

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: **FLDSQ4C10D010 FEU4C109030 F4LC-CSSQ-MMS**

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: FLDSQ4C10D010 FEU4C109030 F4LC-CSSQ-MMS  
 Description: 4 INCH 1000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MMS FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

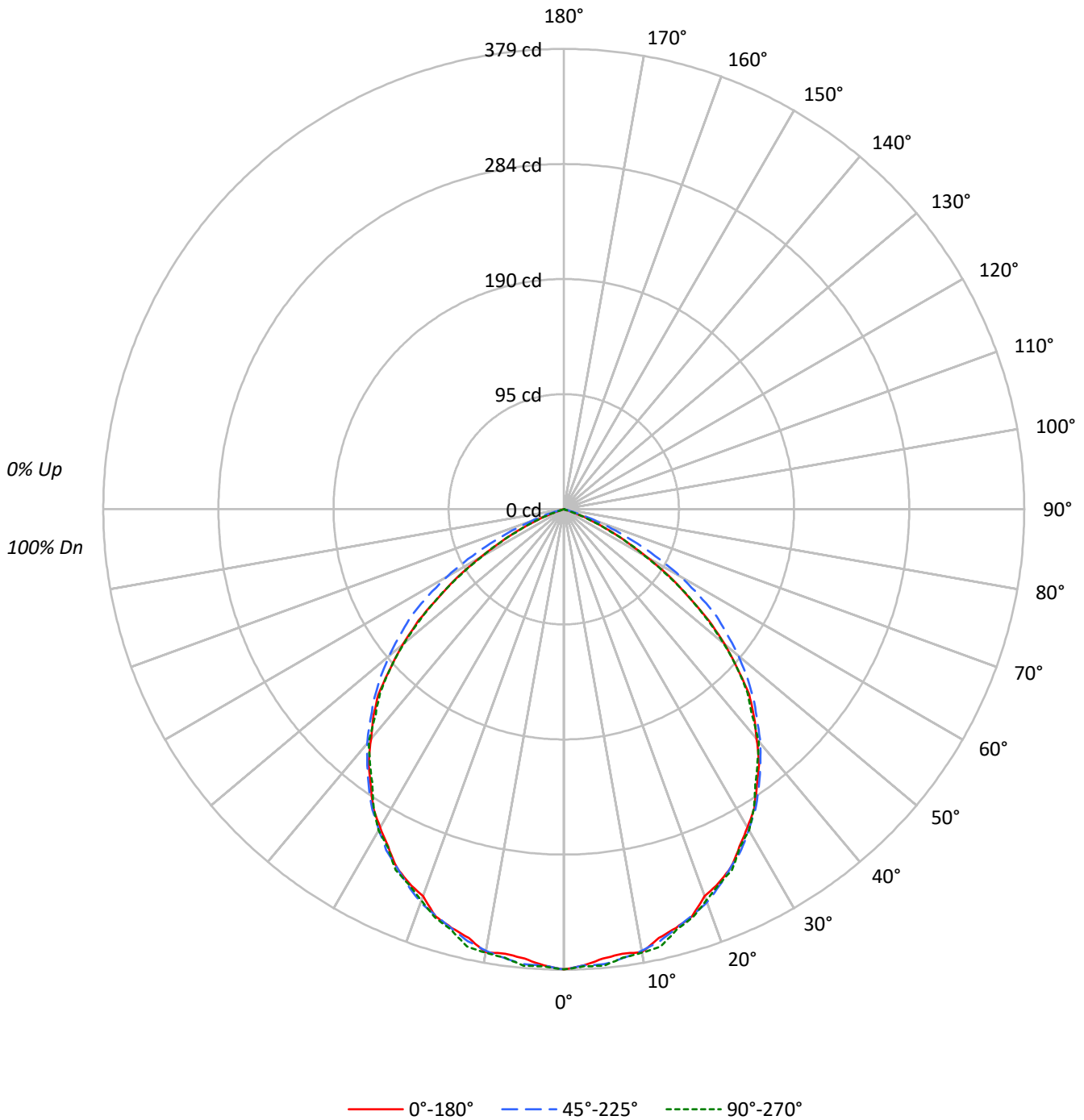
Lumens per Lamp: N/A  
 Luminaire Lumens: 809.0 lumens  
 Efficiency: N/A  
 Efficacy: 83.0 lumens/watt  
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 9.75  
 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	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	34
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°	36540	36540	36540
5°	35953	36418	36525
10°	36261	36154	36310
15°	35632	35682	35792
20°	34799	35353	35189
25°	34643	34643	34878
30°	33681	33926	33982
35°	32628	32946	32381
40°	31099	31703	31439
45°	29434	30102	29147
50°	25924	28176	25759
55°	20994	25789	21078
60°	15361	21382	15052
65°	9338	15228	9087
70°	3639	8210	3498
75°	410	2200	410
80°	278	278	278
85°	0	0	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.7	4.4
10°-20°	101.2	12.5
20°-30°	150.1	18.6
30°-40°	173.9	21.5
40°-50°	166.7	20.6
50°-60°	122.6	15.2
60°-70°	53.0	6.5
70°-80°	5.7	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°	287.0	35.5
0°-40°	460.9	57.0
0°-60°	750.2	92.7
0°-90°	809.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	809.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	379	379	379	379	379	
5°	371	375	376	377	377	35
15°	357	359	357	358	358	101
25°	325	325	325	326	328	149
35°	277	279	280	279	275	173
45°	216	216	221	217	214	164
55°	125	138	153	137	125	112
65°	41	51	67	51	40	42
75°	1	2	6	1	1	3
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C10D010 FEU4C109030 F4LC-CSSQ-MMS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	378.7	378.7	378.7	378.7	378.7	378.7	378.7	378.7	378.7	378.7	378.7
2.5°	376.0	380.3	380.9	378.2	377.1	375.5	379.2	376.6	377.6	376.6	376.0
5°	371.2	376.0	376.6	376.6	375.5	374.9	376.6	376.0	375.5	374.4	376.0
