

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 FEU4C259035 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 FEU4C259035 F4LC-DFSSQ-MW
 Description: 4 INCH 2500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-DFSSQ TRIM WITH MW FINISH
 Light Source: -
 Ballast/Driver: -

Summary

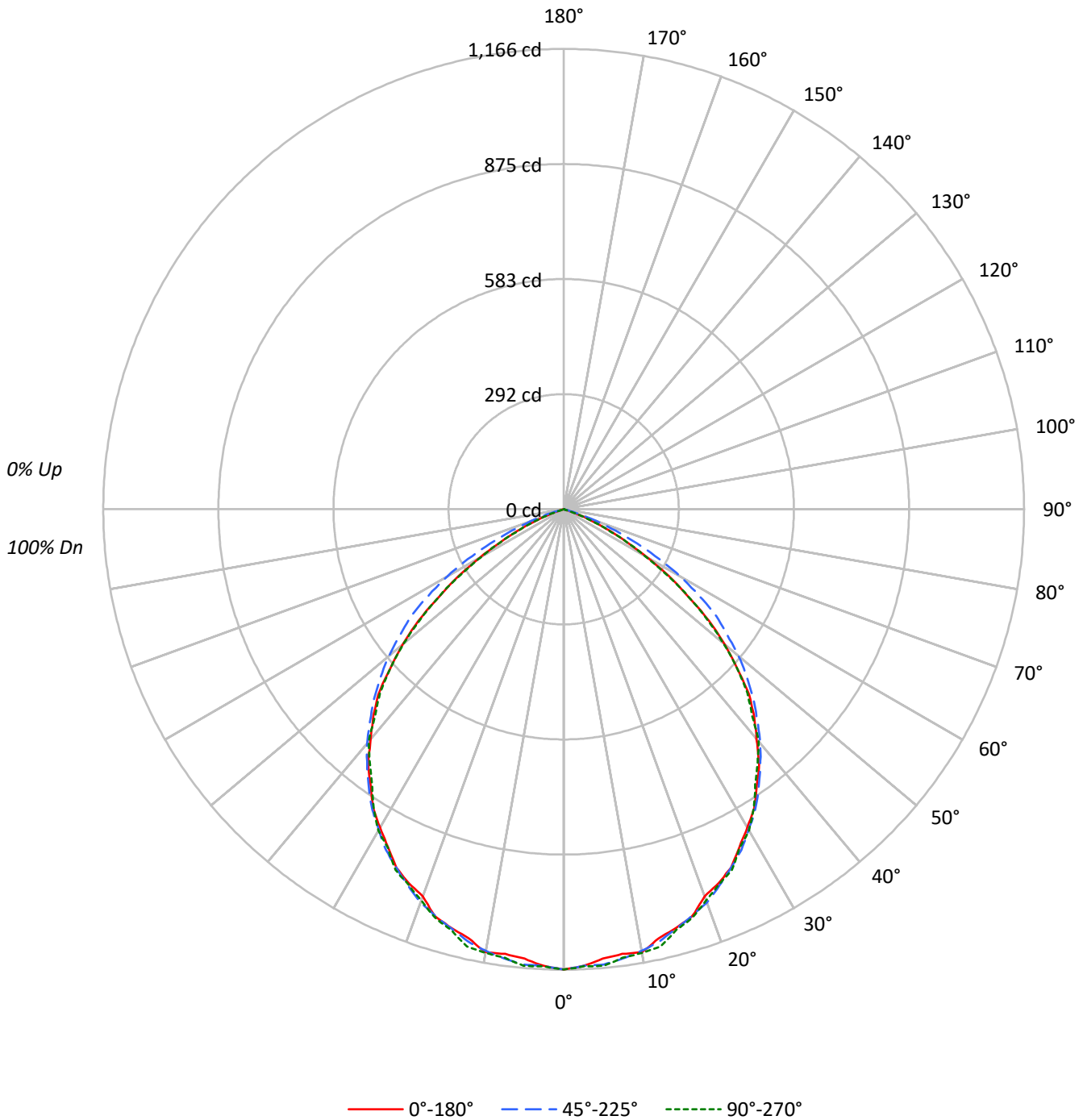
Lumens per Lamp: N/A
 Luminaire Lumens: 2490.0 lumens
 Efficiency: N/A
 Efficacy: 79.0 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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



