

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: **FLDSQ4C08D010 FEU4C089050 F4LC-SQ-WH**

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: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-WH  
 Description: 4 INCH 800 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

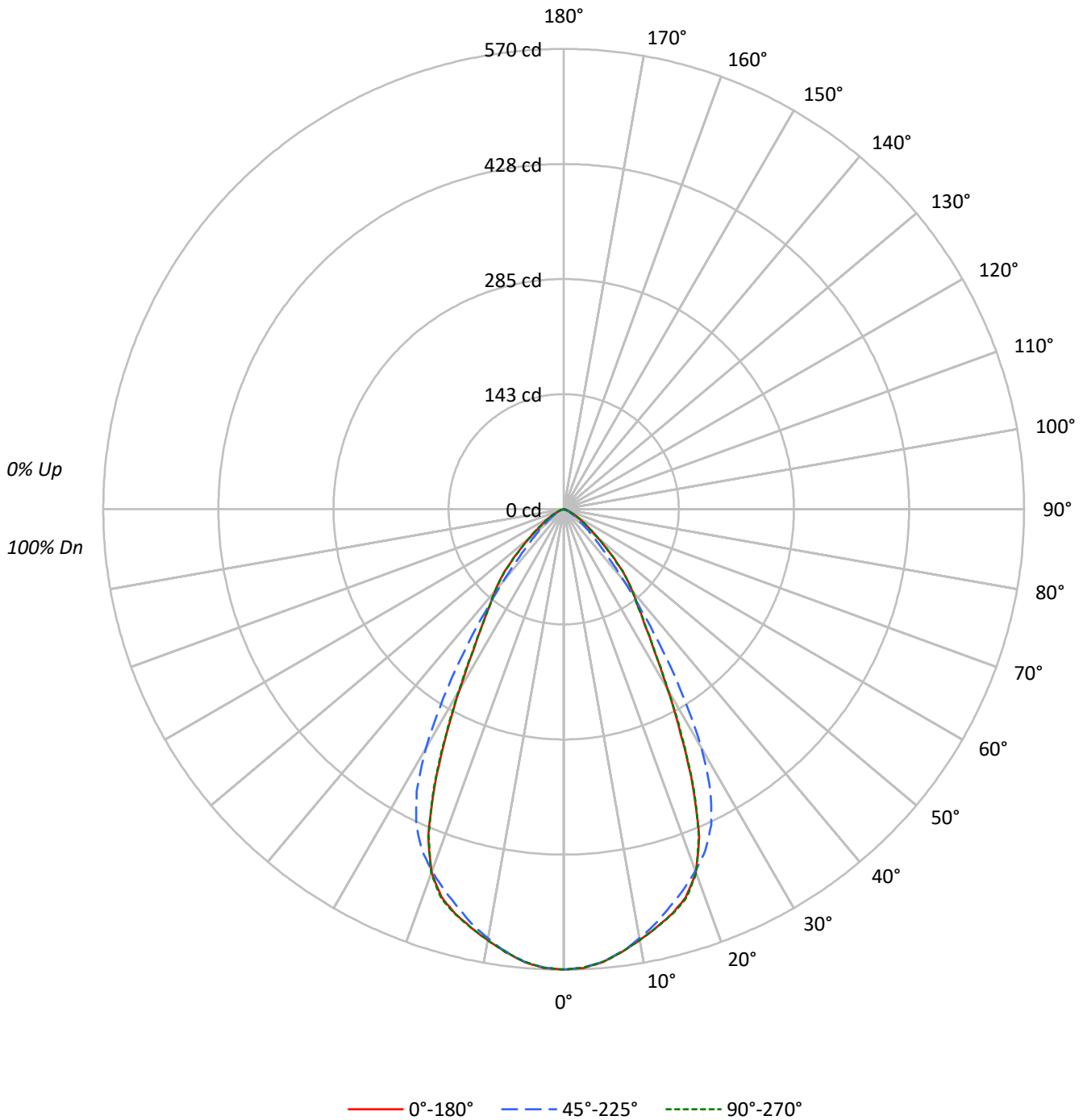
Lumens per Lamp: N/A  
 Luminaire Lumens: 603.0 lumens  
 Efficiency: N/A  
 Efficacy: 60.9 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 9.9  
 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: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-WH

