

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 FEU4C209040 F4LC-SQ-WH**

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 FEU4C209040 F4LC-SQ-WH
 Description: 4 INCH 2000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

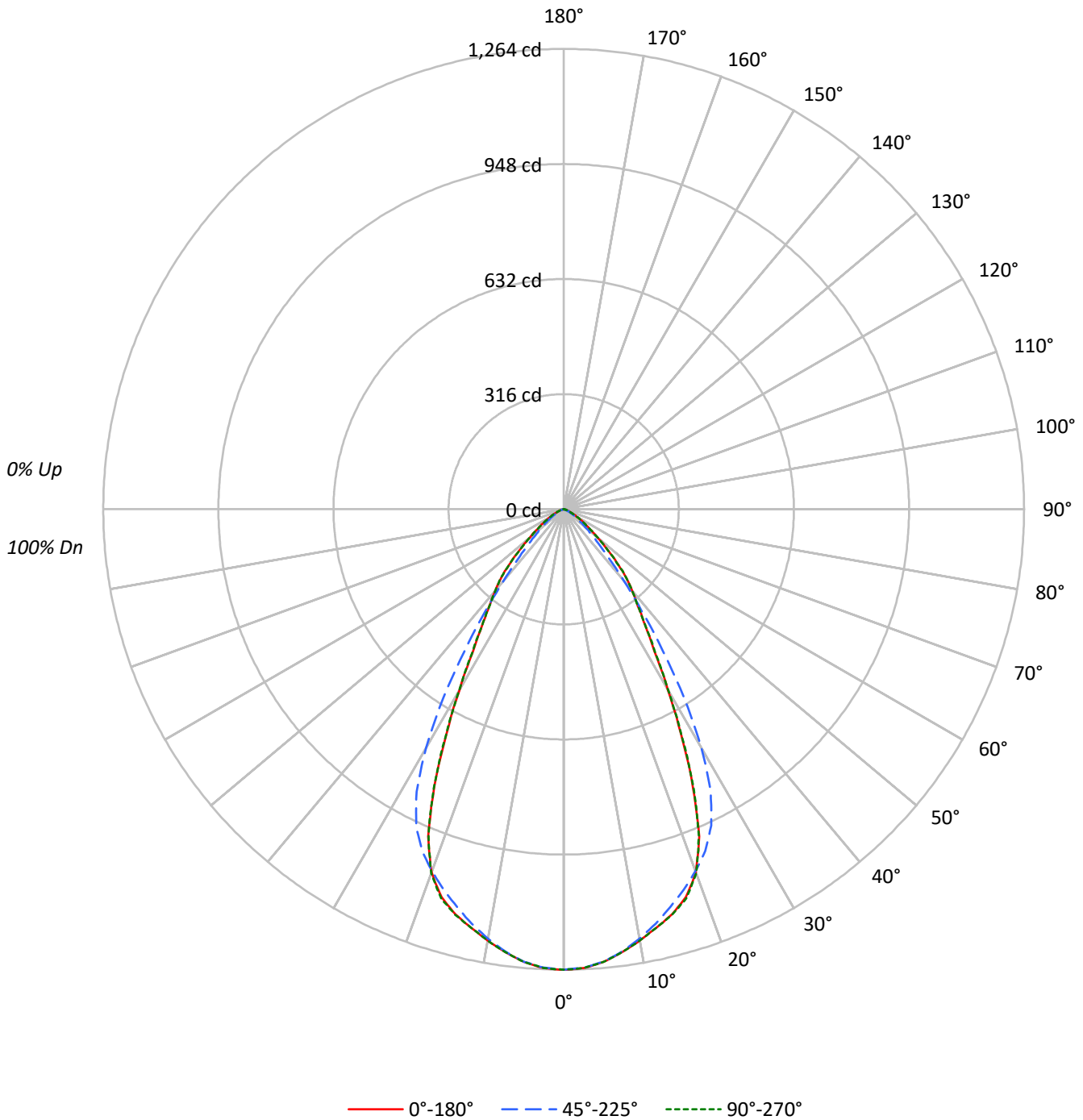
Lumens per Lamp: N/A
 Luminaire Lumens: 1338.0 lumens
 Efficiency: N/A
 Efficacy: 61.4 lumens/watt
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71
5	89	80	74	69	88	79	73	69	78	72	68	76	71	68	74	70	67	66
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56
8	76	65	59	55	74	65	59	54	64	58	54	63	58	54	62	57	54	52
9	72	61	55	51	71	61	55	51	60	54	51	59	54	50	58	54	50	49
10	68	58	52	48	67	57	51	47	57	51	47	56	51	47	55	50	47	46