TEST NUMBER: P#

CATALOG NUMBER: FLDSQ4C25D010 FEU4C259035 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°	112467	112467	112467
5°	110660	112093	112413
10°	111616	111293	111773
15°	109662	109822	110152
20°	107107	108811	108298
25°	106645	106645	107347
30°	103672	104408	104597
35°	100441	101418	99651
40°	95728	97592	96760
45°	90593	92640	89692
50°	79784	86749	79288
55°	64615	79385	64901
60°	47280	65825	46334
65°	28745	46872	27968
70°	11200	25221	10749
75°	1230	6785	1230
80°	945	945	945
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.0	4.4
10°-20°	311.3	12.5
20°-30°	462.0	18.6
30°-40°	535.3	21.5
40°-50°	513.2	20.6
50°-60°	377.3	15.2
60°-70°	163.0	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°	883.3	35.5
0°-40°	1418.6	57.0
0°-60°	2309.2	92.7
0°-90°	2490.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2490.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1166	1166	1166	1166	1166	
5°	1142	1154	1157	1159	1161	109
15°	1098	1104	1099	1101	1103	309
25°	1002	1000	1002	1003	1008	459
35°	853	858	861	859	846	533
45°	664	666	679	669	657	505
55°	384	424	472	422	386	346
65°	126	157	205	156	122	129
75°	3	5	18	3	3	10
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6
2.5°	1157.3	1170.6	1172.3	1164.0	1160.6	1155.7	1167.3	1159.0	1162.3	1159.0	1157.3
5°	1142.5	1157.3	1159.0	1159.0	1155.7	1154.0	1159.0	1157.3	1155.7	1152.4	1157.3
7.5°	1135.9	1144.1	1152.4	1142.5	1147.4	1145.8	1157.3	1152.4	1150.7	1150.7	1147.4
10°	1139.2	1137.5	1144.1	1134.2	1137.5	1134.2	1144.1	1144.1	1140.8	1137.5	1135.9
12.5°	1112.6	1125.9	1125.9	1124.2	1120.9	1115.9	1125.9	1132.5	1122.5	1122.5	1120.9
15°	1097.8	1101.1	1102.7	1102.7	1101.1	1104.4	1109.3	1102.7	1104.4	1096.1	1099.4
17.5°	1081.2	1074.6	1079.5	1076.2	1077.9	1081.2	1087.8	1087.8	1077.9	1076.2	1079.5
20°	1043.1	1063.0	1064.7	1054.7	1056.3	1056.3	1068.0	1058.0	1064.7	1056.3	1059.7
22.5°	1024.9	1038.1	1039.8	1026.6	1034.8	1024.9	1036.5	1021.6	1038.1	1026.6	1031.5
25°	1001.7	1000.1	1005.0	998.4	1000.1	1000.1	1008.3	1001.7	1006.7	1000.1	1001.7
27.5°	963.7	976.9	975.2	968.6	971.9	970.3	986.8	968.6	978.5	970.3	973.6
30°	930.5	942.1	938.8	932.2	932.2	927.2	945.4	940.4	938.8	938.8	937.1
32.5°	897.4	899.1	895.8	897.4	899.1	892.5	907.3	900.7	899.1	900.7	902.4
35°	852.7	852.7	856.0	851.0	857.7	857.7	870.9	862.6	861.0	856.0	861.0
37.5°	812.9	808.0	809.6	809.6	812.9	816.3	822.9	819.6	819.6	814.6	817.9
40°	760.0	756.7	761.6	761.6	766.6	766.6	773.2	769.9	774.8	774.8	774.8
42.5°	713.6	713.6	710.3	715.3	717.0	715.3	726.9	725.2	726.9	723.6	725.2
45°	663.9	663.9	660.6	659.0	667.2	665.6	678.9	673.9	680.5	677.2	678.9
47.5°	596.0	604.3	599.3	604.3	614.3	616.0	624.2	620.9	627.5	622.6	629.2
50°	531.5	531.5	536.4	543.1	553.0	554.7	564.6	571.2	574.5	576.2	577.9
52.5°	463.6	461.9	466.9	475.2	483.5	490.1	500.0	510.0	516.6	526.5	521.5
