

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: P547503

Luminaire Tested: **FMR-24-4-LD4-4STD-40-UNV-93-84-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: P547503  
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-93-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

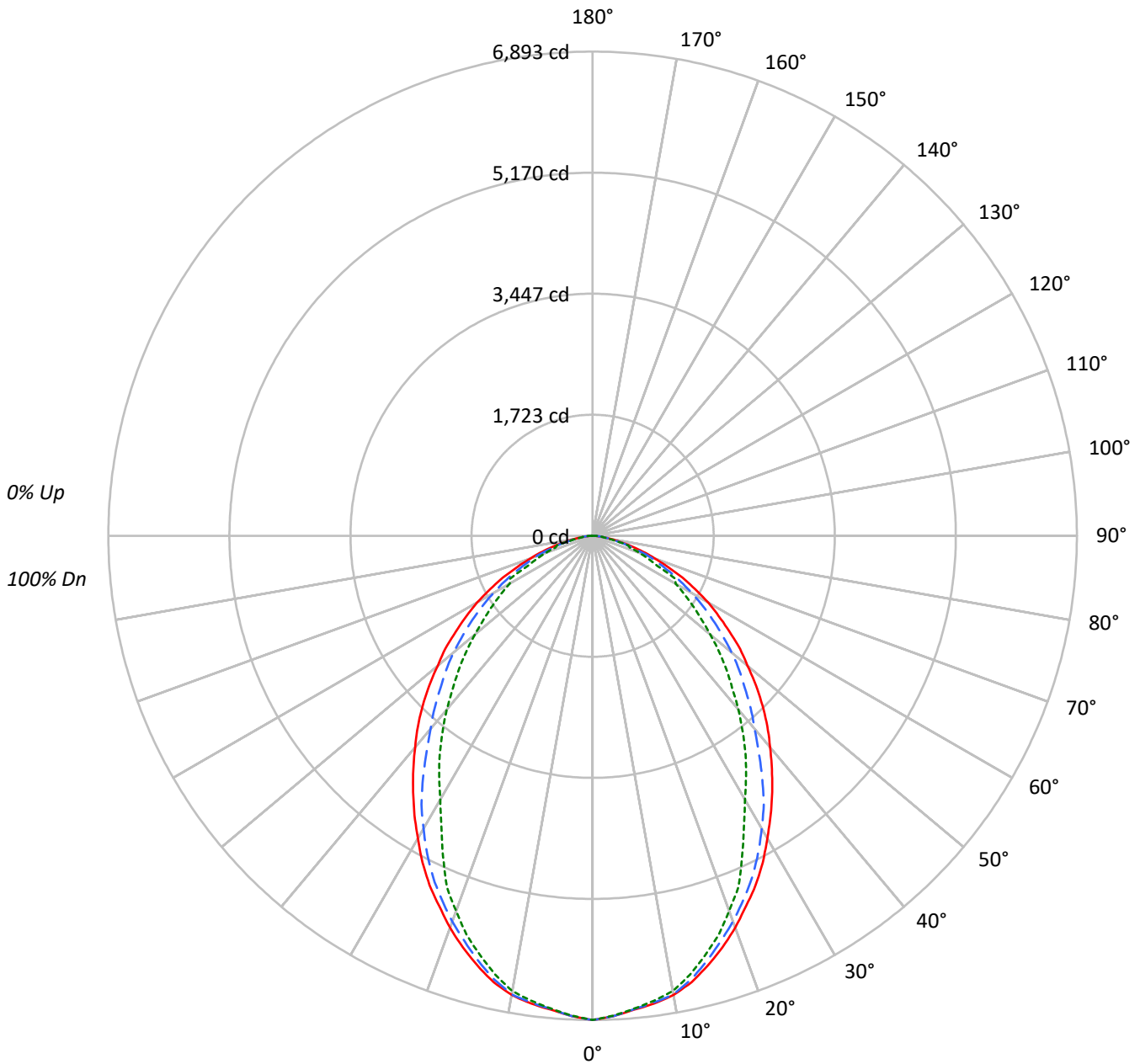
Lumens per Lamp: N/A  
Luminaire Lumens: 13532.0 lumens  
Efficiency: N/A  
Efficacy: 101.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	9274	9274	9274
5°	9148	9138	9127
10°	9069	9058	8993
15°	8825	8736	8614
20°	8501	8364	8135
25°	8151	7974	7477
30°	7725	7478	6735
35°	7317	6911	6230
40°	6900	6298	5669
45°	6505	5823	5125
50°	6022	5404	4571
55°	5571	4898	4094
60°	5104	4374	3667
65°	4491	3831	3247
70°	3699	3354	2759
75°	2941	2569	2693
80°	1976	1853	1729
85°	1230	1476	1723



