

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: P547331

Luminaire Tested: **FMR-24-4-LD4-4HI-50-UNV-81-88-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: P547331  
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-LD4-4HI-50-UNV-81-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

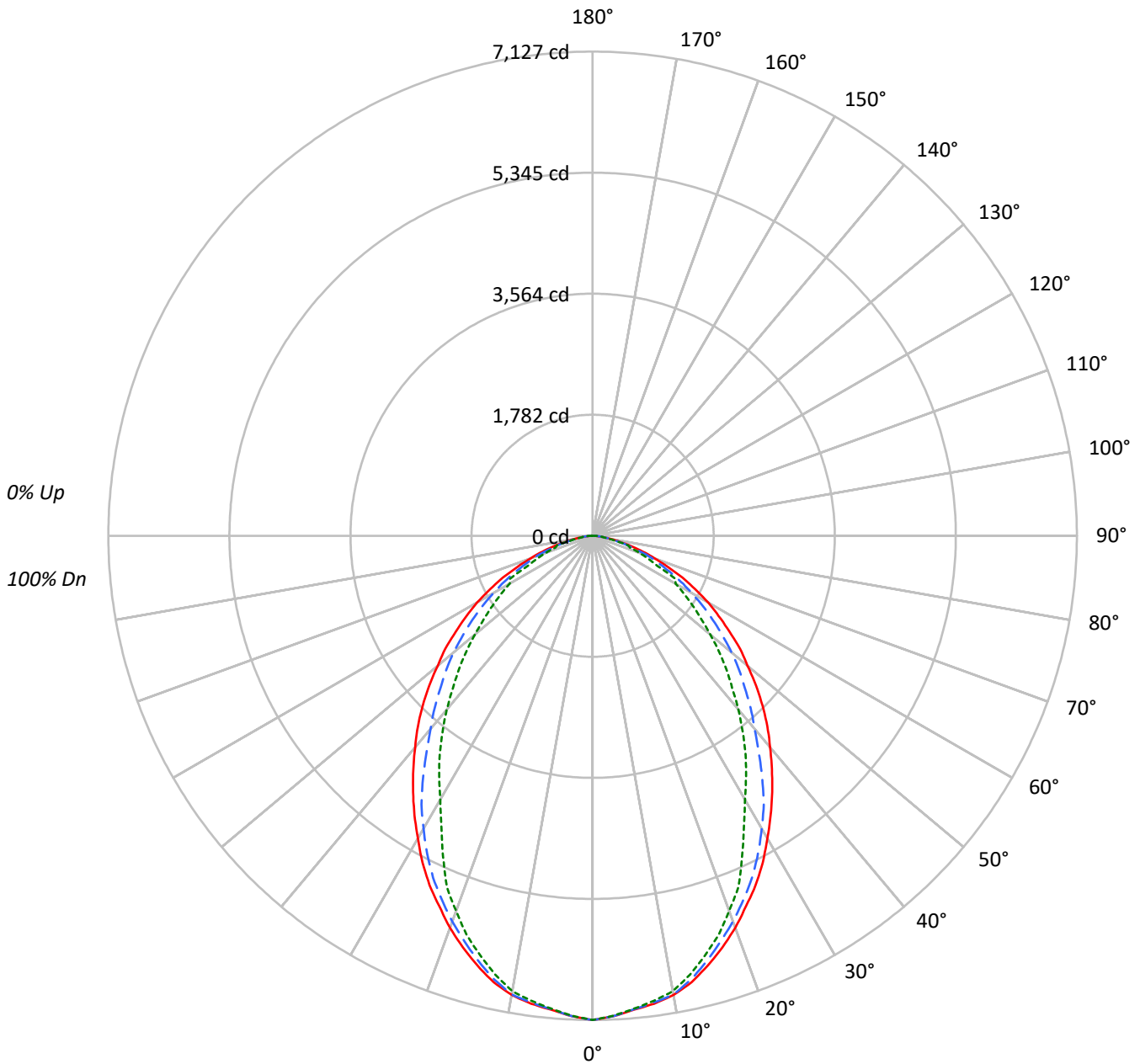
Lumens per Lamp: N/A  
Luminaire Lumens: 13992.0 lumens  
Efficiency: N/A  
Efficacy: 81.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 172.8  
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°	9590	9590	9590
5°	9459	9448	9437
10°	9378	9366	9299
15°	9125	9033	8907
20°	8789	8648	8412
25°	8428	8245	7731
30°	7988	7732	6964
35°	7566	7146	6442
40°	7135	6513	5861
45°	6726	6020	5299
50°	6226	5588	4726
55°	5760	5064	4233
60°	5277	4523	3792
65°	4643	3961	3358
70°	3825	3468	2853
75°	3041	2656	2784
80°	2043	1915	1788
85°	1272	1527	1782



