

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: P547200

Luminaire Tested: **FMR-24-4-LD4-3STD-40-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: P547200  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

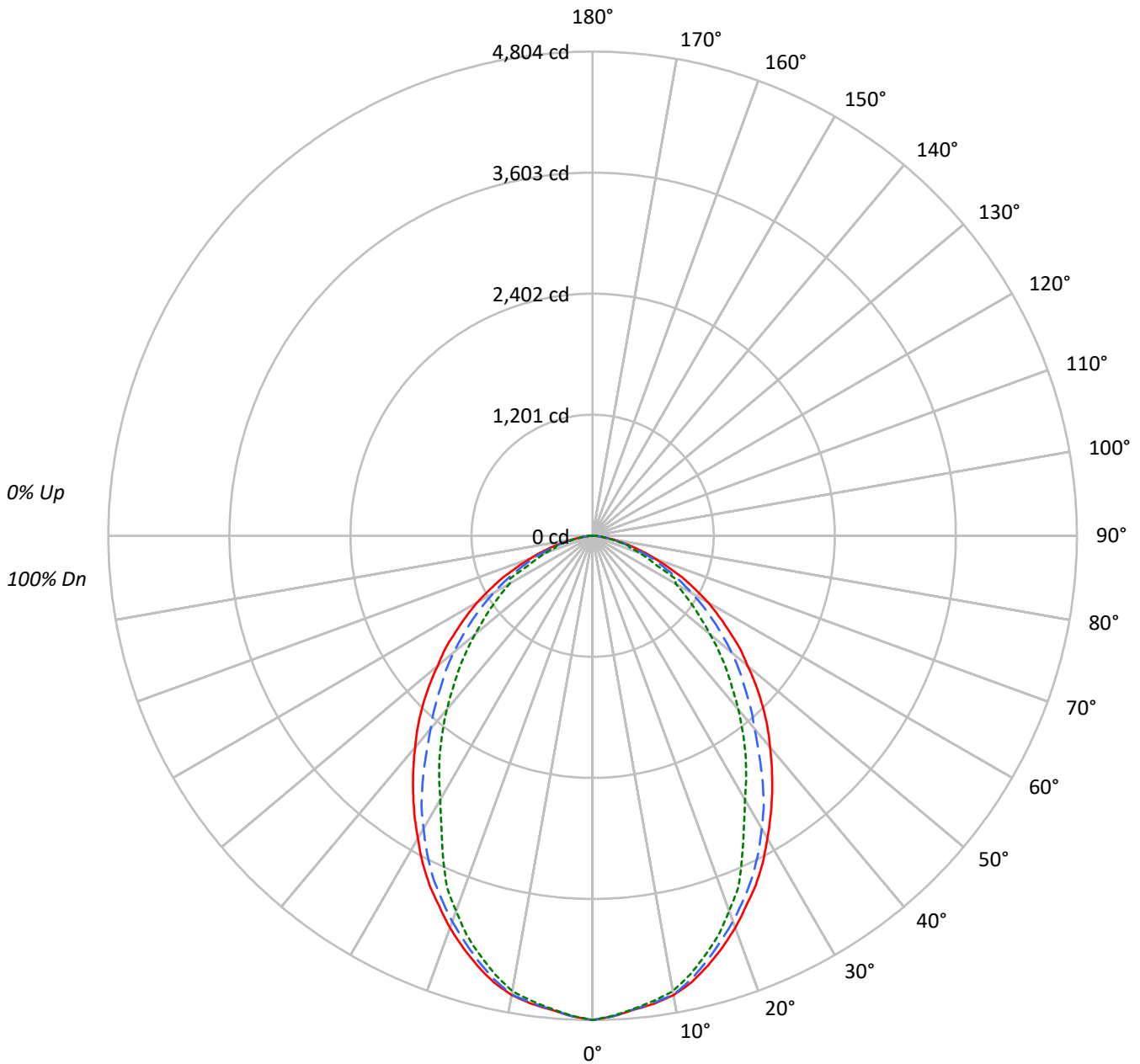
Lumens per Lamp: N/A  
Luminaire Lumens: 9432.0 lumens  
Efficiency: N/A  
Efficacy: 94.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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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### 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°	6464	6464	6464
5°	6377	6369	6362
10°	6321	6314	6268
15°	6151	6089	6004
20°	5925	5830	5671
25°	5682	5558	5211
30°	5385	5212	4694
35°	5100	4817	4343
40°	4810	4390	3951
45°	4534	4059	3572
50°	4197	3767	3186
55°	3883	3414	2853
60°	3557	3049	2556
65°	3130	2670	2264
70°	2578	2338	1923
75°	2050	1790	1877
80°	1377	1291	1205
85°	857	1030	1201



