

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 FEU4C309027 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: FLDSQ4C30D010 FEU4C309027 F4LC-SQ-WH  
 Description: 4 INCH 3000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

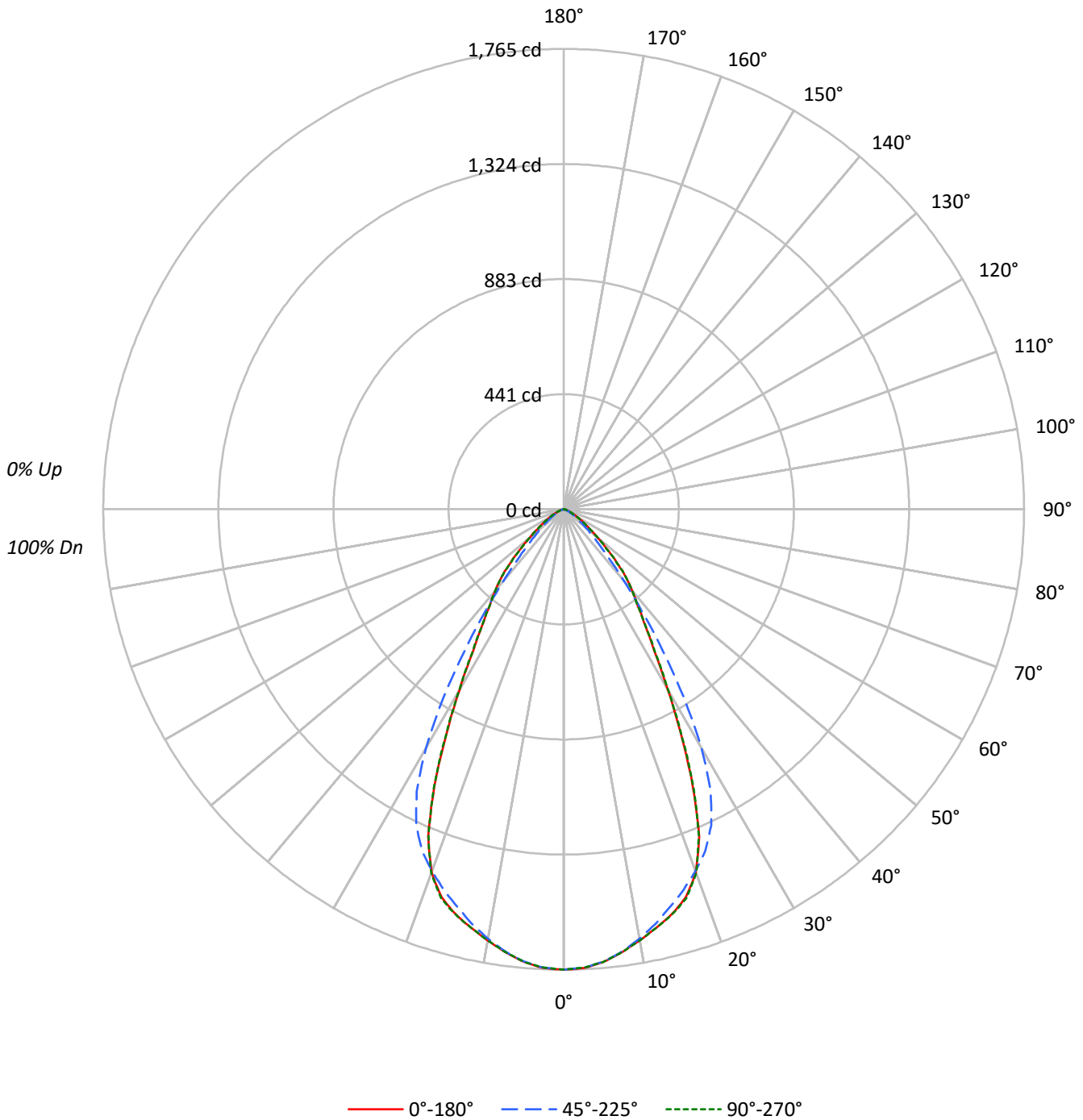
Lumens per Lamp: N/A  
 Luminaire Lumens: 1868.0 lumens  
 Efficiency: N/A  
 Efficacy: 59.1 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 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

