

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: P547176

Luminaire Tested: **FMR-24-4-LD4-3STD-35-UNV-82-85-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: P547176  
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-35-UNV-82-85-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

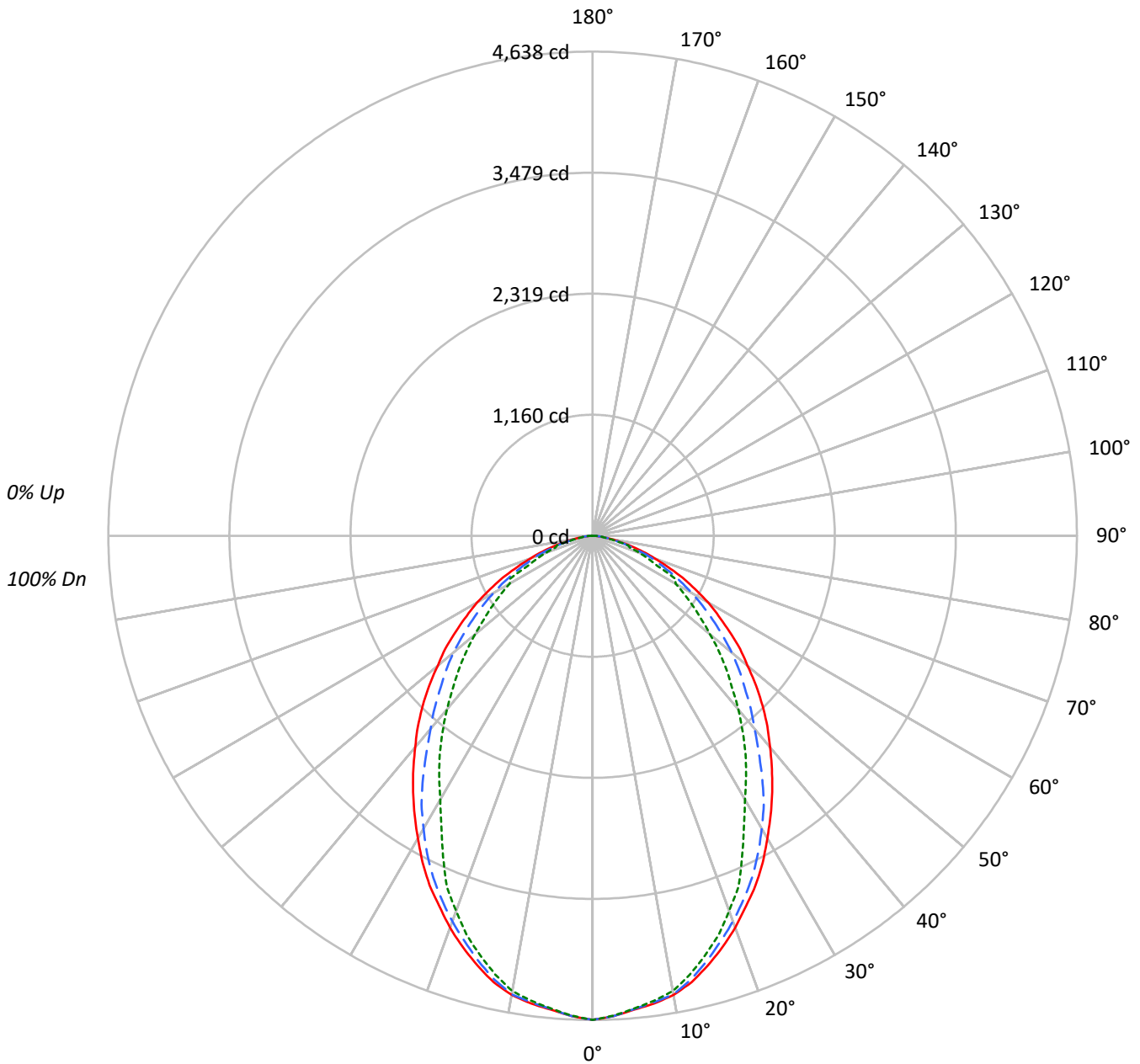
Lumens per Lamp: N/A  
Luminaire Lumens: 9104.0 lumens  
Efficiency: N/A  
Efficacy: 91.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
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°	6240	6240	6240
5°	6155	6148	6140
10°	6102	6094	6050
15°	5937	5877	5795
20°	5719	5627	5473
25°	5484	5365	5030
30°	5198	5031	4531
35°	4923	4650	4192
40°	4642	4237	3814
45°	4376	3917	3448
50°	4051	3636	3075
55°	3748	3295	2754
60°	3434	2943	2467
65°	3021	2577	2185
70°	2489	2257	1856
75°	1979	1728	1812
80°	1330	1246	1163
85°	827	993	1159



