

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: **FLDSQ4C15D010 FEU4C159040 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: FLDSQ4C15D010 FEU4C159040 F4LC-SQ-WLI  
 Description: 4 INCH 1500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

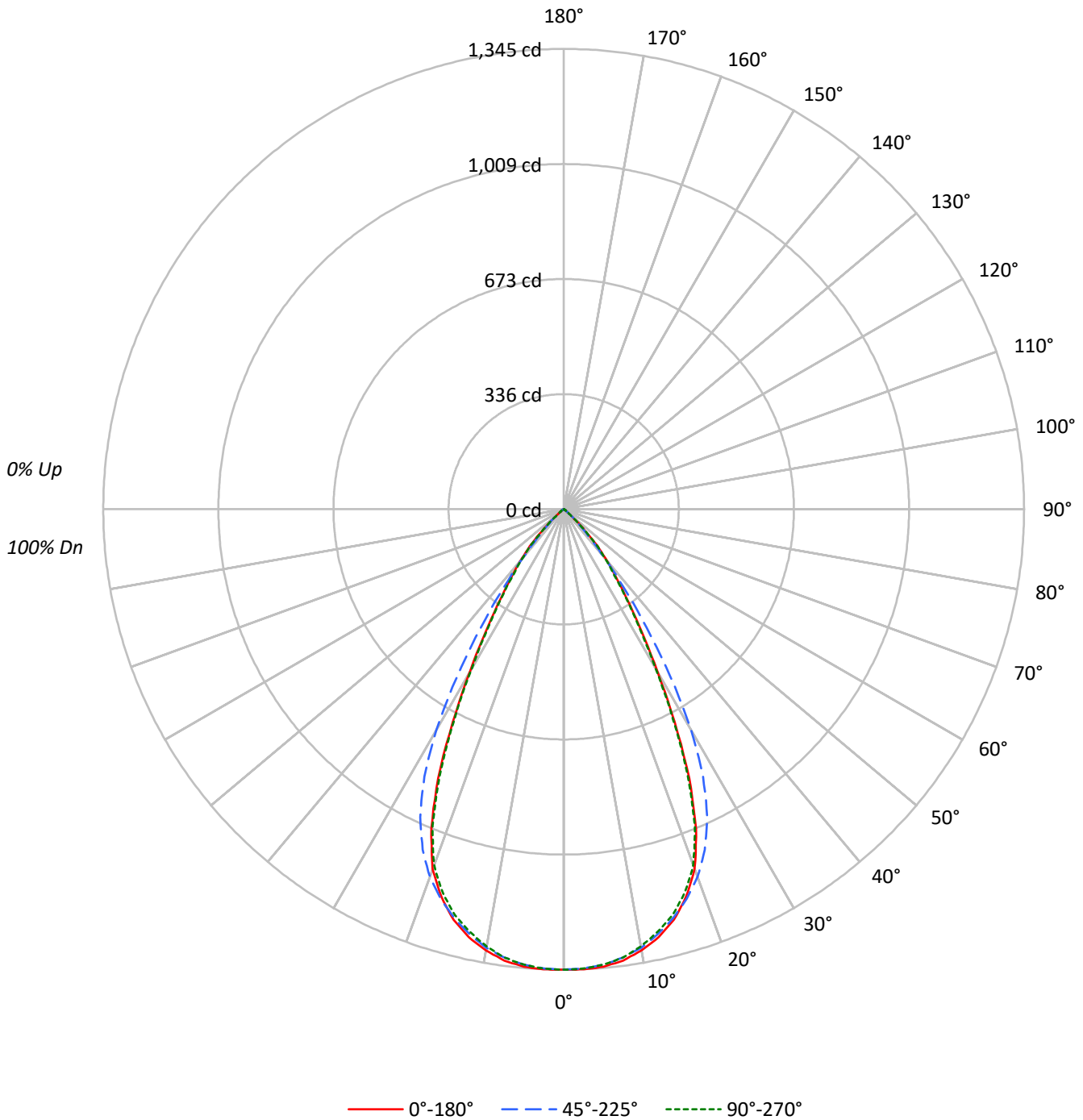
Lumens per Lamp: N/A  
 Luminaire Lumens: 1204.0 lumens  
 Efficiency: N/A  
 Efficacy: 76.2 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 15.8  
 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°	129768	129768	129768
5°	129905	129305	129305
10°	128194	127439	127047
15°	124037	123447	122618
20°	114870	117375	113607
25°	92368	105591	91144
30°	60967	82782	59518
35°	38105	49708	37410
40°	24864	23038	23894
45°	11967	9197	11299
50°	3017	3663	2822
55°	1665	1514	1615
60°	1139	946	1081
65°	776	708	776
70°	621	536	621
75°	447	447	447
80°	333	500	500
85°	332	664	664

