

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: P547093

Luminaire Tested: **FMR-24-4-LD4-3LO-35-UNV-93-96-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: P547093  
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-LD4-3LO-35-UNV-93-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

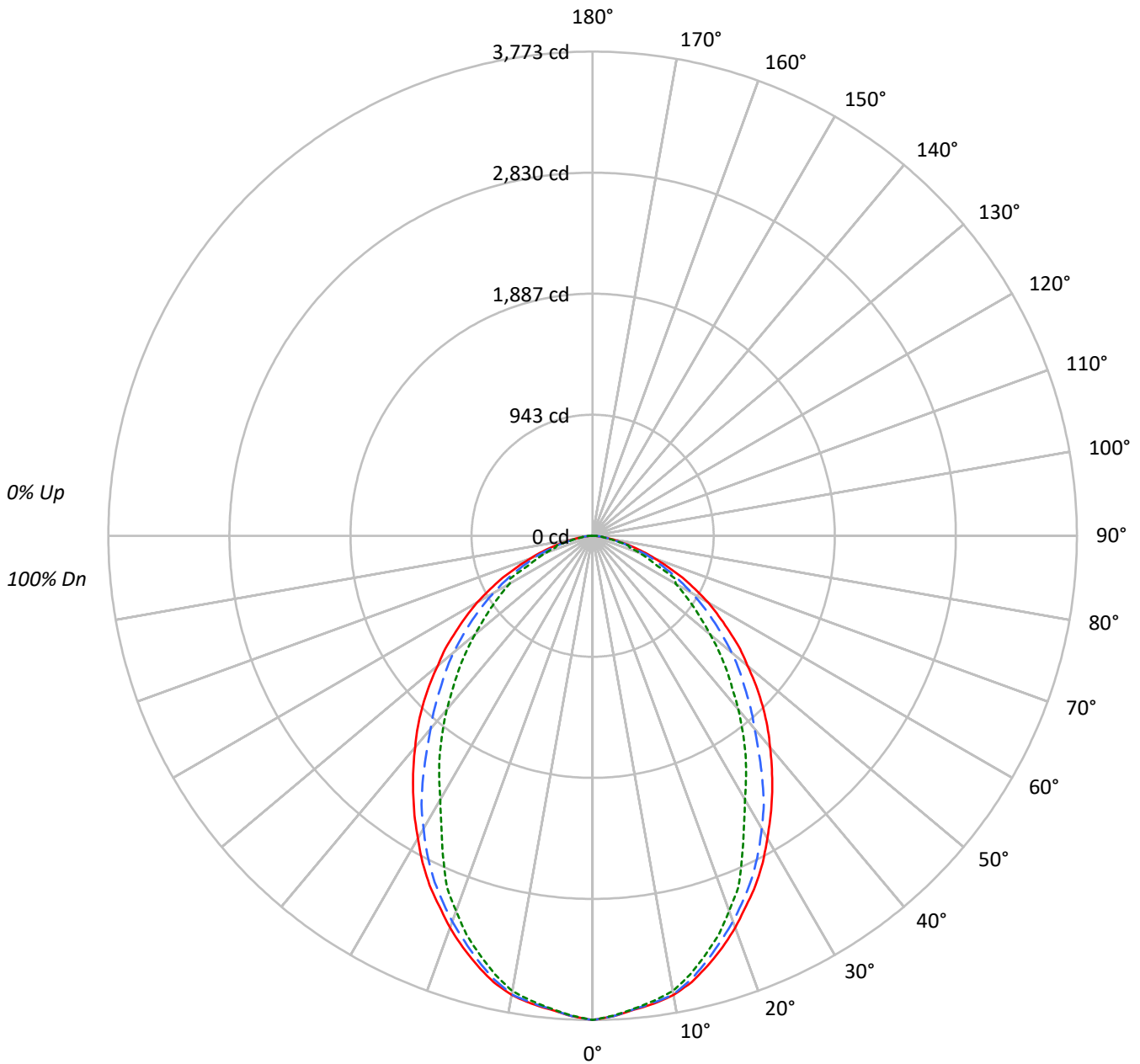
Lumens per Lamp: N/A  
Luminaire Lumens: 7407.0 lumens  
Efficiency: N/A  
Efficacy: 105.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70.2  
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°	5077	5077	5077
5°	5008	5002	4996
10°	4964	4958	4922
15°	4830	4782	4715
20°	4653	4578	4453
25°	4462	4365	4093
30°	4229	4093	3687
35°	4005	3783	3410
40°	3777	3447	3103
45°	3561	3187	2805
50°	3296	2958	2502
55°	3049	2681	2241
60°	2794	2394	2007
65°	2458	2097	1777
70°	2025	1836	1510
75°	1610	1406	1474
80°	1082	1014	946
85°	673	807	943



