

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: P546150

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-81-97-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: P546150  
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-81-97-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

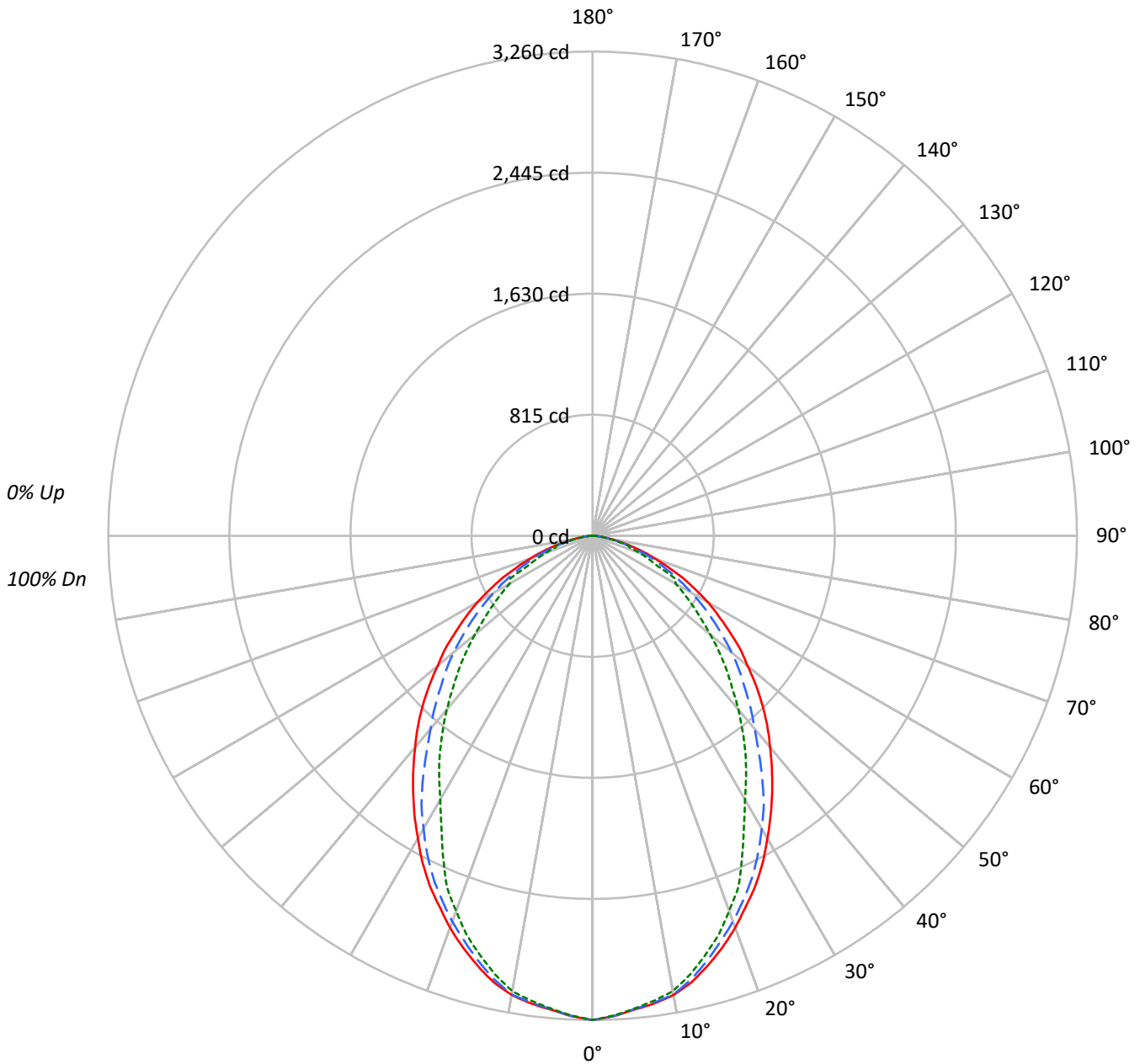
Lumens per Lamp: N/A  
Luminaire Lumens: 6400.0 lumens  
Efficiency: N/A  
Efficacy: 74.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	8773	8773	8773
5°	8653	8643	8633
10°	8579	8568	8507
15°	8347	8263	8148
20°	8041	7911	7695
25°	7710	7542	7072
30°	7308	7073	6371
35°	6921	6537	5893
40°	6527	5958	5362
45°	6153	5507	4848
50°	5696	5112	4323
55°	5269	4632	3872
60°	4828	4138	3469
65°	4248	3624	3072
70°	3499	3173	2610
75°	2782	2430	2547
80°	1869	1753	1635
85°	1164	1396	1630



