

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: **FLDSQ4C40D010 FEU4C409027 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: FLDSQ4C40D010 FEU4C409027 F4LC-SQ-WH
 Description: 4 INCH 4000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

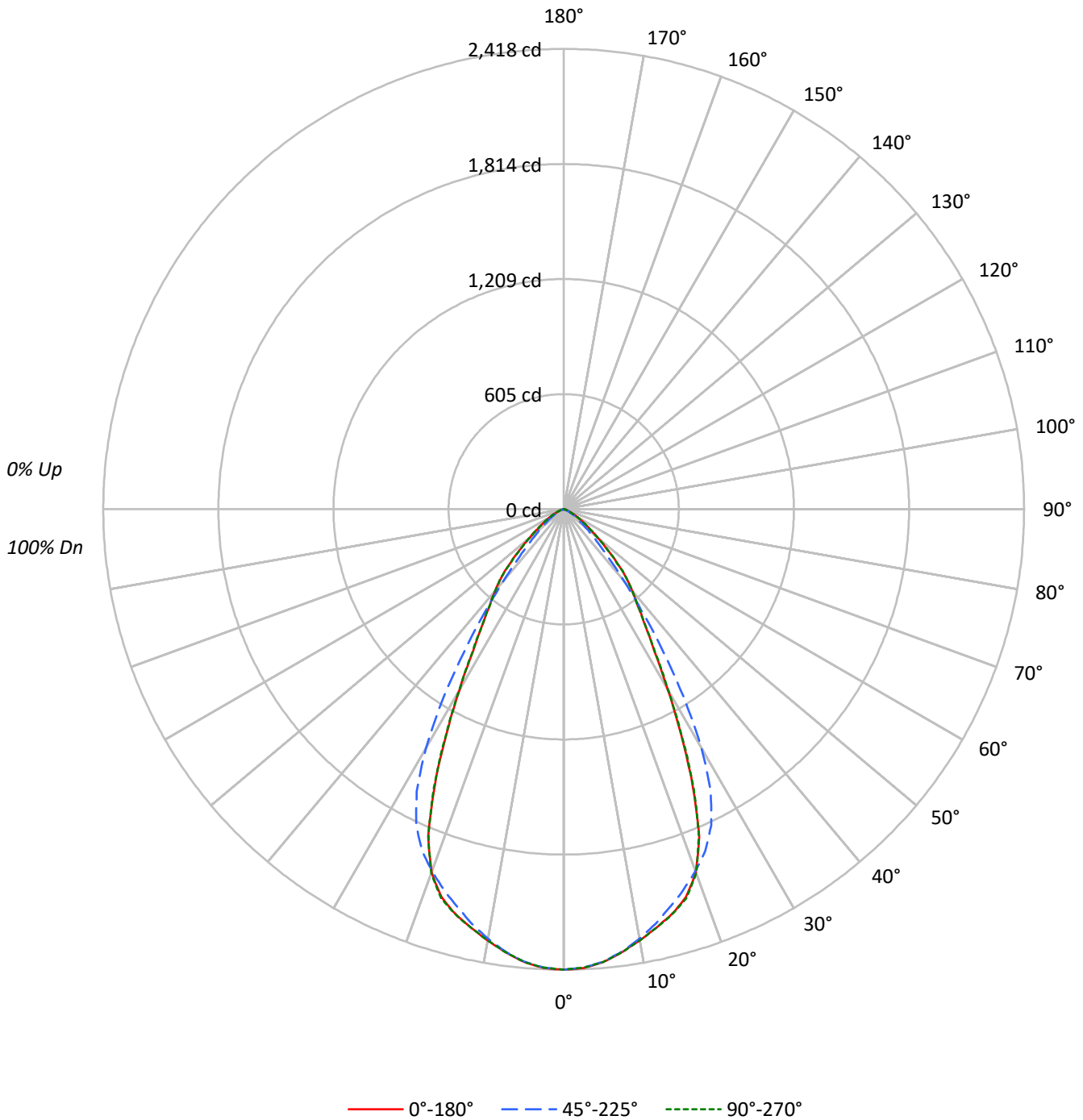
Lumens per Lamp: N/A
 Luminaire Lumens: 2559.0 lumens
 Efficiency: N/A
 Efficacy: 54.4 lumens/watt
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 47
 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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CATALOG NUMBER: FLDSQ4C40D010 FEU4C409027 F4LC-SQ-WH

