

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 FEU4C409050 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 FEU4C409050 F4LC-SQ-WH  
 Description: 4 INCH 4000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

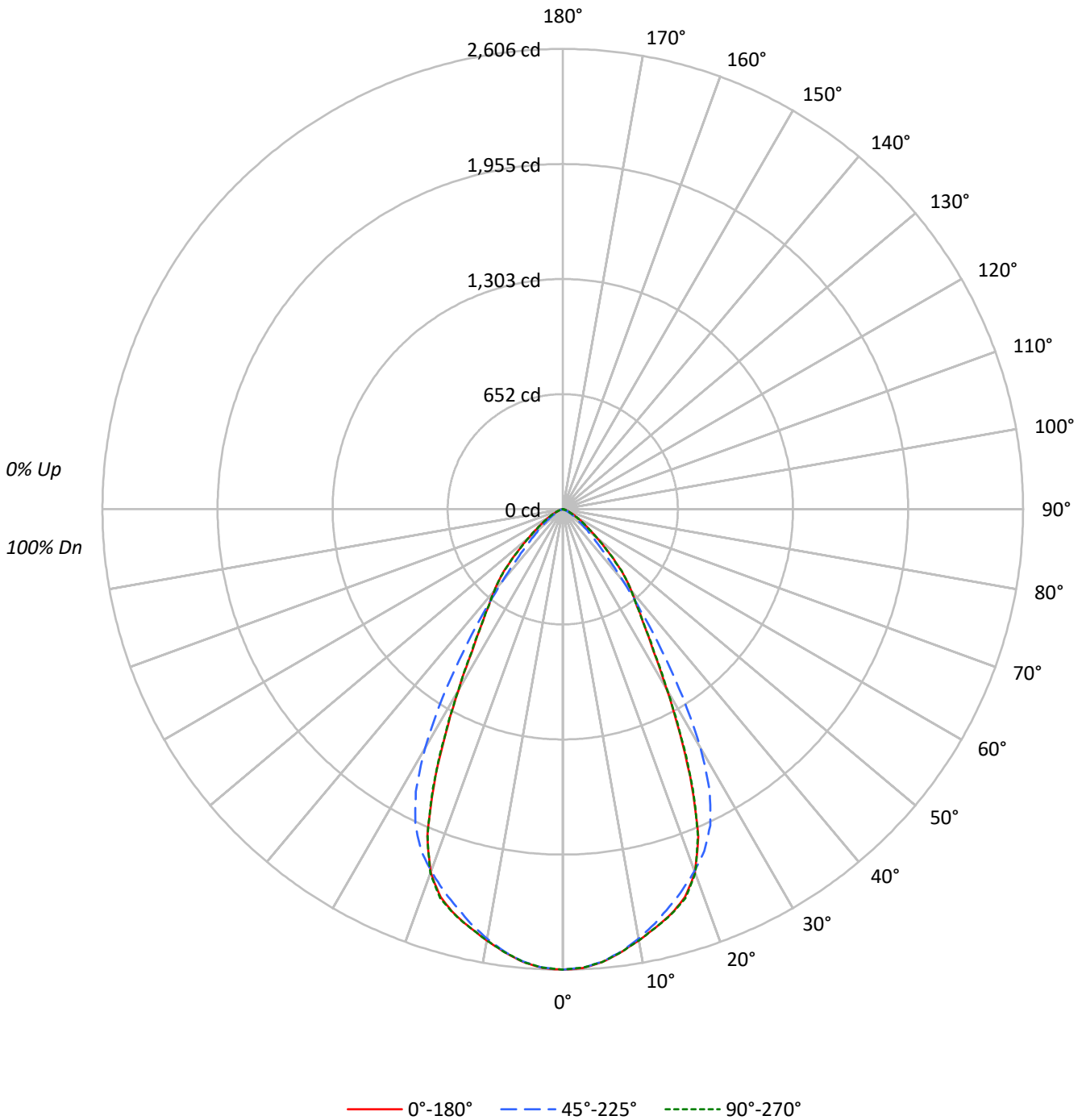
Lumens per Lamp: N/A  
 Luminaire Lumens: 2758.0 lumens  
 Efficiency: N/A  
 Efficacy: 58.7 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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	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°	251431	251431	251431
5°	249127	248972	249050
10°	242749	241779	242749
15°	236905	232640	237155
20°	224615	223773	225036
25°	184246	210234	185215
30°	131381	173686	131571
35°	94763	115094	95057
40°	75977	66871	75977
45°	57966	39026	57530
50°	38233	24918	38113
55°	25705	16721	25435
60°	17291	11424	17445
65°	11827	8059	11621
70°	7871	5783	7871
75°	5219	4287	5219
80°	3667	3223	3667
85°	2768	2768	2768

