

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: **FLDSQ4C30D010 FEU4C309050 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: FLDSQ4C30D010 FEU4C309050 F4LC-SQ-WLI  
 Description: 4 INCH 3000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

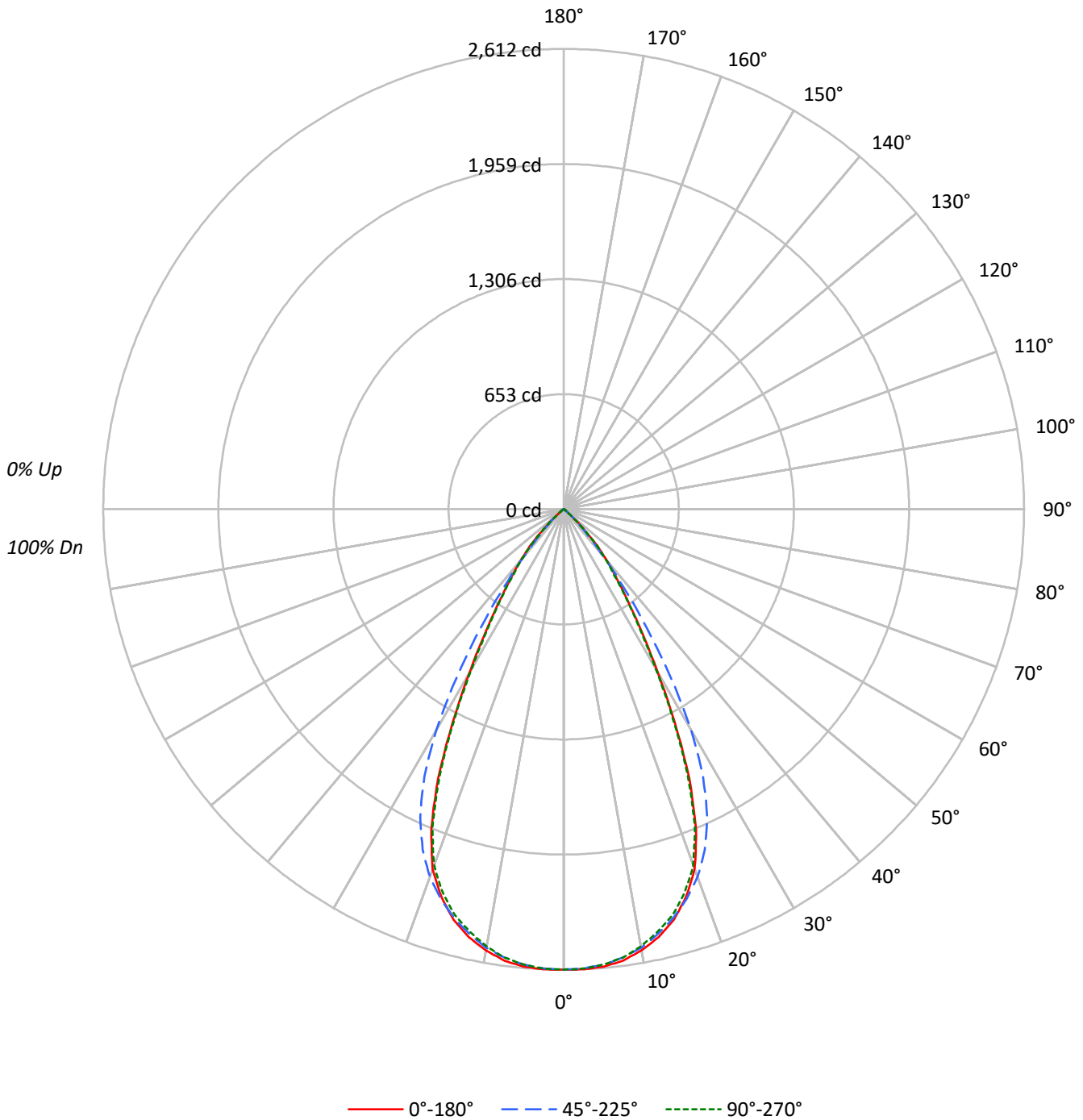
Lumens per Lamp: N/A  
 Luminaire Lumens: 2338.0 lumens  
 Efficiency: N/A  
 Efficacy: 74.0 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 31.6  
 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	114	111	108	106	111	109	106	104	105	103	101		101	100	98		97	96	95	94
2	108	103	99	96	106	102	98	95	98	95	93		95	93	91		93	91	89	87
3	103	96	91	88	101	95	90	87	92	89	85		90	87	84		88	85	83	81
4	98	90	85	80	96	89	84	80	87	82	79		85	81	78		83	80	77	76
5	93	84	79	74	91	84	78	74	82	77	73		80	76	73		79	75	72	71
6	88	79	73	69	87	79	73	69	77	72	68		76	71	68		74	71	68	66
7	84	75	69	65	82	74	68	64	73	68	64		71	67	64		70	66	63	62
8	80	70	64	60	79	70	64	60	69	64	60		68	63	60		67	63	59	58
9	76	66	61	57	75	66	60	57	65	60	56		64	60	56		63	59	56	55
10	72	63	57	53	71	62	57	53	62	57	53		61	56	53		60	56	53	52

