

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 FEU4C089027 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 FEU4C089027 F4LC-CSSQ-MMS
 Description: 4 INCH 800 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MMS FINISH
 Light Source: -
 Ballast/Driver: -

Summary

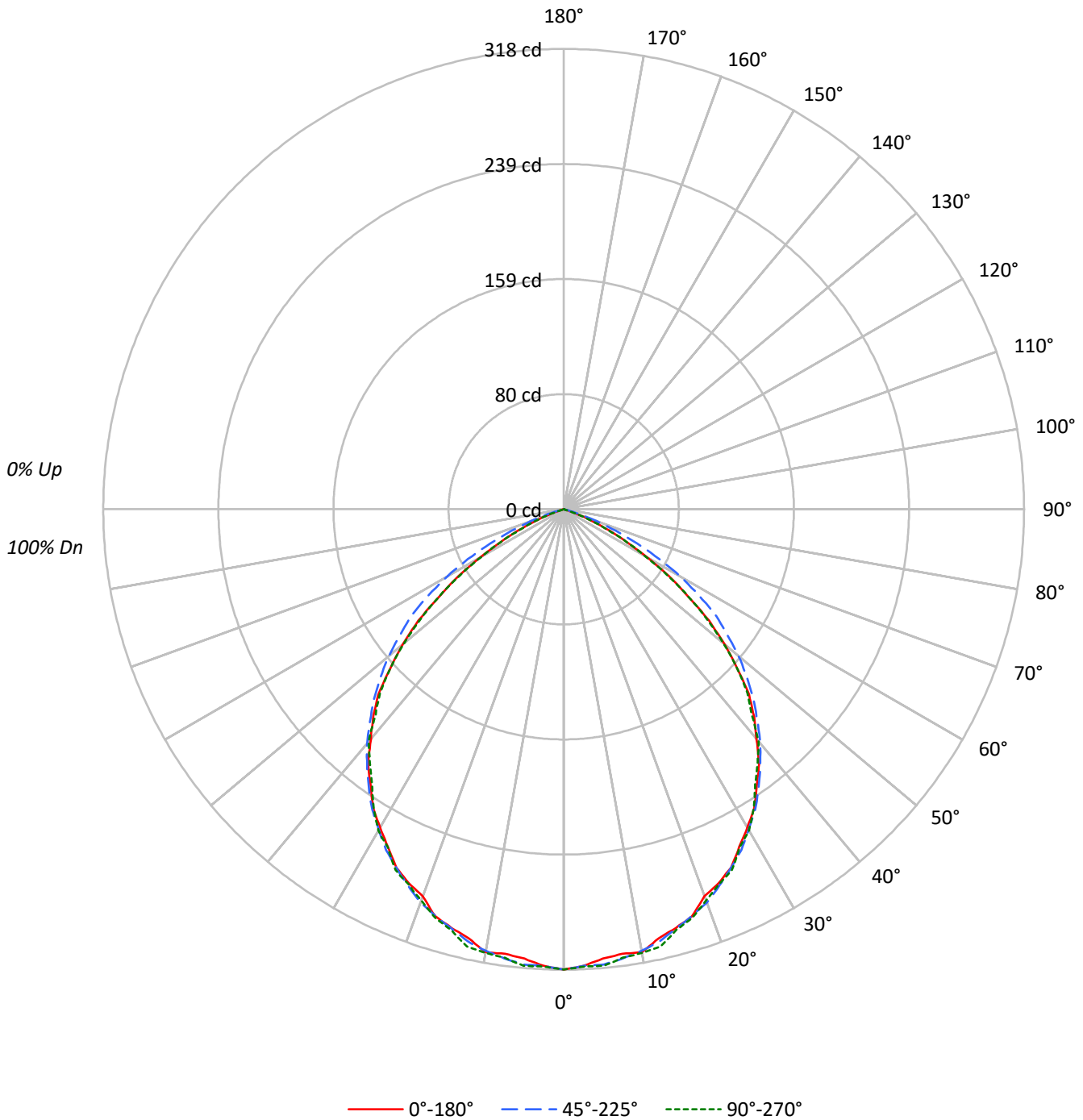
Lumens per Lamp: N/A
 Luminaire Lumens: 679.0 lumens
 Efficiency: N/A
 Efficacy: 68.8 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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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CATALOG NUMBER: FLDSQ4C08D010 FEU4C089027 F4LC-CSSQ-MMS

