

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 FEU4C089050 F4LC-CSSQ-MW**

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 FEU4C089050 F4LC-CSSQ-MW
 Description: 4 INCH 800 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MW FINISH
 Light Source: -
 Ballast/Driver: -

Summary

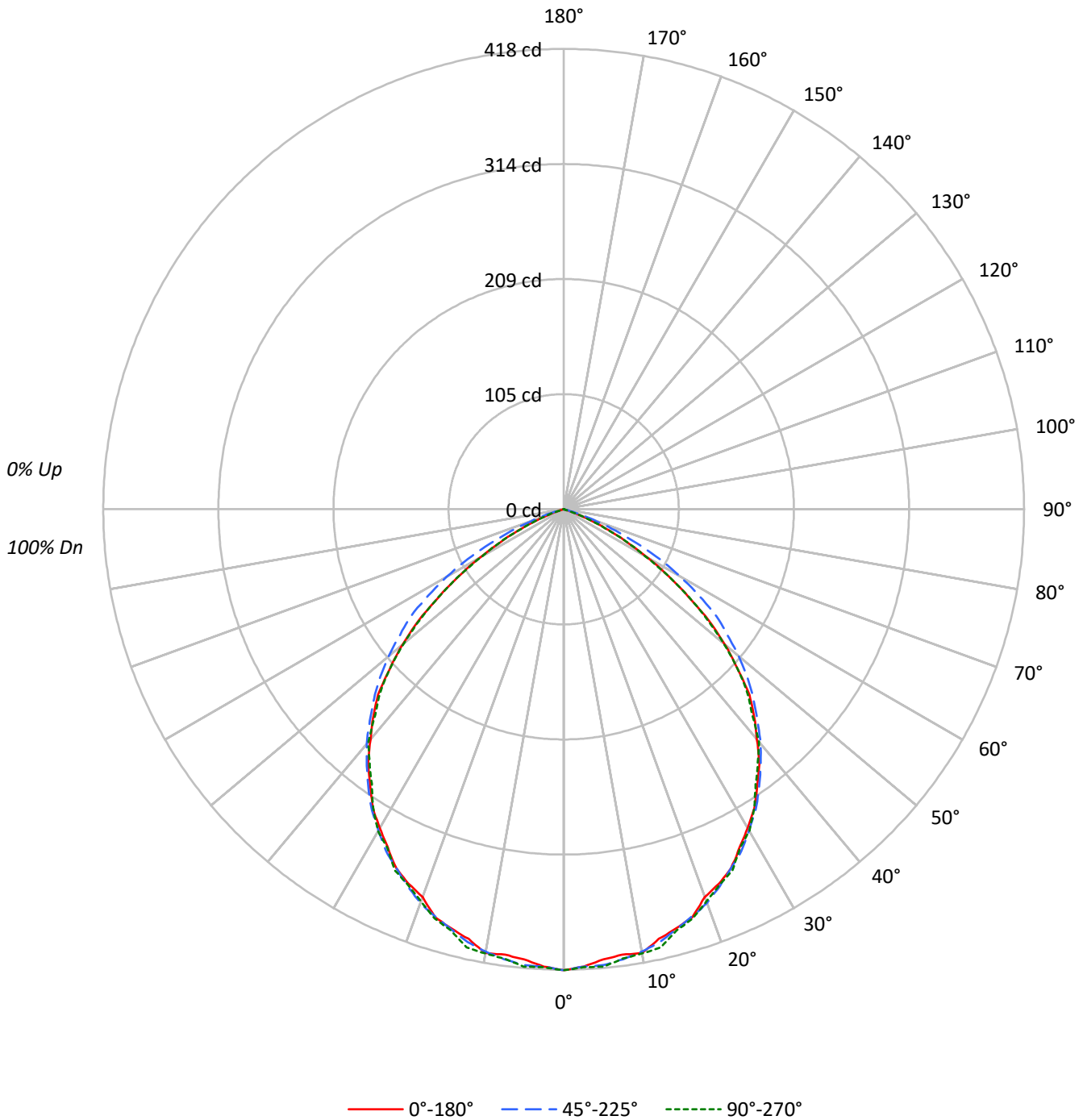
Lumens per Lamp: N/A
 Luminaire Lumens: 894.0 lumens
 Efficiency: N/A
 Efficacy: 90.6 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 9.87
 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



