

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: **FLDSQ4C08D010 FEU4C089040 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: FLDSQ4C08D010 FEU4C089040 F4LC-SQ-LI
 Description: 4 INCH 800 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

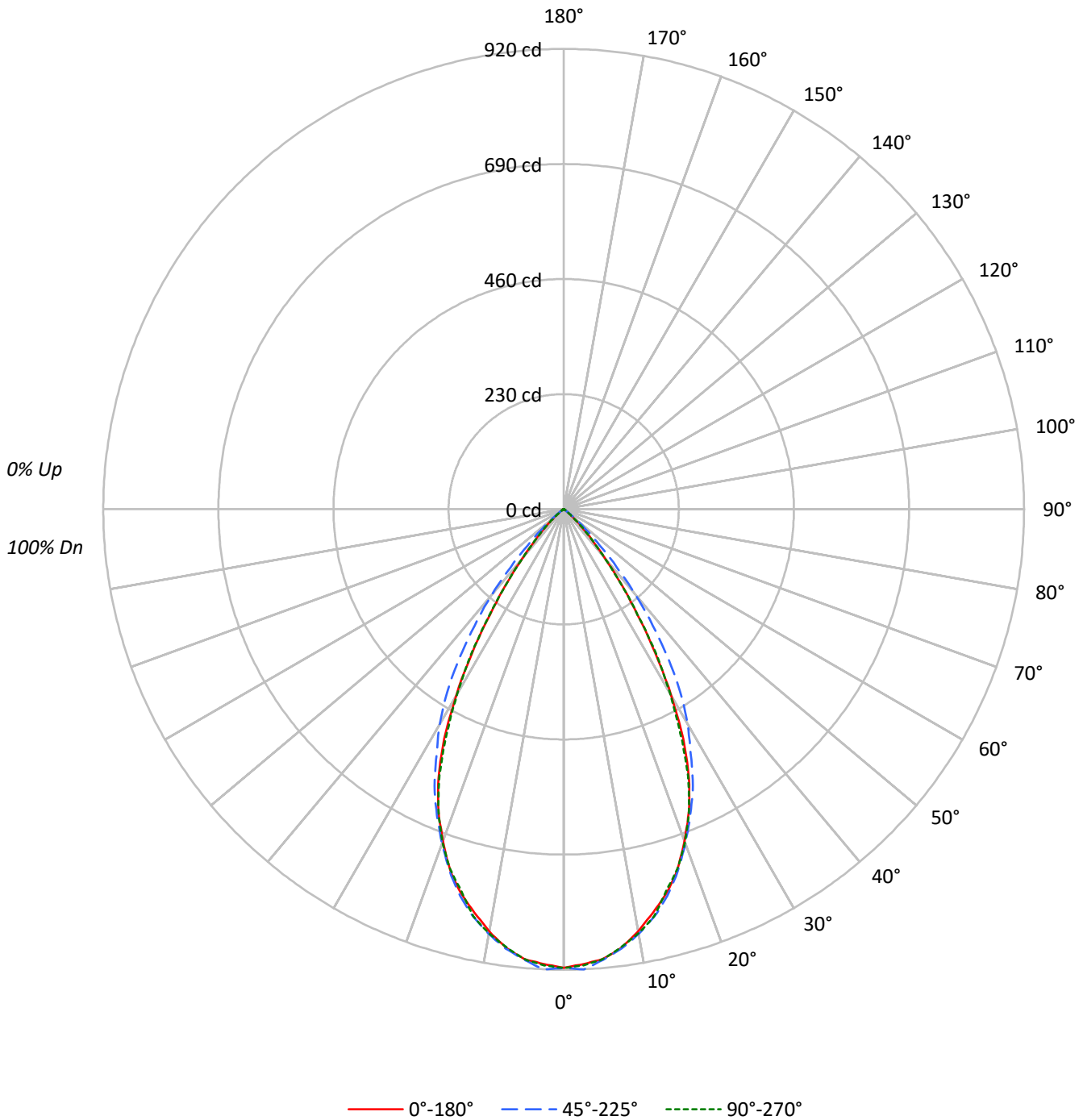
Lumens per Lamp: N/A
 Luminaire Lumens: 846.0 lumens
 Efficiency: N/A
 Efficacy: 85.5 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 9.9
 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				
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°	88413	88413	88413
5°	87404	87511	87404
10°	83908	84417	84310
15°	79325	79904	78915
20°	72390	72935	72750
25°	63037	65017	62601
30°	47931	55129	47218
35°	30178	42864	30449
40°	16274	28303	15984
45°	7710	13987	7628
50°	2882	5239	2882
55°	1363	1665	1278
60°	907	791	907
65°	525	525	525
70°	339	508	339
75°	224	224	224
80°	333	333	333
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.0	10.0
10°-20°	222.7	26.3
20°-30°	272.0	32.2
30°-40°	190.2	22.5
40°-50°	62.3	7.4
50°-60°	9.9	1.2
60°-70°	2.7	0.3
70°-80°	0.9	0.1
80°-90°	0.3	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°	579.6	68.5
0°-40°	769.9	91.0
0°-60°	842.1	99.5
0°-90°	846.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	846.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	916	916	916	916	916	
5°	902	903	904	898	902	85
15°	794	797	800	795	790	222
25°	592	601	611	600	588	266
35°	256	302	364	298	258	163
45°	56	70	102	69	56	47
55°	8	9	10	9	8	8
65°	2	3	2	3	2	3
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089040 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	916.3	916.3	916.3	916.3	916.3	916.3	916.3	916.3	916.3	916.3	916.3
2.5°	909.4	915.8	914.0	918.1	918.1	913.5	914.6	916.3	918.7	920.4	906.4
5°	902.4	908.2	903.0	908.8	905.3	900.1	908.8	904.1	907.0	903.5	905.9
7.5°	883.8	893.1	882.6	889.6	887.2	884.3	887.8	886.7	888.4	885.5	879.1
10°	856.4	864.0	857.0	866.9	862.2	859.3	862.2	865.1	864.5	861.6	865.1
12.5°	825.0	833.7	830.2	836.0	830.8	830.8	837.8	836.0	836.6	834.3	838.3
15°	794.1	800.5	795.3	802.8	800.5	794.1	797.0	797.0	801.7	799.9	795.3
17.5°	755.7	760.9	755.1	756.8	754.5	753.3	765.6	757.4	762.1	758.6	759.2
20°	705.0	707.4	705.6	710.3	707.4	710.8	709.7	708.5	708.5	710.3	706.2
22.5°	653.8	653.8	655.5	656.7	659.0	655.5	662.5	656.7	657.3	661.4	660.2
25°	592.1	590.3	594.4	600.2	602.6	599.6	609.0	604.3	607.8	610.7	604.3
27.5°	517.0	517.0	521.0	531.0	532.7	536.2	549.0	549.0	553.6	549.6	554.2
30°	430.2	436.6	441.9	454.7	458.8	466.3	479.7	486.1	496.6	494.8	492.5
32.5°	341.2	349.9	350.5	363.9	374.9	387.7	405.8	420.9	428.5	433.7	427.9
