

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: P546119

Luminaire Tested: **FMR-12-4-LD4-2HI-35-UNV-82-84-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: P546119  
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-35-UNV-82-84-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

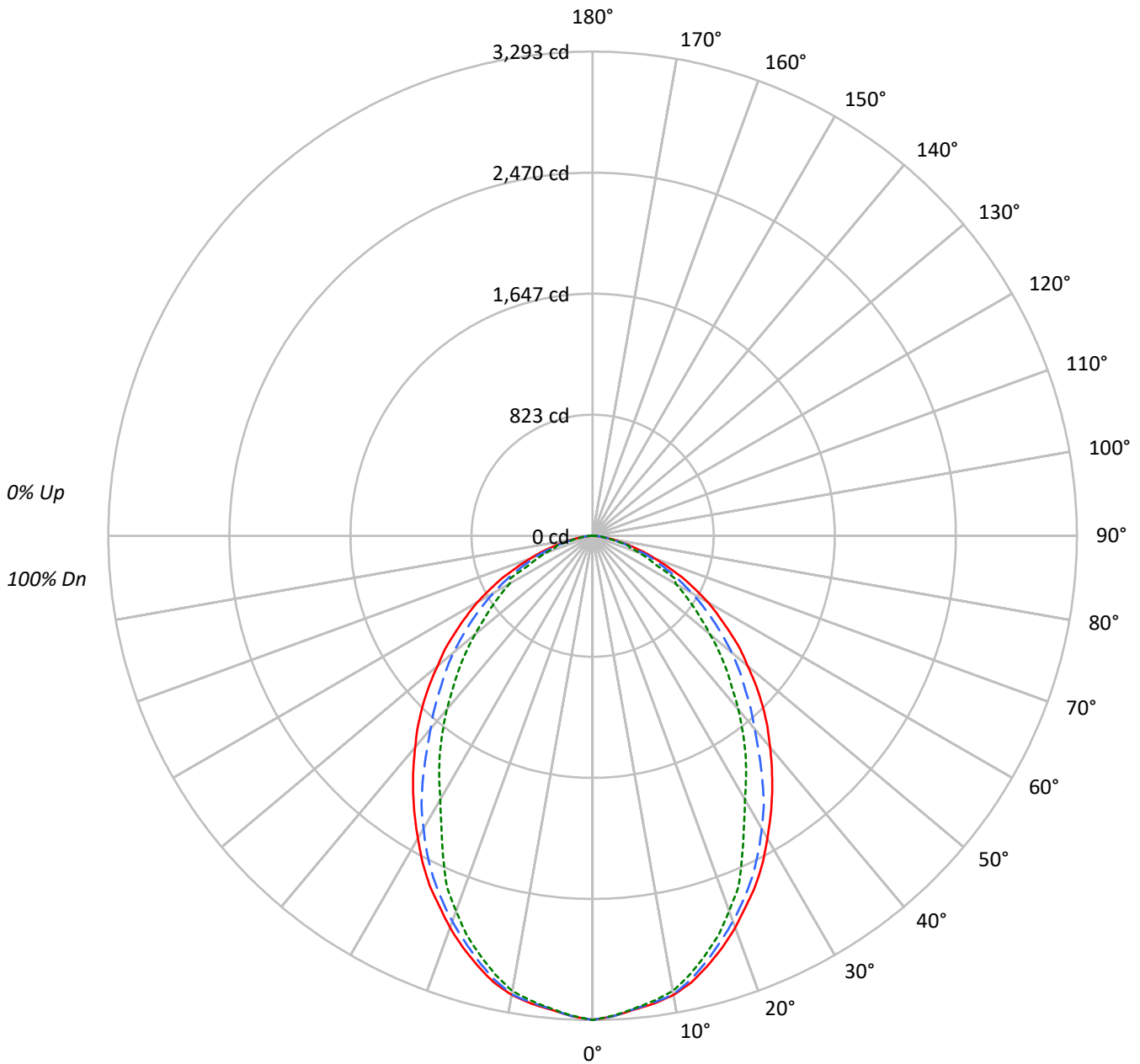
Lumens per Lamp: N/A  
Luminaire Lumens: 6464.0 lumens  
Efficiency: N/A  
Efficacy: 74.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	8861	8861	8861
5°	8740	8730	8720
10°	8664	8654	8591
15°	8431	8346	8229
20°	8121	7990	7772
25°	7787	7618	7143
30°	7381	7144	6435
35°	6990	6603	5952
40°	6592	6017	5416
45°	6215	5563	4896
50°	5753	5163	4366
55°	5322	4679	3911
60°	4876	4179	3503
65°	4290	3660	3102
70°	3534	3205	2636
75°	2810	2454	2572
80°	1888	1770	1652
85°	1176	1411	1646