### Luminous Intensity Polar Plot





TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-WH

**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°	54970	54970	54970
5°	54473	54434	54453
10°	53074	52859	53074
15°	51794	50865	51854
20°	49112	48928	49205
25°	40286	45960	40499
30°	28723	37970	28768
35°	20719	25160	20778
40°	16614	14624	16614
45°	12677	8528	12581
50°	8361	5449	8331
55°	5619	3650	5568
60°	3782	2489	3821
65°	2580	1758	2534
70°	1721	1270	1721
75°	1156	932	1156
80°	778	722	778
85°	554	554	554

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-WH

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	53.0	8.8
10°-20°	144.4	23.9
20°-30°	180.5	29.9
30°-40°	121.4	20.1
40°-50°	64.1	10.6
50°-60°	26.1	4.3
60°-70°	9.7	1.6
70°-80°	3.1	0.5
80°-90°	0.7	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°	377.9	62.7
0°-40°	499.3	82.8
0°-60°	589.5	97.8
0°-90°	603.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	603.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	570	570	570	570	570	
5°	562	562	562	562	562	53
15°	518	514	509	514	519	145
25°	378	400	432	400	380	170
35°	176	185	214	185	176	113
45°	93	88	62	88	92	71
55°	33	28	22	28	33	31
65°	11	9	8	9	11	12
75°	3	3	2	3	3	4
85°	0	0	0	0	0	1
90°	0	0	0	0	0	

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-WH

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	569.7	569.7	569.7	569.7	569.7
2.5°	568.3	567.9	567.7	567.7	567.9
5°	562.4	561.8	562.0	562.0	562.2
7.5°	552.8	552.7	552.1	552.8	552.8
10°	541.7	540.8	539.5	541.0	541.7
12.5°	530.2	527.5	525.3	527.5	530.2
15°	518.5	514.2	509.2	514.0	519.1
17.5°	503.2	498.9	493.4	499.8	504.7
20°	478.3	478.6	476.5	478.3	479.2
22.5°	438.2	446.3	457.6	446.5	436.9
25°	378.4	399.6	431.7	400.3	380.4
27.5°	314.2	341.2	393.8	342.8	316.2
30°	257.8	281.7	340.8	283.3	258.2
32.5°	208.8	226.6	277.0	228.7	211.1
35°	175.9	184.7	213.6	185.1	176.4
37.5°	150.7	150.7	158.6	151.5	150.0
40°	131.9	126.1	116.1	125.9	131.9
42.5°	114.3	105.6	84.3	105.3	114.6
45°	92.9	88.2	62.5	87.9	92.2
47.5°	71.3	68.1	47.1	67.7	71.9
50°	55.7	50.7	36.3	50.3	55.5
52.5°	42.8	37.4	28.0	37.4	42.4
55°	33.4	28.0	21.7	28.0	33.1
57.5°	25.7	21.4	16.5	21.0	25.5
60°	19.6	16.0	12.9	16.0	19.8
62.5°	14.9	12.2	9.9	12.0	14.7
65°	11.3	9.2	7.7	9.2	11.1
67.5°	8.3	6.8	5.9	6.8	8.4
70°	6.1	5.2	4.5	5.0	6.1
72.5°	4.5	3.8	3.4	3.8	4.5
75°	3.1	2.7	2.5	2.7	3.1
77.5°	2.2	2.0	1.8	2.0	2.2
80°	1.4	1.3	1.3	1.4	1.4
82.5°	0.9	0.9	0.9	0.9	0.9
85°	0.5	0.5	0.5	0.5	0.5
87.5°	0.4	0.4	0.4	0.4	0.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)