

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 FEU4C209030 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 FEU4C209030 F4LC-SQ-WLI
 Description: 4 INCH 2000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

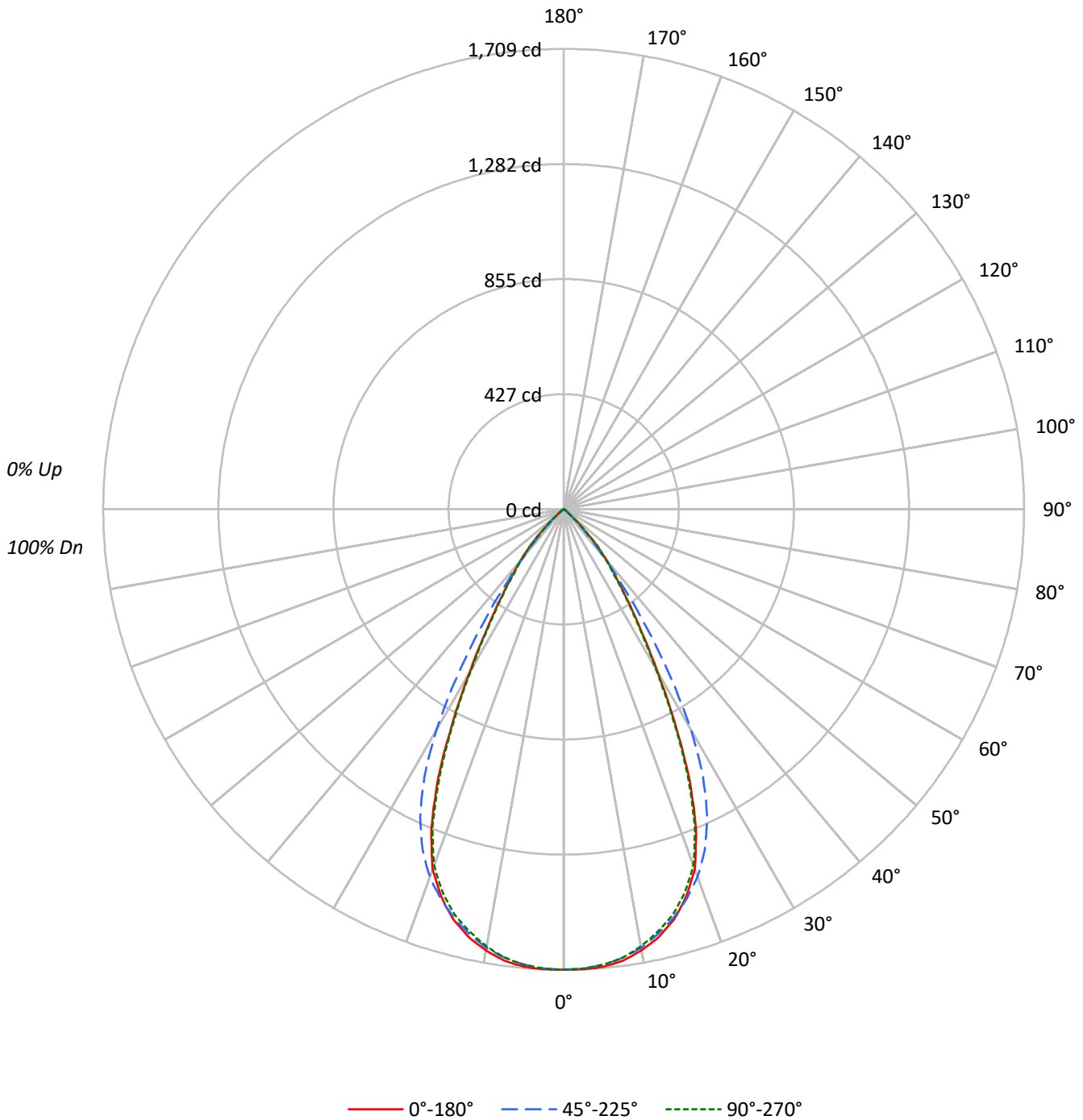
Lumens per Lamp: N/A
 Luminaire Lumens: 1530.0 lumens
 Efficiency: N/A
 Efficacy: 70.2 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 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	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	114	111	108	106	111	109	106	104	105	103	101		101	100	98		97	96	95	94
2	108	103	99	96	106	102	98	95	98	95	93		95	93	91		93	91	89	87
3	103	96	91	88	101	95	90	87	92	89	85		90	87	84		88	85	83	81
4	98	90	85	80	96	89	84	80	87	82	79		85	81	78		83	80	77	76
5	93	84	79	74	91	84	78	74	82	77	73		80	76	73		79	75	72	71
6	88	79	73	69	87	79	73	69	77	72	68		76	71	68		74	71	68	66
7	84	75	69	65	82	74	68	64	73	68	64		71	67	64		70	66	63	62
8	80	70	64	60	79	70	64	60	69	64	60		68	63	60		67	63	59	58
9	76	66	61	57	75	66	60	57	65	60	56		64	60	56		63	59	56	55
10	72	63	57	53	71	62	57	53	62	57	53		61	56	53		60	56	53	52