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	242.2	8.8
10°-20°	660.5	23.9
20°-30°	825.7	29.9
30°-40°	555.5	20.1
40°-50°	293.3	10.6
50°-60°	119.2	4.3
60°-70°	44.2	1.6
70°-80°	14.3	0.5
80°-90°	3.1	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°	1728.5	62.7
0°-40°	2283.9	82.8
0°-60°	2696.4	97.8
0°-90°	2758.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2758.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2606	2606	2606	2606	2606	
5°	2572	2570	2570	2570	2571	242
15°	2372	2352	2329	2351	2374	664
25°	1731	1828	1975	1831	1740	779
35°	804	845	977	846	807	518
45°	425	404	286	402	422	326
55°	153	128	99	128	151	142
65°	52	42	35	42	51	53
75°	14	12	12	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°	2605.8	2605.8	2605.8	2605.8	2605.8
2.5°	2599.2	2597.6	2596.8	2596.8	2597.6
5°	2572.1	2569.6	2570.5	2570.5	2571.3
7.5°	2528.5	2527.7	2525.3	2528.5	2528.5
10°	2477.6	2473.5	2467.7	2474.3	2477.6
12.5°	2425.0	2412.7	2402.8	2412.7	2425.0
15°	2371.6	2351.9	2328.9	2351.0	2374.1
17.5°	2301.7	2282.0	2256.5	2286.1	2308.3
20°	2187.5	2189.2	2179.3	2187.5	2191.6
22.5°	2004.3	2041.2	2093.0	2042.1	1998.5
25°	1730.6	1827.6	1974.7	1830.9	1739.7
27.5°	1437.3	1560.5	1801.3	1567.9	1446.3
30°	1179.2	1288.5	1558.9	1295.9	1180.9
32.5°	954.9	1036.2	1267.1	1046.1	965.6
35°	804.5	844.8	977.1	846.4	807.0
37.5°	689.5	689.5	725.6	692.7	686.2
40°	603.2	576.9	530.9	576.1	603.2
42.5°	522.6	483.2	385.4	481.5	524.3
45°	424.8	403.5	286.0	401.8	421.6
47.5°	326.2	311.4	215.3	309.8	328.7
50°	254.7	231.7	166.0	230.1	253.9
52.5°	195.6	170.9	128.2	170.9	193.9
55°	152.8	128.2	99.4	128.2	151.2
57.5°	117.5	97.8	75.6	96.1	116.7
60°	89.6	73.1	59.2	73.1	90.4
62.5°	68.2	55.9	45.2	55.1	67.4
65°	51.8	41.9	35.3	41.9	50.9
67.5°	37.8	31.2	27.1	31.2	38.6
70°	27.9	23.8	20.5	23.0	27.9
72.5°	20.5	17.3	15.6	17.3	20.5
75°	14.0	12.3	11.5	12.3	14.0
77.5°	9.9	9.0	8.2	9.0	9.9
80°	6.6	5.8	5.8	6.6	6.6
82.5°	4.1	4.1	4.1	4.1	4.1
85°	2.5	2.5	2.5	2.5	2.5
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)