

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: **FLDSQ4C50D010 FEU4C509035 F4LC-SQ-WH**

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: FLDSQ4C50D010 FEU4C509035 F4LC-SQ-WH  
 Description: 4 INCH 5000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

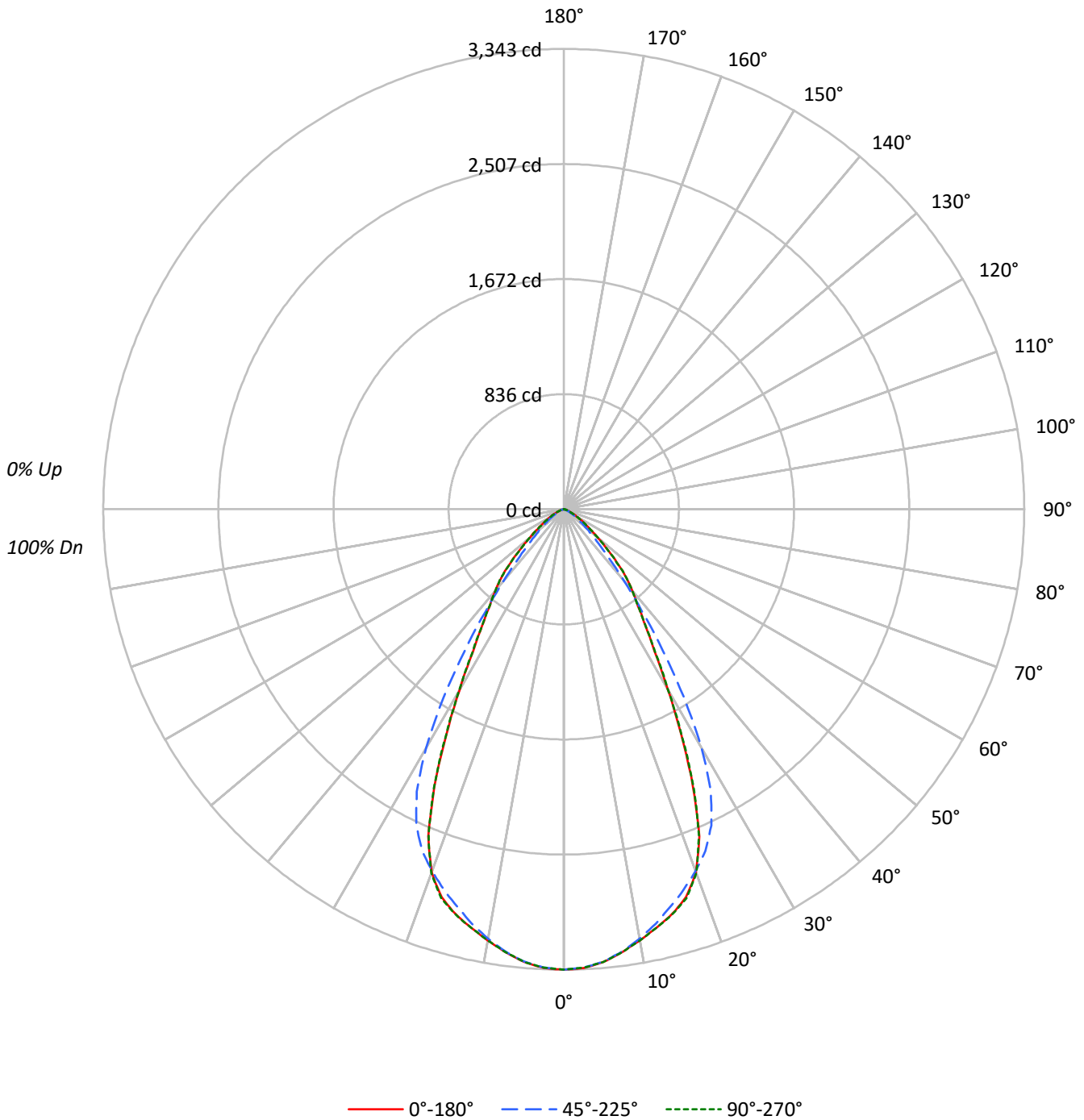
Lumens per Lamp: N/A  
 Luminaire Lumens: 3538.0 lumens  
 Efficiency: N/A  
 Efficacy: 60.6 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 58.4  
 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	0		
RW	70	50	30	10	70	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	110	107	105	110	108	105	103	104	102	100		100	98	97		96	95	94	92
2	107	101	97	93	104	99	95	92	96	93	90		93	90	88		90	88	86	84
3	101	93	88	84	98	92	87	83	89	85	82		87	83	80		85	82	79	77
4	95	87	80	76	93	85	80	75	83	78	74		81	77	74		79	76	73	71
5	89	80	74	69	88	79	73	69	78	72	68		76	71	68		74	70	67	66
6	85	75	68	64	83	74	68	63	72	67	63		71	66	63		70	65	62	61
7	80	70	63	59	79	69	63	59	68	62	58		67	62	58		65	61	58	56
8	76	65	59	55	74	65	59	54	64	58	54		63	58	54		62	57	54	52
9	72	61	55	51	71	61	55	51	60	54	51		59	54	50		58	54	50	49
10	68	58	52	48	67	57	51	47	57	51	47		56	51	47		55	50	47	46

