

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 FEU4C409050 F4LC-SQ-WLI**

Issue Date: 12/13/2022

Tested By:

Approved By:



Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

**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 FEU4C409050 F4LC-SQ-WLI  
 Description: 4 INCH 4000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

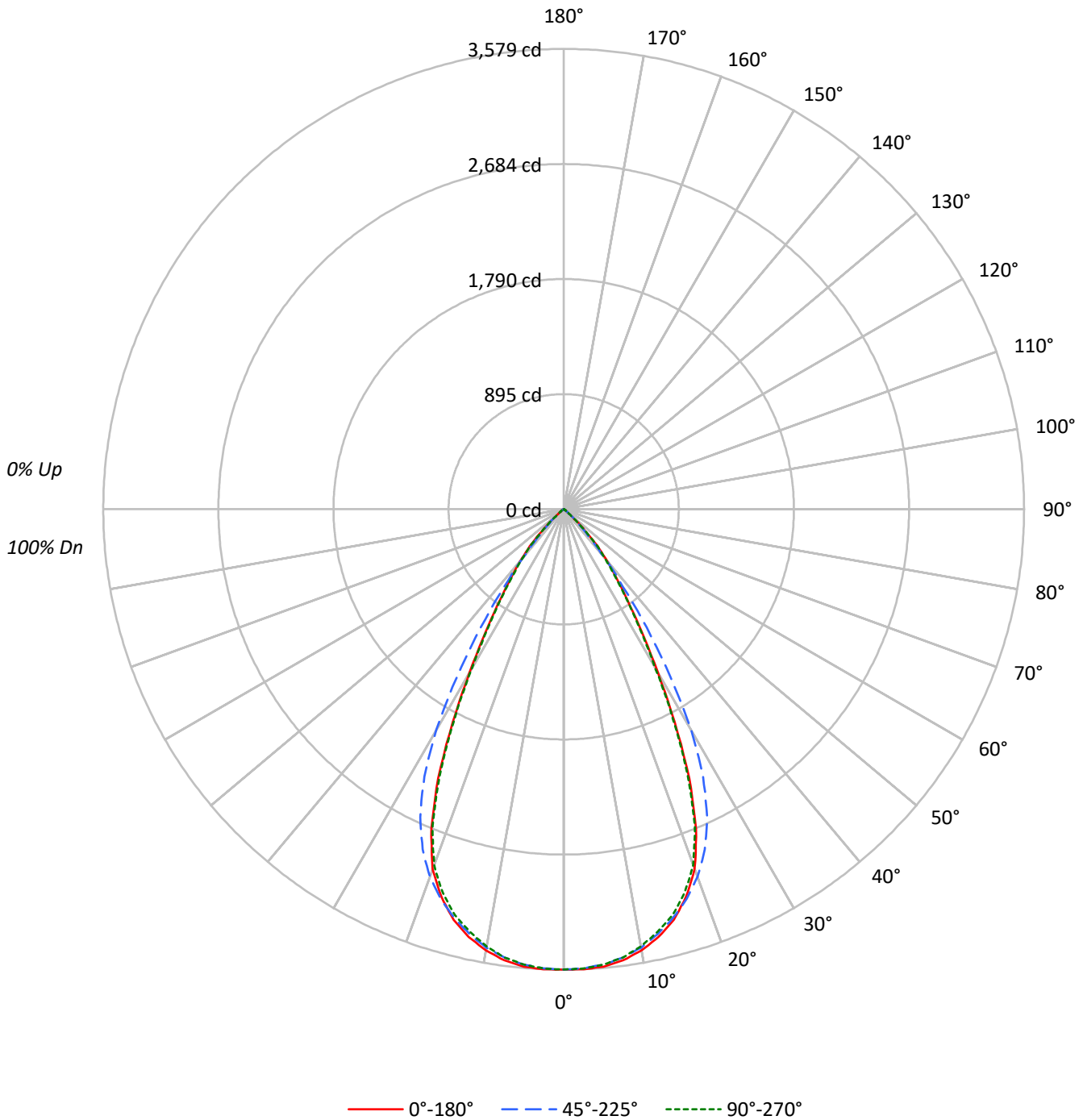
Lumens per Lamp: N/A  
 Luminaire Lumens: 3203.0 lumens  
 Efficiency: N/A  
 Efficacy: 68.1 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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

