

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: **FLDSQ4C05D010 FEU4C059050 F4LC-CSSQ-MW**

Issue Date: 12/13/2022

Tested By:

Approved By:



Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

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: FLDSQ4C05D010 FEU4C059050 F4LC-CSSQ-MW
 Description: 4 INCH 500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MW FINISH
 Light Source: -
 Ballast/Driver: -

Summary

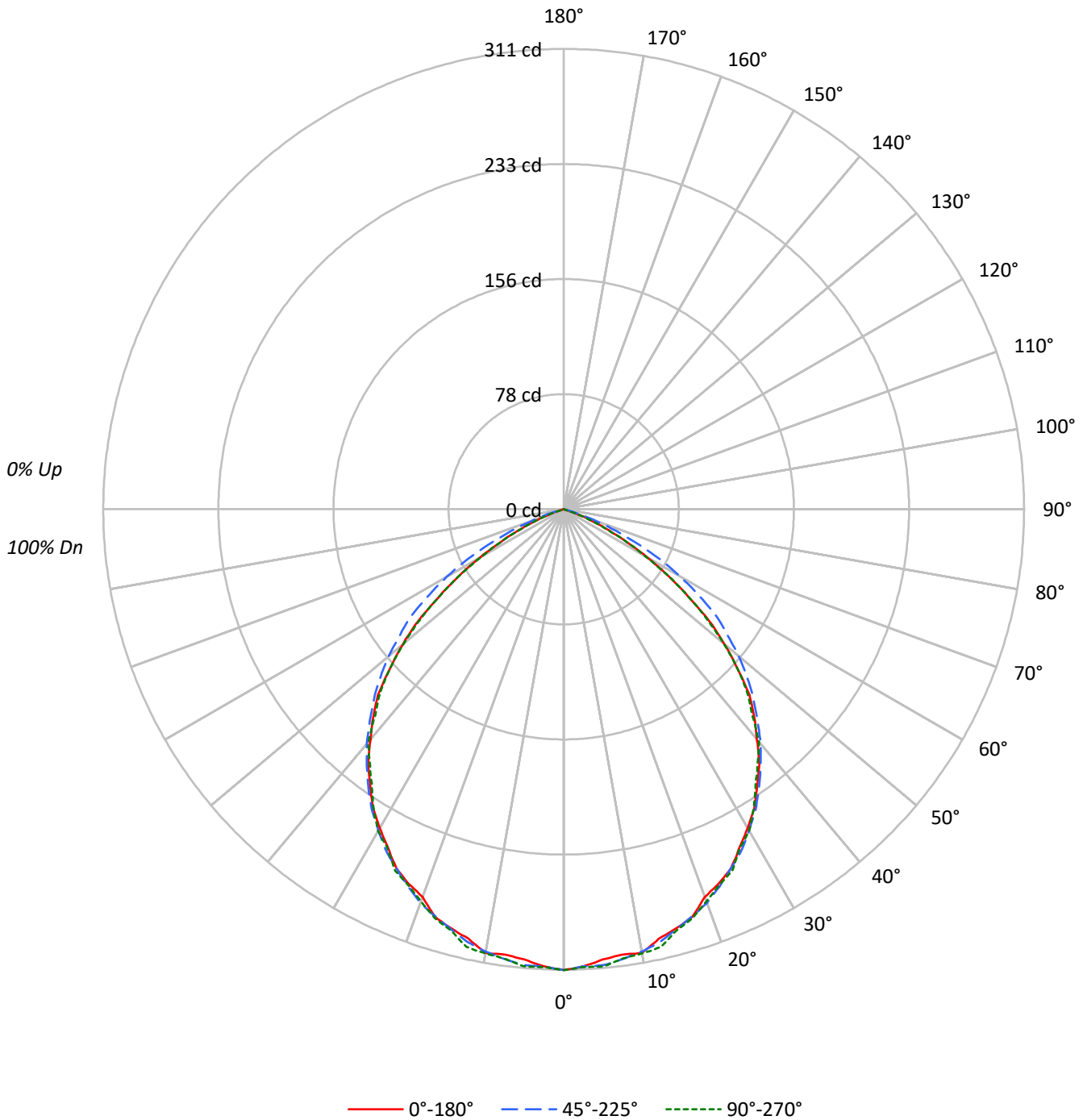
Lumens per Lamp: N/A
 Luminaire Lumens: 665.0 lumens
 Efficiency: N/A
 Efficacy: 92.4 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 7.2
 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

