

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: P547429

Luminaire Tested: **FMR-24-4-LD4-4LO-50-UNV-81-96-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: P547429  
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-81-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 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**

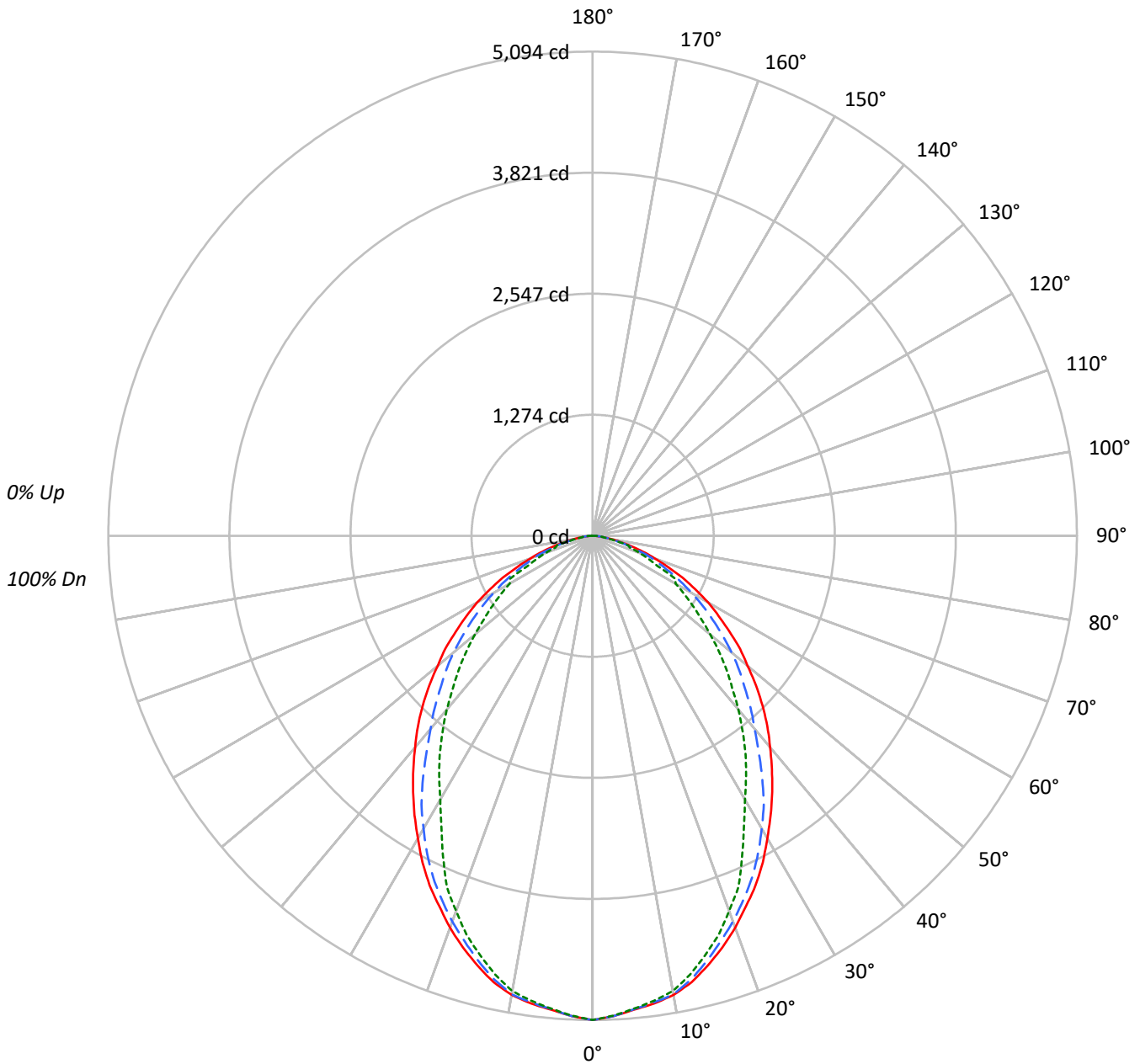
Lumens per Lamp: N/A  
Luminaire Lumens: 10000.0 lumens  
Efficiency: N/A  
Efficacy: 106.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
Input Voltage (V): NR  
Input Current (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°	6854	6854	6854
5°	6761	6753	6745
10°	6702	6694	6646
15°	6521	6456	6366
20°	6282	6181	6012
25°	6024	5892	5525
30°	5709	5526	4977
35°	5407	5107	4604
40°	5099	4654	4189
45°	4807	4303	3787
50°	4450	3994	3377
55°	4117	3619	3025
60°	3771	3233	2710
65°	3318	2831	2400
70°	2734	2479	2039
75°	2174	1898	1990
80°	1460	1369	1278
85°	909	1091	1272



