

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: P546715

Luminaire Tested: **FMR-24-4-LD4-2HI-40-UNV-80-88-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: P546715  
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-80-88-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC 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**

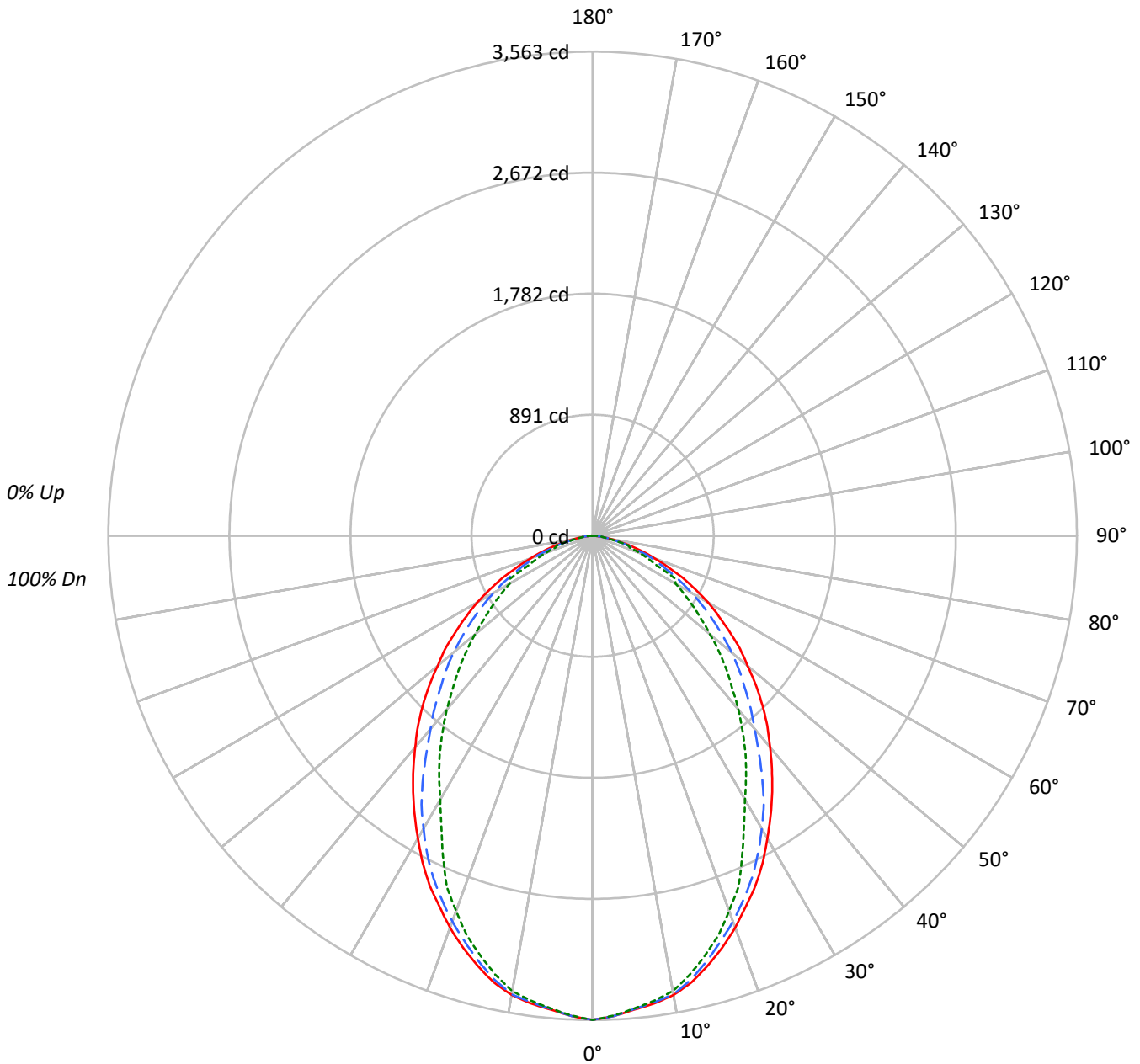
Lumens per Lamp: N/A  
Luminaire Lumens: 6994.0 lumens  
Efficiency: N/A  
Efficacy: 80.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	4794	4794	4794
5°	4728	4723	4717
10°	4687	4682	4648
15°	4561	4515	4452
20°	4393	4323	4205
25°	4213	4121	3864
30°	3993	3865	3481
35°	3782	3572	3220
40°	3566	3255	2930
45°	3362	3009	2649
50°	3112	2793	2362
55°	2879	2531	2116
60°	2638	2261	1895
65°	2321	1980	1678
70°	1912	1734	1426
75°	1520	1328	1392
80°	1021	958	893
85°	636	763	891



