

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: **FLDSQ4C65D010 FEU4C659050 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: FLDSQ4C65D010 FEU4C659050 F4LC-SQ-WH  
 Description: 4 INCH 6500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

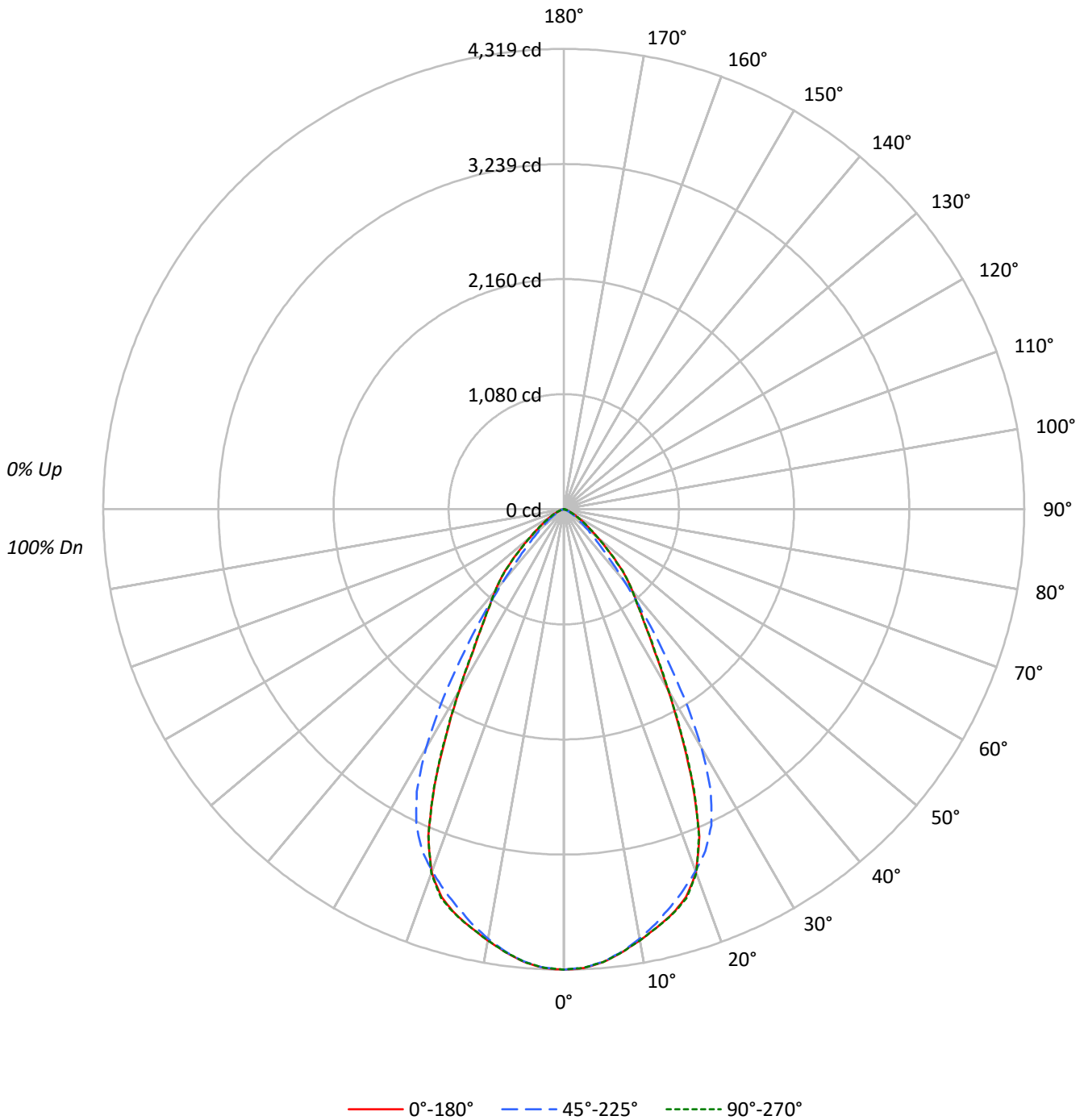
Lumens per Lamp: N/A  
 Luminaire Lumens: 4571.0 lumens  
 Efficiency: N/A  
 Efficacy: 63.1 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 72.4  
 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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71
5	89	80	74	69	88	79	73	69	78	72	68	76	71	68	74	70	67	66
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56
8	76	65	59	55	74	65	59	54	64	58	54	63	58	54	62	57	54	52
9	72	61	55	51	71	61	55	51	60	54	51	59	54	50	58	54	50	49
10	68	58	52	48	67	57	51	47	57	51	47	56	51	47	55	50	47	46

