

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: P545962

Luminaire Tested: **FMR-12-4-LD4-1LO-40-UNV-82-87-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: P545962  
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-82-87-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

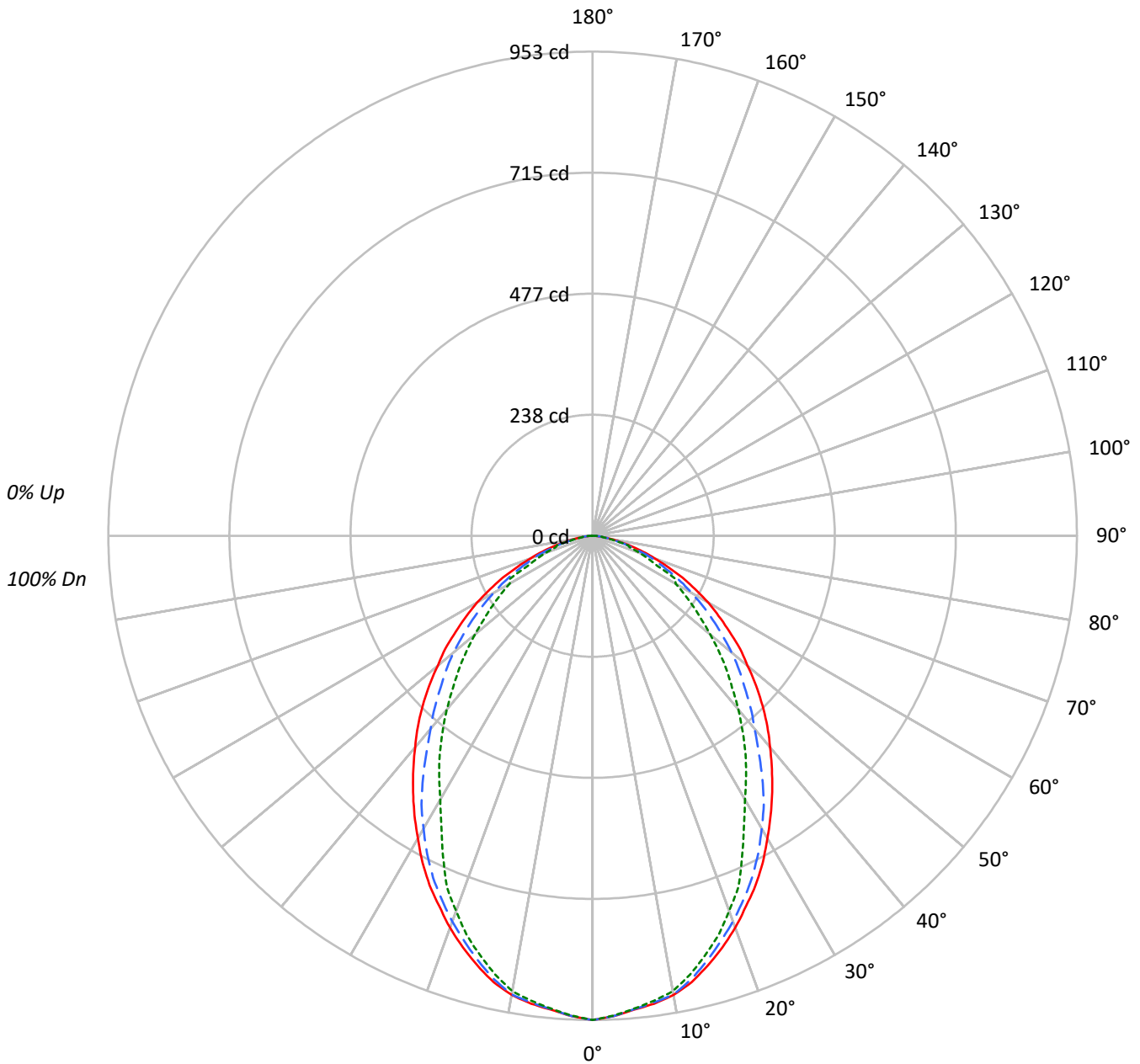
Lumens per Lamp: N/A  
Luminaire Lumens: 1871.0 lumens  
Efficiency: N/A  
Efficacy: 80.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	2565	2565	2565
5°	2530	2527	2524
10°	2508	2505	2487
15°	2440	2416	2382
20°	2351	2313	2250
25°	2254	2205	2067
30°	2136	2068	1863
35°	2023	1911	1723
40°	1908	1742	1567
45°	1799	1610	1417
50°	1665	1495	1264
55°	1540	1354	1132
60°	1411	1210	1014
65°	1242	1060	898
70°	1023	928	763
75°	813	710	744
80°	547	513	479
85°	340	408	475



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	88.7	4.7
10°-20°	243.5	13.0
20°-30°	337.1	18.0
30°-40°	359.4	19.2
40°-50°	327.9	17.5
50°-60°	256.9	13.7
60°-70°	167.4	8.9
70°-80°	74.2	4.0
80°-90°	15.9	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°	669.3	35.8
0°-40°	1028.7	55.0
0°-60°	1613.5	86.2
0°-90°	1871.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1871.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	953	953	953	953	953	
5°	936	935	935	934	934	89
15°	876	876	867	858	855	246
25°	759	755	743	716	696	349
35°	616	612	582	538	524	385
45°	473	463	423	388	372	364
55°	328	318	289	254	241	294
65°	195	184	166	170	141	192
75°	78	73	68	65	72	84
85°	11	12	13	14	15	15
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	953.1	953.1	953.1	953.1	953.1
2.5°	946.5	946.5	946.5	945.3	945.3
5°	936.5	935.4	935.4	934.3	934.3
7.5°	928.8	927.7	926.6	925.5	923.3
10°	917.8	917.8	916.7	911.2	910.1
12.5°	900.2	899.1	894.7	887.0	884.8
15°	875.9	875.9	867.1	858.3	855.0
17.5°	849.5	848.4	837.4	828.6	824.2
20°	820.8	818.6	807.6	793.3	785.6
22.5°	788.9	788.9	775.7	756.9	749.2
25°	759.1	754.7	742.6	716.2	696.3
27.5°	725.0	718.4	705.2	667.7	644.6
30°	687.5	684.2	665.5	617.0	599.4
32.5°	652.3	646.8	626.9	576.2	561.9
35°	615.9	611.5	581.8	537.7	524.5
37.5°	579.6	574.0	536.6	501.3	484.8
40°	543.2	536.6	495.8	463.9	446.2
42.5°	509.0	500.2	460.6	426.4	406.6
45°	472.7	462.8	423.1	387.8	372.4
47.5°	436.3	427.5	391.1	354.8	337.2
50°	397.8	390.0	357.0	320.6	301.9
52.5°	365.8	353.7	321.7	285.4	269.9
55°	328.3	318.4	288.7	254.5	241.3
57.5°	294.2	284.3	256.7	224.8	213.8
60°	262.2	247.9	224.8	197.2	188.4
62.5°	227.0	216.0	196.1	173.0	184.0
65°	195.0	184.0	166.4	169.7	141.0
67.5°	159.8	154.3	138.8	123.4	119.0
70°	130.0	123.4	117.9	101.4	97.0
72.5°	103.6	97.0	89.2	80.4	77.1
75°	78.2	72.7	68.3	65.0	71.6
77.5°	54.0	51.8	48.5	45.2	44.1
80°	35.3	34.2	33.1	32.0	30.9
82.5°	20.9	20.9	20.9	20.9	20.9
85°	11.0	12.1	13.2	14.3	15.4
87.5°	6.6	6.6	7.7	8.8	9.9
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)