

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: P547274

Luminaire Tested: **FMR-24-4-LD4-4HI-35-UNV-82-87-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: P547274  
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-35-UNV-82-87-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

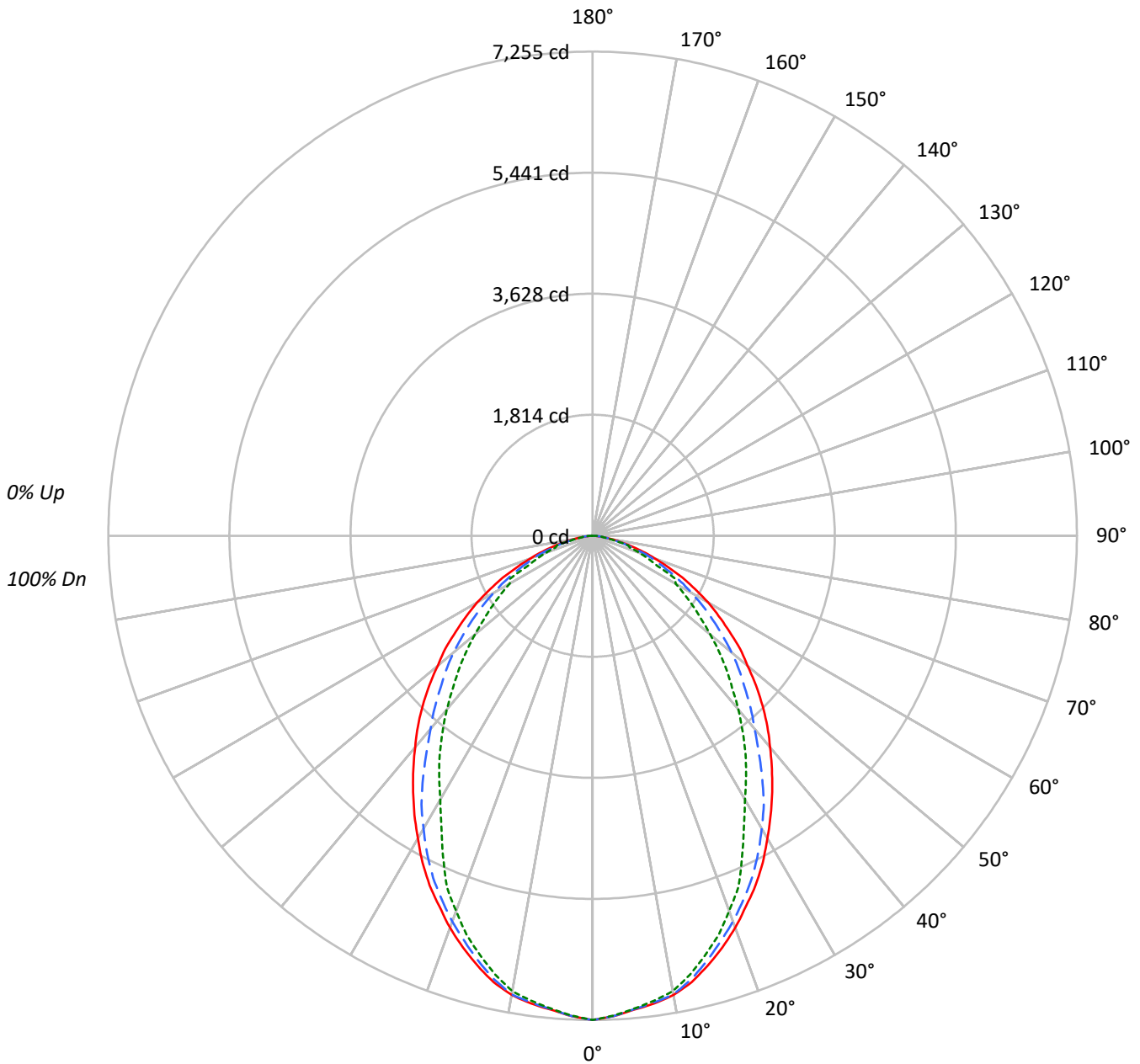
Lumens per Lamp: N/A  
Luminaire Lumens: 14243.1 lumens  
Efficiency: N/A  
Efficacy: 82.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	9762	9762	9762
5°	9629	9618	9606
10°	9546	9534	9465
15°	9288	9195	9066
20°	8947	8803	8563
25°	8579	8393	7870
30°	8131	7871	7089
35°	7701	7274	6558
40°	7263	6629	5966
45°	6847	6129	5394
50°	6338	5689	4811
55°	5863	5155	4309
60°	5372	4605	3860
65°	4727	4032	3418
70°	3893	3531	2904
75°	3096	2703	2834
80°	2080	1949	1820
85°	1295	1555	1812



