

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: P547489

Luminaire Tested: **FMR-24-4-LD4-4STD-40-UNV-81-86-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: P547489  
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-40-UNV-81-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

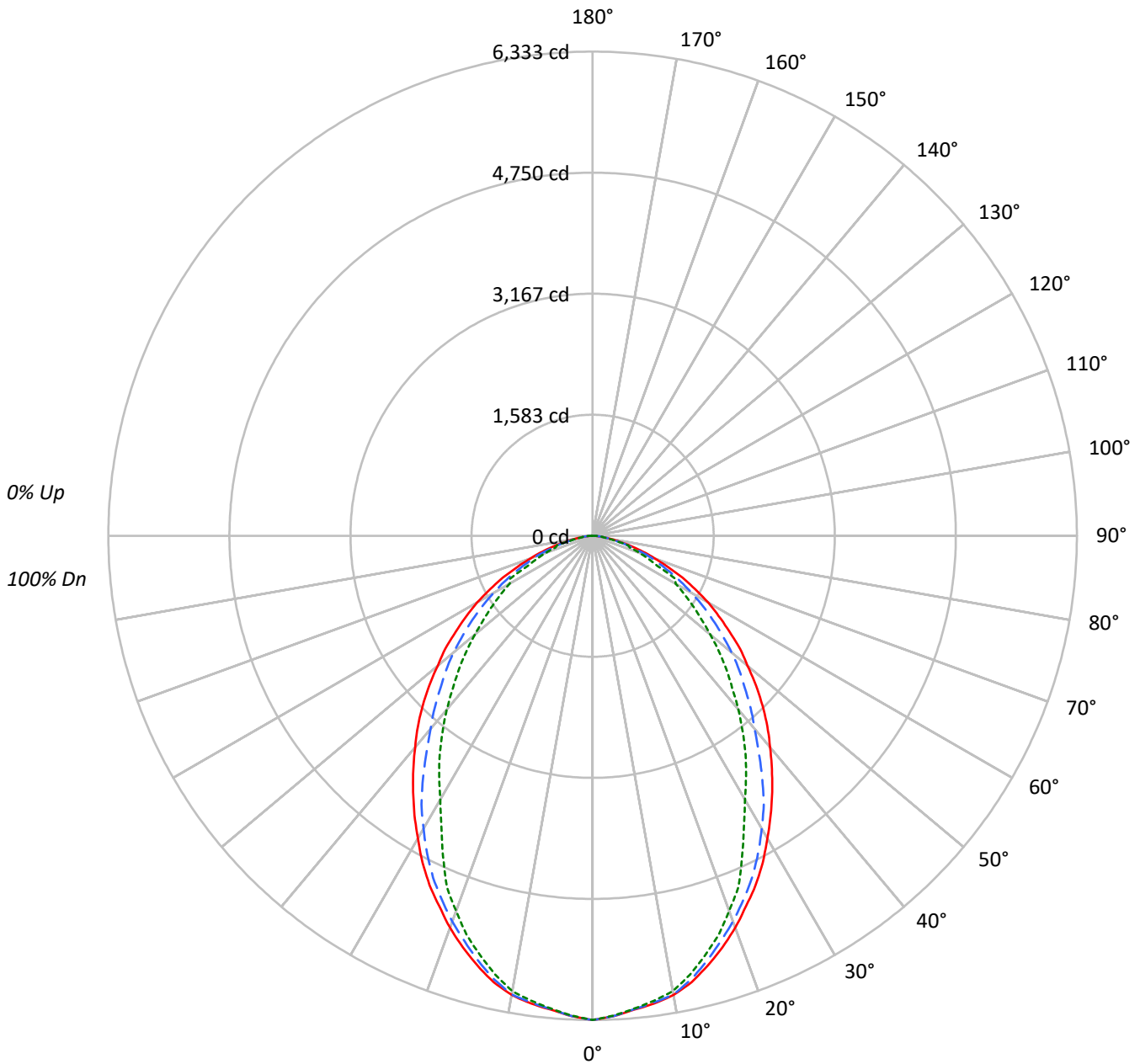
Lumens per Lamp: N/A  
Luminaire Lumens: 12433.0 lumens  
Efficiency: N/A  
Efficacy: 93.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	8521	8521	8521
5°	8406	8396	8386
10°	8333	8323	8263
15°	8108	8026	7914
20°	7810	7684	7475
25°	7489	7326	6870
30°	7098	6871	6188
35°	6723	6350	5724
40°	6340	5787	5208
45°	5977	5350	4709
50°	5533	4966	4199
55°	5118	4500	3761
60°	4689	4019	3369
65°	4126	3520	2984
70°	3399	3082	2535
75°	2702	2360	2474
80°	1815	1702	1588
85°	1130	1357	1582



