

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: P546006

Luminaire Tested: **FMR-12-4-LD4-1LO-50-UNV-93-97-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: P546006  
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-93-97-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

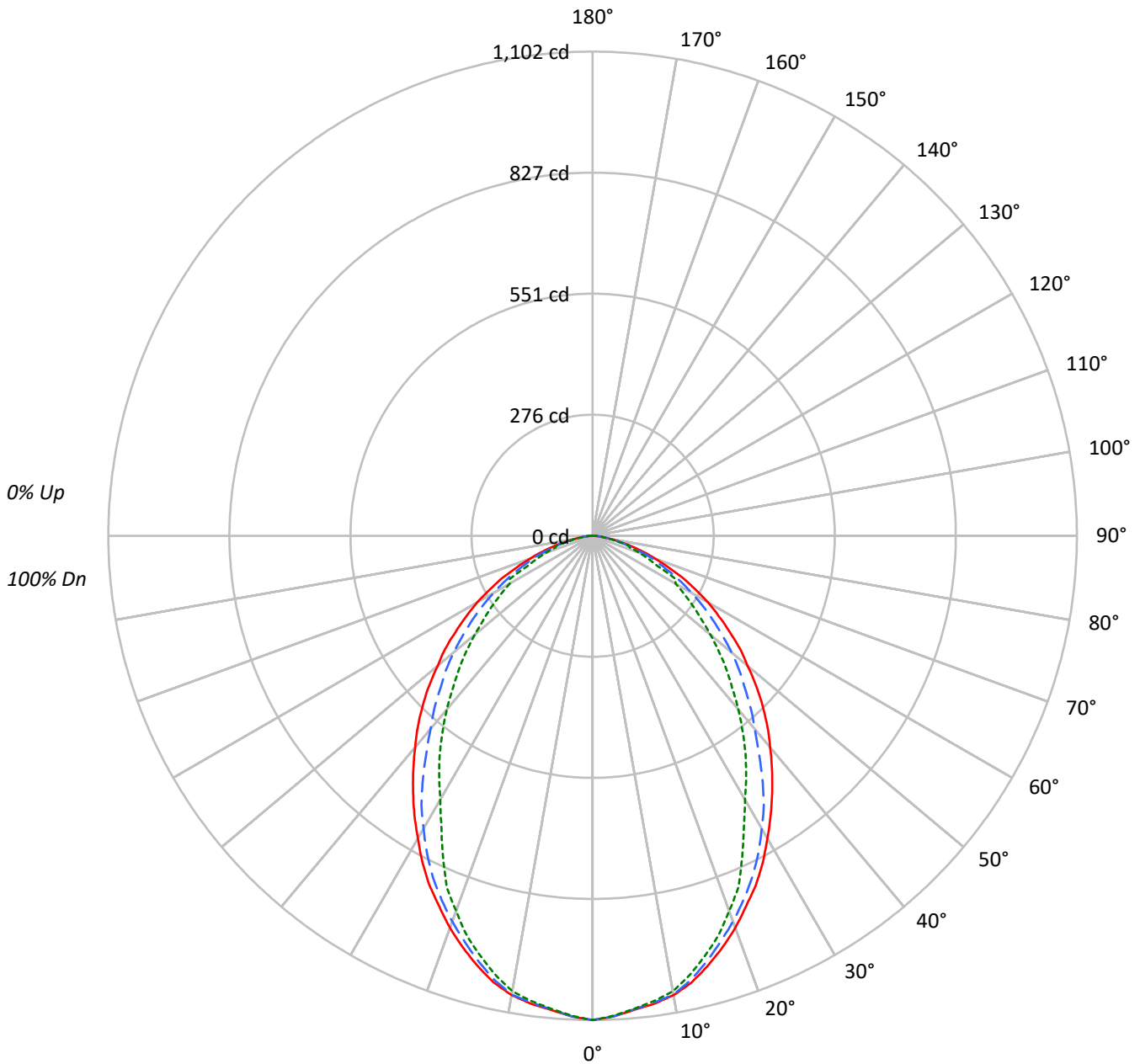
Lumens per Lamp: N/A  
Luminaire Lumens: 2164.0 lumens  
Efficiency: N/A  
Efficacy: 92.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	2966	2966	2966
5°	2926	2922	2919
10°	2901	2897	2876
15°	2822	2794	2755
20°	2719	2675	2602
25°	2607	2550	2391
30°	2471	2392	2154
35°	2340	2211	1993
40°	2207	2015	1813
45°	2081	1862	1639
50°	1926	1729	1462
55°	1782	1567	1309
60°	1632	1399	1173
65°	1436	1225	1039
70°	1183	1073	882
75°	941	821	861
80°	632	592	553
85°	392	472	550



