

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: P545999

Luminaire Tested: **FMR-12-4-LD4-1LO-50-UNV-93-84-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: P545999  
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-93-84-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

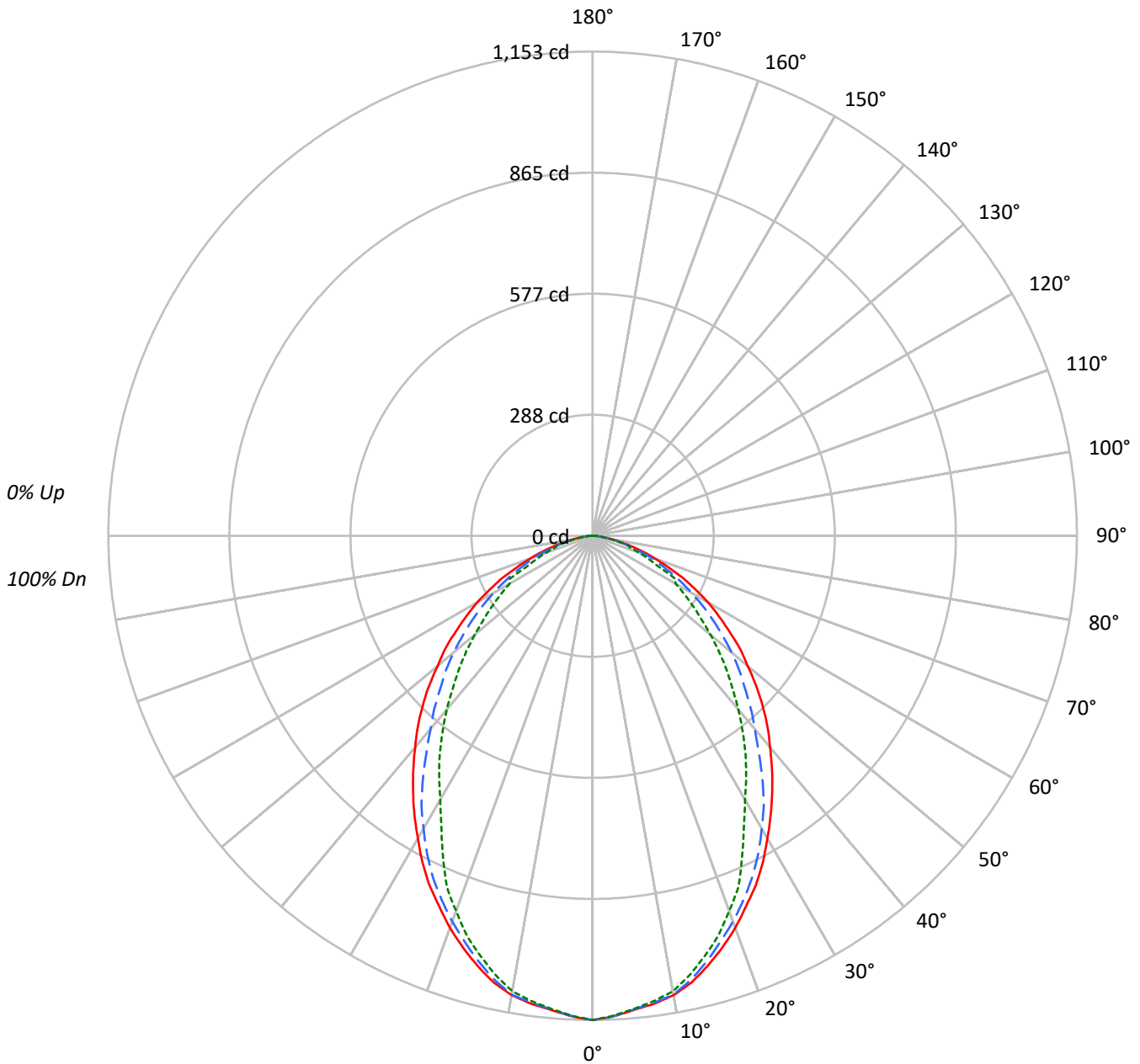
Lumens per Lamp: N/A  
Luminaire Lumens: 2264.0 lumens  
Efficiency: N/A  
Efficacy: 96.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	3104	3104	3104
5°	3061	3058	3054
10°	3035	3031	3009
15°	2953	2923	2882
20°	2844	2799	2722
25°	2727	2668	2502
30°	2585	2502	2254
35°	2448	2312	2085
40°	2309	2108	1897
45°	2177	1948	1715
50°	2015	1809	1529
55°	1864	1639	1370
60°	1708	1464	1227
65°	1503	1282	1087
70°	1238	1123	923
75°	985	860	901
80°	662	620	578
85°	411	494	577