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	589.5	4.7
10°-20°	1617.9	13.0
20°-30°	2239.9	18.0
30°-40°	2388.4	19.2
40°-50°	2178.9	17.5
50°-60°	1707.0	13.7
60°-70°	1112.5	8.9
70°-80°	492.9	4.0
80°-90°	105.8	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°	4447.4	35.8
0°-40°	6835.8	55.0
0°-60°	10721.7	86.2
0°-90°	12433.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12433.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6333	6333	6333	6333	6333	
5°	6223	6216	6216	6209	6209	591
15°	5821	5821	5762	5704	5682	1636
25°	5045	5015	4935	4759	4627	2316
35°	4093	4064	3866	3573	3485	2559
45°	3141	3075	2812	2577	2475	2419
55°	2182	2116	1918	1691	1603	1957
65°	1296	1223	1106	1128	937	1277
75°	520	483	454	432	476	557
85°	73	80	88	95	102	102
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6333.2	6333.2	6333.2	6333.2	6333.2
2.5°	6289.3	6289.3	6289.3	6282.0	6282.0
5°	6223.4	6216.1	6216.1	6208.7	6208.7
7.5°	6172.1	6164.8	6157.5	6150.2	6135.5
10°	6098.9	6098.9	6091.6	6055.0	6047.7
12.5°	5981.8	5974.4	5945.2	5893.9	5879.3
15°	5820.7	5820.7	5762.1	5703.5	5681.6
17.5°	5645.0	5637.6	5564.4	5505.9	5476.6
20°	5454.6	5440.0	5366.7	5271.6	5220.3
22.5°	5242.3	5242.3	5154.4	5030.0	4978.7
25°	5044.6	5015.3	4934.8	4759.1	4627.3
27.5°	4817.6	4773.7	4685.8	4436.9	4283.1
30°	4568.7	4546.7	4422.3	4100.1	3983.0
32.5°	4334.4	4297.8	4166.0	3829.2	3734.0
35°	4092.8	4063.5	3865.8	3573.0	3485.1
37.5°	3851.2	3814.6	3565.6	3331.3	3221.5
40°	3609.6	3565.6	3294.7	3082.4	2965.3
42.5°	3382.6	3324.0	3060.4	2833.5	2701.7
45°	3141.0	3075.1	2811.5	2577.2	2474.7
47.5°	2899.4	2840.8	2599.2	2357.6	2240.4
50°	2643.1	2591.9	2372.2	2130.6	2006.1
52.5°	2430.8	2350.2	2137.9	1896.3	1793.8
55°	2181.8	2115.9	1918.3	1691.3	1603.4
57.5°	1954.9	1889.0	1705.9	1493.6	1420.4
60°	1742.5	1647.4	1493.6	1310.6	1252.0
62.5°	1508.3	1435.0	1303.2	1149.5	1222.7
65°	1295.9	1222.7	1105.6	1127.5	937.2
67.5°	1061.6	1025.0	922.5	820.0	790.7
70°	864.0	820.0	783.4	673.6	644.3
72.5°	688.2	644.3	593.1	534.5	512.5
75°	519.8	483.2	453.9	432.0	475.9
77.5°	358.8	344.1	322.2	300.2	292.9
80°	234.3	227.0	219.6	212.3	205.0
82.5°	139.1	139.1	139.1	139.1	139.1
85°	73.2	80.5	87.9	95.2	102.5
87.5°	43.9	43.9	51.3	58.6	65.9
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)