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°	30674	30674	30674
5°	30171	30568	30655
10°	30432	30344	30481
15°	29898	29948	30038
20°	29203	29675	29531
25°	29086	29086	29278
30°	28266	28467	28522
35°	27386	27657	27174
40°	26098	26615	26388
45°	24699	25258	24453
50°	21751	23657	21616
55°	17613	21650	17697
60°	12891	17947	12640
65°	7831	12785	7626
70°	3047	6884	2934
75°	336	1864	336
80°	278	278	278
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.0	4.4
10°-20°	84.9	12.5
20°-30°	126.0	18.6
30°-40°	146.0	21.5
40°-50°	139.9	20.6
50°-60°	102.9	15.2
60°-70°	44.4	6.5
70°-80°	4.8	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°	240.9	35.5
0°-40°	386.8	57.0
0°-60°	629.7	92.7
0°-90°	679.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	679.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	318	318	318	318	318	
5°	312	315	316	316	316	30
15°	299	301	300	300	301	84
25°	273	273	273	274	275	125
35°	232	234	235	234	231	145
45°	181	182	185	182	179	138
55°	105	116	129	115	105	94
65°	34	43	56	42	33	35
75°	1	1	5	1	1	3
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

TEST NUMBER: P#
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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	317.9	317.9	317.9	317.9	317.9	317.9	317.9	317.9	317.9	317.9	317.9
2.5°	315.6	319.2	319.7	317.4	316.5	315.2	318.3	316.1	317.0	316.1	315.6
5°	311.5	315.6	316.1	316.1	315.2	314.7	316.1	315.6	315.2	314.3	315.6
7.5°	309.7	312.0	314.3	311.5	312.9	312.4	315.6	314.3	313.8	313.8	312.9
10°	310.6	310.2	312.0	309.3	310.2	309.3	312.0	312.0	311.1	310.2	309.7
12.5°	303.4	307.0	307.0	306.6	305.7	304.3	307.0	308.8	306.1	306.1	305.7
15°	299.3	300.3	300.7	300.7	300.3	301.2	302.5	300.7	301.2	298.9	299.8
17.5°	294.8	293.0	294.4	293.5	293.9	294.8	296.6	296.6	293.9	293.5	294.4
20°	284.4	289.9	290.3	287.6	288.1	288.1	291.2	288.5	290.3	288.1	289.0
22.5°	279.5	283.1	283.5	279.9	282.2	279.5	282.6	278.6	283.1	279.9	281.3
25°	273.2	272.7	274.1	272.2	272.7	272.7	275.0	273.2	274.5	272.7	273.2
27.5°	262.8	266.4	265.9	264.1	265.0	264.6	269.1	264.1	266.8	264.6	265.5
30°	253.7	256.9	256.0	254.2	254.2	252.8	257.8	256.4	256.0	256.0	255.5
32.5°	244.7	245.2	244.3	244.7	245.2	243.4	247.4	245.6	245.2	245.6	246.1
35°	232.5	232.5	233.4	232.1	233.9	233.9	237.5	235.2	234.8	233.4	234.8
37.5°	221.7	220.3	220.8	220.8	221.7	222.6	224.4	223.5	223.5	222.1	223.0
40°	207.2	206.3	207.7	207.7	209.0	209.0	210.9	209.9	211.3	211.3	211.3
42.5°	194.6	194.6	193.7	195.0	195.5	195.0	198.2	197.8	198.2	197.3	197.8
45°	181.0	181.0	180.1	179.7	181.9	181.5	185.1	183.8	185.6	184.7	185.1
47.5°	162.5	164.8	163.4	164.8	167.5	168.0	170.2	169.3	171.1	169.8	171.6