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	351.2	4.7
10°-20°	963.9	13.0
20°-30°	1334.4	18.0
30°-40°	1422.9	19.2
40°-50°	1298.1	17.5
50°-60°	1017.0	13.7
60°-70°	662.8	8.9
70°-80°	293.6	4.0
80°-90°	63.1	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°	2649.5	35.8
0°-40°	4072.4	55.0
0°-60°	6387.5	86.2
0°-90°	7407.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7407.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3773	3773	3773	3773	3773	
5°	3708	3703	3703	3699	3699	352
15°	3468	3468	3433	3398	3385	975
25°	3005	2988	2940	2835	2757	1380
35°	2438	2421	2303	2129	2076	1524
45°	1871	1832	1675	1535	1474	1441
55°	1300	1261	1143	1008	955	1166
65°	772	728	659	672	558	761
75°	310	288	270	257	284	332
85°	44	48	52	57	61	61
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3773.0	3773.0	3773.0	3773.0	3773.0
2.5°	3746.9	3746.9	3746.9	3742.5	3742.5
5°	3707.6	3703.2	3703.2	3698.9	3698.9
7.5°	3677.1	3672.7	3668.3	3664.0	3655.3
10°	3633.4	3633.4	3629.1	3607.3	3602.9
12.5°	3563.7	3559.3	3541.8	3511.3	3502.6
15°	3467.7	3467.7	3432.8	3397.9	3384.8
17.5°	3363.0	3358.6	3315.0	3280.1	3262.7
20°	3249.6	3240.9	3197.3	3140.6	3110.0
22.5°	3123.1	3123.1	3070.8	2996.6	2966.1
25°	3005.3	2987.9	2939.9	2835.2	2756.7
27.5°	2870.1	2843.9	2791.6	2643.3	2551.7
30°	2721.8	2708.7	2634.6	2442.7	2372.9
32.5°	2582.2	2560.4	2481.9	2281.3	2224.6
35°	2438.3	2420.8	2303.1	2128.6	2076.3
37.5°	2294.3	2272.5	2124.2	1984.7	1919.2
40°	2150.4	2124.2	1962.8	1836.4	1766.6
42.5°	2015.2	1980.3	1823.3	1688.0	1609.5
45°	1871.2	1832.0	1675.0	1535.4	1474.3
47.5°	1727.3	1692.4	1548.5	1404.5	1334.7
50°	1574.6	1544.1	1413.2	1269.3	1195.2
52.5°	1448.1	1400.2	1273.7	1129.7	1068.7
55°	1299.8	1260.6	1142.8	1007.6	955.3
57.5°	1164.6	1125.4	1016.3	889.8	846.2
60°	1038.1	981.4	889.8	780.8	745.9
62.5°	898.5	854.9	776.4	684.8	728.4
65°	772.1	728.4	658.6	671.7	558.3
67.5°	632.5	610.7	549.6	488.5	471.1
70°	514.7	488.5	466.7	401.3	383.8
72.5°	410.0	383.8	353.3	318.4	305.3
75°	309.7	287.9	270.4	257.4	283.5
77.5°	213.7	205.0	191.9	178.8	174.5
80°	139.6	135.2	130.9	126.5	122.1
82.5°	82.9	82.9	82.9	82.9	82.9
85°	43.6	48.0	52.3	56.7	61.1
87.5°	26.2	26.2	30.5	34.9	39.3
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)