

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: P546729

Luminaire Tested: **FMR-24-4-LD4-2HI-40-UNV-82-86-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: P546729  
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-24-4-LD4-2HI-40-UNV-82-86-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

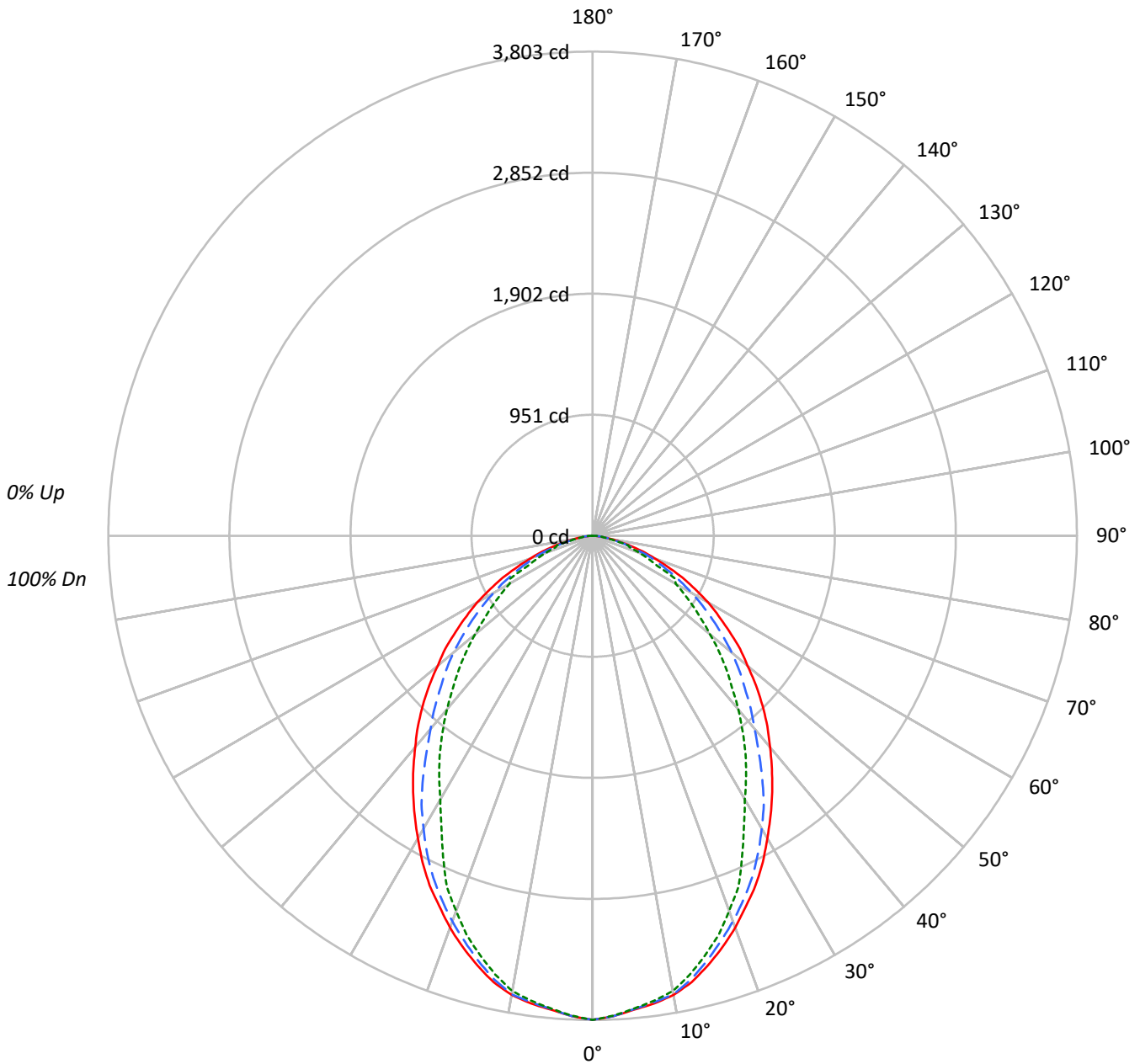
Lumens per Lamp: N/A  
Luminaire Lumens: 7465.0 lumens  
Efficiency: N/A  
Efficacy: 86.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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°	5116	5116	5116
5°	5047	5041	5035
10°	5003	4997	4961
15°	4868	4819	4752
20°	4689	4614	4488
25°	4497	4399	4125
30°	4262	4125	3715
35°	4036	3812	3437
40°	3806	3475	3127
45°	3589	3212	2827
50°	3322	2981	2521
55°	3073	2702	2258
60°	2816	2413	2023
65°	2477	2113	1791
70°	2041	1851	1522
75°	1622	1417	1485
80°	1090	1022	954
85°	679	815	949



