

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: **FLDSQ4C75D010 FEU4C759027 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: FLDSQ4C75D010 FEU4C759027 F4LC-SQ-LI
 Description: 4 INCH 7500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQ TRIM WITH LI FINISH
 Light Source: -
 Ballast/Driver: -

Summary

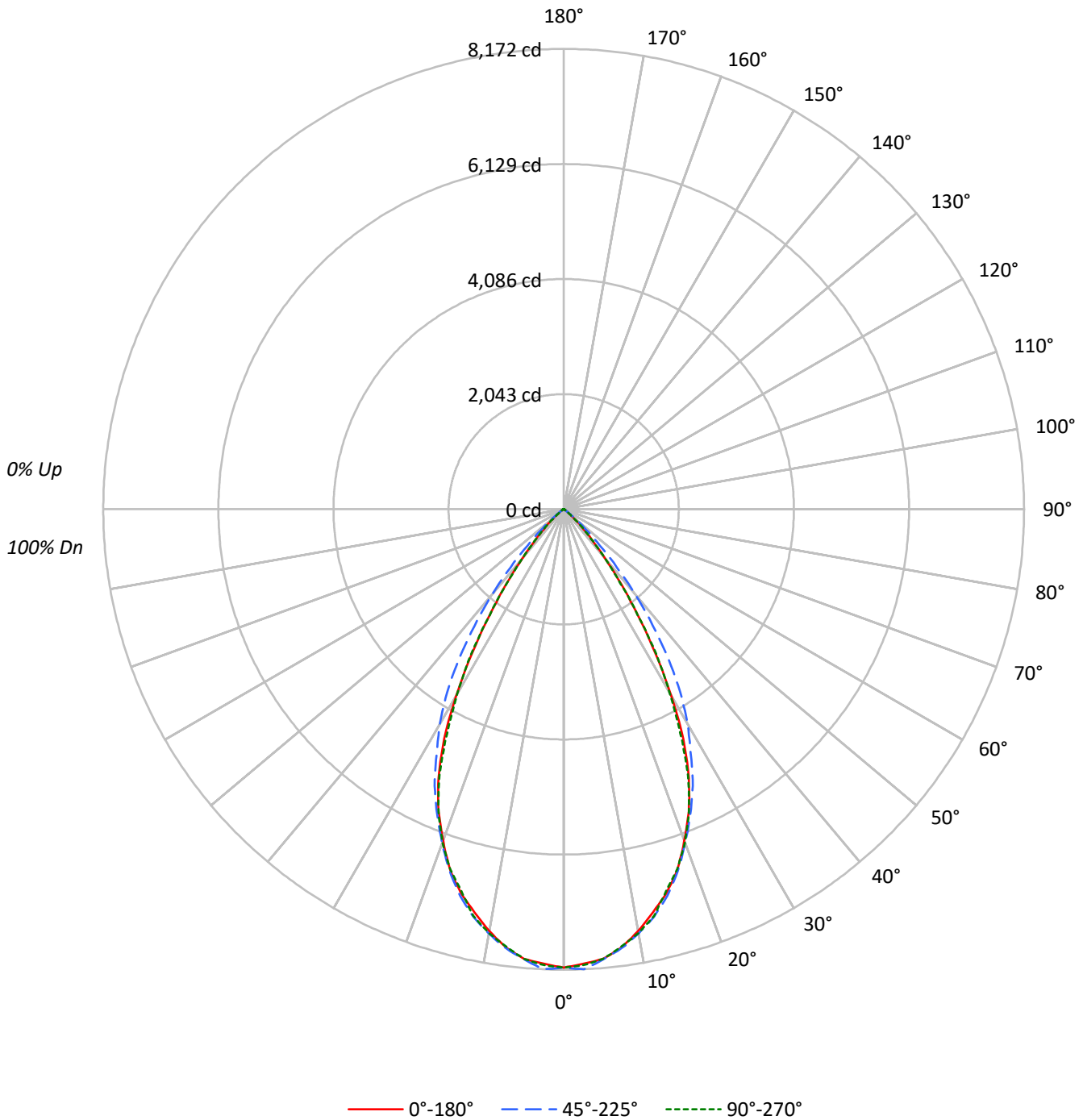
Lumens per Lamp: N/A
 Luminaire Lumens: 7511.0 lumens
 Efficiency: N/A
 Efficacy: 92.2 lumens/watt
 Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 81.5
 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			
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93	93	93
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87	87	87
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80	80	80
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75	75	75
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69	69	69
6	87	78	72	68	86	77	71	67	76	71	67	74	70	66	73	69	66	64	64	64
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60	60	60
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56	56	56
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53	53	53
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50	50	50

