

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: **FLDSQ4C90D010 FEU4C909027 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: FLDSQ4C90D010 FEU4C909027 F4LC-SQ-WH
 Description: 4 INCH 9000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

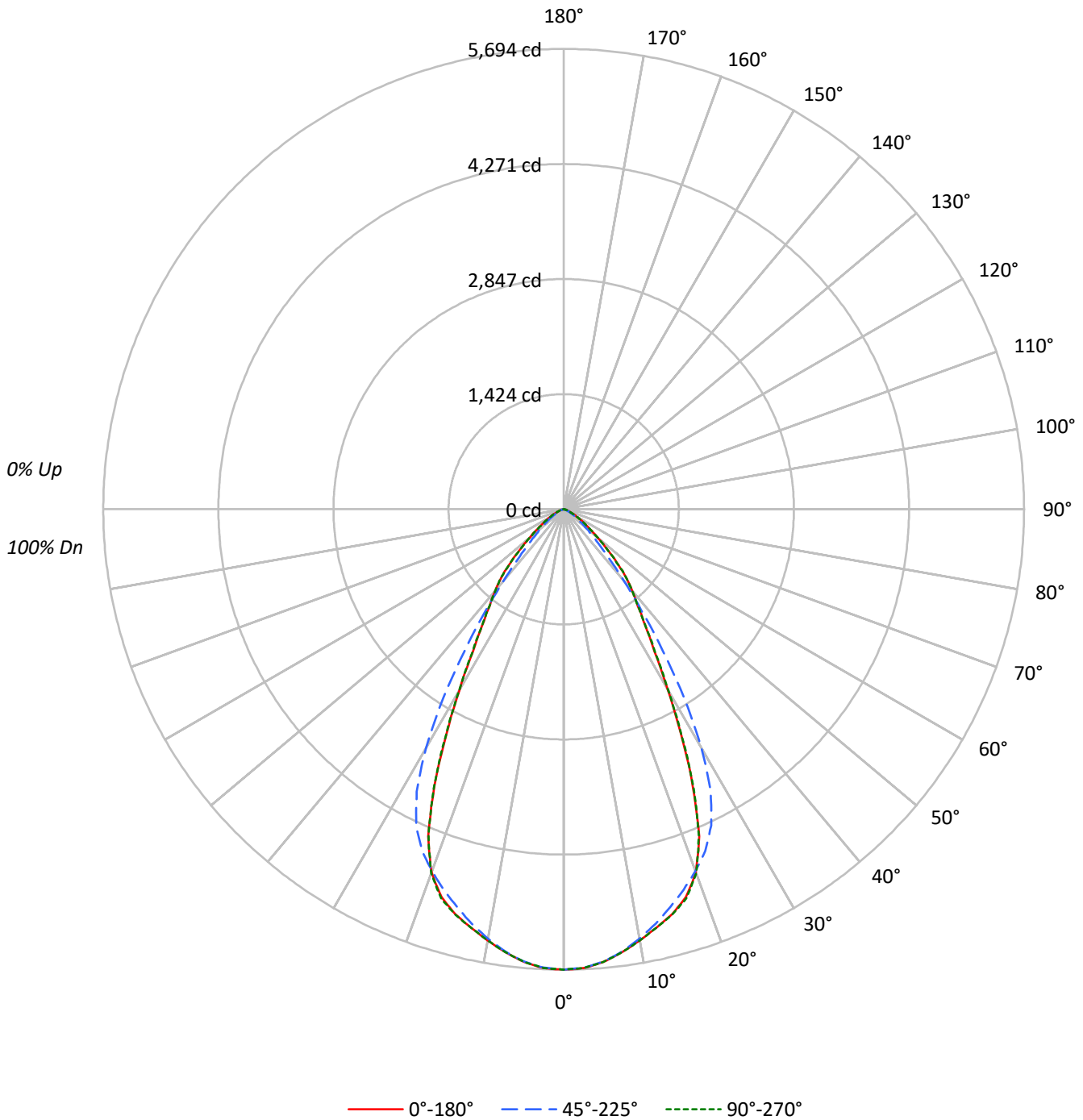
Lumens per Lamp: N/A
 Luminaire Lumens: 6027.0 lumens
 Efficiency: N/A
 Efficacy: 62.1 lumens/watt
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 97.1
 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°	549446	549446	549446
5°	544416	544068	544242
10°	530469	528363	530469
15°	517704	508374	518243
20°	490848	489010	491772
25°	402635	459412	404732
30°	287107	379549	287508
35°	207089	251508	207713
40°	166024	146123	166024
45°	126686	85271	125703
50°	83566	54445	83296
55°	56187	36555	55581
60°	37766	24952	38113
65°	25822	17626	25411
70°	17237	12667	17237
75°	11371	9357	11371
80°	8001	7001	8001
85°	5978	5978	5978