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	675.4	4.7
10°-20°	1853.5	13.0
20°-30°	2566.0	18.0
30°-40°	2736.1	19.2
40°-50°	2496.1	17.5
50°-60°	1955.5	13.7
60°-70°	1274.5	8.9
70°-80°	564.7	4.0
80°-90°	121.2	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°	5094.8	35.8
0°-40°	7831.0	55.0
0°-60°	12282.6	86.2
0°-90°	14243.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14243.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7255	7255	7255	7255	7255	
5°	7129	7121	7121	7113	7113	677
15°	6668	6668	6601	6534	6509	1875
25°	5779	5745	5653	5452	5301	2653
35°	4689	4655	4429	4093	3992	2931
45°	3598	3523	3221	2952	2835	2772
55°	2500	2424	2198	1938	1837	2242
65°	1485	1401	1266	1292	1074	1463
75°	596	554	520	495	545	638
85°	84	92	101	109	117	116
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7255.2	7255.2	7255.2	7255.2	7255.2
2.5°	7204.9	7204.9	7204.9	7196.5	7196.5
5°	7129.4	7121.0	7121.0	7112.6	7112.6
7.5°	7070.7	7062.3	7053.9	7045.5	7028.7
10°	6986.8	6986.8	6978.4	6936.5	6928.1
12.5°	6852.6	6844.2	6810.7	6751.9	6735.2
15°	6668.1	6668.1	6601.0	6533.9	6508.7
17.5°	6466.8	6458.4	6374.5	6307.4	6273.9
20°	6248.7	6231.9	6148.0	6039.0	5980.3
22.5°	6005.5	6005.5	5904.8	5762.2	5703.5
25°	5779.0	5745.4	5653.2	5451.9	5300.9
27.5°	5519.0	5468.7	5368.0	5082.8	4906.7
30°	5233.8	5208.6	5066.1	4697.0	4562.8
32.5°	4965.4	4923.5	4772.5	4386.7	4277.6
35°	4688.6	4655.1	4428.6	4093.1	3992.5
37.5°	4411.8	4369.9	4084.7	3816.3	3690.5
40°	4135.0	4084.7	3774.4	3531.1	3396.9
42.5°	3875.0	3807.9	3506.0	3246.0	3095.0
45°	3598.2	3522.8	3220.8	2952.4	2835.0
47.5°	3321.5	3254.4	2977.6	2700.8	2566.6
50°	3027.9	2969.2	2717.6	2440.8	2298.2
52.5°	2784.7	2692.4	2449.2	2172.4	2054.9
55°	2499.5	2424.0	2197.5	1937.5	1836.9
57.5°	2239.5	2164.0	1954.3	1711.1	1627.2
60°	1996.2	1887.2	1711.1	1501.4	1434.3
62.5°	1727.8	1644.0	1493.0	1316.8	1400.7
65°	1484.6	1400.7	1266.5	1291.7	1073.6
67.5°	1216.2	1174.3	1056.8	939.4	905.9
70°	989.7	939.4	897.5	771.7	738.1
72.5°	788.4	738.1	679.4	612.3	587.1
75°	595.5	553.6	520.0	494.9	545.2
77.5°	411.0	394.2	369.1	343.9	335.5
80°	268.4	260.0	251.6	243.2	234.9
82.5°	159.4	159.4	159.4	159.4	159.4
85°	83.9	92.3	100.7	109.0	117.4
87.5°	50.3	50.3	58.7	67.1	75.5
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)