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	121981	121981	121981
5°	120859	120781	120820
10°	117769	117299	117769
15°	114926	112859	115046
20°	108965	108565	109171
25°	89387	101992	89855
30°	63741	84264	63830
35°	45974	55833	46115
40°	36855	32434	36855
45°	28124	18926	27905
50°	18554	12084	18494
55°	12482	8108	12348
60°	8395	5538	8472
65°	5731	3904	5639
70°	3837	2821	3837
75°	2535	2088	2535
80°	1778	1556	1778
85°	1329	1329	1329

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.5	8.8
10°-20°	320.4	23.9
20°-30°	400.6	29.9
30°-40°	269.5	20.1
40°-50°	142.3	10.6
50°-60°	57.8	4.3
60°-70°	21.4	1.6
70°-80°	6.9	0.5
80°-90°	1.5	0.1
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°	838.5	62.7
0°-40°	1108.0	82.8
0°-60°	1308.1	97.8
0°-90°	1338.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1338.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1264	1264	1264	1264	1264	
5°	1248	1247	1247	1247	1247	118
15°	1150	1141	1130	1141	1152	322
25°	840	887	958	888	844	378
35°	390	410	474	411	392	251
45°	206	196	139	195	204	158
55°	74	62	48	62	73	69
65°	25	20	17	20	25	26
75°	7	6	6	6	7	8
85°	1	1	1	1	1	2
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1264.2	1264.2	1264.2	1264.2	1264.2
2.5°	1261.0	1260.2	1259.8	1259.8	1260.2
5°	1247.8	1246.6	1247.0	1247.0	1247.4
7.5°	1226.7	1226.3	1225.1	1226.7	1226.7
10°	1202.0	1200.0	1197.2	1200.4	1202.0
12.5°	1176.5	1170.5	1165.7	1170.5	1176.5
15°	1150.5	1141.0	1129.8	1140.6	1151.7
17.5°	1116.7	1107.1	1094.7	1109.1	1119.8
20°	1061.2	1062.0	1057.3	1061.2	1063.2
22.5°	972.3	990.3	1015.4	990.7	969.5
25°	839.6	886.6	958.0	888.2	844.0
27.5°	697.3	757.1	873.9	760.6	701.6
30°	572.1	625.1	756.3	628.7	572.9
32.5°	463.2	502.7	614.7	507.5	468.4
35°	390.3	409.8	474.0	410.6	391.5
37.5°	334.5	334.5	352.0	336.1	332.9
40°	292.6	279.9	257.5	279.5	292.6
42.5°	253.5	234.4	187.0	233.6	254.3
45°	206.1	195.7	138.7	194.9	204.5
47.5°	158.3	151.1	104.4	150.3	159.5
50°	123.6	112.4	80.5	111.6	123.2
52.5°	94.9	82.9	62.2	82.9	94.1
55°	74.2	62.2	48.2	62.2	73.4
57.5°	57.0	47.4	36.7	46.6	56.6
60°	43.5	35.5	28.7	35.5	43.9
62.5°	33.1	27.1	21.9	26.7	32.7
65°	25.1	20.3	17.1	20.3	24.7
67.5°	18.3	15.1	13.2	15.1	18.7
70°	13.6	11.6	10.0	11.2	13.6
72.5°	10.0	8.4	7.6	8.4	10.0
75°	6.8	6.0	5.6	6.0	6.8
77.5°	4.8	4.4	4.0	4.4	4.8
80°	3.2	2.8	2.8	3.2	3.2
82.5°	2.0	2.0	2.0	2.0	2.0
85°	1.2	1.2	1.2	1.2	1.2
87.5°	0.8	0.8	0.8	0.8	0.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)