

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: P546155

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-82-88-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: P546155  
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-40-UNV-82-88-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

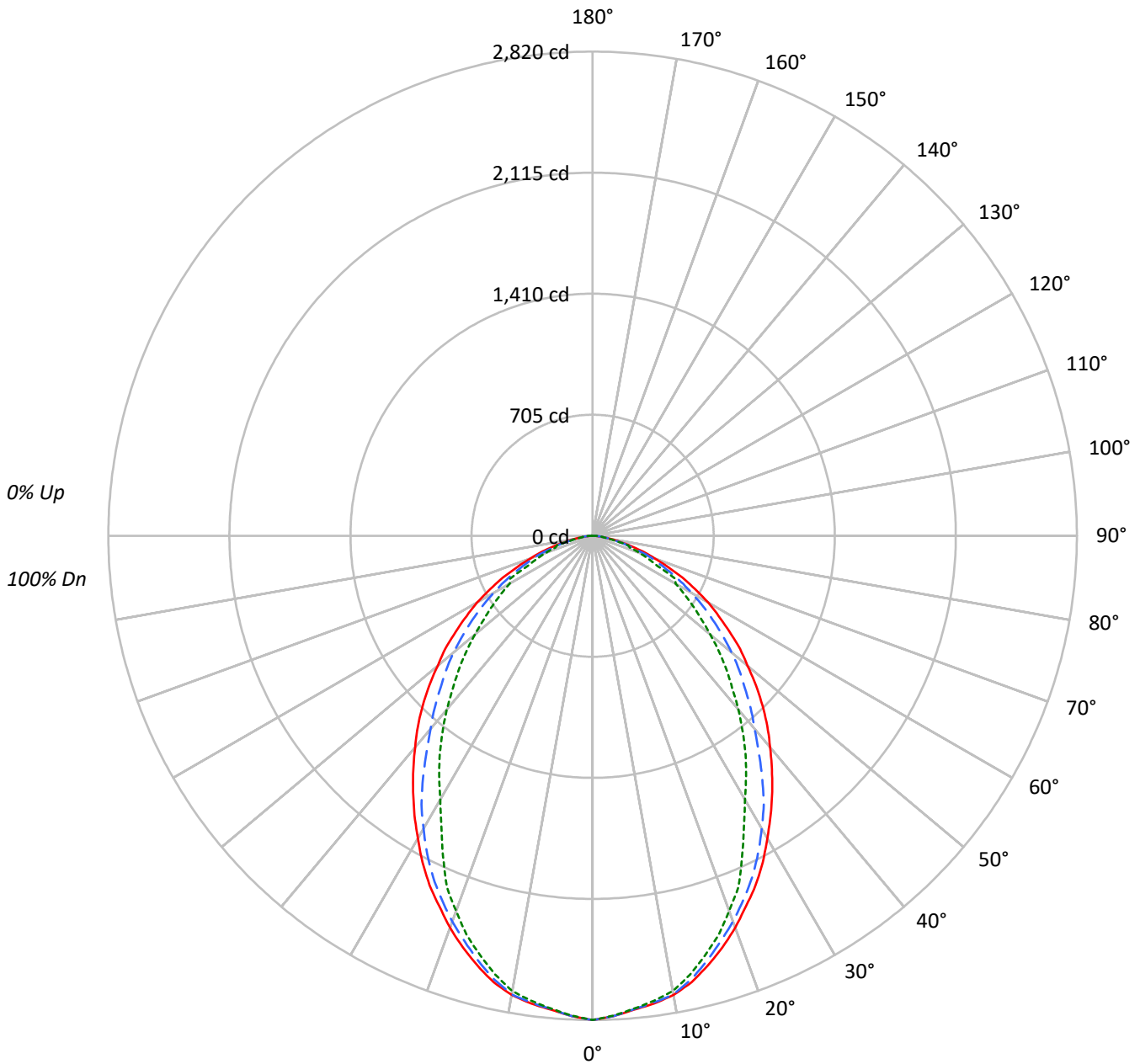
Lumens per Lamp: N/A  
Luminaire Lumens: 5536.0 lumens  
Efficiency: N/A  
Efficacy: 64.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
Input Voltage (V): NR  
Input Current (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°	7589	7589	7589
5°	7485	7477	7468
10°	7420	7412	7358
15°	7221	7148	7048
20°	6955	6843	6656
25°	6669	6524	6118
30°	6321	6119	5511
35°	5987	5655	5098
40°	5646	5153	4638
45°	5323	4764	4193
50°	4927	4422	3740
55°	4558	4007	3350
60°	4176	3580	3000
65°	3674	3135	2657
70°	3027	2744	2257
75°	2407	2101	2203
80°	1616	1516	1415
85°	1007	1207	1408



