

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: **FLDSQ4C100D010 FEU4C1009040 F4LC-SQ-WLI**

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: FLDSQ4C100D010 FEU4C1009040 F4LC-SQ-WLI  
 Description: 4 INCH 10000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

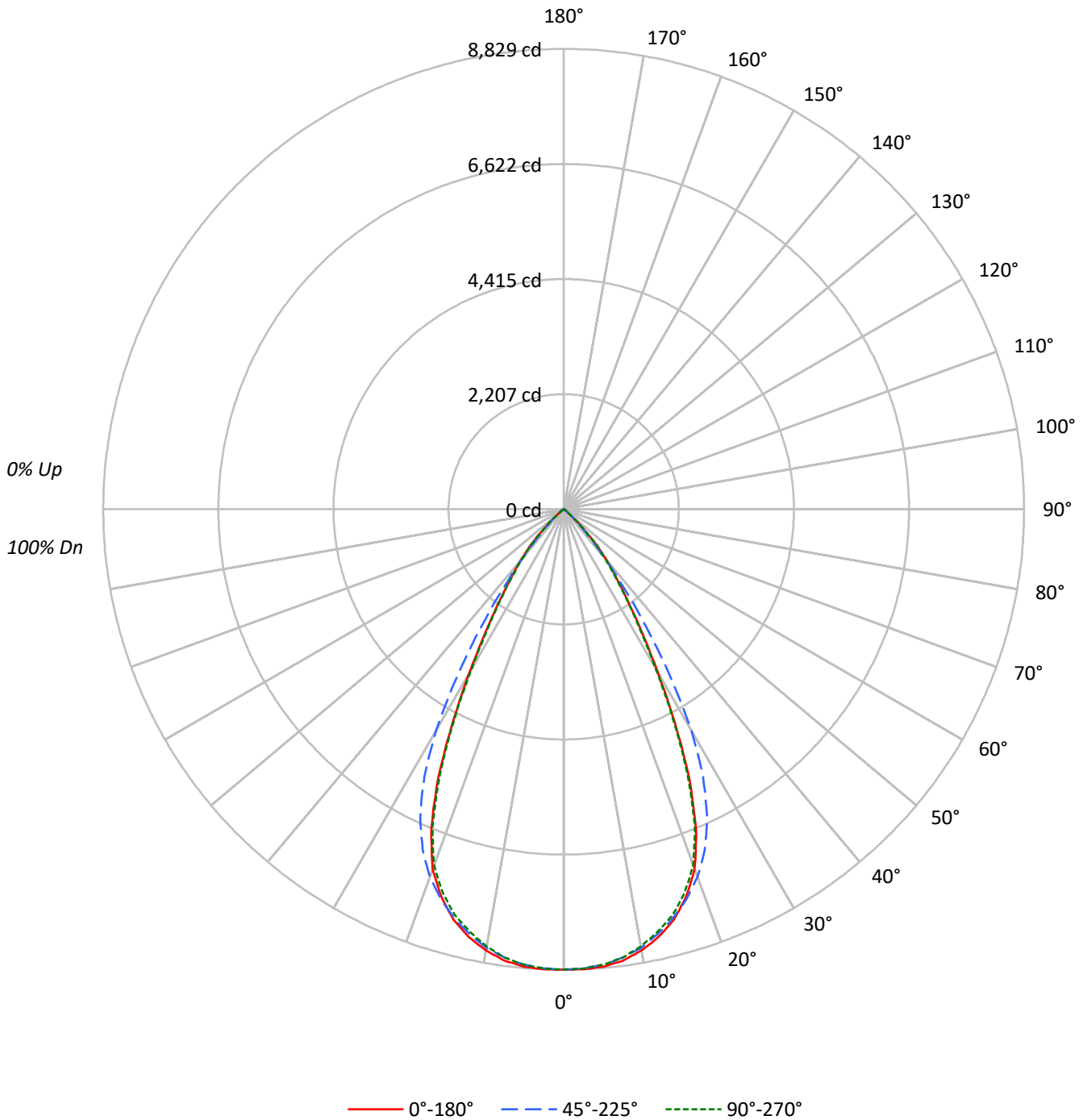
Lumens per Lamp: N/A  
 Luminaire Lumens: 7902.0 lumens  
 Efficiency: N/A  
 Efficacy: 69.1 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 114.4  
 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	114	111	108	106	111	109	106	104	105	103	101		101	100	98		97	96	95	94
2	108	103	99	96	106	102	98	95	98	95	93		95	93	91		93	91	89	87
3	103	96	91	88	101	95	90	87	92	89	85		90	87	84		88	85	83	81
4	98	90	85	80	96	89	84	80	87	82	79		85	81	78		83	80	77	76
5	93	84	79	74	91	84	78	74	82	77	73		80	76	73		79	75	72	71
6	88	79	73	69	87	79	73	69	77	72	68		76	71	68		74	71	68	66
7	84	75	69	65	82	74	68	64	73	68	64		71	67	64		70	66	63	62
8	80	70	64	60	79	70	64	60	69	64	60		68	63	60		67	63	59	58
9	76	66	61	57	75	66	60	57	65	60	56		64	60	56		63	59	56	55
10	72	63	57	53	71	62	57	53	62	57	53		61	56	53		60	56	53	52

