

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: P546766

Luminaire Tested: **FMR-24-4-LD4-2HI-50-UNV-82-97-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: P546766  
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-82-97-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

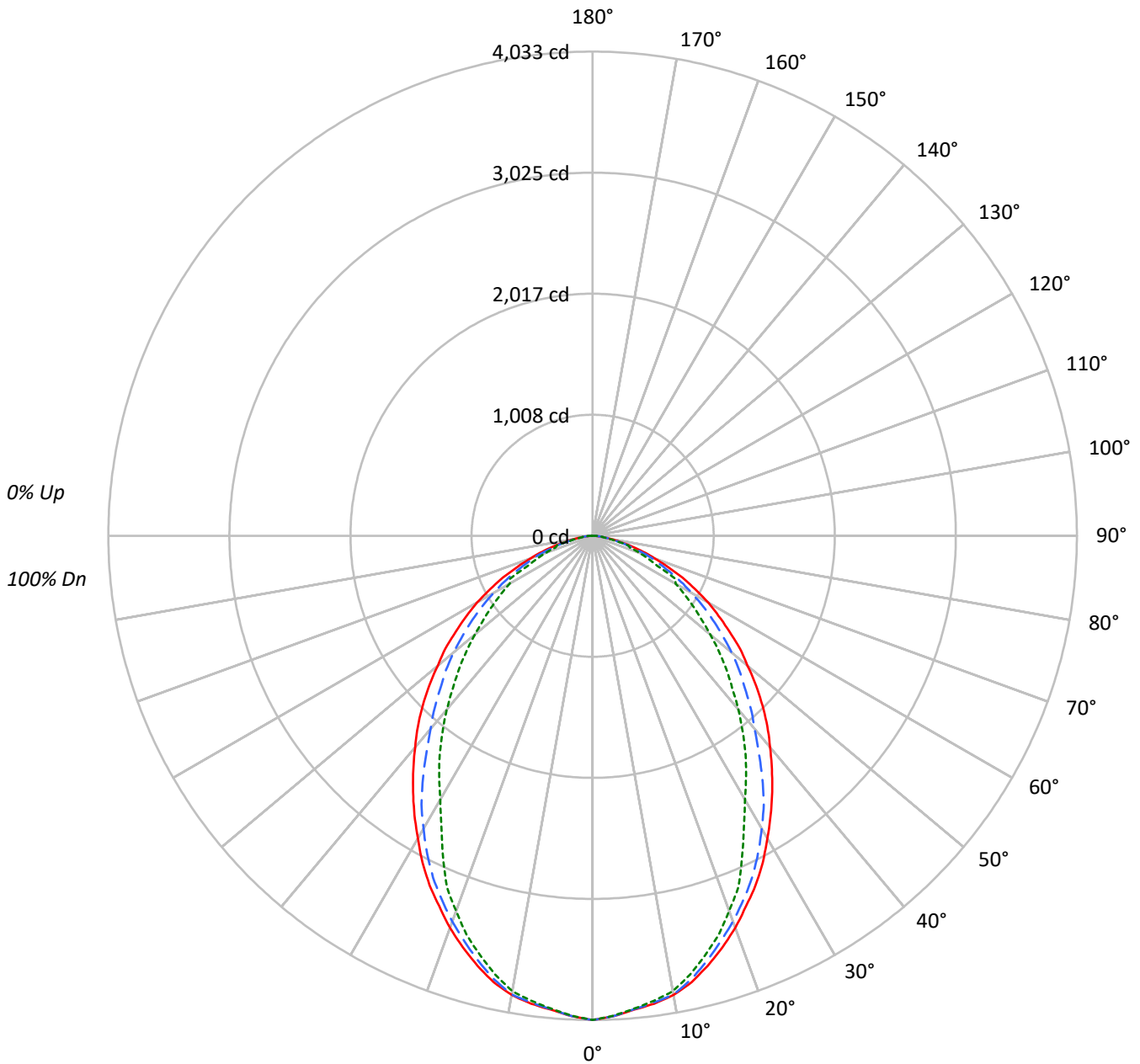
Lumens per Lamp: N/A  
Luminaire Lumens: 7918.0 lumens  
Efficiency: N/A  
Efficacy: 91.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	5427	5427	5427
5°	5353	5347	5341
10°	5307	5300	5262
15°	5164	5112	5040
20°	4974	4894	4760
25°	4770	4666	4375
30°	4520	4376	3941
35°	4281	4044	3646
40°	4038	3685	3317
45°	3806	3407	2999
50°	3524	3162	2674
55°	3259	2866	2396
60°	2986	2560	2146
65°	2628	2242	1900
70°	2164	1963	1614
75°	1721	1503	1576
80°	1156	1084	1012
85°	719	865	1008



