

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 FEU4C089030 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: FLDSQ4C08D010 FEU4C089030 F4LC-CSSQ-MMS
 Description: 4 INCH 800 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MMS FINISH
 Light Source: -
 Ballast/Driver: -

Summary

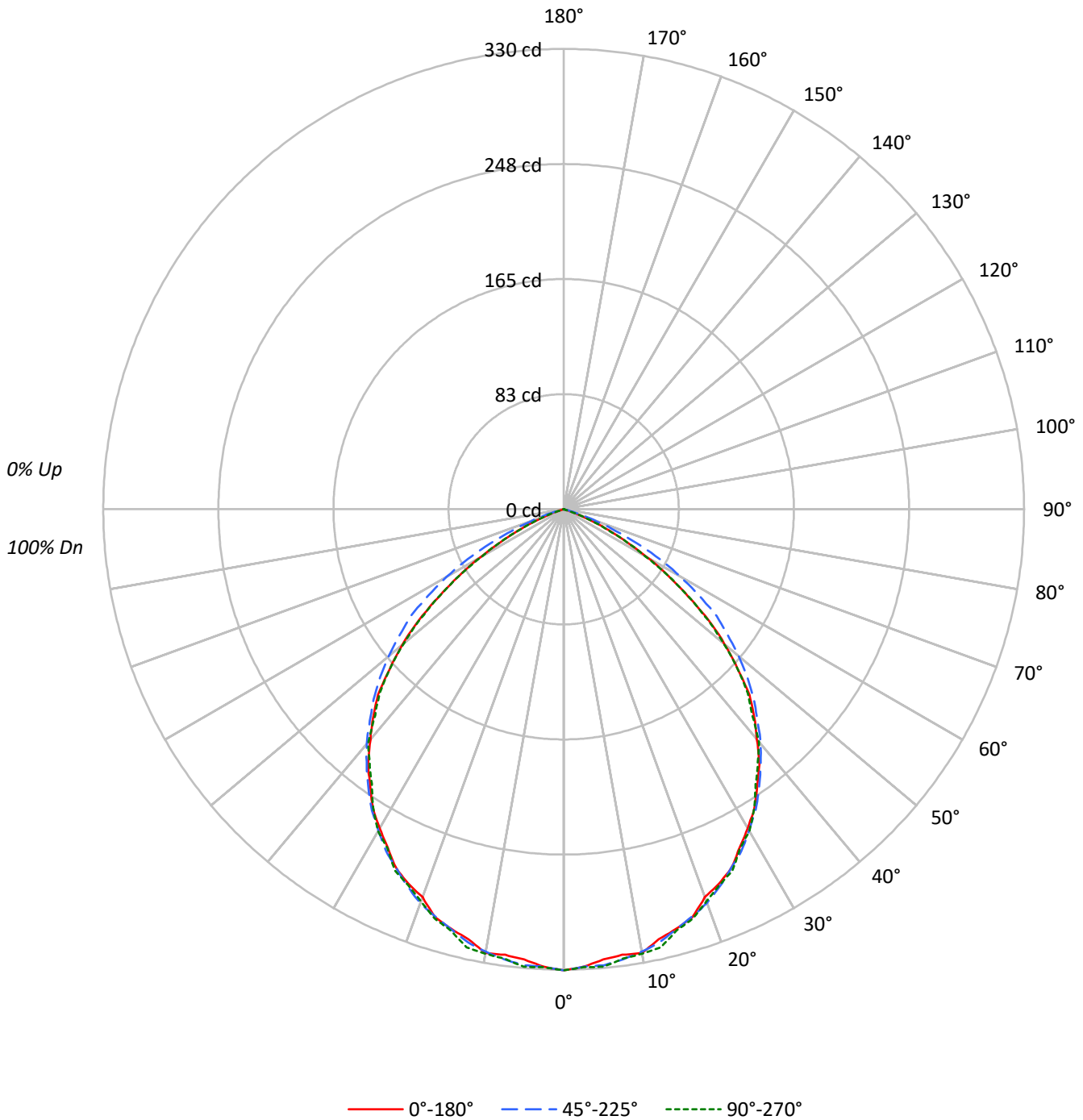
Lumens per Lamp: N/A
 Luminaire Lumens: 706.0 lumens
 Efficiency: N/A
 Efficacy: 71.5 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	31890	31890	31890
5°	31372	31779	31876
10°	31647	31559	31696
15°	31097	31137	31226
20°	30373	30845	30702
25°	30236	30236	30438
30°	29391	29603	29659
35°	28482	28753	28258
40°	27144	27673	27434
45°	25681	26268	25435
50°	22622	24588	22486
55°	18320	22508	18404
60°	13412	18661	13142
65°	8151	13288	7922
70°	3188	7166	3047
75°	336	1939	336
80°	278	278	278
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.2	4.4
10°-20°	88.3	12.5
20°-30°	131.0	18.6
30°-40°	151.8	21.5
40°-50°	145.5	20.6
50°-60°	107.0	15.2
60°-70°	46.2	6.5
70°-80°	5.0	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°	250.5	35.5
0°-40°	402.2	57.0
0°-60°	654.7	92.7
0°-90°	706.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	706.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	330	330	330	330	330	
5°	324	327	328	329	329	31
15°	311	313	312	312	313	88
25°	284	284	284	284	286	130
35°	242	243	244	244	240	151
45°	188	189	192	190	186	143
55°	109	120	134	120	109	98
65°	36	45	58	44	35	37
75°	1	1	5	1	1	3
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089030 F4LC-CSSQ-MMS

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	330.5	330.5	330.5	330.5	330.5	330.5	330.5	330.5	330.5	330.5	330.5
2.5°	328.1	331.9	332.4	330.0	329.1	327.7	331.0	328.6	329.6	328.6	328.1
5°	323.9	328.1	328.6	328.6	327.7	327.2	328.6	328.1	327.7	326.7	328.1
7.5°	322.1	324.4	326.7	323.9	325.3	324.9	328.1	326.7	326.3	326.3	325.3
10°	323.0	322.5	324.4	321.6	322.5	321.6	324.4	324.4	323.5	322.5	322.1
