

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 FEU4C759050 F4LC-DFSSQ-MW**

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 FEU4C759050 F4LC-DFSSQ-MW
 Description: 4 INCH 7500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-DFSSQ TRIM WITH MW FINISH
 Light Source: -
 Ballast/Driver: -

Summary

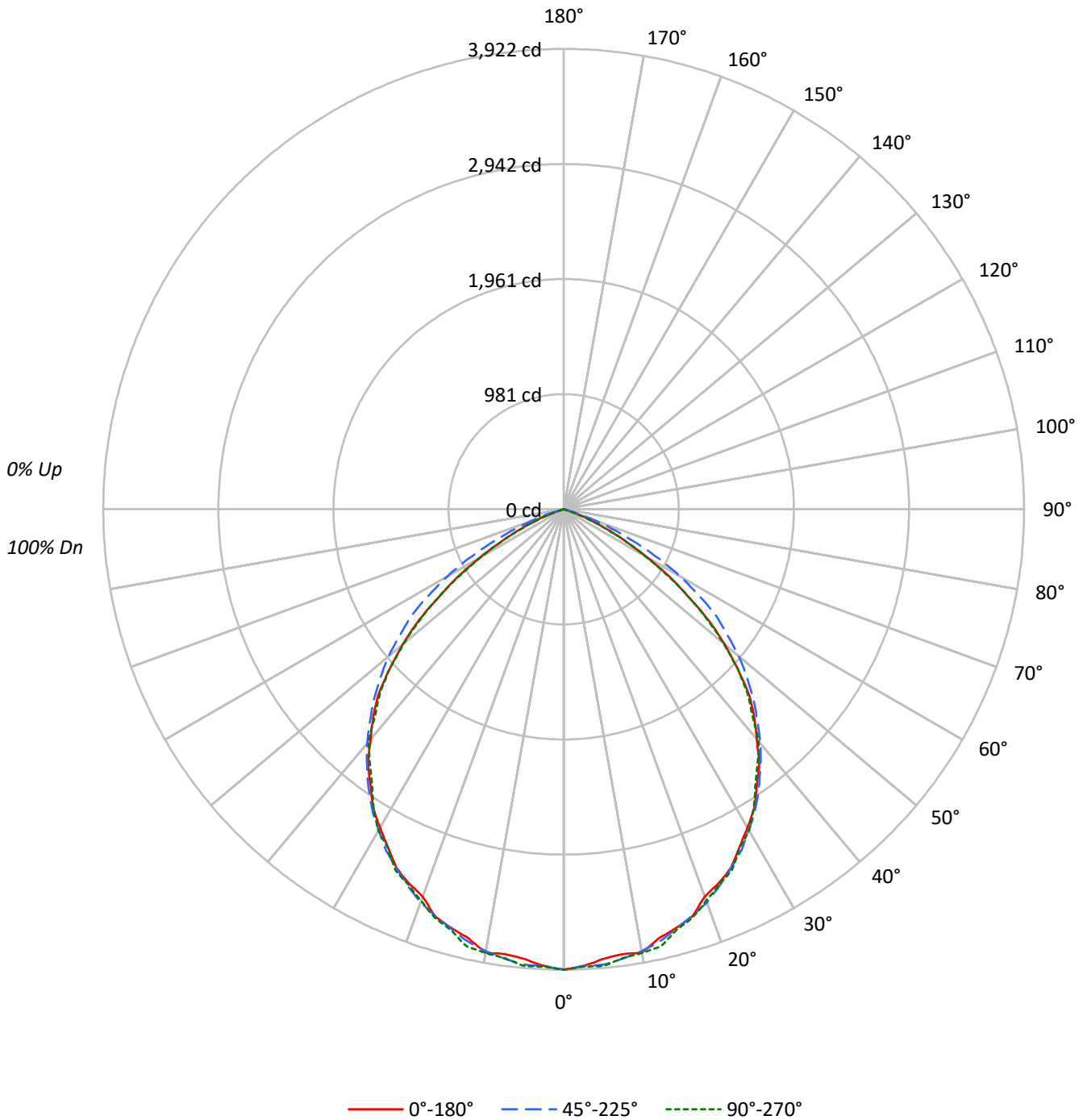
Lumens per Lamp: N/A
 Luminaire Lumens: 8378.0 lumens
 Efficiency: N/A
 Efficacy: 102.8 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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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CATALOG NUMBER: FLDSQ4C75D010 FEU4C759050 F4LC-DFSSQ-MW

