

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: **FLDSQ4C05D010 FEU4C059040 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: FLDSQ4C05D010 FEU4C059040 F4LC-SQ-LI
 Description: 4 INCH 500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

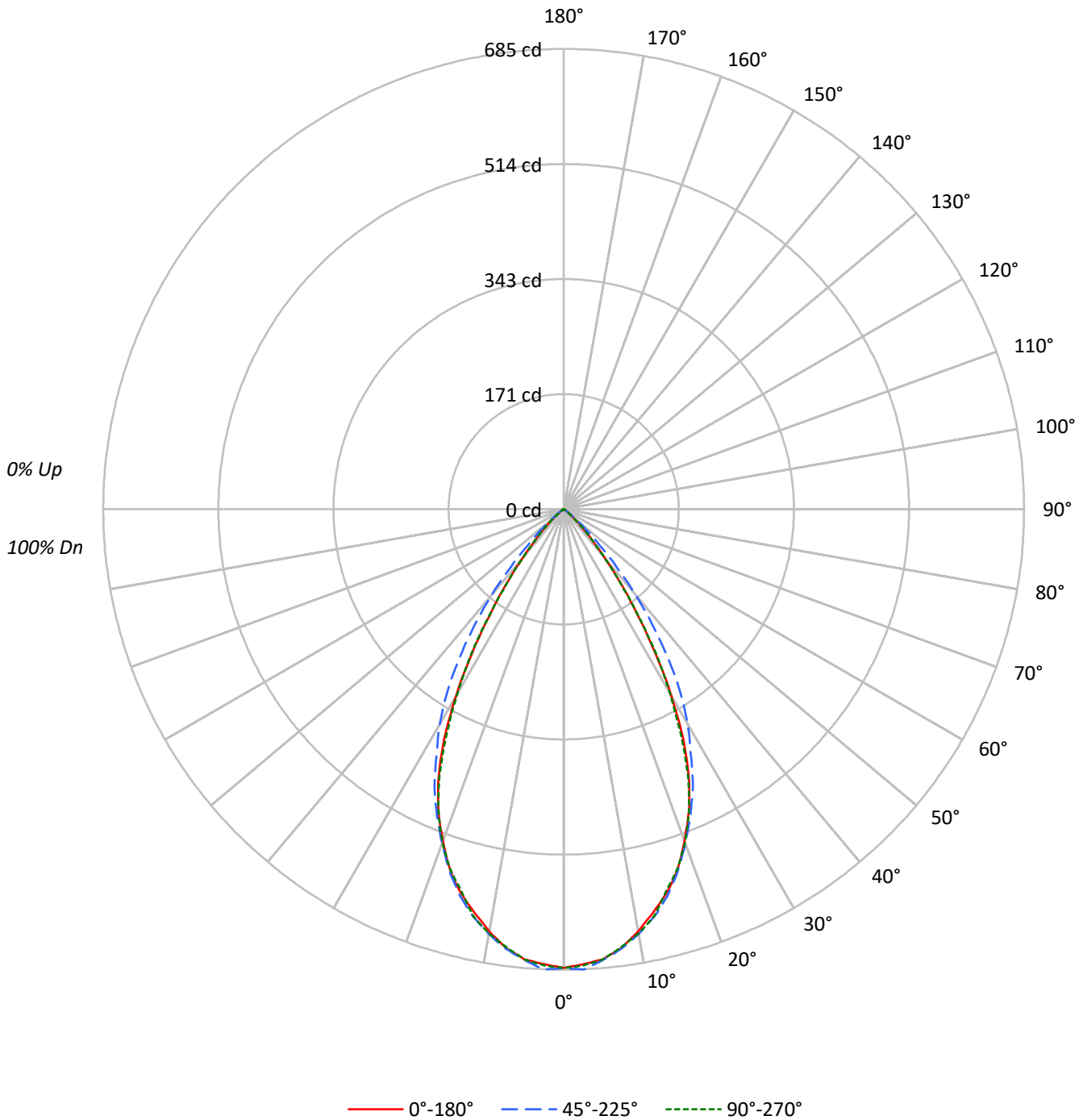
Lumens per Lamp: N/A
 Luminaire Lumens: 630.0 lumens
 Efficiency: N/A
 Efficacy: 87.5 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 7.2
 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	72	67	76	71	67		74	70	66		73	69	66	65
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°	65844	65844	65844
5°	65088	65175	65088
10°	62480	62862	62784
15°	59067	59506	58767
20°	53908	54308	54175
25°	46940	48420	46620
30°	35698	41057	35163
35°	22475	31921	22675
40°	12117	21073	11903
45°	5745	10412	5677
50°	2147	3903	2147
55°	1026	1245	942
60°	675	579	675
65°	388	388	388
70°	254	367	254
75°	149	149	149
80°	222	222	222
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.3	10.0
10°-20°	165.8	26.3
20°-30°	202.6	32.2
30°-40°	141.7	22.5
40°-50°	46.4	7.4
50°-60°	7.4	1.2
60°-70°	2.0	0.3
70°-80°	0.7	0.1
80°-90°	0.2	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°	431.6	68.5
0°-40°	573.3	91.0
0°-60°	627.1	99.5
0°-90°	630.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	630.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	682	682	682	682	682	
5°	672	672	673	669	672	63
15°	591	594	596	592	588	165
25°	441	448	455	447	438	198
35°	191	225	271	222	192	122
45°	42	52	76	51	42	35
55°	6	6	7	6	6	6
65°	2	2	2	2	2	2
75°	0	0	0	0	0	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C05D010 FEU4C059040 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	682.4	682.4	682.4	682.4	682.4	682.4	682.4	682.4	682.4	682.4	682.4
2.5°	677.2	682.0	680.7	683.7	683.7	680.2	681.1	682.4	684.1	685.4	675.0
5°	672.0	676.3	672.4	676.7	674.1	670.3	676.7	673.3	675.5	672.9	674.6
7.5°	658.1	665.1	657.2	662.4	660.7	658.5	661.1	660.3	661.6	659.4	654.6
10°	637.7	643.4	638.2	645.5	642.1	639.9	642.1	644.2	643.8	641.6	644.2
12.5°	614.3	620.8	618.2	622.6	618.7	618.7	623.9	622.6	623.0	621.3	624.3
15°	591.3	596.1	592.2	597.9	596.1	591.3	593.5	593.5	597.0	595.7	592.2
17.5°	562.7	566.6	562.3	563.6	561.9	561.0	570.1	564.0	567.5	564.9	565.3
20°	525.0	526.8	525.4	528.9	526.8	529.4	528.5	527.6	527.6	528.9	525.9
22.5°	486.9	486.9	488.2	489.0	490.8	488.2	493.4	489.0	489.5	492.5	491.6
25°	440.9	439.6	442.6	447.0	448.7	446.5	453.5	450.0	452.6	454.8	450.0
27.5°	385.0	385.0	388.0	395.4	396.7	399.3	408.8	408.8	412.3	409.3	412.7
30°	320.4	325.2	329.0	338.6	341.6	347.3	357.2	362.0	369.8	368.5	366.8
32.5°	254.1	260.6	261.0	271.0	279.2	288.7	302.2	313.4	319.1	323.0	318.6
35°	190.8	194.7	198.1	205.1	218.9	231.5	243.7	258.4	268.4	271.0	267.1
