

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 FEU4C209050 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 FEU4C209050 F4LC-SQ-WH
 Description: 4 INCH 2000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

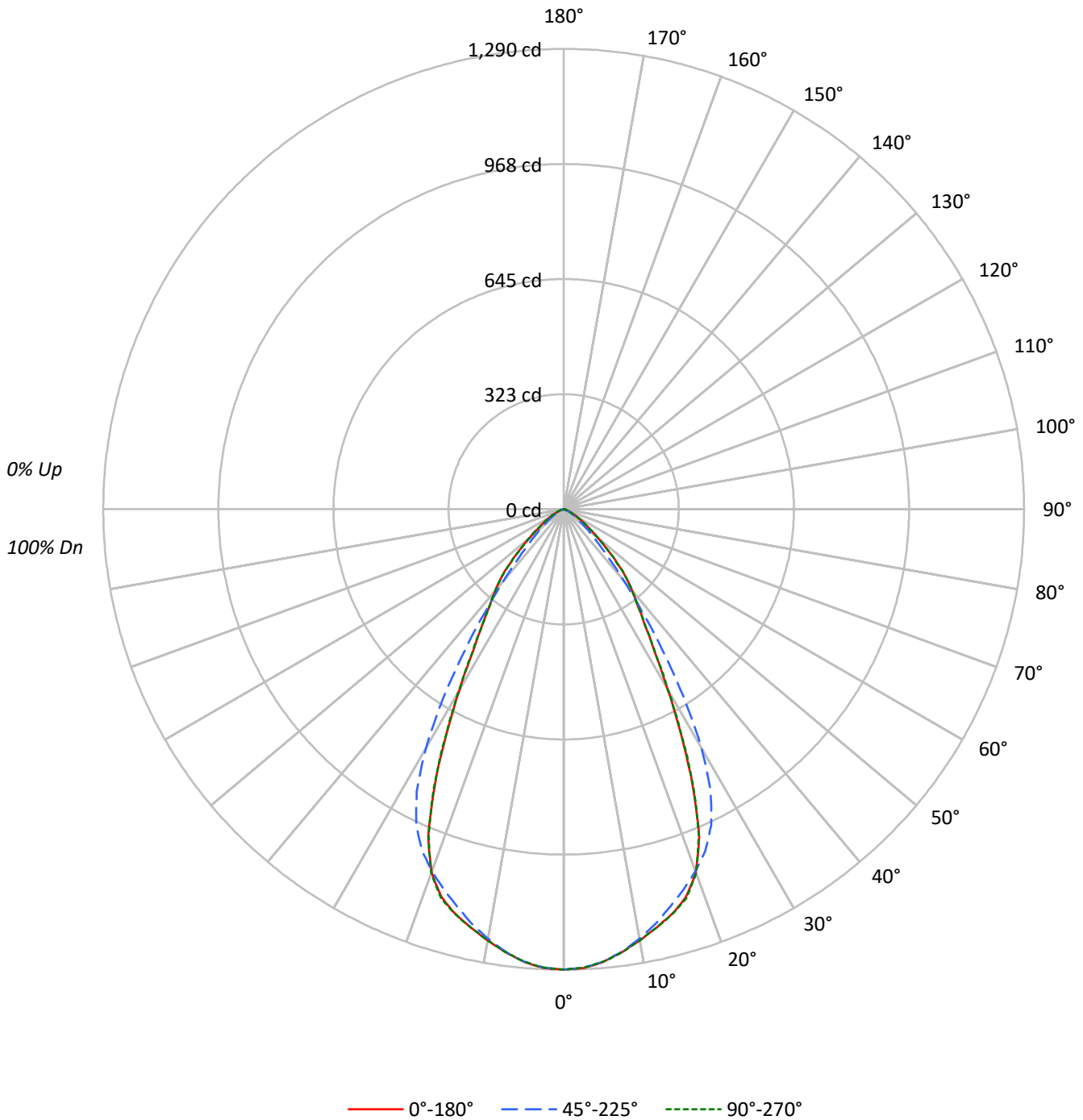
Lumens per Lamp: N/A
 Luminaire Lumens: 1365.0 lumens
 Efficiency: N/A
 Efficacy: 62.6 lumens/watt
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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°	124442	124442	124442
5°	123300	123222	123261
10°	120140	119660	120140
15°	117254	115136	117374
20°	111173	110752	111378
25°	91186	104047	91665
30°	65022	85957	65111
35°	46904	56964	47046
40°	37598	33089	37598
45°	28697	19309	28465
50°	18929	12339	18869
55°	12718	8277	12583
60°	8549	5654	8626
65°	5845	3995	5753
70°	3893	2878	3893
75°	2572	2125	2572
80°	1834	1556	1834
85°	1329	1329	1329

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.9	8.8
10°-20°	326.9	23.9
20°-30°	408.7	29.9
30°-40°	274.9	20.1
40°-50°	145.2	10.6
50°-60°	59.0	4.3
60°-70°	21.9	1.6
70°-80°	7.1	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°	855.5	62.7
0°-40°	1130.4	82.8
0°-60°	1334.5	97.8
0°-90°	1365.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1365.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1290	1290	1290	1290	1290	
5°	1273	1272	1272	1272	1273	120
15°	1174	1164	1153	1164	1175	329
25°	856	904	977	906	861	386
35°	398	418	484	419	399	256
45°	210	200	142	199	209	161
55°	76	63	49	63	75	70
65°	26	21	18	21	25	26
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°	1289.7	1289.7	1289.7	1289.7	1289.7
2.5°	1286.4	1285.6	1285.2	1285.2	1285.6
5°	1273.0	1271.8	1272.2	1272.2	1272.6
7.5°	1251.4	1251.0	1249.8	1251.4	1251.4
10°	1226.2	1224.2	1221.3	1224.6	1226.2
12.5°	1200.2	1194.1	1189.2	1194.1	1200.2
15°	1173.8	1164.0	1152.6	1163.6	1175.0
17.5°	1139.2	1129.4	1116.8	1131.5	1142.4
20°	1082.7	1083.5	1078.6	1082.7	1084.7
22.5°	992.0	1010.3	1035.9	1010.7	989.1
25°	856.5	904.5	977.3	906.1	861.0
27.5°	711.3	772.3	891.5	776.0	715.8
30°	583.6	637.7	771.5	641.4	584.4
32.5°	472.6	512.9	627.1	517.7	477.9
35°	398.2	418.1	483.6	418.9	399.4
37.5°	341.2	341.2	359.1	342.9	339.6
40°	298.5	285.5	262.7	285.1	298.5
42.5°	258.7	239.1	190.7	238.3	259.5
45°	210.3	199.7	141.5	198.9	208.6
47.5°	161.5	154.1	106.6	153.3	162.7
50°	126.1	114.7	82.2	113.9	125.7
52.5°	96.8	84.6	63.4	84.6	96.0
55°	75.6	63.4	49.2	63.4	74.8
57.5°	58.2	48.4	37.4	47.6	57.8
60°	44.3	36.2	29.3	36.2	44.7
62.5°	33.8	27.7	22.4	27.2	33.3
65°	25.6	20.7	17.5	20.7	25.2
67.5°	18.7	15.5	13.4	15.5	19.1
70°	13.8	11.8	10.2	11.4	13.8
72.5°	10.2	8.5	7.7	8.5	10.2
75°	6.9	6.1	5.7	6.1	6.9
77.5°	4.9	4.5	4.1	4.5	4.9
80°	3.3	2.8	2.8	3.3	3.3
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)