35°	256.2	261.4	266.1	275.4	294.0	310.9	327.2	347.0	360.4	363.9	358.6
37.5°	187.5	188.6	193.3	202.0	216.0	232.3	252.1	273.6	287.6	292.8	287.0
40°	129.2	130.4	132.7	140.3	152.0	163.6	179.3	201.4	214.2	224.7	217.1
42.5°	86.7	87.9	90.2	96.1	102.5	113.5	125.7	139.7	152.0	156.6	152.5
45°	56.5	56.5	57.6	61.7	65.2	73.9	82.7	91.4	99.5	102.5	99.5
47.5°	33.2	33.8	34.9	37.8	41.9	45.4	51.8	57.6	60.0	62.3	61.1
50°	19.2	19.2	21.0	22.7	25.6	27.9	30.3	32.6	33.8	34.9	33.8
52.5°	10.5	11.1	11.6	12.2	13.4	15.7	17.5	17.5	18.1	18.6	18.1
55°	8.1	8.1	8.1	8.1	8.7	8.7	8.7	9.3	9.3	9.9	9.3
57.5°	5.8	5.8	5.8	6.4	6.4	6.4	5.8	5.8	5.8	5.8	5.8
60°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.1	4.1	4.1	4.1
62.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
65°	2.3	2.3	2.9	2.9	2.9	2.9	2.9	2.3	2.3	2.3	2.3
67.5°	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8
70°	1.2	1.2	1.2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
75°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	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°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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°	916.3	916.3	916.3	916.3	916.3	916.3	916.3	916.3
2.5°	916.3	906.4	907.6	912.9	909.9	912.9	912.3	912.3
5°	906.4	903.5	898.9	897.1	900.6	908.2	907.0	902.4
7.5°	887.8	880.3	885.5	887.8	884.9	889.6	891.9	882.0
10°	865.7	862.8	861.6	862.8	861.6	866.3	860.5	860.5
12.5°	834.3	829.6	829.6	836.6	832.5	829.0	833.7	833.1
15°	802.8	793.5	793.5	795.8	797.6	795.3	795.8	790.0
17.5°	756.2	753.3	749.3	755.7	757.4	755.1	756.8	753.9
20°	712.6	712.6	705.0	707.9	710.3	712.0	713.2	708.5
22.5°	656.7	657.9	652.6	658.4	660.2	654.4	655.5	654.4
25°	605.5	604.9	600.8	598.5	599.6	597.3	596.7	588.0
27.5°	549.0	543.2	534.4	536.8	526.9	518.7	518.7	505.3
30°	487.9	478.0	466.3	454.7	446.0	436.6	431.4	423.8
32.5°	416.3	402.9	388.3	372.6	362.7	348.7	341.2	345.2
35°	345.2	325.4	305.6	289.9	274.8	266.6	257.3	258.5
37.5°	276.5	248.6	231.1	214.2	201.4	191.0	186.9	185.7
40°	202.0	179.9	162.4	150.2	141.5	133.3	128.7	126.9
42.5°	139.7	124.0	110.0	100.1	94.3	89.1	86.7	86.2
45°	90.8	81.5	72.2	65.2	60.6	57.1	56.5	55.9
47.5°	57.1	52.4	46.6	41.3	37.3	34.9	33.2	33.2
50°	32.6	30.9	27.9	25.0	22.7	21.5	19.8	19.2
52.5°	17.5	17.5	16.3	14.0	12.2	11.1	11.1	10.5
55°	9.3	9.3	8.7	8.7	8.1	8.1	8.1	7.6
57.5°	5.8	5.8	6.4	6.4	5.8	5.8	5.8	5.8
60°	4.1	4.7	4.7	4.7	4.7	4.7	4.7	4.7
62.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
65°	2.3	2.9	2.9	2.9	2.9	2.3	2.3	2.3
67.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
70°	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
75°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)