

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: P546767

Luminaire Tested: **FMR-24-4-LD4-2HI-50-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: P546767  
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-LD4-2HI-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

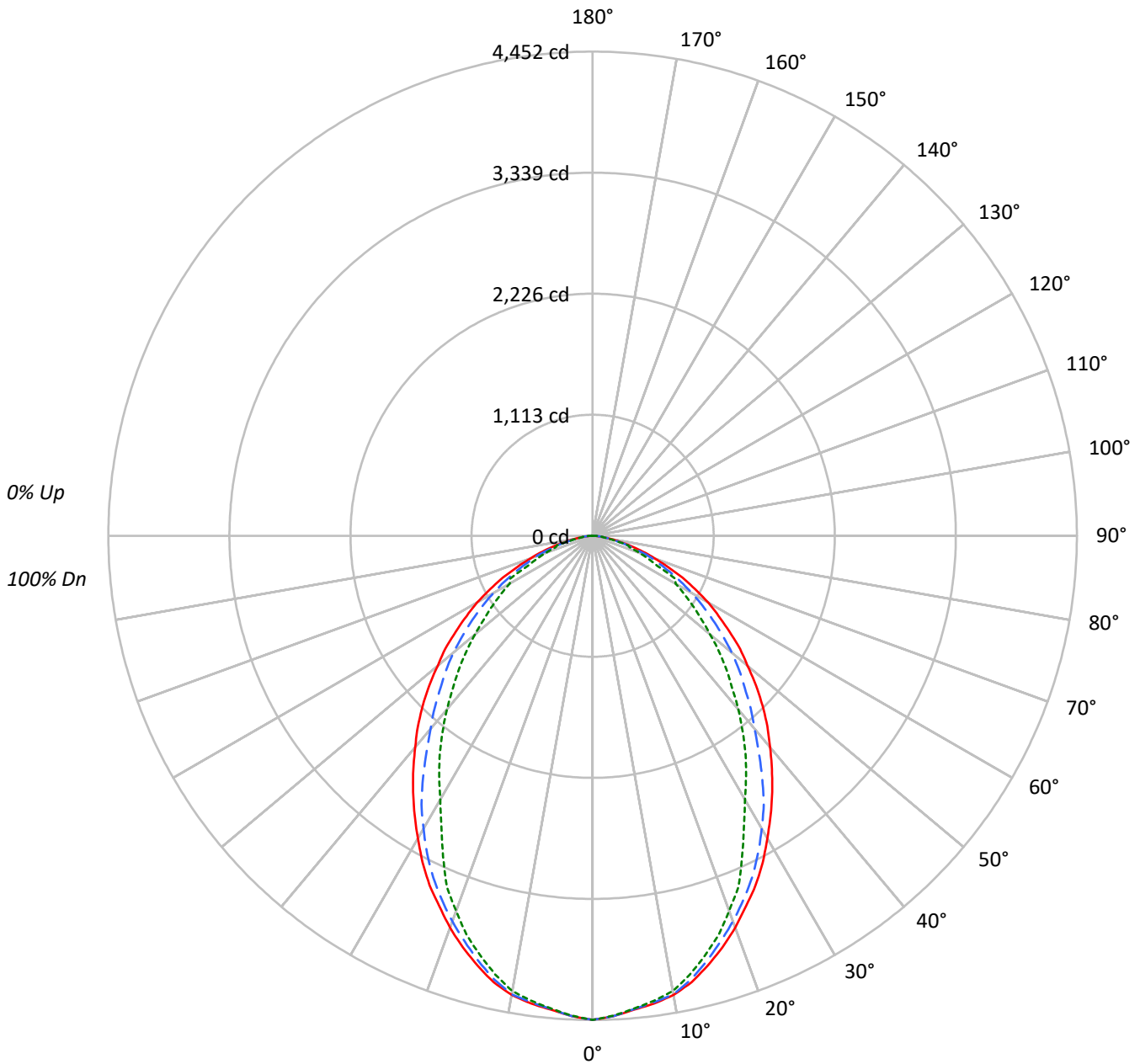
Lumens per Lamp: N/A  
Luminaire Lumens: 8739.0 lumens  
Efficiency: N/A  
Efficacy: 101.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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°	5989	5989	5989
5°	5908	5901	5894
10°	5857	5850	5808
15°	5699	5642	5563
20°	5490	5401	5254
25°	5264	5149	4828
30°	4989	4829	4350
35°	4725	4463	4024
40°	4456	4067	3661
45°	4201	3760	3310
50°	3889	3490	2952
55°	3598	3163	2644
60°	3296	2825	2368
65°	2900	2474	2097
70°	2389	2166	1782
75°	1900	1659	1739
80°	1276	1196	1117
85°	795	954	1112



