

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 FEU4C059027 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 FEU4C059027 F4LC-SQ-LI
 Description: 4 INCH 500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

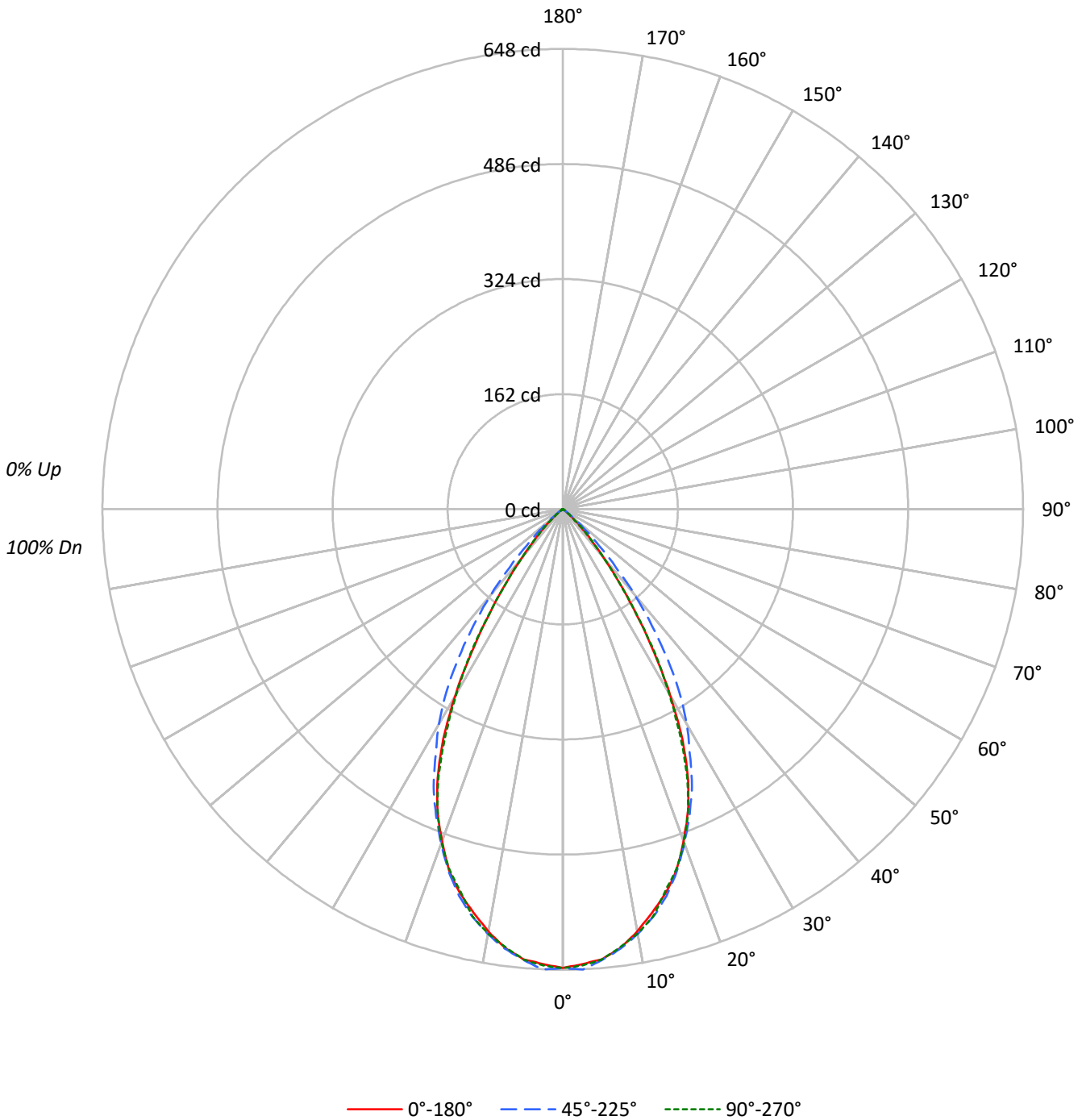
Lumens per Lamp: N/A
 Luminaire Lumens: 596.0 lumens
 Efficiency: N/A
 Efficacy: 82.8 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 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	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				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°	62293	62293	62293
5°	61572	61650	61572
10°	59110	59472	59394
15°	55880	56290	55600
20°	51002	51382	51248
25°	44406	45801	44097
30°	33770	38840	33269
35°	21261	30190	21450
40°	11462	19939	11261
45°	5431	9852	5376
50°	2026	3693	2026
55°	959	1178	892
60°	637	560	637
65°	365	365	365
70°	226	339	226
75°	149	149	149
80°	222	222	222
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.9	10.0
10°-20°	156.9	26.3
20°-30°	191.6	32.2
30°-40°	134.0	22.5
40°-50°	43.9	7.4
50°-60°	7.0	1.2
60°-70°	1.9	0.3
70°-80°	0.6	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°	408.3	68.5
0°-40°	542.4	91.0
0°-60°	593.3	99.5
0°-90°	596.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	596.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	646	646	646	646	646	
5°	636	636	636	633	636	60
15°	559	562	564	560	557	156
25°	417	423	430	422	414	187
35°	180	213	256	210	182	115
45°	40	49	72	48	39	33
55°	6	6	7	6	5	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 FEU4C059027 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6
2.5°	640.6	645.2	643.9	646.8	646.8	643.5	644.3	645.6	647.2	648.4	638.6
5°	635.7	639.8	636.1	640.2	637.8	634.1	640.2	636.9	639.0	636.5	638.2
7.5°	622.6	629.2	621.8	626.7	625.1	623.0	625.5	624.6	625.9	623.8	619.3
10°	603.3	608.7	603.7	610.7	607.4	605.4	607.4	609.5	609.1	607.0	609.5
12.5°	581.2	587.3	584.9	589.0	585.3	585.3	590.2	589.0	589.4	587.7	590.6
15°	559.4	564.0	560.3	565.6	564.0	559.4	561.5	561.5	564.8	563.5	560.3
17.5°	532.4	536.1	532.0	533.2	531.5	530.7	539.3	533.6	536.9	534.4	534.8
20°	496.7	498.3	497.1	500.4	498.3	500.8	500.0	499.1	499.1	500.4	497.5
22.5°	460.6	460.6	461.8	462.6	464.3	461.8	466.7	462.6	463.0	465.9	465.1
25°	417.1	415.9	418.8	422.9	424.5	422.4	429.0	425.7	428.2	430.2	425.7
27.5°	364.2	364.2	367.1	374.1	375.3	377.7	386.8	386.8	390.0	387.2	390.5
30°	303.1	307.6	311.3	320.3	323.2	328.5	338.0	342.5	349.9	348.6	347.0
32.5°	240.3	246.5	246.9	256.3	264.1	273.1	285.9	296.5	301.9	305.5	301.4
