

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: **FLDSQ4C30D010 FEU4C309040 F4LC-CSSQ-MMS**

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: FLDSQ4C30D010 FEU4C309040 F4LC-CSSQ-MMS
 Description: 4 INCH 3000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MMS FINISH
 Light Source: -
 Ballast/Driver: -

Summary

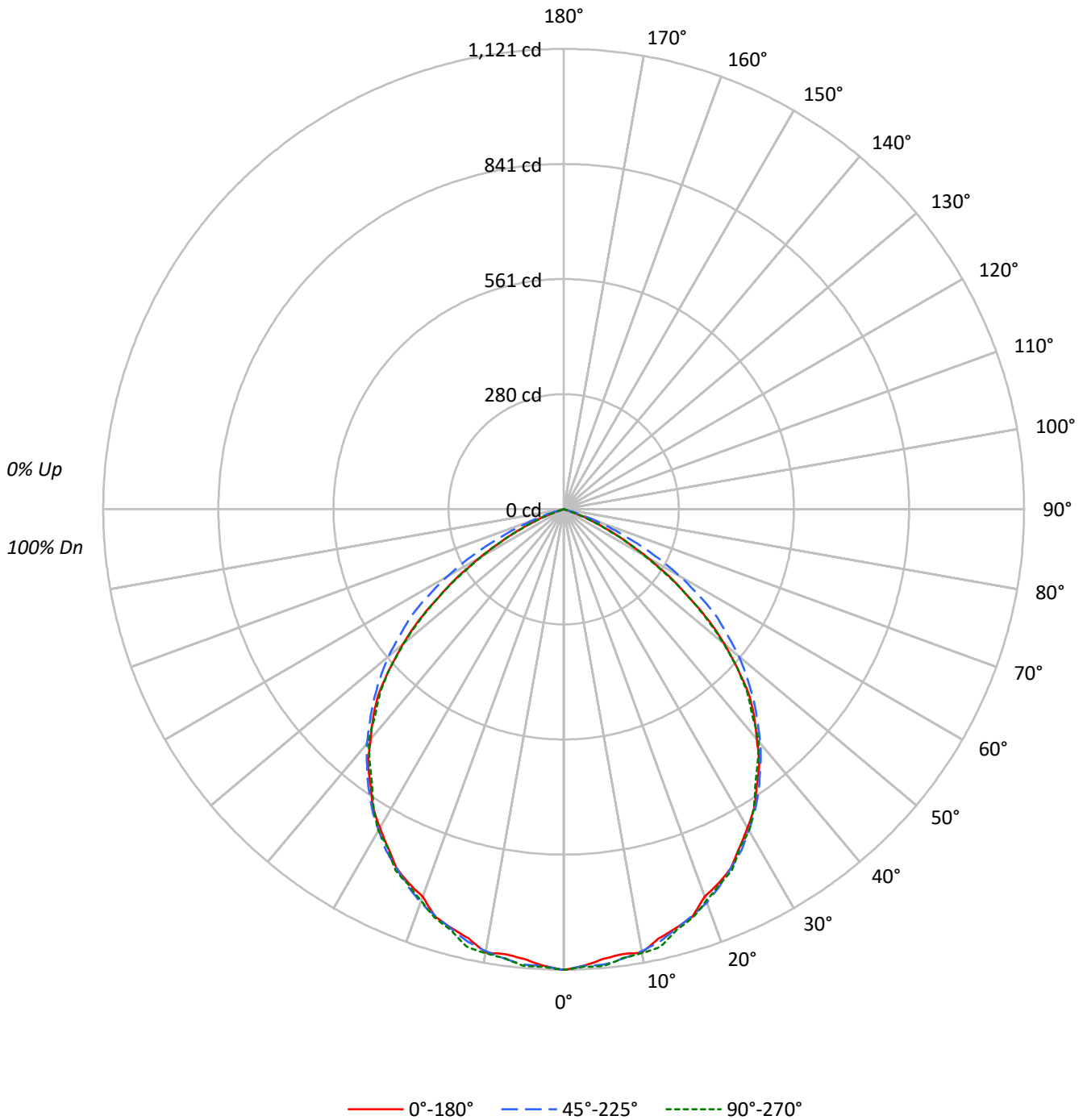
Lumens per Lamp: N/A
 Luminaire Lumens: 2395.0 lumens
 Efficiency: N/A
 Efficacy: 75.8 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 31.6
 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: FLDSQ4C30D010 FEU4C309040 F4LC-CSSQ-MMS

