

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: **FLDSQ4C90D010 FEU4C909050 F4LC-SQ-WLI**

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: FLDSQ4C90D010 FEU4C909050 F4LC-SQ-WLI
 Description: 4 INCH 9000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

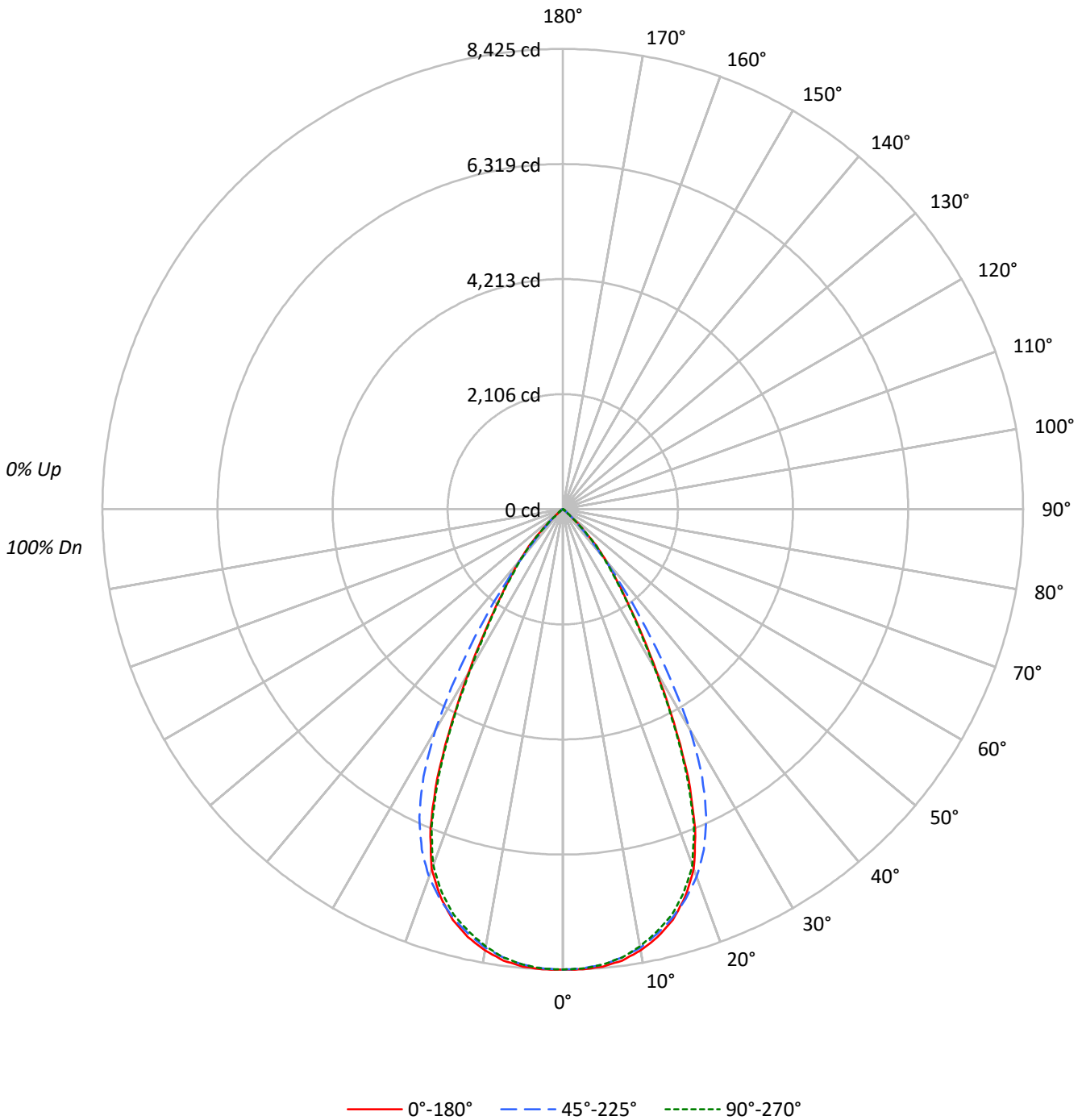
Lumens per Lamp: N/A
 Luminaire Lumens: 7541.0 lumens
 Efficiency: N/A
 Efficacy: 77.7 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 97.1
 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: FLDSQ4C90D010 FEU4C909050 F4LC-SQ-WLI

