

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: **FLDSQ4C50D010 FEU4C509050 F4LC-SQ-LI**

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: FLDSQ4C50D010 FEU4C509050 F4LC-SQ-LI
 Description: 4 INCH 5000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

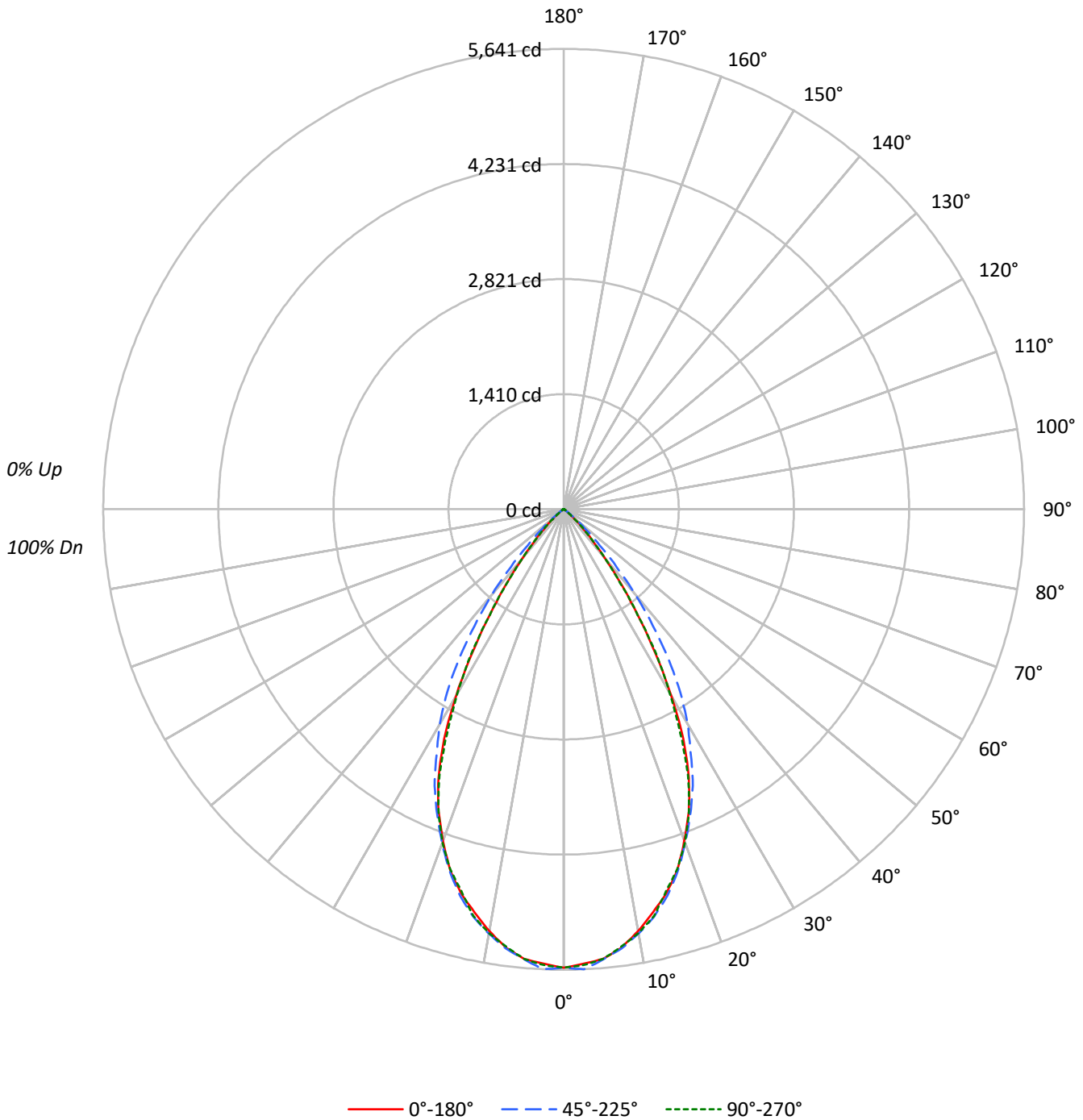
Lumens per Lamp: N/A
 Luminaire Lumens: 5185.0 lumens
 Efficiency: N/A
 Efficacy: 88.8 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 58.4
 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	111	108	106	111	108	106	104	104	103	101		101	99	98		97	96	95	93
2	108	103	99	95	105	101	97	94	98	95	92		95	92	90		92	90	88	87
3	102	96	91	87	100	94	90	86	92	88	84		89	86	83		87	84	82	80
4	97	89	84	79	95	88	83	79	86	81	78		84	80	77		82	79	76	75
5	92	83	77	73	90	82	77	73	81	76	72		79	75	71		77	74	71	69
6	87	78	72	68	86	77	71	67	76	71	67		74	70	66		73	69	66	64
7	83	73	67	63	81	73	67	63	71	66	62		70	65	62		69	65	62	60
8	79	69	63	59	77	68	62	58	67	62	58		66	61	58		65	61	58	56
9	75	65	59	55	74	64	59	55	63	58	55		63	58	54		62	57	54	53
10	71	61	55	51	70	61	55	51	60	55	51		59	54	51		58	54	51	50

