

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: P547245

Luminaire Tested: **FMR-24-4-LD4-3STD-50-UNV-82-96-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: P547245  
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-LD4-3STD-50-UNV-82-96-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

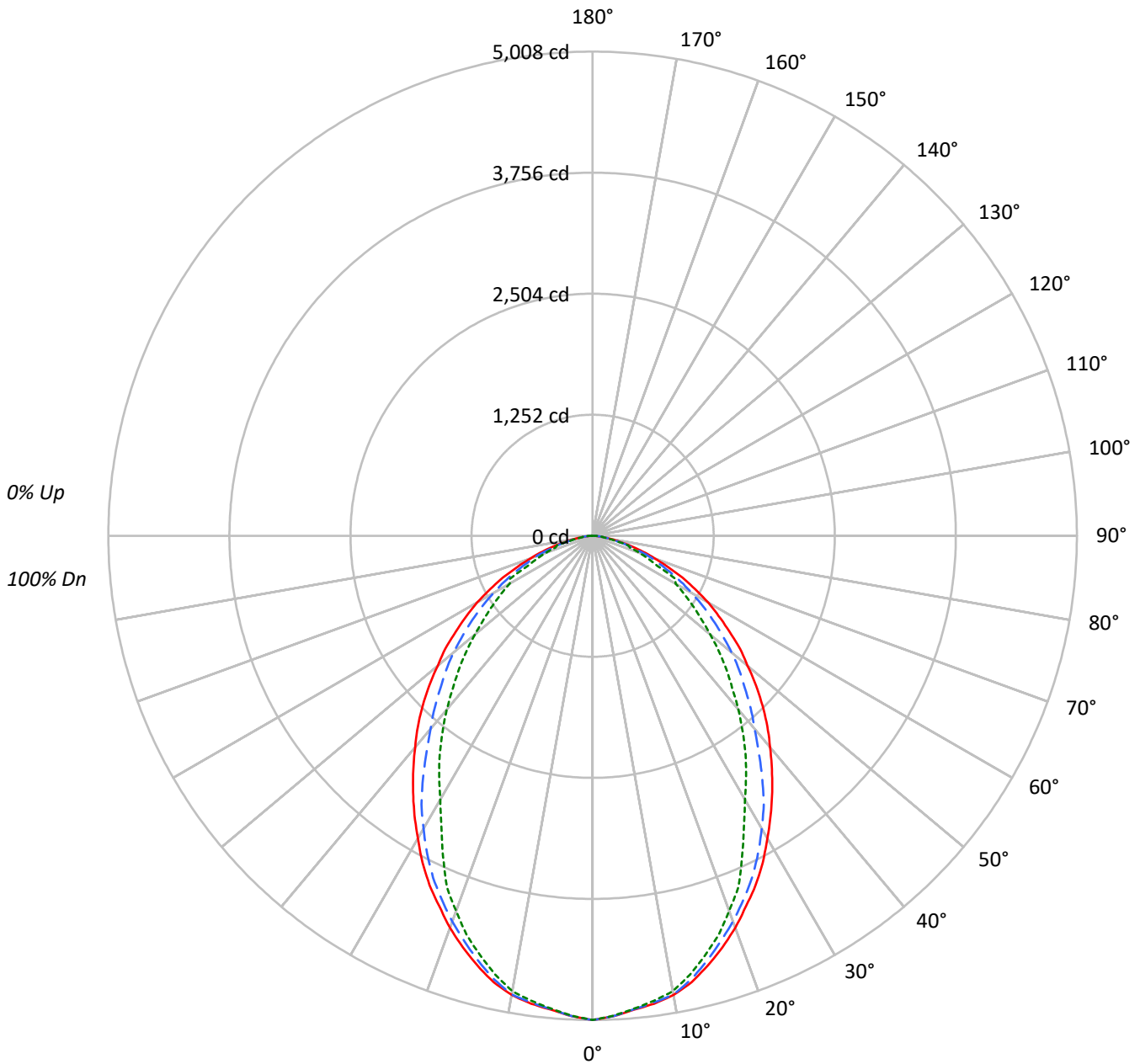
Lumens per Lamp: N/A  
Luminaire Lumens: 9832.0 lumens  
Efficiency: N/A  
Efficacy: 98.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
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°	6739	6739	6739
5°	6647	6639	6631
10°	6589	6581	6534
15°	6412	6347	6259
20°	6176	6077	5911
25°	5922	5793	5432
30°	5613	5433	4893
35°	5316	5021	4527
40°	5014	4576	4119
45°	4726	4231	3724
50°	4375	3927	3321
55°	4047	3559	2974
60°	3708	3178	2664
65°	3263	2784	2359
70°	2688	2437	2004
75°	2137	1866	1956
80°	1436	1346	1256
85°	894	1073	1252