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	262.5	4.7
10°-20°	720.4	13.0
20°-30°	997.4	18.0
30°-40°	1063.5	19.2
40°-50°	970.2	17.5
50°-60°	760.1	13.7
60°-70°	495.4	8.9
70°-80°	219.5	4.0
80°-90°	47.1	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°	1980.3	35.8
0°-40°	3043.7	55.0
0°-60°	4774.0	86.2
0°-90°	5536.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5536.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2820	2820	2820	2820	2820	
5°	2771	2768	2768	2764	2764	263
15°	2592	2592	2566	2540	2530	729
25°	2246	2233	2197	2119	2060	1031
35°	1822	1809	1721	1591	1552	1139
45°	1399	1369	1252	1148	1102	1077
55°	972	942	854	753	714	871
65°	577	544	492	502	417	569
75°	232	215	202	192	212	248
85°	33	36	39	42	46	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2820.0	2820.0	2820.0	2820.0	2820.0
2.5°	2800.4	2800.4	2800.4	2797.1	2797.1
5°	2771.1	2767.8	2767.8	2764.5	2764.5
7.5°	2748.2	2745.0	2741.7	2738.5	2731.9
10°	2715.6	2715.6	2712.4	2696.1	2692.8
12.5°	2663.5	2660.2	2647.2	2624.4	2617.8
15°	2591.8	2591.8	2565.7	2539.6	2529.8
17.5°	2513.5	2510.3	2477.7	2451.6	2438.5
20°	2428.8	2422.2	2389.6	2347.3	2324.4
22.5°	2334.2	2334.2	2295.1	2239.7	2216.9
25°	2246.2	2233.2	2197.3	2119.0	2060.4
27.5°	2145.1	2125.6	2086.4	1975.6	1907.1
30°	2034.3	2024.5	1969.1	1825.6	1773.5
32.5°	1930.0	1913.7	1855.0	1705.0	1662.6
35°	1822.4	1809.3	1721.3	1590.9	1551.8
37.5°	1714.8	1698.5	1587.7	1483.3	1434.4
40°	1607.2	1587.7	1467.0	1372.5	1320.3
42.5°	1506.2	1480.1	1362.7	1261.6	1203.0
45°	1398.6	1369.2	1251.9	1147.5	1101.9
47.5°	1291.0	1264.9	1157.3	1049.7	997.6
50°	1176.9	1154.1	1056.3	948.7	893.3
52.5°	1082.3	1046.5	951.9	844.4	798.7
55°	971.5	942.2	854.1	753.1	714.0
57.5°	870.4	841.1	759.6	665.1	632.5
60°	775.9	733.5	665.1	583.6	557.5
62.5°	671.6	639.0	580.3	511.8	544.4
65°	577.0	544.4	492.3	502.1	417.3
67.5°	472.7	456.4	410.8	365.1	352.1
70°	384.7	365.1	348.8	299.9	286.9
72.5°	306.4	286.9	264.1	238.0	228.2
75°	231.5	215.2	202.1	192.3	211.9
77.5°	159.7	153.2	143.4	133.7	130.4
80°	104.3	101.1	97.8	94.5	91.3
82.5°	61.9	61.9	61.9	61.9	61.9
85°	32.6	35.9	39.1	42.4	45.6
87.5°	19.6	19.6	22.8	26.1	29.3
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)