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	303.5	4.7
10°-20°	832.8	13.0
20°-30°	1153.0	18.0
30°-40°	1229.5	19.2
40°-50°	1121.6	17.5
50°-60°	878.7	13.7
60°-70°	572.7	8.9
70°-80°	253.7	4.0
80°-90°	54.5	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°	2289.3	35.8
0°-40°	3518.8	55.0
0°-60°	5519.1	86.2
0°-90°	6400.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6400.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3260	3260	3260	3260	3260	
5°	3204	3200	3200	3196	3196	304
15°	2996	2996	2966	2936	2925	842
25°	2597	2582	2540	2450	2382	1192
35°	2107	2092	1990	1839	1794	1317
45°	1617	1583	1447	1327	1274	1245
55°	1123	1089	987	871	825	1007
65°	667	629	569	580	482	657
75°	268	249	234	222	245	287
85°	38	42	45	49	53	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3260.1	3260.1	3260.1	3260.1	3260.1
2.5°	3237.5	3237.5	3237.5	3233.7	3233.7
5°	3203.5	3199.8	3199.8	3196.0	3196.0
7.5°	3177.2	3173.4	3169.6	3165.9	3158.3
10°	3139.5	3139.5	3135.7	3116.9	3113.1
12.5°	3079.2	3075.4	3060.3	3033.9	3026.4
15°	2996.3	2996.3	2966.1	2936.0	2924.6
17.5°	2905.8	2902.0	2864.3	2834.2	2819.1
20°	2807.8	2800.3	2762.6	2713.6	2687.2
22.5°	2698.5	2698.5	2653.3	2589.2	2562.8
25°	2596.8	2581.7	2540.2	2449.8	2381.9
27.5°	2479.9	2457.3	2412.1	2283.9	2204.8
30°	2351.8	2340.5	2276.4	2110.6	2050.3
32.5°	2231.2	2212.3	2144.5	1971.1	1922.1
35°	2106.8	2091.7	1990.0	1839.2	1794.0
37.5°	1982.4	1963.6	1835.4	1714.8	1658.3
40°	1858.1	1835.4	1696.0	1586.7	1526.4
42.5°	1741.2	1711.1	1575.4	1458.6	1390.7
45°	1616.8	1582.9	1447.2	1326.6	1273.9
47.5°	1492.5	1462.3	1337.9	1213.6	1153.3
50°	1360.6	1334.2	1221.1	1096.7	1032.7
52.5°	1251.3	1209.8	1100.5	976.1	923.4
55°	1123.1	1089.2	987.4	870.6	825.4
57.5°	1006.3	972.4	878.1	768.8	731.2
60°	897.0	848.0	768.8	674.6	644.5
62.5°	776.4	738.7	670.9	591.7	629.4
65°	667.1	629.4	569.1	580.4	482.4
67.5°	546.5	527.6	474.9	422.1	407.0
70°	444.7	422.1	403.3	346.7	331.7
72.5°	354.3	331.7	305.3	275.1	263.8
75°	267.6	248.7	233.7	222.4	245.0
77.5°	184.7	177.1	165.8	154.5	150.8
80°	120.6	116.8	113.1	109.3	105.5
82.5°	71.6	71.6	71.6	71.6	71.6
85°	37.7	41.5	45.2	49.0	52.8
87.5°	22.6	22.6	26.4	30.2	33.9
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)