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	663.5	4.7
10°-20°	1820.8	13.0
20°-30°	2520.8	18.0
30°-40°	2687.9	19.2
40°-50°	2452.1	17.5
50°-60°	1921.1	13.7
60°-70°	1252.0	8.9
70°-80°	554.7	4.0
80°-90°	119.1	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°	5005.1	35.8
0°-40°	7693.0	55.0
0°-60°	12066.2	86.2
0°-90°	13992.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13992.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7127	7127	7127	7127	7127	
5°	7004	6996	6996	6987	6987	665
15°	6551	6551	6485	6419	6394	1842
25°	5677	5644	5554	5356	5208	2606
35°	4606	4573	4351	4021	3922	2880
45°	3535	3461	3164	2900	2785	2723
55°	2455	2381	2159	1903	1804	2202
65°	1458	1376	1244	1269	1055	1437
75°	585	544	511	486	536	627
85°	82	91	99	107	115	114
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7127.3	7127.3	7127.3	7127.3	7127.3
2.5°	7077.9	7077.9	7077.9	7069.7	7069.7
5°	7003.7	6995.5	6995.5	6987.3	6987.3
7.5°	6946.1	6937.8	6929.6	6921.3	6904.9
10°	6863.7	6863.7	6855.4	6814.2	6806.0
12.5°	6731.8	6723.6	6690.6	6633.0	6616.5
15°	6550.6	6550.6	6484.6	6418.7	6394.0
17.5°	6352.8	6344.6	6262.2	6196.3	6163.3
20°	6138.6	6122.1	6039.7	5932.6	5874.9
22.5°	5899.6	5899.6	5800.7	5660.7	5603.0
25°	5677.2	5644.2	5553.6	5355.8	5207.5
27.5°	5421.7	5372.3	5273.4	4993.3	4820.2
30°	5141.6	5116.9	4976.8	4614.2	4482.4
32.5°	4877.9	4836.7	4688.4	4309.4	4202.2
35°	4606.0	4573.0	4350.6	4021.0	3922.1
37.5°	4334.1	4292.9	4012.7	3749.1	3625.5
40°	4062.2	4012.7	3707.9	3468.9	3337.1
42.5°	3806.7	3740.8	3444.2	3188.8	3040.4
45°	3534.8	3460.7	3164.0	2900.4	2785.0
47.5°	3262.9	3197.0	2925.1	2653.2	2521.3
50°	2974.5	2916.9	2669.7	2397.8	2257.7
52.5°	2735.6	2644.9	2406.0	2134.1	2018.7
55°	2455.4	2381.3	2158.8	1903.4	1804.5
57.5°	2200.0	2125.8	1919.8	1680.9	1598.5
60°	1961.0	1853.9	1680.9	1474.9	1409.0
62.5°	1697.4	1615.0	1466.7	1293.6	1376.0
65°	1458.4	1376.0	1244.2	1268.9	1054.7
67.5°	1194.8	1153.6	1038.2	922.8	889.9
70°	972.3	922.8	881.6	758.1	725.1
72.5°	774.5	725.1	667.4	601.5	576.8
75°	585.0	543.8	510.9	486.1	535.6
77.5°	403.7	387.3	362.5	337.8	329.6
80°	263.7	255.4	247.2	239.0	230.7
82.5°	156.6	156.6	156.6	156.6	156.6
85°	82.4	90.6	98.9	107.1	115.4
87.5°	49.4	49.4	57.7	65.9	74.2
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)