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	851679	851679	851679
5°	852568	848646	848646
10°	841371	836404	833827
15°	814065	810219	804745
20°	753927	770377	745600
25°	606183	692972	598198
30°	400105	543341	390613
35°	250071	326270	245536
40°	163203	151199	156817
45°	78585	60314	74150
50°	19785	24048	18569
55°	10918	9892	10581
60°	7430	6252	7044
65°	5091	4635	5091
70°	4006	3442	4006
75°	3020	3020	3020
80°	2278	3390	3390
85°	2214	4539	4539

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	830.1	10.5
10°-20°	2266.9	28.7
20°-30°	2701.5	34.2
30°-40°	1529.7	19.4
40°-50°	472.9	6.0
50°-60°	65.7	0.8
60°-70°	22.4	0.3
70°-80°	8.9	0.1
80°-90°	3.8	0.0
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°	5798.5	73.4
0°-40°	7328.3	92.7
0°-60°	7866.9	99.6
0°-90°	7902.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7902.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8827	8827	8827	8827	8827	
5°	8802	8782	8762	8756	8762	833
15°	8149	8135	8111	8078	8056	2272
25°	5694	6026	6509	6036	5619	2539
35°	2123	2316	2770	2322	2084	1382
45°	576	671	442	653	543	476
55°	65	65	59	63	63	64
65°	22	22	20	22	22	23
75°	8	8	8	8	8	9
85°	2	4	4	4	4	3
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8826.7	8826.7	8826.7	8826.7	8826.7
2.5°	8828.7	8814.5	8810.5	8806.4	8814.5
5°	8802.3	8782.1	8761.8	8755.7	8761.8
7.5°	8727.3	8707.0	8672.6	8664.5	8670.5
10°	8587.4	8569.2	8536.7	8518.5	8510.4
12.5°	8402.9	8372.5	8342.1	8321.8	8301.5
15°	8149.4	8135.2	8110.9	8078.4	8056.1
17.5°	7798.6	7818.9	7833.1	7768.2	7709.4
20°	7342.4	7417.4	7502.6	7370.8	7261.3
22.5°	6630.7	6845.6	7062.6	6813.2	6569.8
25°	5693.8	6026.4	6509.0	6036.5	5618.8
27.5°	4600.9	5022.7	5783.1	5024.7	4540.1
30°	3591.1	4025.0	4876.7	3968.3	3505.9
32.5°	2757.7	3082.1	3810.1	3033.5	2698.9
35°	2123.0	2315.7	2769.9	2321.7	2084.5
37.5°	1650.6	1747.9	1863.5	1713.4	1601.9
40°	1295.7	1299.8	1200.4	1279.5	1245.0
42.5°	961.1	957.1	738.1	932.8	938.8
45°	575.9	671.2	442.0	652.9	543.4
47.5°	273.7	379.2	265.6	358.9	253.5
50°	131.8	182.5	160.2	170.3	123.7
52.5°	89.2	93.3	91.2	89.2	85.2
55°	64.9	64.9	58.8	62.9	62.9
57.5°	48.7	48.7	42.6	46.6	46.6
60°	38.5	36.5	32.4	36.5	36.5
62.5°	28.4	28.4	24.3	28.4	28.4
65°	22.3	22.3	20.3	22.3	22.3
67.5°	18.2	18.2	14.2	18.2	16.2
70°	14.2	14.2	12.2	14.2	14.2
72.5°	10.1	10.1	10.1	10.1	10.1
75°	8.1	8.1	8.1	8.1	8.1
77.5°	6.1	6.1	6.1	6.1	6.1
80°	4.1	4.1	6.1	6.1	6.1
82.5°	4.1	4.1	4.1	4.1	4.1
85°	2.0	4.1	4.1	4.1	4.1
87.5°	2.0	2.0	4.1	4.1	4.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)