TEST NUMBER: P#

CATALOG NUMBER: FLDSQ4C08D010 FEU4C089050 F4LC-CSSQ-MW

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	111	108	104	101	109	105	102	100	101	99	96		97	95	94		94	92	91	89
2	103	96	91	86	100	94	89	85	91	87	83		88	84	81		85	82	79	77
3	95	86	79	74	93	85	78	73	82	76	72		79	74	71		77	73	69	67
4	88	77	70	64	86	76	69	63	74	67	63		71	66	62		69	65	61	59
5	81	70	62	56	79	69	61	56	67	60	55		65	59	54		63	58	54	52
6	75	63	55	49	73	62	55	49	61	54	49		59	53	48		57	52	48	46
7	70	58	50	44	68	57	49	44	55	49	44		54	48	43		53	47	43	41
8	65	53	45	40	64	52	45	39	51	44	39		50	44	39		49	43	39	37
9	61	49	41	36	60	48	41	36	47	40	36		46	40	35		45	39	35	33
10	57	45	38	33	56	44	37	33	44	37	32		43	37	32		42	36	32	31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	40381	40381	40381
5°	39731	40244	40361
10°	40073	39955	40132
15°	39368	39428	39548
20°	38454	39070	38885
25°	38284	38284	38540
30°	37224	37491	37558
35°	36056	36409	35785
40°	34374	35041	34739
45°	32531	33254	32204
50°	28641	31148	28461
55°	23198	28497	23299
60°	16982	23640	16635
65°	10320	16827	10046
70°	4034	9056	3865
75°	447	2423	447
80°	333	333	333
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.5	4.4
10°-20°	111.8	12.5
20°-30°	165.9	18.6
30°-40°	192.2	21.5
40°-50°	184.3	20.6
50°-60°	135.5	15.2
60°-70°	58.5	6.5
70°-80°	6.3	0.7
80°-90°	0.1	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°	317.2	35.5
0°-40°	509.3	57.0
0°-60°	829.1	92.7
0°-90°	894.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	894.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	418	418	418	418	418	
5°	410	414	416	416	417	39
15°	394	396	395	395	396	111
25°	360	359	360	360	362	165
35°	306	308	309	308	304	191
45°	238	239	244	240	236	181
55°	138	152	169	152	138	124
65°	45	56	74	56	44	46
75°	1	2	6	1	1	4
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089050 F4LC-CSSQ-MW

