

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: P546306

Luminaire Tested: **FMR-12-4-LD4-2STD-35-UNV-81-87-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: P546306  
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-LD4-2STD-35-UNV-81-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

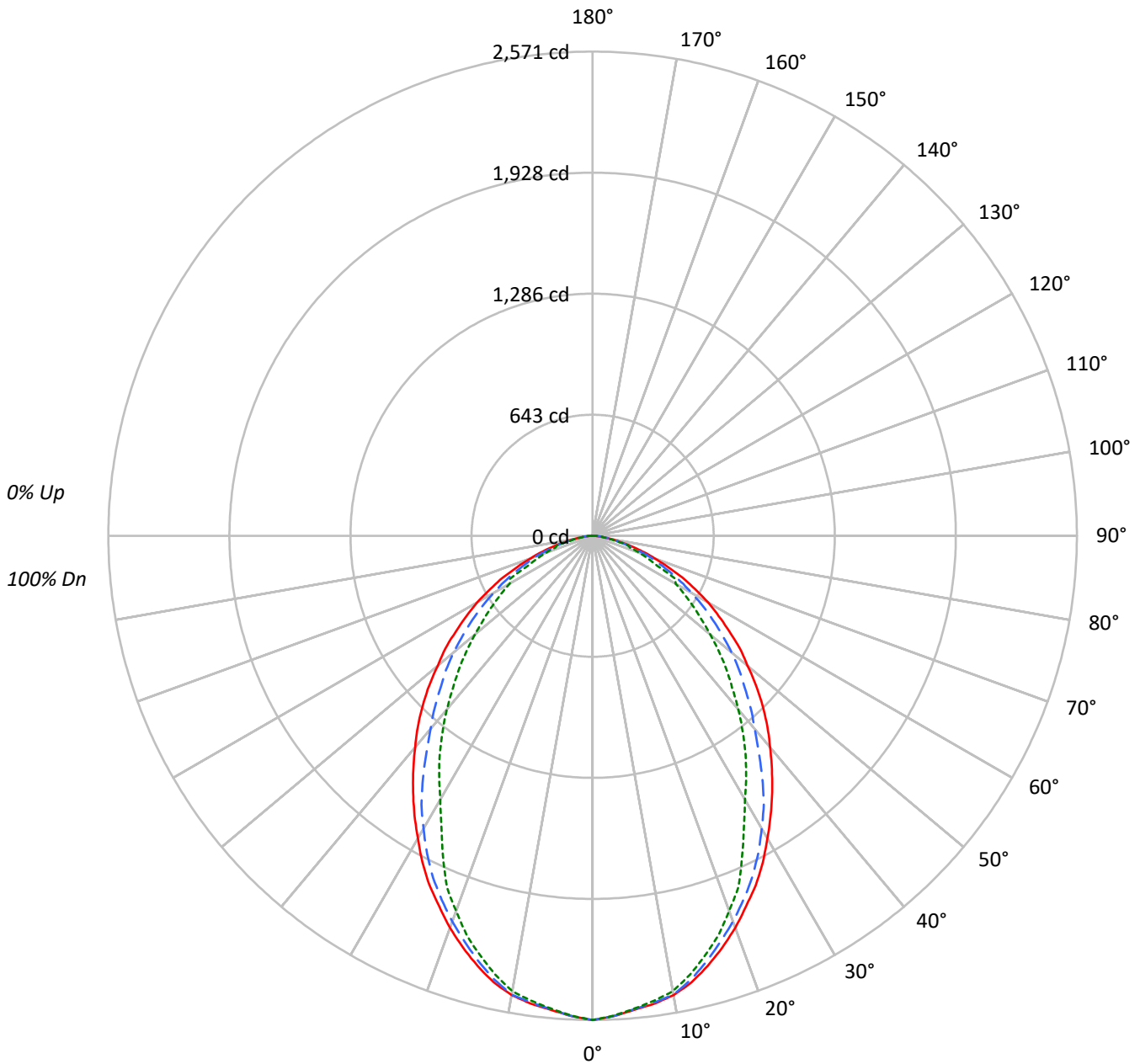
Lumens per Lamp: N/A  
Luminaire Lumens: 5048.0 lumens  
Efficiency: N/A  
Efficacy: 75.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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°	6920	6920	6920
5°	6826	6817	6809
10°	6766	6758	6709
15°	6584	6518	6427
20°	6342	6240	6070
25°	6081	5949	5578
30°	5764	5579	5025
35°	5459	5156	4648
40°	5148	4699	4229
45°	4853	4344	3824
50°	4492	4032	3410
55°	4156	3654	3054
60°	3808	3264	2736
65°	3351	2858	2423
70°	2760	2503	2058
75°	2195	1916	2009
80°	1474	1382	1289
85°	917	1102	1284



