

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: P547345

Luminaire Tested: **FMR-24-4-LD4-4HI-50-UNV-93-86-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: P547345  
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-93-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

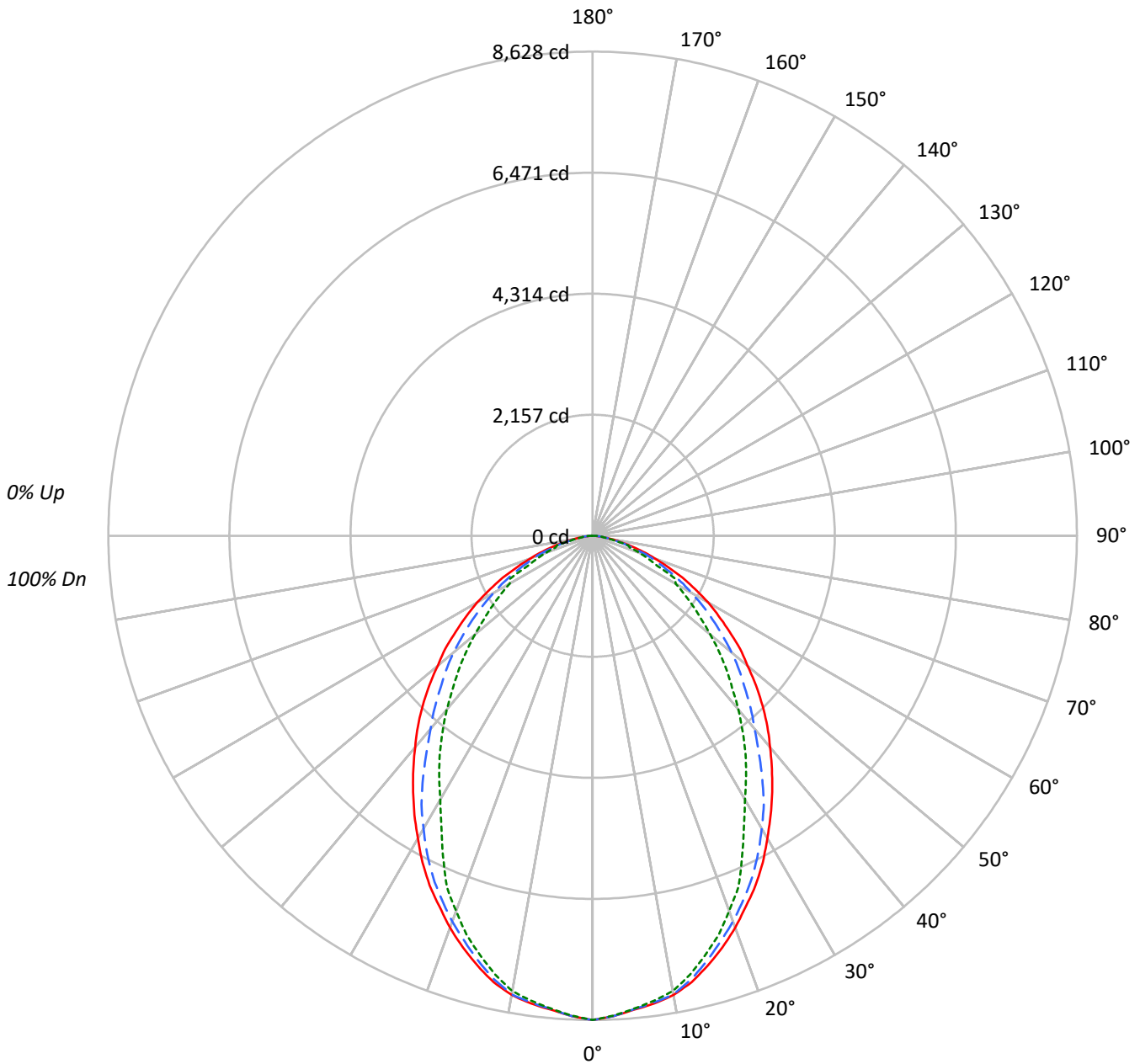
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16938.0 lumens  
Efficiency: N/A  
Efficacy: 98.0 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°	11609	11609	11609
5°	11451	11438	11424
10°	11352	11338	11256
15°	11046	10935	10782
20°	10640	10469	10183
25°	10203	9981	9359
30°	9670	9360	8430
35°	9158	8651	7799
40°	8637	7884	7095
45°	8142	7288	6415
50°	7537	6765	5721
55°	6973	6130	5124
60°	6388	5476	4590
65°	5621	4795	4065
70°	4630	4199	3453
75°	3682	3215	3370
80°	2473	2318	2164
85°	1539	1848	2155