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	447.2	4.7
10°-20°	1227.4	13.0
20°-30°	1699.3	18.0
30°-40°	1811.9	19.2
40°-50°	1653.0	17.5
50°-60°	1295.0	13.7
60°-70°	844.0	8.9
70°-80°	373.9	4.0
80°-90°	80.3	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°	3373.9	35.8
0°-40°	5185.8	55.0
0°-60°	8133.8	86.2
0°-90°	9432.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9432.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4804	4804	4804	4804	4804	
5°	4721	4716	4716	4710	4710	448
15°	4416	4416	4371	4327	4310	1241
25°	3827	3805	3744	3610	3510	1757
35°	3105	3083	2933	2710	2644	1941
45°	2383	2333	2133	1955	1877	1835
55°	1655	1605	1455	1283	1216	1485
65°	983	928	839	855	711	969
75°	394	367	344	328	361	423
85°	56	61	67	72	78	77
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4804.5	4804.5	4804.5	4804.5	4804.5
2.5°	4771.2	4771.2	4771.2	4765.7	4765.7
5°	4721.2	4715.7	4715.7	4710.1	4710.1
7.5°	4682.3	4676.8	4671.2	4665.7	4654.6
10°	4626.8	4626.8	4621.2	4593.5	4587.9
12.5°	4537.9	4532.4	4510.2	4471.3	4460.2
15°	4415.7	4415.7	4371.3	4326.9	4310.2
17.5°	4282.4	4276.9	4221.3	4176.9	4154.7
20°	4138.0	4126.9	4071.4	3999.2	3960.3
22.5°	3976.9	3976.9	3910.3	3815.9	3777.0
25°	3827.0	3804.7	3743.6	3610.3	3510.4
27.5°	3654.8	3621.5	3554.8	3366.0	3249.3
30°	3465.9	3449.3	3354.8	3110.5	3021.6
32.5°	3288.2	3260.4	3160.4	2904.9	2832.7
35°	3104.9	3082.7	2932.7	2710.5	2643.9
37.5°	2921.6	2893.8	2705.0	2527.2	2443.9
40°	2738.3	2705.0	2499.5	2338.4	2249.5
42.5°	2566.1	2521.7	2321.7	2149.5	2049.6
45°	2382.8	2332.8	2132.9	1955.1	1877.4
47.5°	2199.5	2155.1	1971.8	1788.5	1699.6
50°	2005.1	1966.2	1799.6	1616.3	1521.9
52.5°	1844.1	1783.0	1621.9	1438.6	1360.8
55°	1655.2	1605.2	1455.2	1283.1	1216.4
57.5°	1483.0	1433.0	1294.2	1133.1	1077.5
60°	1321.9	1249.7	1133.1	994.2	949.8
62.5°	1144.2	1088.7	988.7	872.0	927.6
65°	983.1	927.6	838.7	855.4	711.0
67.5°	805.4	777.6	699.9	622.1	599.9
70°	655.4	622.1	594.3	511.0	488.8
72.5°	522.1	488.8	449.9	405.5	388.8
75°	394.4	366.6	344.4	327.7	361.0
77.5°	272.2	261.1	244.4	227.7	222.2
80°	177.7	172.2	166.6	161.1	155.5
82.5°	105.5	105.5	105.5	105.5	105.5
85°	55.5	61.1	66.7	72.2	77.8
87.5°	33.3	33.3	38.9	44.4	50.0
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)