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	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	111	108	104	101	109	105	102	100	101	99	96		97	95	94		94	92	91	89
2	103	96	91	86	100	94	89	85	91	87	83		88	84	81		85	82	79	77
3	95	86	79	74	93	85	78	73	82	76	72		79	74	71		77	73	69	67
4	88	77	70	64	86	76	69	63	74	67	63		71	66	62		69	65	61	59
5	81	70	62	56	79	69	61	56	67	60	55		65	59	54		63	58	54	52
6	75	63	55	49	73	62	55	49	61	54	49		59	53	48		57	52	48	46
7	70	58	50	44	68	57	49	44	55	49	44		54	48	43		53	47	43	41
8	65	53	45	40	64	52	45	39	51	44	39		50	44	39		49	43	39	37
9	61	49	41	36	60	48	41	36	47	40	36		46	40	35		45	39	35	33
10	57	45	38	33	56	44	37	33	44	37	32		43	37	32		42	36	32	31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	108183	108183	108183
5°	106437	107822	108132
10°	107354	107040	107511
15°	105477	105626	105946
20°	103020	104653	104170
25°	102578	102578	103249
30°	99717	100430	100608
35°	96601	97543	95858
40°	92075	93876	93070
45°	87141	89106	86267
50°	76736	83431	76271
55°	62158	76357	62428
60°	45485	63316	44559
65°	27649	45092	26918
70°	10777	24262	10325
75°	1193	6524	1193
80°	889	889	889
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.8	4.4
10°-20°	299.5	12.5
20°-30°	444.3	18.6
30°-40°	514.9	21.5
40°-50°	493.6	20.6
50°-60°	363.0	15.2
60°-70°	156.8	6.5
70°-80°	16.9	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°	849.6	35.5
0°-40°	1364.5	57.0
0°-60°	2221.1	92.7
0°-90°	2395.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2395.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1121	1121	1121	1121	1121	
5°	1099	1110	1113	1115	1116	105
15°	1056	1062	1057	1059	1061	298
25°	964	962	964	965	970	441
35°	820	825	828	826	814	513
45°	639	640	653	643	632	485
55°	370	408	454	406	371	332
65°	121	151	198	150	118	124
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°	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2
2.5°	1113.2	1125.9	1127.5	1119.6	1116.4	1111.6	1122.7	1114.8	1118.0	1114.8	1113.2
5°	1098.9	1113.2	1114.8	1114.8	1111.6	1110.0	1114.8	1113.2	1111.6	1108.4	1113.2
7.5°	1092.5	1100.4	1108.4	1098.9	1103.6	1102.1	1113.2	1108.4	1106.8	1106.8	1103.6
10°	1095.7	1094.1	1100.4	1090.9	1094.1	1090.9	1100.4	1100.4	1097.3	1094.1	1092.5
12.5°	1070.2	1082.9	1082.9	1081.3	1078.2	1073.4	1082.9	1089.3	1079.7	1079.7	1078.2
15°	1055.9	1059.1	1060.6	1060.6	1059.1	1062.2	1067.0	1060.6	1062.2	1054.2	1057.4
17.5°	1040.0	1033.6	1038.3	1035.1	1036.8	1040.0	1046.3	1046.3	1036.8	1035.1	1038.3
20°	1003.3	1022.4	1024.0	1014.5	1016.0	1016.0	1027.2	1017.7	1024.0	1016.0	1019.2
22.5°	985.8	998.5	1000.1	987.4	995.3	985.8	996.9	982.6	998.5	987.4	992.1
25°	963.5	961.9	966.7	960.3	961.9	961.9	969.8	963.5	968.3	961.9	963.5
27.5°	926.9	939.6	938.0	931.6	934.8	933.3	949.2	931.6	941.2	933.3	936.4
30°	895.0	906.2	903.0	896.6	896.6	891.8	909.3	904.5	903.0	903.0	901.4
32.5°	863.2	864.8	861.6	863.2	864.8	858.4	872.7	866.3	864.8	866.3	868.0
35°	820.1	820.1	823.3	818.6	824.9	824.9	837.7	829.7	828.1	823.3	828.1
37.5°	781.9	777.2	778.7	778.7	781.9	785.1	791.5	788.3	788.3	783.6	786.7
40°	731.0	727.8	732.5	732.5	737.4	737.4	743.7	740.5	745.3	745.3	745.3
42.5°	686.4	686.4	683.2	688.0	689.6	688.0	699.1	697.5	699.1	696.0	697.5
