

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: **FLDSQ4C80D010 FEU4C809035 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: FLDSQ4C80D010 FEU4C809035 F4LC-SQ-LI
 Description: 4 INCH 8000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

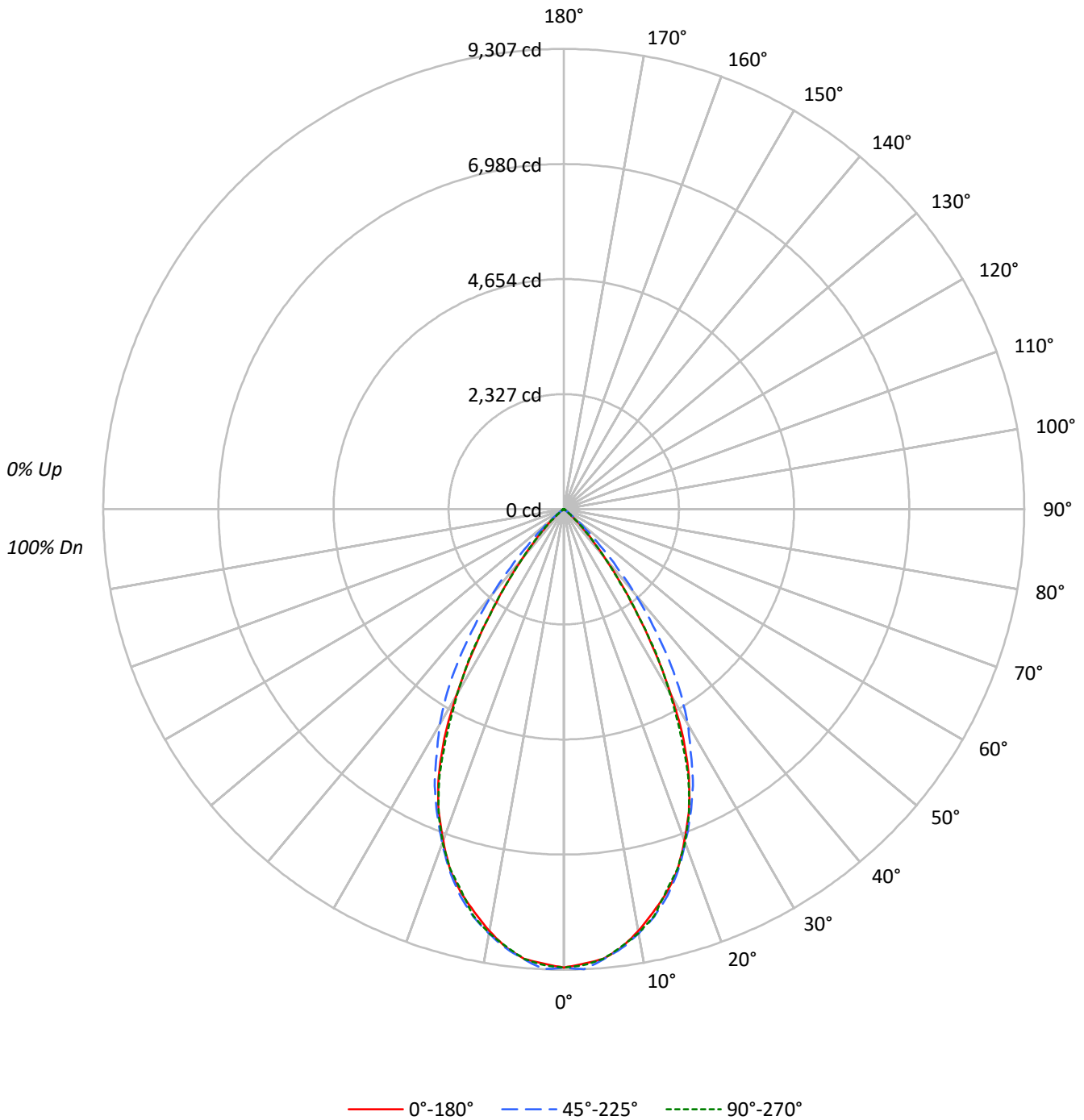
Lumens per Lamp: N/A
 Luminaire Lumens: 8554.0 lumens
 Efficiency: N/A
 Efficacy: 95.6 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 89.5
 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: FLDSQ4C80D010 FEU4C809035 F4LC-SQ-LI