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	541901	541901	541901
5°	535670	536368	535670
10°	514254	517399	516703
15°	486168	489724	483660
20°	443686	446972	445883
25°	386336	398483	383663
30°	293781	337902	289414
35°	184920	262686	186605
40°	99771	173481	97970
45°	47227	85694	46736
50°	17683	32124	17683
55°	8394	10211	7806
60°	5500	4824	5500
65°	3265	3265	3265
70°	2003	3047	2003
75°	1342	1342	1342
80°	2000	2000	2000
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	520.7	10.0
10°-20°	1364.7	26.3
20°-30°	1667.1	32.2
30°-40°	1166.0	22.5
40°-50°	382.1	7.4
50°-60°	60.8	1.2
60°-70°	16.6	0.3
70°-80°	5.5	0.1
80°-90°	1.5	0.0
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°	3552.5	68.5
0°-40°	4718.4	91.0
0°-60°	5161.3	99.5
0°-90°	5185.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5185.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5616	5616	5616	5616	5616	
5°	5530	5532	5538	5504	5530	519
15°	4867	4887	4902	4870	4842	1358
25°	3629	3684	3743	3675	3604	1630
35°	1570	1854	2230	1825	1584	1002
45°	346	426	628	421	342	290
55°	50	54	61	54	46	49
65°	14	18	14	18	14	16
75°	4	4	4	4	4	5
85°	0	0	0	0	0	1
90°	0	0	0	0	0	

