

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 FEU4C359035 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 FEU4C359035 F4LC-SQ-LI
Description: 4 INCH 3500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS
AND F4LC-SQ TRIM WITH LI FINISH
Light Source: -
Ballast/Driver: -

Summary

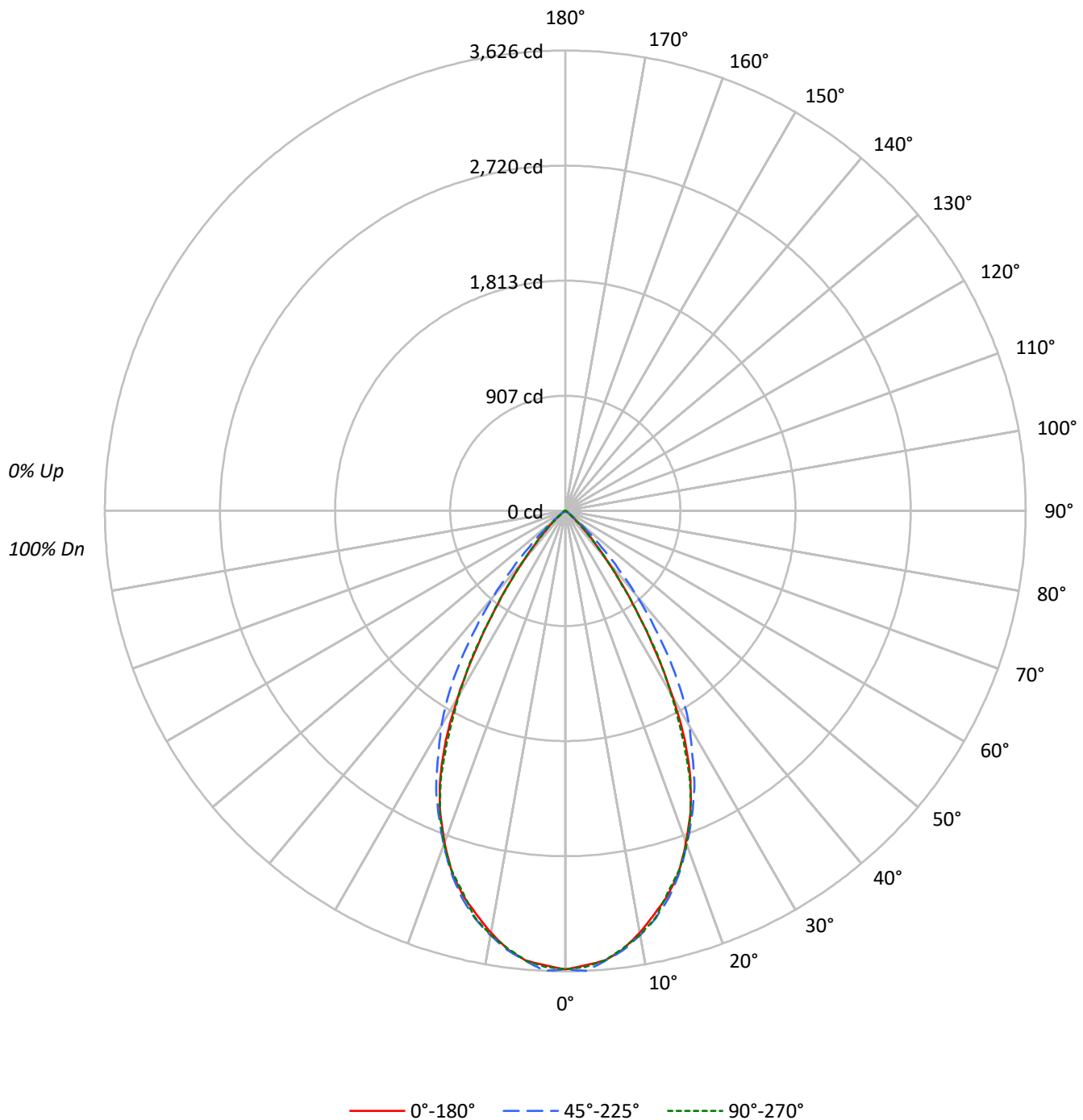
Lumens per Lamp: N/A
Luminaire Lumens: 3333.0 lumens
Efficiency: N/A
Efficacy: 82.5 lumens/watt
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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	30	10	50	30	10
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°	348344	348344	348344
5°	344338	344784	344338
10°	330566	332594	332143
15°	312514	314802	310906
20°	285208	287323	286625
25°	248337	256152	246623
30°	188850	217205	186042
35°	118875	168854	119947
40°	64137	111510	62979
45°	30361	55087	30034
50°	11363	20655	11363
55°	5400	6561	5030
60°	3531	3107	3531
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°	334.7	10.0
10°-20°	877.2	26.3
20°-30°	1071.6	32.2
30°-40°	749.5	22.5
40°-50°	245.6	7.4
50°-60°	39.0	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°	2283.6	68.5
0°-40°	3033.1	91.0
0°-60°	3317.8	99.5
0°-90°	3333.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3333.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3610	3610	3610	3610	3610	
5°	3555	3556	3560	3538	3555	333
15°	3128	3141	3151	3131	3112	873
25°	2333	2368	2406	2362	2316	1048
35°	1009	1192	1434	1173	1018	644
45°	222	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 FEU4C359035 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3610.2	3610.2	3610.2	3610.2	3610.2	3610.2	3610.2	3610.2	3610.2	3610.2	3610.2
2.5°	3582.6	3607.9	3601.0	3617.1	3617.1	3598.7	3603.3	3610.2	3619.3	3626.3	3571.1
5°	3555.1	3578.1	3557.4	3580.3	3566.5	3545.9	3580.3	3562.0	3573.5	3559.7	3568.9
7.5°	3481.7	3518.4	3477.2	3504.7	3495.5	3484.0	3497.7	3493.2	3500.1	3488.6	3463.4
10°	3373.9	3403.8	3376.3	3415.2	3396.8	3385.4	3396.8	3408.4	3406.0	3394.6	3408.4
12.5°	3250.1	3284.4	3270.7	3293.6	3273.0	3273.0	3300.5	3293.6	3295.9	3286.8	3302.8
15°	3128.5	3153.8	3133.1	3162.9	3153.8	3128.5	3139.9	3139.9	3158.4	3151.4	3133.1
17.5°	2977.2	2997.7	2974.8	2981.7	2972.6	2968.0	3016.1	2984.0	3002.3	2988.6	2990.9
20°	2777.6	2786.8	2779.9	2798.2	2786.8	2800.5	2796.0	2791.4	2791.4	2798.2	2782.2
22.5°	2575.7	2575.7	2582.6	2587.2	2596.4	2582.6	2610.2	2587.2	2589.5	2605.6	2601.0
25°	2332.6	2325.7	2341.8	2364.7	2373.9	2362.4	2399.1	2380.8	2394.5	2406.0	2380.8
