

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: P546739

Luminaire Tested: **FMR-24-4-LD4-2HI-40-UNV-93-88-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: P546739  
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-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

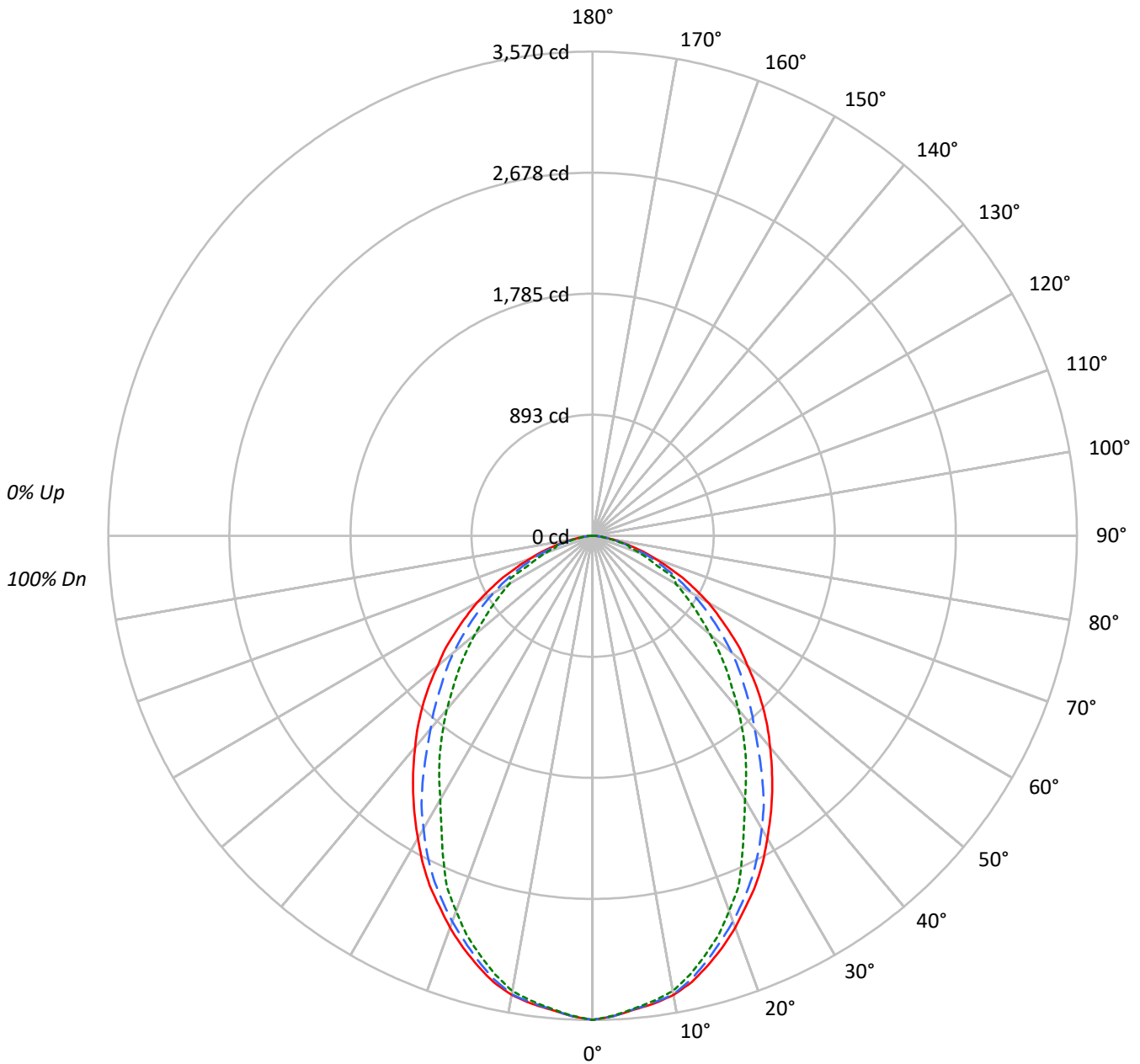
Lumens per Lamp: N/A  
Luminaire Lumens: 7008.0 lumens  
Efficiency: N/A  
Efficacy: 81.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
Input Voltage (V): NR  
Input Current (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°	4803	4803	4803
5°	4738	4732	4727
10°	4697	4691	4657
15°	4570	4524	4461
20°	4402	4331	4213
25°	4221	4129	3872
30°	4001	3873	3488
35°	3789	3579	3227
40°	3574	3262	2936
45°	3369	3015	2654
50°	3118	2799	2367
55°	2885	2537	2120
60°	2643	2266	1899
65°	2326	1984	1682
70°	1916	1737	1429
75°	1523	1330	1394
80°	1024	959	896
85°	638	764	892