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

	0°	45°	90°
0°	251990	251990	251990
5°	252256	251093	251093
10°	248941	247471	246707
15°	240861	239722	238104
20°	223065	227932	220601
25°	179359	205028	176996
30°	118379	160762	115572
35°	73985	96530	72654
40°	48292	44740	46403
45°	23252	17848	21942
50°	5854	7115	5494
55°	3230	2927	3129
60°	2200	1853	2084
65°	1507	1370	1507
70°	1185	1016	1185
75°	895	895	895
80°	667	1000	1000
85°	664	1329	1329

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	245.6	10.5
10°-20°	670.7	28.7
20°-30°	799.3	34.2
30°-40°	452.6	19.4
40°-50°	139.9	6.0
50°-60°	19.4	0.8
60°-70°	6.6	0.3
70°-80°	2.6	0.1
80°-90°	1.1	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°	1715.6	73.4
0°-40°	2168.2	92.7
0°-60°	2327.6	99.6
0°-90°	2338.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2338.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2612	2612	2612	2612	2612	
5°	2604	2598	2592	2591	2592	247
15°	2411	2407	2400	2390	2384	672
25°	1685	1783	1926	1786	1662	751
35°	628	685	820	687	617	409
45°	170	199	131	193	161	141
55°	19	19	17	19	19	19
65°	7	7	6	7	7	7
75°	2	2	2	2	2	3
85°	1	1	1	1	1	1
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2611.6	2611.6	2611.6	2611.6	2611.6
2.5°	2612.2	2608.0	2606.8	2605.6	2608.0
5°	2604.4	2598.4	2592.4	2590.6	2592.4
7.5°	2582.2	2576.2	2566.0	2563.6	2565.4
10°	2540.8	2535.4	2525.8	2520.4	2518.0
12.5°	2486.2	2477.2	2468.2	2462.2	2456.2
15°	2411.2	2407.0	2399.8	2390.2	2383.6
17.5°	2307.4	2313.4	2317.6	2298.4	2281.0
20°	2172.4	2194.6	2219.8	2180.8	2148.4
22.5°	1961.8	2025.4	2089.6	2015.8	1943.8
25°	1684.7	1783.1	1925.8	1786.1	1662.5
27.5°	1361.3	1486.1	1711.1	1486.7	1343.3
30°	1062.5	1190.9	1442.9	1174.1	1037.3
32.5°	815.9	911.9	1127.3	897.5	798.5
35°	628.1	685.1	819.5	686.9	616.8
37.5°	488.4	517.2	551.4	507.0	474.0
40°	383.4	384.6	355.2	378.6	368.4
42.5°	284.4	283.2	218.4	276.0	277.8
45°	170.4	198.6	130.8	193.2	160.8
47.5°	81.0	112.2	78.6	106.2	75.0
50°	39.0	54.0	47.4	50.4	36.6
52.5°	26.4	27.6	27.0	26.4	25.2
55°	19.2	19.2	17.4	18.6	18.6
57.5°	14.4	14.4	12.6	13.8	13.8
60°	11.4	10.8	9.6	10.8	10.8
62.5°	8.4	8.4	7.2	8.4	8.4
65°	6.6	6.6	6.0	6.6	6.6
67.5°	5.4	5.4	4.2	5.4	4.8
70°	4.2	4.2	3.6	4.2	4.2
72.5°	3.0	3.0	3.0	3.0	3.0
75°	2.4	2.4	2.4	2.4	2.4
77.5°	1.8	1.8	1.8	1.8	1.8
80°	1.2	1.2	1.8	1.8	1.8
82.5°	1.2	1.2	1.2	1.2	1.2
85°	0.6	1.2	1.2	1.2	1.2
87.5°	0.6	0.6	1.2	1.2	1.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)