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	306.5	4.7
10°-20°	841.2	13.0
20°-30°	1164.6	18.0
30°-40°	1241.8	19.2
40°-50°	1132.8	17.5
50°-60°	887.5	13.7
60°-70°	578.4	8.9
70°-80°	256.3	4.0
80°-90°	55.0	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°	2312.2	35.8
0°-40°	3554.0	55.0
0°-60°	5574.3	86.2
0°-90°	6464.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6464.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3293	3293	3293	3293	3293	
5°	3236	3232	3232	3228	3228	307
15°	3026	3026	2996	2965	2954	851
25°	2623	2608	2566	2474	2406	1204
35°	2128	2113	2010	1858	1812	1330
45°	1633	1599	1462	1340	1287	1258
55°	1134	1100	997	879	834	1017
65°	674	636	575	586	487	664
75°	270	251	236	225	247	290
85°	38	42	46	50	53	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3292.7	3292.7	3292.7	3292.7	3292.7
2.5°	3269.8	3269.8	3269.8	3266.0	3266.0
5°	3235.6	3231.8	3231.8	3228.0	3228.0
7.5°	3208.9	3205.1	3201.3	3197.5	3189.9
10°	3170.9	3170.9	3167.1	3148.0	3144.2
12.5°	3110.0	3106.2	3090.9	3064.3	3056.7
15°	3026.2	3026.2	2995.8	2965.3	2953.9
17.5°	2934.9	2931.1	2893.0	2862.5	2847.3
20°	2835.9	2828.3	2790.2	2740.7	2714.1
22.5°	2725.5	2725.5	2679.8	2615.1	2588.5
25°	2622.7	2607.5	2565.6	2474.3	2405.7
27.5°	2504.7	2481.9	2436.2	2306.8	2226.8
30°	2375.3	2363.9	2299.2	2131.7	2070.8
32.5°	2253.5	2234.5	2165.9	1990.8	1941.3
35°	2127.9	2112.6	2009.9	1857.6	1811.9
37.5°	2002.3	1983.2	1853.8	1732.0	1674.9
40°	1876.6	1853.8	1713.0	1602.6	1541.7
42.5°	1758.6	1728.2	1591.1	1473.1	1404.6
45°	1633.0	1598.8	1461.7	1339.9	1286.6
47.5°	1507.4	1476.9	1351.3	1225.7	1164.8
50°	1374.2	1347.5	1233.3	1107.7	1043.0
52.5°	1263.8	1221.9	1111.5	985.9	932.6
55°	1134.4	1100.1	997.3	879.3	833.6
57.5°	1016.4	982.1	886.9	776.5	738.5
60°	906.0	856.5	776.5	681.4	650.9
62.5°	784.2	746.1	677.6	597.6	635.7
65°	673.8	635.7	574.8	586.2	487.2
67.5°	552.0	532.9	479.6	426.3	411.1
70°	449.2	426.3	407.3	350.2	335.0
72.5°	357.8	335.0	308.3	277.9	266.5
75°	270.3	251.2	236.0	224.6	247.4
77.5°	186.5	178.9	167.5	156.1	152.3
80°	121.8	118.0	114.2	110.4	106.6
82.5°	72.3	72.3	72.3	72.3	72.3
85°	38.1	41.9	45.7	49.5	53.3
87.5°	22.8	22.8	26.6	30.5	34.3
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)