

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: P547456

Luminaire Tested: **FMR-24-4-LD4-4STD-35-UNV-81-85-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: P547456  
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-LD4-4STD-35-UNV-81-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 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**

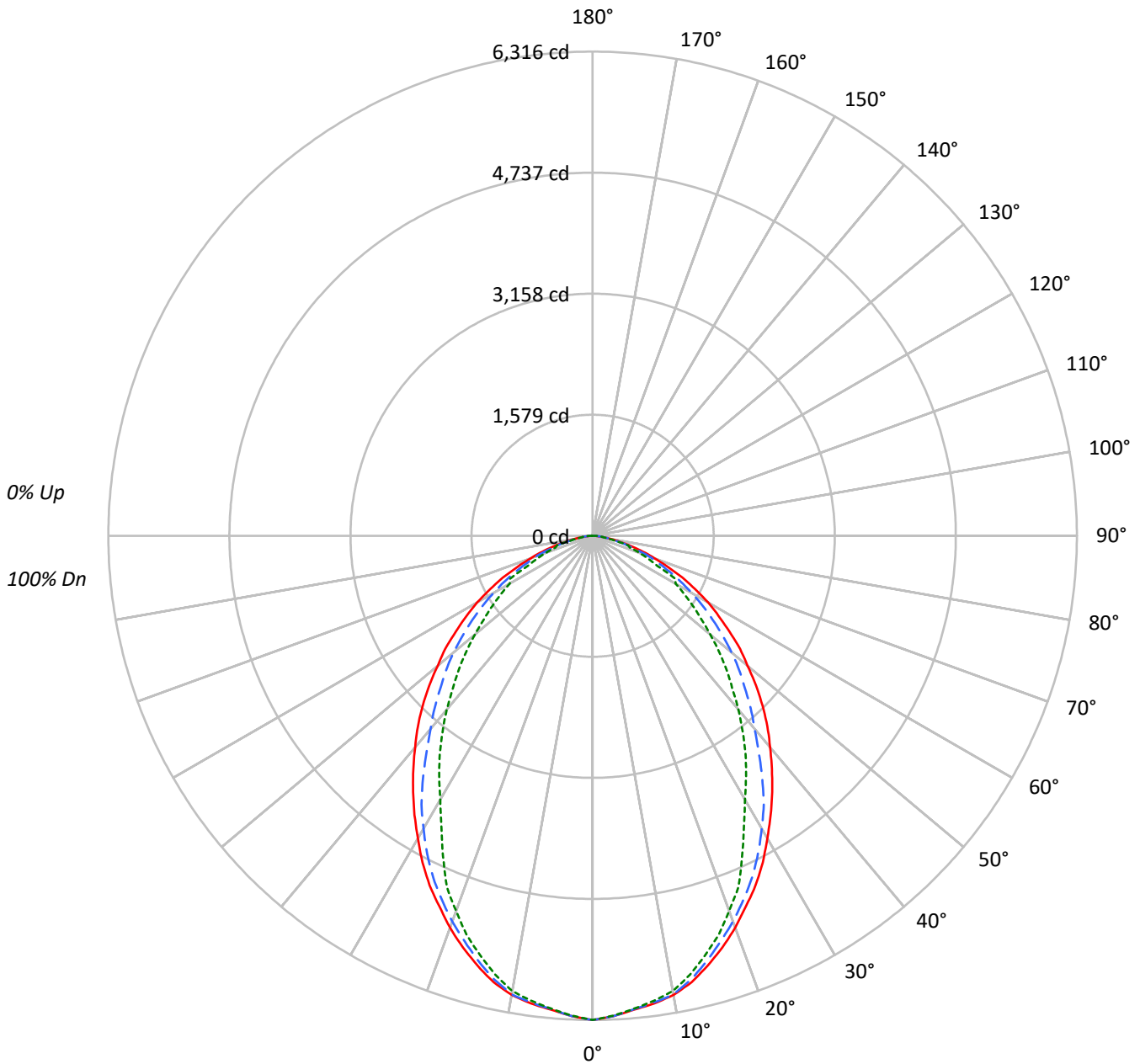
Lumens per Lamp: N/A  
Luminaire Lumens: 12399.0 lumens  
Efficiency: N/A  
Efficacy: 93.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 133.2  
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°	8498	8498	8498
5°	8383	8373	8363
10°	8310	8300	8240
15°	8086	8004	7892
20°	7789	7663	7454
25°	7469	7306	6851
30°	7079	6852	6171
35°	6704	6332	5709
40°	6323	5771	5194
45°	5960	5335	4696
50°	5517	4952	4188
55°	5104	4487	3751
60°	4676	4008	3360
65°	4115	3510	2975
70°	3389	3074	2528
75°	2695	2353	2467
80°	1811	1697	1584
85°	1127	1352	1578



