

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: P546174

Luminaire Tested: **FMR-12-4-LD4-2HI-50-UNV-80-97-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: P546174  
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-12-4-LD4-2HI-50-UNV-80-97-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC 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**

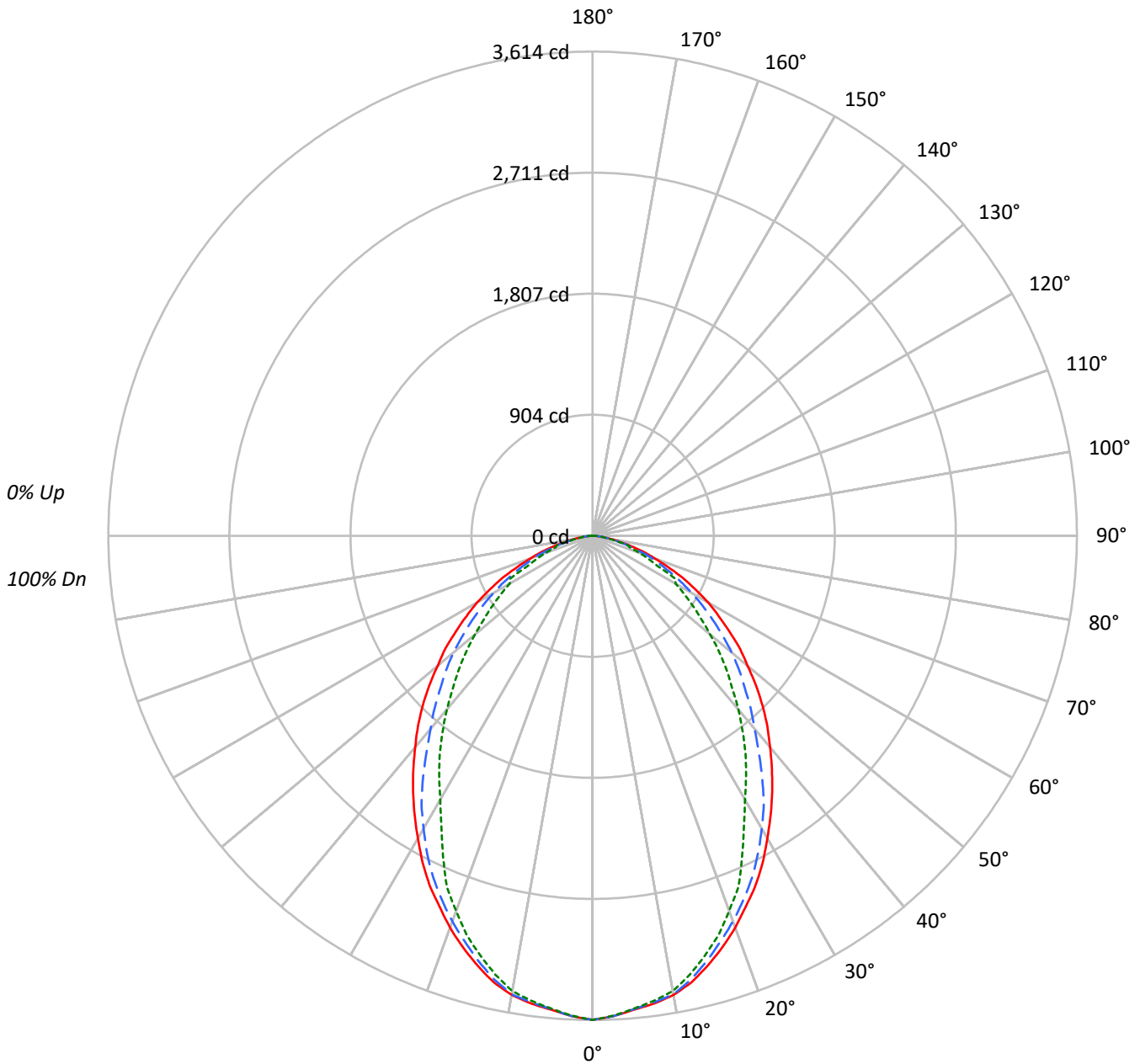
Lumens per Lamp: N/A  
Luminaire Lumens: 7094.0 lumens  
Efficiency: N/A  
Efficacy: 82.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	9724	9724	9724
5°	9592	9581	9569
10°	9509	9497	9429
15°	9253	9159	9031
20°	8913	8769	8530
25°	8546	8360	7839
30°	8100	7840	7062
35°	7672	7246	6532
40°	7235	6604	5943
45°	6820	6105	5374
50°	6314	5666	4792
55°	5841	5135	4292
60°	5351	4587	3845
65°	4708	4017	3405
70°	3879	3517	2892
75°	3084	2693	2823
80°	2072	1942	1813
85°	1291	1547	1806