TEST NUMBER: P#  
CATALOG NUMBER: FLDSQ4C40D010 FEU4C409050 F4LC-SQ-WLI

### Luminous Intensity Polar Plot



TEST NUMBER: P#

CATALOG NUMBER: FLDSQ4C40D010 FEU4C409050 F4LC-SQ-WLI

**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°	345218	345218	345218
5°	345578	343989	343989
10°	341040	339031	337983
15°	329975	328417	326199
20°	305600	312264	302222
25°	245708	280894	242471
30°	162177	220236	158333
35°	101359	132244	99522
40°	66153	61291	63571
45°	31849	24453	30061
50°	8016	9742	7521
55°	4424	4004	4290
60°	3010	2547	2856
65°	2055	1872	2055
70°	1636	1382	1636
75°	1230	1230	1230
80°	889	1389	1389
85°	886	1771	1771

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C40D010 FEU4C409050 F4LC-SQ-WLI

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	336.5	10.5
10°-20°	918.9	28.7
20°-30°	1095.0	34.2
30°-40°	620.1	19.4
40°-50°	191.7	6.0
50°-60°	26.6	0.8
60°-70°	9.1	0.3
70°-80°	3.6	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°	2350.4	73.4
0°-40°	2970.4	92.7
0°-60°	3188.8	99.6
0°-90°	3203.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3203.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3578	3578	3578	3578	3578	
5°	3568	3560	3552	3549	3552	338
15°	3303	3298	3288	3274	3266	921
25°	2308	2443	2638	2447	2278	1029
35°	860	939	1123	941	845	560
45°	233	272	179	265	220	193
55°	26	26	24	26	26	26
65°	9	9	8	9	9	10
75°	3	3	3	3	3	4
85°	1	2	2	2	2	1
90°	0	0	0	0	0	

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C40D010 FEU4C409050 F4LC-SQ-WLI

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3577.8	3577.8	3577.8	3577.8	3577.8
2.5°	3578.6	3572.9	3571.2	3569.6	3572.9
5°	3567.9	3559.7	3551.5	3549.0	3551.5
7.5°	3537.5	3529.3	3515.3	3512.1	3514.5
10°	3480.8	3473.4	3460.3	3452.9	3449.6
12.5°	3406.0	3393.7	3381.4	3373.2	3364.9
15°	3303.3	3297.5	3287.7	3274.5	3265.5
17.5°	3161.1	3169.3	3175.1	3148.8	3124.9
20°	2976.2	3006.6	3041.1	2987.7	2943.3
22.5°	2687.7	2774.8	2862.7	2761.6	2663.0
25°	2307.9	2442.7	2638.4	2446.9	2277.5
27.5°	1864.9	2035.9	2344.1	2036.7	1840.3
30°	1455.6	1631.5	1976.7	1608.5	1421.1
32.5°	1117.8	1249.3	1544.4	1229.6	1094.0
35°	860.5	938.6	1122.7	941.1	844.9
37.5°	669.0	708.5	755.3	694.5	649.3
40°	525.2	526.8	486.6	518.6	504.7
42.5°	389.6	387.9	299.2	378.1	380.5
45°	233.4	272.1	179.2	264.7	220.3
47.5°	111.0	153.7	107.7	145.5	102.7
50°	53.4	74.0	64.9	69.0	50.1
52.5°	36.2	37.8	37.0	36.2	34.5
55°	26.3	26.3	23.8	25.5	25.5
57.5°	19.7	19.7	17.3	18.9	18.9
60°	15.6	14.8	13.2	14.8	14.8
62.5°	11.5	11.5	9.9	11.5	11.5
65°	9.0	9.0	8.2	9.0	9.0
67.5°	7.4	7.4	5.8	7.4	6.6
70°	5.8	5.8	4.9	5.8	5.8
72.5°	4.1	4.1	4.1	4.1	4.1
75°	3.3	3.3	3.3	3.3	3.3
77.5°	2.5	2.5	2.5	2.5	2.5
80°	1.6	1.6	2.5	2.5	2.5
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)