12.5°	315.5	319.2	319.2	318.8	317.8	316.4	319.2	321.1	318.3	318.3	317.8
15°	311.3	312.2	312.6	312.6	312.2	313.1	314.5	312.6	313.1	310.8	311.7
17.5°	306.6	304.7	306.1	305.1	305.6	306.6	308.4	308.4	305.6	305.1	306.1
20°	295.8	301.4	301.9	299.0	299.5	299.5	302.8	300.0	301.9	299.5	300.4
22.5°	290.6	294.3	294.8	291.1	293.4	290.6	293.9	289.6	294.3	291.1	292.5
25°	284.0	283.6	285.0	283.1	283.6	283.6	285.9	284.0	285.4	283.6	284.0
27.5°	273.2	277.0	276.5	274.6	275.6	275.1	279.8	274.6	277.4	275.1	276.0
30°	263.8	267.1	266.2	264.3	264.3	262.9	268.1	266.6	266.2	266.2	265.7
32.5°	254.4	254.9	254.0	254.4	254.9	253.0	257.3	255.4	254.9	255.4	255.9
35°	241.8	241.8	242.7	241.3	243.2	243.2	246.9	244.6	244.1	242.7	244.1
37.5°	230.5	229.1	229.6	229.6	230.5	231.4	233.3	232.4	232.4	231.0	231.9
40°	215.5	214.5	215.9	215.9	217.4	217.4	219.2	218.3	219.7	219.7	219.7
42.5°	202.3	202.3	201.4	202.8	203.3	202.8	206.1	205.6	206.1	205.2	205.6
45°	188.2	188.2	187.3	186.8	189.2	188.7	192.5	191.1	192.9	192.0	192.5
47.5°	169.0	171.4	169.9	171.4	174.2	174.6	177.0	176.0	177.9	176.5	178.4
50°	150.7	150.7	152.1	154.0	156.8	157.3	160.1	162.0	162.9	163.4	163.8
52.5°	131.5	131.0	132.4	134.7	137.1	139.0	141.8	144.6	146.5	149.3	147.9
55°	108.9	109.8	111.3	114.1	117.8	120.2	122.5	126.3	129.6	131.0	133.8
57.5°	89.7	88.7	89.7	93.4	97.6	99.5	102.8	106.6	111.3	114.1	115.0
60°	69.5	70.0	70.9	74.2	77.5	80.3	81.7	87.8	92.0	94.8	96.7
62.5°	51.2	52.1	53.1	55.9	59.1	61.5	63.8	69.0	72.8	75.6	77.5
65°	35.7	36.1	37.6	39.0	42.3	44.6	46.5	50.7	54.5	56.8	58.2
67.5°	22.1	22.5	23.5	25.4	27.7	29.6	31.5	34.3	37.6	39.9	40.4
70°	11.3	11.7	12.2	13.6	15.5	16.4	17.8	20.2	22.5	24.4	25.4
72.5°	3.8	3.8	4.2	5.2	6.1	7.0	7.5	9.9	11.7	12.7	13.1
75°	0.9	0.9	0.9	0.9	0.9	1.4	1.4	2.8	3.8	4.7	5.2
77.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.9	0.9
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°	330.5	330.5	330.5	330.5	330.5	330.5	330.5	330.5	330.5	330.5