27.5°	2036.8	2036.8	2052.8	2091.8	2098.6	2112.4	2162.9	2162.9	2181.2	2165.2	2183.5
30°	1695.0	1720.2	1740.8	1791.3	1807.4	1837.2	1889.9	1915.2	1956.5	1949.5	1940.4
32.5°	1344.1	1378.5	1380.8	1433.5	1477.1	1527.5	1598.6	1658.3	1688.1	1708.7	1685.8
35°	1009.2	1029.9	1048.2	1084.9	1158.3	1224.8	1289.0	1367.0	1419.8	1433.5	1412.9
37.5°	738.6	743.2	761.5	795.9	850.9	915.2	993.2	1078.0	1133.1	1153.7	1130.8
40°	509.2	513.8	522.9	552.8	598.7	644.5	706.5	793.6	844.1	885.3	855.5
42.5°	341.7	346.3	355.5	378.4	403.7	447.2	495.4	550.4	598.7	617.0	600.9
45°	222.5	222.5	227.1	243.2	256.9	291.3	325.7	360.1	392.2	403.7	392.2
47.5°	130.8	133.0	137.6	149.1	165.1	178.9	204.1	227.1	236.2	245.4	240.8
50°	75.7	75.7	82.6	89.5	100.9	110.1	119.2	128.4	133.0	137.6	133.0
52.5°	41.3	43.6	45.9	48.2	52.8	62.0	68.8	68.8	71.1	73.4	71.1
55°	32.1	32.1	32.1	32.1	34.4	34.4	34.4	36.7	36.7	39.0	36.7
57.5°	22.9	22.9	22.9	25.3	25.3	25.3	22.9	22.9	22.9	22.9	22.9
60°	18.3	18.3	18.3	18.3	18.3	18.3	18.3	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°	3610.2	3610.2	3610.2	3610.2	3610.2	3610.2	3610.2	3610.2
2.5°	3610.2	3571.1	3575.7	3596.4	3584.9	3596.4	3594.2	3594.2
5°	3571.1	3559.7	3541.4	3534.4	3548.2	3578.1	3573.5	3555.1
7.5°	3497.7	3468.0	3488.6	3497.7	3486.3	3504.7	3513.8	3474.8
10°	3410.6	3399.2	3394.6	3399.2	3394.6	3412.9	3390.0	3390.0
12.5°	3286.8	3268.4	3268.4	3295.9	3279.9	3266.1	3284.4	3282.2
15°	3162.9	3126.2	3126.2	3135.3	3142.3	3133.1	3135.3	3112.4
17.5°	2979.4	2968.0	2951.9	2977.2	2984.0	2974.8	2981.7	2970.2
20°	2807.4	2807.4	2777.6	2789.0	2798.2	2805.1	2809.7	2791.4
22.5°	2587.2	2591.8	2571.1	2594.1	2601.0	2578.1	2582.6	2578.1
25°	2385.3	2383.1	2367.0	2357.8	2362.4	2353.2	2351.0	2316.5
27.5°	2162.9	2139.9	2105.6	2114.7	2075.7	2043.6	2043.6	1990.8
30°	1922.0	1883.1	1837.2	1791.3	1756.9	1720.2	1699.5	1669.8
32.5°	1639.9	1587.2	1529.9	1467.9	1429.0	1373.9	1344.1	1360.2
35°	1360.2	1282.1	1204.1	1142.3	1082.6	1050.4	1013.8	1018.3
37.5°	1089.5	979.4	910.6	844.1	793.6	752.3	736.2	731.7
40°	795.9	708.7	639.9	591.7	557.4	525.3	506.9	500.0
42.5°	550.4	488.6	433.5	394.5	371.6	350.9	341.7	339.5
45°	357.8	321.1	284.4	256.9	238.6	224.8	222.5	220.1
47.5°	224.8	206.4	183.5	162.9	146.8	137.6	130.8	130.8
50°	128.4	121.6	110.1	98.7	89.5	84.9	78.0	75.7
52.5°	68.8	68.8	64.2	55.0	48.2	43.6	43.6	41.3
55°	36.7	36.7	34.4	34.4	32.1	32.1	32.1	29.9
57.5°	22.9	22.9	25.3	25.3	22.9	22.9	22.9	22.9
60°	16.1	18.3	18.3	18.3	18.3	18.3	18.3	18.3
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)