

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: P547116

Luminaire Tested: **FMR-24-4-LD4-3LO-40-UNV-82-94-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: P547116  
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-LD4-3LO-40-UNV-82-94-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

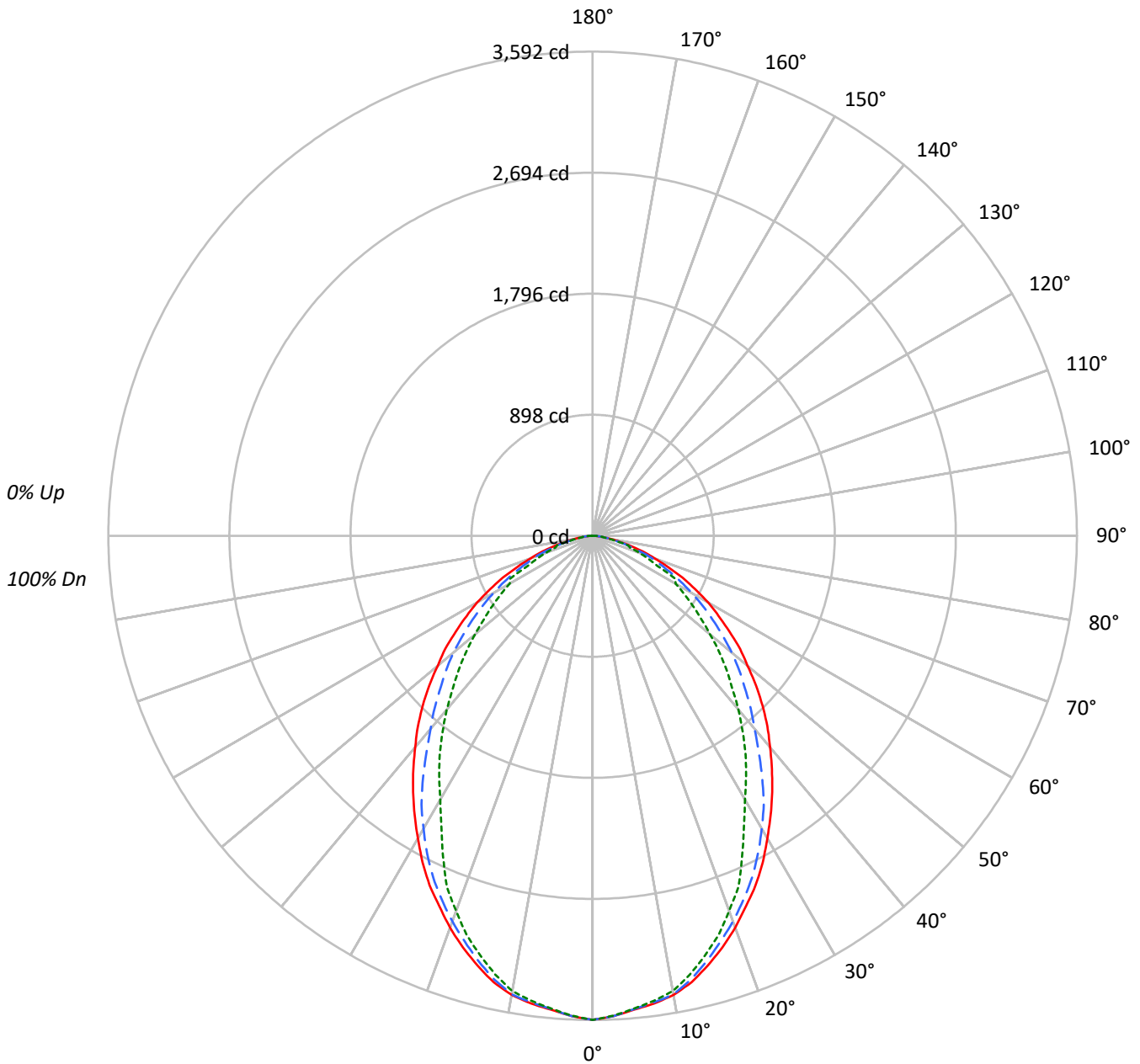
Lumens per Lamp: N/A  
Luminaire Lumens: 7051.0 lumens  
Efficiency: N/A  
Efficacy: 100.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70.2  
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°	4833	4833	4833
5°	4767	4761	4756
10°	4726	4720	4686
15°	4598	4552	4488
20°	4429	4358	4239
25°	4247	4155	3896
30°	4025	3897	3509
35°	3812	3601	3246
40°	3596	3282	2954
45°	3389	3034	2671
50°	3138	2816	2381
55°	2903	2552	2133
60°	2659	2280	1911
65°	2340	1996	1692
70°	1928	1748	1437
75°	1533	1338	1403
80°	1030	965	901
85°	641	769	897



