

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: P546734

Luminaire Tested: **FMR-24-4-LD4-2HI-40-UNV-82-97-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: P546734  
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-24-4-LD4-2HI-40-UNV-82-97-EDD  
Description: 2X4 FMR TROFFER WITH .187 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**

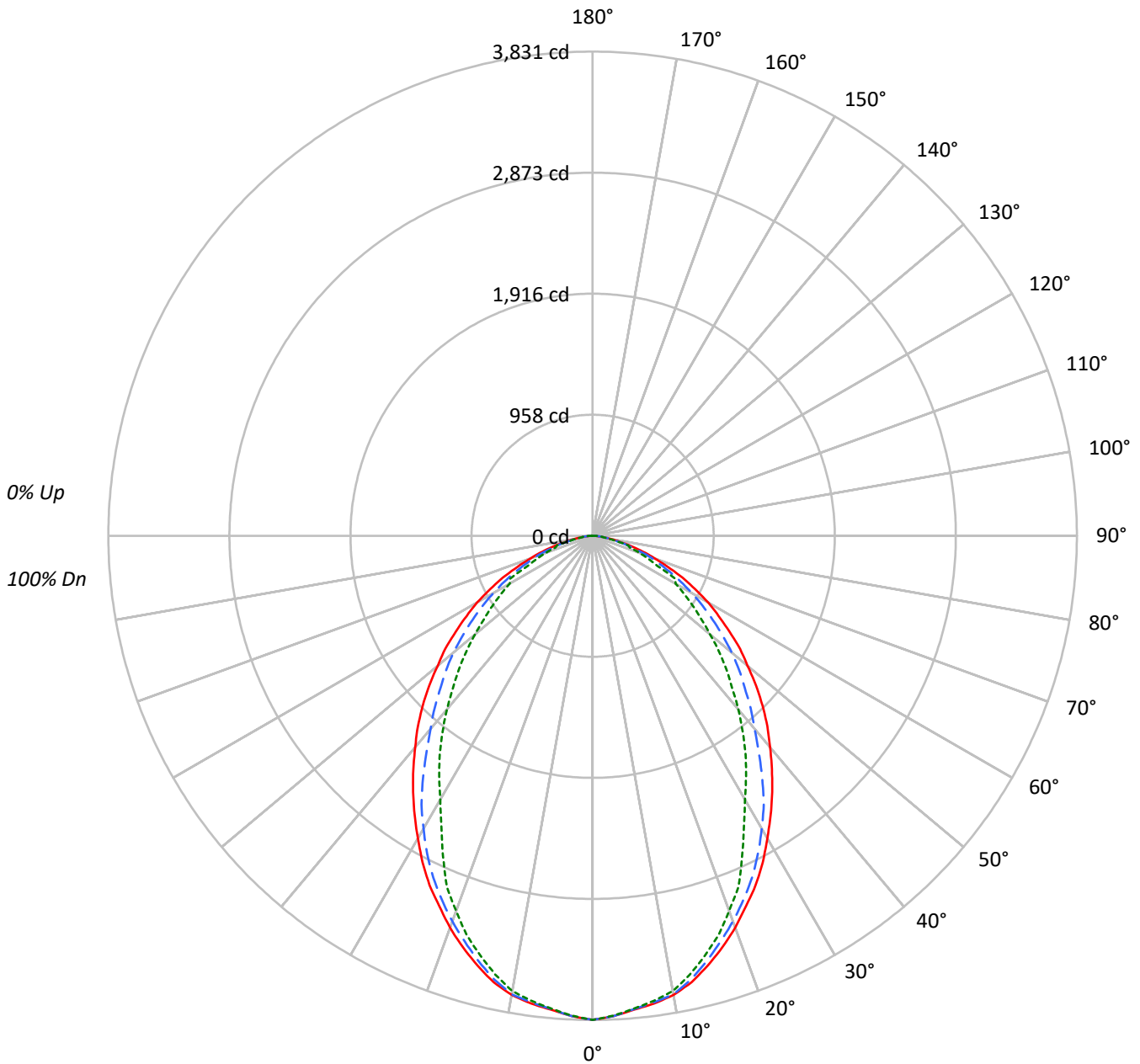
Lumens per Lamp: N/A  
Luminaire Lumens: 7520.0 lumens  
Efficiency: N/A  
Efficacy: 87.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	5154	5154	5154
5°	5084	5078	5072
10°	5040	5034	4998
15°	4904	4855	4787
20°	4724	4648	4521
25°	4530	4431	4155
30°	4293	4156	3743
35°	4066	3841	3462
40°	3835	3500	3150
45°	3615	3236	2848
50°	3346	3003	2540
55°	3096	2722	2275
60°	2836	2431	2038
65°	2495	2129	1805
70°	2056	1864	1533
75°	1634	1428	1496
80°	1098	1030	961
85°	684	820	957



