

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: P545983

Luminaire Tested: **FMR-12-4-LD4-1LO-50-UNV-81-84-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: P545983  
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-81-84-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

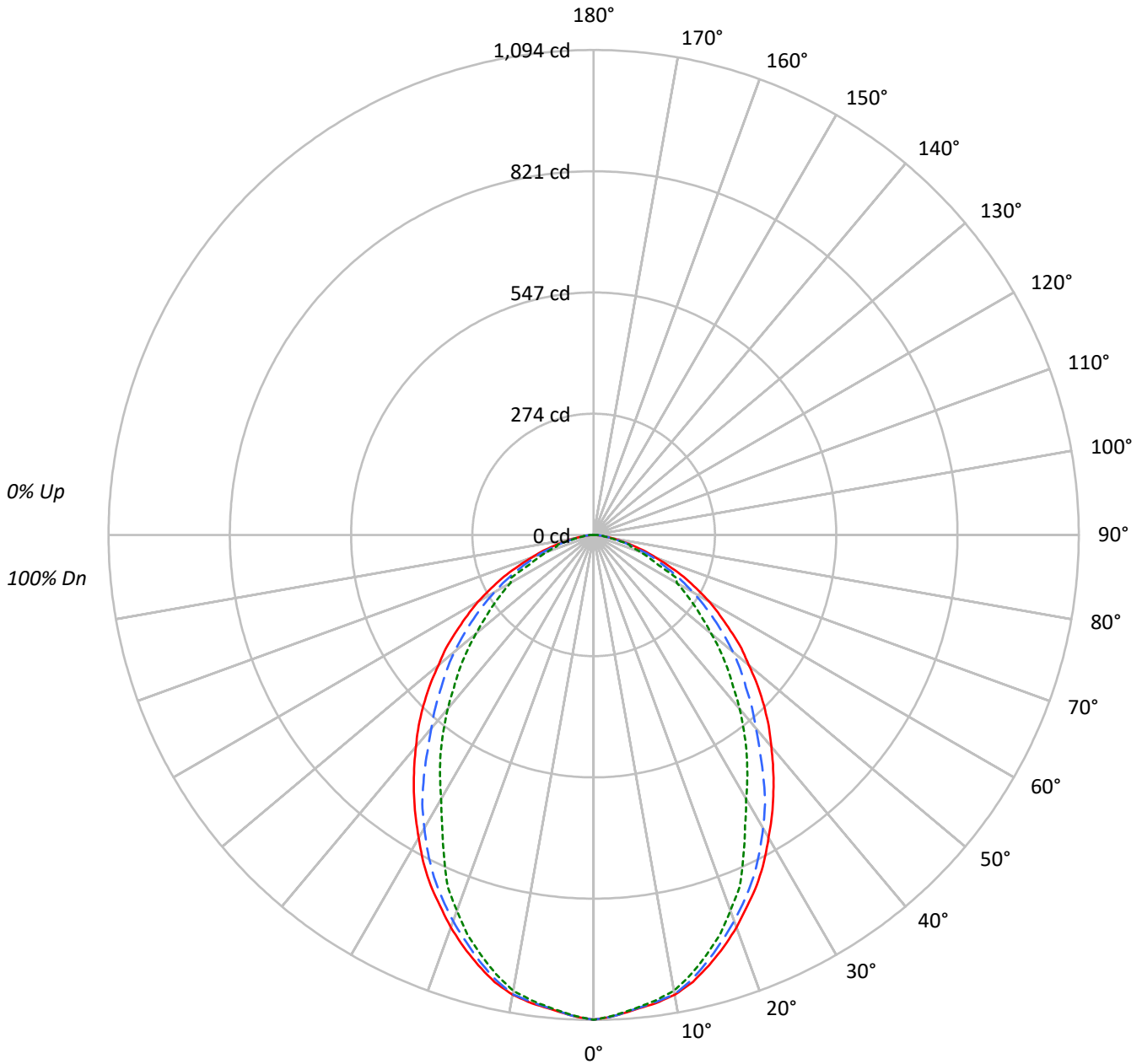
Lumens per Lamp: N/A  
Luminaire Lumens: 2147.0 lumens  
Efficiency: N/A  
Efficacy: 91.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	2943	2943	2943
5°	2903	2900	2896
10°	2878	2874	2854
15°	2800	2772	2733
20°	2697	2654	2582
25°	2586	2530	2373
30°	2451	2373	2137
35°	2322	2193	1977
40°	2190	1999	1799
45°	2064	1848	1626
50°	1911	1715	1450
55°	1768	1554	1299
60°	1619	1388	1164
65°	1425	1216	1030
70°	1174	1065	876
75°	934	815	855
80°	628	587	549
85°	389	469	546



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	101.8	4.7
10°-20°	279.4	13.0
20°-30°	386.8	18.0
30°-40°	412.4	19.2
40°-50°	376.3	17.5
50°-60°	294.8	13.7
60°-70°	192.1	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°	768.0	35.8
0°-40°	1180.4	55.0
0°-60°	1851.5	86.2
0°-90°	2147.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2147.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1094	1094	1094	1094	1094	
5°	1075	1073	1073	1072	1072	102
15°	1005	1005	995	985	981	283
25°	871	866	852	822	799	400
35°	707	702	668	617	602	442
45°	542	531	486	445	427	418
55°	377	365	331	292	277	338
65°	224	211	191	195	162	221
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°	1093.7	1093.7	1093.7	1093.7	1093.7
2.5°	1086.1	1086.1	1086.1	1084.8	1084.8
5°	1074.7	1073.4	1073.4	1072.2	1072.2
7.5°	1065.8	1064.6	1063.3	1062.0	1059.5
10°	1053.2	1053.2	1051.9	1045.6	1044.3
12.5°	1033.0	1031.7	1026.6	1017.8	1015.3
15°	1005.1	1005.1	995.0	984.9	981.1
17.5°	974.8	973.5	960.9	950.8	945.7
20°	941.9	939.4	926.8	910.3	901.5
22.5°	905.3	905.3	890.1	868.6	859.8
25°	871.1	866.1	852.2	821.8	799.1
27.5°	831.9	824.3	809.2	766.2	739.6
30°	788.9	785.2	763.7	708.0	687.8
32.5°	748.5	742.2	719.4	661.2	644.8
35°	706.8	701.7	667.6	617.0	601.8
37.5°	665.0	658.7	615.7	575.3	556.3
40°	623.3	615.7	569.0	532.3	512.1
42.5°	584.1	574.0	528.5	489.3	466.5
45°	542.4	531.0	485.5	445.0	427.3
47.5°	500.7	490.6	448.8	407.1	386.9
50°	456.4	447.6	409.6	367.9	346.4
52.5°	419.8	405.9	369.2	327.5	309.8
55°	376.8	365.4	331.3	292.1	276.9
57.5°	337.6	326.2	294.6	257.9	245.3
60°	300.9	284.5	257.9	226.3	216.2
62.5°	260.5	247.8	225.1	198.5	211.1
65°	223.8	211.1	190.9	194.7	161.8
67.5°	183.3	177.0	159.3	141.6	136.5
70°	149.2	141.6	135.3	116.3	111.3
72.5°	118.8	111.3	102.4	92.3	88.5
75°	89.8	83.4	78.4	74.6	82.2
77.5°	62.0	59.4	55.6	51.8	50.6
80°	40.5	39.2	37.9	36.7	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	8.9	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)