

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: P545943

Luminaire Tested: **FMR-12-4-LD4-1LO-40-UNV-80-84-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: P545943  
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-40-UNV-80-84-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

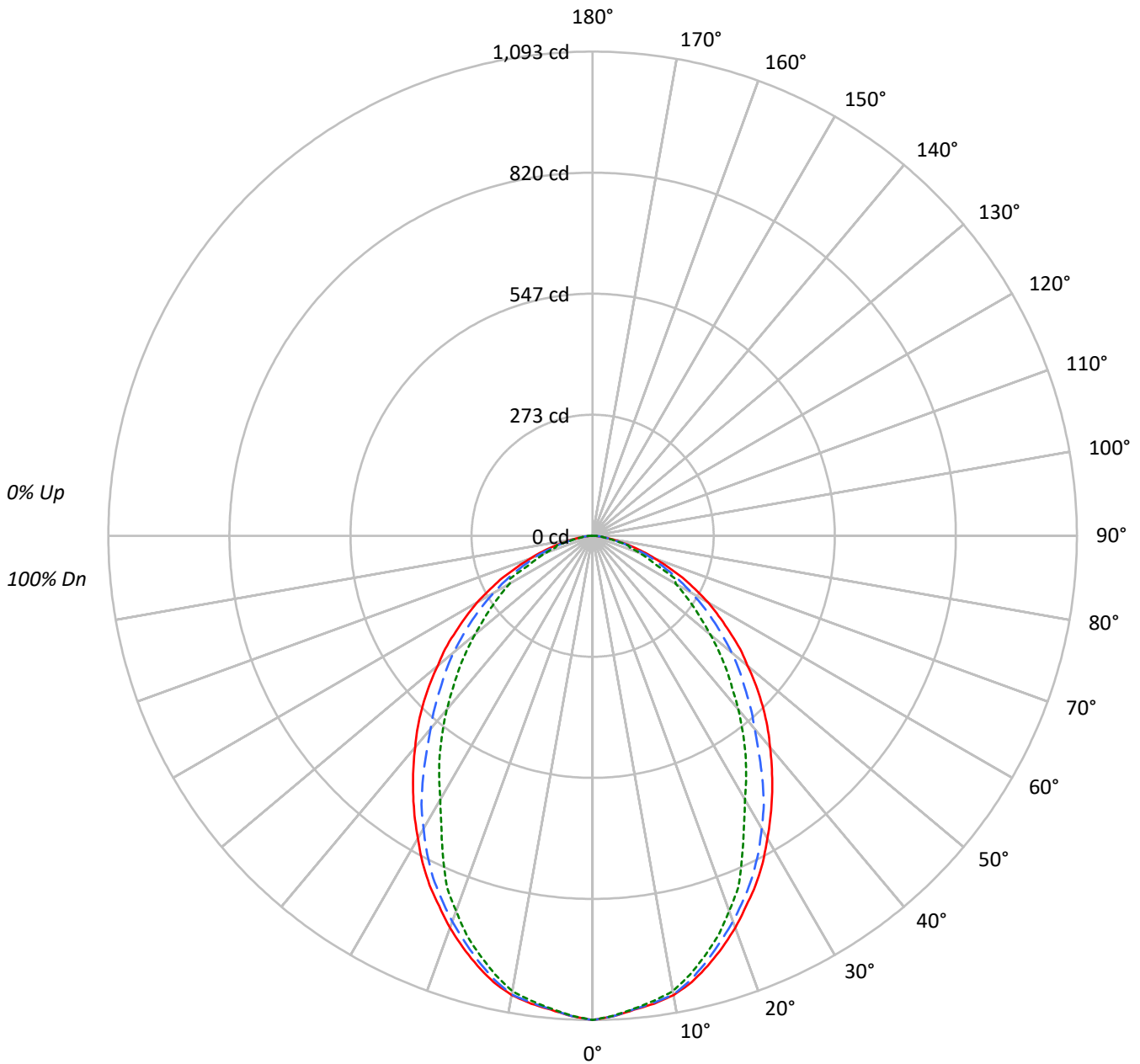
Lumens per Lamp: N/A  
Luminaire Lumens: 2146.0 lumens  
Efficiency: N/A  
Efficacy: 91.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	2942	2942	2942
5°	2902	2898	2895
10°	2876	2873	2852
15°	2799	2771	2732
20°	2696	2653	2580
25°	2585	2529	2371
30°	2450	2372	2136
35°	2321	2192	1976
40°	2188	1998	1798
45°	2063	1847	1625
50°	1910	1714	1450
55°	1767	1553	1299
60°	1619	1387	1163
65°	1424	1215	1030
70°	1173	1064	875
75°	933	815	854
80°	626	587	549
85°	389	469	546



