

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: P547533

Luminaire Tested: **FMR-24-4-LD4-4STD-50-UNV-82-96-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: P547533  
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-50-UNV-82-96-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

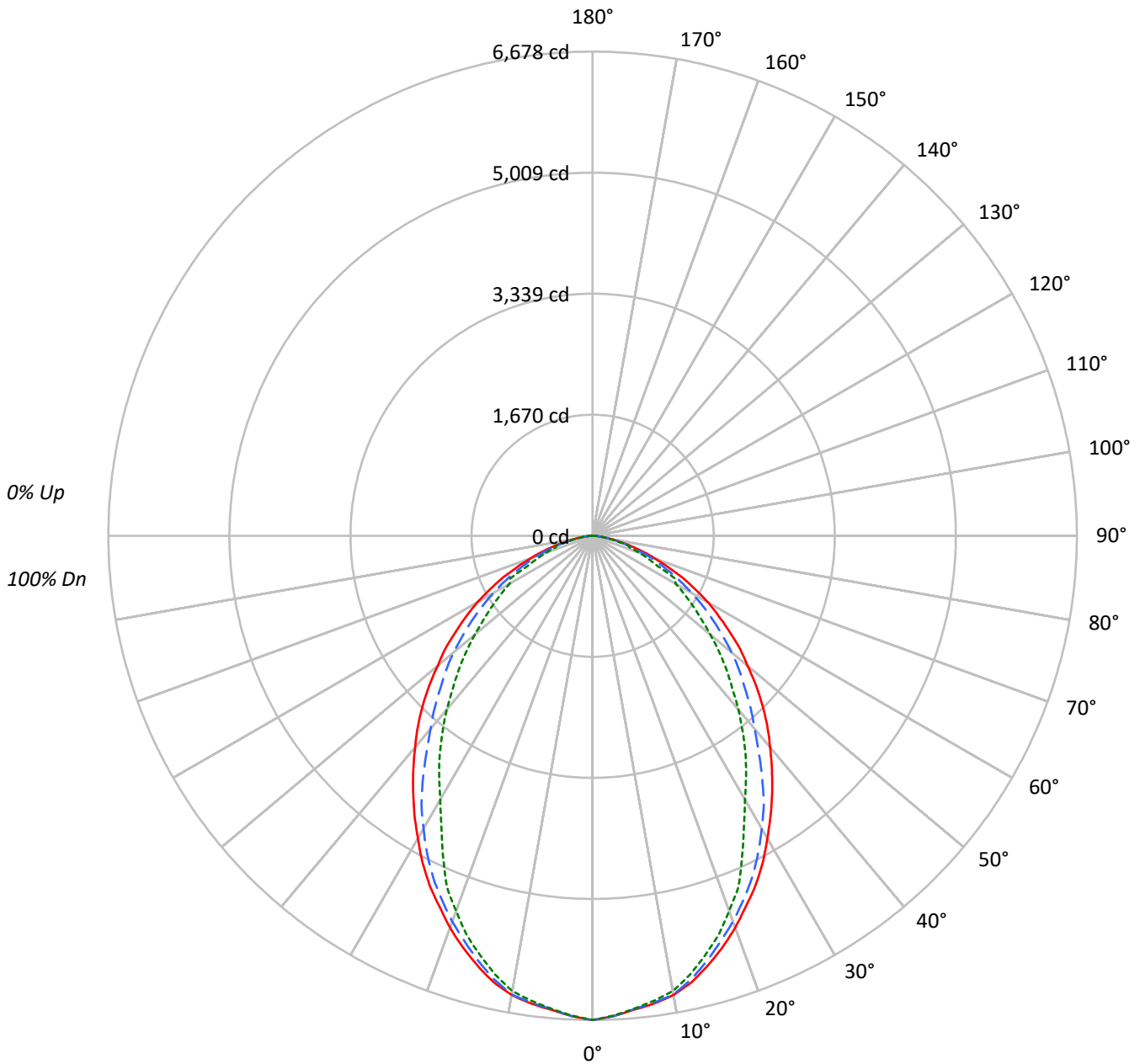
Lumens per Lamp: N/A  
Luminaire Lumens: 13110.0 lumens  
Efficiency: N/A  
Efficacy: 98.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	8985	8985	8985
5°	8863	8853	8842
10°	8786	8776	8713
15°	8549	8463	8345
20°	8235	8103	7882
25°	7897	7725	7244
30°	7485	7245	6525
35°	7089	6695	6036
40°	6685	6102	5492
45°	6302	5641	4965
50°	5834	5236	4428
55°	5397	4745	3966
60°	4944	4238	3553
65°	4351	3712	3146
70°	3584	3250	2673
75°	2849	2489	2609
80°	1914	1795	1675
85°	1192	1430	1669



