

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: **FLDSQ4C60D010 FEU4C609030 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: FLDSQ4C60D010 FEU4C609030 F4LC-SQ-WH  
 Description: 4 INCH 6000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

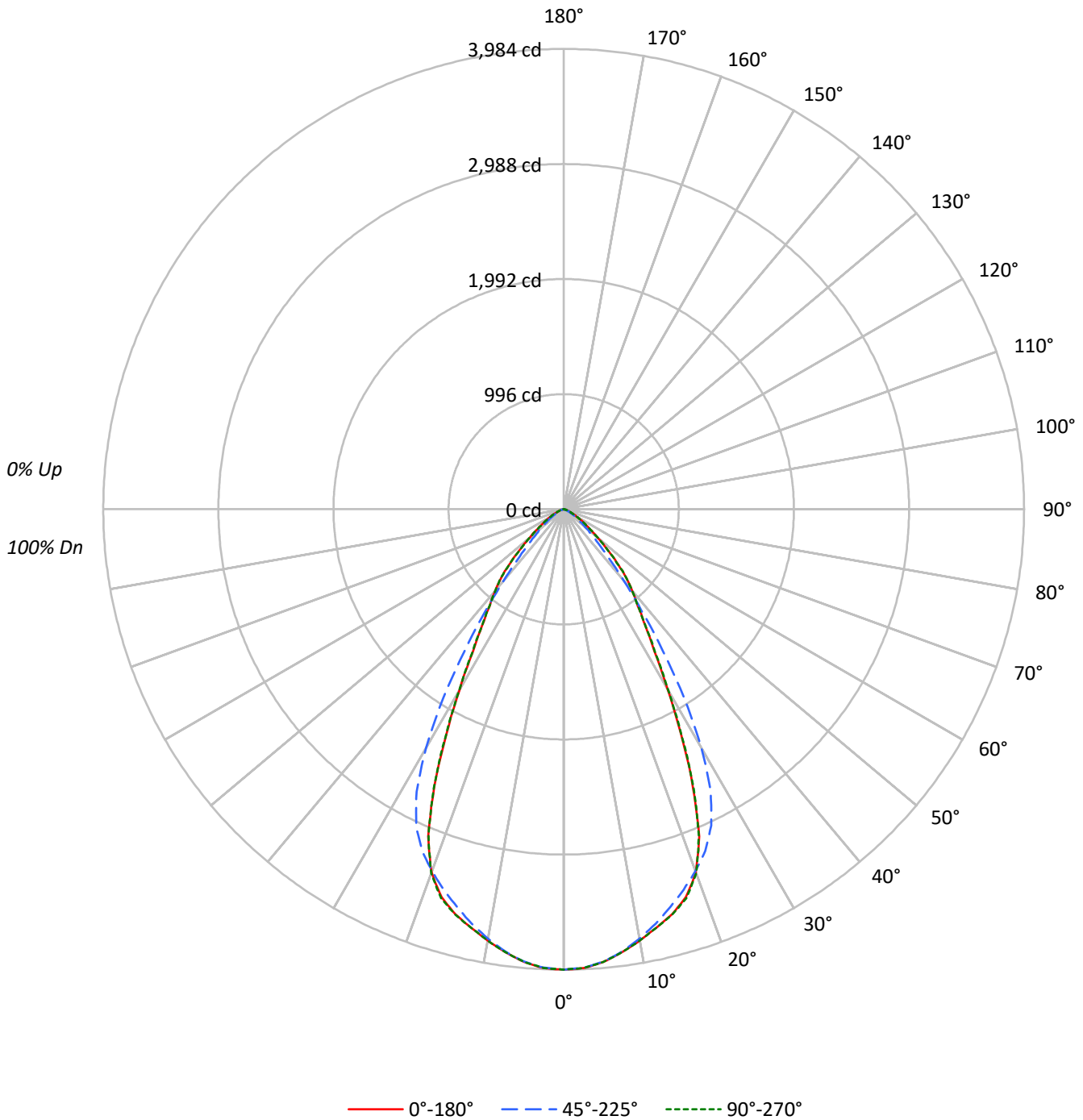
Lumens per Lamp: N/A  
 Luminaire Lumens: 4217.0 lumens  
 Efficiency: N/A  
 Efficacy: 58.6 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 72  
 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°	384441	384441	384441
5°	380921	380669	380795
10°	371168	369688	371168
15°	362231	355698	362600
20°	343438	342155	344085
25°	281714	321446	283193
30°	200883	265560	201161
35°	144895	175968	145343
40°	116170	102240	116170
45°	88642	59672	87959
50°	58468	38098	58273
55°	39314	25570	38893
60°	26438	17464	26670
65°	18082	12329	17786
70°	12046	8858	12046
75°	7978	6561	7978
80°	5612	4890	5612
85°	4207	4207	4207

