

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: P546129

Luminaire Tested: **FMR-12-4-LD4-2HI-35-UNV-93-86-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: P546129  
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-93-86-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

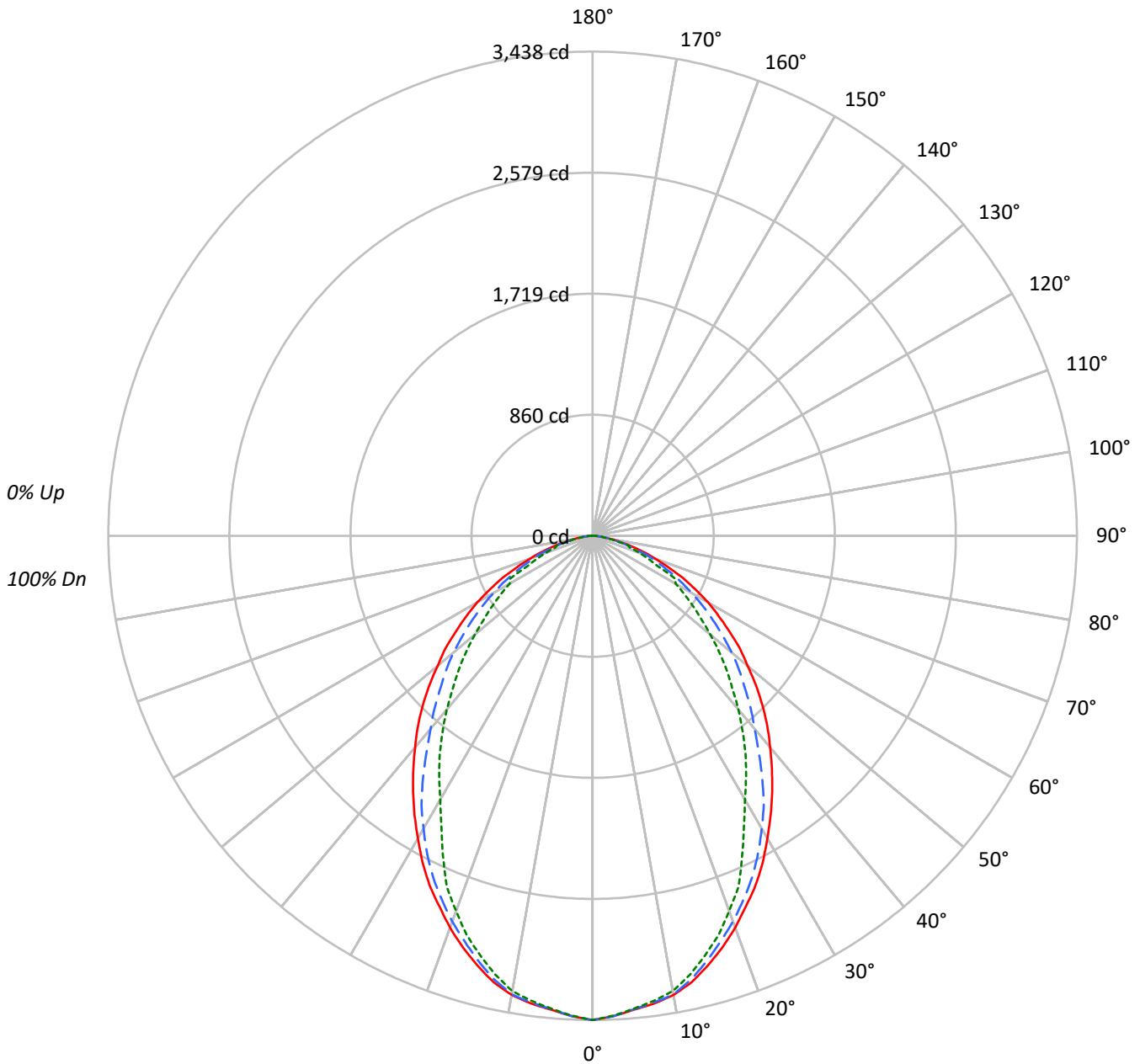
Lumens per Lamp: N/A  
Luminaire Lumens: 6749.0 lumens  
Efficiency: N/A  
Efficacy: 78.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	9251	9251	9251
5°	9125	9115	9104
10°	9046	9036	8970
15°	8802	8714	8592
20°	8479	8342	8115
25°	8131	7954	7458
30°	7706	7459	6718
35°	7298	6894	6215
40°	6883	6283	5654
45°	6489	5808	5112
50°	6007	5391	4559
55°	5557	4885	4084
60°	5091	4364	3658
65°	4479	3821	3239
70°	3690	3346	2751
75°	2934	2562	2686
80°	1971	1847	1725
85°	1226	1473	1717



