

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: P547446

Luminaire Tested: **FMR-24-4-LD4-4LO-50-UNV-93-97-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: P547446  
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-LD4-4LO-50-UNV-93-97-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

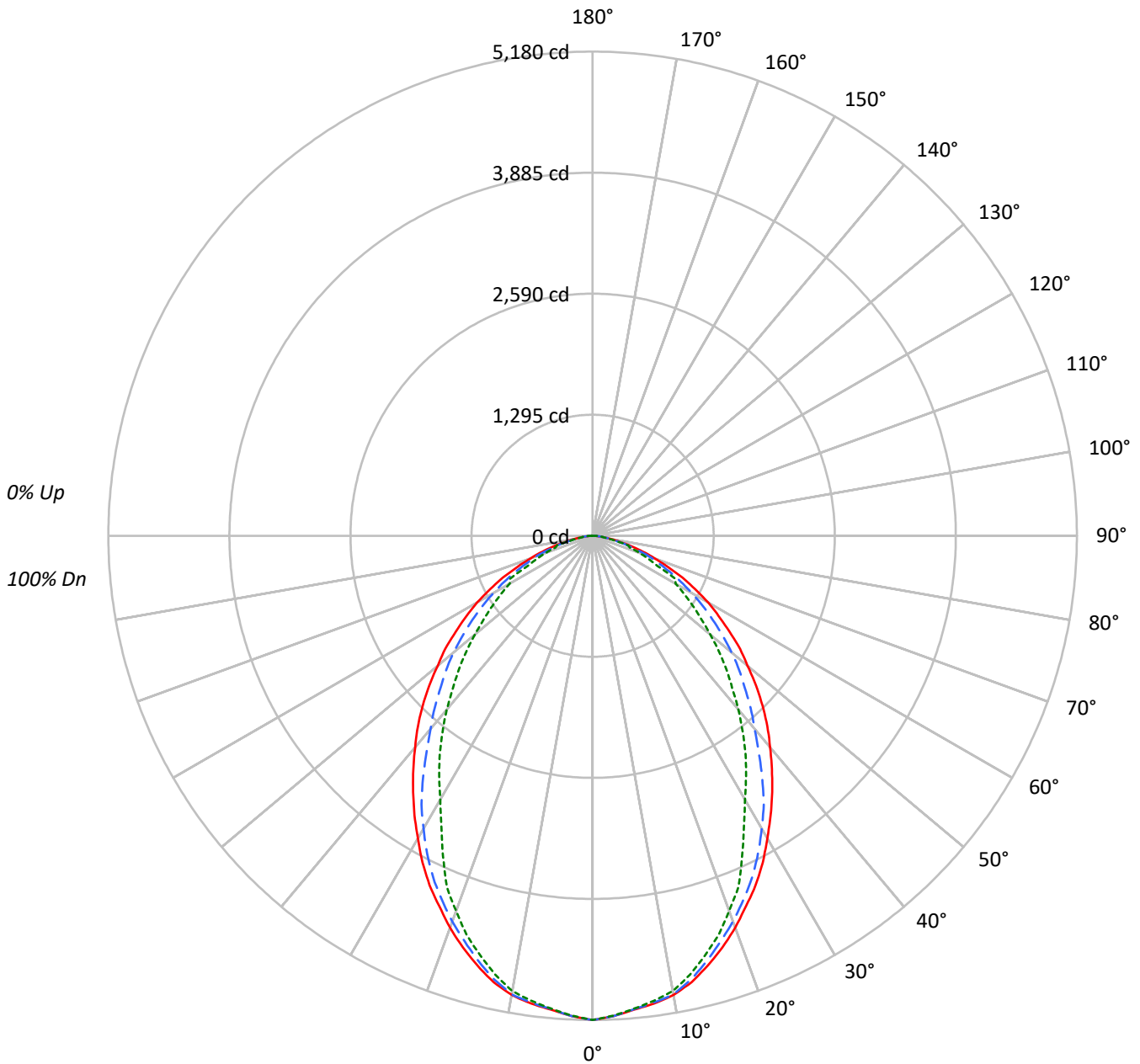
Lumens per Lamp: N/A  
Luminaire Lumens: 10169.0 lumens  
Efficiency: N/A  
Efficacy: 108.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
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°	6970	6970	6970
5°	6875	6867	6859
10°	6815	6807	6758
15°	6632	6565	6473
20°	6388	6285	6114
25°	6125	5992	5619
30°	5806	5620	5061
35°	5498	5194	4682
40°	5185	4733	4260
45°	4888	4376	3851
50°	4525	4061	3435
55°	4186	3681	3077
60°	3835	3287	2756
65°	3374	2879	2440
70°	2780	2521	2073
75°	2210	1930	2023
80°	1485	1392	1299
85°	925	1110	1294



