

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: P546175

Luminaire Tested: **FMR-12-4-LD4-2HI-50-UNV-81-84-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: P546175  
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-81-84-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC 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**

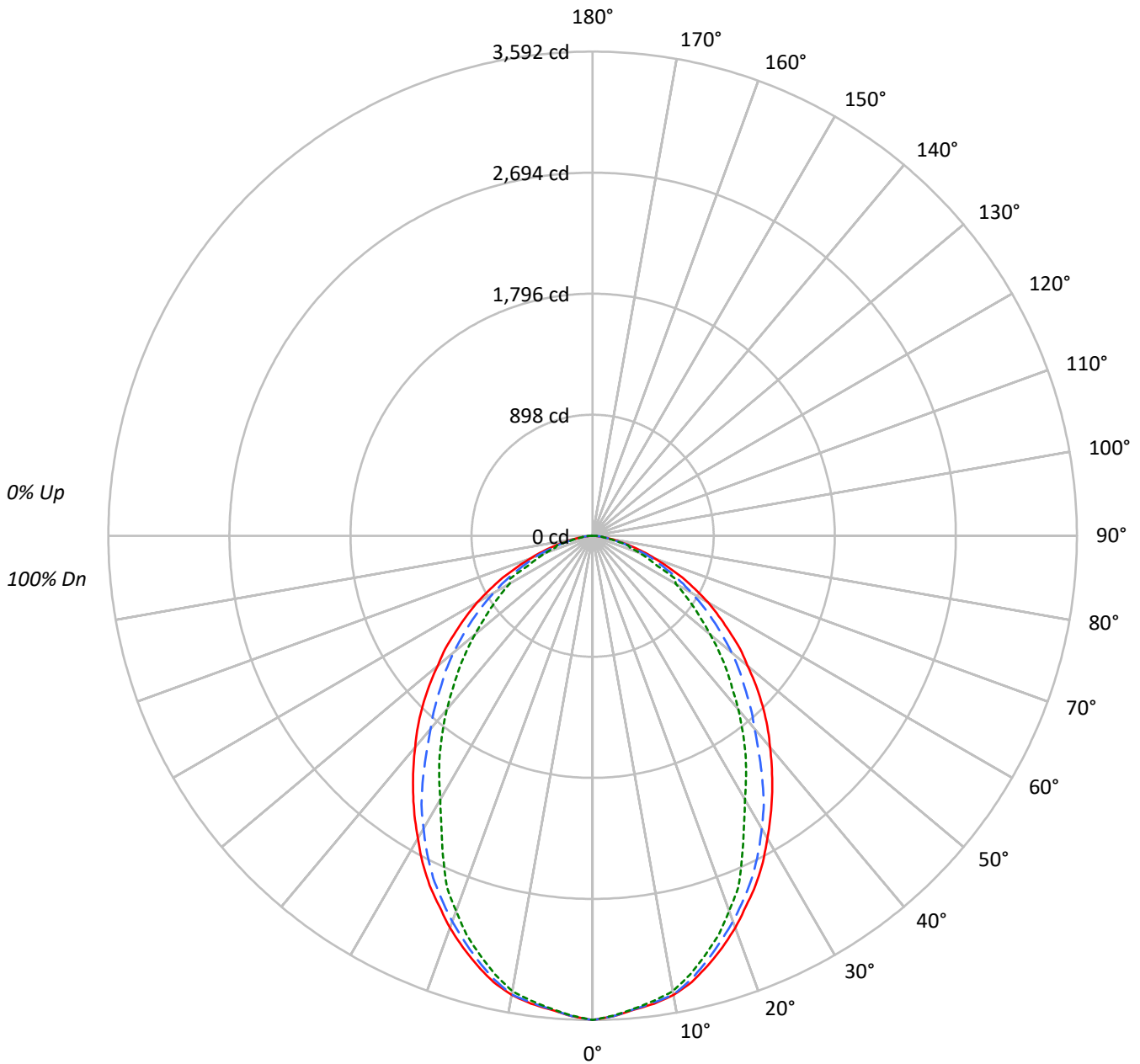
Lumens per Lamp: N/A  
Luminaire Lumens: 7052.0 lumens  
Efficiency: N/A  
Efficacy: 81.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
Input Voltage (V): NR  
Input Current (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°	9667	9667	9667
5°	9535	9524	9513
10°	9453	9441	9373
15°	9198	9105	8978
20°	8860	8717	8479
25°	8496	8311	7793
30°	8052	7794	7020
35°	7626	7203	6494
40°	7192	6565	5908
45°	6780	6069	5342
50°	6276	5633	4764
55°	5806	5104	4267
60°	5320	4560	3822
65°	4681	3993	3385
70°	3855	3496	2875
75°	3066	2677	2806
80°	2060	1931	1802
85°	1281	1538	1794



