2213.3	2232.0
30°	1732.6	1758.4	1779.5	1831.0	1847.5	1878.0	1931.9	1957.7	1999.9	1992.8	1983.5
32.5°	1373.9	1409.1	1411.4	1465.4	1509.9	1561.4	1634.1	1695.1	1725.6	1746.7	1723.2
35°	1031.6	1052.7	1071.5	1109.0	1184.0	1252.0	1317.6	1397.3	1451.3	1465.4	1444.2
37.5°	755.0	759.7	778.4	813.5	869.8	935.5	1015.2	1101.9	1158.2	1179.3	1155.9
40°	520.5	525.2	534.5	565.1	611.9	658.8	722.2	811.2	862.8	905.0	874.5
42.5°	349.3	354.0	363.4	386.8	412.6	457.1	506.4	562.7	611.9	630.7	614.2
45°	227.4	227.4	232.1	248.6	262.6	297.7	333.0	368.1	400.9	412.6	400.9
47.5°	133.7	136.0	140.6	152.4	168.8	182.8	208.7	232.1	241.5	250.9	246.2
50°	77.4	77.4	84.4	91.5	103.1	112.5	121.9	131.3	136.0	140.6	136.0
52.5°	42.2	44.6	46.9	49.3	54.0	63.3	70.3	70.3	72.7	75.0	72.7
55°	32.8	32.8	32.8	32.8	35.2	35.2	35.2	37.5	37.5	39.9	37.5
57.5°	23.4	23.4	23.4	25.8	25.8	25.8	23.4	23.4	23.4	23.4	23.4
60°	18.8	18.8	18.8	18.8	18.8	18.8	18.8	16.5	16.5	16.5	16.5
62.5°	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
65°	9.4	9.4	11.8	11.8	11.8	11.8	11.8	9.4	9.4	9.4	9.4
67.5°	7.1	7.1	7.1	7.1	9.4	9.4	7.1	7.1	7.1	7.1	7.1
70°	4.7	4.7	4.7	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
72.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
75°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
77.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
80°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	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°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
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°	3690.3	3690.3	3690.3	3690.3	3690.3	3690.3	3690.3	3690.3
2.5°	3690.3	3650.4	3655.1	3676.2	3664.5	3676.2	3673.9	3673.9
5°	3650.4	3638.7	3620.0	3612.9	3627.0	3657.5	3652.8	3634.1
7.5°	3575.4	3545.0	3566.0	3575.4	3563.7	3582.5	3591.9	3552.0
10°	3486.3	3474.7	3470.0	3474.7	3470.0	3488.7	3465.3	3465.3
12.5°	3359.8	3341.0	3341.0	3369.1	3352.7	3338.6	3357.4	3355.1
15°	3233.2	3195.6	3195.6	3204.9	3212.0	3202.7	3204.9	3181.5
17.5°	3045.6	3033.9	3017.4	3043.3	3050.2	3040.9	3047.9	3036.2
20°	2869.7	2869.7	2839.3	2850.9	2860.3	2867.4	2872.1	2853.3
22.5°	2644.7	2649.4	2628.2	2651.7	2658.7	2635.3	2640.0	2635.3
25°	2438.3	2436.0	2419.5	2410.2	2414.9	2405.5	2403.2	2368.0
27.5°	2210.9	2187.4	2152.3	2161.7	2121.8	2089.0	2089.0	2035.0
30°	1964.7	1924.9	1878.0	1831.0	1795.9	1758.4	1737.3	1706.9
32.5°	1676.3	1622.5	1563.8	1500.5	1460.7	1404.4	1373.9	1390.4
35°	1390.4	1310.6	1230.9	1167.6	1106.6	1073.8	1036.3	1041.0
37.5°	1113.7	1001.2	930.8	862.8	811.2	769.0	752.6	747.9
40°	813.5	724.5	654.1	604.9	569.7	536.9	518.2	511.1
42.5°	562.7	499.4	443.1	403.3	379.8	358.7	349.3	347.0
45°	365.8	328.3	290.8	262.6	243.9	229.8	227.4	225.0
47.5°	229.8	211.0	187.5	166.5	150.0	140.6	133.7	133.7
50°	131.3	124.3	112.5	100.8	91.5	86.8	79.7	77.4
52.5°	70.3	70.3	65.6	56.3	49.3	44.6	44.6	42.2
55°	37.5	37.5	35.2	35.2	32.8	32.8	32.8	30.5
57.5°	23.4	23.4	25.8	25.8	23.4	23.4	23.4	23.4
60°	16.5	18.8	18.8	18.8	18.8	18.8	18.8	18.8
62.5°	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
65°	9.4	11.8	11.8	11.8	11.8	9.4	9.4	9.4
67.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
70°	7.1	7.1	7.1	7.1	7.1	4.7	4.7	4.7
72.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
75°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
77.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
80°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
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°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)