

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: **FLDSQ4C75D010 FEU4C759040 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: FLDSQ4C75D010 FEU4C759040 F4LC-SQ-LI  
 Description: 4 INCH 7500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

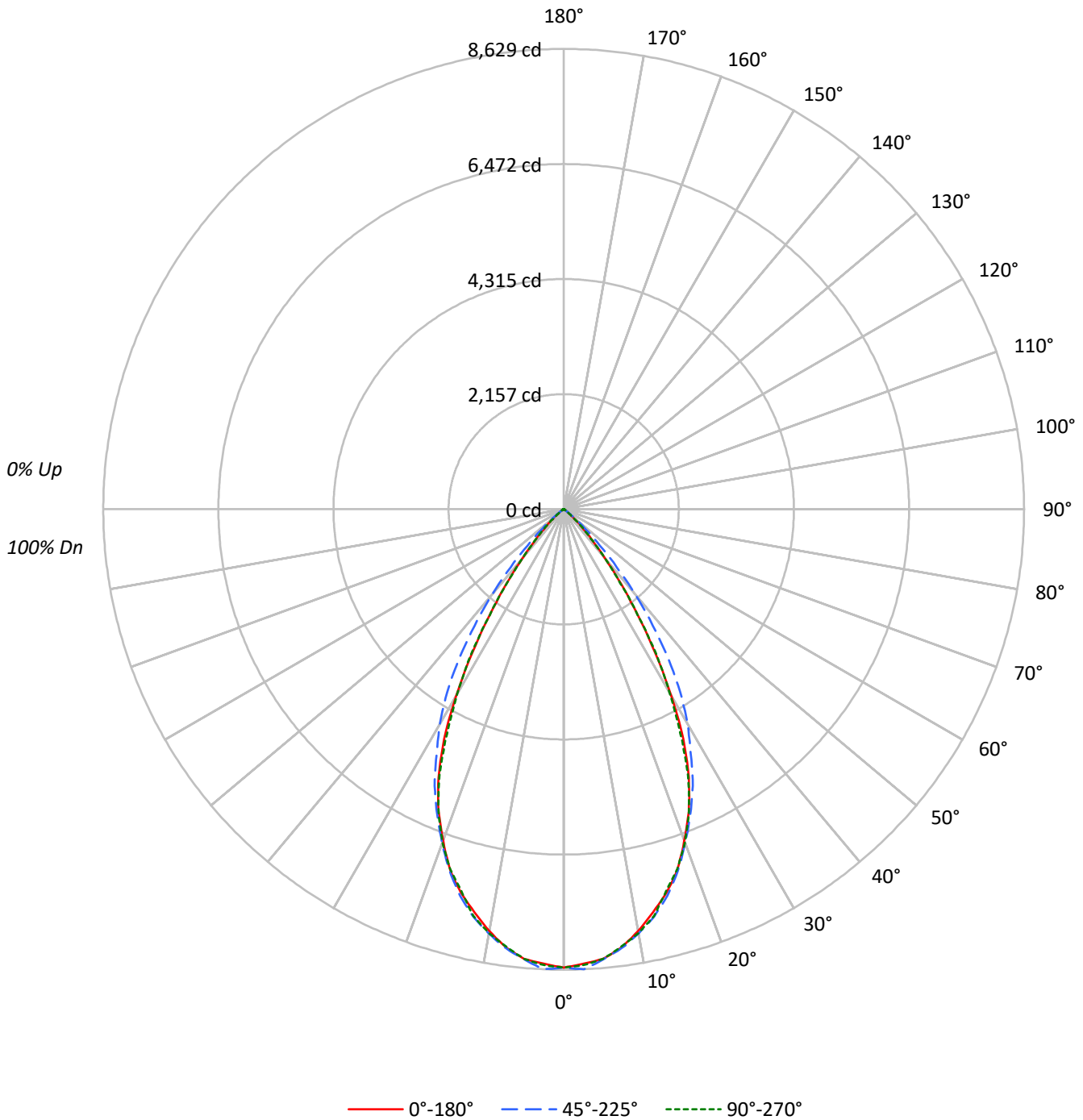
Lumens per Lamp: N/A  
 Luminaire Lumens: 7931.0 lumens  
 Efficiency: N/A  
 Efficacy: 97.3 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 81.5  
 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°	828888	828888	828888
5°	819366	820431	819366
10°	786602	791422	790354
15°	743641	749095	739815
20°	678662	683693	682030
25°	590937	609526	586860
30°	449362	516858	442688
35°	282864	401809	285432
40°	152610	265354	149864
45°	72240	131080	71476
50°	27050	49146	27050
55°	12852	15628	11944
60°	8433	7391	8433
65°	4977	4977	4977
70°	3075	4655	3075
75°	2088	2088	2088
80°	3112	3112	3112
85°	0	0	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	796.5	10.0
10°-20°	2087.4	26.3
20°-30°	2550.0	32.2
30°-40°	1783.5	22.5
40°-50°	584.5	7.4
50°-60°	92.9	1.2
60°-70°	25.4	0.3
70°-80°	8.5	0.1
80°-90°	2.4	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°	5433.8	68.5
0°-40°	7217.4	91.0
0°-60°	7894.8	99.5
0°-90°	7931.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7931.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8590	8590	8590	8590	8590	
5°	8460	8462	8470	8419	8460	793
15°	7444	7474	7499	7450	7406	2077
25°	5551	5635	5725	5621	5512	2493
35°	2401	2835	3411	2792	2423	1532
45°	529	652	961	644	524	444
55°	76	82	93	82	71	76
65°	22	27	22	27	22	24
75°	6	6	6	6	6	8
85°	0	0	0	0	0	2
90°	0	0	0	0	0	

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C75D010 FEU4C759040 F4LC-SQ-LI

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	8590.5	8590.5	8590.5	8590.5	8590.5	8590.5	8590.5	8590.5	8590.5	8590.5	8590.5
2.5°	8525.0	8585.2	8568.7	8607.0	8607.0	8563.3	8574.2	8590.5	8612.3	8628.8	8497.6
5°	8459.5	8514.1	8464.9	8519.5	8486.7	8437.7	8519.5	8475.8	8503.2	8470.5	8492.3
7.5°	8284.9	8372.2	8274.0	8339.5	8317.7	8290.3	8323.0	8312.1	8328.6	8301.2	8241.3