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	334.4	4.7
10°-20°	917.7	13.0
20°-30°	1270.5	18.0
30°-40°	1354.7	19.2
40°-50°	1235.9	17.5
50°-60°	968.2	13.7
60°-70°	631.0	8.9
70°-80°	279.6	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°	2522.6	35.8
0°-40°	3877.3	55.0
0°-60°	6081.4	86.2
0°-90°	7052.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7052.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3592	3592	3592	3592	3592	
5°	3530	3526	3526	3522	3522	335
15°	3302	3302	3268	3235	3223	928
25°	2861	2845	2799	2699	2625	1314
35°	2321	2305	2193	2027	1977	1451
45°	1782	1744	1595	1462	1404	1372
55°	1238	1200	1088	959	910	1110
65°	735	694	627	640	532	724
75°	295	274	258	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°	3592.2	3592.2	3592.2	3592.2	3592.2
2.5°	3567.3	3567.3	3567.3	3563.1	3563.1
5°	3529.9	3525.7	3525.7	3521.6	3521.6
7.5°	3500.8	3496.7	3492.5	3488.4	3480.1
10°	3459.3	3459.3	3455.2	3434.4	3430.2
12.5°	3392.9	3388.7	3372.1	3343.0	3334.7
15°	3301.5	3301.5	3268.3	3235.1	3222.6
17.5°	3201.8	3197.7	3156.1	3122.9	3106.3
20°	3093.9	3085.5	3044.0	2990.0	2961.0
22.5°	2973.4	2973.4	2923.6	2853.0	2823.9
25°	2861.3	2844.7	2799.0	2699.3	2624.6
27.5°	2732.6	2707.6	2657.8	2516.6	2429.4
30°	2591.4	2578.9	2508.3	2325.6	2259.1
32.5°	2458.5	2437.7	2363.0	2171.9	2117.9
35°	2321.4	2304.8	2192.7	2026.6	1976.7
37.5°	2184.4	2163.6	2022.4	1889.5	1827.2
40°	2047.3	2022.4	1868.8	1748.3	1681.9
42.5°	1918.6	1885.4	1735.9	1607.1	1532.4
45°	1781.6	1744.2	1594.7	1461.8	1403.7
47.5°	1644.5	1611.3	1474.3	1337.2	1270.8
50°	1499.2	1470.1	1345.5	1208.5	1137.9
52.5°	1378.7	1333.1	1212.6	1075.6	1017.4
55°	1237.5	1200.2	1088.0	959.3	909.5
57.5°	1108.8	1071.4	967.6	847.2	805.6
60°	988.4	934.4	847.2	743.4	710.1
62.5°	855.5	814.0	739.2	652.0	693.5
65°	735.1	693.5	627.1	639.5	531.6
67.5°	602.2	581.4	523.3	465.1	448.5
70°	490.0	465.1	444.4	382.1	365.4
72.5°	390.4	365.4	336.4	303.2	290.7
75°	294.9	274.1	257.5	245.0	269.9
77.5°	203.5	195.2	182.7	170.3	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)