

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 FEU4C1009027 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 FEU4C1009027 F4LC-SQ-WLI  
 Description: 4 INCH 10000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

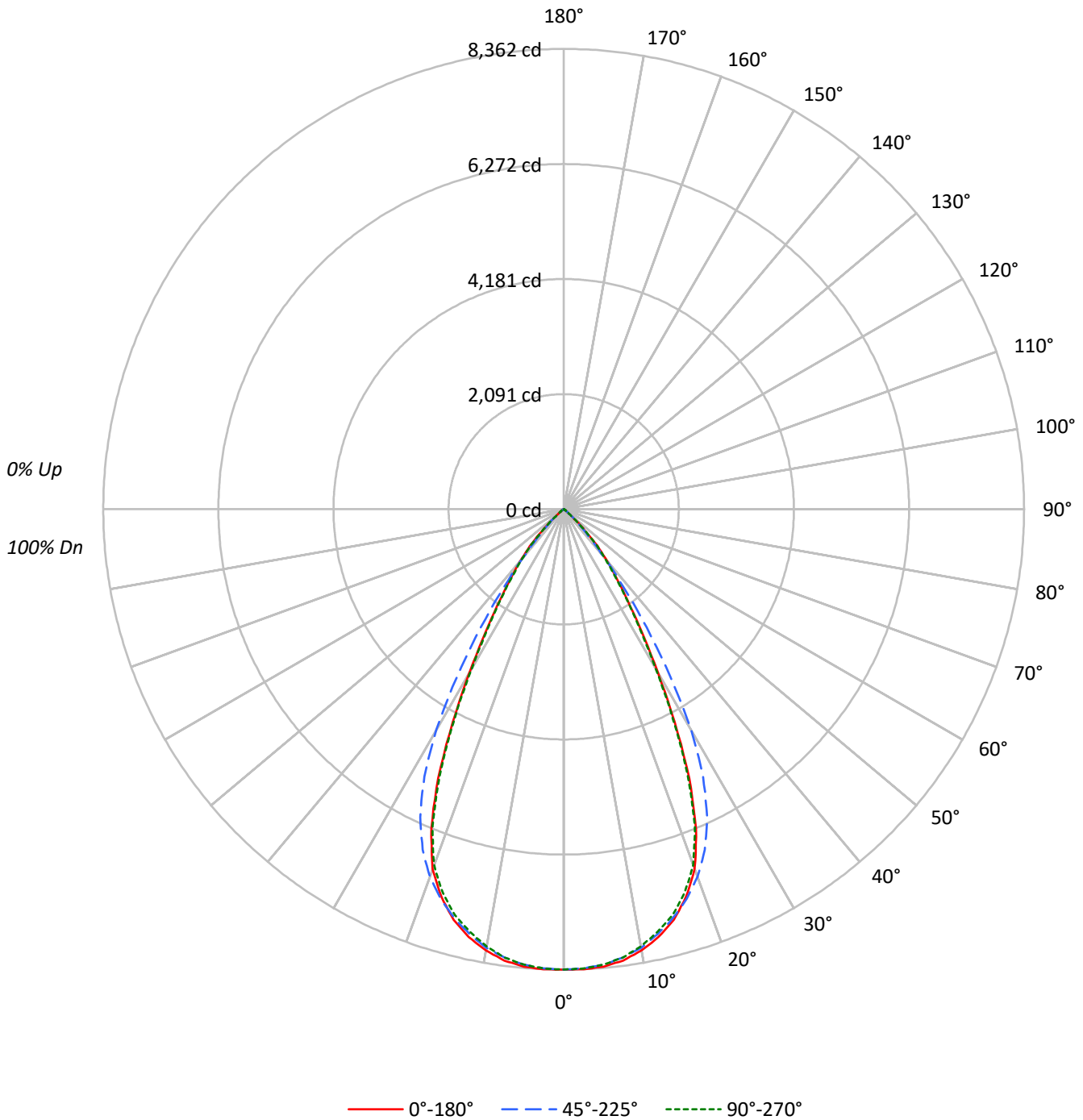
Lumens per Lamp: N/A  
 Luminaire Lumens: 7484.0 lumens  
 Efficiency: N/A  
 Efficacy: 65.4 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.91 / 0.9  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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

