

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: **FLDSQ4C20D010 FEU4C209030 F4LC-SQ-WH**

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: FLDSQ4C20D010 FEU4C209030 F4LC-SQ-WH
 Description: 4 INCH 2000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

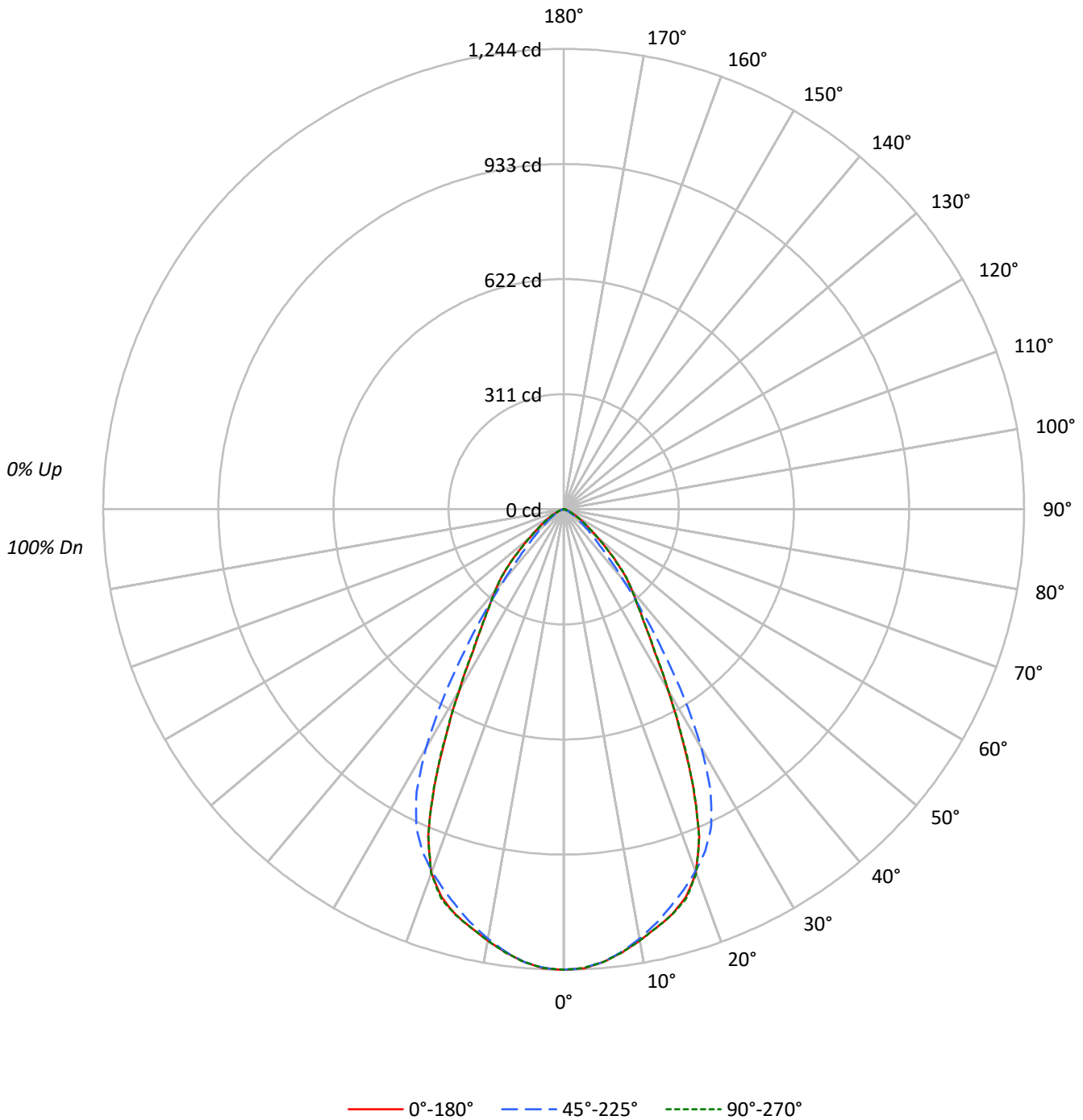
Lumens per Lamp: N/A
 Luminaire Lumens: 1317.0 lumens
 Efficiency: N/A
 Efficacy: 60.4 lumens/watt
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 21.8
 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	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	113	110	107	105	110	108	105	103	104	102	100		100	98	97		96	95	94	92
2	107	101	97	93	104	99	95	92	96	93	90		93	90	88		90	88	86	84
3	101	93	88	84	98	92	87	83	89	85	82		87	83	80		85	82	79	77
4	95	87	80	76	93	85	80	75	83	78	74		81	77	74		79	76	73	71
5	89	80	74	69	88	79	73	69	78	72	68		76	71	68		74	70	67	66
6	85	75	68	64	83	74	68	63	72	67	63		71	66	63		70	65	62	61
7	80	70	63	59	79	69	63	59	68	62	58		67	62	58		65	61	58	56
8	76	65	59	55	74	65	59	54	64	58	54		63	58	54		62	57	54	52
9	72	61	55	51	71	61	55	51	60	54	51		59	54	50		58	54	50	49
10	68	58	52	48	67	57	51	47	57	51	47		56	51	47		55	50	47	46