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.5	10.5
10°-20°	345.4	28.7
20°-30°	411.6	34.2
30°-40°	233.1	19.4
40°-50°	72.1	6.0
50°-60°	10.0	0.8
60°-70°	3.4	0.3
70°-80°	1.3	0.1
80°-90°	0.6	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°	883.5	73.4
0°-40°	1116.6	92.7
0°-60°	1198.7	99.6
0°-90°	1204.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1204.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1345	1345	1345	1345	1345	
5°	1341	1338	1335	1334	1335	127
15°	1242	1240	1236	1231	1228	346
25°	868	918	992	920	856	387
35°	324	353	422	354	318	211
45°	88	102	67	100	83	72
55°	10	10	9	10	10	10
65°	3	3	3	3	3	4
75°	1	1	1	1	1	1
85°	0	1	1	1	1	0
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1344.9	1344.9	1344.9	1344.9	1344.9
2.5°	1345.2	1343.0	1342.4	1341.8	1343.0
5°	1341.2	1338.1	1335.0	1334.1	1335.0
7.5°	1329.8	1326.7	1321.4	1320.2	1321.1
10°	1308.4	1305.7	1300.7	1297.9	1296.7
12.5°	1280.3	1275.7	1271.0	1268.0	1264.9
15°	1241.7	1239.5	1235.8	1230.9	1227.5
17.5°	1188.2	1191.3	1193.5	1183.6	1174.7
20°	1118.7	1130.2	1143.1	1123.1	1106.4
22.5°	1010.3	1043.0	1076.1	1038.1	1001.0
25°	867.6	918.2	991.8	919.8	856.1
27.5°	701.0	765.3	881.1	765.6	691.8
30°	547.2	613.3	743.0	604.6	534.2
32.5°	420.2	469.6	580.5	462.2	411.2
35°	323.5	352.8	422.0	353.8	317.6
37.5°	251.5	266.3	283.9	261.1	244.1
40°	197.4	198.0	182.9	195.0	189.7
42.5°	146.4	145.8	112.5	142.1	143.0
45°	87.7	102.3	67.4	99.5	82.8
47.5°	41.7	57.8	40.5	54.7	38.6
50°	20.1	27.8	24.4	26.0	18.8
52.5°	13.6	14.2	13.9	13.6	13.0
55°	9.9	9.9	9.0	9.6	9.6
57.5°	7.4	7.4	6.5	7.1	7.1
60°	5.9	5.6	4.9	5.6	5.6
62.5°	4.3	4.3	3.7	4.3	4.3
65°	3.4	3.4	3.1	3.4	3.4
67.5°	2.8	2.8	2.2	2.8	2.5
70°	2.2	2.2	1.9	2.2	2.2
72.5°	1.5	1.5	1.5	1.5	1.5
75°	1.2	1.2	1.2	1.2	1.2
77.5°	0.9	0.9	0.9	0.9	0.9
80°	0.6	0.6	0.9	0.9	0.9
82.5°	0.6	0.6	0.6	0.6	0.6
85°	0.3	0.6	0.6	0.6	0.6
87.5°	0.3	0.3	0.6	0.6	0.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)