37.5°	139.6	140.5	143.9	150.4	160.8	173.0	187.7	203.8	214.2	218.1	213.7
40°	96.2	97.1	98.8	104.5	113.2	121.8	133.5	150.0	159.5	167.3	161.7
42.5°	64.6	65.5	67.2	71.5	76.3	84.5	93.6	104.0	113.2	116.6	113.6
45°	42.1	42.1	42.9	46.0	48.6	55.1	61.6	68.1	74.1	76.3	74.1
47.5°	24.7	25.1	26.0	28.2	31.2	33.8	38.6	42.9	44.7	46.4	45.5
50°	14.3	14.3	15.6	16.9	19.1	20.8	22.5	24.3	25.1	26.0	25.1
52.5°	7.8	8.2	8.7	9.1	10.0	11.7	13.0	13.0	13.4	13.9	13.4
55°	6.1	6.1	6.1	6.1	6.5	6.5	6.5	6.9	6.9	7.4	6.9
57.5°	4.3	4.3	4.3	4.8	4.8	4.8	4.3	4.3	4.3	4.3	4.3
60°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
62.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
65°	1.7	1.7	2.2	2.2	2.2	2.2	2.2	1.7	1.7	1.7	1.7
67.5°	1.3	1.3	1.3	1.3	1.7	1.7	1.3	1.3	1.3	1.3	1.3
70°	0.9	0.9	0.9	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
72.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
75°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	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°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
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°	682.4	682.4	682.4	682.4	682.4	682.4	682.4	682.4
2.5°	682.4	675.0	675.9	679.8	677.6	679.8	679.4	679.4
5°	675.0	672.9	669.4	668.1	670.7	676.3	675.5	672.0
7.5°	661.1	655.5	659.4	661.1	659.0	662.4	664.2	656.8
10°	644.7	642.5	641.6	642.5	641.6	645.1	640.8	640.8
12.5°	621.3	617.8	617.8	623.0	620.0	617.4	620.8	620.4
15°	597.9	590.9	590.9	592.6	593.9	592.2	592.6	588.3
17.5°	563.2	561.0	558.0	562.7	564.0	562.3	563.6	561.4
20°	530.6	530.6	525.0	527.2	528.9	530.2	531.1	527.6
22.5°	489.0	489.9	486.0	490.3	491.6	487.3	488.2	487.3
25°	450.9	450.4	447.4	445.7	446.5	444.8	444.4	437.9
27.5°	408.8	404.5	398.0	399.7	392.3	386.3	386.3	376.3
30°	363.3	355.9	347.3	338.6	332.1	325.2	321.2	315.6
32.5°	310.0	300.0	289.2	277.5	270.1	259.7	254.1	257.1
35°	257.1	242.3	227.6	215.9	204.6	198.6	191.6	192.5
37.5°	205.9	185.1	172.1	159.5	150.0	142.2	139.2	138.3
40°	150.4	134.0	121.0	111.8	105.4	99.3	95.8	94.5
42.5°	104.0	92.4	81.9	74.6	70.2	66.3	64.6	64.2
45°	67.6	60.7	53.8	48.6	45.1	42.5	42.1	41.6
47.5°	42.5	39.0	34.7	30.8	27.7	26.0	24.7	24.7
50°	24.3	23.0	20.8	18.6	16.9	16.0	14.7	14.3
52.5°	13.0	13.0	12.1	10.4	9.1	8.2	8.2	7.8
55°	6.9	6.9	6.5	6.5	6.1	6.1	6.1	5.6
57.5°	4.3	4.3	4.8	4.8	4.3	4.3	4.3	4.3
60°	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5
62.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
65°	1.7	2.2	2.2	2.2	2.2	1.7	1.7	1.7
67.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
70°	1.3	1.3	1.3	1.3	1.3	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
75°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
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°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)