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	354.0	4.7
10°-20°	971.4	13.0
20°-30°	1344.9	18.0
30°-40°	1434.0	19.2
40°-50°	1308.3	17.5
50°-60°	1024.9	13.7
60°-70°	668.0	8.9
70°-80°	295.9	4.0
80°-90°	63.5	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°	2670.3	35.8
0°-40°	4104.3	55.0
0°-60°	6437.5	86.2
0°-90°	7465.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7465.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3803	3803	3803	3803	3803	
5°	3737	3732	3732	3728	3728	355
15°	3495	3495	3460	3424	3411	982
25°	3029	3011	2963	2857	2778	1391
35°	2457	2440	2321	2145	2092	1536
45°	1886	1846	1688	1547	1486	1453
55°	1310	1270	1152	1016	963	1175
65°	778	734	664	677	563	767
75°	312	290	273	259	286	334
85°	44	48	53	57	62	61
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3802.6	3802.6	3802.6	3802.6	3802.6
2.5°	3776.2	3776.2	3776.2	3771.8	3771.8
5°	3736.6	3732.2	3732.2	3727.8	3727.8
7.5°	3705.9	3701.5	3697.1	3692.7	3683.9
10°	3661.9	3661.9	3657.5	3635.5	3631.1
12.5°	3591.6	3587.2	3569.6	3538.8	3530.0
15°	3494.8	3494.8	3459.7	3424.5	3411.3
17.5°	3389.3	3384.9	3341.0	3305.8	3288.2
20°	3275.0	3266.3	3222.3	3165.1	3134.4
22.5°	3147.6	3147.6	3094.8	3020.1	2989.3
25°	3028.9	3011.3	2962.9	2857.4	2778.3
27.5°	2892.6	2866.2	2813.5	2664.0	2571.7
30°	2743.1	2729.9	2655.2	2461.8	2391.4
32.5°	2602.5	2580.5	2501.3	2299.1	2242.0
35°	2457.4	2439.8	2321.1	2145.3	2092.5
37.5°	2312.3	2290.3	2140.9	2000.2	1934.3
40°	2167.2	2140.9	1978.2	1850.7	1780.4
42.5°	2031.0	1995.8	1837.5	1701.3	1622.1
45°	1885.9	1846.3	1688.1	1547.4	1485.9
47.5°	1740.8	1705.7	1560.6	1415.5	1345.2
50°	1587.0	1556.2	1424.3	1279.2	1204.5
52.5°	1459.5	1411.1	1283.6	1138.6	1077.0
55°	1310.0	1270.5	1151.8	1015.5	962.7
57.5°	1173.7	1134.2	1024.3	896.8	852.8
60°	1046.3	989.1	896.8	786.9	751.7
62.5°	905.6	861.6	782.5	690.2	734.1
65°	778.1	734.1	663.8	677.0	562.7
67.5°	637.4	615.4	553.9	492.4	474.8
70°	518.7	492.4	470.4	404.4	386.9
72.5°	413.2	386.9	356.1	320.9	307.7
75°	312.1	290.1	272.6	259.4	285.7
77.5°	215.4	206.6	193.4	180.2	175.8
80°	140.7	136.3	131.9	127.5	123.1
82.5°	83.5	83.5	83.5	83.5	83.5
85°	44.0	48.4	52.8	57.1	61.5
87.5°	26.4	26.4	30.8	35.2	39.6
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)