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	418.5	418.5	418.5	418.5	418.5	418.5	418.5	418.5	418.5	418.5	418.5
2.5°	415.5	420.3	420.9	417.9	416.7	414.9	419.1	416.1	417.3	416.1	415.5
5°	410.2	415.5	416.1	416.1	414.9	414.3	416.1	415.5	414.9	413.8	415.5
7.5°	407.8	410.8	413.8	410.2	412.0	411.4	415.5	413.8	413.1	413.1	412.0
10°	409.0	408.4	410.8	407.2	408.4	407.2	410.8	410.8	409.6	408.4	407.8
12.5°	399.5	404.2	404.2	403.6	402.5	400.7	404.2	406.6	403.0	403.0	402.5
15°	394.1	395.3	395.9	395.9	395.3	396.5	398.3	395.9	396.5	393.5	394.7
17.5°	388.2	385.8	387.6	386.4	387.0	388.2	390.6	390.6	387.0	386.4	387.6
20°	374.5	381.6	382.2	378.7	379.3	379.3	383.4	379.9	382.2	379.3	380.5
22.5°	368.0	372.7	373.3	368.6	371.5	368.0	372.1	366.8	372.7	368.6	370.3
25°	359.6	359.1	360.8	358.5	359.1	359.1	362.0	359.6	361.4	359.1	359.6
27.5°	346.0	350.7	350.1	347.8	348.9	348.4	354.3	347.8	351.3	348.4	349.6
30°	334.1	338.3	337.1	334.7	334.7	332.9	339.4	337.6	337.1	337.1	336.5
32.5°	322.2	322.8	321.6	322.2	322.8	320.4	325.8	323.4	322.8	323.4	324.0
35°	306.1	306.1	307.3	305.6	307.9	307.9	312.7	309.7	309.1	307.3	309.1
37.5°	291.9	290.1	290.7	290.7	291.9	293.1	295.4	294.3	294.3	292.5	293.7
40°	272.9	271.7	273.4	273.4	275.2	275.2	277.6	276.4	278.2	278.2	278.2
42.5°	256.2	256.2	255.0	256.8	257.4	256.8	261.0	260.4	261.0	259.8	260.4
45°	238.4	238.4	237.2	236.6	239.6	239.0	243.7	241.9	244.3	243.1	243.7
47.5°	214.0	217.0	215.2	217.0	220.5	221.2	224.1	222.9	225.3	223.5	225.9
50°	190.8	190.8	192.6	195.0	198.5	199.2	202.7	205.1	206.3	206.9	207.5
52.5°	166.5	165.9	167.6	170.6	173.6	176.0	179.5	183.1	185.5	189.0	187.2
55°	137.9	139.1	140.9	144.5	149.2	152.2	155.2	159.9	164.1	165.9	169.4
57.5°	113.5	112.3	113.5	118.3	123.6	126.0	130.2	135.0	140.9	144.5	145.6
60°	88.0	88.6	89.8	93.9	98.1	101.7	103.4	111.2	116.5	120.1	122.5
62.5°	64.8	66.0	67.2	70.7	74.9	77.9	80.8	87.4	92.1	95.7	98.1
65°	45.2	45.8	47.6	49.3	53.5	56.5	58.8	64.2	69.0	71.9	73.7
67.5°	27.9	28.5	29.7	32.1	35.1	37.4	39.8	43.4	47.6	50.5	51.1
70°	14.3	14.9	15.5	17.2	19.6	20.8	22.6	25.6	28.5	30.9	32.1
72.5°	4.8	4.8	5.4	6.5	7.7	8.9	9.5	12.5	14.9	16.1	16.6
75°	1.2	1.2	1.2	1.2	1.2	1.8	1.8	3.6	4.8	5.9	6.5
77.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.2	1.2
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	0.0	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°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	418.5	418.5	418.5	418.5	418.5	418.5	418.5	418.5	418.5	418.5
2.5°	418.5	417.3	416.7	417.3	417.3	416.7	418.5	420.9	423.8	416.1
5°	417.9	416.7	417.9	414.3	416.1	414.9	417.3	416.7	419.1	416.7
7.5°	416.1	413.8	414.3	412.6	414.9	412.0	413.8	417.3	414.9	411.4
10°	410.2	409.0	413.1	407.2	406.0	408.4	413.1	409.6	408.4	409.6
12.5°	404.2	404.2	406.0	401.3	401.8	403.0	405.4	403.0	404.2	407.2
15°	397.7	396.5	399.5	395.9	395.3	394.1	396.5	396.5	397.7	395.9
17.5°	390.0	388.2	388.2	387.0	386.4	389.4	390.6	391.2	391.8	389.4
20°	380.5	379.9	381.6	379.9	380.5	381.1	381.1	379.9	385.2	378.7
22.5°	370.3	372.1	369.8	368.6	369.8	370.9	370.9	371.5	370.3	369.2
25°	360.3	361.4	362.0	358.5	360.3	358.5	362.6	363.2	360.8	362.0
27.5°	351.3	349.6	348.9	346.6	347.8	347.2	347.8	347.8	351.3	346.6
30°	337.6	335.9	336.5	334.7	335.3	334.7	335.3	335.3	337.6	337.1
32.5°	324.6	322.8	323.4	321.6	321.6	322.2	321.0	321.0	322.8	321.6
35°	312.1	307.9	308.5	307.9	308.5	306.1	306.1	305.6	306.7	303.8
37.5°	294.3	292.5	291.9	291.3	291.9	290.7	291.9	290.1	291.9	289.5
40°	278.2	277.0	277.6	274.1	274.1	274.6	273.4	272.9	273.4	275.8
42.5°	262.2	259.8	258.6	257.4	258.0	256.2	255.6	254.4	255.6	253.2
45°	243.1	243.1	242.5	239.6	240.2	240.2	237.8	235.4	236.0	236.0
47.5°	225.9	224.7	224.1	221.2	220.5	220.0	217.6	215.8	215.8	214.0
50°	206.9	205.7	203.9	200.9	199.7	196.2	194.4	192.0	189.6	189.6
52.5°	189.0	184.9	182.5	177.7	176.0	174.2	169.4	167.6	165.9	164.1
55°	167.6	164.1	159.3	154.0	151.6	148.6	143.9	140.3	137.9	138.5
57.5°	146.8	140.9	136.1	129.0	126.0	124.2	119.5	114.7	112.3	112.3
60°	121.3	116.5	110.6	104.0	101.7	98.7	92.7	89.8	88.0	86.2
62.5°	96.9	93.3	88.0	79.7	77.9	74.9	70.7	67.2	65.4	65.4
65°	72.5	69.0	64.2	58.3	55.9	53.5	49.9	46.4	44.6	44.0
67.5°	51.1	47.0	42.8	38.1	36.3	35.1	31.5	29.1	27.9	27.3
70°	30.9	28.5	25.6	22.0	20.2	19.0	16.6	14.9	14.3	13.7
72.5°	16.1	14.3	11.9	9.5	8.3	7.1	5.9	4.8	4.2	4.2
75°	5.9	4.8	3.0	1.8	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	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
82.5°	0.0	0.0	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	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)