

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 FEU4C089027 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: FLDSQ4C08D010 FEU4C089027 F4LC-SQ-WLI  
 Description: 4 INCH 800 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

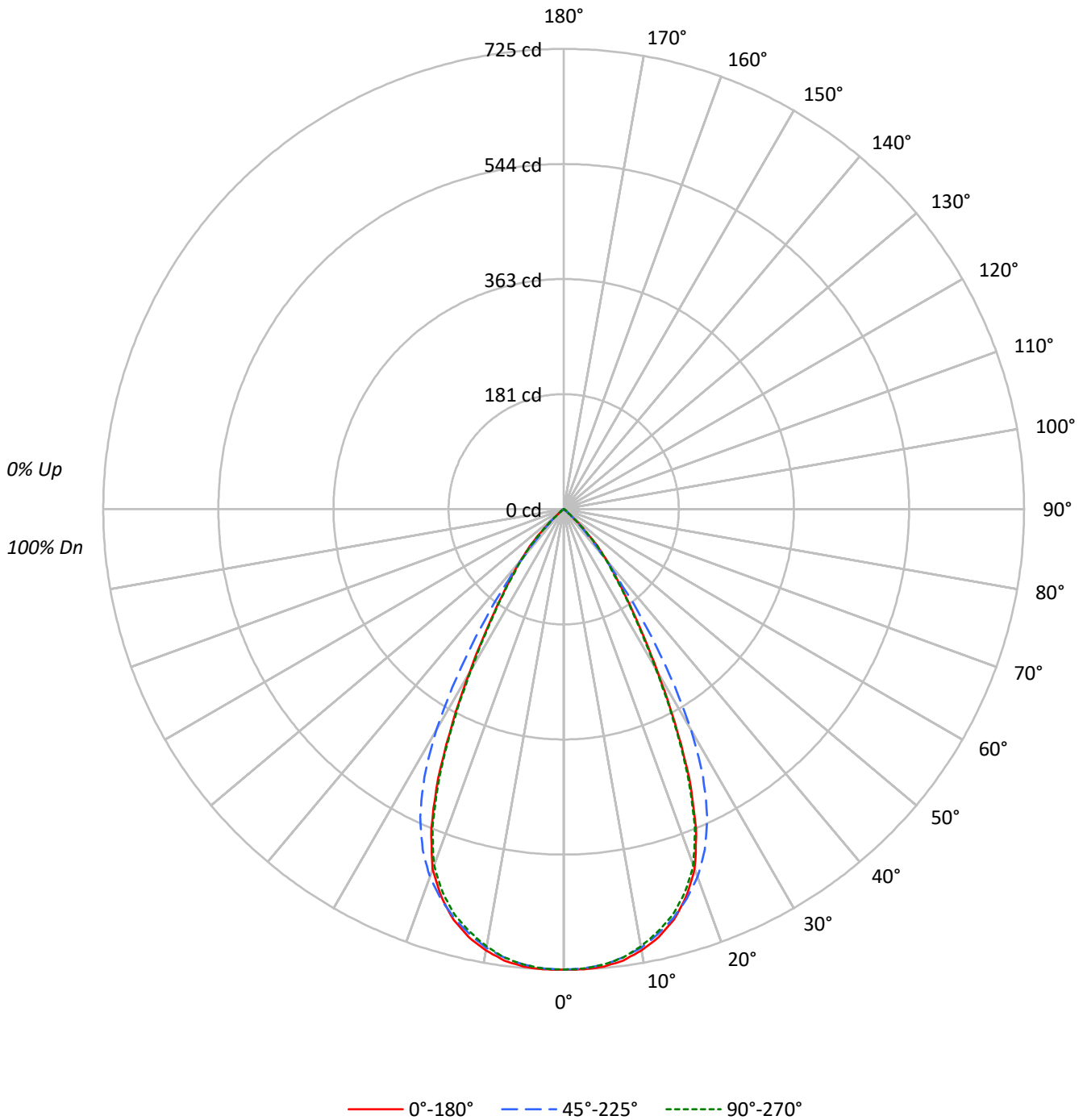
Lumens per Lamp: N/A  
 Luminaire Lumens: 649.0 lumens  
 Efficiency: N/A  
 Efficacy: 65.6 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 9.9  
 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 FEU4C089027 F4LC-SQ-WLI

