

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: **FLDSQ4C70D010 FEU4C709035 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: FLDSQ4C70D010 FEU4C709035 F4LC-SQ-WH  
 Description: 4 INCH 7000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

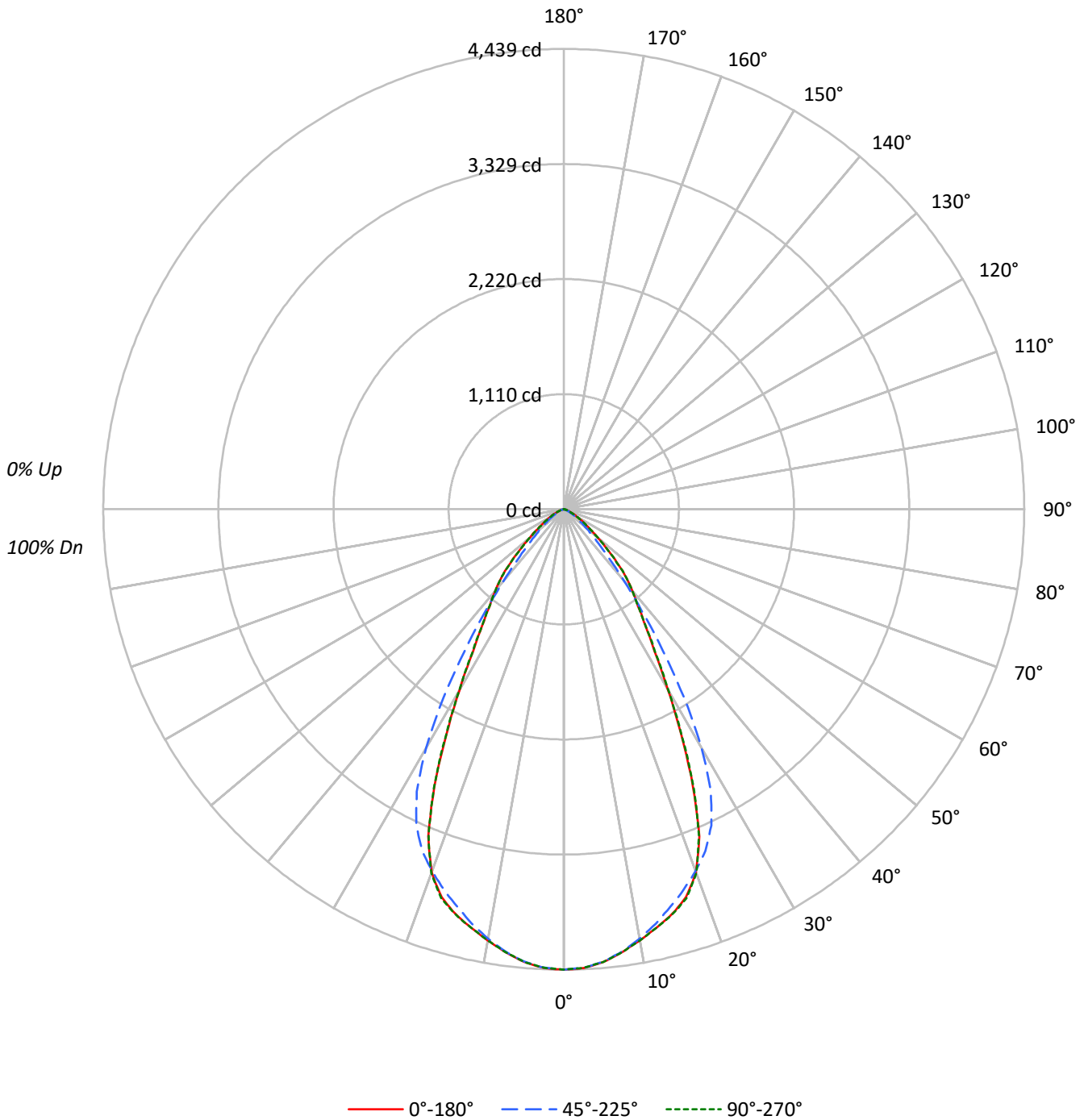
Lumens per Lamp: N/A  
 Luminaire Lumens: 4698.0 lumens  
 Efficiency: N/A  
 Efficacy: 60.2 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 78  
 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°	428285	428285	428285
5°	424362	424090	424226
10°	413504	411858	413504
15°	403546	396274	403966
20°	382611	381174	383330
25°	313855	358112	315495
30°	223801	295853	224113
35°	161421	196040	161916
40°	129409	113903	129409
45°	98753	66468	97989
50°	65133	42451	64923
55°	43805	28497	43334
60°	29448	19452	29719
65°	20137	13744	19817
70°	13429	9874	13429
75°	8873	7307	8873
80°	6223	5445	6223
85°	4650	4650	4650