35°	180.5	184.2	187.4	194.0	207.1	219.0	230.5	244.4	253.9	256.3	252.6
37.5°	132.1	132.9	136.2	142.3	152.2	163.7	177.6	192.8	202.6	206.3	202.2
40°	91.0	91.9	93.5	98.8	107.0	115.3	126.3	141.9	150.9	158.3	153.0
42.5°	61.1	61.9	63.6	67.7	72.2	80.0	88.6	98.4	107.0	110.3	107.5
45°	39.8	39.8	40.6	43.5	45.9	52.1	58.2	64.4	70.1	72.2	70.1
47.5°	23.4	23.8	24.6	26.7	29.5	32.0	36.5	40.6	42.2	43.9	43.1
50°	13.5	13.5	14.8	16.0	18.0	19.7	21.3	23.0	23.8	24.6	23.8
52.5°	7.4	7.8	8.2	8.6	9.4	11.1	12.3	12.3	12.7	13.1	12.7
55°	5.7	5.7	5.7	5.7	6.2	6.2	6.2	6.6	6.6	7.0	6.6
57.5°	4.1	4.1	4.1	4.5	4.5	4.5	4.1	4.1	4.1	4.1	4.1
60°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.9	2.9	2.9	2.9
62.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
65°	1.6	1.6	2.1	2.1	2.1	2.1	2.1	1.6	1.6	1.6	1.6
67.5°	1.2	1.2	1.2	1.2	1.6	1.6	1.2	1.2	1.2	1.2	1.2
70°	0.8	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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°	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6
2.5°	645.6	638.6	639.4	643.1	641.0	643.1	642.7	642.7
5°	638.6	636.5	633.3	632.0	634.5	639.8	639.0	635.7
7.5°	625.5	620.1	623.8	625.5	623.4	626.7	628.3	621.4
10°	609.9	607.8	607.0	607.8	607.0	610.3	606.2	606.2
12.5°	587.7	584.5	584.5	589.4	586.5	584.0	587.3	586.9
15°	565.6	559.0	559.0	560.7	561.9	560.3	560.7	556.6
17.5°	532.8	530.7	527.8	532.4	533.6	532.0	533.2	531.1
20°	502.0	502.0	496.7	498.7	500.4	501.6	502.4	499.1
22.5°	462.6	463.5	459.8	463.9	465.1	461.0	461.8	461.0
25°	426.5	426.1	423.3	421.6	422.4	420.8	420.4	414.2
27.5°	386.8	382.7	376.5	378.2	371.2	365.4	365.4	356.0
30°	343.7	336.7	328.5	320.3	314.2	307.6	303.9	298.6
32.5°	293.2	283.8	273.6	262.5	255.5	245.7	240.3	243.2
35°	243.2	229.3	215.3	204.3	193.6	187.8	181.3	182.1
37.5°	194.8	175.1	162.8	150.9	141.9	134.5	131.7	130.8
40°	142.3	126.7	114.4	105.8	99.7	93.9	90.6	89.4
42.5°	98.4	87.4	77.5	70.5	66.4	62.7	61.1	60.7
45°	64.0	57.4	50.9	45.9	42.7	40.2	39.8	39.4
47.5°	40.2	36.9	32.8	29.1	26.2	24.6	23.4	23.4
50°	23.0	21.7	19.7	17.6	16.0	15.2	13.9	13.5
52.5°	12.3	12.3	11.5	9.8	8.6	7.8	7.8	7.4
55°	6.6	6.6	6.2	6.2	5.7	5.7	5.7	5.3
57.5°	4.1	4.1	4.5	4.5	4.1	4.1	4.1	4.1
60°	2.9	3.3	3.3	3.3	3.3	3.3	3.3	3.3
62.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
65°	1.6	2.1	2.1	2.1	2.1	1.6	1.6	1.6
67.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
70°	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8
72.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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)