### Luminous Intensity Polar Plot



TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089027 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°	69945	69945	69945
5°	70018	69699	69699
10°	69103	68692	68486
15°	66858	66548	66099
20°	61917	63272	61239
25°	49782	56916	49133
30°	32857	44622	32077
35°	20543	26797	20166
40°	13402	12419	12885
45°	6454	4953	6086
50°	1621	1981	1531
55°	892	807	875
60°	618	521	579
65°	411	388	411
70°	339	282	339
75°	261	261	261
80°	167	278	278
85°	221	332	332

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089027 F4LC-SQ-WLI

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	68.2	10.5
10°-20°	186.2	28.7
20°-30°	221.9	34.2
30°-40°	125.6	19.4
40°-50°	38.8	6.0
50°-60°	5.4	0.8
60°-70°	1.8	0.3
70°-80°	0.7	0.1
80°-90°	0.3	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°	476.2	73.4
0°-40°	601.9	92.7
0°-60°	646.1	99.6
0°-90°	649.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	649.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	725	725	725	725	725	
5°	723	721	720	719	720	68
15°	669	668	666	664	662	187
25°	468	495	535	496	462	209
35°	174	190	228	191	171	113
45°	47	55	36	54	45	39
55°	5	5	5	5	5	5
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	

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089027 F4LC-SQ-WLI

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	724.9	724.9	724.9	724.9	724.9
2.5°	725.1	723.9	723.6	723.3	723.9
5°	722.9	721.3	719.6	719.1	719.6
7.5°	716.8	715.1	712.3	711.6	712.1
10°	705.3	703.8	701.1	699.6	699.0
12.5°	690.1	687.6	685.1	683.5	681.8
15°	669.3	668.2	666.2	663.5	661.7
17.5°	640.5	642.2	643.3	638.0	633.2
20°	603.0	609.2	616.2	605.4	596.4
22.5°	544.6	562.2	580.1	559.6	539.6
25°	467.6	495.0	534.6	495.8	461.5
27.5°	377.9	412.5	475.0	412.7	372.9
30°	294.9	330.6	400.5	325.9	287.9
32.5°	226.5	253.1	312.9	249.1	221.7
35°	174.4	190.2	227.5	190.7	171.2
37.5°	135.6	143.6	153.0	140.7	131.6
40°	106.4	106.8	98.6	105.1	102.3
42.5°	78.9	78.6	60.6	76.6	77.1
45°	47.3	55.1	36.3	53.6	44.6
47.5°	22.5	31.1	21.8	29.5	20.8
50°	10.8	15.0	13.2	14.0	10.2
52.5°	7.3	7.7	7.5	7.3	7.0
55°	5.3	5.3	4.8	5.2	5.2
57.5°	4.0	4.0	3.5	3.8	3.8
60°	3.2	3.0	2.7	3.0	3.0
62.5°	2.3	2.3	2.0	2.3	2.3
65°	1.8	1.8	1.7	1.8	1.8
67.5°	1.5	1.5	1.2	1.5	1.3
70°	1.2	1.2	1.0	1.2	1.2
72.5°	0.8	0.8	0.8	0.8	0.8
75°	0.7	0.7	0.7	0.7	0.7
77.5°	0.5	0.5	0.5	0.5	0.5
80°	0.3	0.3	0.5	0.5	0.5
82.5°	0.3	0.3	0.3	0.3	0.3
85°	0.2	0.3	0.3	0.3	0.3
87.5°	0.2	0.2	0.3	0.3	0.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)