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	111	108	104	101	109	105	102	100	101	99	96	97	95	94	94	92	91	89	89	89
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77	77	77
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67	67	67
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59	59	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52	52	52
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46	46	46
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41	41	41
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37	37	37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33	33	33
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	31	31	31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	378429	378429	378429
5°	372320	377163	378248
10°	375538	374450	376076
15°	368964	369503	370622
20°	360381	366100	364396
25°	358825	358825	361189
30°	348821	351305	351929
35°	337931	341229	335316
40°	322085	328383	325574
45°	304829	311679	301786
50°	268457	291859	266776
55°	217412	267088	218371
60°	159091	221461	155887
65°	96690	157718	94133
70°	37719	84888	36167
75°	4138	22890	4138
80°	3167	3167	3167
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	370.2	4.4
10°-20°	1047.6	12.5
20°-30°	1554.4	18.6
30°-40°	1801.1	21.5
40°-50°	1726.8	20.6
50°-60°	1269.7	15.2
60°-70°	548.4	6.5
70°-80°	59.2	0.7
80°-90°	0.8	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°	2972.1	35.5
0°-40°	4773.2	57.0
0°-60°	7769.7	92.7
0°-90°	8378.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8378.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3922	3922	3922	3922	3922	
5°	3844	3883	3894	3900	3905	367
15°	3694	3716	3699	3705	3710	1041
25°	3370	3365	3370	3376	3393	1543
35°	2869	2886	2897	2891	2847	1794
45°	2234	2240	2284	2251	2212	1698
55°	1292	1426	1588	1421	1298	1163
65°	424	529	691	524	412	435
75°	11	17	61	11	11	34
85°	0	0	0	0	0	1
90°	0	0	0	0	0	

