

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: **FLDSQ4C50D010 FEU4C509040 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: FLDSQ4C50D010 FEU4C509040 F4LC-SQ-WLI  
 Description: 4 INCH 5000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

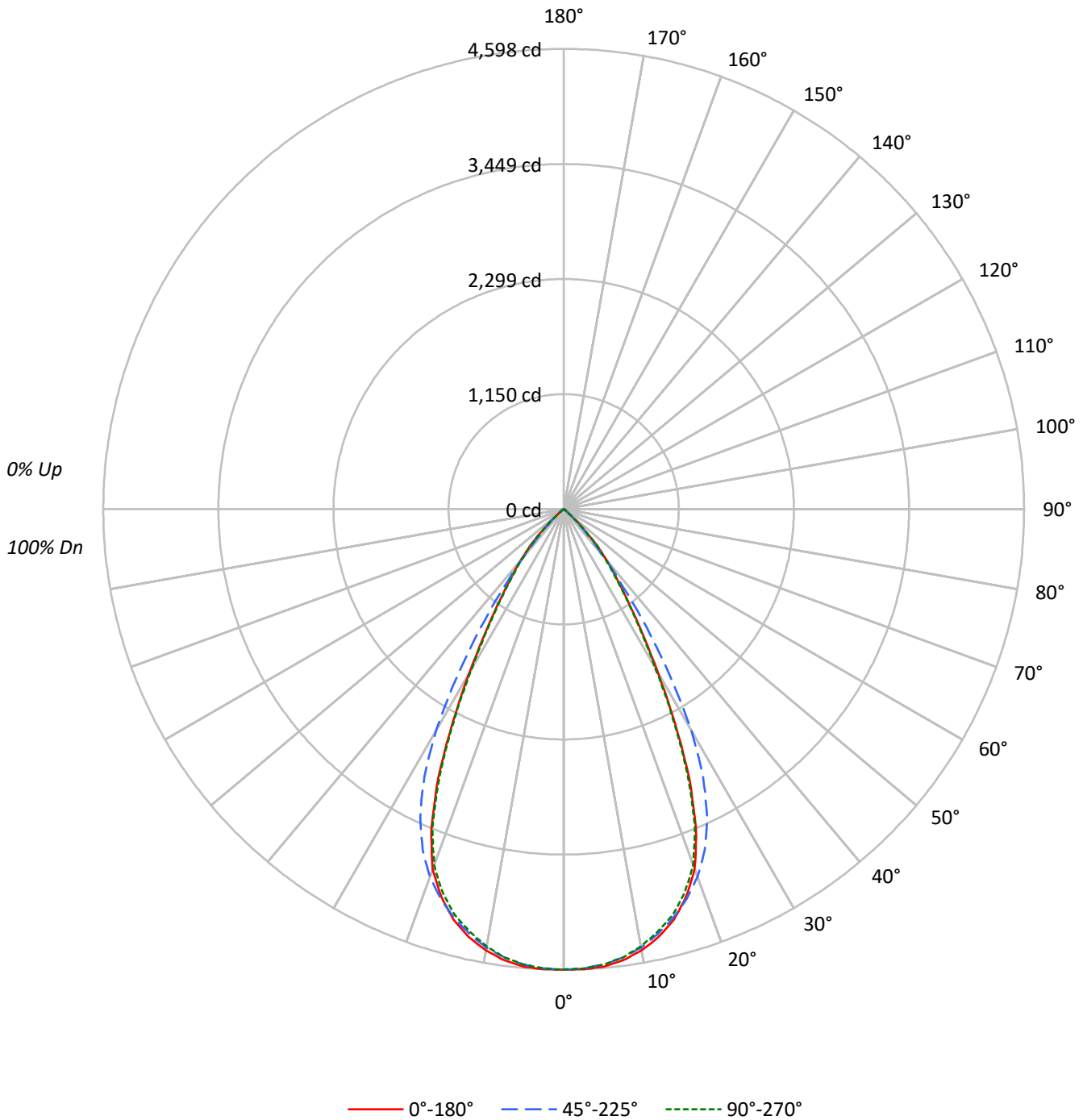
Lumens per Lamp: N/A  
 Luminaire Lumens: 4115.0 lumens  
 Efficiency: N/A  
 Efficacy: 70.5 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 58.4  
 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°	443511	443511	443511
5°	443985	441932	441932
10°	438145	435558	434216
15°	423924	421927	419080
20°	392612	401176	388269
25°	315676	360869	311513
30°	208359	282940	203412
35°	130230	169902	127862
40°	84983	78736	81671
45°	40923	31412	38617
50°	10298	12519	9667
55°	5686	5148	5501
60°	3879	3261	3667
65°	2648	2420	2648
70°	2088	1777	2088
75°	1566	1566	1566
80°	1167	1778	1778
85°	1218	2325	2325

