

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 FEU4C909030 F4LC-SQ-WLI**

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: FLDSQ4C90D010 FEU4C909030 F4LC-SQ-WLI  
 Description: 4 INCH 9000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

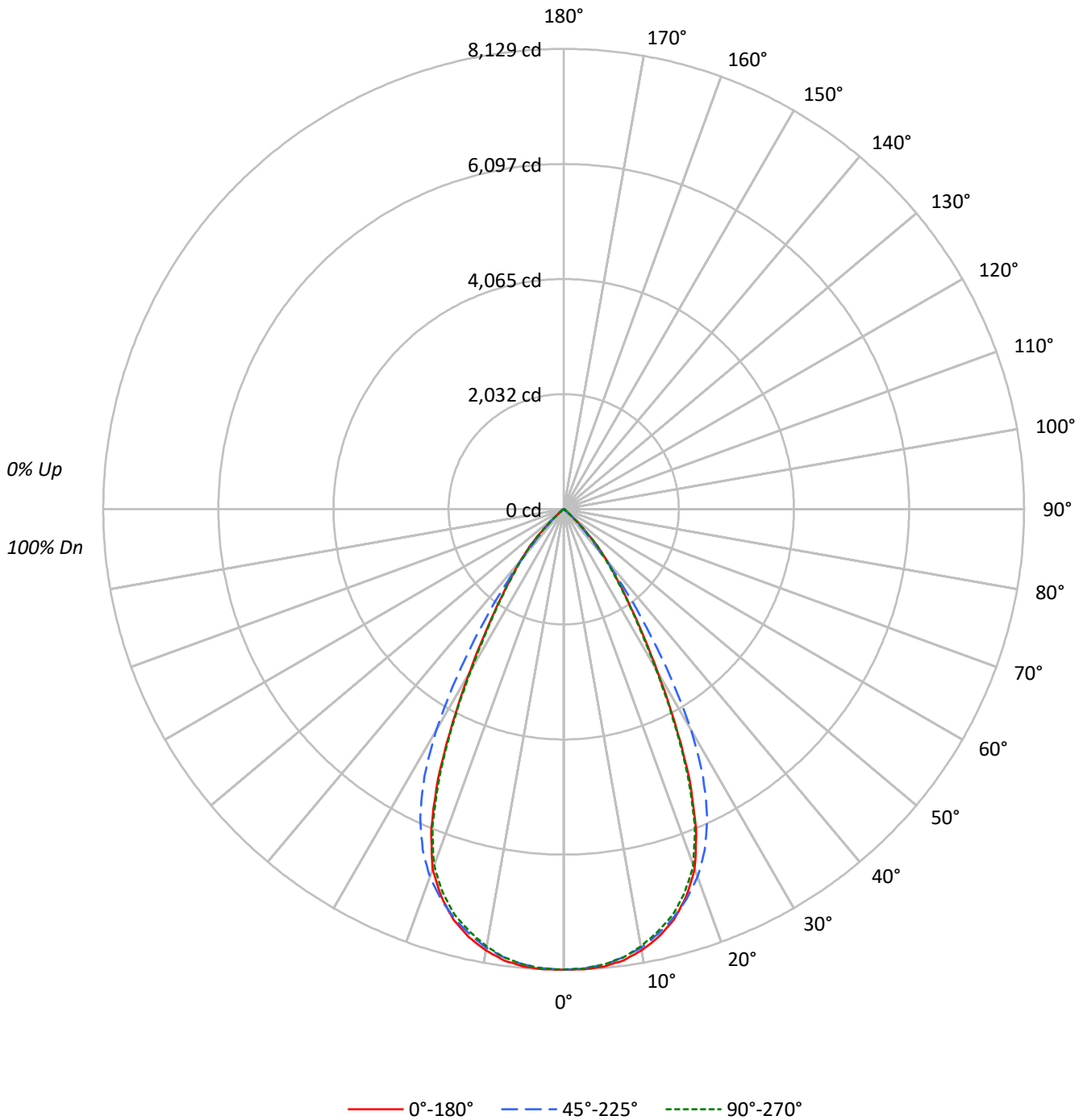
Lumens per Lamp: N/A  
 Luminaire Lumens: 7276.0 lumens  
 Efficiency: N/A  
 Efficacy: 74.9 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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