TEST NUMBER: P#
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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0
2.5°	3894.0	3938.6	3944.3	3916.3	3905.2	3888.6	3927.5	3899.7	3910.9	3899.7	3894.0
5°	3844.0	3894.0	3899.7	3899.7	3888.6	3882.9	3899.7	3894.0	3888.6	3877.4	3894.0
7.5°	3821.8	3849.5	3877.4	3844.0	3860.6	3855.2	3894.0	3877.4	3871.8	3871.8	3860.6
10°	3832.9	3827.2	3849.5	3816.1	3827.2	3816.1	3849.5	3849.5	3838.4	3827.2	3821.8
12.5°	3743.6	3788.1	3788.1	3782.7	3771.5	3754.7	3788.1	3810.6	3777.0	3777.0	3771.5
15°	3693.6	3704.7	3710.2	3710.2	3704.7	3715.8	3732.4	3710.2	3715.8	3687.9	3699.0
17.5°	3637.9	3615.6	3632.2	3621.1	3626.7	3637.9	3660.2	3660.2	3626.7	3621.1	3632.2
20°	3509.7	3576.5	3582.2	3548.8	3554.2	3554.2	3593.3	3559.9	3582.2	3554.2	3565.4
22.5°	3448.3	3492.9	3498.5	3454.0	3481.7	3448.3	3487.4	3437.2	3492.9	3454.0	3470.6
25°	3370.4	3364.9	3381.5	3359.2	3364.9	3364.9	3392.6	3370.4	3387.2	3364.9	3370.4
27.5°	3242.4	3286.9	3281.3	3259.0	3270.1	3264.7	3320.3	3259.0	3292.4	3264.7	3275.8
30°	3130.8	3169.9	3158.7	3136.5	3136.5	3119.6	3181.0	3164.2	3158.7	3158.7	3153.1
32.5°	3019.4	3025.1	3014.0	3019.4	3025.1	3002.8	3052.8	3030.5	3025.1	3030.5	3036.2
35°	2868.9	2868.9	2880.1	2863.5	2885.8	2885.8	2930.3	2902.4	2896.9	2880.1	2896.9
37.5°	2735.3	2718.7	2724.2	2724.2	2735.3	2746.4	2768.7	2757.6	2757.6	2741.0	2752.1
40°	2557.1	2545.9	2562.5	2562.5	2579.4	2579.4	2601.6	2590.5	2607.1	2607.1	2607.1
42.5°	2401.2	2401.2	2390.0	2406.6	2412.3	2406.6	2445.7	2440.0	2445.7	2434.6	2440.0
45°	2233.9	2233.9	2222.7	2217.3	2245.0	2239.6	2284.1	2267.3	2289.6	2278.4	2284.1
47.5°	2005.4	2033.4	2016.6	2033.4	2066.8	2072.5	2100.2	2089.1	2111.4	2094.8	2117.0
50°	1788.4	1788.4	1805.0	1827.2	1860.7	1866.3	1899.7	1922.0	1933.2	1938.6	1944.3
52.5°	1559.9	1554.3	1571.1	1598.8	1626.8	1649.0	1682.4	1715.9	1738.1	1771.6	1754.7
55°	1292.4	1303.5	1320.4	1353.8	1398.3	1426.1	1454.0	1498.6	1537.7	1554.3	1587.7
57.5°	1064.0	1052.8	1064.0	1108.5	1158.8	1181.0	1220.1	1264.7	1320.4	1353.8	1364.9
60°	824.4	830.1	841.2	880.3	919.2	952.6	969.4	1041.7	1091.9	1125.3	1147.6
62.5°	607.3	618.5	629.6	663.0	701.9	729.8	757.6	818.9	863.5	896.9	919.2
65°	423.5	428.9	445.7	462.3	501.4	529.2	551.4	601.7	646.2	674.2	690.8
67.5°	261.8	267.3	278.4	300.9	328.7	350.9	373.2	406.6	445.7	473.5	479.1
70°	133.7	139.3	144.8	161.6	183.9	195.0	211.6	239.6	267.3	289.6	300.9
72.5°	44.6	44.6	50.2	61.4	72.5	83.6	89.1	117.1	139.3	150.5	155.9
75°	11.1	11.1	11.1	11.1	11.1	16.8	16.8	33.4	44.6	55.7	61.4
77.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	11.1	11.1
80°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
82.5°	0.0	0.0	0.0	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	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0	3922.0
2.5°	3922.0	3910.9	3905.2	3910.9	3910.9	3905.2	3922.0	3944.3	3972.0	3899.7
5°	3916.3	3905.2	3916.3	3882.9	3899.7	3888.6	3910.9	3905.2	3927.5	3905.2
7.5°	3899.7	3877.4	3882.9	3866.3	3888.6	3860.6	3877.4	3910.9	3888.6	3855.2
10°	3844.0	3832.9	3871.8	3816.1	3804.9	3827.2	3871.8	3838.4	3827.2	3838.4
12.5°	3788.1	3788.1	3804.9	3760.4	3765.9	3777.0	3799.3	3777.0	3788.1	3816.1
15°	3727.0	3715.8	3743.6	3710.2	3704.7	3693.6	3715.8	3715.8	3727.0	3710.2
17.5°	3654.5	3637.9	3637.9	3626.7	3621.1	3649.0	3660.2	3665.6	3671.3	3649.0
20°	3565.4	3559.9	3576.5	3559.9	3565.4	3571.1	3571.1	3559.9	3609.9	3548.8
22.5°	3470.6	3487.4	3465.1	3454.0	3465.1	3476.3	3476.3	3481.7	3470.6	3459.5
25°	3376.0	3387.2	3392.6	3359.2	3376.0	3359.2	3398.3	3403.8	3381.5	3392.6
27.5°	3292.4	3275.8	3270.1	3247.8	3259.0	3253.5	3259.0	3259.0	3292.4	3247.8
30°	3164.2	3147.6	3153.1	3136.5	3141.9	3136.5	3141.9	3141.9	3164.2	3158.7
32.5°	3041.7	3025.1	3030.5	3014.0	3014.0	3019.4	3008.3	3008.3	3025.1	3014.0
35°	2924.6	2885.8	2891.2	2885.8	2891.2	2868.9	2868.9	2863.5	2874.6	2846.7
37.5°	2757.6	2741.0	2735.3	2729.8	2735.3	2724.2	2735.3	2718.7	2735.3	2713.0
40°	2607.1	2596.0	2601.6	2568.2	2568.2	2573.7	2562.5	2557.1	2562.5	2584.8
42.5°	2456.8	2434.6	2423.4	2412.3	2417.8	2401.2	2395.5	2384.3	2395.5	2373.2
45°	2278.4	2278.4	2273.0	2245.0	2250.7	2250.7	2228.4	2206.1	2211.6	2211.6
47.5°	2117.0	2105.9	2100.2	2072.5	2066.8	2061.3	2038.9	2022.3	2022.3	2005.4
50°	1938.6	1927.5	1910.9	1882.9	1871.8	1838.4	1821.8	1799.5	1777.2	1777.2
52.5°	1771.6	1732.5	1710.2	1665.6	1649.0	1632.2	1587.7	1571.1	1554.3	1537.7
55°	1571.1	1537.7	1493.1	1442.9	1420.6	1392.6	1348.1	1314.7	1292.4	1298.1
57.5°	1376.1	1320.4	1275.8	1209.0	1181.0	1164.2	1119.7	1075.1	1052.8	1052.8
60°	1136.5	1091.9	1036.2	974.9	952.6	924.9	869.0	841.2	824.4	807.8
62.5°	908.1	874.6	824.4	746.4	729.8	701.9	663.0	629.6	612.8	612.8
65°	679.6	646.2	601.7	546.0	523.7	501.4	468.0	434.6	417.8	412.3
67.5°	479.1	440.0	401.2	356.6	339.8	328.7	295.3	273.0	261.8	256.2
70°	289.6	267.3	239.6	206.2	189.3	178.2	155.9	139.3	133.7	128.2
72.5°	150.5	133.7	111.4	89.1	78.0	66.8	55.7	44.6	39.1	39.1
75°	55.7	44.6	28.0	16.8	11.1	11.1	11.1	11.1	11.1	11.1
77.5°	11.1	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
80°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
82.5°	0.0	0.0	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	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)