

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: P547231

Luminaire Tested: **FMR-24-4-LD4-3STD-50-UNV-81-84-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: P547231  
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-50-UNV-81-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

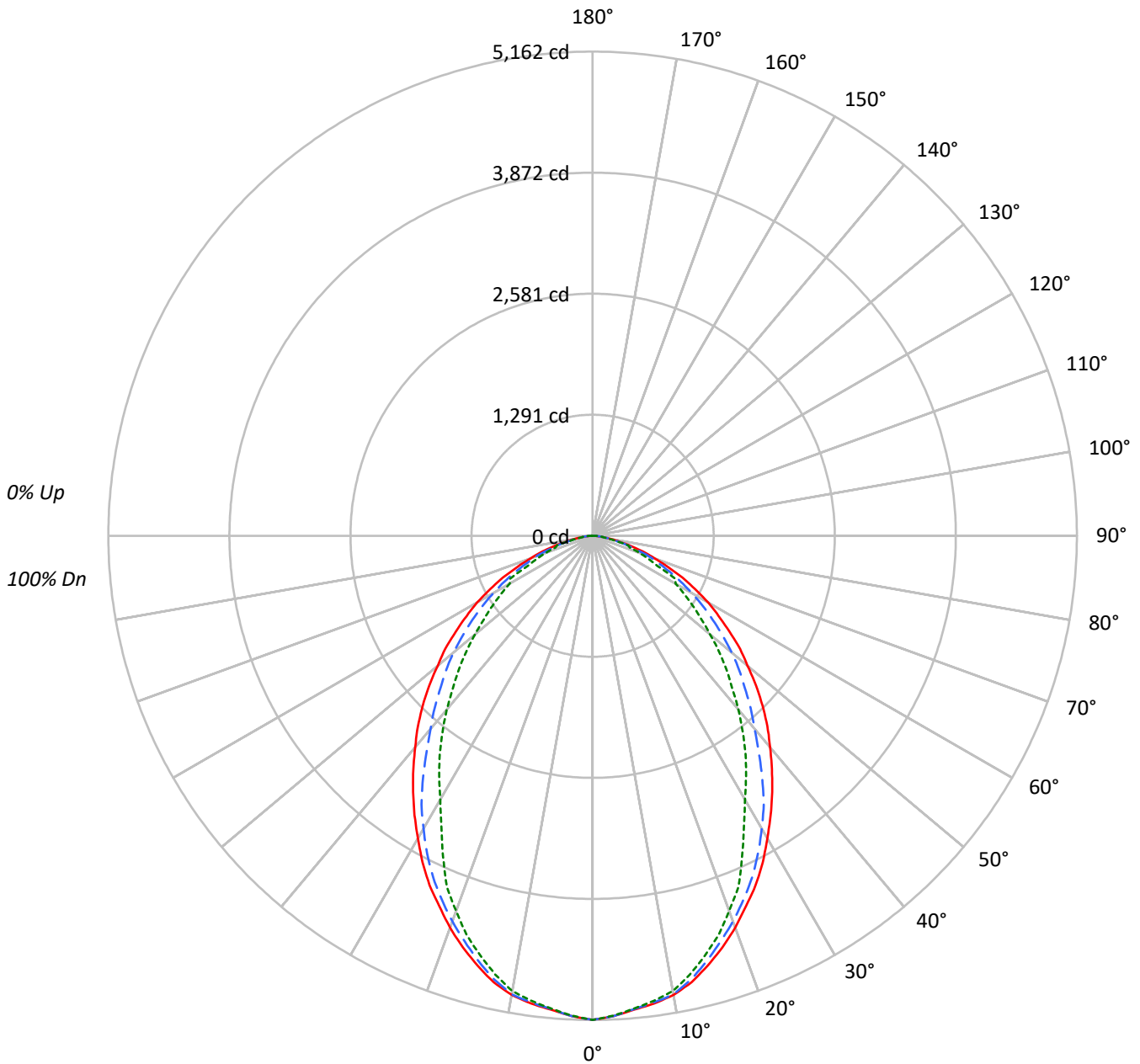
Lumens per Lamp: N/A  
Luminaire Lumens: 10133.0 lumens  
Efficiency: N/A  
Efficacy: 101.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
Input Voltage (V): NR  
Input Current (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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CATALOG NUMBER: FMR-24-4-LD4-3STD-50-UNV-81-84-EDD

