

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-SQ-LI**

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: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-LI
 Description: 4 INCH 800 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

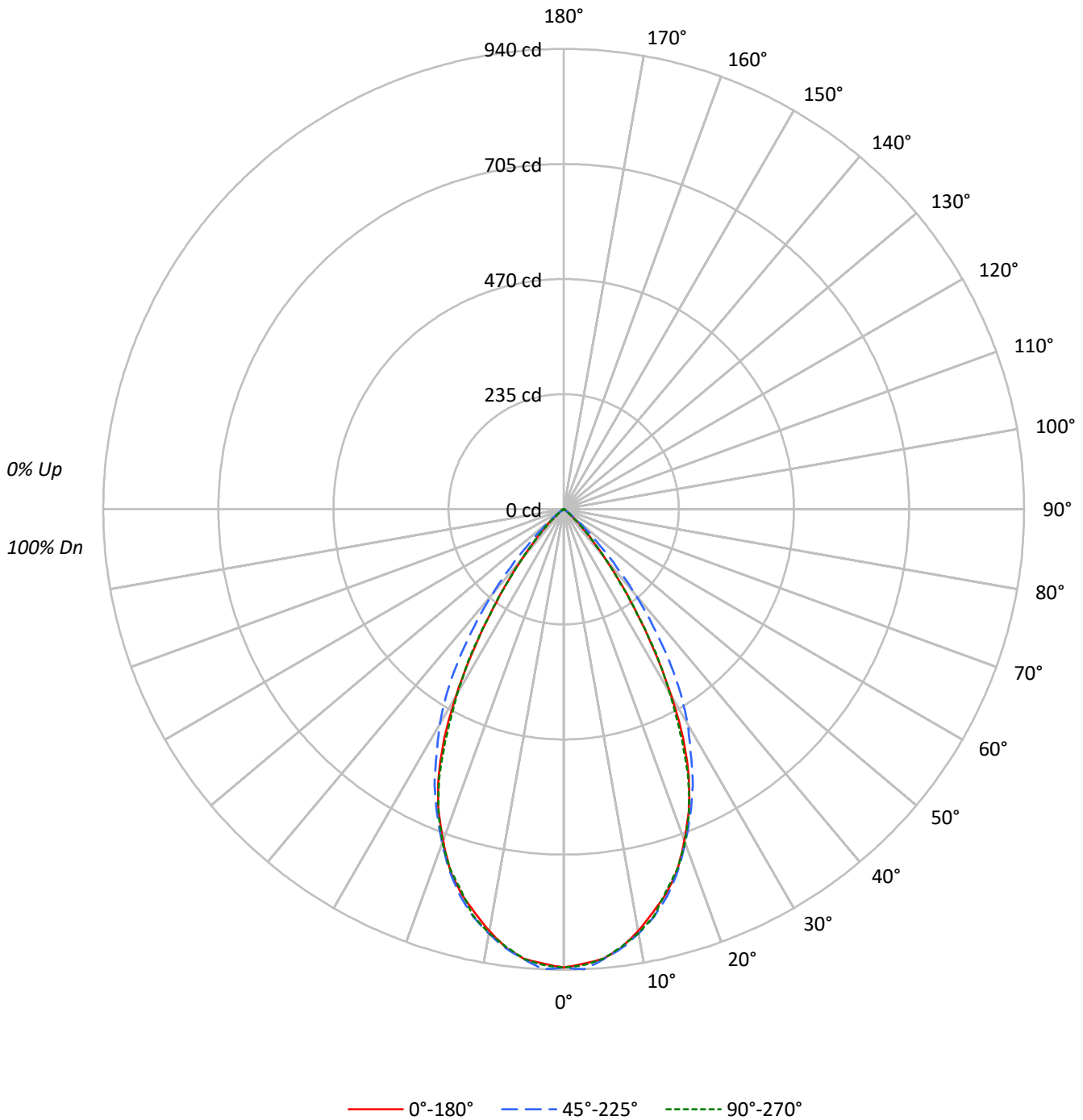
Lumens per Lamp: N/A
 Luminaire Lumens: 864.0 lumens
 Efficiency: N/A
 Efficacy: 87.3 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 9.9
 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: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-LI

Luminous Intensity Polar Plot



TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-LI

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				
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93				
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87				
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80				
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75				
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69				
6	87	78	72	68	86	77	71	67	76	71	67	74	70	66	73	69	66	64				
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60				
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56				
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53				
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	90294	90294	90294
5°	89264	89380	89264
10°	85691	86220	86103
15°	81013	81602	80593
20°	73931	74485	74300
25°	64379	66401	63931
30°	48956	56310	48232
35°	30814	43771	31097
40°	16626	28907	16324
45°	7874	14273	7792
50°	2942	5359	2942
55°	1396	1699	1295
60°	926	811	926
65°	548	548	548
70°	339	508	339
75°	224	224	224
80°	333	333	333
85°	0	0	0

