

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: **FLDSQ4C25D010 FEU4C259040 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: FLDSQ4C25D010 FEU4C259040 F4LC-DFSSQ-MW
 Description: 4 INCH 2500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-DFSSQ TRIM WITH MW FINISH
 Light Source: -
 Ballast/Driver: -

Summary

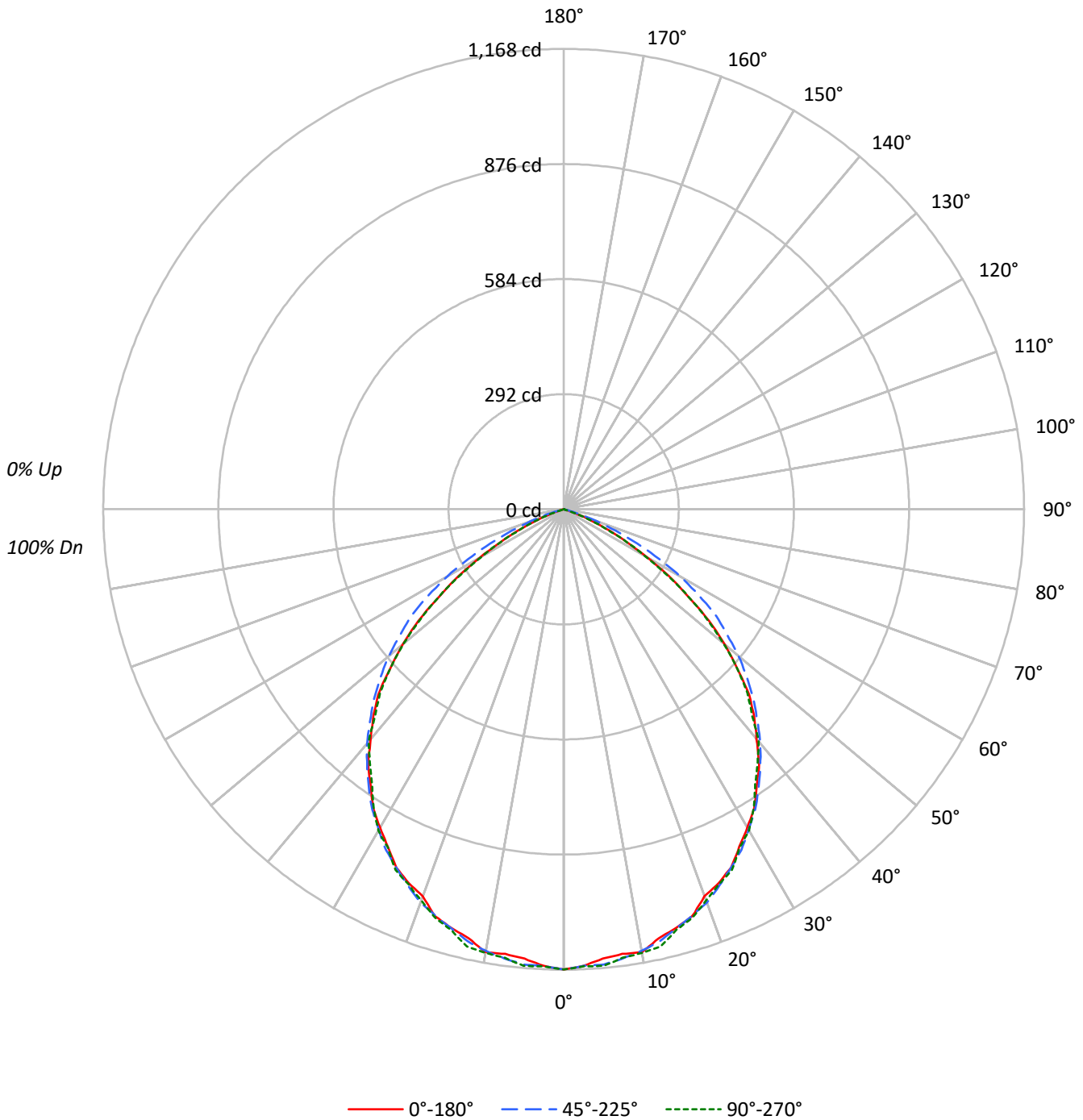
Lumens per Lamp: N/A
 Luminaire Lumens: 2494.0 lumens
 Efficiency: N/A
 Efficacy: 79.2 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 31.5
 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: FLDSQ4C25D010 FEU4C259040 F4LC-DFSSQ-MW

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				100
1	111	108	104	101	109	105	102	100	101	99	96	97	95	94	94	92	91	89				89
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77				77
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67				67
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59				59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52				52
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46				46
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41				41
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37				37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33				33
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	31				31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	112651	112651	112651
5°	110834	112277	112597
10°	111792	111469	111949
15°	109832	109992	110331
20°	107281	108986	108473
25°	106815	106815	107518
30°	103840	104575	104764
35°	100594	101583	99816
40°	95879	97755	96924
45°	90743	92776	89843
50°	79919	86884	79423
55°	64715	79502	65001
60°	47357	65921	46411
65°	28790	46941	28014
70°	11228	25277	10777
75°	1230	6822	1230
80°	945	945	945
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.2	4.4
10°-20°	311.8	12.5
20°-30°	462.7	18.6
30°-40°	536.1	21.5
40°-50°	514.0	20.6
50°-60°	378.0	15.2
60°-70°	163.2	6.5
70°-80°	17.6	0.7
80°-90°	0.2	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°	884.8	35.5
0°-40°	1420.9	57.0
0°-60°	2312.9	92.7
0°-90°	2494.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2494.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1168	1168	1168	1168	1168	
5°	1144	1156	1159	1161	1162	109
15°	1100	1106	1101	1103	1104	310
25°	1003	1002	1003	1005	1010	459
35°	854	859	862	861	847	534
45°	665	667	680	670	658	506
55°	385	424	473	423	386	346