TEST NUMBER: P#
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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	5616.2	5616.2	5616.2	5616.2	5616.2	5616.2	5616.2	5616.2	5616.2	5616.2	5616.2
2.5°	5573.4	5612.7	5601.9	5626.9	5626.9	5598.4	5605.5	5616.2	5630.4	5641.2	5555.4
5°	5530.5	5566.2	5534.0	5569.7	5548.3	5516.3	5569.7	5541.2	5559.1	5537.7	5551.9
7.5°	5416.4	5473.5	5409.3	5452.1	5437.8	5419.9	5441.3	5434.2	5444.9	5427.0	5387.9
10°	5248.7	5295.1	5252.3	5312.9	5284.3	5266.6	5284.3	5302.2	5298.6	5280.8	5302.2
12.5°	5056.0	5109.5	5088.1	5123.7	5091.7	5091.7	5134.5	5123.7	5127.4	5113.1	5138.0
15°	4866.9	4906.2	4874.0	4920.5	4906.2	4866.9	4884.6	4884.6	4913.3	4902.5	4874.0
17.5°	4631.4	4663.5	4627.8	4638.6	4624.3	4617.2	4692.0	4642.1	4670.6	4649.2	4652.8
20°	4321.0	4335.3	4324.5	4353.0	4335.3	4356.7	4349.5	4342.4	4342.4	4353.0	4328.1
22.5°	4006.9	4006.9	4017.7	4024.8	4039.1	4017.7	4060.5	4024.8	4028.3	4053.4	4046.2
25°	3628.8	3618.0	3643.1	3678.7	3693.0	3675.1	3732.2	3703.6	3725.0	3742.9	3703.6
27.5°	3168.5	3168.5	3193.4	3254.1	3264.8	3286.2	3364.7	3364.7	3393.2	3368.3	3396.8
30°	2636.8	2676.1	2708.1	2786.6	2811.6	2858.1	2940.1	2979.4	3043.6	3032.8	3018.6
32.5°	2090.9	2144.5	2148.0	2230.1	2297.8	2376.3	2486.9	2579.7	2626.1	2658.2	2622.5
35°	1569.9	1602.1	1630.6	1687.7	1801.9	1905.4	2005.3	2126.6	2208.7	2230.1	2197.9
37.5°	1149.0	1156.1	1184.6	1238.1	1323.7	1423.7	1545.0	1676.9	1762.7	1794.7	1759.1
40°	792.1	799.2	813.5	859.9	931.3	1002.6	1099.0	1234.6	1313.1	1377.3	1330.8
42.5°	531.6	538.7	553.0	588.7	628.0	695.7	770.7	856.3	931.3	959.8	934.8
45°	346.1	346.1	353.2	378.3	399.7	453.1	506.7	560.1	610.1	628.0	610.1
47.5°	203.4	206.9	214.0	231.9	256.9	278.3	317.6	353.2	367.5	381.8	374.6
50°	117.8	117.8	128.4	139.2	157.0	171.2	185.5	199.8	206.9	214.0	206.9
52.5°	64.2	67.9	71.3	75.0	82.1	96.4	107.0	107.0	110.7	114.2	110.7
55°	49.9	49.9	49.9	49.9	53.6	53.6	53.6	57.1	57.1	60.7	57.1
57.5°	35.7	35.7	35.7	39.3	39.3	39.3	35.7	35.7	35.7	35.7	35.7
60°	28.5	28.5	28.5	28.5	28.5	28.5	28.5	25.0	25.0	25.0	25.0
62.5°	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
65°	14.3	14.3	17.9	17.9	17.9	17.9	17.9	14.3	14.3	14.3	14.3
67.5°	10.8	10.8	10.8	10.8	14.3	14.3	10.8	10.8	10.8	10.8	10.8
70°	7.1	7.1	7.1	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
72.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
75°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
77.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
80°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	5616.2	5616.2	5616.2	5616.2	5616.2	5616.2	5616.2	5616.2
2.5°	5616.2	5555.4	5562.6	5594.8	5576.9	5594.8	5591.3	5591.3
5°	5555.4	5537.7	5509.1	5498.4	5519.8	5566.2	5559.1	5530.5
7.5°	5441.3	5395.0	5427.0	5441.3	5423.5	5452.1	5466.3	5405.6
10°	5305.7	5288.0	5280.8	5288.0	5280.8	5309.4	5273.7	5273.7
12.5°	5113.1	5084.6	5084.6	5127.4	5102.3	5080.9	5109.5	5106.0
15°	4920.5	4863.2	4863.2	4877.5	4888.3	4874.0	4877.5	4841.8
17.5°	4634.9	4617.2	4592.1	4631.4	4642.1	4627.8	4638.6	4620.7
20°	4367.3	4367.3	4321.0	4338.8	4353.0	4363.8	4370.9	4342.4
22.5°	4024.8	4032.0	3999.8	4035.5	4046.2	4010.6	4017.7	4010.6
25°	3710.8	3707.3	3682.2	3668.0	3675.1	3660.8	3657.3	3603.7
27.5°	3364.7	3329.0	3275.5	3289.8	3229.1	3179.2	3179.2	3097.0
30°	2990.0	2929.4	2858.1	2786.6	2733.2	2676.1	2643.9	2597.6
32.5°	2551.2	2469.2	2379.9	2283.5	2223.0	2137.3	2090.9	2115.9
35°	2115.9	1994.5	1873.2	1777.0	1684.1	1634.1	1577.1	1584.2
37.5°	1694.9	1523.6	1416.6	1313.1	1234.6	1170.4	1145.3	1138.2
40°	1238.1	1102.5	995.5	920.5	867.1	817.1	788.6	777.8
42.5°	856.3	760.1	674.3	613.7	578.1	545.9	531.6	528.1
45°	556.6	499.6	442.5	399.7	371.1	349.7	346.1	342.5
47.5°	349.7	321.1	285.4	253.4	228.3	214.0	203.4	203.4
50°	199.8	189.1	171.2	153.5	139.2	132.1	121.3	117.8
52.5°	107.0	107.0	99.9	85.6	75.0	67.9	67.9	64.2
55°	57.1	57.1	53.6	53.6	49.9	49.9	49.9	46.4
57.5°	35.7	35.7	39.3	39.3	35.7	35.7	35.7	35.7
60°	25.0	28.5	28.5	28.5	28.5	28.5	28.5	28.5
62.5°	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
65°	14.3	17.9	17.9	17.9	17.9	14.3	14.3	14.3
67.5°	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
70°	10.8	10.8	10.8	10.8	10.8	7.1	7.1	7.1
72.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
75°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
77.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
80°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)