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	101.8	4.7
10°-20°	279.3	13.0
20°-30°	386.6	18.0
30°-40°	412.2	19.2
40°-50°	376.1	17.5
50°-60°	294.6	13.7
60°-70°	192.0	8.9
70°-80°	85.1	4.0
80°-90°	18.3	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°	767.6	35.8
0°-40°	1179.9	55.0
0°-60°	1850.6	86.2
0°-90°	2146.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2146.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1093	1093	1093	1093	1093	
5°	1074	1073	1073	1072	1072	102
15°	1005	1005	995	984	981	282
25°	871	866	852	821	799	400
35°	706	701	667	617	602	442
45°	542	531	485	445	427	418
55°	377	365	331	292	277	338
65°	224	211	191	195	162	220
75°	90	83	78	75	82	96
85°	13	14	15	16	18	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1093.1	1093.1	1093.1	1093.1	1093.1
2.5°	1085.6	1085.6	1085.6	1084.3	1084.3
5°	1074.2	1072.9	1072.9	1071.7	1071.7
7.5°	1065.3	1064.1	1062.8	1061.5	1059.0
10°	1052.7	1052.7	1051.4	1045.1	1043.9
12.5°	1032.5	1031.2	1026.2	1017.3	1014.8
15°	1004.7	1004.7	994.6	984.5	980.7
17.5°	974.4	973.1	960.4	950.3	945.3
20°	941.5	939.0	926.3	909.9	901.1
22.5°	904.8	904.8	889.7	868.2	859.3
25°	870.7	865.7	851.8	821.4	798.7
27.5°	831.5	824.0	808.8	765.8	739.3
30°	788.6	784.8	763.3	707.7	687.5
32.5°	748.1	741.8	719.1	660.9	644.5
35°	706.4	701.4	667.3	616.7	601.5
37.5°	664.7	658.4	615.4	575.0	556.0
40°	623.0	615.4	568.7	532.0	511.8
42.5°	583.9	573.7	528.2	489.1	466.3
45°	542.1	530.8	485.3	444.8	427.1
47.5°	500.4	490.3	448.6	406.9	386.7
50°	456.2	447.4	409.5	367.8	346.3
52.5°	419.6	405.7	369.0	327.3	309.6
55°	376.6	365.2	331.1	291.9	276.8
57.5°	337.4	326.0	294.5	257.8	245.2
60°	300.8	284.3	257.8	226.2	216.1
62.5°	260.3	247.7	224.9	198.4	211.0
65°	223.7	211.0	190.8	194.6	161.8
67.5°	183.2	176.9	159.2	141.5	136.5
70°	149.1	141.5	135.2	116.3	111.2
72.5°	118.8	111.2	102.4	92.3	88.5
75°	89.7	83.4	78.4	74.6	82.1
77.5°	61.9	59.4	55.6	51.8	50.5
80°	40.4	39.2	37.9	36.6	35.4
82.5°	24.0	24.0	24.0	24.0	24.0
85°	12.6	13.9	15.2	16.4	17.7
87.5°	7.6	7.6	8.8	10.1	11.4
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)