Luminous Intensity Polar Plot



TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C80D010 FEU4C809035 F4LC-SQ-LI

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20			
RC	80				70				50				30				10			
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93	93	93
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87	87	87
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80	80	80
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75	75	75
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69	69	69
6	87	78	72	68	86	77	71	67	76	71	67	74	70	66	73	69	66	64	64	64
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60	60	60
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56	56	56
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53	53	53
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50	50	50

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	893999	893999	893999
5°	883737	884870	883737
10°	848386	853589	852433
15°	802058	807932	797933
20°	731974	737406	735599
25°	637356	657413	632959
30°	484659	557458	477461
35°	305079	433366	307847
40°	164601	286200	161628
45°	77916	141368	77098
50°	29166	53004	29166
55°	13862	16856	12886
60°	9089	7970	9089
65°	5365	5365	5365
70°	3329	5022	3329
75°	2237	2237	2237
80°	3334	3334	3334
85°	0	0	0

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C80D010 FEU4C809035 F4LC-SQ-LI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	859.0	10.0
10°-20°	2251.4	26.3
20°-30°	2750.3	32.2
30°-40°	1923.6	22.5
40°-50°	630.4	7.4
50°-60°	100.3	1.2
60°-70°	27.4	0.3
70°-80°	9.2	0.1
80°-90°	2.5	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°	5860.7	68.5
0°-40°	7784.3	91.0
0°-60°	8514.9	99.5
0°-90°	8554.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8554.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	9265	9265	9265	9265	9265	
5°	9124	9127	9136	9080	9124	856
15°	8029	8062	8088	8035	7988	2240
25°	5987	6078	6175	6063	5945	2689
35°	2590	3058	3679	3011	2614	1653
45°	571	703	1036	695	565	479
55°	82	88	100	88	77	81
65°	24	30	24	30	24	26
75°	6	6	6	6	6	9
85°	0	0	0	0	0	2
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C80D010 FEU4C809035 F4LC-SQ-LI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	9265.3	9265.3	9265.3	9265.3	9265.3	9265.3	9265.3	9265.3	9265.3	9265.3	9265.3
2.5°	9194.7	9259.5	9241.8	9283.1	9283.1	9236.0	9247.8	9265.3	9288.9	9306.6	9165.1
5°	9124.1	9182.9	9129.8	9188.7	9153.4	9100.5	9188.7	9141.6	9171.1	9135.8	9159.4
7.5°	8935.7	9029.9	8924.0	8994.6	8971.0	8941.5	8976.8	8965.0	8982.8	8953.3	8888.7
10°	8659.0	8735.6	8665.0	8764.9	8717.9	8688.6	8717.9	8747.4	8741.4	8712.1	8747.4
12.5°	8341.2	8429.4	8394.1	8452.9	8400.1	8400.1	8470.7	8452.9	8458.9	8435.4	8476.5
15°	8029.2	8094.0	8040.9	8117.6	8094.0	8029.2	8058.5	8058.5	8105.8	8088.0	8040.9
17.5°	7640.7	7693.6	7634.7	7652.5	7629.0	7617.2	7740.7	7658.3	7705.4	7670.1	7676.1
20°	7128.6	7152.1	7134.4	7181.5	7152.1	7187.5	7175.7	7163.9	7163.9	7181.5	7140.4
22.5°	6610.5	6610.5	6628.2	6640.0	6663.5	6628.2	6698.9	6640.0	6645.8	6687.1	6675.3
25°	5986.6	5968.9	6010.2	6069.0	6092.6	6063.0	6157.2	6110.1	6145.4	6175.0	6110.1
27.5°	5227.3	5227.3	5268.4	5368.6	5386.1	5421.4	5550.9	5550.9	5598.0	5556.9	5604.0
30°	4350.0	4414.9	4467.8	4597.2	4638.5	4715.2	4850.4	4915.3	5021.2	5003.4	4979.9
32.5°	3449.5	3537.9	3543.6	3679.1	3790.8	3920.3	4102.9	4255.9	4332.5	4385.4	4326.5
35°	2590.0	2643.1	2690.2	2784.3	2972.7	3143.4	3308.2	3508.3	3643.8	3679.1	3626.0
37.5°	1895.5	1907.3	1954.4	2042.5	2183.8	2348.8	2548.9	2766.6	2908.0	2960.9	2902.0
40°	1306.8	1318.5	1342.1	1418.7	1536.4	1654.1	1813.1	2036.8	2166.3	2272.2	2195.6
42.5°	877.0	888.8	912.3	971.2	1036.0	1147.7	1271.5	1412.7	1536.4	1583.5	1542.2
45°	571.0	571.0	582.8	624.1	659.4	747.5	835.9	924.1	1006.5	1036.0	1006.5
47.5°	335.6	341.3	353.1	382.7	423.7	459.1	523.9	582.8	606.3	629.8	618.1
50°	194.3	194.3	211.9	229.6	259.0	282.5	306.0	329.6	341.3	353.1	341.3
52.5°	105.9	111.9	117.7	123.7	135.5	159.0	176.6	176.6	182.6	188.3	182.6
55°	82.4	82.4	82.4	82.4	88.4	88.4	88.4	94.2	94.2	100.2	94.2
57.5°	58.9	58.9	58.9	64.9	64.9	64.9	58.9	58.9	58.9	58.9	58.9
60°	47.1	47.1	47.1	47.1	47.1	47.1	47.1	41.3	41.3	41.3	41.3
62.5°	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3
65°	23.5	23.5	29.5	29.5	29.5	29.5	29.5	23.5	23.5	23.5	23.5
67.5°	17.8	17.8	17.8	17.8	23.5	23.5	17.8	17.8	17.8	17.8	17.8
70°	11.8	11.8	11.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8
72.5°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
75°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
77.5°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
80°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	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°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
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: FLDSQ4C80D010 FEU4C809035 F4LC-SQ-LI

