

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: **FLDSQ4C80D010 FEU4C809050 F4LC-SQ-LI**

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: FLDSQ4C80D010 FEU4C809050 F4LC-SQ-LI  
 Description: 4 INCH 8000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

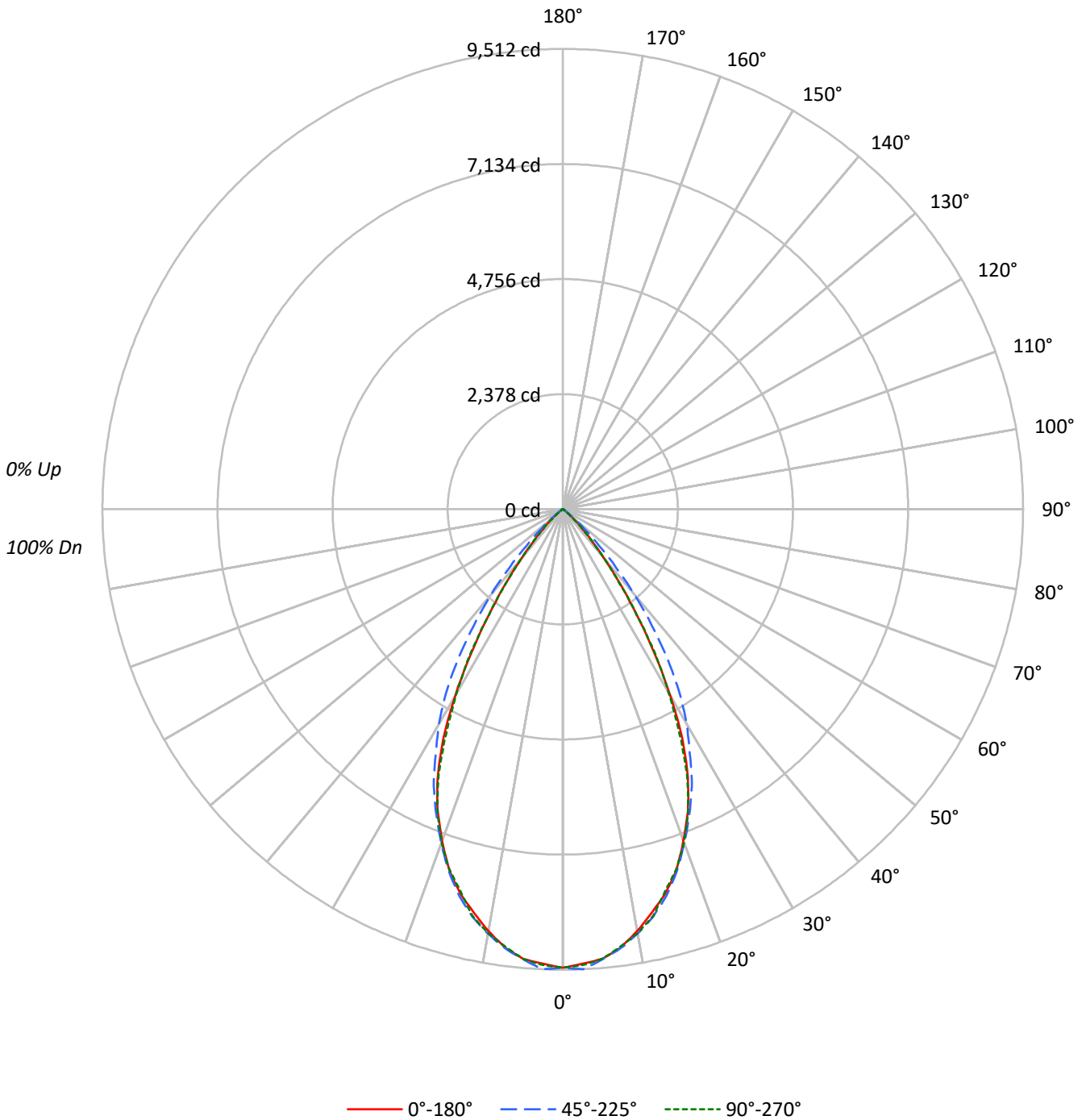
Lumens per Lamp: N/A  
 Luminaire Lumens: 8743.0 lumens  
 Efficiency: N/A  
 Efficacy: 97.7 lumens/watt  
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 89.5  
 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				
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93				
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87				
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80				
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75				
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69				
6	87	78	72	68	86	77	71	67	76	71	67	74	70	66	73	69	66	64				
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60				
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56				
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53				
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50				