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	356.6	4.7
10°-20°	978.6	13.0
20°-30°	1354.8	18.0
30°-40°	1444.6	19.2
40°-50°	1317.9	17.5
50°-60°	1032.5	13.7
60°-70°	672.9	8.9
70°-80°	298.1	4.0
80°-90°	64.0	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°	2690.0	35.8
0°-40°	4134.6	55.0
0°-60°	6485.0	86.2
0°-90°	7520.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7520.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3831	3831	3831	3831	3831	
5°	3764	3760	3760	3755	3755	357
15°	3521	3521	3485	3450	3436	990
25°	3051	3034	2985	2878	2799	1401
35°	2476	2458	2338	2161	2108	1548
45°	1900	1860	1700	1559	1497	1463
55°	1320	1280	1160	1023	970	1184
65°	784	740	669	682	567	772
75°	314	292	275	261	288	337
85°	44	49	53	58	62	61
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3830.6	3830.6	3830.6	3830.6	3830.6
2.5°	3804.0	3804.0	3804.0	3799.6	3799.6
5°	3764.2	3759.7	3759.7	3755.3	3755.3
7.5°	3733.2	3728.7	3724.3	3719.9	3711.0
10°	3688.9	3688.9	3684.4	3662.3	3657.9
12.5°	3618.0	3613.6	3595.9	3564.9	3556.0
15°	3520.6	3520.6	3485.2	3449.7	3436.5
17.5°	3414.3	3409.9	3365.6	3330.2	3312.5
20°	3299.2	3290.3	3246.0	3188.5	3157.5
22.5°	3170.8	3170.8	3117.6	3042.3	3011.3
25°	3051.2	3033.5	2984.8	2878.5	2798.8
27.5°	2913.9	2887.3	2834.2	2683.6	2590.6
30°	2763.3	2750.1	2674.8	2479.9	2409.1
32.5°	2621.6	2599.5	2519.8	2316.1	2258.5
35°	2475.5	2457.8	2338.2	2161.1	2107.9
37.5°	2329.4	2307.2	2156.6	2014.9	1948.5
40°	2183.2	2156.6	1992.8	1864.4	1793.5
42.5°	2045.9	2010.5	1851.1	1713.8	1634.1
45°	1899.8	1859.9	1700.5	1558.8	1496.8
47.5°	1753.7	1718.2	1572.1	1426.0	1355.1
50°	1598.7	1567.7	1434.8	1288.7	1213.4
52.5°	1470.2	1421.5	1293.1	1147.0	1085.0
55°	1319.7	1279.8	1160.2	1023.0	969.8
57.5°	1182.4	1142.5	1031.8	903.4	859.1
60°	1054.0	996.4	903.4	792.7	757.3
62.5°	912.3	868.0	788.3	695.3	739.5
65°	783.8	739.5	668.7	682.0	566.8
67.5°	642.1	620.0	558.0	496.0	478.3
70°	522.6	496.0	473.8	407.4	389.7
72.5°	416.3	389.7	358.7	323.3	310.0
75°	314.4	292.3	274.6	261.3	287.8
77.5°	217.0	208.1	194.9	181.6	177.1
80°	141.7	137.3	132.9	128.4	124.0
82.5°	84.1	84.1	84.1	84.1	84.1
85°	44.3	48.7	53.1	57.6	62.0
87.5°	26.6	26.6	31.0	35.4	39.9
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)