

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 FEU4C359040 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 FEU4C359040 F4LC-SQ-LI
Description: 4 INCH 3500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS
AND F4LC-SQ TRIM WITH LI FINISH
Light Source: -
Ballast/Driver: -

Summary

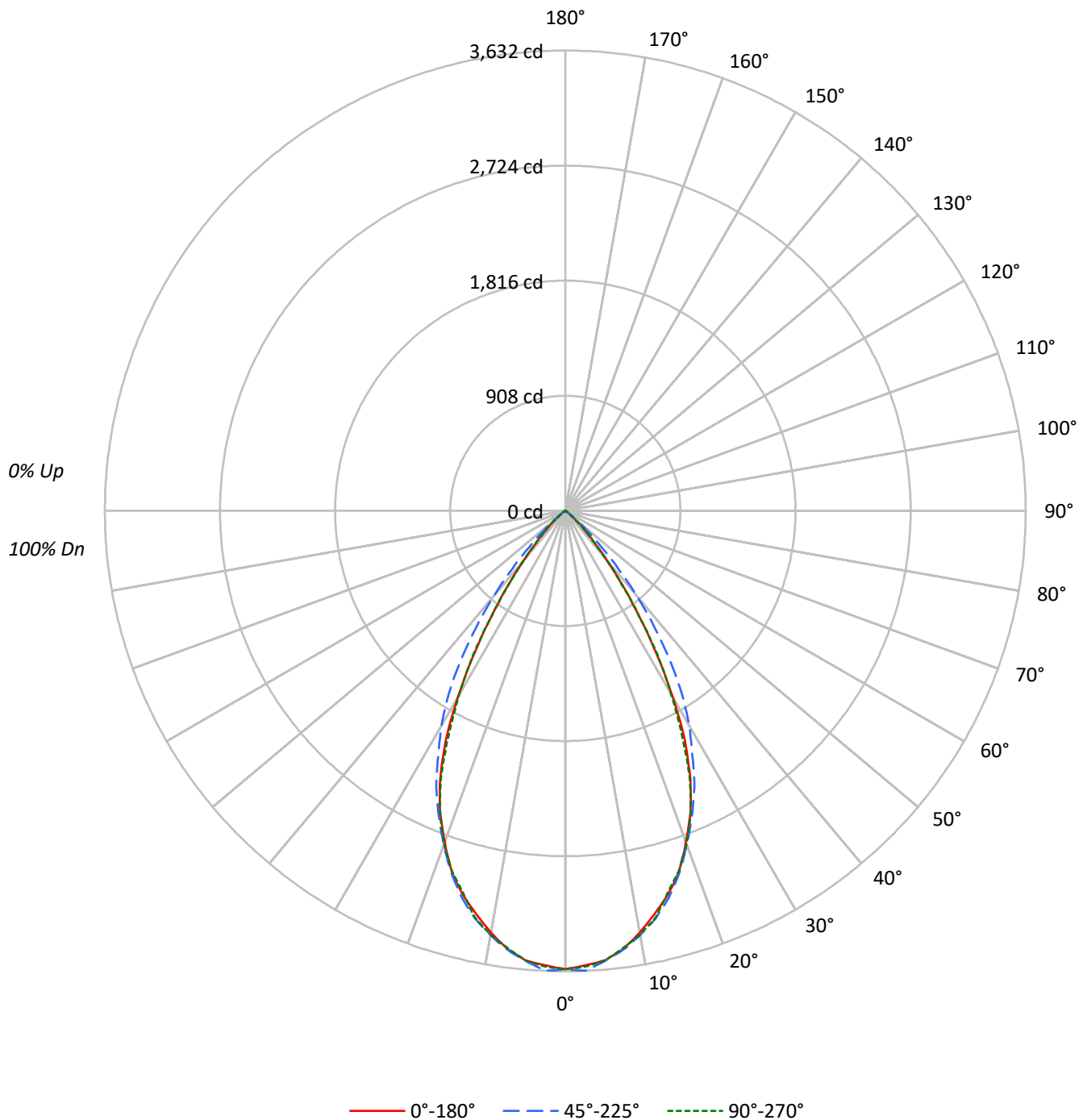
Lumens per Lamp: N/A
Luminaire Lumens: 3338.0 lumens
Efficiency: N/A
Efficacy: 82.6 lumens/watt
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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°	348865	348865	348865
5°	344861	345297	344861
10°	331066	333094	332643
15°	312984	315281	311375
20°	285639	287754	287056
25°	248710	256535	246996
30°	189128	217539	186321
35°	119052	169113	120135
40°	64226	111686	63067
45°	30402	55169	30089
50°	11378	20685	11378
55°	5417	6578	5030
60°	3551	3107	3551
65°	2100	2100	2100
70°	1298	1947	1298
75°	857	857	857
80°	1278	1278	1278
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	335.2	10.0
10°-20°	878.5	26.3
20°-30°	1073.2	32.2
30°-40°	750.6	22.5
40°-50°	246.0	7.4
50°-60°	39.1	1.2
60°-70°	10.7	0.3
70°-80°	3.5	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°	2287.0	68.5
0°-40°	3037.6	91.0
0°-60°	3322.8	99.5
0°-90°	3338.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3338.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3616	3616	3616	3616	3616	
5°	3560	3562	3565	3543	3560	334
15°	3133	3146	3156	3135	3117	874
25°	2336	2372	2410	2366	2320	1049
35°	1011	1193	1436	1175	1020	645
45°	223	274	404	271	220	187
55°	32	34	39	34	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 FEU4C359040 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3615.6	3615.6	3615.6	3615.6	3615.6	3615.6	3615.6	3615.6	3615.6	3615.6	3615.6
2.5°	3588.0	3613.3	3606.4	3622.5	3622.5	3604.1	3608.7	3615.6	3624.8	3631.7	3576.5
5°	3560.5	3583.4	3562.7	3585.7	3571.9	3551.3	3585.7	3567.3	3578.8	3565.0	3574.2