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	332.3	4.7
10°-20°	912.0	13.0
20°-30°	1262.5	18.0
30°-40°	1346.2	19.2
40°-50°	1228.2	17.5
50°-60°	962.2	13.7
60°-70°	627.1	8.9
70°-80°	277.8	4.0
80°-90°	59.6	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°	2506.8	35.8
0°-40°	3853.1	55.0
0°-60°	6043.4	86.2
0°-90°	7008.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7008.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3570	3570	3570	3570	3570	
5°	3508	3504	3504	3500	3500	333
15°	3281	3281	3248	3215	3202	922
25°	2843	2827	2782	2682	2608	1305
35°	2307	2290	2179	2014	1964	1442
45°	1770	1733	1585	1453	1395	1364
55°	1230	1193	1081	953	904	1103
65°	730	689	623	636	528	720
75°	293	272	256	244	268	314
85°	41	45	50	54	58	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3569.8	3569.8	3569.8	3569.8	3569.8
2.5°	3545.0	3545.0	3545.0	3540.9	3540.9
5°	3507.9	3503.8	3503.8	3499.6	3499.6
7.5°	3479.0	3474.9	3470.7	3466.6	3458.4
10°	3437.7	3437.7	3433.6	3413.0	3408.8
12.5°	3371.7	3367.6	3351.1	3322.2	3313.9
15°	3280.9	3280.9	3247.9	3214.9	3202.5
17.5°	3181.9	3177.7	3136.5	3103.4	3086.9
20°	3074.6	3066.3	3025.0	2971.4	2942.5
22.5°	2954.9	2954.9	2905.3	2835.2	2806.3
25°	2843.4	2826.9	2781.5	2682.5	2608.2
27.5°	2715.5	2690.7	2641.2	2500.9	2414.2
30°	2575.2	2562.8	2492.7	2311.1	2245.0
32.5°	2443.1	2422.5	2348.2	2158.4	2104.7
35°	2306.9	2290.4	2179.0	2013.9	1964.4
37.5°	2170.8	2150.1	2009.8	1877.7	1815.8
40°	2034.6	2009.8	1857.1	1737.4	1671.4
42.5°	1906.6	1873.6	1725.1	1597.1	1522.8
45°	1770.4	1733.3	1584.7	1452.7	1394.9
47.5°	1634.3	1601.2	1465.1	1328.9	1262.8
50°	1489.8	1460.9	1337.1	1200.9	1130.8
52.5°	1370.1	1324.7	1205.1	1068.9	1011.1
55°	1229.8	1192.7	1081.3	953.3	903.8
57.5°	1101.9	1064.7	961.6	841.9	800.6
60°	982.2	928.6	841.9	738.7	705.7
62.5°	850.1	808.9	734.6	647.9	689.2
65°	730.5	689.2	623.2	635.5	528.2
67.5°	598.4	577.8	520.0	462.2	445.7
70°	487.0	462.2	441.6	379.7	363.2
72.5°	387.9	363.2	334.3	301.3	288.9
75°	293.0	272.4	255.9	243.5	268.2
77.5°	202.2	194.0	181.6	169.2	165.1
80°	132.1	127.9	123.8	119.7	115.6
82.5°	78.4	78.4	78.4	78.4	78.4
85°	41.3	45.4	49.5	53.6	57.8
87.5°	24.8	24.8	28.9	33.0	37.1
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)