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

	0°	45°	90°
0°	913750	913750	913750
5°	903264	904426	903264
10°	867129	872449	871274
15°	819779	825783	815554
20°	748146	753691	751853
25°	651441	671935	646948
30°	495377	569780	488012
35°	311817	442942	314656
40°	168229	292523	165206
45°	79636	144493	78803
50°	29812	54175	29812
55°	14164	17226	13172
60°	9282	8144	9282
65°	5502	5502	5502
70°	3385	5134	3385
75°	2274	2274	2274
80°	3390	3390	3390
85°	0	0	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	878.0	10.0
10°-20°	2301.1	26.3
20°-30°	2811.0	32.2
30°-40°	1966.1	22.5
40°-50°	644.3	7.4
50°-60°	102.5	1.2
60°-70°	28.0	0.3
70°-80°	9.3	0.1
80°-90°	2.6	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°	5990.2	68.5
0°-40°	7956.3	91.0
0°-60°	8703.1	99.5
0°-90°	8743.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8743.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9470	9470	9470	9470	9470	
5°	9326	9329	9338	9280	9326	875
15°	8207	8240	8267	8212	8164	2289
25°	6119	6212	6311	6197	6077	2749
35°	2647	3126	3760	3077	2671	1689
45°	584	719	1059	710	578	490
55°	84	90	102	90	78	83
65°	24	30	24	30	24	27
75°	6	6	6	6	6	9
85°	0	0	0	0	0	2
90°	0	0	0	0	0	