7.5°	3487.0	3523.7	3482.4	3509.9	3500.7	3489.2	3503.0	3498.4	3505.3	3493.8	3468.6
10°	3379.0	3408.9	3381.3	3420.3	3401.9	3390.5	3401.9	3413.5	3411.1	3399.7	3413.5
12.5°	3255.0	3289.4	3275.6	3298.6	3277.9	3277.9	3305.5	3298.6	3300.9	3291.7	3307.7
15°	3133.2	3158.5	3137.8	3167.7	3158.5	3133.2	3144.6	3144.6	3163.1	3156.2	3137.8
17.5°	2981.6	3002.2	2979.3	2986.2	2977.0	2972.4	3020.6	2988.5	3006.8	2993.1	2995.4
20°	2781.8	2791.0	2784.0	2802.4	2791.0	2804.7	2800.1	2795.6	2795.6	2802.4	2786.4
22.5°	2579.6	2579.6	2586.5	2591.1	2600.3	2586.5	2614.1	2591.1	2593.4	2609.5	2604.9
25°	2336.1	2329.2	2345.3	2368.3	2377.5	2366.0	2402.7	2384.3	2398.1	2409.6	2384.3
27.5°	2039.8	2039.8	2055.9	2095.0	2101.8	2115.6	2166.1	2166.1	2184.5	2168.4	2186.8
30°	1697.5	1722.8	1743.4	1794.0	1810.1	1840.0	1892.8	1918.1	1959.4	1952.5	1943.3
32.5°	1346.1	1380.6	1382.8	1435.7	1479.3	1529.8	1601.0	1660.8	1690.7	1711.3	1688.3
35°	1010.7	1031.4	1049.8	1086.5	1160.0	1226.7	1291.0	1369.0	1421.9	1435.7	1415.0
37.5°	739.7	744.3	762.7	797.1	852.2	916.6	994.7	1079.6	1134.8	1155.4	1132.5
40°	509.9	514.5	523.7	553.6	599.5	645.5	707.5	794.8	845.3	886.7	856.8
42.5°	342.2	346.8	356.0	379.0	404.3	447.9	496.2	551.3	599.5	617.9	601.8
45°	222.8	222.8	227.4	243.5	257.3	291.7	326.2	360.6	392.8	404.3	392.8
47.5°	131.0	133.2	137.8	149.3	165.4	179.1	204.4	227.4	236.6	245.8	241.2
50°	75.8	75.8	82.7	89.6	101.1	110.2	119.4	128.6	133.2	137.8	133.2
52.5°	41.3	43.7	45.9	48.3	52.9	62.1	68.9	68.9	71.2	73.5	71.2
55°	32.2	32.2	32.2	32.2	34.5	34.5	34.5	36.7	36.7	39.1	36.7
57.5°	23.0	23.0	23.0	25.3	25.3	25.3	23.0	23.0	23.0	23.0	23.0
60°	18.4	18.4	18.4	18.4	18.4	18.4	18.4	16.1	16.1	16.1	16.1
62.5°	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
65°	9.2	9.2	11.5	11.5	11.5	11.5	11.5	9.2	9.2	9.2	9.2
67.5°	6.9	6.9	6.9	6.9	9.2	9.2	6.9	6.9	6.9	6.9	6.9
70°	4.6	4.6	4.6	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
72.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
