

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 FEU4C659027 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 FEU4C659027 F4LC-SQ-WH  
 Description: 4 INCH 6500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

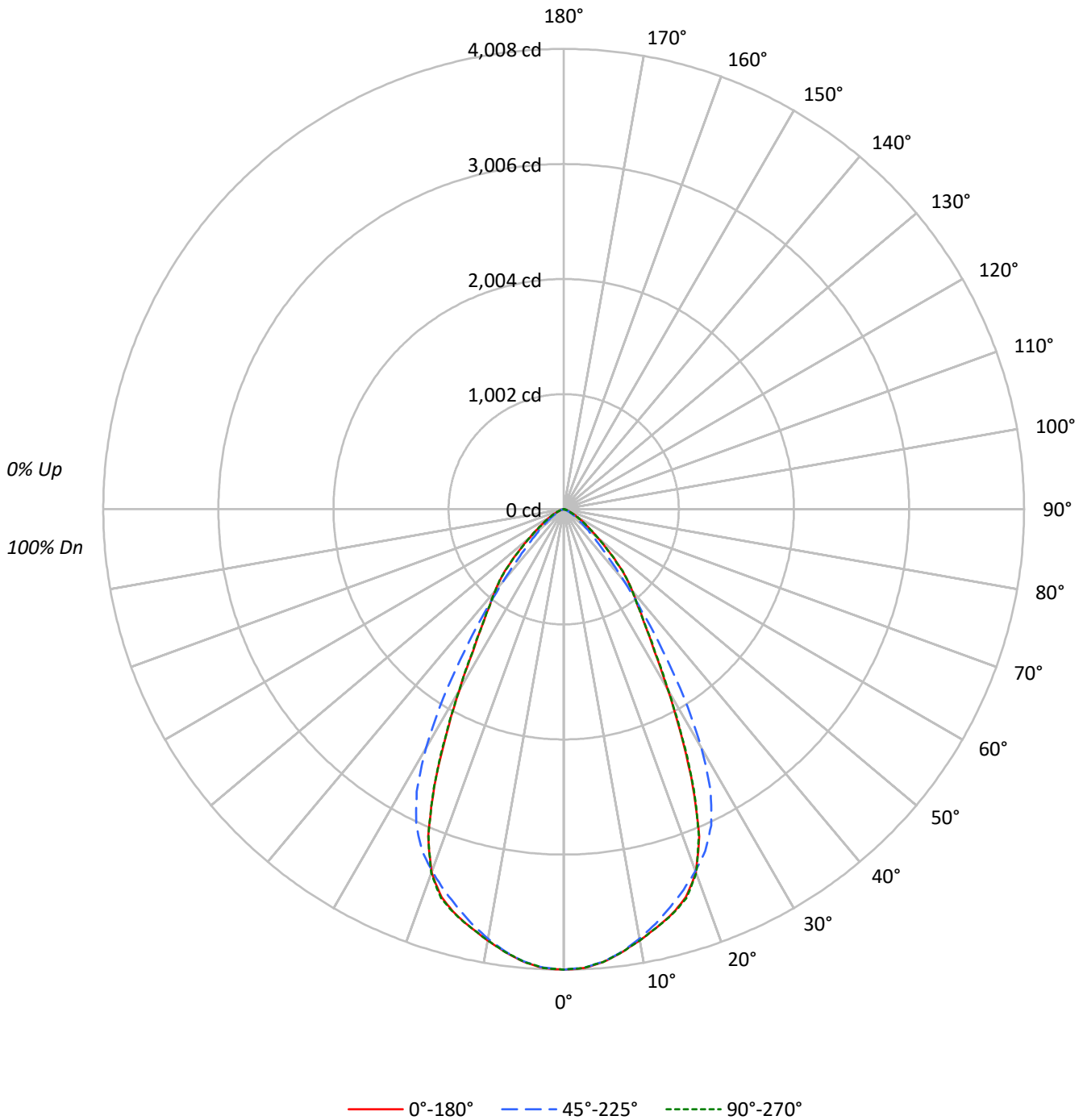
Lumens per Lamp: N/A  
 Luminaire Lumens: 4242.0 lumens  
 Efficiency: N/A  
 Efficacy: 58.6 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