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	334.3	4.7
10°-20°	917.6	13.0
20°-30°	1270.3	18.0
30°-40°	1354.5	19.2
40°-50°	1235.7	17.5
50°-60°	968.1	13.7
60°-70°	630.9	8.9
70°-80°	279.5	4.0
80°-90°	60.0	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°	2522.2	35.8
0°-40°	3876.7	55.0
0°-60°	6080.5	86.2
0°-90°	7051.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7051.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3592	3592	3592	3592	3592	
5°	3529	3525	3525	3521	3521	335
15°	3301	3301	3268	3235	3222	928
25°	2861	2844	2799	2699	2624	1313
35°	2321	2304	2192	2026	1976	1451
45°	1781	1744	1594	1462	1404	1372
55°	1237	1200	1088	959	909	1110
65°	735	693	627	639	532	724
75°	295	274	257	245	270	316
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°	3591.7	3591.7	3591.7	3591.7	3591.7
2.5°	3566.8	3566.8	3566.8	3562.6	3562.6
5°	3529.4	3525.2	3525.2	3521.1	3521.1
7.5°	3500.3	3496.2	3492.0	3487.9	3479.6
10°	3458.8	3458.8	3454.7	3433.9	3429.7
12.5°	3392.4	3388.2	3371.6	3342.6	3334.2
15°	3301.0	3301.0	3267.8	3234.6	3222.1
17.5°	3201.4	3197.2	3155.7	3122.5	3105.9
20°	3093.4	3085.1	3043.6	2989.6	2960.5
22.5°	2973.0	2973.0	2923.2	2852.6	2823.5
25°	2860.9	2844.3	2798.6	2699.0	2624.2
27.5°	2732.2	2707.3	2657.4	2516.3	2429.1
30°	2591.0	2578.5	2508.0	2325.3	2258.8
32.5°	2458.1	2437.4	2362.6	2171.6	2117.6
35°	2321.1	2304.5	2192.4	2026.3	1976.5
37.5°	2184.1	2163.3	2022.1	1889.3	1827.0
40°	2047.1	2022.1	1868.5	1748.1	1681.7
42.5°	1918.3	1885.1	1735.6	1606.9	1532.2
45°	1781.3	1743.9	1594.5	1461.6	1403.5
47.5°	1644.3	1611.1	1474.0	1337.0	1270.6
50°	1499.0	1469.9	1345.3	1208.3	1137.7
52.5°	1378.5	1332.9	1212.5	1075.4	1017.3
55°	1237.4	1200.0	1087.9	959.2	909.3
57.5°	1108.6	1071.3	967.5	847.1	805.5
60°	988.2	934.3	847.1	743.3	710.0
62.5°	855.4	813.8	739.1	651.9	693.4
65°	734.9	693.4	627.0	639.4	531.5
67.5°	602.1	581.3	523.2	465.1	448.4
70°	490.0	465.1	444.3	382.0	365.4
72.5°	390.3	365.4	336.3	303.1	290.7
75°	294.8	274.0	257.4	245.0	269.9
77.5°	203.5	195.2	182.7	170.2	166.1
80°	132.9	128.7	124.6	120.4	116.3
82.5°	78.9	78.9	78.9	78.9	78.9
85°	41.5	45.7	49.8	54.0	58.1
87.5°	24.9	24.9	29.1	33.2	37.4
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)