7.5°	369.0	371.7	374.4	371.2	372.8	372.3	376.0	374.4	373.9	373.9	372.8
10°	370.1	369.6	371.7	368.5	369.6	368.5	371.7	371.7	370.6	369.6	369.0
12.5°	361.5	365.8	365.8	365.3	364.2	362.6	365.8	368.0	364.7	364.7	364.2
15°	356.7	357.7	358.3	358.3	357.7	358.8	360.4	358.3	358.8	356.1	357.2
17.5°	351.3	349.1	350.7	349.7	350.2	351.3	353.4	353.4	350.2	349.7	350.7
20°	338.9	345.4	345.9	342.7	343.2	343.2	347.0	343.8	345.9	343.2	344.3
22.5°	333.0	337.3	337.8	333.5	336.2	333.0	336.8	331.9	337.3	333.5	335.1
25°	325.4	324.9	326.5	324.4	324.9	324.9	327.6	325.4	327.1	324.9	325.4
27.5°	313.1	317.4	316.8	314.7	315.8	315.2	320.6	314.7	317.9	315.2	316.3
30°	302.3	306.1	305.0	302.9	302.9	301.2	307.2	305.5	305.0	305.0	304.5
32.5°	291.6	292.1	291.0	291.6	292.1	290.0	294.8	292.6	292.1	292.6	293.2
35°	277.0	277.0	278.1	276.5	278.7	278.7	283.0	280.3	279.7	278.1	279.7
37.5°	264.1	262.5	263.1	263.1	264.1	265.2	267.4	266.3	266.3	264.7	265.7
40°	246.9	245.8	247.4	247.4	249.1	249.1	251.2	250.1	251.7	251.7	251.7
42.5°	231.9	231.9	230.8	232.4	232.9	232.4	236.2	235.6	236.2	235.1	235.6
45°	215.7	215.7	214.6	214.1	216.8	216.3	220.6	218.9	221.1	220.0	220.6
47.5°	193.7	196.3	194.7	196.3	199.6	200.1	202.8	201.7	203.9	202.3	204.4
50°	172.7	172.7	174.3	176.4	179.7	180.2	183.4	185.6	186.7	187.2	187.7
52.5°	150.6	150.1	151.7	154.4	157.1	159.2	162.5	165.7	167.8	171.1	169.4
55°	124.8	125.9	127.5	130.7	135.0	137.7	140.4	144.7	148.5	150.1	153.3
57.5°	102.7	101.7	102.7	107.0	111.9	114.0	117.8	122.1	127.5	130.7	131.8
60°	79.6	80.2	81.2	85.0	88.8	92.0	93.6	100.6	105.4	108.7	110.8
62.5°	58.6	59.7	60.8	64.0	67.8	70.5	73.2	79.1	83.4	86.6	88.8
65°	40.9	41.4	43.0	44.6	48.4	51.1	53.2	58.1	62.4	65.1	66.7
67.5°	25.3	25.8	26.9	29.1	31.7	33.9	36.0	39.3	43.0	45.7	46.3
70°	12.9	13.5	14.0	15.6	17.8	18.8	20.4	23.1	25.8	28.0	29.1
72.5°	4.3	4.3	4.9	5.9	7.0	8.1	8.6	11.3	13.5	14.5	15.1
75°	1.1	1.1	1.1	1.1	1.1	1.6	1.6	3.2	4.3	5.4	5.9
77.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.1	1.1