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	621.6	4.7
10°-20°	1706.0	13.0
20°-30°	2361.9	18.0
30°-40°	2518.5	19.2
40°-50°	2297.6	17.5
50°-60°	1800.0	13.7
60°-70°	1173.1	8.9
70°-80°	519.7	4.0
80°-90°	111.6	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°	4689.6	35.8
0°-40°	7208.0	55.0
0°-60°	11305.5	86.2
0°-90°	13110.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13110.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6678	6678	6678	6678	6678	
5°	6562	6554	6554	6547	6547	623
15°	6138	6138	6076	6014	5991	1725
25°	5319	5288	5204	5018	4879	2442
35°	4316	4285	4076	3768	3675	2698
45°	3312	3242	2965	2718	2610	2551
55°	2301	2231	2023	1783	1691	2063
65°	1366	1289	1166	1189	988	1347
75°	548	510	479	456	502	587
85°	77	85	93	100	108	107
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6678.1	6678.1	6678.1	6678.1	6678.1
2.5°	6631.7	6631.7	6631.7	6624.0	6624.0
5°	6562.3	6554.5	6554.5	6546.8	6546.8
7.5°	6508.2	6500.5	6492.8	6485.1	6469.6
10°	6431.0	6431.0	6423.3	6384.7	6377.0
12.5°	6307.5	6299.8	6268.9	6214.8	6199.4
15°	6137.6	6137.6	6075.9	6014.1	5991.0
17.5°	5952.4	5944.6	5867.4	5805.7	5774.8
20°	5751.6	5736.2	5659.0	5558.6	5504.6
22.5°	5527.7	5527.7	5435.1	5303.8	5249.8
25°	5319.3	5288.4	5203.5	5018.2	4879.2
27.5°	5080.0	5033.6	4941.0	4678.5	4516.4
30°	4817.5	4794.3	4663.1	4323.4	4199.8
32.5°	4570.4	4531.8	4392.9	4037.7	3937.4
35°	4315.6	4284.8	4076.3	3767.5	3674.9
37.5°	4060.9	4022.3	3759.8	3512.7	3396.9
40°	3806.1	3759.8	3474.1	3250.2	3126.7
42.5°	3566.8	3505.0	3227.1	2987.8	2848.8
45°	3312.0	3242.5	2964.6	2717.5	2609.5
47.5°	3057.2	2995.5	2740.7	2485.9	2362.4
50°	2787.0	2733.0	2501.4	2246.6	2115.4
52.5°	2563.1	2478.2	2254.3	1999.6	1891.5
55°	2300.6	2231.2	2022.7	1783.4	1690.7
57.5°	2061.3	1991.8	1798.8	1574.9	1497.7
60°	1837.4	1737.1	1574.9	1381.9	1320.2
62.5°	1590.4	1513.2	1374.2	1212.1	1289.3
65°	1366.5	1289.3	1165.8	1188.9	988.2
67.5°	1119.4	1080.8	972.8	864.7	833.8
70°	911.0	864.7	826.1	710.3	679.4
72.5°	725.7	679.4	625.3	563.6	540.4
75°	548.1	509.5	478.7	455.5	501.8
77.5°	378.3	362.9	339.7	316.5	308.8
80°	247.0	239.3	231.6	223.9	216.2
82.5°	146.7	146.7	146.7	146.7	146.7
85°	77.2	84.9	92.6	100.4	108.1
87.5°	46.3	46.3	54.0	61.8	69.5
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)