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.8	10.0
10°-20°	227.4	26.3
20°-30°	277.8	32.2
30°-40°	194.3	22.5
40°-50°	63.7	7.4
50°-60°	10.1	1.2
60°-70°	2.8	0.3
70°-80°	0.9	0.1
80°-90°	0.3	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°	592.0	68.5
0°-40°	786.3	91.0
0°-60°	860.1	99.5
0°-90°	864.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	864.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	936	936	936	936	936	
5°	922	922	923	917	922	86
15°	811	814	817	812	807	226
25°	605	614	624	612	600	272
35°	262	309	372	304	264	167
45°	58	71	105	70	57	48
55°	8	9	10	9	8	8
65°	2	3	2	3	2	3
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	935.8	935.8	935.8	935.8	935.8	935.8	935.8	935.8	935.8	935.8	935.8
2.5°	928.7	935.3	933.5	937.6	937.6	932.9	934.1	935.8	938.2	940.0	925.7
5°	921.6	927.5	922.2	928.1	924.5	919.2	928.1	923.4	926.3	922.8	925.1
7.5°	902.6	912.1	901.4	908.5	906.1	903.1	906.7	905.5	907.3	904.3	897.8
10°	874.6	882.3	875.2	885.3	880.6	877.6	880.6	883.5	882.9	880.0	883.5
12.5°	842.5	851.4	847.8	853.8	848.5	848.5	855.6	853.8	854.4	852.0	856.2
15°	811.0	817.5	812.2	819.9	817.5	811.0	813.9	813.9	818.7	816.9	812.2
17.5°	771.8	777.1	771.1	772.9	770.6	769.4	781.8	773.5	778.3	774.7	775.3
20°	720.0	722.4	720.6	725.4	722.4	726.0	724.8	723.6	723.6	725.4	721.2
22.5°	667.7	667.7	669.5	670.7	673.1	669.5	676.6	670.7	671.3	675.4	674.2
25°	604.7	602.9	607.1	613.0	615.4	612.4	621.9	617.2	620.7	623.7	617.2
27.5°	528.0	528.0	532.1	542.3	544.0	547.6	560.7	560.7	565.4	561.3	566.0
30°	439.4	445.9	451.3	464.3	468.5	476.3	489.9	496.5	507.2	505.4	503.0
32.5°	348.4	357.3	357.9	371.6	382.9	396.0	414.4	429.9	437.6	442.9	437.0
35°	261.6	267.0	271.7	281.2	300.3	317.5	334.1	354.4	368.0	371.6	366.2
37.5°	191.5	192.6	197.4	206.3	220.6	237.2	257.5	279.4	293.7	299.1	293.1
40°	132.0	133.2	135.6	143.3	155.2	167.1	183.1	205.7	218.8	229.5	221.8
42.5°	88.6	89.8	92.2	98.1	104.6	115.9	128.4	142.7	155.2	159.9	155.8
45°	57.7	57.7	58.9	63.0	66.6	75.5	84.4	93.3	101.7	104.6	101.7
47.5°	33.9	34.5	35.7	38.7	42.8	46.4	52.9	58.9	61.2	63.6	62.4
50°	19.6	19.6	21.4	23.2	26.2	28.5	30.9	33.3	34.5	35.7	34.5
52.5°	10.7	11.3	11.9	12.5	13.7	16.1	17.8	17.8	18.4	19.0	18.4
55°	8.3	8.3	8.3	8.3	8.9	8.9	8.9	9.5	9.5	10.1	9.5
57.5°	5.9	5.9	5.9	6.6	6.6	6.6	5.9	5.9	5.9	5.9	5.9
60°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.2	4.2	4.2	4.2
62.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
65°	2.4	2.4	3.0	3.0	3.0	3.0	3.0	2.4	2.4	2.4	2.4
67.5°	1.8	1.8	1.8	1.8	2.4	2.4	1.8	1.8	1.8	1.8	1.8
70°	1.2	1.2	1.2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
75°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	0.6	0.6	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	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	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°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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: FLDSQ4C08D010 FEU4C089050 F4LC-SQ-LI

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	935.8	935.8	935.8	935.8	935.8	935.8	935.8	935.8
2.5°	935.8	925.7	926.9	932.3	929.3	932.3	931.7	931.7
5°	925.7	922.8	918.0	916.2	919.8	927.5	926.3	921.6
7.5°	906.7	899.0	904.3	906.7	903.7	908.5	910.9	900.8
10°	884.1	881.2	880.0	881.2	880.0	884.7	878.8	878.8
12.5°	852.0	847.3	847.3	854.4	850.2	846.7	851.4	850.8
15°	819.9	810.4	810.4	812.8	814.6	812.2	812.8	806.8
17.5°	772.3	769.4	765.2	771.8	773.5	771.1	772.9	770.0
20°	727.7	727.7	720.0	723.0	725.4	727.2	728.3	723.6
22.5°	670.7	671.9	666.5	672.4	674.2	668.3	669.5	668.3
25°	618.3	617.8	613.6	611.2	612.4	610.0	609.4	600.5
27.5°	560.7	554.7	545.8	548.2	538.1	529.8	529.8	516.1
30°	498.2	488.1	476.3	464.3	455.4	445.9	440.6	432.9
32.5°	425.1	411.5	396.6	380.5	370.4	356.2	348.4	352.6
35°	352.6	332.4	312.1	296.1	280.6	272.3	262.8	264.0
37.5°	282.4	253.9	236.1	218.8	205.7	195.0	190.9	189.7
40°	206.3	183.7	165.9	153.4	144.5	136.2	131.4	129.6
42.5°	142.7	126.7	112.4	102.3	96.3	91.0	88.6	88.0
45°	92.8	83.2	73.7	66.6	61.8	58.3	57.7	57.1
47.5°	58.3	53.5	47.6	42.2	38.0	35.7	33.9	33.9
50°	33.3	31.5	28.5	25.6	23.2	22.0	20.2	19.6
52.5°	17.8	17.8	16.6	14.3	12.5	11.3	11.3	10.7
55°	9.5	9.5	8.9	8.9	8.3	8.3	8.3	7.7
57.5°	5.9	5.9	6.6	6.6	5.9	5.9	5.9	5.9
60°	4.2	4.8	4.8	4.8	4.8	4.8	4.8	4.8
62.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
65°	2.4	3.0	3.0	3.0	3.0	2.4	2.4	2.4
67.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
70°	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
75°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	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
82.5°	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
87.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)