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	336.4	4.7
10°-20°	923.2	13.0
20°-30°	1278.0	18.0
30°-40°	1362.8	19.2
40°-50°	1243.2	17.5
50°-60°	974.0	13.7
60°-70°	634.8	8.9
70°-80°	281.2	4.0
80°-90°	60.4	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°	2537.6	35.8
0°-40°	3900.3	55.0
0°-60°	6117.6	86.2
0°-90°	7094.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7094.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3614	3614	3614	3614	3614	
5°	3551	3547	3547	3543	3543	337
15°	3321	3321	3288	3254	3242	934
25°	2878	2862	2816	2715	2640	1321
35°	2335	2318	2206	2039	1988	1460
45°	1792	1755	1604	1470	1412	1380
55°	1245	1207	1094	965	915	1117
65°	739	698	631	643	535	729
75°	297	276	259	246	272	318
85°	42	46	50	54	58	58
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3613.6	3613.6	3613.6	3613.6	3613.6
2.5°	3588.5	3588.5	3588.5	3584.3	3584.3
5°	3550.9	3546.7	3546.7	3542.6	3542.6
7.5°	3521.7	3517.5	3513.3	3509.1	3500.8
10°	3479.9	3479.9	3475.7	3454.8	3450.7
12.5°	3413.1	3408.9	3392.2	3362.9	3354.6
15°	3321.2	3321.2	3287.7	3254.3	3241.8
17.5°	3220.9	3216.7	3174.9	3141.5	3124.8
20°	3112.3	3103.9	3062.2	3007.8	2978.6
22.5°	2991.1	2991.1	2941.0	2870.0	2840.7
25°	2878.3	2861.6	2815.7	2715.4	2640.2
27.5°	2748.8	2723.8	2673.6	2531.6	2443.9
30°	2606.8	2594.3	2523.2	2339.4	2272.6
32.5°	2473.1	2452.2	2377.0	2184.9	2130.6
35°	2335.3	2318.5	2205.8	2038.6	1988.5
37.5°	2197.4	2176.5	2034.5	1900.8	1838.1
40°	2059.5	2034.5	1879.9	1758.8	1691.9
42.5°	1930.0	1896.6	1746.2	1616.7	1541.5
45°	1792.2	1754.6	1604.2	1470.5	1412.0
47.5°	1654.3	1620.9	1483.0	1345.2	1278.3
50°	1508.1	1478.9	1353.5	1215.7	1144.7
52.5°	1386.9	1341.0	1219.8	1082.0	1023.5
55°	1244.9	1207.3	1094.5	965.0	914.9
57.5°	1115.4	1077.8	973.4	852.2	810.4
60°	994.3	940.0	852.2	747.8	714.4
62.5°	860.6	818.8	743.6	655.9	697.7
65°	739.4	697.7	630.8	643.3	534.7
67.5°	605.7	584.9	526.4	467.9	451.2
70°	493.0	467.9	447.0	384.3	367.6
72.5°	392.7	367.6	338.4	305.0	292.4
75°	296.6	275.7	259.0	246.5	271.5
77.5°	204.7	196.3	183.8	171.3	167.1
80°	133.7	129.5	125.3	121.1	117.0
82.5°	79.4	79.4	79.4	79.4	79.4
85°	41.8	46.0	50.1	54.3	58.5
87.5°	25.1	25.1	29.2	33.4	37.6
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)