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	641.6	4.7
10°-20°	1760.9	13.0
20°-30°	2437.9	18.0
30°-40°	2599.5	19.2
40°-50°	2371.5	17.5
50°-60°	1857.9	13.7
60°-70°	1210.9	8.9
70°-80°	536.5	4.0
80°-90°	115.2	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°	4840.5	35.8
0°-40°	7440.0	55.0
0°-60°	11669.5	86.2
0°-90°	13532.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13532.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6893	6893	6893	6893	6893	
5°	6774	6766	6766	6758	6758	643
15°	6335	6335	6272	6208	6184	1781
25°	5490	5459	5371	5180	5036	2521
35°	4455	4423	4208	3889	3793	2785
45°	3419	3347	3060	2805	2694	2633
55°	2375	2303	2088	1841	1745	2130
65°	1410	1331	1203	1227	1020	1390
75°	566	526	494	470	518	606
85°	80	88	96	104	112	111
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6893.0	6893.0	6893.0	6893.0	6893.0
2.5°	6845.2	6845.2	6845.2	6837.2	6837.2
5°	6773.5	6765.5	6765.5	6757.6	6757.6
7.5°	6717.7	6709.7	6701.8	6693.8	6677.9
10°	6638.0	6638.0	6630.0	6590.2	6582.2
12.5°	6510.5	6502.5	6470.7	6414.9	6399.0
15°	6335.2	6335.2	6271.5	6207.7	6183.8
17.5°	6144.0	6136.0	6056.3	5992.5	5960.7
20°	5936.8	5920.8	5841.1	5737.5	5681.8
22.5°	5705.7	5705.7	5610.0	5474.6	5418.8
25°	5490.5	5458.6	5371.0	5179.7	5036.3
27.5°	5243.5	5195.7	5100.0	4829.1	4661.8
30°	4972.5	4948.6	4813.2	4462.5	4335.0
32.5°	4717.5	4677.7	4534.3	4167.7	4064.1
35°	4454.6	4422.7	4207.5	3888.8	3793.2
37.5°	4191.6	4151.7	3880.8	3625.8	3506.3
40°	3928.6	3880.8	3586.0	3354.9	3227.4
42.5°	3681.6	3617.8	3331.0	3083.9	2940.5
45°	3418.6	3346.9	3060.0	2805.0	2693.5
47.5°	3155.6	3091.9	2828.9	2566.0	2438.5
50°	2876.7	2821.0	2581.9	2318.9	2183.5
52.5°	2645.6	2558.0	2326.9	2063.9	1952.4
55°	2374.7	2303.0	2087.8	1840.8	1745.2
57.5°	2127.7	2056.0	1856.7	1625.6	1545.9
60°	1896.6	1793.0	1625.6	1426.4	1362.7
62.5°	1641.6	1561.9	1418.4	1251.1	1330.8
65°	1410.5	1330.8	1203.3	1227.2	1020.0
67.5°	1155.5	1115.6	1004.1	892.5	860.6
70°	940.3	892.5	852.7	733.1	701.3
72.5°	749.1	701.3	645.5	581.7	557.8
75°	565.8	525.9	494.1	470.2	518.0
77.5°	390.5	374.5	350.6	326.7	318.8
80°	255.0	247.0	239.1	231.1	223.1
82.5°	151.4	151.4	151.4	151.4	151.4
85°	79.7	87.7	95.6	103.6	111.6
87.5°	47.8	47.8	55.8	63.8	71.7
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)