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

	0°	45°	90°
0°	416707	416707	416707
5°	412894	412632	412758
10°	402325	400718	402325
15°	392638	385566	393048
20°	372271	370875	372969
25°	305370	348434	306956
30°	217751	287854	218052
35°	157051	190751	157534
40°	125920	110817	125920
45°	96079	64680	95342
50°	63376	41295	63166
55°	42611	27723	42157
60°	28657	18931	28908
65°	19589	13379	19270
70°	13062	9592	13062
75°	8649	7121	8649
80°	6057	5279	6057
85°	4539	4539	4539

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	401.5	8.8
10°-20°	1094.7	23.9
20°-30°	1368.5	29.9
30°-40°	920.6	20.1
40°-50°	486.1	10.6
50°-60°	197.6	4.3
60°-70°	73.3	1.6
70°-80°	23.7	0.5
80°-90°	5.1	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°	2864.7	62.7
0°-40°	3785.3	82.8
0°-60°	4469.0	97.8
0°-90°	4571.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4571.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4319	4319	4319	4319	4319	
5°	4263	4259	4260	4260	4262	402
15°	3931	3898	3860	3896	3935	1101
25°	2868	3029	3273	3034	2883	1291
35°	1333	1400	1619	1403	1337	858
45°	704	669	474	666	699	540
55°	253	212	165	212	251	235
65°	86	70	59	70	84	88
75°	23	20	19	20	23	27
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°	4318.7	4318.7	4318.7	4318.7	4318.7
2.5°	4307.8	4305.1	4303.8	4303.8	4305.1
5°	4262.9	4258.8	4260.2	4260.2	4261.5
7.5°	4190.7	4189.4	4185.3	4190.7	4190.7
10°	4106.3	4099.5	4089.9	4100.8	4106.3
12.5°	4019.1	3998.7	3982.3	3998.7	4019.1
15°	3930.6	3897.9	3859.8	3896.5	3934.7
17.5°	3814.8	3782.1	3739.9	3788.9	3825.7
20°	3625.5	3628.2	3611.9	3625.5	3632.3
22.5°	3321.8	3383.1	3468.9	3384.4	3312.3
25°	2868.3	3029.0	3272.8	3034.4	2883.2
27.5°	2382.0	2586.3	2985.4	2598.6	2397.0
30°	1954.4	2135.5	2583.6	2147.8	1957.1
32.5°	1582.6	1717.4	2100.1	1733.8	1600.3
35°	1333.3	1400.1	1619.4	1402.8	1337.4
37.5°	1142.7	1142.7	1202.6	1148.1	1137.2
40°	999.7	956.1	879.8	954.7	999.7
42.5°	866.2	800.8	638.8	798.1	868.9
45°	704.1	668.7	474.0	666.0	698.7
47.5°	540.7	516.2	356.8	513.5	544.8
50°	422.2	384.1	275.1	381.3	420.8
52.5°	324.1	283.3	212.5	283.3	321.4
55°	253.3	212.5	164.8	212.5	250.6
57.5°	194.8	162.1	125.3	159.3	193.4
60°	148.5	121.2	98.1	121.2	149.8
62.5°	113.0	92.6	74.9	91.3	111.7
65°	85.8	69.5	58.6	69.5	84.4
67.5°	62.6	51.8	44.9	51.8	64.0
70°	46.3	39.5	34.0	38.1	46.3
72.5°	34.0	28.6	25.9	28.6	34.0
75°	23.2	20.4	19.1	20.4	23.2
77.5°	16.3	15.0	13.6	15.0	16.3
80°	10.9	9.5	9.5	10.9	10.9
82.5°	6.8	6.8	6.8	6.8	6.8
85°	4.1	4.1	4.1	4.1	4.1
87.5°	2.7	2.7	2.7	2.7	2.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)