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	412.6	8.8
10°-20°	1125.1	23.9
20°-30°	1406.5	29.9
30°-40°	946.2	20.1
40°-50°	499.6	10.6
50°-60°	203.1	4.3
60°-70°	75.3	1.6
70°-80°	24.3	0.5
80°-90°	5.2	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°	2944.3	62.7
0°-40°	3890.5	82.8
0°-60°	4593.2	97.8
0°-90°	4698.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4698.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4439	4439	4439	4439	4439	
5°	4381	4377	4378	4378	4380	413
15°	4040	4006	3967	4005	4044	1132
25°	2948	3113	3364	3119	2963	1327
35°	1370	1439	1664	1442	1375	882
45°	724	687	487	684	718	555
55°	260	218	169	218	258	241
65°	88	71	60	71	87	91
75°	24	21	20	21	24	28
85°	4	4	4	4	4	5
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4438.7	4438.7	4438.7	4438.7	4438.7
2.5°	4427.5	4424.7	4423.3	4423.3	4424.7
5°	4381.3	4377.1	4378.5	4378.5	4379.9
7.5°	4307.1	4305.7	4301.5	4307.1	4307.1
10°	4220.4	4213.4	4203.6	4214.8	4220.4
12.5°	4130.8	4109.8	4093.0	4109.8	4130.8
15°	4039.8	4006.2	3967.0	4004.8	4044.0
17.5°	3920.8	3887.2	3843.8	3894.2	3932.0
20°	3726.2	3729.0	3712.2	3726.2	3733.2
22.5°	3414.1	3477.1	3565.3	3478.5	3404.3
25°	2948.0	3113.1	3363.7	3118.7	2963.4
27.5°	2448.2	2658.2	3068.3	2670.8	2463.6
30°	2008.7	2194.9	2655.4	2207.5	2011.5
32.5°	1626.6	1765.1	2158.5	1781.9	1644.8
35°	1370.4	1439.0	1664.3	1441.8	1374.6
37.5°	1174.4	1174.4	1236.0	1180.0	1168.8
40°	1027.4	982.7	904.3	981.3	1027.4
42.5°	890.3	823.1	656.5	820.3	893.1
45°	723.7	687.3	487.1	684.5	718.1
47.5°	555.7	530.5	366.7	527.7	559.9
50°	433.9	394.7	282.8	391.9	432.5
52.5°	333.1	291.2	218.4	291.2	330.3
55°	260.4	218.4	169.4	218.4	257.6
57.5°	200.2	166.6	128.8	163.8	198.8
60°	152.6	124.6	100.8	124.6	154.0
62.5°	116.2	95.2	77.0	93.8	114.8
65°	88.2	71.4	60.2	71.4	86.8
67.5°	64.4	53.2	46.2	53.2	65.8
70°	47.6	40.6	35.0	39.2	47.6
72.5°	35.0	29.4	26.6	29.4	35.0
75°	23.8	21.0	19.6	21.0	23.8
77.5°	16.8	15.4	14.0	15.4	16.8
80°	11.2	9.8	9.8	11.2	11.2
82.5°	7.0	7.0	7.0	7.0	7.0
85°	4.2	4.2	4.2	4.2	4.2
87.5°	2.8	2.8	2.8	2.8	2.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)