

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 FEU4C209027 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 FEU4C209027 F4LC-SQ-WH
 Description: 4 INCH 2000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

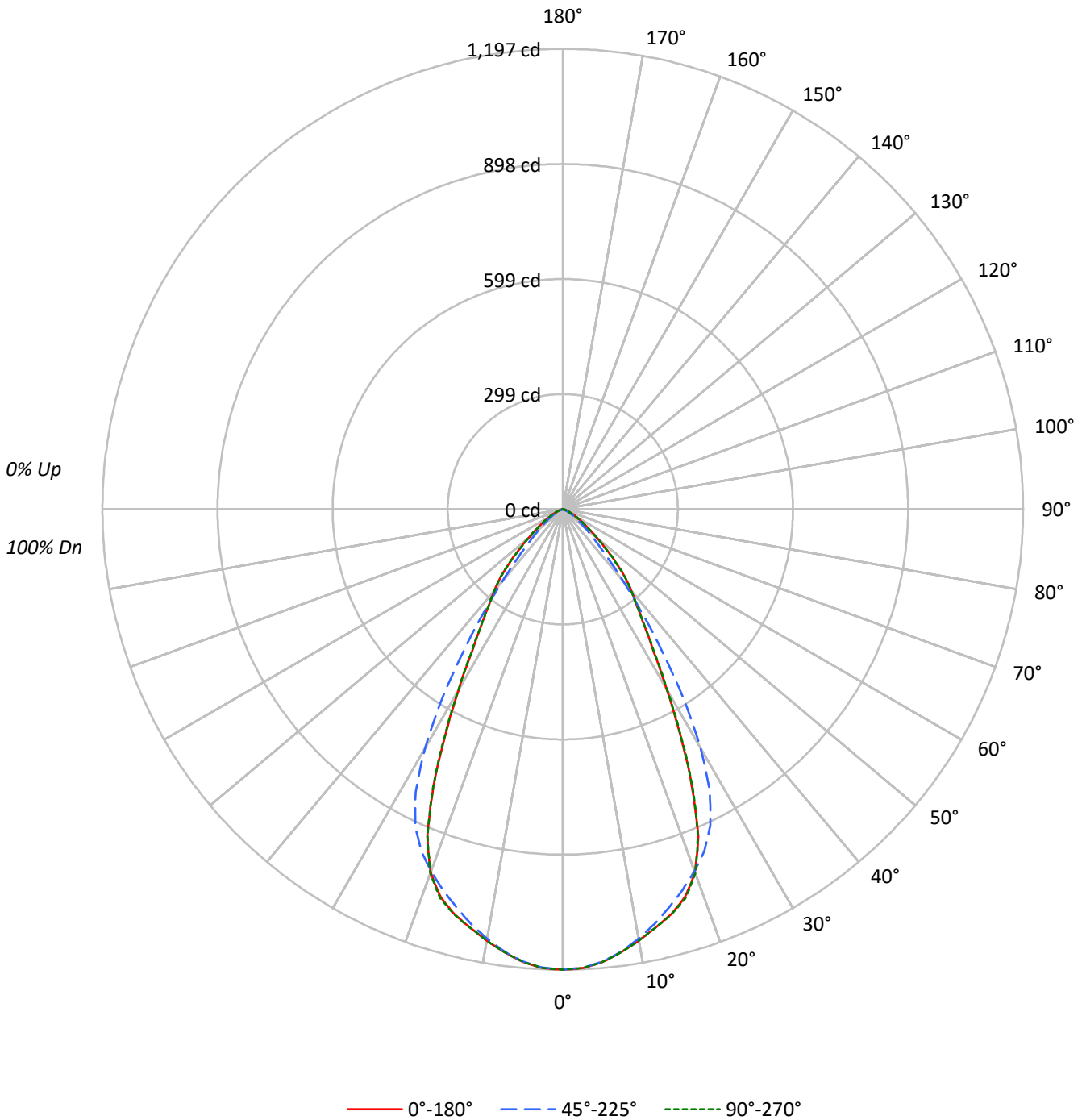
Lumens per Lamp: N/A
 Luminaire Lumens: 1267.0 lumens
 Efficiency: N/A
 Efficacy: 58.1 lumens/watt
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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	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	100	100	
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92	92	92	92	
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84	84	84	84	
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77	77	77	77	
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71	71	71	71	
5	89	80	74	69	88	79	73	69	78	72	68	76	71	68	74	70	67	66	66	66	66	
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61	61	61	61	
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56	56	56	56	
8	76	65	59	55	74	65	59	54	64	58	54	63	58	54	62	57	54	52	52	52	52	
9	72	61	55	51	71	61	55	51	60	54	51	59	54	50	58	54	50	49	49	49	49	
10	68	58	52	48	67	57	51	47	57	51	47	56	51	47	55	50	47	46	46	46	46	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	115507	115507	115507
5°	114447	114369	114408
10°	111518	111077	111518
15°	108833	106875	108943
20°	103184	102805	103380
25°	84639	96584	85086
30°	60354	79785	60443
35°	43536	52876	43665
40°	34903	30721	34903
45°	26636	17930	26432
50°	17563	11453	17503
55°	11809	7688	11692
60°	7931	5249	8009
65°	5434	3699	5343
70°	3611	2652	3611
75°	2386	1976	2386
80°	1667	1445	1667
85°	1218	1218	1218

