

Scaled data based on original data using  
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: P545989

Luminaire Tested: **FMR-12-4-LD4-1LO-50-UNV-81-96-EDD**

Issue Date: 6/15/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
Report Number: P545989  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 6/15/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-12-4-LD4-1LO-50-UNV-81-96-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

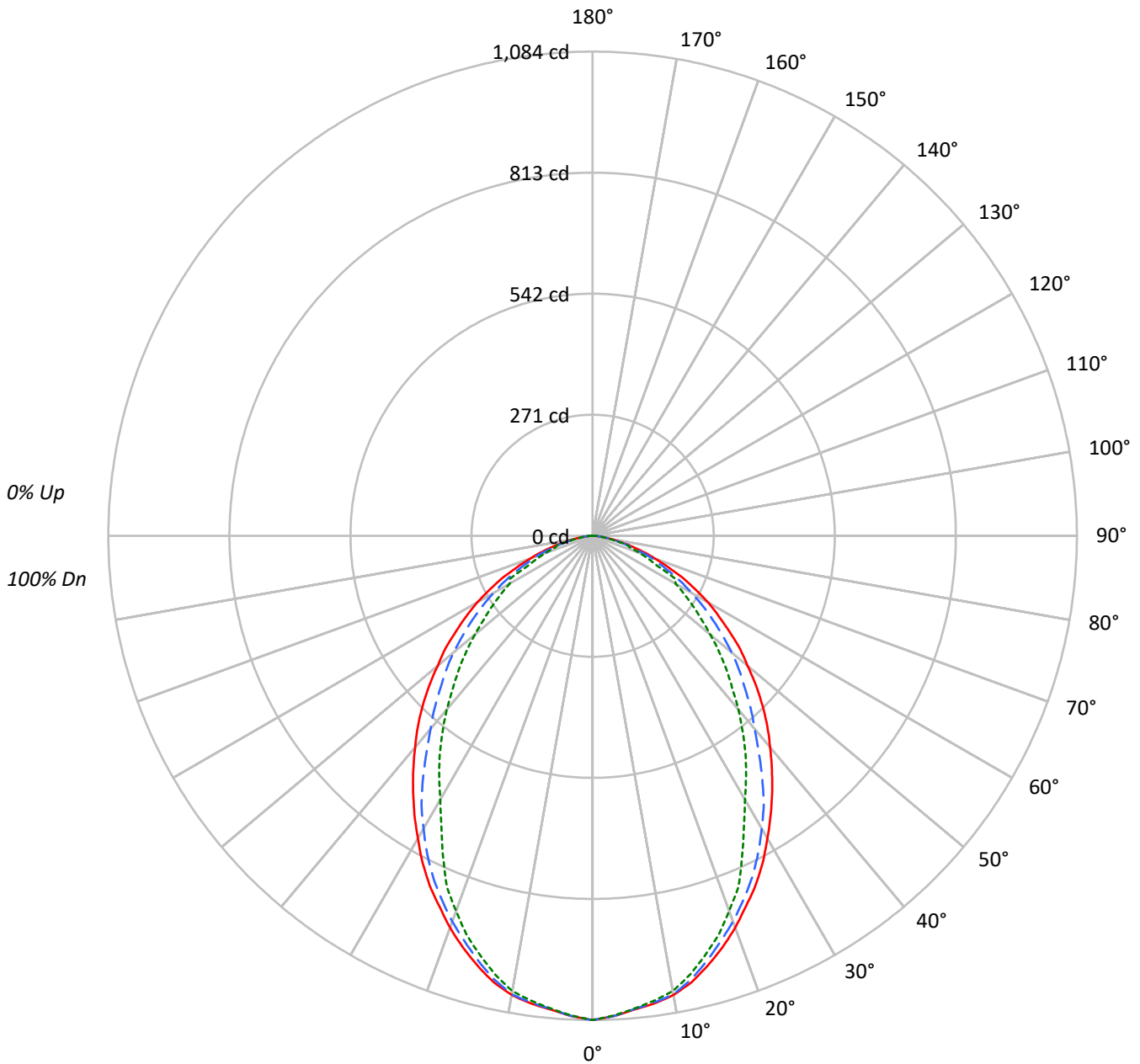
Lumens per Lamp: N/A  
Luminaire Lumens: 2128.0 lumens  
Efficiency: N/A  
Efficacy: 90.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
Input Voltage (V): NR  
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