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	120061	120061	120061
5°	118960	118883	118922
10°	115917	115457	115917
15°	113128	111091	113248
20°	107261	106860	107456
25°	87982	100395	88439
30°	62738	82938	62827
35°	45255	54961	45385
40°	36276	31930	36276
45°	27687	18640	27469
50°	18253	11904	18208
55°	12280	7991	12146
60°	8259	5461	8337
65°	5639	3858	5548
70°	3752	2765	3752
75°	2498	2050	2498
80°	1723	1500	1723
85°	1329	1329	1329

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	115.7	8.8
10°-20°	315.4	23.9
20°-30°	394.3	29.9
30°-40°	265.3	20.1
40°-50°	140.1	10.6
50°-60°	56.9	4.3
60°-70°	21.1	1.6
70°-80°	6.8	0.5
80°-90°	1.5	0.1
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°	825.4	62.7
0°-40°	1090.6	82.8
0°-60°	1287.6	97.8
0°-90°	1317.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1317.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1244	1244	1244	1244	1244	
5°	1228	1227	1227	1227	1228	116
15°	1132	1123	1112	1123	1134	317
25°	826	873	943	874	831	372
35°	384	403	467	404	385	247
45°	203	193	137	192	201	156
55°	73	61	48	61	72	68
65°	25	20	17	20	24	25
75°	7	6	6	6	7	8
85°	1	1	1	1	1	2
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1244.3	1244.3	1244.3	1244.3	1244.3
2.5°	1241.2	1240.4	1240.0	1240.0	1240.4
5°	1228.2	1227.1	1227.4	1227.4	1227.8
7.5°	1207.4	1207.0	1205.9	1207.4	1207.4
10°	1183.1	1181.1	1178.4	1181.5	1183.1
12.5°	1158.0	1152.1	1147.4	1152.1	1158.0
15°	1132.5	1123.1	1112.1	1122.7	1133.7
17.5°	1099.1	1089.7	1077.5	1091.7	1102.3
20°	1044.6	1045.4	1040.7	1044.6	1046.5
22.5°	957.1	974.7	999.5	975.1	954.3
25°	826.4	872.7	943.0	874.3	830.7
27.5°	686.3	745.2	860.2	748.7	690.6
30°	563.1	615.3	744.4	618.8	563.9
32.5°	456.0	494.8	605.1	499.5	461.1
35°	384.2	403.4	466.6	404.2	385.3
37.5°	329.2	329.2	346.5	330.8	327.7
40°	288.0	275.5	253.5	275.1	288.0
42.5°	249.6	230.7	184.0	229.9	250.4
45°	202.9	192.7	136.6	191.9	201.3
47.5°	155.8	148.7	102.8	147.9	157.0
50°	121.6	110.7	79.3	109.9	121.3
52.5°	93.4	81.6	61.2	81.6	92.6
55°	73.0	61.2	47.5	61.2	72.2
57.5°	56.1	46.7	36.1	45.9	55.7
60°	42.8	34.9	28.3	34.9	43.2
62.5°	32.6	26.7	21.6	26.3	32.2
65°	24.7	20.0	16.9	20.0	24.3
67.5°	18.1	14.9	12.9	14.9	18.4
70°	13.3	11.4	9.8	11.0	13.3
72.5°	9.8	8.2	7.5	8.2	9.8
75°	6.7	5.9	5.5	5.9	6.7
77.5°	4.7	4.3	3.9	4.3	4.7
80°	3.1	2.7	2.7	3.1	3.1
82.5°	2.0	2.0	2.0	2.0	2.0
85°	1.2	1.2	1.2	1.2	1.2
87.5°	0.8	0.8	0.8	0.8	0.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)