

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: **FLDSQ4C05D010 FEU4C059035 F4LC-SQ-WH**

Issue Date: 12/13/2022

Tested By:

Approved By:



Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.



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: FLDSQ4C05D010 FEU4C059035 F4LC-SQ-WH
 Description: 4 INCH 500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

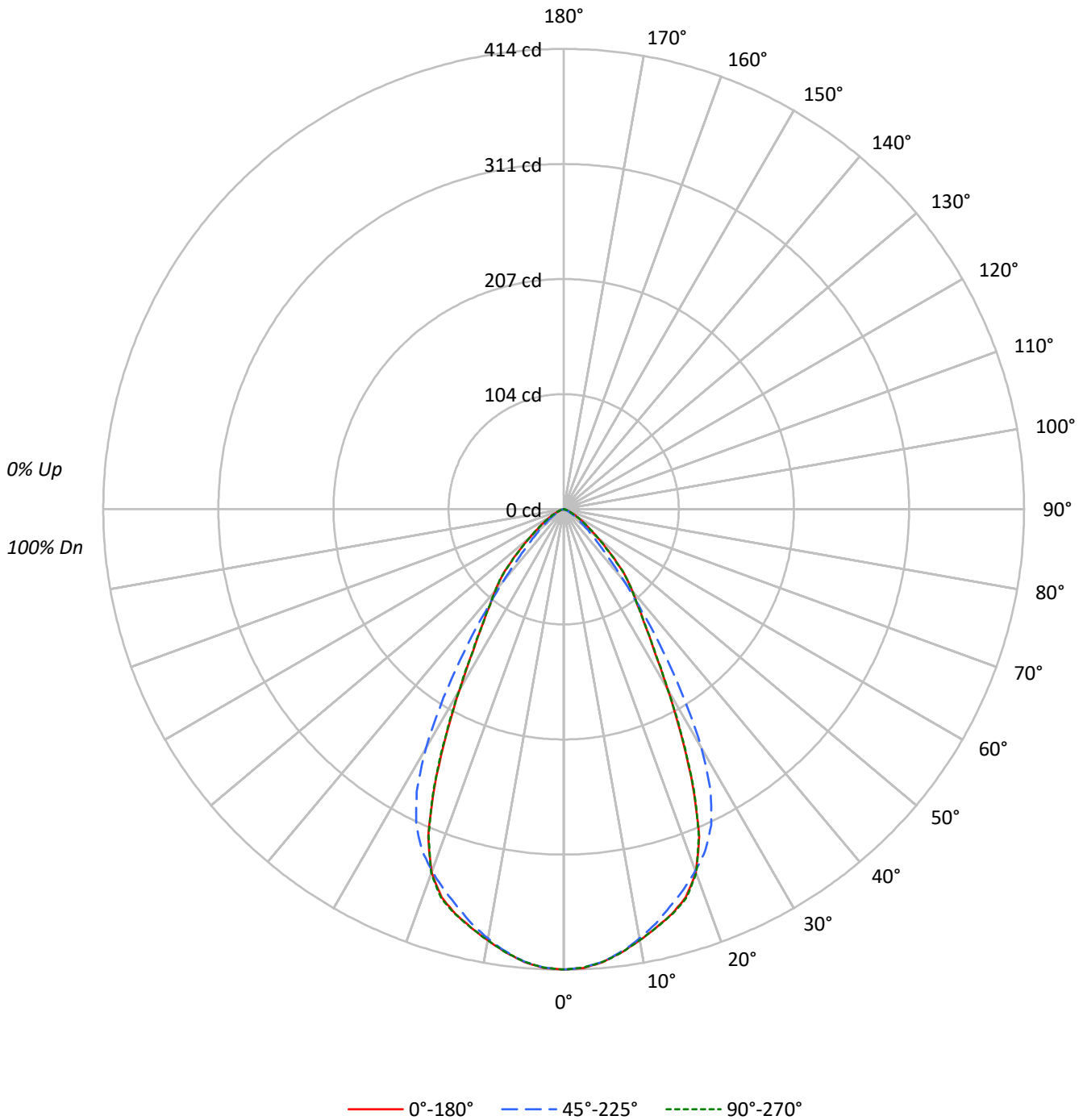
Lumens per Lamp: N/A
 Luminaire Lumens: 438.0 lumens
 Efficiency: N/A
 Efficacy: 60.8 lumens/watt
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 7.2
 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

