

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: **FLDSQ4C25D010 FEU4C259030 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: FLDSQ4C25D010 FEU4C259030 F4LC-SQ-WH  
 Description: 4 INCH 2500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

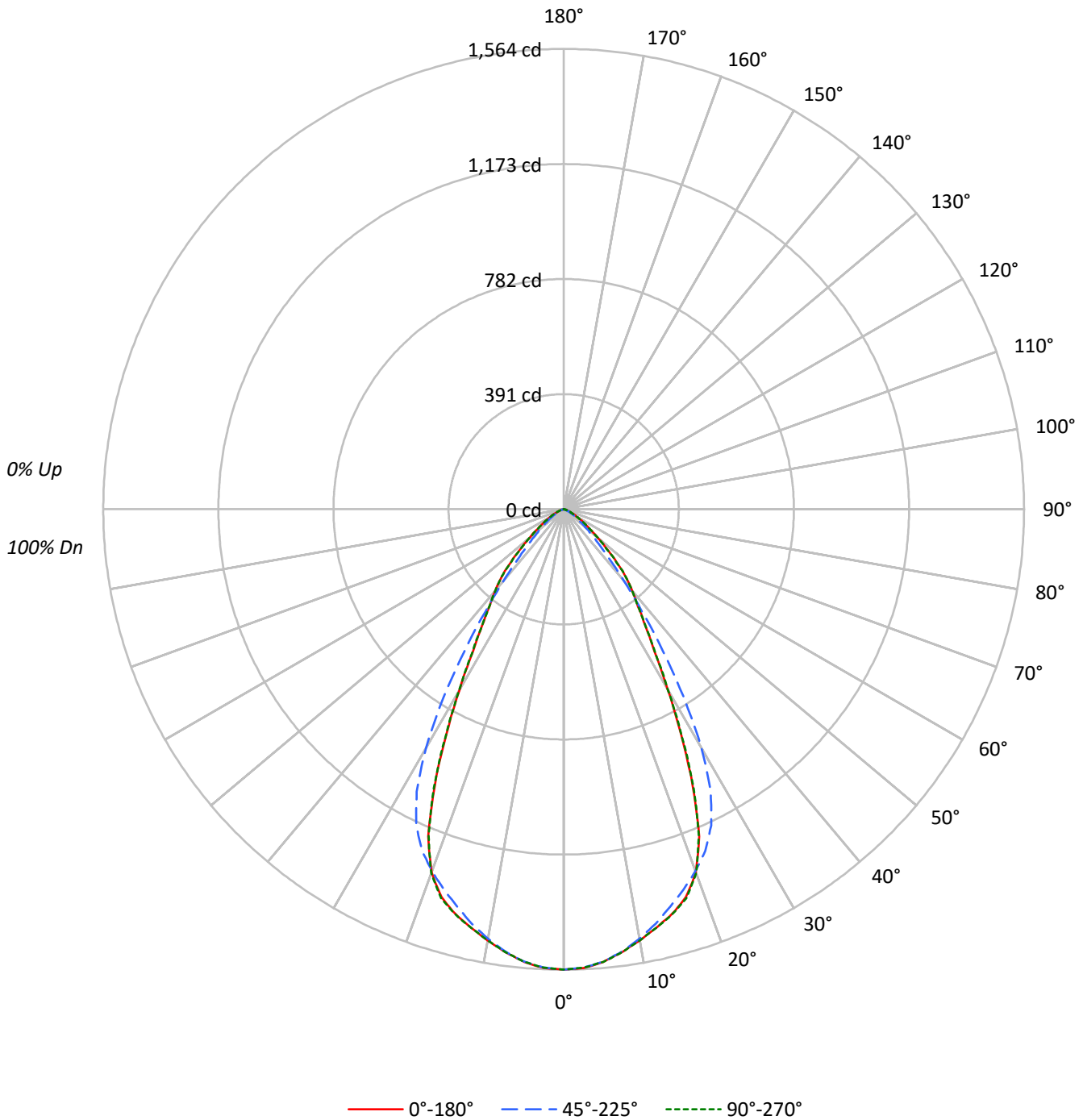
Lumens per Lamp: N/A  
 Luminaire Lumens: 1655.0 lumens  
 Efficiency: N/A  
 Efficacy: 52.5 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 31.5  
 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	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°	150880	150880	150880
5°	149490	149403	149451
10°	145663	145085	145663
15°	142157	139600	142307
20°	134790	134276	135036
25°	110563	126160	111137
30°	78838	104218	78949
35°	56870	69061	57034
40°	45584	40130	45584
45°	34783	23416	34523
50°	22952	14951	22877
55°	15426	10043	15258
60°	10363	6851	10459
65°	7101	4840	6986
70°	4740	3470	4740
75°	3132	2572	3132
80°	2167	1945	2167
85°	1661	1661	1661