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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°	378.7	378.7	378.7	378.7	378.7	378.7	378.7	378.7	378.7	378.7
2.5°	378.7	377.6	377.1	377.6	377.6	377.1	378.7	380.9	383.5	376.6
5°	378.2	377.1	378.2	374.9	376.6	375.5	377.6	377.1	379.2	377.1
7.5°	376.6	374.4	374.9	373.3	375.5	372.8	374.4	377.6	375.5	372.3
10°	371.2	370.1	373.9	368.5	367.4	369.6	373.9	370.6	369.6	370.6
12.5°	365.8	365.8	367.4	363.1	363.6	364.7	366.9	364.7	365.8	368.5
15°	359.9	358.8	361.5	358.3	357.7	356.7	358.8	358.8	359.9	358.3
17.5°	352.9	351.3	351.3	350.2	349.7	352.4	353.4	354.0	354.5	352.4
20°	344.3	343.8	345.4	343.8	344.3	344.8	344.8	343.8	348.6	342.7
22.5°	335.1	336.8	334.6	333.5	334.6	335.7	335.7	336.2	335.1	334.1
25°	326.0	327.1	327.6	324.4	326.0	324.4	328.1	328.7	326.5	327.6
27.5°	317.9	316.3	315.8	313.6	314.7	314.2	314.7	314.7	317.9	313.6
30°	305.5	303.9	304.5	302.9	303.4	302.9	303.4	303.4	305.5	305.0
32.5°	293.7	292.1	292.6	291.0	291.0	291.6	290.5	290.5	292.1	291.0
35°	282.4	278.7	279.2	278.7	279.2	277.0	277.0	276.5	277.6	274.9
37.5°	266.3	264.7	264.1	263.6	264.1	263.1	264.1	262.5	264.1	262.0
40°	251.7	250.7	251.2	248.0	248.0	248.5	247.4	246.9	247.4	249.6
42.5°	237.2	235.1	234.0	232.9	233.5	231.9	231.3	230.2	231.3	229.2
45°	220.0	220.0	219.5	216.8	217.3	217.3	215.2	213.0	213.6	213.6
47.5°	204.4	203.4	202.8	200.1	199.6	199.0	196.9	195.3	195.3	193.7
50°	187.2	186.1	184.5	181.8	180.7	177.5	175.9	173.8	171.6	171.6
52.5°	171.1	167.3	165.1	160.8	159.2	157.6	153.3	151.7	150.1	148.5
55°	151.7	148.5	144.2	139.3	137.2	134.5	130.2	126.9	124.8	125.3
57.5°	132.9	127.5	123.2	116.7	114.0	112.4	108.1	103.8	101.7	101.7
60°	109.7	105.4	100.1	94.1	92.0	89.3	83.9	81.2	79.6	78.0
62.5°	87.7	84.5	79.6	72.1	70.5	67.8	64.0	60.8	59.2	59.2
65°	65.6	62.4	58.1	52.7	50.6	48.4	45.2	42.0	40.3	39.8
67.5°	46.3	42.5	38.7	34.4	32.8	31.7	28.5	26.4	25.3	24.7
70°	28.0	25.8	23.1	19.9	18.3	17.2	15.1	13.5	12.9	12.4
72.5°	14.5	12.9	10.8	8.6	7.5	6.5	5.4	4.3	3.8	3.8
75°	5.4	4.3	2.7	1.6	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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)