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	320.0	4.7
10°-20°	878.3	13.0
20°-30°	1215.9	18.0
30°-40°	1296.5	19.2
40°-50°	1182.8	17.5
50°-60°	926.6	13.7
60°-70°	603.9	8.9
70°-80°	267.6	4.0
80°-90°	57.4	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°	2414.2	35.8
0°-40°	3710.7	55.0
0°-60°	5820.1	86.2
0°-90°	6749.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6749.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3438	3438	3438	3438	3438	
5°	3378	3374	3374	3370	3370	321
15°	3160	3160	3128	3096	3084	888
25°	2738	2722	2679	2583	2512	1257
35°	2222	2206	2098	1940	1892	1389
45°	1705	1669	1526	1399	1343	1313
55°	1184	1149	1041	918	870	1062
65°	704	664	600	612	509	693
75°	282	262	246	234	258	302
85°	40	44	48	52	56	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3437.9	3437.9	3437.9	3437.9	3437.9
2.5°	3414.0	3414.0	3414.0	3410.0	3410.0
5°	3378.2	3374.3	3374.3	3370.3	3370.3
7.5°	3350.4	3346.4	3342.5	3338.5	3330.5
10°	3310.7	3310.7	3306.7	3286.8	3282.8
12.5°	3247.1	3243.1	3227.2	3199.4	3191.4
15°	3159.6	3159.6	3127.8	3096.1	3084.1
17.5°	3064.3	3060.3	3020.5	2988.7	2972.8
20°	2960.9	2953.0	2913.2	2861.6	2833.7
22.5°	2845.7	2845.7	2798.0	2730.4	2702.6
25°	2738.4	2722.5	2678.7	2583.4	2511.8
27.5°	2615.2	2591.3	2543.6	2408.5	2325.0
30°	2480.0	2468.1	2400.5	2225.7	2162.1
32.5°	2352.8	2333.0	2261.4	2078.6	2026.9
35°	2221.7	2205.8	2098.5	1939.5	1891.8
37.5°	2090.5	2070.7	1935.5	1808.3	1748.7
40°	1959.4	1935.5	1788.5	1673.2	1609.6
42.5°	1836.2	1804.4	1661.3	1538.1	1466.6
45°	1705.0	1669.2	1526.2	1399.0	1343.3
47.5°	1573.9	1542.1	1410.9	1279.8	1216.2
50°	1434.8	1406.9	1287.7	1156.5	1089.0
52.5°	1319.5	1275.8	1160.5	1029.4	973.7
55°	1184.4	1148.6	1041.3	918.1	870.4
57.5°	1061.2	1025.4	926.0	810.8	771.0
60°	945.9	894.2	810.8	711.4	679.6
62.5°	818.7	779.0	707.4	624.0	663.7
65°	703.5	663.7	600.1	612.1	508.7
67.5°	576.3	556.4	500.8	445.1	429.2
70°	469.0	445.1	425.3	365.6	349.7
72.5°	373.6	349.7	321.9	290.1	278.2
75°	282.2	262.3	246.4	234.5	258.3
77.5°	194.7	186.8	174.9	163.0	159.0
80°	127.2	123.2	119.2	115.3	111.3
82.5°	75.5	75.5	75.5	75.5	75.5
85°	39.7	43.7	47.7	51.7	55.6
87.5°	23.8	23.8	27.8	31.8	35.8
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)