65°	126	158	206	156	123	130
75°	3	5	18	3	3	10
85°	0	0	0	0	0	0
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°	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5
2.5°	1159.2	1172.5	1174.1	1165.8	1162.5	1157.6	1169.1	1160.9	1164.2	1160.9	1159.2
5°	1144.3	1159.2	1160.9	1160.9	1157.6	1155.9	1160.9	1159.2	1157.6	1154.3	1159.2
7.5°	1137.7	1145.9	1154.3	1144.3	1149.3	1147.6	1159.2	1154.3	1152.6	1152.6	1149.3
10°	1141.0	1139.3	1145.9	1136.0	1139.3	1136.0	1145.9	1145.9	1142.6	1139.3	1137.7
12.5°	1114.4	1127.7	1127.7	1126.0	1122.7	1117.7	1127.7	1134.4	1124.4	1124.4	1122.7
15°	1099.5	1102.8	1104.5	1104.5	1102.8	1106.1	1111.1	1104.5	1106.1	1097.8	1101.1
17.5°	1082.9	1076.3	1081.2	1077.9	1079.6	1082.9	1089.6	1089.6	1079.6	1077.9	1081.2
20°	1044.8	1064.7	1066.4	1056.4	1058.0	1058.0	1069.7	1059.7	1066.4	1058.0	1061.4
22.5°	1026.5	1039.8	1041.5	1028.2	1036.5	1026.5	1038.1	1023.2	1039.8	1028.2	1033.1
25°	1003.3	1001.7	1006.6	1000.0	1001.7	1001.7	1009.9	1003.3	1008.3	1001.7	1003.3
27.5°	965.2	978.5	976.8	970.1	973.5	971.8	988.4	970.1	980.1	971.8	975.2
30°	932.0	943.6	940.3	933.7	933.7	928.7	946.9	941.9	940.3	940.3	938.6
32.5°	898.8	900.5	897.2	898.8	900.5	893.9	908.8	902.1	900.5	902.1	903.8
35°	854.0	854.0	857.4	852.4	859.0	859.0	872.3	864.0	862.4	857.4	862.4
37.5°	814.3	809.3	810.9	810.9	814.3	817.6	824.2	820.9	820.9	815.9	819.3
40°	761.2	757.9	762.8	762.8	767.8	767.8	774.5	771.2	776.1	776.1	776.1
42.5°	714.8	714.8	711.5	716.4	718.1	716.4	728.0	726.4	728.0	724.7	726.4
45°	665.0	665.0	661.7	660.0	668.3	666.7	679.9	674.9	681.6	678.3	679.9
47.5°	597.0	605.3	600.3	605.3	615.3	616.9	625.2	621.9	628.5	623.6	630.2
50°	532.4	532.4	537.3	543.9	553.9	555.6	565.5	572.2	575.5	577.1	578.8
52.5°	464.4	462.7	467.7	475.9	484.3	490.9	500.8	510.8	517.4	527.4	522.4
55°	384.7	388.0	393.1	403.0	416.3	424.5	432.8	446.1	457.7	462.7	472.6
57.5°	316.7	313.4	316.7	330.0	344.9	351.6	363.2	376.5	393.1	403.0	406.3
60°	245.4	247.1	250.4	262.1	273.6	283.6	288.6	310.1	325.1	335.0	341.6
62.5°	180.8	184.1	187.4	197.4	208.9	217.3	225.5	243.8	257.1	267.0	273.6
65°	126.1	127.7	132.7	137.6	149.3	157.5	164.2	179.1	192.4	200.7	205.6
67.5°	77.9	79.6	82.9	89.6	97.8	104.5	111.1	121.0	132.7	140.9	142.6
70°	39.8	41.5	43.1	48.1	54.7	58.1	63.0	71.3	79.6	86.2	89.6
72.5°	13.3	13.3	15.0	18.3	21.6	24.9	26.5	34.8	41.5	44.8	46.4
75°	3.3	3.3	3.3	3.3	3.3	5.0	5.0	9.9	13.3	16.6	18.3