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	529.3	8.8
10°-20°	1443.4	23.9
20°-30°	1804.4	29.9
30°-40°	1213.9	20.1
40°-50°	640.9	10.6
50°-60°	260.5	4.3
60°-70°	96.6	1.6
70°-80°	31.2	0.5
80°-90°	6.7	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°	3777.2	62.7
0°-40°	4991.0	82.8
0°-60°	5892.5	97.8
0°-90°	6027.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6027.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5694	5694	5694	5694	5694	
5°	5621	5615	5617	5617	5619	530
15°	5183	5140	5089	5138	5188	1452
25°	3782	3994	4315	4001	3802	1702
35°	1758	1846	2135	1850	1763	1131
45°	928	882	625	878	921	712
55°	334	280	217	280	330	310
65°	113	92	77	92	111	117
75°	30	27	25	27	30	35
85°	5	5	5	5	5	7
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5694.4	5694.4	5694.4	5694.4	5694.4
2.5°	5680.0	5676.4	5674.6	5674.6	5676.4
5°	5620.8	5615.4	5617.2	5617.2	5619.0
7.5°	5525.6	5523.8	5518.4	5525.6	5525.6
10°	5414.2	5405.3	5392.7	5407.1	5414.2
12.5°	5299.3	5272.4	5250.8	5272.4	5299.3
15°	5182.6	5139.5	5089.2	5137.7	5188.0
17.5°	5029.9	4986.8	4931.2	4995.8	5044.3
20°	4780.3	4783.9	4762.4	4780.3	4789.3
22.5°	4379.9	4460.7	4573.8	4462.5	4367.3
25°	3781.9	3993.8	4315.2	4001.0	3801.6
27.5°	3140.8	3410.2	3936.3	3426.3	3160.6
30°	2576.9	2815.8	3406.6	2831.9	2580.5
32.5°	2086.7	2264.5	2769.1	2286.0	2110.0
35°	1758.1	1846.0	2135.2	1849.6	1763.4
37.5°	1506.6	1506.6	1585.7	1513.8	1499.5
40°	1318.1	1260.6	1160.1	1258.8	1318.1
42.5°	1142.1	1055.9	842.2	1052.3	1145.7
45°	928.4	881.7	624.9	878.1	921.2
47.5°	712.9	680.6	470.5	677.0	718.3
50°	556.7	506.4	362.7	502.8	554.9
52.5°	427.4	373.5	280.1	373.5	423.8
55°	334.0	280.1	217.3	280.1	330.4
57.5°	256.8	213.7	165.2	210.1	255.0
60°	195.7	159.8	129.3	159.8	197.5
62.5°	149.0	122.1	98.8	120.3	147.3
65°	113.1	91.6	77.2	91.6	111.3
67.5°	82.6	68.2	59.3	68.2	84.4
70°	61.1	52.1	44.9	50.3	61.1
72.5°	44.9	37.7	34.1	37.7	44.9
75°	30.5	26.9	25.1	26.9	30.5
77.5°	21.5	19.8	18.0	19.8	21.5
80°	14.4	12.6	12.6	14.4	14.4
82.5°	9.0	9.0	9.0	9.0	9.0
85°	5.4	5.4	5.4	5.4	5.4
87.5°	3.6	3.6	3.6	3.6	3.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)