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	331.6	4.7
10°-20°	910.1	13.0
20°-30°	1260.0	18.0
30°-40°	1343.6	19.2
40°-50°	1225.7	17.5
50°-60°	960.3	13.7
60°-70°	625.8	8.9
70°-80°	277.3	4.0
80°-90°	59.5	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°	2501.8	35.8
0°-40°	3845.4	55.0
0°-60°	6031.3	86.2
0°-90°	6994.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6994.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3563	3563	3563	3563	3563	
5°	3501	3497	3497	3493	3493	332
15°	3274	3274	3241	3208	3196	921
25°	2838	2821	2776	2677	2603	1303
35°	2302	2286	2175	2010	1960	1439
45°	1767	1730	1582	1450	1392	1361
55°	1227	1190	1079	951	902	1101
65°	729	688	622	634	527	718
75°	292	272	255	243	268	313
85°	41	45	49	54	58	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3562.7	3562.7	3562.7	3562.7	3562.7
2.5°	3537.9	3537.9	3537.9	3533.8	3533.8
5°	3500.9	3496.8	3496.8	3492.6	3492.6
7.5°	3472.0	3467.9	3463.8	3459.7	3451.4
10°	3430.9	3430.9	3426.7	3406.1	3402.0
12.5°	3365.0	3360.8	3344.4	3315.5	3307.3
15°	3274.3	3274.3	3241.4	3208.4	3196.1
17.5°	3175.5	3171.4	3130.2	3097.2	3080.8
20°	3068.4	3060.2	3019.0	2965.4	2936.6
22.5°	2949.0	2949.0	2899.5	2829.5	2800.7
25°	2837.8	2821.3	2776.0	2677.1	2603.0
27.5°	2710.1	2685.4	2635.9	2495.9	2409.4
30°	2570.1	2557.7	2487.7	2306.5	2240.6
32.5°	2438.3	2417.7	2343.5	2154.1	2100.5
35°	2302.3	2285.9	2174.7	2009.9	1960.5
37.5°	2166.4	2145.8	2005.8	1874.0	1812.2
40°	2030.5	2005.8	1853.4	1734.0	1668.1
42.5°	1902.8	1869.9	1721.6	1593.9	1519.8
45°	1766.9	1729.8	1581.6	1449.8	1392.1
47.5°	1631.0	1598.0	1462.1	1326.2	1260.3
50°	1486.8	1458.0	1334.4	1198.5	1128.5
52.5°	1367.4	1322.1	1202.7	1066.7	1009.1
55°	1227.4	1190.3	1079.1	951.4	902.0
57.5°	1099.7	1062.6	959.7	840.2	799.0
60°	980.2	926.7	840.2	737.2	704.3
62.5°	848.4	807.3	733.1	646.6	687.8
65°	729.0	687.8	621.9	634.3	527.2
67.5°	597.2	576.6	519.0	461.3	444.8
70°	486.0	461.3	440.7	378.9	362.4
72.5°	387.2	362.4	333.6	300.7	288.3
75°	292.4	271.8	255.4	243.0	267.7
77.5°	201.8	193.6	181.2	168.9	164.7
80°	131.8	127.7	123.6	119.4	115.3
82.5°	78.3	78.3	78.3	78.3	78.3
85°	41.2	45.3	49.4	53.5	57.7
87.5°	24.7	24.7	28.8	32.9	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)