TEST NUMBER: P#
CATALOG NUMBER: FLDSQ4C05D010 FEU4C059050 F4LC-CSSQ-MW

Luminous Intensity Polar Plot



TEST NUMBER: P#

CATALOG NUMBER: FLDSQ4C05D010 FEU4C059050 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°	30037	30037	30037
5°	29551	29939	30026
10°	29805	29726	29854
15°	29289	29328	29418
20°	28607	29059	28925
25°	28479	28479	28671
30°	27687	27887	27932
35°	26821	27080	26621
40°	25569	26061	25846
45°	24194	24739	23948
50°	21316	23162	21181
55°	17260	21196	17327
60°	12621	17580	12370
65°	7671	12512	7466
70°	2990	6743	2878
75°	336	1827	336
80°	278	278	278
85°	0	0	0

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C05D010 FEU4C059050 F4LC-CSSQ-MW

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	29.4	4.4
10°-20°	83.2	12.5
20°-30°	123.4	18.6
30°-40°	143.0	21.5
40°-50°	137.1	20.6
50°-60°	100.8	15.2
60°-70°	43.5	6.5
70°-80°	4.7	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°	235.9	35.5
0°-40°	378.9	57.0
0°-60°	616.7	92.7
0°-90°	665.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	665.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	311	311	311	311	311	
5°	305	308	309	310	310	29
15°	293	295	294	294	294	83
25°	268	267	268	268	269	122
35°	228	229	230	230	226	142
45°	177	178	181	179	176	135
55°	103	113	126	113	103	92
65°	34	42	55	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#
 CATALOG NUMBER: FLDSQ4C05D010 FEU4C059050 F4LC-CSSQ-MW

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	311.3	311.3	311.3	311.3	311.3	311.3	311.3	311.3	311.3	311.3	311.3
2.5°	309.1	312.6	313.1	310.9	310.0	308.7	311.7	309.5	310.4	309.5	309.1
5°	305.1	309.1	309.5	309.5	308.7	308.2	309.5	309.1	308.7	307.8	309.1
7.5°	303.4	305.6	307.8	305.1	306.4	306.0	309.1	307.8	307.3	307.3	306.4
10°	304.2	303.8	305.6	302.9	303.8	302.9	305.6	305.6	304.7	303.8	303.4
12.5°	297.1	300.7	300.7	300.2	299.4	298.0	300.7	302.5	299.8	299.8	299.4
15°	293.2	294.1	294.5	294.5	294.1	294.9	296.3	294.5	294.9	292.7	293.6
17.5°	288.8	287.0	288.3	287.4	287.9	288.8	290.5	290.5	287.9	287.4	288.3
20°	278.6	283.9	284.3	281.7	282.1	282.1	285.2	282.6	284.3	282.1	283.0
22.5°	273.7	277.2	277.7	274.2	276.4	273.7	276.8	272.8	277.2	274.2	275.5
25°	267.5	267.1	268.4	266.6	267.1	267.1	269.3	267.5	268.9	267.1	267.5
27.5°	257.4	260.9	260.4	258.7	259.6	259.1	263.6	258.7	261.3	259.1	260.0
30°	248.5	251.6	250.7	249.0	249.0	247.6	252.5	251.2	250.7	250.7	250.3
32.5°	239.7	240.1	239.2	239.7	240.1	238.3	242.3	240.5	240.1	240.5	241.0
35°	227.7	227.7	228.6	227.3	229.1	229.1	232.6	230.4	229.9	228.6	229.9
37.5°	217.1	215.8	216.2	216.2	217.1	218.0	219.8	218.9	218.9	217.6	218.4
40°	203.0	202.1	203.4	203.4	204.7	204.7	206.5	205.6	206.9	206.9	206.9
42.5°	190.6	190.6	189.7	191.0	191.5	191.0	194.1	193.7	194.1	193.2	193.7
45°	177.3	177.3	176.4	176.0	178.2	177.8	181.3	180.0	181.7	180.8	181.3
47.5°	159.2	161.4	160.1	161.4	164.1	164.5	166.7	165.8	167.6	166.3	168.0
50°	142.0	142.0	143.3	145.0	147.7	148.1	150.8	152.6	153.4	153.9	154.3
52.5°	123.8	123.4	124.7	126.9	129.1	130.9	133.5	136.2	138.0	140.6	139.3
55°	102.6	103.5	104.8	107.5	111.0	113.2	115.4	118.9	122.1	123.4	126.0
57.5°	84.5	83.6	84.5	88.0	92.0	93.7	96.8	100.4	104.8	107.5	108.3
60°	65.4	65.9	66.8	69.9	73.0	75.6	76.9	82.7	86.7	89.3	91.1
62.5°	48.2	49.1	50.0	52.6	55.7	57.9	60.1	65.0	68.5	71.2	73.0
65°	33.6	34.0	35.4	36.7	39.8	42.0	43.8	47.8	51.3	53.5	54.8
67.5°	20.8	21.2	22.1	23.9	26.1	27.9	29.6	32.3	35.4	37.6	38.0
70°	10.6	11.1	11.5	12.8	14.6	15.5	16.8	19.0	21.2	23.0	23.9
72.5°	3.5	3.5	4.0	4.9	5.8	6.6	7.1	9.3	11.1	11.9	12.4
75°	0.9	0.9	0.9	0.9	0.9	1.3	1.3	2.7	3.5	4.4	4.9
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