55°	384.1	387.4	392.4	402.4	415.6	423.8	432.1	445.4	457.0	461.9	471.9
57.5°	316.2	312.9	316.2	329.5	344.4	351.0	362.6	375.9	392.4	402.4	405.7
60°	245.0	246.7	250.0	261.6	273.2	283.1	288.1	309.6	324.5	334.5	341.1
62.5°	180.5	183.8	187.1	197.1	208.6	216.9	225.2	243.4	256.6	266.6	273.2
65°	125.9	127.5	132.5	137.4	149.0	157.3	163.9	178.8	192.1	200.4	205.3
67.5°	77.8	79.4	82.8	89.4	97.7	104.3	110.9	120.9	132.5	140.7	142.4
70°	39.7	41.4	43.0	48.0	54.7	58.0	62.9	71.2	79.4	86.1	89.4
72.5°	13.2	13.2	14.9	18.2	21.5	24.9	26.5	34.8	41.4	44.7	46.3
75°	3.3	3.3	3.3	3.3	3.3	5.0	5.0	9.9	13.2	16.6	18.2
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°	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6	1165.6
2.5°	1165.6	1162.3	1160.6	1162.3	1162.3	1160.6	1165.6	1172.3	1180.5	1159.0
5°	1164.0	1160.6	1164.0	1154.0	1159.0	1155.7	1162.3	1160.6	1167.3	1160.6
7.5°	1159.0	1152.4	1154.0	1149.1	1155.7	1147.4	1152.4	1162.3	1155.7	1145.8
10°	1142.5	1139.2	1150.7	1134.2	1130.9	1137.5	1150.7	1140.8	1137.5	1140.8
12.5°	1125.9	1125.9	1130.9	1117.6	1119.2	1122.5	1129.2	1122.5	1125.9	1134.2
15°	1107.7	1104.4	1112.6	1102.7	1101.1	1097.8	1104.4	1104.4	1107.7	1102.7
17.5°	1086.1	1081.2	1081.2	1077.9	1076.2	1084.5	1087.8	1089.4	1091.1	1084.5
20°	1059.7	1058.0	1063.0	1058.0	1059.7	1061.3	1061.3	1058.0	1072.9	1054.7
22.5°	1031.5	1036.5	1029.9	1026.6	1029.9	1033.2	1033.2	1034.8	1031.5	1028.2
25°	1003.4	1006.7	1008.3	998.4	1003.4	998.4	1010.0	1011.6	1005.0	1008.3
27.5°	978.5	973.6	971.9	965.3	968.6	967.0	968.6	968.6	978.5	965.3
30°	940.4	935.5	937.1	932.2	933.8	932.2	933.8	933.8	940.4	938.8
32.5°	904.0	899.1	900.7	895.8	895.8	897.4	894.1	894.1	899.1	895.8
35°	869.2	857.7	859.3	857.7	859.3	852.7	852.7	851.0	854.4	846.0
37.5°	819.6	814.6	812.9	811.3	812.9	809.6	812.9	808.0	812.9	806.3
40°	774.8	771.5	773.2	763.3	763.3	764.9	761.6	760.0	761.6	768.2
42.5°	730.2	723.6	720.3	717.0	718.6	713.6	712.0	708.6	712.0	705.3
45°	677.2	677.2	675.5	667.2	668.9	668.9	662.3	655.7	657.3	657.3
47.5°	629.2	625.9	624.2	616.0	614.3	612.6	606.0	601.0	601.0	596.0
50°	576.2	572.9	567.9	559.6	556.3	546.4	541.4	534.8	528.2	528.2
52.5°	526.5	514.9	508.3	495.0	490.1	485.1	471.9	466.9	461.9	457.0
55°	466.9	457.0	443.8	428.8	422.2	413.9	400.7	390.7	384.1	385.8
57.5°	409.0	392.4	379.2	359.3	351.0	346.0	332.8	319.5	312.9	312.9
60°	337.8	324.5	308.0	289.7	283.1	274.9	258.3	250.0	245.0	240.1
62.5°	269.9	259.9	245.0	221.8	216.9	208.6	197.1	187.1	182.1	182.1
65°	202.0	192.1	178.8	162.3	155.6	149.0	139.1	129.2	124.2	122.5
67.5°	142.4	130.8	119.2	106.0	101.0	97.7	87.8	81.1	77.8	76.1
70°	86.1	79.4	71.2	61.3	56.3	53.0	46.3	41.4	39.7	38.1
72.5°	44.7	39.7	33.1	26.5	23.2	19.9	16.6	13.2	11.6	11.6
75°	16.6	13.2	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)