2.5°	330.5	329.6	329.1	329.6	329.6	329.1	330.5	332.4	334.7	328.6
5°	330.0	329.1	330.0	327.2	328.6	327.7	329.6	329.1	331.0	329.1
7.5°	328.6	326.7	327.2	325.8	327.7	325.3	326.7	329.6	327.7	324.9
10°	323.9	323.0	326.3	321.6	320.6	322.5	326.3	323.5	322.5	323.5
12.5°	319.2	319.2	320.6	316.9	317.3	318.3	320.2	318.3	319.2	321.6
15°	314.1	313.1	315.5	312.6	312.2	311.3	313.1	313.1	314.1	312.6
17.5°	308.0	306.6	306.6	305.6	305.1	307.5	308.4	308.9	309.4	307.5
20°	300.4	300.0	301.4	300.0	300.4	300.9	300.9	300.0	304.2	299.0
22.5°	292.5	293.9	292.0	291.1	292.0	292.9	292.9	293.4	292.5	291.5
25°	284.5	285.4	285.9	283.1	284.5	283.1	286.4	286.8	285.0	285.9
27.5°	277.4	276.0	275.6	273.7	274.6	274.2	274.6	274.6	277.4	273.7
30°	266.6	265.2	265.7	264.3	264.8	264.3	264.8	264.8	266.6	266.2
32.5°	256.3	254.9	255.4	254.0	254.0	254.4	253.5	253.5	254.9	254.0
35°	246.5	243.2	243.6	243.2	243.6	241.8	241.8	241.3	242.2	239.9
37.5°	232.4	231.0	230.5	230.0	230.5	229.6	230.5	229.1	230.5	228.6
40°	219.7	218.8	219.2	216.4	216.4	216.9	215.9	215.5	215.9	217.8
42.5°	207.0	205.2	204.2	203.3	203.7	202.3	201.9	200.9	201.9	200.0
45°	192.0	192.0	191.5	189.2	189.7	189.7	187.8	185.9	186.4	186.4
47.5°	178.4	177.5	177.0	174.6	174.2	173.7	171.8	170.4	170.4	169.0
50°	163.4	162.4	161.0	158.7	157.7	154.9	153.5	151.6	149.8	149.8
52.5°	149.3	146.0	144.1	140.4	139.0	137.5	133.8	132.4	131.0	129.6
55°	132.4	129.6	125.8	121.6	119.7	117.4	113.6	110.8	108.9	109.4
57.5°	116.0	111.3	107.5	101.9	99.5	98.1	94.4	90.6	88.7	88.7
60°	95.8	92.0	87.3	82.2	80.3	77.9	73.2	70.9	69.5	68.1
62.5°	76.5	73.7	69.5	62.9	61.5	59.1	55.9	53.1	51.6	51.6
65°	57.3	54.5	50.7	46.0	44.1	42.3	39.4	36.6	35.2	34.7
67.5°	40.4	37.1	33.8	30.1	28.6	27.7	24.9	23.0	22.1	21.6
70°	24.4	22.5	20.2	17.4	16.0	15.0	13.1	11.7	11.3	10.8
72.5°	12.7	11.3	9.4	7.5	6.6	5.6	4.7	3.8	3.3	3.3
75°	4.7	3.8	2.4	1.4	0.9	0.9	0.9	0.9	0.9	0.9
77.5°	0.9	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)