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	3.3	3.3
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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°	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5	1167.5
2.5°	1167.5	1164.2	1162.5	1164.2	1164.2	1162.5	1167.5	1174.1	1182.4	1160.9
5°	1165.8	1162.5	1165.8	1155.9	1160.9	1157.6	1164.2	1162.5	1169.1	1162.5
7.5°	1160.9	1154.3	1155.9	1150.9	1157.6	1149.3	1154.3	1164.2	1157.6	1147.6
10°	1144.3	1141.0	1152.6	1136.0	1132.7	1139.3	1152.6	1142.6	1139.3	1142.6
12.5°	1127.7	1127.7	1132.7	1119.4	1121.0	1124.4	1131.0	1124.4	1127.7	1136.0
15°	1109.5	1106.1	1114.4	1104.5	1102.8	1099.5	1106.1	1106.1	1109.5	1104.5
17.5°	1087.9	1082.9	1082.9	1079.6	1077.9	1086.3	1089.6	1091.2	1092.9	1086.3
20°	1061.4	1059.7	1064.7	1059.7	1061.4	1063.0	1063.0	1059.7	1074.6	1056.4
22.5°	1033.1	1038.1	1031.5	1028.2	1031.5	1034.8	1034.8	1036.5	1033.1	1029.8
25°	1005.0	1008.3	1009.9	1000.0	1005.0	1000.0	1011.6	1013.2	1006.6	1009.9
27.5°	980.1	975.2	973.5	966.8	970.1	968.5	970.1	970.1	980.1	966.8
30°	941.9	937.0	938.6	933.7	935.3	933.7	935.3	935.3	941.9	940.3
32.5°	905.5	900.5	902.1	897.2	897.2	898.8	895.5	895.5	900.5	897.2
35°	870.6	859.0	860.7	859.0	860.7	854.0	854.0	852.4	855.7	847.4
37.5°	820.9	815.9	814.3	812.6	814.3	810.9	814.3	809.3	814.3	807.6
40°	776.1	772.8	774.5	764.5	764.5	766.1	762.8	761.2	762.8	769.5
42.5°	731.4	724.7	721.4	718.1	719.7	714.8	713.1	709.8	713.1	706.5
45°	678.3	678.3	676.6	668.3	670.0	670.0	663.4	656.7	658.4	658.4
47.5°	630.2	626.9	625.2	616.9	615.3	613.6	606.9	602.0	602.0	597.0
50°	577.1	573.8	568.8	560.5	557.2	547.3	542.3	535.7	529.1	529.1
52.5°	527.4	515.7	509.1	495.8	490.9	485.9	472.6	467.7	462.7	457.7
55°	467.7	457.7	444.5	429.5	422.9	414.6	401.3	391.4	384.7	386.4
57.5°	409.6	393.1	379.8	359.9	351.6	346.6	333.3	320.0	313.4	313.4
60°	338.3	325.1	308.5	290.2	283.6	275.3	258.7	250.4	245.4	240.5
62.5°	270.3	260.4	245.4	222.2	217.3	208.9	197.4	187.4	182.4	182.4
65°	202.3	192.4	179.1	162.5	155.9	149.3	139.3	129.4	124.4	122.7
67.5°	142.6	131.0	119.4	106.2	101.2	97.8	87.9	81.3	77.9	76.3
70°	86.2	79.6	71.3	61.4	56.4	53.0	46.4	41.5	39.8	38.2
72.5°	44.8	39.8	33.2	26.5	23.2	19.9	16.6	13.3	11.6	11.6
75°	16.6	13.3	8.3	5.0	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	3.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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)