

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: P545986

Luminaire Tested: **FMR-12-4-LD4-1LO-50-UNV-81-87-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: P545986  
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-81-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

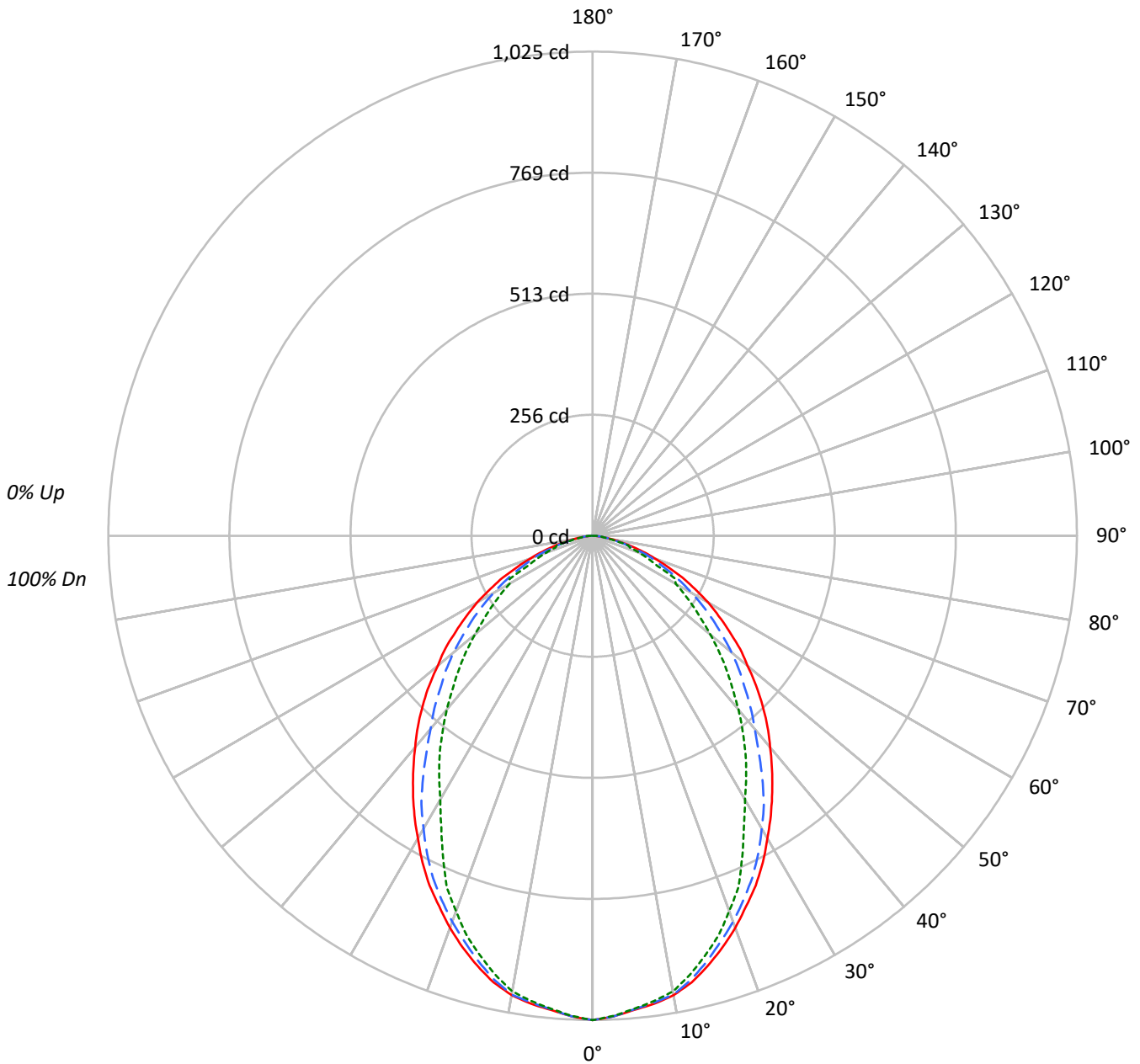
Lumens per Lamp: N/A  
Luminaire Lumens: 2013.0 lumens  
Efficiency: N/A  
Efficacy: 86.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	2759	2759	2759
5°	2722	2719	2715
10°	2698	2695	2676
15°	2625	2599	2563
20°	2529	2488	2420
25°	2425	2372	2224
30°	2298	2225	2004
35°	2177	2056	1854
40°	2053	1874	1687
45°	1935	1732	1525
50°	1791	1608	1360
55°	1658	1457	1218
60°	1518	1301	1091
65°	1336	1140	966
70°	1101	998	821
75°	875	764	802
80°	587	552	514
85°	367	438	513