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	375.4	4.7
10°-20°	1030.4	13.0
20°-30°	1426.5	18.0
30°-40°	1521.1	19.2
40°-50°	1387.7	17.5
50°-60°	1087.1	13.7
60°-70°	708.5	8.9
70°-80°	313.9	4.0
80°-90°	67.4	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°	2832.3	35.8
0°-40°	4353.4	55.0
0°-60°	6828.2	86.2
0°-90°	7918.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7918.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4033	4033	4033	4033	4033	
5°	3963	3959	3959	3954	3954	376
15°	3707	3707	3670	3632	3618	1042
25°	3213	3194	3143	3031	2947	1475
35°	2606	2588	2462	2275	2220	1630
45°	2000	1958	1790	1641	1576	1541
55°	1390	1348	1222	1077	1021	1246
65°	825	779	704	718	597	813
75°	331	308	289	275	303	355
85°	47	51	56	61	65	65
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4033.3	4033.3	4033.3	4033.3	4033.3
2.5°	4005.3	4005.3	4005.3	4000.7	4000.7
5°	3963.4	3958.7	3958.7	3954.1	3954.1
7.5°	3930.7	3926.1	3921.4	3916.8	3907.4
10°	3884.1	3884.1	3879.5	3856.1	3851.5
12.5°	3809.5	3804.8	3786.2	3753.6	3744.2
15°	3706.9	3706.9	3669.6	3632.3	3618.3
17.5°	3595.0	3590.4	3543.7	3506.4	3487.8
20°	3473.8	3464.5	3417.8	3357.2	3324.6
22.5°	3338.6	3338.6	3282.6	3203.3	3170.7
25°	3212.7	3194.0	3142.7	3030.8	2946.9
27.5°	3068.1	3040.1	2984.2	2825.7	2727.7
30°	2909.6	2895.6	2816.3	2611.2	2536.6
32.5°	2760.4	2737.1	2653.1	2438.6	2378.0
35°	2606.5	2587.9	2462.0	2275.4	2219.5
37.5°	2452.6	2429.3	2270.8	2121.6	2051.6
40°	2298.8	2270.8	2098.3	1963.0	1888.4
42.5°	2154.2	2116.9	1949.1	1804.5	1720.6
45°	2000.3	1958.4	1790.5	1641.3	1576.0
47.5°	1846.5	1809.2	1655.3	1501.4	1426.8
50°	1683.3	1650.6	1510.7	1356.9	1277.6
52.5°	1548.1	1496.8	1361.5	1207.7	1142.4
55°	1389.5	1347.5	1221.7	1077.1	1021.2
57.5°	1245.0	1203.0	1086.4	951.2	904.6
60°	1109.7	1049.1	951.2	834.6	797.3
62.5°	960.5	913.9	830.0	732.1	778.7
65°	825.3	778.7	704.1	718.1	596.8
67.5°	676.1	652.8	587.5	522.2	503.6
70°	550.2	522.2	498.9	429.0	410.3
72.5°	438.3	410.3	377.7	340.4	326.4
75°	331.1	307.7	289.1	275.1	303.1
77.5°	228.5	219.2	205.2	191.2	186.5
80°	149.2	144.5	139.9	135.2	130.6
82.5°	88.6	88.6	88.6	88.6	88.6
85°	46.6	51.3	56.0	60.6	65.3
87.5°	28.0	28.0	32.6	37.3	42.0
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)