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	431.7	4.7
10°-20°	1184.7	13.0
20°-30°	1640.2	18.0
30°-40°	1748.9	19.2
40°-50°	1595.5	17.5
50°-60°	1250.0	13.7
60°-70°	814.7	8.9
70°-80°	360.9	4.0
80°-90°	77.5	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°	3256.6	35.8
0°-40°	5005.5	55.0
0°-60°	7850.9	86.2
0°-90°	9104.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9104.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4638	4638	4638	4638	4638	
5°	4557	4552	4552	4546	4546	433
15°	4262	4262	4219	4176	4160	1198
25°	3694	3672	3614	3485	3388	1696
35°	2997	2976	2831	2616	2552	1874
45°	2300	2252	2059	1887	1812	1772
55°	1598	1549	1405	1238	1174	1433
65°	949	895	810	826	686	935
75°	381	354	332	316	348	408
85°	54	59	64	70	75	74
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4637.5	4637.5	4637.5	4637.5	4637.5
2.5°	4605.3	4605.3	4605.3	4599.9	4599.9
5°	4557.0	4551.7	4551.7	4546.3	4546.3
7.5°	4519.5	4514.1	4508.8	4503.4	4492.7
10°	4465.9	4465.9	4460.5	4433.7	4428.4
12.5°	4380.1	4374.8	4353.3	4315.8	4305.1
15°	4262.2	4262.2	4219.3	4176.4	4160.3
17.5°	4133.5	4128.1	4074.5	4031.6	4010.2
20°	3994.1	3983.4	3929.8	3860.1	3822.6
22.5°	3838.6	3838.6	3774.3	3683.2	3645.6
25°	3693.9	3672.4	3613.5	3484.8	3388.3
27.5°	3527.7	3495.5	3431.2	3248.9	3136.3
30°	3345.4	3329.3	3238.2	3002.3	2916.5
32.5°	3173.8	3147.0	3050.5	2803.9	2734.2
35°	2996.9	2975.5	2830.7	2616.3	2551.9
37.5°	2820.0	2793.2	2610.9	2439.4	2358.9
40°	2643.1	2610.9	2412.5	2257.1	2171.3
42.5°	2476.9	2434.0	2241.0	2074.8	1978.3
45°	2300.0	2251.7	2058.7	1887.1	1812.1
47.5°	2123.0	2080.2	1903.2	1726.3	1640.5
50°	1935.4	1897.9	1737.0	1560.1	1469.0
52.5°	1779.9	1721.0	1565.5	1388.6	1313.5
55°	1597.6	1549.4	1404.6	1238.4	1174.1
57.5°	1431.4	1383.2	1249.2	1093.7	1040.1
60°	1276.0	1206.3	1093.7	959.7	916.8
62.5°	1104.4	1050.8	954.3	841.7	895.3
65°	948.9	895.3	809.5	825.6	686.2
67.5°	777.4	750.6	675.5	600.5	579.0
70°	632.6	600.5	573.7	493.2	471.8
72.5°	504.0	471.8	434.3	391.4	375.3
75°	380.6	353.8	332.4	316.3	348.5
77.5°	262.7	252.0	235.9	219.8	214.4
80°	171.6	166.2	160.8	155.5	150.1
82.5°	101.9	101.9	101.9	101.9	101.9
85°	53.6	59.0	64.3	69.7	75.1
87.5°	32.2	32.2	37.5	42.9	48.3
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)