45°	638.6	638.6	635.4	633.8	641.8	640.2	653.0	648.1	654.5	651.3	653.0
47.5°	573.3	581.3	576.5	581.3	590.8	592.5	600.4	597.2	603.6	598.8	605.2
50°	511.2	511.2	516.0	522.3	531.9	533.5	543.1	549.4	552.6	554.2	555.8
52.5°	445.9	444.3	449.1	457.0	465.0	471.4	481.0	490.5	496.9	506.4	501.6
55°	369.5	372.6	377.4	387.0	399.7	407.7	415.7	428.4	439.6	444.3	453.9
57.5°	304.2	301.0	304.2	316.9	331.3	337.6	348.8	361.5	377.4	387.0	390.2
60°	235.7	237.3	240.5	251.7	262.8	272.3	277.1	297.8	312.1	321.7	328.1
62.5°	173.6	176.8	180.0	189.5	200.6	208.6	216.6	234.1	246.8	256.4	262.8
65°	121.1	122.6	127.4	132.2	143.3	151.3	157.6	172.0	184.7	192.7	197.5
67.5°	74.9	76.4	79.6	86.0	94.0	100.3	106.7	116.2	127.4	135.3	137.0
70°	38.2	39.8	41.4	46.2	52.6	55.7	60.5	68.5	76.4	82.8	86.0
72.5°	12.7	12.7	14.4	17.5	20.7	23.9	25.5	33.5	39.8	43.0	44.6
75°	3.2	3.2	3.2	3.2	3.2	4.8	4.8	9.6	12.7	15.9	17.5
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	3.2	3.2
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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°	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2	1121.2
2.5°	1121.2	1118.0	1116.4	1118.0	1118.0	1116.4	1121.2	1127.5	1135.5	1114.8
5°	1119.6	1116.4	1119.6	1110.0	1114.8	1111.6	1118.0	1116.4	1122.7	1116.4
7.5°	1114.8	1108.4	1110.0	1105.3	1111.6	1103.6	1108.4	1118.0	1111.6	1102.1
10°	1098.9	1095.7	1106.8	1090.9	1087.7	1094.1	1106.8	1097.3	1094.1	1097.3
12.5°	1082.9	1082.9	1087.7	1075.0	1076.5	1079.7	1086.1	1079.7	1082.9	1090.9
15°	1065.4	1062.2	1070.2	1060.6	1059.1	1055.9	1062.2	1062.2	1065.4	1060.6
17.5°	1044.7	1040.0	1040.0	1036.8	1035.1	1043.1	1046.3	1047.9	1049.5	1043.1
20°	1019.2	1017.7	1022.4	1017.7	1019.2	1020.8	1020.8	1017.7	1032.0	1014.5
22.5°	992.1	996.9	990.6	987.4	990.6	993.8	993.8	995.3	992.1	988.9
25°	965.1	968.3	969.8	960.3	965.1	960.3	971.5	973.0	966.7	969.8
27.5°	941.2	936.4	934.8	928.5	931.6	930.1	931.6	931.6	941.2	928.5
30°	904.5	899.8	901.4	896.6	898.2	896.6	898.2	898.2	904.5	903.0
32.5°	869.5	864.8	866.3	861.6	861.6	863.2	860.0	860.0	864.8	861.6
35°	836.1	824.9	826.5	824.9	826.5	820.1	820.1	818.6	821.8	813.8
37.5°	788.3	783.6	781.9	780.4	781.9	778.7	781.9	777.2	781.9	775.6
40°	745.3	742.1	743.7	734.2	734.2	735.7	732.5	731.0	732.5	738.9
42.5°	702.3	696.0	692.8	689.6	691.2	686.4	684.8	681.6	684.8	678.4
45°	651.3	651.3	649.8	641.8	643.4	643.4	637.0	630.7	632.2	632.2
47.5°	605.2	602.0	600.4	592.5	590.8	589.3	582.8	578.1	578.1	573.3
50°	554.2	551.0	546.3	538.3	535.1	525.5	520.8	514.4	508.1	508.1
52.5°	506.4	495.3	488.9	476.2	471.4	466.6	453.9	449.1	444.3	439.6
55°	449.1	439.6	426.8	412.5	406.1	398.1	385.4	375.8	369.5	371.1
57.5°	393.4	377.4	364.7	345.6	337.6	332.8	320.1	307.3	301.0	301.0
60°	324.9	312.1	296.2	278.7	272.3	264.4	248.4	240.5	235.7	230.9
62.5°	259.6	250.0	235.7	213.4	208.6	200.6	189.5	180.0	175.2	175.2
65°	194.3	184.7	172.0	156.1	149.7	143.3	133.8	124.2	119.4	117.9
67.5°	137.0	125.8	114.7	101.9	97.1	94.0	84.4	78.0	74.9	73.2
70°	82.8	76.4	68.5	58.9	54.1	50.9	44.6	39.8	38.2	36.6
72.5°	43.0	38.2	31.8	25.5	22.3	19.1	15.9	12.7	11.2	11.2
75°	15.9	12.7	8.0	4.8	3.2	3.2	3.2	3.2	3.2	3.2
77.5°	3.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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)