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	145.4	8.8
10°-20°	396.4	23.9
20°-30°	495.5	29.9
30°-40°	333.3	20.1
40°-50°	176.0	10.6
50°-60°	71.5	4.3
60°-70°	26.5	1.6
70°-80°	8.6	0.5
80°-90°	1.9	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°	1037.2	62.7
0°-40°	1370.5	82.8
0°-60°	1618.1	97.8
0°-90°	1655.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1655.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1564	1564	1564	1564	1564	
5°	1543	1542	1542	1542	1543	145
15°	1423	1411	1398	1411	1425	399
25°	1038	1097	1185	1099	1044	467
35°	483	507	586	508	484	311
45°	255	242	172	241	253	195
55°	92	77	60	77	91	85
65°	31	25	21	25	31	32
75°	8	7	7	7	8	10
85°	2	2	2	2	2	2
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1563.7	1563.7	1563.7	1563.7	1563.7
2.5°	1559.7	1558.7	1558.2	1558.2	1558.7
5°	1543.4	1542.0	1542.5	1542.5	1543.0
7.5°	1517.3	1516.8	1515.3	1517.3	1517.3
10°	1486.7	1484.3	1480.8	1484.8	1486.7
12.5°	1455.2	1447.8	1441.9	1447.8	1455.2
15°	1423.1	1411.3	1397.5	1410.8	1424.6
17.5°	1381.2	1369.4	1354.1	1371.8	1385.2
20°	1312.7	1313.7	1307.7	1312.7	1315.1
22.5°	1202.7	1224.9	1256.0	1225.4	1199.3
25°	1038.5	1096.7	1185.0	1098.7	1043.9
27.5°	862.5	936.4	1080.9	940.9	867.9
30°	707.6	773.2	935.4	777.6	708.6
32.5°	573.0	621.8	760.4	627.7	579.4
35°	482.8	506.9	586.3	507.9	484.2
37.5°	413.7	413.7	435.4	415.7	411.8
40°	361.9	346.2	318.6	345.7	361.9
42.5°	313.6	290.0	231.3	289.0	314.6
45°	254.9	242.1	171.6	241.1	253.0
47.5°	195.8	186.9	129.2	185.9	197.2
50°	152.9	139.1	99.6	138.1	152.4
52.5°	117.4	102.6	76.9	102.6	116.4
55°	91.7	76.9	59.7	76.9	90.7
57.5°	70.5	58.7	45.4	57.7	70.0
60°	53.7	43.9	35.5	43.9	54.2
62.5°	40.9	33.5	27.1	33.0	40.4
65°	31.1	25.1	21.2	25.1	30.6
67.5°	22.7	18.7	16.3	18.7	23.2
70°	16.8	14.3	12.3	13.8	16.8
72.5°	12.3	10.4	9.4	10.4	12.3
75°	8.4	7.4	6.9	7.4	8.4
77.5°	5.9	5.4	4.9	5.4	5.9
80°	3.9	3.5	3.5	3.9	3.9
82.5°	2.5	2.5	2.5	2.5	2.5
85°	1.5	1.5	1.5	1.5	1.5
87.5°	1.0	1.0	1.0	1.0	1.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)