50°	144.9	144.9	146.3	148.1	150.8	151.3	154.0	155.8	156.7	157.1	157.6
52.5°	126.4	126.0	127.3	129.6	131.8	133.6	136.4	139.1	140.9	143.6	142.2
55°	104.7	105.6	107.0	109.7	113.3	115.6	117.8	121.5	124.6	126.0	128.7
57.5°	86.2	85.3	86.2	89.8	93.9	95.7	98.9	102.5	107.0	109.7	110.6
60°	66.8	67.3	68.2	71.3	74.5	77.2	78.6	84.4	88.5	91.2	93.0
62.5°	49.2	50.1	51.0	53.7	56.9	59.2	61.4	66.4	70.0	72.7	74.5
65°	34.3	34.8	36.1	37.5	40.6	42.9	44.7	48.8	52.4	54.6	56.0
67.5°	21.2	21.7	22.6	24.4	26.6	28.4	30.2	33.0	36.1	38.4	38.8
70°	10.8	11.3	11.7	13.1	14.9	15.8	17.2	19.4	21.7	23.5	24.4
72.5°	3.6	3.6	4.1	5.0	5.9	6.8	7.2	9.5	11.3	12.2	12.6
75°	0.9	0.9	0.9	0.9	0.9	1.4	1.4	2.7	3.6	4.5	5.0
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°	317.9	317.9	317.9	317.9	317.9	317.9	317.9	317.9	317.9	317.9
2.5°	317.9	317.0	316.5	317.0	317.0	316.5	317.9	319.7	321.9	316.1
5°	317.4	316.5	317.4	314.7	316.1	315.2	317.0	316.5	318.3	316.5
7.5°	316.1	314.3	314.7	313.3	315.2	312.9	314.3	317.0	315.2	312.4
10°	311.5	310.6	313.8	309.3	308.4	310.2	313.8	311.1	310.2	311.1
12.5°	307.0	307.0	308.4	304.8	305.2	306.1	307.9	306.1	307.0	309.3
15°	302.1	301.2	303.4	300.7	300.3	299.3	301.2	301.2	302.1	300.7
17.5°	296.2	294.8	294.8	293.9	293.5	295.7	296.6	297.1	297.5	295.7
20°	289.0	288.5	289.9	288.5	289.0	289.4	289.4	288.5	292.6	287.6
22.5°	281.3	282.6	280.8	279.9	280.8	281.7	281.7	282.2	281.3	280.4
25°	273.6	274.5	275.0	272.2	273.6	272.2	275.4	275.9	274.1	275.0
27.5°	266.8	265.5	265.0	263.2	264.1	263.7	264.1	264.1	266.8	263.2
30°	256.4	255.1	255.5	254.2	254.6	254.2	254.6	254.6	256.4	256.0
32.5°	246.5	245.2	245.6	244.3	244.3	244.7	243.8	243.8	245.2	244.3
35°	237.0	233.9	234.3	233.9	234.3	232.5	232.5	232.1	233.0	230.7
37.5°	223.5	222.1	221.7	221.2	221.7	220.8	221.7	220.3	221.7	219.9
40°	211.3	210.4	210.9	208.1	208.1	208.6	207.7	207.2	207.7	209.5
42.5°	199.1	197.3	196.4	195.5	195.9	194.6	194.1	193.2	194.1	192.3
45°	184.7	184.7	184.2	181.9	182.4	182.4	180.6	178.8	179.2	179.2
47.5°	171.6	170.7	170.2	168.0	167.5	167.1	165.2	163.9	163.9	162.5
50°	157.1	156.2	154.9	152.6	151.7	149.0	147.6	145.8	144.0	144.0
52.5°	143.6	140.4	138.6	135.0	133.6	132.3	128.7	127.3	126.0	124.6
55°	127.3	124.6	121.0	116.9	115.1	112.9	109.3	106.5	104.7	105.2
57.5°	111.5	107.0	103.4	98.0	95.7	94.4	90.7	87.1	85.3	85.3
60°	92.1	88.5	84.0	79.0	77.2	75.0	70.4	68.2	66.8	65.5
62.5°	73.6	70.9	66.8	60.5	59.2	56.9	53.7	51.0	49.7	49.7
65°	55.1	52.4	48.8	44.2	42.4	40.6	37.9	35.2	33.9	33.4
67.5°	38.8	35.7	32.5	28.9	27.5	26.6	23.9	22.1	21.2	20.8
70°	23.5	21.7	19.4	16.7	15.3	14.4	12.6	11.3	10.8	10.4
72.5°	12.2	10.8	9.0	7.2	6.3	5.4	4.5	3.6	3.2	3.2
75°	4.5	3.6	2.3	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)