

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: **FLDSQ4C20D010 FEU4C209027 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: FLDSQ4C20D010 FEU4C209027 F4LC-SQ-WLI
 Description: 4 INCH 2000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

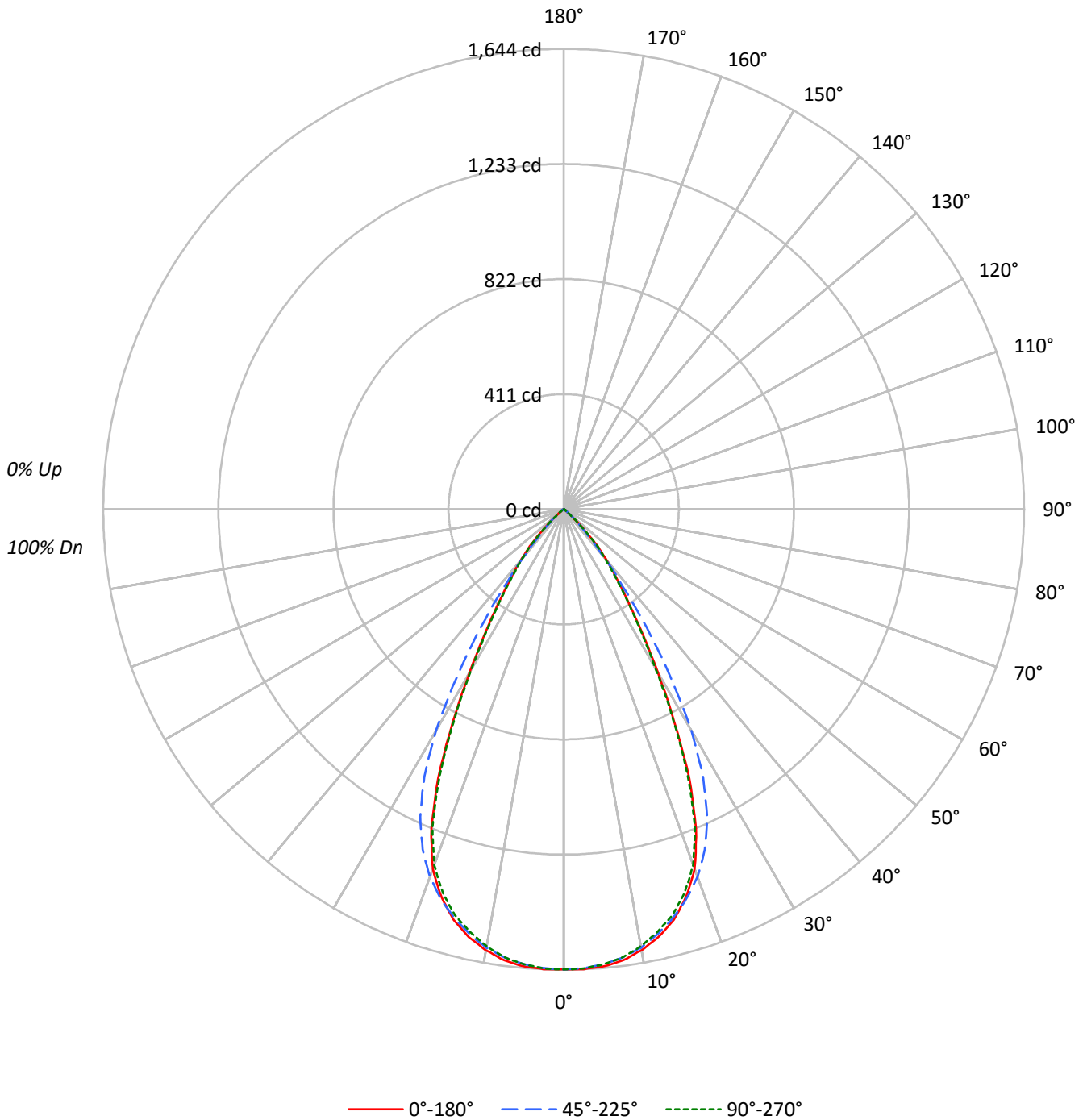
Lumens per Lamp: N/A
 Luminaire Lumens: 1471.0 lumens
 Efficiency: N/A
 Efficacy: 67.5 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 21.8
 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°	158541	158541	158541
5°	158711	157984	157984
10°	156627	155706	155216
15°	151547	150828	149809
20°	140345	143405	138794
25°	112841	129002	111361
30°	74481	101143	72710
35°	46551	60733	45703
40°	30381	28151	29197
45°	14628	11230	13809
50°	3678	4473	3453
55°	2036	1834	1968
60°	1389	1158	1312
65°	959	868	959
70°	733	649	733
75°	559	559	559
80°	445	611	611
85°	443	886	886