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	474.2	4.7
10°-20°	1301.3	13.0
20°-30°	1801.6	18.0
30°-40°	1921.0	19.2
40°-50°	1752.5	17.5
50°-60°	1373.0	13.7
60°-70°	894.8	8.9
70°-80°	396.5	4.0
80°-90°	85.1	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°	3577.1	35.8
0°-40°	5498.1	55.0
0°-60°	8623.6	86.2
0°-90°	10000.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10000.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5094	5094	5094	5094	5094	
5°	5006	5000	5000	4994	4994	475
15°	4682	4682	4634	4587	4570	1316
25°	4057	4034	3969	3828	3722	1863
35°	3292	3268	3109	2874	2803	2058
45°	2526	2473	2261	2073	1990	1946
55°	1755	1702	1543	1360	1290	1574
65°	1042	983	889	907	754	1027
75°	418	389	365	347	383	448
85°	59	65	71	77	82	82
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5093.9	5093.9	5093.9	5093.9	5093.9
2.5°	5058.5	5058.5	5058.5	5052.6	5052.6
5°	5005.5	4999.6	4999.6	4993.8	4993.8
7.5°	4964.3	4958.4	4952.5	4946.6	4934.9
10°	4905.4	4905.4	4899.5	4870.1	4864.2
12.5°	4811.2	4805.3	4781.8	4740.5	4728.8
15°	4681.6	4681.6	4634.5	4587.4	4569.8
17.5°	4540.3	4534.4	4475.5	4428.4	4404.9
20°	4387.2	4375.4	4316.5	4240.0	4198.8
22.5°	4216.4	4216.4	4145.8	4045.6	4004.4
25°	4057.4	4033.9	3969.1	3827.8	3721.8
27.5°	3874.9	3839.5	3768.9	3568.7	3445.0
30°	3674.7	3657.0	3556.9	3297.8	3203.5
32.5°	3486.2	3456.8	3350.8	3079.9	3003.3
35°	3291.9	3268.3	3109.3	2873.8	2803.1
37.5°	3097.5	3068.1	2867.9	2679.4	2591.1
40°	2903.2	2867.9	2650.0	2479.2	2385.0
42.5°	2720.7	2673.5	2461.5	2279.0	2173.0
45°	2526.3	2473.3	2261.3	2072.9	1990.4
47.5°	2332.0	2284.9	2090.5	1896.2	1802.0
50°	2125.9	2084.7	1908.0	1713.7	1613.5
52.5°	1955.1	1890.3	1719.5	1525.2	1442.8
55°	1754.9	1701.9	1542.9	1360.3	1289.7
57.5°	1572.3	1519.3	1372.1	1201.3	1142.4
60°	1401.5	1325.0	1201.3	1054.1	1007.0
62.5°	1213.1	1154.2	1048.2	924.6	983.4
65°	1042.3	983.4	889.2	906.9	753.8
67.5°	853.9	824.4	742.0	659.6	636.0
70°	694.9	659.6	630.1	541.8	518.2
72.5°	553.6	518.2	477.0	429.9	412.2
75°	418.1	388.7	365.1	347.4	382.8
77.5°	288.6	276.8	259.1	241.4	235.6
80°	188.4	182.6	176.7	170.8	164.9
82.5°	111.9	111.9	111.9	111.9	111.9
85°	58.9	64.8	70.7	76.6	82.4
87.5°	35.3	35.3	41.2	47.1	53.0
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)