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	466.2	4.7
10°-20°	1279.5	13.0
20°-30°	1771.3	18.0
30°-40°	1888.8	19.2
40°-50°	1723.1	17.5
50°-60°	1349.9	13.7
60°-70°	879.8	8.9
70°-80°	389.8	4.0
80°-90°	83.7	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°	3517.0	35.8
0°-40°	5405.7	55.0
0°-60°	8478.7	86.2
0°-90°	9832.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9832.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5008	5008	5008	5008	5008	
5°	4921	4916	4916	4910	4910	467
15°	4603	4603	4557	4510	4493	1294
25°	3989	3966	3902	3764	3659	1831
35°	3237	3213	3057	2826	2756	2023
45°	2484	2432	2223	2038	1957	1913
55°	1725	1673	1517	1338	1268	1548
65°	1025	967	874	892	741	1010
75°	411	382	359	342	376	441
85°	58	64	70	75	81	80
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5008.3	5008.3	5008.3	5008.3	5008.3
2.5°	4973.5	4973.5	4973.5	4967.8	4967.8
5°	4921.4	4915.7	4915.7	4909.9	4909.9
7.5°	4880.9	4875.1	4869.3	4863.5	4852.0
10°	4823.0	4823.0	4817.2	4788.3	4782.5
12.5°	4730.4	4724.6	4701.4	4660.9	4649.3
15°	4603.0	4603.0	4556.7	4510.4	4493.0
17.5°	4464.0	4458.2	4400.3	4354.0	4330.9
20°	4313.5	4301.9	4244.0	4168.7	4128.2
22.5°	4145.6	4145.6	4076.1	3977.7	3937.2
25°	3989.3	3966.1	3902.4	3763.5	3659.2
27.5°	3809.8	3775.0	3705.6	3508.7	3387.1
30°	3612.9	3595.5	3497.1	3242.4	3149.7
32.5°	3427.6	3398.7	3294.5	3028.1	2952.9
35°	3236.6	3213.4	3057.1	2825.5	2756.0
37.5°	3045.5	3016.6	2819.7	2634.4	2547.6
40°	2854.4	2819.7	2605.5	2437.6	2344.9
42.5°	2674.9	2628.6	2420.2	2240.7	2136.5
45°	2483.9	2431.8	2223.3	2038.1	1957.0
47.5°	2292.8	2246.5	2055.4	1864.4	1771.7
50°	2090.2	2049.6	1875.9	1684.9	1586.4
52.5°	1922.3	1858.6	1690.7	1499.6	1418.5
55°	1725.4	1673.3	1517.0	1337.5	1268.0
57.5°	1545.9	1493.8	1349.1	1181.1	1123.2
60°	1378.0	1302.7	1181.1	1036.4	990.1
62.5°	1192.7	1134.8	1030.6	909.0	966.9
65°	1024.8	966.9	874.3	891.6	741.1
67.5°	839.5	810.6	729.5	648.5	625.3
70°	683.2	648.5	619.5	532.7	509.5
72.5°	544.3	509.5	469.0	422.7	405.3
75°	411.1	382.1	359.0	341.6	376.3
77.5°	283.7	272.1	254.8	237.4	231.6
80°	185.3	179.5	173.7	167.9	162.1
82.5°	110.0	110.0	110.0	110.0	110.0
85°	57.9	63.7	69.5	75.3	81.1
87.5°	34.7	34.7	40.5	46.3	52.1
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)