

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: **FLDSQ4C65D010 FEU4C659040 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: FLDSQ4C65D010 FEU4C659040 F4LC-SQ-WH  
 Description: 4 INCH 6500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQW TRIM WITH H FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

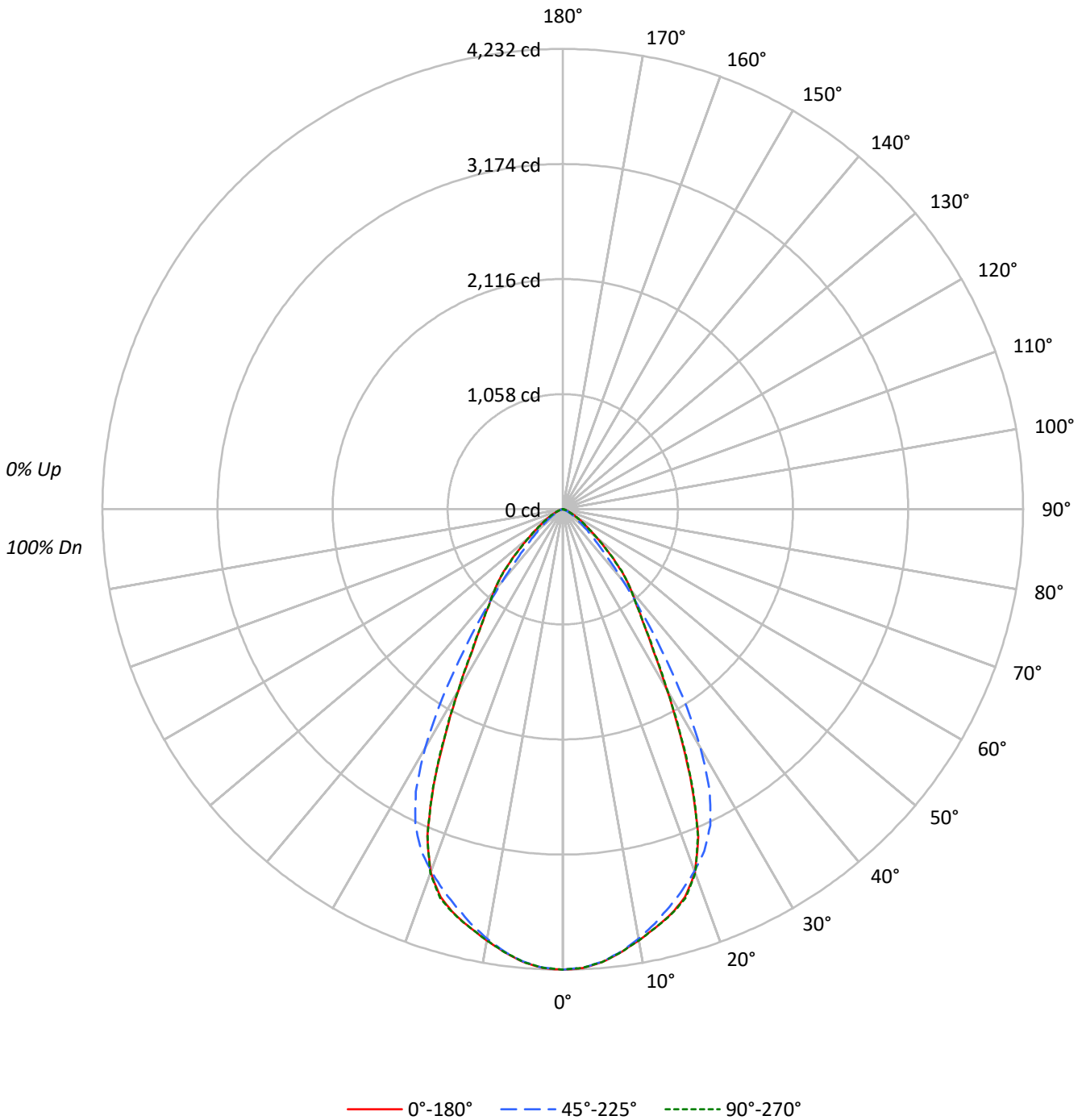
Lumens per Lamp: N/A  
 Luminaire Lumens: 4479.0 lumens  
 Efficiency: N/A  
 Efficacy: 61.9 lumens/watt  
 Spacing Criteria (0/90/45): 0.93 / 0.93 / 0.94  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 72.4  
 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				
RC	80					70					50					30				
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°	408322	408322	408322
5°	404583	404322	404457
10°	394222	392654	394222
15°	384737	377804	385136
20°	364775	363410	365463
25°	299216	341418	300781
30°	213372	282060	213662
35°	153894	186911	154365
40°	123375	108588	123375
45°	94155	63370	93418
50°	62101	40470	61905
55°	41753	27168	41316
60°	28078	18545	28329
65°	19201	13105	18881
70°	12808	9423	12808
75°	8463	6971	8463
80°	5946	5168	5946
85°	4428	4428	4428