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.5	10.5
10°-20°	422.0	28.7
20°-30°	502.9	34.2
30°-40°	284.8	19.4
40°-50°	88.0	6.0
50°-60°	12.2	0.8
60°-70°	4.2	0.3
70°-80°	1.6	0.1
80°-90°	0.7	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°	1079.4	73.4
0°-40°	1364.2	92.7
0°-60°	1464.5	99.6
0°-90°	1471.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1471.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1643	1643	1643	1643	1643	
5°	1639	1635	1631	1630	1631	155
15°	1517	1514	1510	1504	1500	423
25°	1060	1122	1212	1124	1046	473
35°	395	431	516	432	388	257
45°	107	125	82	122	101	89
55°	12	12	11	12	12	12
65°	4	4	4	4	4	4
75°	2	2	2	2	2	2
85°	0	1	1	1	1	1
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1643.1	1643.1	1643.1	1643.1	1643.1
2.5°	1643.5	1640.9	1640.1	1639.4	1640.9
5°	1638.6	1634.8	1631.1	1629.9	1631.1
7.5°	1624.6	1620.9	1614.4	1612.9	1614.1
10°	1598.6	1595.2	1589.2	1585.8	1584.2
12.5°	1564.2	1558.6	1552.9	1549.1	1545.4
15°	1517.1	1514.4	1509.9	1503.8	1499.7
17.5°	1451.8	1455.5	1458.2	1446.1	1435.1
20°	1366.8	1380.8	1396.6	1372.1	1351.7
22.5°	1234.3	1274.3	1314.7	1268.3	1223.0
25°	1059.9	1121.8	1211.7	1123.7	1046.0
27.5°	856.5	935.0	1076.5	935.4	845.2
30°	668.5	749.3	907.8	738.7	652.6
32.5°	513.4	573.8	709.3	564.7	502.4
35°	395.2	431.1	515.6	432.2	388.0
37.5°	307.3	325.4	346.9	319.0	298.2
40°	241.2	242.0	223.5	238.2	231.8
42.5°	178.9	178.2	137.4	173.6	174.8
45°	107.2	124.9	82.3	121.5	101.2
47.5°	51.0	70.6	49.4	66.8	47.2
50°	24.5	34.0	29.8	31.7	23.0
52.5°	16.6	17.4	17.0	16.6	15.9
55°	12.1	12.1	10.9	11.7	11.7
57.5°	9.1	9.1	7.9	8.7	8.7
60°	7.2	6.8	6.0	6.8	6.8
62.5°	5.3	5.3	4.5	5.3	5.3
65°	4.2	4.2	3.8	4.2	4.2
67.5°	3.4	3.4	2.6	3.4	3.0
70°	2.6	2.6	2.3	2.6	2.6
72.5°	1.9	1.9	1.9	1.9	1.9
75°	1.5	1.5	1.5	1.5	1.5
77.5°	1.1	1.1	1.1	1.1	1.1
80°	0.8	0.8	1.1	1.1	1.1
82.5°	0.8	0.8	0.8	0.8	0.8
85°	0.4	0.8	0.8	0.8	0.8
87.5°	0.4	0.4	0.8	0.8	0.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)