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.6	4.7
10°-20°	281.6	13.0
20°-30°	389.9	18.0
30°-40°	415.7	19.2
40°-50°	379.2	17.5
50°-60°	297.1	13.7
60°-70°	193.6	8.9
70°-80°	85.8	4.0
80°-90°	18.4	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°	774.1	35.8
0°-40°	1189.8	55.0
0°-60°	1866.2	86.2
0°-90°	2164.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2164.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1102	1102	1102	1102	1102	
5°	1083	1082	1082	1081	1081	103
15°	1013	1013	1003	993	989	285
25°	878	873	859	828	805	403
35°	712	707	673	622	607	445
45°	547	535	489	449	431	421
55°	380	368	334	294	279	341
65°	226	213	192	196	163	222
75°	90	84	79	75	83	97
85°	13	14	15	17	18	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1102.3	1102.3	1102.3	1102.3	1102.3
2.5°	1094.7	1094.7	1094.7	1093.4	1093.4
5°	1083.2	1081.9	1081.9	1080.6	1080.6
7.5°	1074.3	1073.0	1071.7	1070.5	1067.9
10°	1061.5	1061.5	1060.3	1053.9	1052.6
12.5°	1041.1	1039.9	1034.8	1025.9	1023.3
15°	1013.1	1013.1	1002.9	992.7	988.9
17.5°	982.5	981.2	968.5	958.3	953.2
20°	949.4	946.8	934.1	917.5	908.6
22.5°	912.4	912.4	897.1	875.5	866.6
25°	878.0	872.9	858.9	828.3	805.4
27.5°	838.5	830.9	815.6	772.3	745.5
30°	795.2	791.4	769.7	713.6	693.2
32.5°	754.4	748.0	725.1	666.5	649.9
35°	712.4	707.3	672.9	621.9	606.6
37.5°	670.3	663.9	620.6	579.8	560.7
40°	628.3	620.6	573.5	536.5	516.1
42.5°	588.7	578.6	532.7	493.2	470.2
45°	546.7	535.2	489.4	448.6	430.7
47.5°	504.6	494.4	452.4	410.3	390.0
50°	460.0	451.1	412.9	370.8	349.2
52.5°	423.1	409.1	372.1	330.1	312.2
55°	379.8	368.3	333.9	294.4	279.1
57.5°	340.3	328.8	296.9	260.0	247.2
60°	303.3	286.7	260.0	228.1	217.9
62.5°	262.5	249.8	226.8	200.1	212.8
65°	225.6	212.8	192.4	196.2	163.1
67.5°	184.8	178.4	160.6	142.7	137.6
70°	150.4	142.7	136.4	117.2	112.1
72.5°	119.8	112.1	103.2	93.0	89.2
75°	90.5	84.1	79.0	75.2	82.8
77.5°	62.4	59.9	56.1	52.2	51.0
80°	40.8	39.5	38.2	37.0	35.7
82.5°	24.2	24.2	24.2	24.2	24.2
85°	12.7	14.0	15.3	16.6	17.8
87.5°	7.6	7.6	8.9	10.2	11.5
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)