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.3	8.8
10°-20°	303.4	23.9
20°-30°	379.3	29.9
30°-40°	255.2	20.1
40°-50°	134.7	10.6
50°-60°	54.8	4.3
60°-70°	20.3	1.6
70°-80°	6.6	0.5
80°-90°	1.4	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°	794.0	62.7
0°-40°	1049.2	82.8
0°-60°	1238.7	97.8
0°-90°	1267.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1267.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1197	1197	1197	1197	1197	
5°	1182	1180	1181	1181	1181	111
15°	1090	1080	1070	1080	1091	305
25°	795	840	907	841	799	358
35°	370	388	449	389	371	238
45°	195	185	131	185	194	150
55°	70	59	46	59	70	65
65°	24	19	16	19	23	25
75°	6	6	5	6	6	7
85°	1	1	1	1	1	1
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1197.1	1197.1	1197.1	1197.1	1197.1
2.5°	1194.1	1193.3	1192.9	1192.9	1193.3
5°	1181.6	1180.5	1180.8	1180.8	1181.2
7.5°	1161.6	1161.2	1160.1	1161.6	1161.6
10°	1138.2	1136.3	1133.7	1136.7	1138.2
12.5°	1114.0	1108.4	1103.8	1108.4	1114.0
15°	1089.5	1080.4	1069.9	1080.0	1090.6
17.5°	1057.4	1048.3	1036.6	1050.2	1060.4
20°	1004.9	1005.7	1001.2	1004.9	1006.8
22.5°	920.7	937.7	961.5	938.1	918.1
25°	795.0	839.6	907.2	841.1	799.2
27.5°	660.3	716.9	827.5	720.3	664.4
30°	541.7	591.9	716.1	595.3	542.5
32.5°	438.7	476.0	582.1	480.6	443.6
35°	369.6	388.1	448.9	388.8	370.7
37.5°	316.7	316.7	333.3	318.2	315.2
40°	277.1	265.0	243.9	264.6	277.1
42.5°	240.1	222.0	177.1	221.2	240.8
45°	195.2	185.4	131.4	184.6	193.7
47.5°	149.9	143.1	98.9	142.3	151.0
50°	117.0	106.5	76.3	105.7	116.6
52.5°	89.8	78.5	58.9	78.5	89.1
55°	70.2	58.9	45.7	58.9	69.5
57.5°	54.0	44.9	34.7	44.2	53.6
60°	41.1	33.6	27.2	33.6	41.5
62.5°	31.3	25.7	20.8	25.3	31.0
65°	23.8	19.3	16.2	19.3	23.4
67.5°	17.4	14.3	12.5	14.3	17.7
70°	12.8	10.9	9.4	10.6	12.8
72.5°	9.4	7.9	7.2	7.9	9.4
75°	6.4	5.7	5.3	5.7	6.4
77.5°	4.5	4.2	3.8	4.2	4.5
80°	3.0	2.6	2.6	3.0	3.0
82.5°	1.9	1.9	1.9	1.9	1.9
85°	1.1	1.1	1.1	1.1	1.1
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)