TEST NUMBER: P#  
 CATALOG NUMBER: FLDSQ4C80D010 FEU4C809050 F4LC-SQ-LI

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	9470.0	9470.0	9470.0	9470.0	9470.0	9470.0	9470.0	9470.0	9470.0	9470.0	9470.0
2.5°	9397.8	9464.1	9446.0	9488.2	9488.2	9440.1	9452.1	9470.0	9494.1	9512.3	9367.7
5°	9325.7	9385.8	9331.6	9391.7	9355.6	9301.6	9391.7	9343.6	9373.8	9337.7	9361.8
7.5°	9133.2	9229.4	9121.1	9193.3	9169.3	9139.1	9175.2	9163.1	9181.3	9151.1	9085.0
10°	8850.3	8928.7	8856.5	8958.6	8910.5	8880.5	8910.5	8940.7	8934.5	8904.6	8940.7
12.5°	8525.5	8615.6	8579.5	8639.7	8585.7	8585.7	8657.8	8639.7	8645.8	8621.7	8663.7
15°	8206.6	8272.9	8218.6	8296.9	8272.9	8206.6	8236.5	8236.5	8284.9	8266.7	8218.6
17.5°	7809.6	7863.6	7803.4	7821.6	7797.5	7785.5	7911.7	7827.5	7875.6	7839.5	7845.7
20°	7286.1	7310.2	7292.0	7340.1	7310.2	7346.3	7334.2	7322.2	7322.2	7340.1	7298.1
22.5°	6756.5	6756.5	6774.7	6786.7	6810.8	6774.7	6846.9	6786.7	6792.6	6834.8	6822.8
25°	6118.9	6100.7	6143.0	6203.1	6227.2	6197.0	6293.2	6245.1	6281.2	6311.4	6245.1
27.5°	5342.8	5342.8	5384.8	5487.2	5505.1	5541.2	5673.5	5673.5	5721.6	5679.7	5727.8
30°	4446.2	4512.4	4566.5	4698.8	4741.0	4819.3	4957.6	5023.9	5132.1	5114.0	5089.9
32.5°	3525.7	3616.0	3621.9	3760.4	3874.6	4006.9	4193.5	4349.9	4428.2	4482.3	4422.1
35°	2647.2	2701.5	2749.6	2845.8	3038.3	3212.9	3381.3	3585.8	3724.3	3760.4	3706.2
37.5°	1937.4	1949.4	1997.6	2087.7	2232.0	2400.7	2605.2	2827.7	2972.3	3026.3	2966.2
40°	1335.6	1347.7	1371.7	1450.1	1570.4	1690.7	1853.2	2081.8	2214.1	2322.4	2244.1
42.5°	896.4	908.4	932.5	992.6	1058.9	1173.1	1299.5	1443.9	1570.4	1618.5	1576.3
45°	583.6	583.6	595.6	637.9	674.0	764.1	854.4	944.5	1028.7	1058.9	1028.7
47.5°	343.0	348.9	360.9	391.1	433.1	469.2	535.5	595.6	619.7	643.8	631.7
50°	198.6	198.6	216.6	234.7	264.7	288.7	312.8	336.9	348.9	360.9	348.9
52.5°	108.3	114.4	120.3	126.4	138.5	162.5	180.5	180.5	186.6	192.5	186.6
55°	84.2	84.2	84.2	84.2	90.3	90.3	90.3	96.2	96.2	102.4	96.2
57.5°	60.2	60.2	60.2	66.3	66.3	66.3	60.2	60.2	60.2	60.2	60.2
60°	48.1	48.1	48.1	48.1	48.1	48.1	48.1	42.2	42.2	42.2	42.2
62.5°	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1
65°	24.1	24.1	30.2	30.2	30.2	30.2	30.2	24.1	24.1	24.1	24.1
67.5°	18.2	18.2	18.2	18.2	24.1	24.1	18.2	18.2	18.2	18.2	18.2
70°	12.0	12.0	12.0	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
72.5°	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
75°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
77.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
80°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	9470.0	9470.0	9470.0	9470.0	9470.0	9470.0	9470.0	9470.0
2.5°	9470.0	9367.7	9379.7	9433.9	9403.7	9433.9	9428.0	9428.0
5°	9367.7	9337.7	9289.6	9271.4	9307.5	9385.8	9373.8	9325.7
7.5°	9175.2	9097.1	9151.1	9175.2	9145.2	9193.3	9217.4	9115.0
10°	8946.6	8916.6	8904.6	8916.6	8904.6	8952.7	8892.6	8892.6
12.5°	8621.7	8573.6	8573.6	8645.8	8603.6	8567.5	8615.6	8609.7
15°	8296.9	8200.4	8200.4	8224.5	8242.7	8218.6	8224.5	8164.3
17.5°	7815.5	7785.5	7743.3	7809.6	7827.5	7803.4	7821.6	7791.4
20°	7364.2	7364.2	7286.1	7316.1	7340.1	7358.3	7370.3	7322.2
22.5°	6786.7	6798.7	6744.5	6804.6	6822.8	6762.7	6774.7	6762.7
25°	6257.1	6251.2	6209.0	6184.9	6197.0	6172.9	6167.0	6076.7
27.5°	5673.5	5613.4	5523.3	5547.3	5444.9	5360.7	5360.7	5222.3
30°	5041.8	4939.7	4819.3	4698.8	4608.7	4512.4	4458.2	4380.1
32.5°	4301.8	4163.6	4013.1	3850.5	3748.4	3604.0	3525.7	3567.9
35°	3567.9	3363.2	3158.6	2996.3	2839.7	2755.5	2659.3	2671.3
37.5°	2857.9	2569.1	2388.7	2214.1	2081.8	1973.5	1931.3	1919.2
40°	2087.7	1859.1	1678.6	1552.2	1462.1	1377.9	1329.7	1311.6
42.5°	1443.9	1281.6	1137.0	1034.9	974.7	920.5	896.4	890.5
45°	938.6	842.4	746.1	674.0	625.8	589.7	583.6	577.5
47.5°	589.7	541.4	481.2	427.2	385.0	360.9	343.0	343.0
50°	336.9	318.9	288.7	258.8	234.7	222.7	204.5	198.6
52.5°	180.5	180.5	168.4	144.4	126.4	114.4	114.4	108.3
55°	96.2	96.2	90.3	90.3	84.2	84.2	84.2	78.3
57.5°	60.2	60.2	66.3	66.3	60.2	60.2	60.2	60.2
60°	42.2	48.1	48.1	48.1	48.1	48.1	48.1	48.1
62.5°	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1
65°	24.1	30.2	30.2	30.2	30.2	24.1	24.1	24.1
67.5°	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
70°	18.2	18.2	18.2	18.2	18.2	12.0	12.0	12.0
72.5°	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
75°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
77.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
80°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)