### 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°	6945	6945	6945
5°	6851	6842	6834
10°	6791	6783	6734
15°	6608	6542	6450
20°	6365	6263	6092
25°	6104	5971	5599
30°	5785	5600	5043
35°	5479	5175	4665
40°	5167	4716	4245
45°	4871	4360	3838
50°	4509	4047	3422
55°	4171	3667	3065
60°	3822	3276	2746
65°	3363	2869	2432
70°	2770	2512	2066
75°	2203	1923	2017
80°	1479	1387	1295
85°	922	1105	1289



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	480.5	4.7
10°-20°	1318.6	13.0
20°-30°	1825.6	18.0
30°-40°	1946.6	19.2
40°-50°	1775.8	17.5
50°-60°	1391.2	13.7
60°-70°	906.7	8.9
70°-80°	401.7	4.0
80°-90°	86.3	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°	3624.7	35.8
0°-40°	5571.2	55.0
0°-60°	8738.3	86.2
0°-90°	10133.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10133.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5162	5162	5162	5162	5162	
5°	5072	5066	5066	5060	5060	481
15°	4744	4744	4696	4648	4630	1334
25°	4111	4088	4022	3879	3771	1888
35°	3336	3312	3151	2912	2840	2085
45°	2560	2506	2291	2100	2017	1972
55°	1778	1724	1563	1378	1307	1595
65°	1056	996	901	919	764	1041
75°	424	394	370	352	388	454
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°	5161.6	5161.6	5161.6	5161.6	5161.6
2.5°	5125.8	5125.8	5125.8	5119.8	5119.8
5°	5072.1	5066.1	5066.1	5060.2	5060.2
7.5°	5030.3	5024.4	5018.4	5012.4	5000.5
10°	4970.7	4970.7	4964.7	4934.9	4928.9
12.5°	4875.2	4869.2	4845.4	4803.6	4791.6
15°	4743.9	4743.9	4696.2	4648.4	4630.5
17.5°	4600.7	4594.7	4535.1	4487.3	4463.5
20°	4445.6	4433.6	4373.9	4296.4	4254.6
22.5°	4272.5	4272.5	4200.9	4099.5	4057.7
25°	4111.4	4087.5	4021.9	3878.7	3771.3
27.5°	3926.4	3890.6	3819.0	3616.1	3490.8
30°	3723.5	3705.6	3604.2	3341.6	3246.1
32.5°	3532.6	3502.7	3395.3	3120.8	3043.3
35°	3335.7	3311.8	3150.7	2912.0	2840.4
37.5°	3138.7	3108.9	2906.0	2715.1	2625.6
40°	2941.8	2906.0	2685.2	2512.2	2416.7
42.5°	2756.8	2709.1	2494.3	2309.3	2201.9
45°	2559.9	2506.2	2291.4	2100.4	2016.9
47.5°	2363.0	2315.3	2118.4	1921.4	1826.0
50°	2154.2	2112.4	1933.4	1736.5	1635.0
52.5°	1981.1	1915.5	1742.4	1545.5	1462.0
55°	1778.2	1724.5	1563.4	1378.4	1306.8
57.5°	1593.2	1539.5	1390.4	1217.3	1157.6
60°	1420.2	1342.6	1217.3	1068.1	1020.4
62.5°	1229.2	1169.6	1062.2	936.8	996.5
65°	1056.2	996.5	901.0	918.9	763.8
67.5°	865.2	835.4	751.9	668.3	644.5
70°	704.1	668.3	638.5	549.0	525.1
72.5°	560.9	525.1	483.3	435.6	417.7
75°	423.7	393.8	370.0	352.1	387.9
77.5°	292.4	280.5	262.6	244.7	238.7
80°	190.9	185.0	179.0	173.0	167.1
82.5°	113.4	113.4	113.4	113.4	113.4
85°	59.7	65.6	71.6	77.6	83.5
87.5°	35.8	35.8	41.8	47.7	53.7
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)