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	9265.3	9265.3	9265.3	9265.3	9265.3	9265.3	9265.3	9265.3
2.5°	9265.3	9165.1	9176.9	9230.0	9200.5	9230.0	9224.2	9224.2
5°	9165.1	9135.8	9088.8	9071.0	9106.3	9182.9	9171.1	9124.1
7.5°	8976.8	8900.4	8953.3	8976.8	8947.5	8994.6	9018.1	8918.0
10°	8753.2	8723.9	8712.1	8723.9	8712.1	8759.2	8700.3	8700.3
12.5°	8435.4	8388.3	8388.3	8458.9	8417.6	8382.3	8429.4	8423.6
15°	8117.6	8023.2	8023.2	8046.7	8064.5	8040.9	8046.7	7987.9
17.5°	7646.5	7617.2	7575.9	7640.7	7658.3	7634.7	7652.5	7623.0
20°	7205.0	7205.0	7128.6	7157.9	7181.5	7199.2	7211.0	7163.9
22.5°	6640.0	6651.8	6598.7	6657.5	6675.3	6616.5	6628.2	6616.5
25°	6121.9	6116.1	6074.8	6051.2	6063.0	6039.5	6033.7	5945.3
27.5°	5550.9	5492.0	5403.9	5427.4	5327.2	5244.8	5244.8	5109.4
30°	4932.8	4832.9	4715.2	4597.2	4509.1	4414.9	4361.8	4285.4
32.5°	4208.8	4073.6	3926.3	3767.3	3667.4	3526.1	3449.5	3490.8
35°	3490.8	3290.5	3090.4	2931.6	2778.3	2695.9	2601.8	2613.5
37.5°	2796.1	2513.6	2337.0	2166.3	2036.8	1930.8	1889.5	1877.8
40°	2042.5	1818.9	1642.3	1518.6	1430.5	1348.1	1301.0	1283.2
42.5°	1412.7	1253.9	1112.4	1012.5	953.6	900.6	877.0	871.3
45°	918.3	824.2	730.0	659.4	612.3	577.0	571.0	565.0
47.5°	577.0	529.7	470.8	418.0	376.7	353.1	335.6	335.6
50°	329.6	312.0	282.5	253.2	229.6	217.9	200.1	194.3
52.5°	176.6	176.6	164.8	141.2	123.7	111.9	111.9	105.9
55°	94.2	94.2	88.4	88.4	82.4	82.4	82.4	76.6
57.5°	58.9	58.9	64.9	64.9	58.9	58.9	58.9	58.9
60°	41.3	47.1	47.1	47.1	47.1	47.1	47.1	47.1
62.5°	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3
65°	23.5	29.5	29.5	29.5	29.5	23.5	23.5	23.5
67.5°	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8
70°	17.8	17.8	17.8	17.8	17.8	11.8	11.8	11.8
72.5°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
75°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
77.5°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
80°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
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°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)