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### Luminous Intensity Polar Plot





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**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°	784204	784204	784204
5°	785030	781417	781417
10°	774717	770141	767770
15°	749574	746028	740994
20°	694198	709343	686527
25°	558168	638069	550811
30°	368407	500290	359672
35°	230258	300415	226088
40°	150280	139221	144397
45°	72363	55538	68283
50°	18223	22141	17098
55°	10043	9101	9740
60°	6851	5770	6484
65°	4680	4269	4680
70°	3696	3160	3696
75°	2796	2796	2796
80°	2056	3112	3112
85°	2103	4096	4096

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	764.3	10.5
10°-20°	2087.3	28.7
20°-30°	2487.5	34.2
30°-40°	1408.6	19.4
40°-50°	435.5	6.0
50°-60°	60.5	0.8
60°-70°	20.6	0.3
70°-80°	8.2	0.1
80°-90°	3.4	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°	5339.2	73.4
0°-40°	6747.7	92.7
0°-60°	7243.7	99.6
0°-90°	7276.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7276.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8127	8127	8127	8127	8127	
5°	8105	8086	8068	8062	8068	767
15°	7504	7491	7468	7438	7418	2092
25°	5243	5549	5993	5558	5174	2338
35°	1955	2132	2550	2138	1919	1272
45°	530	618	407	601	500	438
55°	60	60	54	58	58	59
65°	20	20	19	20	20	22
75°	8	8	8	8	8	8
85°	2	4	4	4	4	3
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8127.4	8127.4	8127.4	8127.4	8127.4
2.5°	8129.3	8116.2	8112.5	8108.8	8116.2
5°	8105.0	8086.4	8067.7	8062.1	8067.7
7.5°	8035.9	8017.3	7985.5	7978.1	7983.7
10°	7907.1	7890.3	7860.4	7843.6	7836.2
12.5°	7737.2	7709.2	7681.2	7662.5	7643.9
15°	7503.8	7490.7	7468.3	7438.5	7417.9
17.5°	7180.8	7199.5	7212.6	7152.8	7098.7
20°	6760.7	6829.8	6908.2	6786.9	6686.0
22.5°	6105.4	6303.3	6503.1	6273.4	6049.4
25°	5242.8	5549.0	5993.3	5558.3	5173.7
27.5°	4236.4	4624.8	5324.9	4626.6	4180.4
30°	3306.6	3706.2	4490.3	3653.9	3228.2
32.5°	2539.2	2838.0	3508.3	2793.2	2485.1
35°	1954.8	2132.2	2550.4	2137.8	1919.4
37.5°	1519.8	1609.4	1715.9	1577.7	1475.0
40°	1193.1	1196.8	1105.3	1178.1	1146.4
42.5°	885.0	881.3	679.6	858.9	864.5
45°	530.3	618.0	407.0	601.2	500.4
47.5°	252.1	349.1	244.6	330.5	233.4
50°	121.4	168.0	147.5	156.8	113.9
52.5°	82.2	85.9	84.0	82.2	78.4
55°	59.7	59.7	54.1	57.9	57.9
57.5°	44.8	44.8	39.2	42.9	42.9
60°	35.5	33.6	29.9	33.6	33.6
62.5°	26.1	26.1	22.4	26.1	26.1
65°	20.5	20.5	18.7	20.5	20.5
67.5°	16.8	16.8	13.1	16.8	14.9
70°	13.1	13.1	11.2	13.1	13.1
72.5°	9.3	9.3	9.3	9.3	9.3
75°	7.5	7.5	7.5	7.5	7.5
77.5°	5.6	5.6	5.6	5.6	5.6
80°	3.7	3.7	5.6	5.6	5.6
82.5°	3.7	3.7	3.7	3.7	3.7
85°	1.9	3.7	3.7	3.7	3.7
87.5°	1.9	1.9	3.7	3.7	3.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)