10°	8028.4	8099.4	8033.9	8126.6	8082.9	8055.8	8082.9	8110.3	8104.8	8077.6	8110.3
12.5°	7733.7	7815.4	7782.7	7837.3	7788.3	7788.3	7853.8	7837.3	7842.8	7821.0	7859.1
15°	7444.4	7504.5	7455.3	7526.4	7504.5	7444.4	7471.6	7471.6	7515.4	7499.0	7455.3
17.5°	7084.3	7133.3	7078.7	7095.2	7073.3	7062.4	7176.9	7100.5	7144.2	7111.4	7117.0
20°	6609.4	6631.2	6614.8	6658.4	6631.2	6664.0	6653.1	6642.2	6642.2	6658.4	6620.3
22.5°	6129.0	6129.0	6145.5	6156.4	6178.2	6145.5	6211.0	6156.4	6161.8	6200.1	6189.1
25°	5550.6	5534.1	5572.4	5627.0	5648.8	5621.4	5708.7	5665.1	5697.8	5725.2	5665.1
27.5°	4846.6	4846.6	4884.7	4977.6	4993.8	5026.6	5146.6	5146.6	5190.3	5152.2	5195.8
30°	4033.2	4093.4	4142.4	4262.4	4300.7	4371.8	4497.2	4557.3	4655.5	4639.0	4617.2
32.5°	3198.2	3280.2	3285.6	3411.2	3514.7	3634.8	3804.0	3945.9	4017.0	4066.0	4011.4
35°	2401.4	2450.6	2494.2	2581.5	2756.2	2914.5	3067.3	3252.8	3378.4	3411.2	3361.9
37.5°	1757.5	1768.4	1812.0	1893.8	2024.7	2177.7	2363.3	2565.1	2696.2	2745.2	2690.7
40°	1211.6	1222.5	1244.3	1315.4	1424.5	1533.6	1681.1	1888.4	2008.5	2106.7	2035.7
42.5°	813.2	824.1	845.9	900.5	960.6	1064.2	1178.9	1309.8	1424.5	1468.2	1429.9
45°	529.4	529.4	540.3	578.6	611.4	693.1	775.1	856.8	933.2	960.6	933.2
47.5°	311.1	316.5	327.4	354.8	392.9	425.6	485.8	540.3	562.1	584.0	573.1
50°	180.2	180.2	196.4	212.9	240.1	261.9	283.7	305.6	316.5	327.4	316.5
52.5°	98.2	103.8	109.1	114.7	125.6	147.4	163.7	163.7	169.3	174.6	169.3
55°	76.4	76.4	76.4	76.4	82.0	82.0	82.0	87.3	87.3	92.9	87.3
57.5°	54.6	54.6	54.6	60.1	60.1	60.1	54.6	54.6	54.6	54.6	54.6
60°	43.7	43.7	43.7	43.7	43.7	43.7	43.7	38.3	38.3	38.3	38.3
62.5°	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7
65°	21.8	21.8	27.4	27.4	27.4	27.4	27.4	21.8	21.8	21.8	21.8
67.5°	16.5	16.5	16.5	16.5	21.8	21.8	16.5	16.5	16.5	16.5	16.5
70°	10.9	10.9	10.9	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
72.5°	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
75°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
77.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
80°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	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°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