TEST NUMBER: P#  
CATALOG NUMBER: FLDSQ4C30D010 FEU4C309027 F4LC-SQ-WH

### Luminous Intensity Polar Plot



TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C30D010 FEU4C309027 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	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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92	92	92	92	
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84	84	84	84	
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77	77	77	77	
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71	71	71	71	
5	89	80	74	69	88	79	73	69	78	72	68	76	71	68	74	70	67	66	66	66	66	
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61	61	61	61	
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56	56	56	56	
8	76	65	59	55	74	65	59	54	64	58	54	63	58	54	62	57	54	52	52	52	52	
9	72	61	55	51	71	61	55	51	60	54	51	59	54	50	58	54	50	49	49	49	49	
10	68	58	52	48	67	57	51	47	57	51	47	56	51	47	55	50	47	46	46	46	46	

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

	0°	45°	90°
0°	170293	170293	170293
5°	168735	168629	168677
10°	164416	163759	164416
15°	160458	157561	160627
20°	152133	151558	152420
25°	124797	142395	125446
30°	88988	117633	89110
35°	64184	77954	64385
40°	51454	45282	51454
45°	39272	26432	38958
50°	25894	16872	25819
55°	17411	11321	17226
60°	11714	7738	11810
65°	8014	5457	7877
70°	5332	3921	5332
75°	3542	2908	3542
80°	2500	2167	2500
85°	1882	1882	1882

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C30D010 FEU4C309027 F4LC-SQ-WH

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.1	8.8
10°-20°	447.4	23.9
20°-30°	559.3	29.9
30°-40°	376.2	20.1
40°-50°	198.7	10.6
50°-60°	80.7	4.3
60°-70°	29.9	1.6
70°-80°	9.7	0.5
80°-90°	2.1	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°	1170.7	62.7
0°-40°	1546.9	82.8
0°-60°	1826.3	97.8
0°-90°	1868.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1868.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1765	1765	1765	1765	1765	
5°	1742	1740	1741	1741	1742	164
15°	1606	1593	1577	1592	1608	450
25°	1172	1238	1338	1240	1178	528
35°	545	572	662	573	547	351
45°	288	273	194	272	286	221
55°	104	87	67	87	102	96
65°	35	28	24	28	34	36
75°	10	8	8	8	10	11
85°	2	2	2	2	2	2
90°	0	0	0	0	0	

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C30D010 FEU4C309027 F4LC-SQ-WH

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1764.9	1764.9	1764.9	1764.9	1764.9
2.5°	1760.5	1759.3	1758.8	1758.8	1759.3
5°	1742.1	1740.4	1741.0	1741.0	1741.5
7.5°	1712.6	1712.0	1710.4	1712.6	1712.6
10°	1678.1	1675.3	1671.4	1675.9	1678.1
12.5°	1642.5	1634.1	1627.4	1634.1	1642.5
15°	1606.3	1592.9	1577.3	1592.4	1608.0
17.5°	1559.0	1545.6	1528.4	1548.4	1563.4
20°	1481.6	1482.7	1476.0	1481.6	1484.4
22.5°	1357.5	1382.5	1417.6	1383.1	1353.6
25°	1172.2	1237.8	1337.5	1240.1	1178.3
27.5°	973.5	1056.9	1220.0	1062.0	979.6
30°	798.7	872.7	1055.8	877.7	799.8
32.5°	646.7	701.8	858.2	708.5	654.0
35°	544.9	572.2	661.8	573.3	546.6
37.5°	467.0	467.0	491.5	469.2	464.7
40°	408.5	390.7	359.5	390.2	408.5
42.5°	354.0	327.3	261.0	326.2	355.1
45°	287.8	273.3	193.7	272.2	285.5
47.5°	221.0	210.9	145.8	209.8	222.6
50°	172.5	157.0	112.4	155.8	172.0
52.5°	132.5	115.8	86.8	115.8	131.4
55°	103.5	86.8	67.3	86.8	102.4
57.5°	79.6	66.2	51.2	65.1	79.0
60°	60.7	49.5	40.1	49.5	61.2
62.5°	46.2	37.8	30.6	37.3	45.6
65°	35.1	28.4	23.9	28.4	34.5
67.5°	25.6	21.1	18.4	21.1	26.2
70°	18.9	16.1	13.9	15.6	18.9
72.5°	13.9	11.7	10.6	11.7	13.9
75°	9.5	8.3	7.8	8.3	9.5
77.5°	6.7	6.1	5.6	6.1	6.7
80°	4.5	3.9	3.9	4.5	4.5
82.5°	2.8	2.8	2.8	2.8	2.8
85°	1.7	1.7	1.7	1.7	1.7
87.5°	1.1	1.1	1.1	1.1	1.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)