Luminous Intensity Polar Plot



TEST NUMBER: P#

CATALOG NUMBER: FLDSQ4C90D010 FEU4C909050 F4LC-SQ-WLI

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	100	100	
1	114	111	108	106	111	109	106	104	105	103	101	101	100	98	97	96	95	94	94	94	94	
2	108	103	99	96	106	102	98	95	98	95	93	95	93	91	93	91	89	87	87	87	87	
3	103	96	91	88	101	95	90	87	92	89	85	90	87	84	88	85	83	81	81	81	81	
4	98	90	85	80	96	89	84	80	87	82	79	85	81	78	83	80	77	76	76	76	76	
5	93	84	79	74	91	84	78	74	82	77	73	80	76	73	79	75	72	71	71	71	71	
6	88	79	73	69	87	79	73	69	77	72	68	76	71	68	74	71	68	66	66	66	66	
7	84	75	69	65	82	74	68	64	73	68	64	71	67	64	70	66	63	62	62	62	62	
8	80	70	64	60	79	70	64	60	69	64	60	68	63	60	67	63	59	58	58	58	58	
9	76	66	61	57	75	66	60	57	65	60	56	64	60	56	63	59	56	55	55	55	55	
10	72	63	57	53	71	62	57	53	62	57	53	61	56	53	60	56	53	52	52	52	52	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	812765	812765	812765
5°	813622	809874	809874
10°	802935	798192	795733
15°	776875	773199	767985
20°	719488	735178	711530
25°	578492	661310	570869
30°	381822	518518	372775
35°	238645	311357	234322
40°	155746	144297	149650
45°	74996	57557	70766
50°	18884	22952	17713
55°	10413	9437	10093
60°	7102	5982	6716
65°	4863	4429	4863
70°	3809	3273	3809
75°	2871	2871	2871
80°	2167	3223	3223
85°	2103	4318	4318

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C90D010 FEU4C909050 F4LC-SQ-WLI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	792.2	10.5
10°-20°	2163.3	28.7
20°-30°	2578.1	34.2
30°-40°	1459.8	19.4
40°-50°	451.3	6.0
50°-60°	62.7	0.8
60°-70°	21.4	0.3
70°-80°	8.5	0.1
80°-90°	3.6	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°	5533.6	73.4
0°-40°	6993.5	92.7
0°-60°	7507.5	99.6
0°-90°	7541.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7541.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8423	8423	8423	8423	8423	
5°	8400	8381	8362	8356	8362	795
15°	7777	7764	7740	7709	7688	2169
25°	5434	5751	6212	5761	5362	2423
35°	2026	2210	2643	2216	1989	1319
45°	550	640	422	623	519	454
55°	62	62	56	60	60	61
65°	21	21	19	21	21	22
75°	8	8	8	8	8	8
85°	2	4	4	4	4	3
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C90D010 FEU4C909050 F4LC-SQ-WLI

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	8423.4	8423.4	8423.4	8423.4	8423.4
2.5°	8425.4	8411.8	8408.0	8404.1	8411.8
5°	8400.2	8380.9	8361.5	8355.7	8361.5
7.5°	8328.6	8309.3	8276.4	8268.6	8274.4
10°	8195.1	8177.7	8146.7	8129.3	8121.6
12.5°	8019.0	7990.0	7960.9	7941.6	7922.2
15°	7777.1	7763.6	7740.3	7709.4	7688.1
17.5°	7442.3	7461.7	7475.2	7413.3	7357.2
20°	7007.0	7078.6	7159.8	7034.0	6929.5
22.5°	6327.7	6532.9	6739.9	6501.9	6269.7
25°	5433.7	5751.1	6211.6	5760.8	5362.1
27.5°	4390.7	4793.2	5518.9	4795.1	4332.7
30°	3427.0	3841.1	4653.9	3787.0	3345.8
32.5°	2631.7	2941.3	3636.0	2894.9	2575.6
35°	2026.0	2209.9	2643.3	2215.7	1989.3
37.5°	1575.2	1668.0	1778.3	1635.1	1528.7
40°	1236.5	1240.4	1145.6	1221.0	1188.1
42.5°	917.2	913.4	704.4	890.1	895.9
45°	549.6	640.5	421.8	623.1	518.6
47.5°	261.2	361.9	253.5	342.5	241.9
50°	125.8	174.2	152.9	162.5	118.0
52.5°	85.1	89.0	87.1	85.1	81.3
55°	61.9	61.9	56.1	60.0	60.0
57.5°	46.4	46.4	40.6	44.5	44.5
60°	36.8	34.8	31.0	34.8	34.8
62.5°	27.1	27.1	23.2	27.1	27.1
65°	21.3	21.3	19.4	21.3	21.3
67.5°	17.4	17.4	13.5	17.4	15.5
70°	13.5	13.5	11.6	13.5	13.5
72.5°	9.7	9.7	9.7	9.7	9.7
75°	7.7	7.7	7.7	7.7	7.7
77.5°	5.8	5.8	5.8	5.8	5.8
80°	3.9	3.9	5.8	5.8	5.8
82.5°	3.9	3.9	3.9	3.9	3.9
85°	1.9	3.9	3.9	3.9	3.9
87.5°	1.9	1.9	3.9	3.9	3.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)