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	95.4	4.7
10°-20°	262.0	13.0
20°-30°	362.7	18.0
30°-40°	386.7	19.2
40°-50°	352.8	17.5
50°-60°	276.4	13.7
60°-70°	180.1	8.9
70°-80°	79.8	4.0
80°-90°	17.1	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°	720.1	35.8
0°-40°	1106.8	55.0
0°-60°	1735.9	86.2
0°-90°	2013.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2013.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1025	1025	1025	1025	1025	
5°	1008	1006	1006	1005	1005	96
15°	942	942	933	923	920	265
25°	817	812	799	770	749	375
35°	663	658	626	578	564	414
45°	508	498	455	417	401	392
55°	353	343	311	274	260	317
65°	210	198	179	183	152	207
75°	84	78	74	70	77	90
85°	12	13	14	15	17	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1025.4	1025.4	1025.4	1025.4	1025.4
2.5°	1018.3	1018.3	1018.3	1017.1	1017.1
5°	1007.6	1006.4	1006.4	1005.2	1005.2
7.5°	999.3	998.1	996.9	995.8	993.4
10°	987.5	987.5	986.3	980.3	979.2
12.5°	968.5	967.3	962.6	954.3	951.9
15°	942.4	942.4	932.9	923.4	919.9
17.5°	914.0	912.8	900.9	891.4	886.7
20°	883.1	880.8	868.9	853.5	845.2
22.5°	848.8	848.8	834.5	814.4	806.1
25°	816.8	812.0	799.0	770.5	749.2
27.5°	780.0	772.9	758.7	718.4	693.5
30°	739.7	736.2	716.0	663.8	644.9
32.5°	701.8	695.8	674.5	620.0	604.6
35°	662.7	657.9	625.9	578.5	564.3
37.5°	623.5	617.6	577.3	539.4	521.6
40°	584.4	577.3	533.4	499.1	480.1
42.5°	547.7	538.2	495.5	458.8	437.4
45°	508.5	497.9	455.2	417.3	400.7
47.5°	469.4	459.9	420.8	381.7	362.7
50°	427.9	419.6	384.1	345.0	324.8
52.5°	393.6	380.5	346.1	307.0	290.4
55°	353.3	342.6	310.6	273.8	259.6
57.5°	316.5	305.8	276.2	241.8	230.0
60°	282.1	266.7	241.8	212.2	202.7
62.5°	244.2	232.3	211.0	186.1	198.0
65°	209.8	198.0	179.0	182.6	151.7
67.5°	171.9	166.0	149.4	132.8	128.0
70°	139.9	132.8	126.8	109.1	104.3
72.5°	111.4	104.3	96.0	86.5	83.0
75°	84.2	78.2	73.5	69.9	77.1
77.5°	58.1	55.7	52.2	48.6	47.4
80°	37.9	36.7	35.6	34.4	33.2
82.5°	22.5	22.5	22.5	22.5	22.5
85°	11.9	13.0	14.2	15.4	16.6
87.5°	7.1	7.1	8.3	9.5	10.7
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)