

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: **FLDSQ4C10D010 FEU4C109030 F4LC-SQ-WLI**

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: FLDSQ4C10D010 FEU4C109030 F4LC-SQ-WLI  
 Description: 4 INCH 1000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

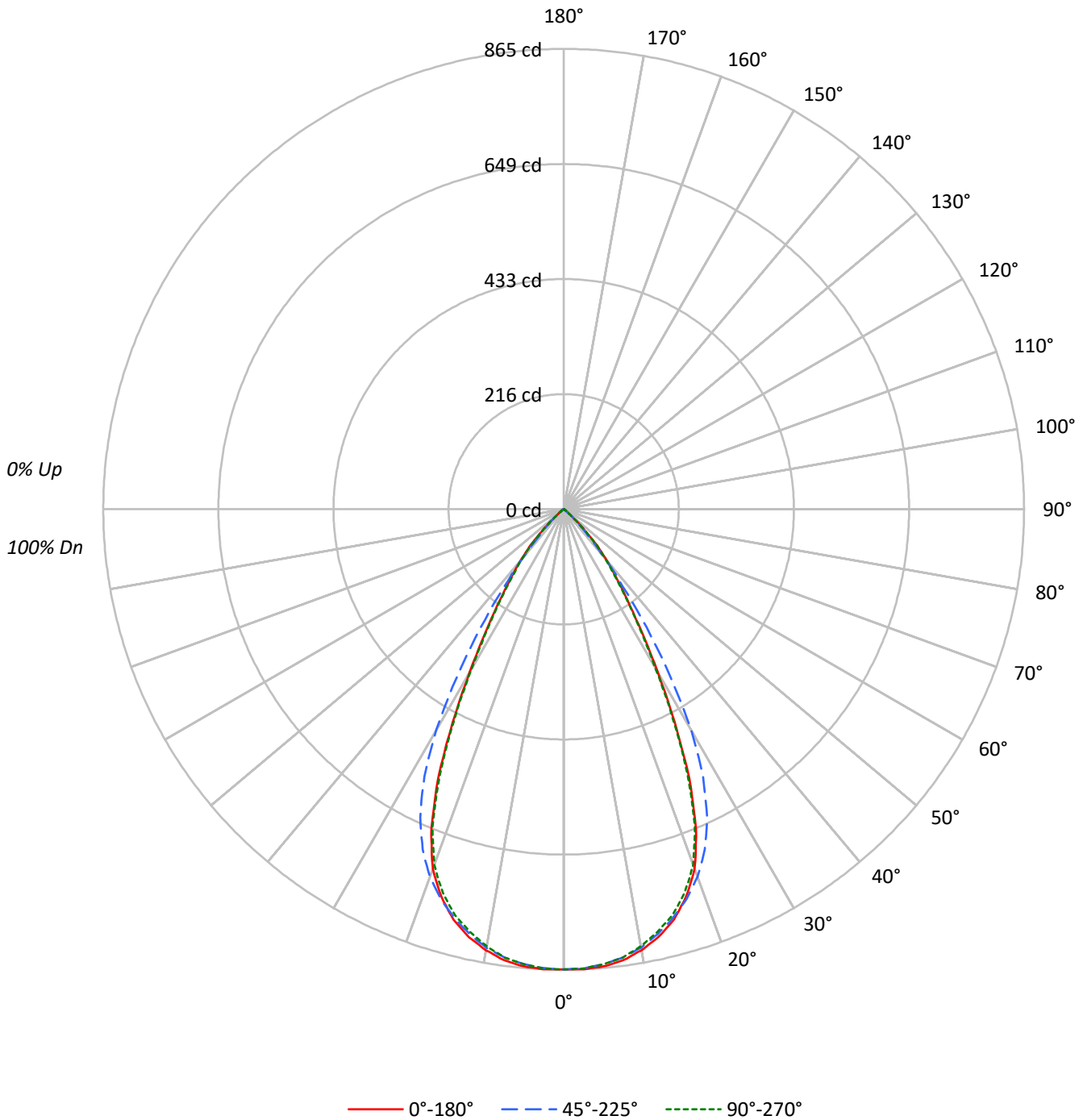
Lumens per Lamp: N/A  
 Luminaire Lumens: 774.0 lumens  
 Efficiency: N/A  
 Efficacy: 79.0 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 9.8  
 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	100	100	100	
1	114	111	108	106	111	109	106	104	105	103	101	101	100	98	97	96	95	94	94	94	94	
2	108	103	99	96	106	102	98	95	98	95	93	95	93	91	93	91	89	87	87	87	87	
3	103	96	91	88	101	95	90	87	92	89	85	90	87	84	88	85	83	81	81	81	81	
4	98	90	85	80	96	89	84	80	87	82	79	85	81	78	83	80	77	76	76	76	76	
5	93	84	79	74	91	84	78	74	82	77	73	80	76	73	79	75	72	71	71	71	71	
6	88	79	73	69	87	79	73	69	77	72	68	76	71	68	74	71	68	66	66	66	66	
7	84	75	69	65	82	74	68	64	73	68	64	71	67	64	70	66	63	62	62	62	62	
8	80	70	64	60	79	70	64	60	69	64	60	68	63	60	67	63	59	58	58	58	58	
9	76	66	61	57	75	66	60	57	65	60	56	64	60	56	63	59	56	55	55	55	55	
10	72	63	57	53	71	62	57	53	62	57	53	61	56	53	60	56	53	52	52	52	52	