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	432.3	10.5
10°-20°	1180.5	28.7
20°-30°	1406.8	34.2
30°-40°	796.6	19.4
40°-50°	246.3	6.0
50°-60°	34.2	0.8
60°-70°	11.7	0.3
70°-80°	4.7	0.1
80°-90°	2.0	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°	3019.6	73.4
0°-40°	3816.2	92.7
0°-60°	4096.7	99.6
0°-90°	4115.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4115.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4596	4596	4596	4596	4596	
5°	4584	4573	4563	4560	4563	434
15°	4244	4236	4224	4207	4195	1183
25°	2965	3138	3390	3144	2926	1322
35°	1106	1206	1442	1209	1086	720
45°	300	350	230	340	283	248
55°	34	34	31	33	33	33
65°	12	12	11	12	12	12
75°	4	4	4	4	4	5
85°	1	2	2	2	2	1
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4596.5	4596.5	4596.5	4596.5	4596.5
2.5°	4597.6	4590.2	4588.1	4586.0	4590.2
5°	4583.9	4573.3	4562.7	4559.6	4562.7
7.5°	4544.8	4534.2	4516.3	4512.1	4515.2
10°	4471.9	4462.4	4445.5	4436.0	4431.8
12.5°	4375.8	4360.0	4344.2	4333.6	4323.0
15°	4243.8	4236.5	4223.8	4206.9	4195.3
17.5°	4061.2	4071.7	4079.1	4045.3	4014.7
20°	3823.6	3862.6	3907.0	3838.4	3781.3
22.5°	3452.9	3564.9	3677.9	3548.0	3421.3
25°	2965.1	3138.3	3389.6	3143.5	2926.0
27.5°	2395.9	2615.6	3011.6	2616.6	2364.3
30°	1870.1	2096.1	2539.5	2066.5	1825.7
32.5°	1436.1	1605.0	1984.1	1579.7	1405.5
35°	1105.6	1205.9	1442.4	1209.1	1085.5
37.5°	859.5	910.2	970.4	892.3	834.2
40°	674.7	676.9	625.1	666.3	648.4
42.5°	500.5	498.4	384.4	485.7	488.9
45°	299.9	349.5	230.2	340.0	283.0
47.5°	142.6	197.5	138.3	186.9	132.0
50°	68.6	95.0	83.4	88.7	64.4
52.5°	46.5	48.6	47.5	46.5	44.3
55°	33.8	33.8	30.6	32.7	32.7
57.5°	25.3	25.3	22.2	24.3	24.3
60°	20.1	19.0	16.9	19.0	19.0
62.5°	14.8	14.8	12.7	14.8	14.8
65°	11.6	11.6	10.6	11.6	11.6
67.5°	9.5	9.5	7.4	9.5	8.4
70°	7.4	7.4	6.3	7.4	7.4
72.5°	5.3	5.3	5.3	5.3	5.3
75°	4.2	4.2	4.2	4.2	4.2
77.5°	3.2	3.2	3.2	3.2	3.2
80°	2.1	2.1	3.2	3.2	3.2
82.5°	2.1	2.1	2.1	2.1	2.1
85°	1.1	2.1	2.1	2.1	2.1
87.5°	1.1	1.1	2.1	2.1	2.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)