

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: **FLDSQ4C10D010 FEU4C109050 F4LC-SQ-WH**

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: FLDSQ4C10D010 FEU4C109050 F4LC-SQ-WH  
 Description: 4 INCH 1000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

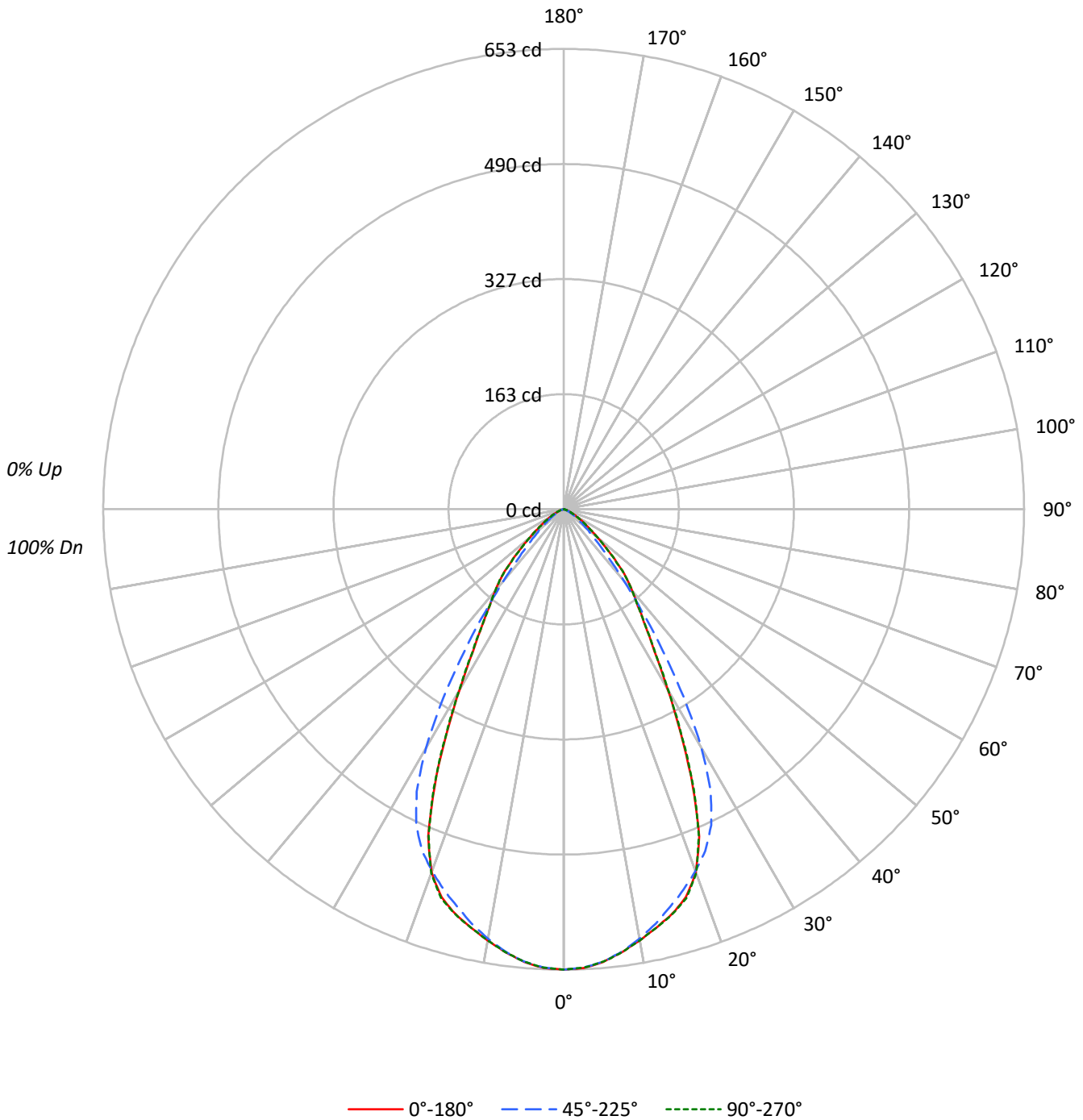
Lumens per Lamp: N/A  
 Luminaire Lumens: 691.0 lumens  
 Efficiency: N/A  
 Efficacy: 70.5 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 9.8  
 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	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
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	90	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°	62998	62998	62998
5°	62415	62376	62396
10°	60815	60579	60815
15°	59356	58287	59416
20°	56280	56064	56382
25°	46163	52668	46408
30°	32912	43519	32968
35°	23747	28835	23817
40°	19032	16752	19032
45°	14519	9770	14410
50°	9577	6245	9547
55°	6443	4189	6376
60°	4323	2856	4361
65°	2968	2032	2922
70°	1975	1439	1975
75°	1305	1081	1305
80°	889	778	889
85°	664	664	664