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°	386718	386718	386718
5°	383178	382926	383052
10°	373362	371883	373362
15°	364378	357815	364758
20°	345482	344178	346129
25°	283385	323352	284865
30°	202075	267142	202364
35°	145755	177017	146202
40°	116851	102844	116851
45°	89160	60013	88478
50°	58813	38323	58633
55°	39549	25721	39129
60°	26592	17561	26824
65°	18174	12397	17900
70°	12131	8915	12131
75°	8015	6599	8015
80°	5612	4890	5612
85°	4207	4207	4207

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	372.6	8.8
10°-20°	1015.9	23.9
20°-30°	1270.0	29.9
30°-40°	854.4	20.1
40°-50°	451.1	10.6
50°-60°	183.4	4.3
60°-70°	68.0	1.6
70°-80°	22.0	0.5
80°-90°	4.7	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°	2658.5	62.7
0°-40°	3512.8	82.8
0°-60°	4147.3	97.8
0°-90°	4242.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4242.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4008	4008	4008	4008	4008	
5°	3956	3952	3954	3954	3955	373
15°	3648	3617	3582	3616	3652	1022
25°	2662	2811	3037	2816	2676	1198
35°	1237	1299	1503	1302	1241	796
45°	653	621	440	618	648	501
55°	235	197	153	197	233	218
65°	80	64	54	64	78	82
75°	22	19	18	19	22	25
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°	4007.9	4007.9	4007.9	4007.9	4007.9
2.5°	3997.8	3995.3	3994.0	3994.0	3995.3
5°	3956.1	3952.3	3953.5	3953.5	3954.8
7.5°	3889.1	3887.8	3884.0	3889.1	3889.1
10°	3810.7	3804.4	3795.6	3805.7	3810.7
12.5°	3729.8	3710.9	3695.7	3710.9	3729.8
15°	3647.7	3617.3	3582.0	3616.1	3651.5
17.5°	3540.2	3509.9	3470.7	3516.2	3550.4
20°	3364.6	3367.1	3351.9	3364.6	3370.9
22.5°	3082.7	3139.6	3219.2	3140.8	3073.9
25°	2661.8	2811.0	3037.2	2816.0	2675.7
27.5°	2210.6	2400.2	2770.5	2411.6	2224.5
30°	1813.7	1981.8	2397.7	1993.2	1816.3
32.5°	1468.7	1593.8	1949.0	1609.0	1485.1
35°	1237.4	1299.3	1502.8	1301.8	1241.2
37.5°	1060.4	1060.4	1116.0	1065.5	1055.4
40°	927.7	887.3	816.5	886.0	927.7
42.5°	803.9	743.2	592.8	740.7	806.4
45°	653.4	620.6	439.8	618.1	648.4
47.5°	501.8	479.0	331.1	476.5	505.6
50°	391.8	356.4	255.3	353.9	390.6
52.5°	300.8	262.9	197.2	262.9	298.3
55°	235.1	197.2	152.9	197.2	232.6
57.5°	180.7	150.4	116.3	147.9	179.5
60°	137.8	112.5	91.0	112.5	139.0
62.5°	104.9	85.9	69.5	84.7	103.6
65°	79.6	64.5	54.3	64.5	78.4
67.5°	58.1	48.0	41.7	48.0	59.4
70°	43.0	36.7	31.6	35.4	43.0
72.5°	31.6	26.5	24.0	26.5	31.6
75°	21.5	19.0	17.7	19.0	21.5
77.5°	15.2	13.9	12.6	13.9	15.2
80°	10.1	8.8	8.8	10.1	10.1
82.5°	6.3	6.3	6.3	6.3	6.3
85°	3.8	3.8	3.8	3.8	3.8
87.5°	2.5	2.5	2.5	2.5	2.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)