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	233291	233291	233291
5°	231150	231005	231083
10°	225230	224339	225230
15°	219814	215848	220044
20°	208412	207632	208802
25°	170949	195063	171843
30°	121900	161152	122078
35°	87931	106789	88190
40°	70486	62047	70486
45°	53791	36202	53368
50°	35486	23117	35366
55°	23854	15527	23602
60°	16036	10594	16191
65°	10959	7489	10799
70°	7307	5388	7307
75°	4846	3989	4846
80°	3390	2945	3390
85°	2546	2546	2546

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	224.8	8.8
10°-20°	612.8	23.9
20°-30°	766.1	29.9
30°-40°	515.4	20.1
40°-50°	272.1	10.6
50°-60°	110.6	4.3
60°-70°	41.0	1.6
70°-80°	13.2	0.5
80°-90°	2.8	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°	1603.7	62.7
0°-40°	2119.1	82.8
0°-60°	2501.9	97.8
0°-90°	2559.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2559.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2418	2418	2418	2418	2418	
5°	2386	2384	2385	2385	2386	225
15°	2200	2182	2161	2181	2203	616
25°	1606	1696	1832	1699	1614	723
35°	746	784	907	785	749	480
45°	394	374	265	373	391	302
55°	142	119	92	119	140	132
65°	48	39	33	39	47	49
75°	13	11	11	11	13	15
85°	2	2	2	2	2	3
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2417.8	2417.8	2417.8	2417.8	2417.8
2.5°	2411.7	2410.1	2409.4	2409.4	2410.1
5°	2386.5	2384.2	2385.0	2385.0	2385.8
7.5°	2346.1	2345.3	2343.1	2346.1	2346.1
10°	2298.8	2295.0	2289.7	2295.8	2298.8
12.5°	2250.0	2238.6	2229.4	2238.6	2250.0
15°	2200.5	2182.2	2160.8	2181.4	2202.8
17.5°	2135.7	2117.4	2093.7	2121.2	2141.8
20°	2029.7	2031.2	2022.1	2029.7	2033.5
22.5°	1859.7	1894.0	1942.0	1894.7	1854.3
25°	1605.7	1695.7	1832.2	1698.8	1614.1
27.5°	1333.5	1447.9	1671.3	1454.8	1341.9
30°	1094.1	1195.5	1446.4	1202.4	1095.7
32.5°	886.0	961.5	1175.7	970.6	895.9
35°	746.5	783.8	906.6	785.3	748.7
37.5°	639.7	639.7	673.3	642.8	636.7
40°	559.6	535.2	492.6	534.5	559.6
42.5°	484.9	448.3	357.6	446.8	486.5
45°	394.2	374.4	265.3	372.8	391.1
47.5°	302.7	289.0	199.8	287.4	305.0
50°	236.4	215.0	154.0	213.5	235.6
52.5°	181.5	158.6	118.9	158.6	179.9
55°	141.8	118.9	92.3	118.9	140.3
57.5°	109.0	90.7	70.1	89.2	108.3
60°	83.1	67.9	54.9	67.9	83.9
62.5°	63.3	51.8	41.9	51.1	62.5
65°	48.0	38.9	32.8	38.9	47.3
67.5°	35.1	29.0	25.2	29.0	35.8
70°	25.9	22.1	19.1	21.3	25.9
72.5°	19.1	16.0	14.5	16.0	19.1
75°	13.0	11.4	10.7	11.4	13.0
77.5°	9.1	8.4	7.6	8.4	9.1
80°	6.1	5.3	5.3	6.1	6.1
82.5°	3.8	3.8	3.8	3.8	3.8
85°	2.3	2.3	2.3	2.3	2.3
87.5°	1.5	1.5	1.5	1.5	1.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)