

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 FEU4C409030 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 FEU4C409030 F4LC-SQ-WH
 Description: 4 INCH 4000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

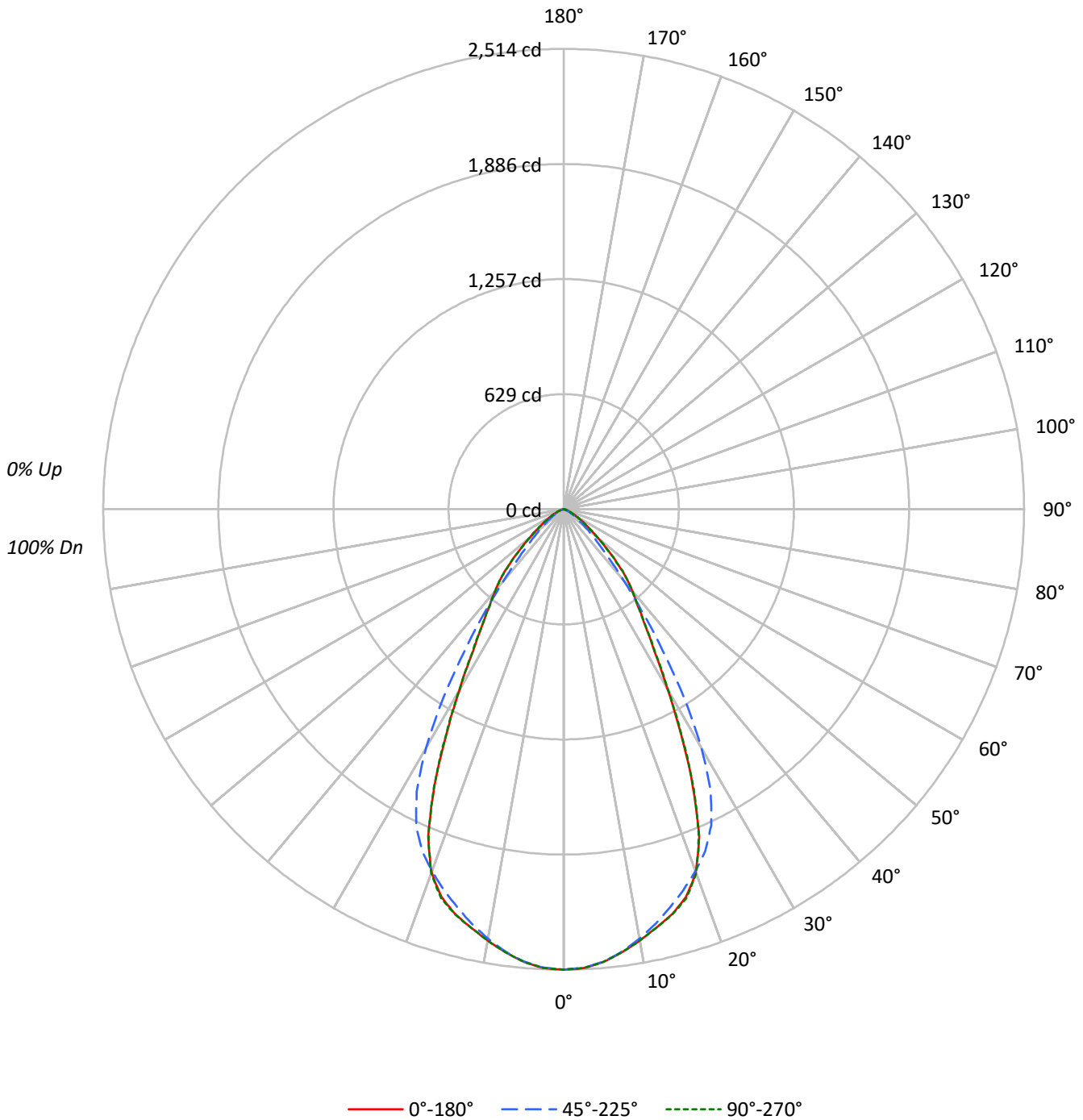
Lumens per Lamp: N/A
 Luminaire Lumens: 2661.0 lumens
 Efficiency: N/A
 Efficacy: 56.6 lumens/watt
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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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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
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92				92
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84				84
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77				77
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71				71
5	89	80	74	69	88	79	73	69	78	72	68	76	71	68	74	70	67	66				66
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61				61
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56				56
8	76	65	59	55	74	65	59	54	64	58	54	63	58	54	62	57	54	52				52
9	72	61	55	51	71	61	55	51	60	54	51	59	54	50	58	54	50	49				49
10	68	58	52	48	67	57	51	47	57	51	47	56	51	47	55	50	47	46				46