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	784995	784995	784995
5°	775983	776981	775983
10°	744942	749507	748498
15°	704263	709418	700637
20°	642724	647488	645907
25°	559648	577246	555783
30°	425564	489494	419246
35°	267881	380524	270319
40°	144523	251297	141929
45°	68419	124134	67696
50°	25609	46549	25609
55°	12163	14804	11321
60°	7970	7005	7970
65°	4726	4726	4726
70°	2906	4401	2906
75°	1976	1976	1976
80°	2945	2945	2945
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	754.3	10.0
10°-20°	1976.9	26.3
20°-30°	2414.9	32.2
30°-40°	1689.1	22.5
40°-50°	553.5	7.4
50°-60°	88.0	1.2
60°-70°	24.0	0.3
70°-80°	8.1	0.1
80°-90°	2.2	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°	5146.1	68.5
0°-40°	6835.1	91.0
0°-60°	7476.7	99.5
0°-90°	7511.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7511.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8136	8136	8136	8136	8136	
5°	8012	8014	8022	7973	8012	751
15°	7050	7079	7102	7055	7014	1967
25°	5257	5337	5422	5324	5220	2361
35°	2274	2685	3230	2644	2295	1451
45°	501	618	910	610	496	421
55°	72	78	88	78	67	71
65°	21	26	21	26	21	23
75°	5	5	5	5	5	8
85°	0	0	0	0	0	2
90°	0	0	0	0	0	