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	587.9	4.7
10°-20°	1613.5	13.0
20°-30°	2233.8	18.0
30°-40°	2381.9	19.2
40°-50°	2173.0	17.5
50°-60°	1702.3	13.7
60°-70°	1109.5	8.9
70°-80°	491.6	4.0
80°-90°	105.5	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°	4435.2	35.8
0°-40°	6817.1	55.0
0°-60°	10692.4	86.2
0°-90°	12399.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12399.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6316	6316	6316	6316	6316	
5°	6206	6199	6199	6192	6192	589
15°	5805	5805	5746	5688	5666	1632
25°	5031	5002	4921	4746	4615	2310
35°	4082	4052	3855	3563	3476	2552
45°	3132	3067	2804	2570	2468	2413
55°	2176	2110	1913	1687	1599	1952
65°	1292	1219	1102	1124	935	1274
75°	518	482	453	431	475	556
85°	73	80	88	95	102	101
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6315.9	6315.9	6315.9	6315.9	6315.9
2.5°	6272.1	6272.1	6272.1	6264.8	6264.8
5°	6206.4	6199.1	6199.1	6191.8	6191.8
7.5°	6155.2	6147.9	6140.6	6133.3	6118.7
10°	6082.2	6082.2	6074.9	6038.4	6031.1
12.5°	5965.4	5958.1	5928.9	5877.8	5863.2
15°	5804.8	5804.8	5746.4	5687.9	5666.0
17.5°	5629.5	5622.2	5549.2	5490.8	5461.6
20°	5439.7	5425.1	5352.1	5257.2	5206.0
22.5°	5227.9	5227.9	5140.3	5016.2	4965.1
25°	5030.8	5001.6	4921.3	4746.0	4614.6
27.5°	4804.5	4760.6	4673.0	4424.8	4271.4
30°	4556.2	4534.3	4410.2	4088.9	3972.1
32.5°	4322.5	4286.0	4154.6	3818.7	3723.8
35°	4081.6	4052.4	3855.2	3563.2	3475.6
37.5°	3840.6	3804.1	3555.9	3322.2	3212.7
40°	3599.7	3555.9	3285.7	3074.0	2957.1
42.5°	3373.3	3314.9	3052.1	2825.7	2694.3
45°	3132.4	3066.7	2803.8	2570.2	2467.9
47.5°	2891.4	2833.0	2592.1	2351.1	2234.3
50°	2635.9	2584.8	2365.7	2124.8	2000.6
52.5°	2424.1	2343.8	2132.1	1891.1	1788.9
55°	2175.9	2110.2	1913.0	1686.7	1599.1
57.5°	1949.5	1883.8	1701.3	1489.5	1416.5
60°	1737.8	1642.9	1489.5	1307.0	1248.6
62.5°	1504.1	1431.1	1299.7	1146.4	1219.4
65°	1292.4	1219.4	1102.5	1124.4	934.6
67.5°	1058.7	1022.2	920.0	817.8	788.6
70°	861.6	817.8	781.3	671.7	642.5
72.5°	686.4	642.5	591.4	533.0	511.1
75°	518.4	481.9	452.7	430.8	474.6
77.5°	357.8	343.2	321.3	299.4	292.1
80°	233.7	226.3	219.0	211.7	204.4
82.5°	138.7	138.7	138.7	138.7	138.7
85°	73.0	80.3	87.6	94.9	102.2
87.5°	43.8	43.8	51.1	58.4	65.7
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)