

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: **FLDSQ4C40D010 FEU4C409040 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: FLDSQ4C40D010 FEU4C409040 F4LC-SQ-WLI  
 Description: 4 INCH 4000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

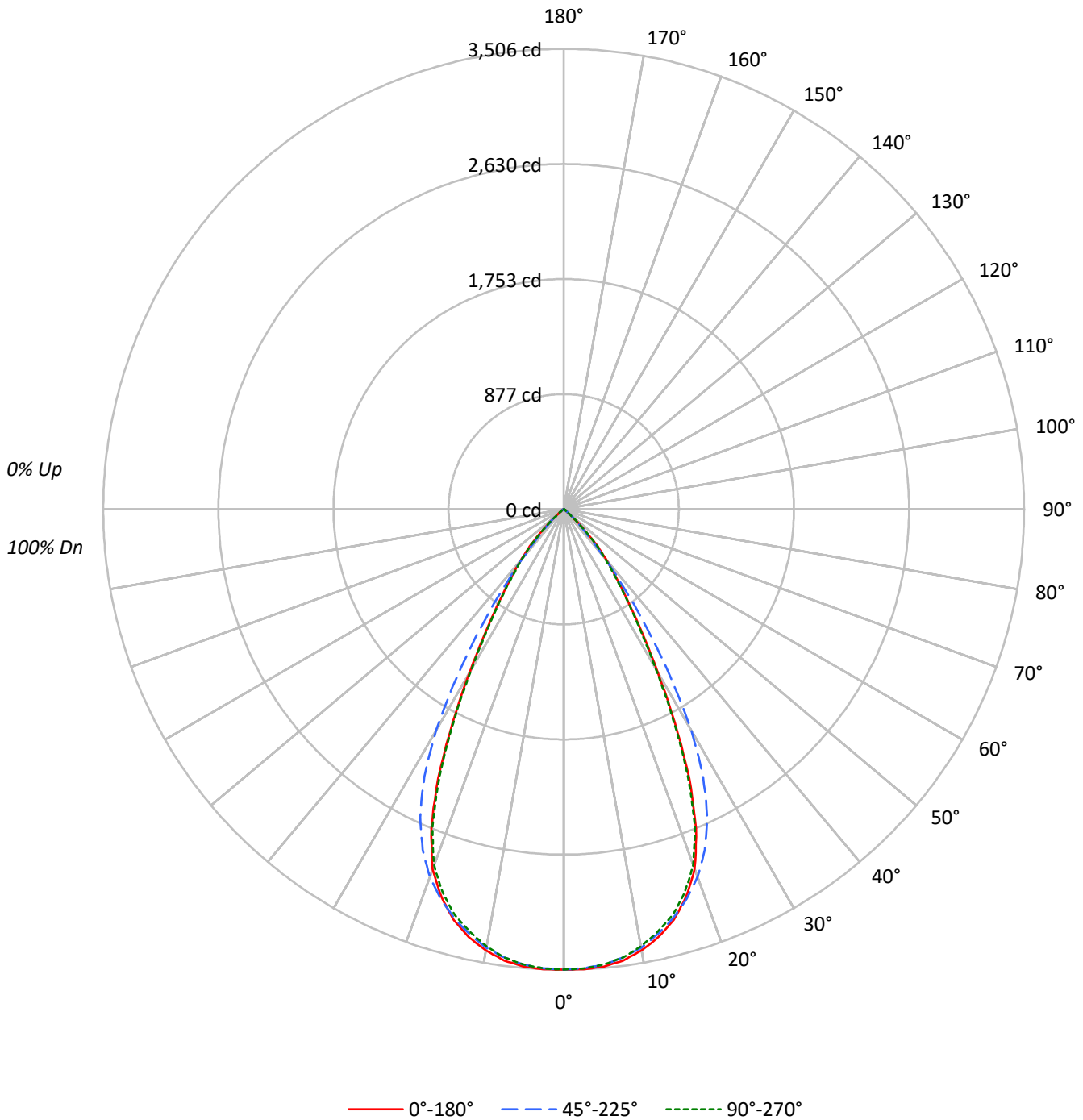
Lumens per Lamp: N/A  
 Luminaire Lumens: 3138.0 lumens  
 Efficiency: N/A  
 Efficacy: 66.8 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 47  
 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°	338213	338213	338213
5°	338565	337006	337006
10°	334122	332153	331124
15°	323283	321754	319577
20°	299398	305929	296092
25°	240725	275187	237552
30°	158890	215768	155124
35°	99310	129570	97508
40°	64805	60044	62273
45°	31207	23948	29447
50°	7851	9547	7370
55°	4340	3936	4206
60°	2953	2489	2798
65°	2032	1849	2032
70°	1580	1354	1580
75°	1193	1193	1193
80°	889	1334	1334
85°	886	1771	1771