75°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	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°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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°	3615.6	3615.6	3615.6	3615.6	3615.6	3615.6	3615.6	3615.6
2.5°	3615.6	3576.5	3581.1	3601.8	3590.3	3601.8	3599.5	3599.5
5°	3576.5	3565.0	3546.7	3539.7	3553.5	3583.4	3578.8	3560.5
7.5°	3503.0	3473.2	3493.8	3503.0	3491.6	3509.9	3519.1	3480.0
10°	3415.7	3404.3	3399.7	3404.3	3399.7	3418.1	3395.1	3395.1
12.5°	3291.7	3273.3	3273.3	3300.9	3284.8	3271.0	3289.4	3287.1
15°	3167.7	3130.9	3130.9	3140.0	3147.0	3137.8	3140.0	3117.1
17.5°	2983.9	2972.4	2956.3	2981.6	2988.5	2979.3	2986.2	2974.7
20°	2811.6	2811.6	2781.8	2793.2	2802.4	2809.3	2813.9	2795.6
22.5°	2591.1	2595.7	2575.0	2598.0	2604.9	2581.9	2586.5	2581.9
25°	2388.9	2386.7	2370.5	2361.4	2366.0	2356.8	2354.5	2320.0
27.5°	2166.1	2143.1	2108.7	2117.9	2078.8	2046.7	2046.7	1993.8
30°	1924.9	1885.9	1840.0	1794.0	1759.6	1722.8	1702.1	1672.3
32.5°	1642.4	1589.6	1532.1	1470.1	1431.1	1376.0	1346.1	1362.2
35°	1362.2	1284.0	1205.9	1144.0	1084.2	1052.0	1015.3	1019.9
37.5°	1091.1	980.9	912.0	845.3	794.8	753.5	737.3	732.8
40°	797.1	709.8	640.9	592.6	558.2	526.1	507.7	500.7
42.5°	551.3	489.3	434.1	395.1	372.1	351.4	342.2	340.0
45°	358.4	321.6	284.9	257.3	238.9	225.2	222.8	220.5
47.5°	225.2	206.7	183.7	163.1	147.0	137.8	131.0	131.0
50°	128.6	121.8	110.2	98.8	89.6	85.0	78.1	75.8
52.5°	68.9	68.9	64.3	55.1	48.3	43.7	43.7	41.3
55°	36.7	36.7	34.5	34.5	32.2	32.2	32.2	29.9
57.5°	23.0	23.0	25.3	25.3	23.0	23.0	23.0	23.0
60°	16.1	18.4	18.4	18.4	18.4	18.4	18.4	18.4
62.5°	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
65°	9.2	11.5	11.5	11.5	11.5	9.2	9.2	9.2
67.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
70°	6.9	6.9	6.9	6.9	6.9	4.6	4.6	4.6
72.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
75°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)