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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									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																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2917	2917	2917
5°	2877	2874	2871
10°	2852	2849	2828
15°	2776	2747	2709
20°	2674	2631	2559
25°	2564	2508	2352
30°	2430	2352	2118
35°	2301	2174	1960
40°	2170	1981	1783
45°	2046	1831	1612
50°	1894	1700	1438
55°	1752	1540	1287
60°	1605	1376	1153
65°	1412	1205	1021
70°	1164	1055	868
75°	925	808	847
80°	621	583	544
85°	386	463	540



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	100.9	4.7
10°-20°	276.9	13.0
20°-30°	383.4	18.0
30°-40°	408.8	19.2
40°-50°	372.9	17.5
50°-60°	292.2	13.7
60°-70°	190.4	8.9
70°-80°	84.4	4.0
80°-90°	18.1	0.9
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°	761.2	35.8
0°-40°	1170.0	55.0
0°-60°	1835.1	86.2
0°-90°	2128.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2128.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1084	1084	1084	1084	1084	
5°	1065	1064	1064	1063	1063	101
15°	996	996	986	976	972	280
25°	863	858	845	814	792	396
35°	700	696	662	612	596	438
45°	538	526	481	441	424	414
55°	373	362	328	290	274	335
65°	222	209	189	193	160	219
75°	89	83	78	74	82	95
85°	12	14	15	16	18	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1084.0	1084.0	1084.0	1084.0	1084.0
2.5°	1076.5	1076.5	1076.5	1075.2	1075.2
5°	1065.2	1063.9	1063.9	1062.7	1062.7
7.5°	1056.4	1055.2	1053.9	1052.6	1050.1
10°	1043.9	1043.9	1042.6	1036.4	1035.1
12.5°	1023.8	1022.6	1017.6	1008.8	1006.3
15°	996.3	996.3	986.2	976.2	972.4
17.5°	966.2	964.9	952.4	942.4	937.4
20°	933.6	931.1	918.6	902.3	893.5
22.5°	897.3	897.3	882.2	860.9	852.1
25°	863.4	858.4	844.6	814.5	792.0
27.5°	824.6	817.1	802.0	759.4	733.1
30°	782.0	778.2	756.9	701.8	681.7
32.5°	741.9	735.6	713.0	655.4	639.1
35°	700.5	695.5	661.7	611.5	596.5
37.5°	659.2	652.9	610.3	570.2	551.4
40°	617.8	610.3	563.9	527.6	507.5
42.5°	579.0	568.9	523.8	485.0	462.4
45°	537.6	526.3	481.2	441.1	423.6
47.5°	496.2	486.2	444.9	403.5	383.5
50°	452.4	443.6	406.0	364.7	343.4
52.5°	416.0	402.3	365.9	324.6	307.0
55°	373.4	362.2	328.3	289.5	274.4
57.5°	334.6	323.3	292.0	255.6	243.1
60°	298.2	282.0	255.6	224.3	214.3
62.5°	258.1	245.6	223.1	196.7	209.3
65°	221.8	209.3	189.2	193.0	160.4
67.5°	181.7	175.4	157.9	140.4	135.3
70°	147.9	140.4	134.1	115.3	110.3
72.5°	117.8	110.3	101.5	91.5	87.7
75°	89.0	82.7	77.7	73.9	81.5
77.5°	61.4	58.9	55.1	51.4	50.1
80°	40.1	38.8	37.6	36.3	35.1
82.5°	23.8	23.8	23.8	23.8	23.8
85°	12.5	13.8	15.0	16.3	17.5
87.5°	7.5	7.5	8.8	10.0	11.3
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC







— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)