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	60.7	8.8
10°-20°	165.5	24.0
20°-30°	206.9	29.9
30°-40°	139.2	20.1
40°-50°	73.5	10.6
50°-60°	29.9	4.3
60°-70°	11.1	1.6
70°-80°	3.6	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°	433.1	62.7
0°-40°	572.2	82.8
0°-60°	675.6	97.8
0°-90°	691.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	691.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	653	653	653	653	653	
5°	644	644	644	644	644	61
15°	594	589	584	589	595	166
25°	434	458	495	459	436	195
35°	202	212	245	212	202	130
45°	106	101	72	101	106	82
55°	38	32	25	32	38	35
65°	13	10	9	10	13	13
75°	4	3	3	3	4	4
85°	1	1	1	1	1	1
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	652.9	652.9	652.9	652.9	652.9
2.5°	651.2	650.8	650.6	650.6	650.8
5°	644.4	643.8	644.0	644.0	644.2
7.5°	633.5	633.3	632.7	633.5	633.5
10°	620.7	619.7	618.3	619.9	620.7
12.5°	607.6	604.5	602.0	604.5	607.6
15°	594.2	589.2	583.5	589.0	594.8
17.5°	576.7	571.7	565.4	572.8	578.3
20°	548.1	548.5	546.0	548.1	549.1
22.5°	502.2	511.4	524.4	511.6	500.7
25°	433.6	457.9	494.7	458.7	435.9
27.5°	360.1	391.0	451.3	392.8	362.4
30°	295.4	322.8	390.6	324.7	295.9
32.5°	239.2	259.6	317.5	262.1	241.9
35°	201.6	211.7	244.8	212.1	202.2
37.5°	172.7	172.7	181.8	173.6	171.9
40°	151.1	144.5	133.0	144.3	151.1
42.5°	130.9	121.1	96.6	120.6	131.4
45°	106.4	101.1	71.6	100.7	105.6
47.5°	81.7	78.0	53.9	77.6	82.4
50°	63.8	58.1	41.6	57.6	63.6
52.5°	49.0	42.8	32.1	42.8	48.6
55°	38.3	32.1	24.9	32.1	37.9
57.5°	29.4	24.5	18.9	24.1	29.2
60°	22.4	18.3	14.8	18.3	22.6
62.5°	17.1	14.0	11.3	13.8	16.9
65°	13.0	10.5	8.9	10.5	12.8
67.5°	9.5	7.8	6.8	7.8	9.7
70°	7.0	6.0	5.1	5.8	7.0
72.5°	5.1	4.3	3.9	4.3	5.1
75°	3.5	3.1	2.9	3.1	3.5
77.5°	2.5	2.3	2.1	2.3	2.5
80°	1.6	1.4	1.4	1.6	1.6
82.5°	1.0	1.0	1.0	1.0	1.0
85°	0.6	0.6	0.6	0.6	0.6
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)