

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: P545942

Luminaire Tested: **FMR-12-4-LD4-1LO-35-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: P545942  
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-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

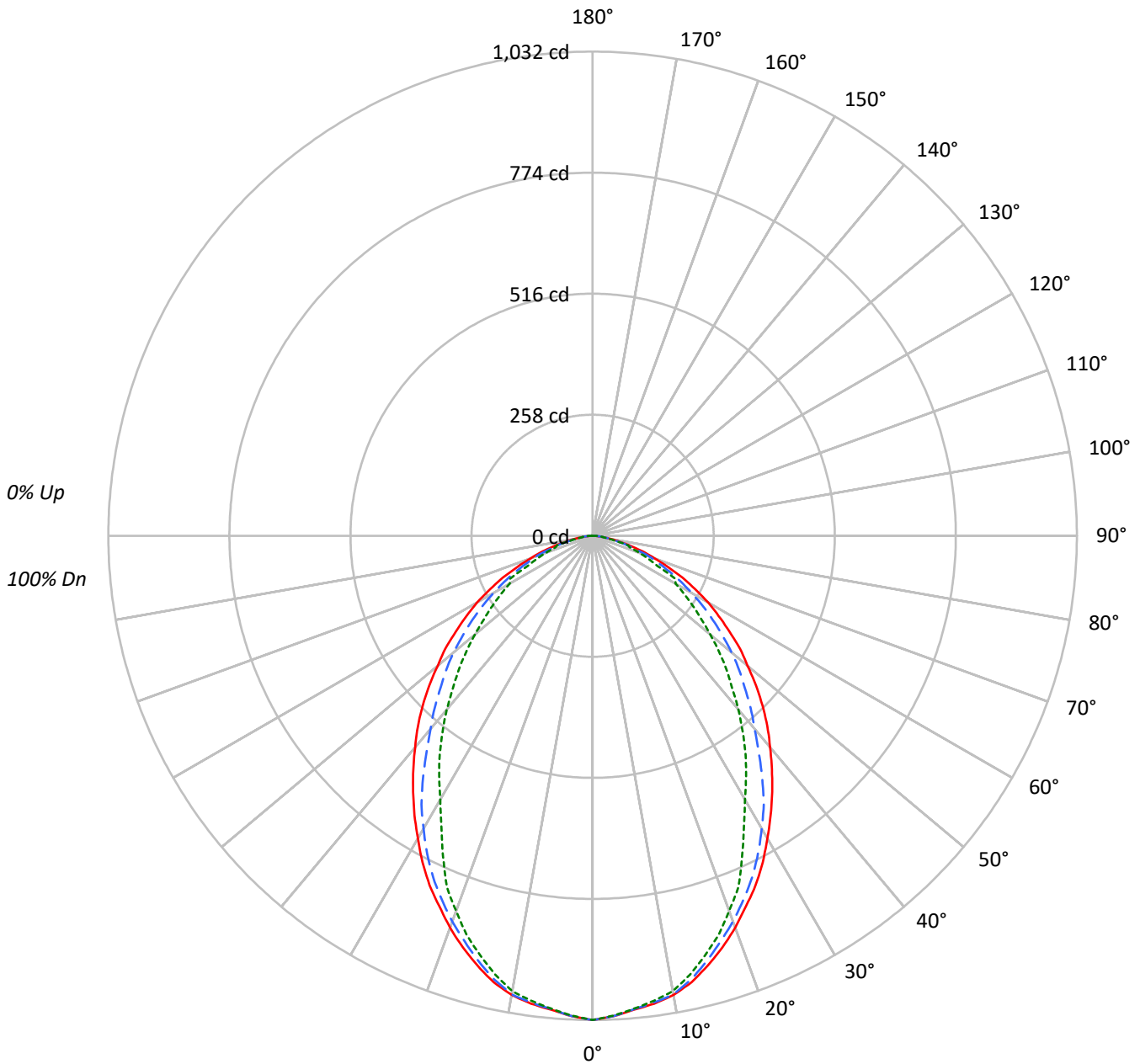
Lumens per Lamp: N/A  
Luminaire Lumens: 2026.0 lumens  
Efficiency: N/A  
Efficacy: 86.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	2777	2777	2777
5°	2739	2736	2733
10°	2716	2712	2693
15°	2642	2616	2579
20°	2545	2504	2436
25°	2441	2388	2239
30°	2313	2239	2017
35°	2191	2069	1866
40°	2066	1886	1697
45°	1948	1743	1535
50°	1803	1618	1369
55°	1668	1467	1226
60°	1528	1310	1098
65°	1345	1147	972
70°	1108	1005	826
75°	881	769	807
80°	592	555	518
85°	367	442	516



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	96.1	4.7
10°-20°	263.6	13.0
20°-30°	365.0	18.0
30°-40°	389.2	19.2
40°-50°	355.1	17.5
50°-60°	278.2	13.7
60°-70°	181.3	8.9
70°-80°	80.3	4.0
80°-90°	17.3	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°	724.7	35.8
0°-40°	1113.9	55.0
0°-60°	1747.1	86.2
0°-90°	2026.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2026.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1032	1032	1032	1032	1032	
5°	1014	1013	1013	1012	1012	96
15°	948	948	939	929	926	267
25°	822	817	804	776	754	377
35°	667	662	630	582	568	417
45°	512	501	458	420	403	394
55°	356	345	313	276	261	319
65°	211	199	180	184	153	208
75°	85	79	74	70	78	91
85°	12	13	14	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1032.0	1032.0	1032.0	1032.0	1032.0
2.5°	1024.9	1024.9	1024.9	1023.7	1023.7
5°	1014.1	1012.9	1012.9	1011.7	1011.7
7.5°	1005.8	1004.6	1003.4	1002.2	999.8
10°	993.8	993.8	992.6	986.7	985.5
12.5°	974.7	973.6	968.8	960.4	958.0
15°	948.5	948.5	939.0	929.4	925.8
17.5°	919.9	918.7	906.7	897.2	892.4
20°	888.8	886.5	874.5	859.0	850.7
22.5°	854.2	854.2	839.9	819.6	811.3
25°	822.0	817.3	804.1	775.5	754.0
27.5°	785.0	777.9	763.6	723.0	698.0
30°	744.5	740.9	720.6	668.1	649.0
32.5°	706.3	700.3	678.9	624.0	608.5
35°	666.9	662.2	629.9	582.2	567.9
37.5°	627.6	621.6	581.0	542.9	525.0
40°	588.2	581.0	536.9	502.3	483.2
42.5°	551.2	541.7	498.7	461.7	440.2
45°	511.8	501.1	458.1	420.0	403.3
47.5°	472.5	462.9	423.5	384.2	365.1
50°	430.7	422.4	386.6	347.2	326.9
52.5°	396.1	383.0	348.4	309.0	292.3
55°	355.5	344.8	312.6	275.6	261.3
57.5°	318.6	307.8	278.0	243.4	231.5
60°	284.0	268.4	243.4	213.6	204.0
62.5°	245.8	233.8	212.4	187.3	199.2
65°	211.2	199.2	180.2	183.7	152.7
67.5°	173.0	167.0	150.3	133.6	128.9
70°	140.8	133.6	127.7	109.8	105.0
72.5°	112.1	105.0	96.6	87.1	83.5
75°	84.7	78.7	74.0	70.4	77.6
77.5°	58.5	56.1	52.5	48.9	47.7
80°	38.2	37.0	35.8	34.6	33.4
82.5°	22.7	22.7	22.7	22.7	22.7
85°	11.9	13.1	14.3	15.5	16.7
87.5°	7.2	7.2	8.4	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)