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	322533	322533	322533
5°	319581	319378	319484
10°	311402	310157	311402
15°	303903	298429	304223
20°	288144	287056	288678
25°	236360	269683	237595
30°	168539	222798	168773
35°	121561	147639	121937
40°	97466	85777	97466
45°	74368	50052	73795
50°	49056	31958	48891
55°	32989	21465	32635
60°	22173	14647	22385
65°	15160	10343	14932
70°	10100	7448	10100
75°	6673	5518	6673
80°	4668	4112	4668
85°	3543	3543	3543

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	310.7	8.8
10°-20°	847.3	23.9
20°-30°	1059.2	29.9
30°-40°	712.6	20.1
40°-50°	376.2	10.6
50°-60°	152.9	4.3
60°-70°	56.7	1.6
70°-80°	18.3	0.5
80°-90°	4.0	0.1
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°	2217.3	62.7
0°-40°	2929.8	82.8
0°-60°	3459.0	97.8
0°-90°	3538.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3538.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3343	3343	3343	3343	3343	
5°	3300	3296	3297	3297	3298	311
15°	3042	3017	2988	3016	3046	852
25°	2220	2344	2533	2349	2232	999
35°	1032	1084	1253	1086	1035	664
45°	545	518	367	516	541	418
55°	196	164	128	164	194	182
65°	66	54	45	54	65	68
75°	18	16	15	16	18	21
85°	3	3	3	3	3	4
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3342.7	3342.7	3342.7	3342.7	3342.7
2.5°	3334.3	3332.2	3331.1	3331.1	3332.2
5°	3299.5	3296.4	3297.4	3297.4	3298.5
7.5°	3243.7	3242.6	3239.4	3243.7	3243.7
10°	3178.3	3173.0	3165.6	3174.1	3178.3
12.5°	3110.8	3095.0	3082.4	3095.0	3110.8
15°	3042.3	3017.0	2987.5	3016.0	3045.5
17.5°	2952.7	2927.4	2894.7	2932.7	2961.1
20°	2806.2	2808.3	2795.6	2806.2	2811.4
22.5°	2571.1	2618.5	2684.9	2619.6	2563.7
25°	2220.1	2344.5	2533.1	2348.7	2231.7
27.5°	1843.7	2001.9	2310.7	2011.3	1855.3
30°	1512.7	1652.9	1999.7	1662.4	1514.8
32.5°	1224.9	1329.3	1625.5	1341.9	1238.6
35°	1032.0	1083.7	1253.4	1085.8	1035.2
37.5°	884.4	884.4	930.8	888.7	880.2
40°	773.8	740.0	681.0	739.0	773.8
42.5°	670.4	619.8	494.4	617.7	672.6
45°	545.0	517.6	366.8	515.5	540.8
47.5°	418.5	399.5	276.2	397.4	421.7
50°	326.8	297.3	212.9	295.2	325.7
52.5°	250.9	219.3	164.4	219.3	248.8
55°	196.1	164.4	127.6	164.4	194.0
57.5°	150.7	125.4	97.0	123.3	149.7
60°	114.9	93.8	75.9	93.8	116.0
62.5°	87.5	71.7	58.0	70.6	86.4
65°	66.4	53.8	45.3	53.8	65.4
67.5°	48.5	40.1	34.8	40.1	49.5
70°	35.8	30.6	26.4	29.5	35.8
72.5°	26.4	22.1	20.0	22.1	26.4
75°	17.9	15.8	14.8	15.8	17.9
77.5°	12.6	11.6	10.5	11.6	12.6
80°	8.4	7.4	7.4	8.4	8.4
82.5°	5.3	5.3	5.3	5.3	5.3
85°	3.2	3.2	3.2	3.2	3.2
87.5°	2.1	2.1	2.1	2.1	2.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)