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.4	4.7
10°-20°	294.6	13.0
20°-30°	407.9	18.0
30°-40°	434.9	19.2
40°-50°	396.8	17.5
50°-60°	310.8	13.7
60°-70°	202.6	8.9
70°-80°	89.8	4.0
80°-90°	19.3	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°	809.9	35.8
0°-40°	1244.8	55.0
0°-60°	1952.4	86.2
0°-90°	2264.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2264.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1153	1153	1153	1153	1153	
5°	1133	1132	1132	1131	1131	108
15°	1060	1060	1049	1039	1035	298
25°	919	913	899	867	843	422
35°	745	740	704	651	635	466
45°	572	560	512	469	451	441
55°	397	385	349	308	292	356
65°	236	223	201	205	171	233
75°	95	88	83	79	87	101
85°	13	15	16	17	19	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1153.3	1153.3	1153.3	1153.3	1153.3
2.5°	1145.3	1145.3	1145.3	1143.9	1143.9
5°	1133.3	1131.9	1131.9	1130.6	1130.6
7.5°	1123.9	1122.6	1121.3	1119.9	1117.3
10°	1110.6	1110.6	1109.3	1102.6	1101.3
12.5°	1089.3	1087.9	1082.6	1073.3	1070.6
15°	1059.9	1059.9	1049.3	1038.6	1034.6
17.5°	1027.9	1026.6	1013.3	1002.6	997.3
20°	993.3	990.6	977.3	959.9	950.6
22.5°	954.6	954.6	938.6	915.9	906.6
25°	918.6	913.3	898.6	866.6	842.6
27.5°	877.3	869.3	853.3	807.9	779.9
30°	831.9	827.9	805.3	746.6	725.3
32.5°	789.3	782.6	758.6	697.3	680.0
35°	745.3	739.9	703.9	650.6	634.6
37.5°	701.3	694.6	649.3	606.6	586.6
40°	657.3	649.3	600.0	561.3	540.0
42.5°	616.0	605.3	557.3	516.0	492.0
45°	572.0	560.0	512.0	469.3	450.6
47.5°	528.0	517.3	473.3	429.3	408.0
50°	481.3	472.0	432.0	388.0	365.3
52.5°	442.6	428.0	389.3	345.3	326.6
55°	397.3	385.3	349.3	308.0	292.0
57.5°	356.0	344.0	310.6	272.0	258.6
60°	317.3	300.0	272.0	238.6	228.0
62.5°	274.6	261.3	237.3	209.3	222.7
65°	236.0	222.7	201.3	205.3	170.7
67.5°	193.3	186.7	168.0	149.3	144.0
70°	157.3	149.3	142.7	122.7	117.3
72.5°	125.3	117.3	108.0	97.3	93.3
75°	94.7	88.0	82.7	78.7	86.7
77.5°	65.3	62.7	58.7	54.7	53.3
80°	42.7	41.3	40.0	38.7	37.3
82.5°	25.3	25.3	25.3	25.3	25.3
85°	13.3	14.7	16.0	17.3	18.7
87.5°	8.0	8.0	9.3	10.7	12.0
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)