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	482.2	4.7
10°-20°	1323.3	13.0
20°-30°	1832.0	18.0
30°-40°	1953.5	19.2
40°-50°	1782.1	17.5
50°-60°	1396.2	13.7
60°-70°	909.9	8.9
70°-80°	403.2	4.0
80°-90°	86.6	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°	3637.5	35.8
0°-40°	5591.0	55.0
0°-60°	8769.3	86.2
0°-90°	10169.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10169.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5180	5180	5180	5180	5180	
5°	5090	5084	5084	5078	5078	483
15°	4761	4761	4713	4665	4647	1338
25°	4126	4102	4036	3892	3785	1894
35°	3348	3324	3162	2922	2850	2093
45°	2569	2515	2300	2108	2024	1979
55°	1784	1731	1569	1383	1312	1601
65°	1060	1000	904	922	766	1045
75°	425	395	371	353	389	456
85°	60	66	72	78	84	83
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5180.0	5180.0	5180.0	5180.0	5180.0
2.5°	5144.0	5144.0	5144.0	5138.0	5138.0
5°	5090.1	5084.1	5084.1	5078.2	5078.2
7.5°	5048.2	5042.2	5036.2	5030.2	5018.3
10°	4988.3	4988.3	4982.3	4952.4	4946.4
12.5°	4892.5	4886.5	4862.6	4820.6	4808.7
15°	4760.8	4760.8	4712.9	4665.0	4647.0
17.5°	4617.0	4611.1	4551.2	4503.3	4479.3
20°	4461.3	4449.4	4389.5	4311.6	4269.7
22.5°	4287.7	4287.7	4215.8	4114.0	4072.1
25°	4126.0	4102.0	4036.2	3892.5	3784.7
27.5°	3940.4	3904.4	3832.6	3629.0	3503.2
30°	3736.8	3718.8	3617.0	3353.5	3257.7
32.5°	3545.1	3515.2	3407.4	3131.9	3054.1
35°	3347.5	3323.6	3161.9	2922.3	2850.5
37.5°	3149.9	3119.9	2916.3	2724.7	2634.9
40°	2952.3	2916.3	2694.8	2521.1	2425.3
42.5°	2766.6	2718.7	2503.1	2317.5	2209.7
45°	2569.0	2515.1	2299.5	2107.9	2024.1
47.5°	2371.4	2323.5	2125.9	1928.3	1832.4
50°	2161.8	2119.9	1940.2	1742.6	1640.8
52.5°	1988.1	1922.3	1748.6	1551.0	1467.2
55°	1784.5	1730.6	1569.0	1383.3	1311.5
57.5°	1598.9	1545.0	1395.3	1221.6	1161.7
60°	1425.2	1347.4	1221.6	1071.9	1024.0
62.5°	1233.6	1173.7	1065.9	940.2	1000.1
65°	1059.9	1000.1	904.2	922.2	766.5
67.5°	868.3	838.4	754.5	670.7	646.7
70°	706.6	670.7	640.8	550.9	527.0
72.5°	562.9	527.0	485.1	437.2	419.2
75°	425.2	395.2	371.3	353.3	389.2
77.5°	293.4	281.5	263.5	245.5	239.5
80°	191.6	185.6	179.7	173.7	167.7
82.5°	113.8	113.8	113.8	113.8	113.8
85°	59.9	65.9	71.9	77.8	83.8
87.5°	35.9	35.9	41.9	47.9	53.9
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)