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°	8590.5	8590.5	8590.5	8590.5	8590.5	8590.5	8590.5	8590.5
2.5°	8590.5	8497.6	8508.6	8557.8	8530.4	8557.8	8552.4	8552.4
5°	8497.6	8470.5	8426.8	8410.3	8443.1	8514.1	8503.2	8459.5
7.5°	8323.0	8252.2	8301.2	8323.0	8295.8	8339.5	8361.3	8268.5
10°	8115.7	8088.5	8077.6	8088.5	8077.6	8121.2	8066.7	8066.7
12.5°	7821.0	7777.4	7777.4	7842.8	7804.5	7771.8	7815.4	7810.1
15°	7526.4	7438.8	7438.8	7460.7	7477.1	7455.3	7460.7	7406.1
17.5°	7089.6	7062.4	7024.1	7084.3	7100.5	7078.7	7095.2	7067.8
20°	6680.2	6680.2	6609.4	6636.6	6658.4	6674.9	6685.8	6642.2
22.5°	6156.4	6167.3	6118.1	6172.7	6189.1	6134.6	6145.5	6134.6
25°	5676.0	5670.7	5632.4	5610.5	5621.4	5599.6	5594.3	5512.3
27.5°	5146.6	5092.0	5010.3	5032.1	4939.2	4862.9	4862.9	4737.2
30°	4573.5	4480.9	4371.8	4262.4	4180.7	4093.4	4044.1	3973.3
32.5°	3902.3	3776.9	3640.3	3492.9	3400.3	3269.3	3198.2	3236.6
35°	3236.6	3050.8	2865.3	2718.1	2576.0	2499.6	2412.3	2423.2
37.5°	2592.5	2330.5	2166.8	2008.5	1888.4	1790.2	1751.9	1741.0
40°	1893.8	1686.4	1522.7	1408.0	1326.3	1249.9	1206.2	1189.8
42.5°	1309.8	1162.6	1031.4	938.8	884.2	835.0	813.2	807.8
45°	851.5	764.1	676.8	611.4	567.7	535.0	529.4	523.8
47.5°	535.0	491.1	436.5	387.5	349.2	327.4	311.1	311.1
50°	305.6	289.3	261.9	234.7	212.9	202.0	185.5	180.2
52.5°	163.7	163.7	152.8	131.0	114.7	103.8	103.8	98.2
55°	87.3	87.3	82.0	82.0	76.4	76.4	76.4	71.0
57.5°	54.6	54.6	60.1	60.1	54.6	54.6	54.6	54.6
60°	38.3	43.7	43.7	43.7	43.7	43.7	43.7	43.7
62.5°	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7
65°	21.8	27.4	27.4	27.4	27.4	21.8	21.8	21.8
67.5°	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
70°	16.5	16.5	16.5	16.5	16.5	10.9	10.9	10.9
72.5°	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
75°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
77.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
80°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
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°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)