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	242583	242583	242583
5°	240361	240216	240284
10°	234215	233274	234215
15°	228574	224459	228814
20°	216719	215908	217120
25°	177773	202835	178699
30°	126758	167569	126936
35°	91430	111042	91712
40°	73307	64515	73307
45°	55933	37648	55497
50°	36897	24048	36777
55°	24813	16133	24544
60°	16673	11019	16828
65°	11393	7785	11233
70°	7617	5586	7617
75°	5033	4138	5033
80°	3501	3056	3501
85°	2657	2657	2657

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	233.7	8.8
10°-20°	637.3	23.9
20°-30°	796.7	29.9
30°-40°	535.9	20.1
40°-50°	283.0	10.6
50°-60°	115.0	4.3
60°-70°	42.6	1.6
70°-80°	13.8	0.5
80°-90°	3.0	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°	1667.7	62.7
0°-40°	2203.6	82.8
0°-60°	2601.6	97.8
0°-90°	2661.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2661.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2514	2514	2514	2514	2514	
5°	2482	2479	2480	2480	2481	234
15°	2288	2269	2247	2268	2291	641
25°	1670	1763	1905	1766	1678	752
35°	776	815	943	817	779	499
45°	410	389	276	388	407	314
55°	148	124	96	124	146	137
65°	50	40	34	40	49	51
75°	14	12	11	12	14	16
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°	2514.1	2514.1	2514.1	2514.1	2514.1
2.5°	2507.8	2506.2	2505.4	2505.4	2506.2
5°	2481.6	2479.3	2480.1	2480.1	2480.8
7.5°	2439.6	2438.8	2436.4	2439.6	2439.6
10°	2390.5	2386.5	2380.9	2387.3	2390.5
12.5°	2339.7	2327.8	2318.3	2327.8	2339.7
15°	2288.2	2269.2	2247.0	2268.4	2290.6
17.5°	2220.8	2201.8	2177.2	2205.7	2227.1
20°	2110.6	2112.2	2102.7	2110.6	2114.5
22.5°	1933.8	1969.5	2019.4	1970.2	1928.2
25°	1669.8	1763.3	1905.2	1766.5	1678.5
27.5°	1386.7	1505.6	1737.9	1512.8	1395.4
30°	1137.7	1243.2	1504.0	1250.3	1139.3
32.5°	921.3	999.8	1222.6	1009.3	931.6
35°	776.2	815.1	942.7	816.6	778.6
37.5°	665.2	665.2	700.1	668.4	662.0
40°	582.0	556.6	512.2	555.8	582.0
42.5°	504.3	466.2	371.8	464.6	505.8
45°	409.9	389.3	275.9	387.7	406.7
47.5°	314.8	300.5	207.7	298.9	317.1
50°	245.8	223.6	160.2	222.0	245.0
52.5°	188.7	164.9	123.7	164.9	187.1
55°	147.5	123.7	95.9	123.7	145.9
57.5°	113.4	94.3	72.9	92.8	112.6
60°	86.4	70.6	57.1	70.6	87.2
62.5°	65.8	53.9	43.6	53.1	65.0
65°	49.9	40.4	34.1	40.4	49.2
67.5°	36.5	30.1	26.2	30.1	37.3
70°	27.0	23.0	19.8	22.2	27.0
72.5°	19.8	16.6	15.1	16.6	19.8
75°	13.5	11.9	11.1	11.9	13.5
77.5°	9.5	8.7	7.9	8.7	9.5
80°	6.3	5.5	5.5	6.3	6.3
82.5°	4.0	4.0	4.0	4.0	4.0
85°	2.4	2.4	2.4	2.4	2.4
87.5°	1.6	1.6	1.6	1.6	1.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)