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	393.4	8.8
10°-20°	1072.7	23.9
20°-30°	1341.0	29.9
30°-40°	902.1	20.1
40°-50°	476.3	10.6
50°-60°	193.6	4.3
60°-70°	71.8	1.6
70°-80°	23.2	0.5
80°-90°	5.0	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°	2807.0	62.7
0°-40°	3709.1	82.8
0°-60°	4379.0	97.8
0°-90°	4479.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4479.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4232	4232	4232	4232	4232	
5°	4177	4173	4174	4174	4176	394
15°	3852	3819	3782	3818	3856	1079
25°	2810	2968	3207	2973	2825	1265
35°	1306	1372	1587	1375	1310	841
45°	690	655	464	653	685	529
55°	248	208	162	208	246	230
65°	84	68	57	68	83	87
75°	23	20	19	20	23	26
85°	4	4	4	4	4	5
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4231.8	4231.8	4231.8	4231.8	4231.8
2.5°	4221.1	4218.5	4217.1	4217.1	4218.5
5°	4177.1	4173.1	4174.4	4174.4	4175.8
7.5°	4106.4	4105.0	4101.0	4106.4	4106.4
10°	4023.6	4017.0	4007.6	4018.3	4023.6
12.5°	3938.2	3918.2	3902.2	3918.2	3938.2
15°	3851.5	3819.4	3782.1	3818.1	3855.5
17.5°	3738.0	3706.0	3664.6	3712.7	3748.7
20°	3552.5	3555.2	3539.2	3552.5	3559.2
22.5°	3254.9	3315.0	3399.1	3316.3	3245.6
25°	2810.5	2968.0	3206.9	2973.3	2825.2
27.5°	2334.1	2534.3	2925.3	2546.3	2348.8
30°	1915.1	2092.6	2531.6	2104.6	1917.7
32.5°	1550.7	1682.8	2057.9	1698.9	1568.1
35°	1306.5	1371.9	1586.8	1374.6	1310.5
37.5°	1119.7	1119.7	1178.4	1125.0	1114.3
40°	979.5	936.8	862.1	935.5	979.5
42.5°	848.8	784.7	625.9	782.0	851.4
45°	690.0	655.3	464.4	652.6	684.6
47.5°	529.8	505.8	349.6	503.1	533.8
50°	413.7	376.3	269.6	373.7	412.4
52.5°	317.6	277.6	208.2	277.6	315.0
55°	248.2	208.2	161.5	208.2	245.6
57.5°	190.8	158.8	122.8	156.1	189.5
60°	145.5	118.8	96.1	118.8	146.8
62.5°	110.8	90.7	73.4	89.4	109.4
65°	84.1	68.1	57.4	68.1	82.7
67.5°	61.4	50.7	44.0	50.7	62.7
70°	45.4	38.7	33.4	37.4	45.4
72.5°	33.4	28.0	25.4	28.0	33.4
75°	22.7	20.0	18.7	20.0	22.7
77.5°	16.0	14.7	13.3	14.7	16.0
80°	10.7	9.3	9.3	10.7	10.7
82.5°	6.7	6.7	6.7	6.7	6.7
85°	4.0	4.0	4.0	4.0	4.0
87.5°	2.7	2.7	2.7	2.7	2.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)