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

	0°	45°	90°
0°	806628	806628	806628
5°	807472	803752	803752
10°	796870	792157	789717
15°	771001	767355	762181
20°	714046	729623	706160
25°	574127	656317	566557
30°	378936	514596	369956
35°	236843	309002	232543
40°	154575	143201	148529
45°	74423	57134	70234
50°	18734	22772	17578
55°	10346	9370	10009
60°	7044	5924	6677
65°	4817	4384	4817
70°	3780	3244	3780
75°	2871	2871	2871
80°	2111	3223	3223
85°	2103	4207	4207

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	786.2	10.5
10°-20°	2147.0	28.7
20°-30°	2558.6	34.2
30°-40°	1448.8	19.4
40°-50°	447.9	6.0
50°-60°	62.2	0.8
60°-70°	21.2	0.3
70°-80°	8.5	0.1
80°-90°	3.5	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°	5491.8	73.4
0°-40°	6940.6	92.7
0°-60°	7450.8	99.6
0°-90°	7484.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7484.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8360	8360	8360	8360	8360	
5°	8337	8318	8298	8292	8298	789
15°	7718	7705	7682	7651	7630	2152
25°	5393	5708	6165	5717	5322	2404
35°	2011	2193	2623	2199	1974	1309
45°	545	636	419	618	515	450
55°	62	62	56	60	60	60
65°	21	21	19	21	21	22
75°	8	8	8	8	8	8
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°	8359.8	8359.8	8359.8	8359.8	8359.8
2.5°	8361.7	8348.2	8344.4	8340.6	8348.2
5°	8336.7	8317.5	8298.3	8292.5	8298.3
7.5°	8265.7	8246.5	8213.8	8206.1	8211.9
10°	8133.2	8115.9	8085.1	8067.9	8060.2
12.5°	7958.4	7929.6	7900.8	7881.6	7862.4
15°	7718.3	7704.9	7681.8	7651.1	7630.0
17.5°	7386.1	7405.3	7418.7	7357.3	7301.6
20°	6954.0	7025.0	7105.7	6980.9	6877.2
22.5°	6279.9	6483.5	6689.0	6452.7	6222.3
25°	5392.7	5707.6	6164.7	5717.2	5321.6
27.5°	4357.5	4757.0	5477.2	4758.9	4299.9
30°	3401.1	3812.1	4618.7	3758.3	3320.5
32.5°	2611.8	2919.1	3608.5	2873.0	2556.1
35°	2010.7	2193.2	2623.3	2198.9	1974.2
37.5°	1563.3	1655.4	1764.9	1622.8	1517.2
40°	1227.2	1231.0	1136.9	1211.8	1179.2
42.5°	910.3	906.5	699.0	883.4	889.2
45°	545.4	635.7	418.7	618.4	514.7
47.5°	259.3	359.1	251.6	339.9	240.1
50°	124.8	172.8	151.7	161.3	117.1
52.5°	84.5	88.3	86.4	84.5	80.7
55°	61.5	61.5	55.7	59.5	59.5
57.5°	46.1	46.1	40.3	44.2	44.2
60°	36.5	34.6	30.7	34.6	34.6
62.5°	26.9	26.9	23.0	26.9	26.9
65°	21.1	21.1	19.2	21.1	21.1
67.5°	17.3	17.3	13.4	17.3	15.4
70°	13.4	13.4	11.5	13.4	13.4
72.5°	9.6	9.6	9.6	9.6	9.6
75°	7.7	7.7	7.7	7.7	7.7
77.5°	5.8	5.8	5.8	5.8	5.8
80°	3.8	3.8	5.8	5.8	5.8
82.5°	3.8	3.8	3.8	3.8	3.8
85°	1.9	3.8	3.8	3.8	3.8
87.5°	1.9	1.9	3.8	3.8	3.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)