TEST NUMBER: P#
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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	8135.6	8135.6	8135.6	8135.6	8135.6	8135.6	8135.6	8135.6	8135.6	8135.6	8135.6
2.5°	8073.6	8130.5	8114.9	8151.2	8151.2	8109.8	8120.2	8135.6	8156.3	8171.9	8047.6
5°	8011.6	8063.2	8016.6	8068.3	8037.3	7990.9	8068.3	8027.0	8052.9	8021.9	8042.6
7.5°	7846.2	7928.9	7835.9	7897.9	7877.2	7851.3	7882.3	7871.9	7887.5	7861.6	7804.8
10°	7603.2	7670.5	7608.5	7696.2	7654.9	7629.1	7654.9	7680.8	7675.6	7649.8	7680.8
12.5°	7324.2	7401.6	7370.6	7422.2	7375.8	7375.8	7437.8	7422.2	7427.5	7406.8	7442.9
15°	7050.2	7107.1	7060.5	7127.8	7107.1	7050.2	7075.9	7075.9	7117.4	7101.8	7060.5
17.5°	6709.1	6755.5	6703.8	6719.4	6698.8	6688.4	6796.8	6724.5	6765.8	6734.8	6740.1
20°	6259.4	6280.1	6264.5	6305.8	6280.1	6311.1	6300.7	6290.4	6290.4	6305.8	6269.7
22.5°	5804.4	5804.4	5820.0	5830.4	5851.1	5820.0	5882.1	5830.4	5835.4	5871.7	5861.4
25°	5256.7	5241.1	5277.3	5329.0	5349.7	5323.7	5406.4	5365.1	5396.1	5422.0	5365.1
27.5°	4589.9	4589.9	4626.0	4714.0	4729.4	4760.4	4874.1	4874.1	4915.4	4879.3	4920.7
30°	3819.6	3876.6	3923.0	4036.7	4073.0	4140.2	4259.0	4315.9	4409.0	4393.4	4372.7
32.5°	3028.9	3106.5	3111.6	3230.5	3328.6	3442.3	3602.6	3737.0	3804.2	3850.6	3799.0
35°	2274.2	2320.8	2362.1	2444.8	2610.2	2760.2	2904.9	3080.6	3199.5	3230.5	3183.9
37.5°	1664.4	1674.7	1716.1	1793.5	1917.5	2062.4	2238.1	2429.2	2553.5	2599.9	2548.2
40°	1147.4	1157.8	1178.4	1245.7	1349.1	1452.4	1592.1	1788.4	1902.1	1995.1	1927.9
42.5°	770.1	780.4	801.1	852.8	909.7	1007.8	1116.4	1240.5	1349.1	1390.4	1354.1
45°	501.4	501.4	511.7	548.0	579.0	656.4	734.0	811.4	883.8	909.7	883.8
47.5°	294.7	299.7	310.1	336.0	372.1	403.1	460.0	511.7	532.4	553.0	542.7
50°	170.6	170.6	186.0	201.6	227.4	248.0	268.7	289.4	299.7	310.1	299.7
52.5°	93.0	98.3	103.4	108.6	119.0	139.6	155.0	155.0	160.3	165.4	160.3
55°	72.3	72.3	72.3	72.3	77.6	77.6	77.6	82.7	82.7	88.0	82.7
57.5°	51.7	51.7	51.7	56.9	56.9	56.9	51.7	51.7	51.7	51.7	51.7
60°	41.3	41.3	41.3	41.3	41.3	41.3	41.3	36.3	36.3	36.3	36.3
62.5°	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0
65°	20.7	20.7	25.9	25.9	25.9	25.9	25.9	20.7	20.7	20.7	20.7
67.5°	15.6	15.6	15.6	15.6	20.7	20.7	15.6	15.6	15.6	15.6	15.6
70°	10.3	10.3	10.3	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
72.5°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
75°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
77.5°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
80°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	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°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
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°	8135.6	8135.6	8135.6	8135.6	8135.6	8135.6	8135.6	8135.6
2.5°	8135.6	8047.6	8058.0	8104.6	8078.6	8104.6	8099.5	8099.5
5°	8047.6	8021.9	7980.6	7964.9	7996.0	8063.2	8052.9	8011.6
7.5°	7882.3	7815.2	7861.6	7882.3	7856.5	7897.9	7918.5	7830.6
10°	7685.9	7660.2	7649.8	7660.2	7649.8	7691.2	7639.5	7639.5
12.5°	7406.8	7365.5	7365.5	7427.5	7391.2	7360.2	7401.6	7396.5
15°	7127.8	7044.9	7044.9	7065.6	7081.2	7060.5	7065.6	7013.9
17.5°	6714.2	6688.4	6652.1	6709.1	6724.5	6703.8	6719.4	6693.5
20°	6326.5	6326.5	6259.4	6285.1	6305.8	6321.4	6331.8	6290.4
22.5°	5830.4	5840.7	5794.1	5845.8	5861.4	5809.7	5820.0	5809.7
25°	5375.4	5370.4	5334.1	5313.4	5323.7	5303.1	5298.0	5220.4
27.5°	4874.1	4822.4	4745.0	4765.6	4677.7	4605.3	4605.3	4486.4
30°	4331.3	4243.6	4140.2	4036.7	3959.3	3876.6	3830.0	3762.9
32.5°	3695.6	3576.9	3447.6	3307.9	3220.2	3096.2	3028.9	3065.2
35°	3065.2	2889.3	2713.5	2574.1	2439.6	2367.2	2284.5	2294.9
37.5°	2455.2	2207.1	2052.1	1902.1	1788.4	1695.4	1659.1	1648.8
40°	1793.5	1597.1	1442.1	1333.5	1256.1	1183.7	1142.4	1126.8
42.5°	1240.5	1101.0	976.8	889.0	837.4	790.8	770.1	765.0
45°	806.4	723.7	641.0	579.0	537.6	506.6	501.4	496.1
47.5°	506.6	465.1	413.4	367.0	330.7	310.1	294.7	294.7
50°	289.4	274.0	248.0	222.3	201.6	191.3	175.7	170.6
52.5°	155.0	155.0	144.7	124.0	108.6	98.3	98.3	93.0
55°	82.7	82.7	77.6	77.6	72.3	72.3	72.3	67.3
57.5°	51.7	51.7	56.9	56.9	51.7	51.7	51.7	51.7
60°	36.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3
62.5°	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0
65°	20.7	25.9	25.9	25.9	25.9	20.7	20.7	20.7
67.5°	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
70°	15.6	15.6	15.6	15.6	15.6	10.3	10.3	10.3
72.5°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
75°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
77.5°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
80°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
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°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)