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	370.4	8.8
10°-20°	1009.9	23.9
20°-30°	1262.5	29.9
30°-40°	849.3	20.1
40°-50°	448.5	10.6
50°-60°	182.3	4.3
60°-70°	67.6	1.6
70°-80°	21.8	0.5
80°-90°	4.7	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°	2642.8	62.7
0°-40°	3492.1	82.8
0°-60°	4122.9	97.8
0°-90°	4217.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4217.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3984	3984	3984	3984	3984	
5°	3933	3929	3930	3930	3932	371
15°	3626	3596	3561	3595	3630	1016
25°	2646	2794	3019	2799	2660	1191
35°	1230	1292	1494	1294	1234	792
45°	650	617	437	614	645	498
55°	234	196	152	196	231	217
65°	79	64	54	64	78	82
75°	21	19	18	19	21	25
85°	4	4	4	4	4	5
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3984.3	3984.3	3984.3	3984.3	3984.3
2.5°	3974.2	3971.7	3970.5	3970.5	3971.7
5°	3932.8	3929.0	3930.2	3930.2	3931.5
7.5°	3866.2	3864.9	3861.1	3866.2	3866.2
10°	3788.3	3782.0	3773.2	3783.2	3788.3
12.5°	3707.8	3689.0	3673.9	3689.0	3707.8
15°	3626.2	3596.0	3560.8	3594.8	3629.9
17.5°	3519.4	3489.2	3450.3	3495.5	3529.4
20°	3344.7	3347.2	3332.2	3344.7	3351.0
22.5°	3064.5	3121.1	3200.2	3122.3	3055.7
25°	2646.1	2794.4	3019.3	2799.4	2660.0
27.5°	2197.6	2386.0	2754.2	2397.3	2211.4
30°	1803.0	1970.1	2383.5	1981.5	1805.5
32.5°	1460.0	1584.4	1937.5	1599.5	1476.4
35°	1230.1	1291.7	1493.9	1294.2	1233.9
37.5°	1054.2	1054.2	1109.5	1059.2	1049.2
40°	922.3	882.0	811.7	880.8	922.3
42.5°	799.1	738.8	589.3	736.3	801.6
45°	649.6	616.9	437.3	614.4	644.6
47.5°	498.8	476.2	329.2	473.7	502.6
50°	389.5	354.3	253.8	351.8	388.2
52.5°	299.0	261.3	196.0	261.3	296.5
55°	233.7	196.0	152.0	196.0	231.2
57.5°	179.7	149.5	115.6	147.0	178.4
60°	137.0	111.8	90.5	111.8	138.2
62.5°	104.3	85.4	69.1	84.2	103.0
65°	79.2	64.1	54.0	64.1	77.9
67.5°	57.8	47.7	41.5	47.7	59.1
70°	42.7	36.4	31.4	35.2	42.7
72.5°	31.4	26.4	23.9	26.4	31.4
75°	21.4	18.8	17.6	18.8	21.4
77.5°	15.1	13.8	12.6	13.8	15.1
80°	10.1	8.8	8.8	10.1	10.1
82.5°	6.3	6.3	6.3	6.3	6.3
85°	3.8	3.8	3.8	3.8	3.8
87.5°	2.5	2.5	2.5	2.5	2.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)