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C05D010 FEU4C059050 F4LC-CSSQ-MW

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	311.3	311.3	311.3	311.3	311.3	311.3	311.3	311.3	311.3	311.3
2.5°	311.3	310.4	310.0	310.4	310.4	310.0	311.3	313.1	315.3	309.5
5°	310.9	310.0	310.9	308.2	309.5	308.7	310.4	310.0	311.7	310.0
7.5°	309.5	307.8	308.2	306.9	308.7	306.4	307.8	310.4	308.7	306.0
10°	305.1	304.2	307.3	302.9	302.0	303.8	307.3	304.7	303.8	304.7
12.5°	300.7	300.7	302.0	298.5	298.9	299.8	301.6	299.8	300.7	302.9
15°	295.8	294.9	297.1	294.5	294.1	293.2	294.9	294.9	295.8	294.5
17.5°	290.1	288.8	288.8	287.9	287.4	289.6	290.5	291.0	291.4	289.6
20°	283.0	282.6	283.9	282.6	283.0	283.5	283.5	282.6	286.5	281.7
22.5°	275.5	276.8	275.0	274.2	275.0	275.9	275.9	276.4	275.5	274.6
25°	268.0	268.9	269.3	266.6	268.0	266.6	269.7	270.2	268.4	269.3
27.5°	261.3	260.0	259.6	257.8	258.7	258.2	258.7	258.7	261.3	257.8
30°	251.2	249.8	250.3	249.0	249.4	249.0	249.4	249.4	251.2	250.7
32.5°	241.4	240.1	240.5	239.2	239.2	239.7	238.8	238.8	240.1	239.2
35°	232.1	229.1	229.5	229.1	229.5	227.7	227.7	227.3	228.2	226.0
37.5°	218.9	217.6	217.1	216.7	217.1	216.2	217.1	215.8	217.1	215.3
40°	206.9	206.1	206.5	203.9	203.9	204.3	203.4	203.0	203.4	205.2
42.5°	195.0	193.2	192.4	191.5	191.9	190.6	190.1	189.3	190.1	188.4
45°	180.8	180.8	180.4	178.2	178.6	178.6	176.9	175.1	175.5	175.5
47.5°	168.0	167.2	166.7	164.5	164.1	163.6	161.8	160.5	160.5	159.2
50°	153.9	153.0	151.7	149.5	148.6	145.9	144.6	142.8	141.1	141.1
52.5°	140.6	137.5	135.7	132.2	130.9	129.6	126.0	124.7	123.4	122.1
55°	124.7	122.1	118.5	114.5	112.8	110.5	107.0	104.4	102.6	103.0
57.5°	109.2	104.8	101.3	96.0	93.7	92.4	88.9	85.3	83.6	83.6
60°	90.2	86.7	82.3	77.4	75.6	73.4	69.0	66.8	65.4	64.1
62.5°	72.1	69.4	65.4	59.2	57.9	55.7	52.6	50.0	48.6	48.6
65°	53.9	51.3	47.8	43.3	41.6	39.8	37.1	34.5	33.2	32.7
67.5°	38.0	34.9	31.8	28.3	27.0	26.1	23.4	21.7	20.8	20.3
70°	23.0	21.2	19.0	16.4	15.0	14.1	12.4	11.1	10.6	10.2
72.5°	11.9	10.6	8.8	7.1	6.2	5.3	4.4	3.5	3.1	3.1
75°	4.4	3.5	2.2	1.3	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)