TEST NUMBER: P#
CATALOG NUMBER: FLDSQ4C05D010 FEU4C059035 F4LC-SQ-WH

Luminous Intensity Polar Plot



TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C05D010 FEU4C059035 F4LC-SQ-WH

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	65
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°	39927	39927	39927
5°	39566	39537	39547
10°	38554	38397	38554
15°	37620	36940	37660
20°	35671	35538	35743
25°	29256	33387	29416
30°	20868	27587	20890
35°	15054	18281	15101
40°	12067	10618	12067
45°	9211	6195	9129
50°	6079	3963	6049
55°	4088	2658	4037
60°	2740	1814	2779
65°	1872	1279	1849
70°	1241	931	1241
75°	820	671	820
80°	556	500	556
85°	443	443	443

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C05D010 FEU4C059035 F4LC-SQ-WH

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.5	8.8
10°-20°	104.9	23.9
20°-30°	131.1	29.9
30°-40°	88.2	20.1
40°-50°	46.6	10.6
50°-60°	18.9	4.3
60°-70°	7.0	1.6
70°-80°	2.3	0.5
80°-90°	0.5	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°	274.5	62.7
0°-40°	362.7	82.8
0°-60°	428.2	97.8
0°-90°	438.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	438.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	414	414	414	414	414	
5°	408	408	408	408	408	39
15°	377	374	370	373	377	106
25°	275	290	314	291	276	124
35°	128	134	155	134	128	82
45°	68	64	45	64	67	52
55°	24	20	16	20	24	23
65°	8	7	6	7	8	8
75°	2	2	2	2	2	3
85°	0	0	0	0	0	1
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C05D010 FEU4C059035 F4LC-SQ-WH

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	413.8	413.8	413.8	413.8	413.8
2.5°	412.8	412.5	412.4	412.4	412.5
5°	408.5	408.1	408.2	408.2	408.3
7.5°	401.6	401.4	401.0	401.6	401.6
10°	393.5	392.8	391.9	392.9	393.5
12.5°	385.1	383.2	381.6	383.2	385.1
15°	376.6	373.5	369.8	373.4	377.0
17.5°	365.5	362.4	358.4	363.1	366.6
20°	347.4	347.7	346.1	347.4	348.1
22.5°	318.3	324.2	332.4	324.3	317.4
25°	274.8	290.2	313.6	290.8	276.3
27.5°	228.3	247.8	286.1	249.0	229.7
30°	187.3	204.6	247.6	205.8	187.5
32.5°	151.6	164.6	201.2	166.1	153.3
35°	127.8	134.2	155.2	134.4	128.2
37.5°	109.5	109.5	115.2	110.0	109.0
40°	95.8	91.6	84.3	91.5	95.8
42.5°	83.0	76.7	61.2	76.5	83.3
45°	67.5	64.1	45.4	63.8	66.9
47.5°	51.8	49.5	34.2	49.2	52.2
50°	40.5	36.8	26.4	36.5	40.3
52.5°	31.1	27.1	20.4	27.1	30.8
55°	24.3	20.4	15.8	20.4	24.0
57.5°	18.7	15.5	12.0	15.3	18.5
60°	14.2	11.6	9.4	11.6	14.4
62.5°	10.8	8.9	7.2	8.7	10.7
65°	8.2	6.7	5.6	6.7	8.1
67.5°	6.0	5.0	4.3	5.0	6.1
70°	4.4	3.8	3.3	3.7	4.4
72.5°	3.3	2.7	2.5	2.7	3.3
75°	2.2	2.0	1.8	2.0	2.2
77.5°	1.6	1.4	1.3	1.4	1.6
80°	1.0	0.9	0.9	1.0	1.0
82.5°	0.7	0.7	0.7	0.7	0.7
85°	0.4	0.4	0.4	0.4	0.4
87.5°	0.3	0.3	0.3	0.3	0.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)