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	329.6	10.5
10°-20°	900.2	28.7
20°-30°	1072.8	34.2
30°-40°	607.5	19.4
40°-50°	187.8	6.0
50°-60°	26.1	0.8
60°-70°	8.9	0.3
70°-80°	3.5	0.1
80°-90°	1.5	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°	2302.7	73.4
0°-40°	2910.2	92.7
0°-60°	3124.1	99.6
0°-90°	3138.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3138.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3505	3505	3505	3505	3505	
5°	3496	3488	3479	3477	3479	331
15°	3236	3231	3221	3208	3199	902
25°	2261	2393	2585	2397	2231	1008
35°	843	920	1100	922	828	549
45°	229	266	176	259	216	189
55°	26	26	23	25	25	25
65°	9	9	8	9	9	9
75°	3	3	3	3	3	3
85°	1	2	2	2	2	1
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3505.2	3505.2	3505.2	3505.2	3505.2
2.5°	3506.0	3500.4	3498.8	3497.2	3500.4
5°	3495.5	3487.5	3479.4	3477.0	3479.4
7.5°	3465.7	3457.7	3444.0	3440.8	3443.2
10°	3410.2	3402.9	3390.1	3382.8	3379.6
12.5°	3336.9	3324.8	3312.8	3304.7	3296.6
15°	3236.3	3230.6	3221.0	3208.1	3199.2
17.5°	3096.9	3105.0	3110.6	3084.9	3061.5
20°	2915.8	2945.6	2979.4	2927.0	2883.6
22.5°	2633.1	2718.5	2804.6	2705.6	2609.0
25°	2261.1	2393.2	2584.8	2397.2	2231.3
27.5°	1827.1	1994.6	2296.5	1995.4	1802.9
30°	1426.1	1598.4	1936.6	1575.9	1392.3
32.5°	1095.1	1224.0	1513.0	1204.6	1071.8
35°	843.1	919.6	1100.0	922.0	827.8
37.5°	655.5	694.1	740.0	680.4	636.1
40°	514.5	516.2	476.7	508.1	494.4
42.5°	381.7	380.1	293.1	370.4	372.8
45°	228.7	266.5	175.5	259.3	215.8
47.5°	108.7	150.6	105.5	142.5	100.7
50°	52.3	72.5	63.6	67.6	49.1
52.5°	35.4	37.0	36.2	35.4	33.8
55°	25.8	25.8	23.4	25.0	25.0
57.5°	19.3	19.3	16.9	18.5	18.5
60°	15.3	14.5	12.9	14.5	14.5
62.5°	11.3	11.3	9.7	11.3	11.3
65°	8.9	8.9	8.1	8.9	8.9
67.5°	7.2	7.2	5.6	7.2	6.4
70°	5.6	5.6	4.8	5.6	5.6
72.5°	4.0	4.0	4.0	4.0	4.0
75°	3.2	3.2	3.2	3.2	3.2
77.5°	2.4	2.4	2.4	2.4	2.4
80°	1.6	1.6	2.4	2.4	2.4
82.5°	1.6	1.6	1.6	1.6	1.6
85°	0.8	1.6	1.6	1.6	1.6
87.5°	0.8	0.8	1.6	1.6	1.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)