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	414.4	4.7
10°-20°	1137.2	13.0
20°-30°	1574.4	18.0
30°-40°	1678.8	19.2
40°-50°	1531.5	17.5
50°-60°	1199.8	13.7
60°-70°	782.0	8.9
70°-80°	346.5	4.0
80°-90°	74.4	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°	3126.0	35.8
0°-40°	4804.8	55.0
0°-60°	7536.2	86.2
0°-90°	8739.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8739.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4452	4452	4452	4452	4452	
5°	4374	4369	4369	4364	4364	415
15°	4091	4091	4050	4009	3994	1150
25°	3546	3525	3469	3345	3252	1628
35°	2877	2856	2717	2511	2450	1799
45°	2208	2161	1976	1812	1739	1701
55°	1534	1487	1348	1189	1127	1376
65°	911	859	777	792	659	898
75°	365	340	319	304	334	392
85°	52	57	62	67	72	71
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4451.5	4451.5	4451.5	4451.5	4451.5
2.5°	4420.7	4420.7	4420.7	4415.5	4415.5
5°	4374.3	4369.2	4369.2	4364.0	4364.0
7.5°	4338.3	4333.2	4328.0	4322.9	4312.6
10°	4286.8	4286.8	4281.7	4256.0	4250.8
12.5°	4204.5	4199.4	4178.8	4142.8	4132.5
15°	4091.3	4091.3	4050.1	4008.9	3993.5
17.5°	3967.8	3962.6	3911.2	3870.0	3849.4
20°	3834.0	3823.7	3772.2	3705.3	3669.3
22.5°	3684.7	3684.7	3623.0	3535.5	3499.5
25°	3545.8	3525.2	3468.6	3345.1	3252.4
27.5°	3386.3	3355.4	3293.6	3118.6	3010.6
30°	3211.3	3195.8	3108.4	2881.9	2799.6
32.5°	3046.6	3020.9	2928.2	2691.5	2624.6
35°	2876.8	2856.2	2717.2	2511.4	2449.6
37.5°	2706.9	2681.2	2506.2	2341.6	2264.4
40°	2537.1	2506.2	2315.8	2166.6	2084.2
42.5°	2377.6	2336.4	2151.1	1991.6	1899.0
45°	2207.8	2161.4	1976.2	1811.5	1739.4
47.5°	2037.9	1996.8	1826.9	1657.1	1574.8
50°	1857.8	1821.8	1667.4	1497.6	1410.1
52.5°	1708.6	1652.0	1502.7	1332.9	1260.8
55°	1533.6	1487.3	1348.3	1188.8	1127.0
57.5°	1374.1	1327.7	1199.1	1049.8	998.4
60°	1224.8	1157.9	1049.8	921.2	880.0
62.5°	1060.1	1008.7	916.0	808.0	859.4
65°	910.9	859.4	777.1	792.5	658.7
67.5°	746.2	720.5	648.4	576.4	555.8
70°	607.3	576.4	550.7	473.5	452.9
72.5°	483.8	452.9	416.8	375.7	360.2
75°	365.4	339.7	319.1	303.6	334.5
77.5°	252.2	241.9	226.4	211.0	205.9
80°	164.7	159.5	154.4	149.2	144.1
82.5°	97.8	97.8	97.8	97.8	97.8
85°	51.5	56.6	61.8	66.9	72.0
87.5°	30.9	30.9	36.0	41.2	46.3
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)