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	239.4	4.7
10°-20°	656.9	13.0
20°-30°	909.4	18.0
30°-40°	969.7	19.2
40°-50°	884.7	17.5
50°-60°	693.1	13.7
60°-70°	451.7	8.9
70°-80°	200.1	4.0
80°-90°	43.0	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°	1805.7	35.8
0°-40°	2775.4	55.0
0°-60°	4353.2	86.2
0°-90°	5048.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5048.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2571	2571	2571	2571	2571	
5°	2527	2524	2524	2521	2521	240
15°	2363	2363	2340	2316	2307	664
25°	2048	2036	2004	1932	1879	940
35°	1662	1650	1570	1451	1415	1039
45°	1275	1248	1142	1046	1005	982
55°	886	859	779	687	651	795
65°	526	496	449	458	380	519
75°	211	196	184	175	193	226
85°	30	33	36	39	42	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2571.4	2571.4	2571.4	2571.4	2571.4
2.5°	2553.5	2553.5	2553.5	2550.6	2550.6
5°	2526.8	2523.8	2523.8	2520.8	2520.8
7.5°	2506.0	2503.0	2500.0	2497.1	2491.1
10°	2476.3	2476.3	2473.3	2458.4	2455.4
12.5°	2428.7	2425.7	2413.8	2393.0	2387.1
15°	2363.3	2363.3	2339.5	2315.7	2306.8
17.5°	2292.0	2289.0	2259.3	2235.5	2223.6
20°	2214.7	2208.7	2179.0	2140.3	2119.5
22.5°	2128.5	2128.5	2092.8	2042.2	2021.4
25°	2048.2	2036.3	2003.6	1932.3	1878.7
27.5°	1956.0	1938.2	1902.5	1801.5	1739.0
30°	1855.0	1846.0	1795.5	1664.7	1617.1
32.5°	1759.8	1745.0	1691.5	1554.7	1516.1
35°	1661.7	1649.8	1569.6	1450.7	1415.0
37.5°	1563.6	1548.8	1447.7	1352.6	1308.0
40°	1465.5	1447.7	1337.7	1251.5	1203.9
42.5°	1373.4	1349.6	1242.6	1150.4	1096.9
45°	1275.3	1248.5	1141.5	1046.4	1004.8
47.5°	1177.2	1153.4	1055.3	957.2	909.6
50°	1073.1	1052.3	963.2	865.1	814.5
52.5°	986.9	954.2	868.0	769.9	728.3
55°	885.9	859.1	778.8	686.7	651.0
57.5°	793.7	767.0	692.6	606.4	576.7
60°	707.5	668.9	606.4	532.1	508.3
62.5°	612.4	582.6	529.1	466.7	496.4
65°	526.2	496.4	448.9	457.8	380.5
67.5°	431.0	416.2	374.6	332.9	321.1
70°	350.8	332.9	318.1	273.5	261.6
72.5°	279.4	261.6	240.8	217.0	208.1
75°	211.1	196.2	184.3	175.4	193.2
77.5°	145.7	139.7	130.8	121.9	118.9
80°	95.1	92.2	89.2	86.2	83.2
82.5°	56.5	56.5	56.5	56.5	56.5
85°	29.7	32.7	35.7	38.6	41.6
87.5°	17.8	17.8	20.8	23.8	26.8
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)