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

	0°	45°	90°
0°	83424	83424	83424
5°	83511	83123	83123
10°	82409	81929	81674
15°	79734	79365	78825
20°	73848	75461	73027
25°	59375	67881	58598
30°	39185	53223	38260
35°	24501	31957	24053
40°	15984	14813	15354
45°	7696	5909	7259
50°	1936	2357	1816
55°	1077	976	1043
60°	733	618	695
65°	502	457	502
70°	395	339	395
75°	298	298	298
80°	222	333	333
85°	221	443	443

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	81.3	10.5
10°-20°	222.0	28.7
20°-30°	264.6	34.2
30°-40°	149.8	19.4
40°-50°	46.3	6.0
50°-60°	6.4	0.8
60°-70°	2.2	0.3
70°-80°	0.9	0.1
80°-90°	0.4	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°	568.0	73.4
0°-40°	717.8	92.7
0°-60°	770.6	99.6
0°-90°	774.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	774.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	865	865	865	865	865	
5°	862	860	858	858	858	82
15°	798	797	794	791	789	223
25°	558	590	638	591	550	249
35°	208	227	271	227	204	135
45°	56	66	43	64	53	47
55°	6	6	6	6	6	6
65°	2	2	2	2	2	2
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	864.6	864.6	864.6	864.6	864.6
2.5°	864.8	863.4	863.0	862.6	863.4
5°	862.2	860.2	858.2	857.6	858.2
7.5°	854.8	852.9	849.5	848.7	849.3
10°	841.1	839.3	836.2	834.4	833.6
12.5°	823.1	820.1	817.1	815.1	813.1
15°	798.2	796.8	794.5	791.3	789.1
17.5°	763.9	765.9	767.3	760.9	755.1
20°	719.2	726.5	734.9	722.0	711.2
22.5°	649.5	670.5	691.8	667.3	643.5
25°	557.7	590.3	637.6	591.3	550.4
27.5°	450.7	492.0	566.5	492.2	444.7
30°	351.7	394.3	477.7	388.7	343.4
32.5°	270.1	301.9	373.2	297.1	264.4
35°	208.0	226.8	271.3	227.4	204.2
37.5°	161.7	171.2	182.5	167.8	156.9
40°	126.9	127.3	117.6	125.3	121.9
42.5°	94.1	93.7	72.3	91.4	92.0
45°	56.4	65.7	43.3	64.0	53.2
47.5°	26.8	37.1	26.0	35.2	24.8
50°	12.9	17.9	15.7	16.7	12.1
52.5°	8.7	9.1	8.9	8.7	8.3
55°	6.4	6.4	5.8	6.2	6.2
57.5°	4.8	4.8	4.2	4.6	4.6
60°	3.8	3.6	3.2	3.6	3.6
62.5°	2.8	2.8	2.4	2.8	2.8
65°	2.2	2.2	2.0	2.2	2.2
67.5°	1.8	1.8	1.4	1.8	1.6
70°	1.4	1.4	1.2	1.4	1.4
72.5°	1.0	1.0	1.0	1.0	1.0
75°	0.8	0.8	0.8	0.8	0.8
77.5°	0.6	0.6	0.6	0.6	0.6
80°	0.4	0.4	0.6	0.6	0.6
82.5°	0.4	0.4	0.4	0.4	0.4
85°	0.2	0.4	0.4	0.4	0.4
87.5°	0.2	0.2	0.4	0.4	0.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)