

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 FEU4C109035 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 FEU4C109035 F4LC-SQ-WH  
 Description: 4 INCH 1000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

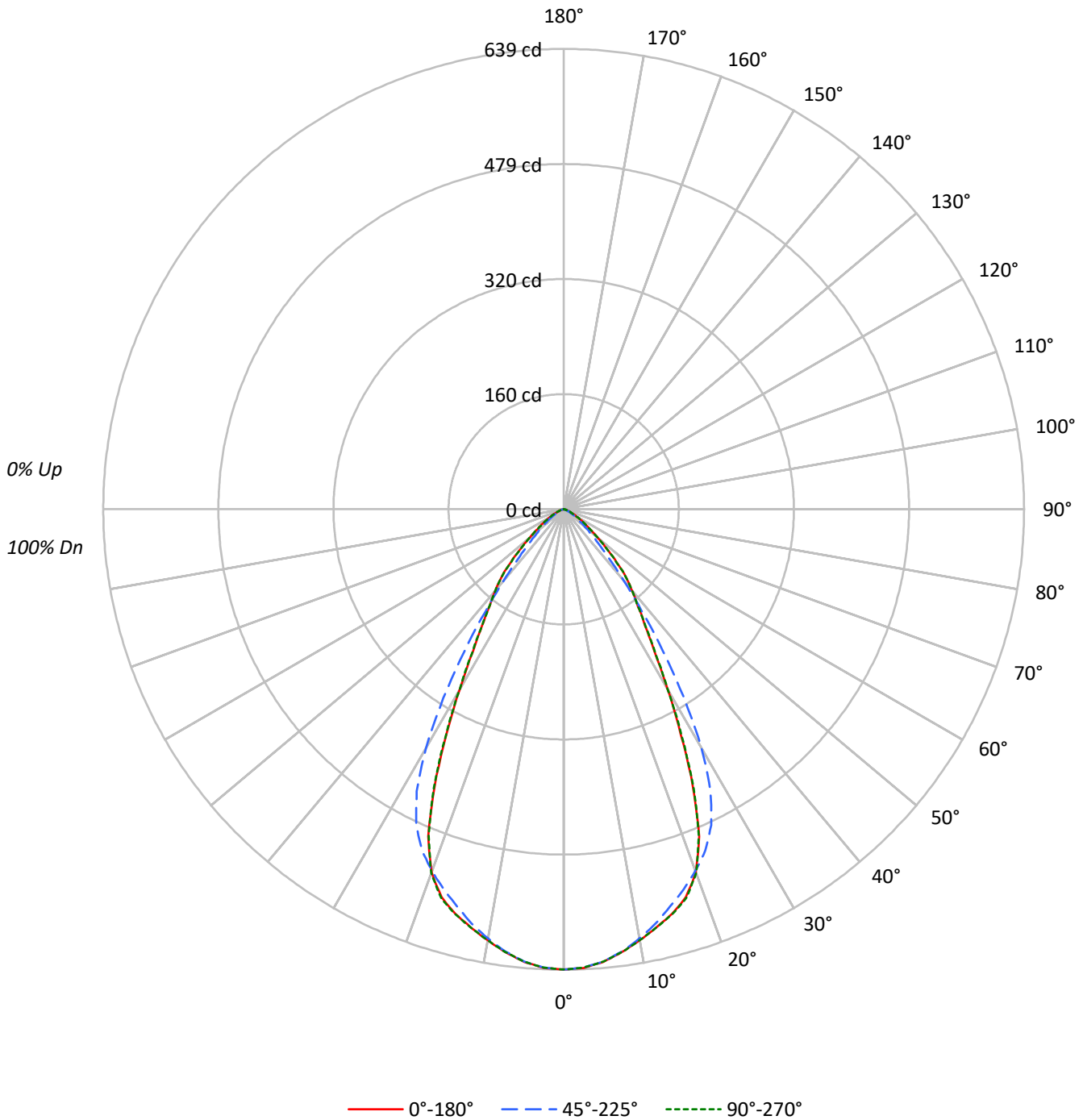
Lumens per Lamp: N/A  
 Luminaire Lumens: 676.0 lumens  
 Efficiency: N/A  
 Efficacy: 69.0 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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	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°	61627	61627	61627
5°	61059	61020	61040
10°	59502	59267	59502
15°	58068	57019	58128
20°	55058	54852	55160
25°	45162	51528	45396
30°	32199	42572	32244
35°	23228	28211	23299
40°	18616	16387	18616
45°	14205	9566	14096
50°	9367	6109	9337
55°	6308	4105	6241
60°	4246	2798	4284
65°	2900	1986	2854
70°	1918	1411	1918
75°	1268	1044	1268
80°	889	778	889
85°	664	664	664

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	59.4	8.8
10°-20°	161.9	23.9
20°-30°	202.4	29.9
30°-40°	136.2	20.1
40°-50°	71.9	10.6
50°-60°	29.2	4.3
60°-70°	10.8	1.6
70°-80°	3.5	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°	423.7	62.7
0°-40°	559.8	82.8
0°-60°	660.9	97.8
0°-90°	676.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	676.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	639	639	639	639	639	
5°	630	630	630	630	630	59
15°	581	576	571	576	582	163
25°	424	448	484	449	426	191
35°	197	207	240	208	198	127
45°	104	99	70	98	103	80
55°	38	31	24	31	37	35
65°	13	10	9	10	12	13
75°	3	3	3	3	3	4
85°	1	1	1	1	1	1
90°	0	0	0	0	0	

TEST NUMBER: P#  
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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	638.7	638.7	638.7	638.7	638.7
2.5°	637.1	636.7	636.5	636.5	636.7
5°	630.4	629.8	630.0	630.0	630.2
7.5°	619.8	619.6	619.0	619.8	619.8
10°	607.3	606.3	604.9	606.5	607.3
12.5°	594.4	591.4	588.9	591.4	594.4
15°	581.3	576.5	570.8	576.3	581.9
17.5°	564.2	559.3	553.1	560.3	565.8
20°	536.2	536.6	534.2	536.2	537.2
22.5°	491.3	500.3	513.0	500.5	489.8
25°	424.2	448.0	484.0	448.8	426.4
27.5°	352.3	382.5	441.5	384.3	354.5
30°	289.0	315.8	382.1	317.6	289.4
32.5°	234.0	254.0	310.6	256.4	236.7
35°	197.2	207.1	239.5	207.5	197.8
37.5°	169.0	169.0	177.9	169.8	168.2
40°	147.8	141.4	130.1	141.2	147.8
42.5°	128.1	118.4	94.5	118.0	128.5
45°	104.1	98.9	70.1	98.5	103.3
47.5°	80.0	76.3	52.8	75.9	80.6
50°	62.4	56.8	40.7	56.4	62.2
52.5°	47.9	41.9	31.4	41.9	47.5
55°	37.5	31.4	24.4	31.4	37.1
57.5°	28.8	24.0	18.5	23.6	28.6
60°	22.0	17.9	14.5	17.9	22.2
62.5°	16.7	13.7	11.1	13.5	16.5
65°	12.7	10.3	8.7	10.3	12.5
67.5°	9.3	7.7	6.6	7.7	9.5
70°	6.8	5.8	5.0	5.6	6.8
72.5°	5.0	4.2	3.8	4.2	5.0
75°	3.4	3.0	2.8	3.0	3.4
77.5°	2.4	2.2	2.0	2.2	2.4
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)