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	164900	164900	164900
5°	165074	164319	164319
10°	162907	161947	161447
15°	157621	156871	155813
20°	145972	149165	144360
25°	117376	134176	115822
30°	77467	105199	75629
35°	48424	63171	47541
40°	31603	29272	30368
45°	15215	11681	14355
50°	3828	4653	3588
55°	2120	1918	2052
60°	1447	1216	1370
65°	982	890	982
70°	762	677	762
75°	596	596	596
80°	445	667	667
85°	443	886	886

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	160.7	10.5
10°-20°	438.9	28.7
20°-30°	523.1	34.2
30°-40°	296.2	19.4
40°-50°	91.6	6.0
50°-60°	12.7	0.8
60°-70°	4.3	0.3
70°-80°	1.7	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°	1122.7	73.4
0°-40°	1418.9	92.7
0°-60°	1523.2	99.6
0°-90°	1530.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1530.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1709	1709	1709	1709	1709	
5°	1704	1700	1696	1695	1696	161
15°	1578	1575	1570	1564	1560	440
25°	1102	1167	1260	1169	1088	492
35°	411	448	536	450	404	268
45°	112	130	86	126	105	92
55°	13	13	11	12	12	12
65°	4	4	4	4	4	5
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°	1709.0	1709.0	1709.0	1709.0	1709.0
2.5°	1709.4	1706.7	1705.9	1705.1	1706.7
5°	1704.3	1700.4	1696.5	1695.3	1696.5
7.5°	1689.8	1685.9	1679.2	1677.6	1678.8
10°	1662.7	1659.2	1652.9	1649.4	1647.8
12.5°	1627.0	1621.1	1615.2	1611.3	1607.4
15°	1577.9	1575.2	1570.4	1564.2	1559.8
17.5°	1510.0	1513.9	1516.7	1504.1	1492.7
20°	1421.6	1436.2	1452.7	1427.1	1405.9
22.5°	1283.8	1325.5	1367.5	1319.2	1272.1
25°	1102.5	1166.8	1260.3	1168.8	1087.9
27.5°	890.8	972.5	1119.7	972.9	879.1
30°	695.3	779.3	944.2	768.3	678.8
32.5°	534.0	596.8	737.7	587.3	522.6
35°	411.1	448.4	536.3	449.5	403.6
37.5°	319.6	338.4	360.8	331.8	310.2
40°	250.9	251.7	232.4	247.7	241.1
42.5°	186.1	185.3	142.9	180.6	181.8
45°	111.5	130.0	85.6	126.4	105.2
47.5°	53.0	73.4	51.4	69.5	49.1
50°	25.5	35.3	31.0	33.0	23.9
52.5°	17.3	18.1	17.7	17.3	16.5
55°	12.6	12.6	11.4	12.2	12.2
57.5°	9.4	9.4	8.2	9.0	9.0
60°	7.5	7.1	6.3	7.1	7.1
62.5°	5.5	5.5	4.7	5.5	5.5
65°	4.3	4.3	3.9	4.3	4.3
67.5°	3.5	3.5	2.7	3.5	3.1
70°	2.7	2.7	2.4	2.7	2.7
72.5°	2.0	2.0	2.0	2.0	2.0
75°	1.6	1.6	1.6	1.6	1.6
77.5°	1.2	1.2	1.2	1.2	1.2
80°	0.8	0.8	1.2	1.2	1.2
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)