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	803.1	4.7
10°-20°	2204.2	13.0
20°-30°	3051.5	18.0
30°-40°	3253.8	19.2
40°-50°	2968.4	17.5
50°-60°	2325.5	13.7
60°-70°	1515.7	8.9
70°-80°	671.5	4.0
80°-90°	144.2	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°	6058.9	35.8
0°-40°	9312.7	55.0
0°-60°	14606.7	86.2
0°-90°	16938.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16938.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8628	8628	8628	8628	8628	
5°	8478	8468	8468	8458	8458	805
15°	7930	7930	7850	7770	7740	2229
25°	6872	6833	6723	6484	6304	3155
35°	5576	5536	5267	4868	4748	3486
45°	4279	4189	3830	3511	3371	3296
55°	2972	2883	2613	2304	2184	2666
65°	1766	1666	1506	1536	1277	1740
75°	708	658	618	588	648	759
85°	100	110	120	130	140	138
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8628.0	8628.0	8628.0	8628.0	8628.0
2.5°	8568.1	8568.1	8568.1	8558.2	8558.2
5°	8478.4	8468.4	8468.4	8458.4	8458.4
7.5°	8408.6	8398.6	8388.6	8378.6	8358.7
10°	8308.8	8308.8	8298.8	8249.0	8239.0
12.5°	8149.2	8139.2	8099.3	8029.5	8009.6
15°	7929.8	7929.8	7850.0	7770.2	7740.3
17.5°	7690.4	7680.4	7580.7	7500.9	7461.0
20°	7431.0	7411.1	7311.3	7181.7	7111.9
22.5°	7141.8	7141.8	7022.1	6852.5	6782.7
25°	6872.5	6832.6	6722.9	6483.5	6303.9
27.5°	6563.3	6503.4	6383.7	6044.6	5835.1
30°	6224.1	6194.2	6024.6	5585.8	5426.2
32.5°	5904.9	5855.1	5675.5	5216.7	5087.0
35°	5575.8	5535.9	5266.6	4867.6	4747.9
37.5°	5246.6	5196.7	4857.6	4538.4	4388.8
40°	4917.5	4857.6	4488.6	4199.3	4039.7
42.5°	4608.2	4528.4	4169.4	3860.2	3680.6
45°	4279.1	4189.3	3830.2	3511.0	3371.4
47.5°	3949.9	3870.1	3541.0	3211.8	3052.2
50°	3600.8	3531.0	3231.8	2902.6	2733.0
52.5°	3311.6	3201.8	2912.6	2583.4	2443.8
55°	2972.4	2882.6	2613.3	2304.1	2184.4
57.5°	2663.2	2573.4	2324.1	2034.8	1935.1
60°	2373.9	2244.3	2034.8	1785.4	1705.6
62.5°	2054.8	1955.0	1775.5	1566.0	1665.8
65°	1765.5	1665.8	1506.2	1536.1	1276.7
67.5°	1446.3	1396.4	1256.8	1117.2	1077.3
70°	1177.0	1117.2	1067.3	917.7	877.8
72.5°	937.6	877.8	807.9	728.1	698.2
75°	708.2	658.3	618.4	588.5	648.3
77.5°	488.8	468.8	438.9	409.0	399.0
80°	319.2	309.2	299.2	289.3	279.3
82.5°	189.5	189.5	189.5	189.5	189.5
85°	99.7	109.7	119.7	129.7	139.6
87.5°	59.8	59.8	69.8	79.8	89.8
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)