

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: P546695

Luminaire Tested: **FMR-24-4-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: P546695  
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-35-UNV-82-84-EDD  
Description: 2X4 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**

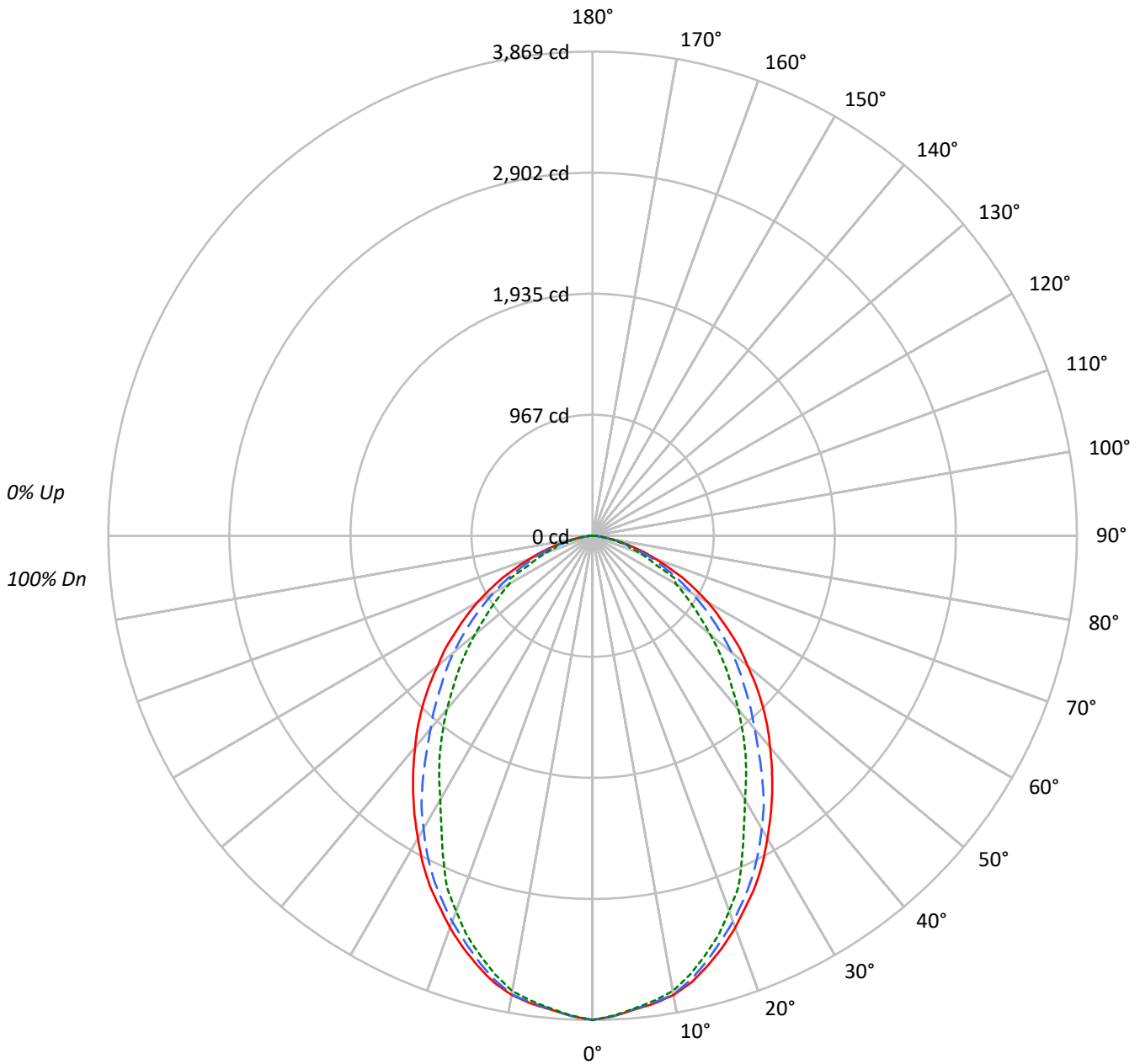
Lumens per Lamp: N/A  
Luminaire Lumens: 7595.0 lumens  
Efficiency: N/A  
Efficacy: 87.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	5205	5205	5205
5°	5135	5129	5123
10°	5090	5084	5047
15°	4953	4903	4835
20°	4771	4694	4566
25°	4575	4475	4196
30°	4336	4197	3780
35°	4107	3879	3497
40°	3873	3535	3182
45°	3651	3268	2876
50°	3380	3033	2565
55°	3126	2749	2298
60°	2865	2455	2058
65°	2520	2150	1823
70°	2076	1883	1548
75°	1651	1442	1511
80°	1109	1040	970
85°	690	829	966



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	360.1	4.7
10°-20°	988.4	13.0
20°-30°	1368.3	18.0
30°-40°	1459.0	19.2
40°-50°	1331.1	17.5
50°-60°	1042.8	13.7
60°-70°	679.6	8.9
70°-80°	301.1	4.0
80°-90°	64.7	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°	2716.8	35.8
0°-40°	4175.8	55.0
0°-60°	6549.6	86.2
0°-90°	7595.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7595.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3869	3869	3869	3869	3869	
5°	3802	3797	3797	3793	3793	361
15°	3556	3556	3520	3484	3471	1000
25°	3082	3064	3014	2907	2827	1415
35°	2500	2482	2362	2183	2129	1563
45°	1919	1878	1718	1574	1512	1478
55°	1333	1293	1172	1033	980	1195
65°	792	747	675	689	572	780
75°	318	295	277	264	291	340
85°	45	49	54	58	63	62
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3868.8	3868.8	3868.8	3868.8	3868.8
2.5°	3842.0	3842.0	3842.0	3837.5	3837.5
5°	3801.7	3797.2	3797.2	3792.8	3792.8
7.5°	3770.4	3765.9	3761.4	3757.0	3748.0
10°	3725.7	3725.7	3721.2	3698.8	3694.4
12.5°	3654.1	3649.6	3631.7	3600.4	3591.5
15°	3555.7	3555.7	3519.9	3484.1	3470.7
17.5°	3448.4	3443.9	3399.2	3363.4	3345.5
20°	3332.1	3323.1	3278.4	3220.3	3189.0
22.5°	3202.4	3202.4	3148.7	3072.7	3041.4
25°	3081.6	3063.7	3014.5	2907.2	2826.7
27.5°	2943.0	2916.1	2862.5	2710.4	2616.5
30°	2790.9	2777.5	2701.4	2504.7	2433.1
32.5°	2647.8	2625.4	2544.9	2339.2	2281.0
35°	2500.2	2482.3	2361.5	2182.6	2129.0
37.5°	2352.6	2330.2	2178.2	2035.0	1967.9
40°	2205.0	2178.2	2012.7	1883.0	1811.4
42.5°	2066.3	2030.6	1869.5	1730.9	1650.4
45°	1918.7	1878.5	1717.5	1574.4	1511.7
47.5°	1771.1	1735.4	1587.8	1440.2	1368.6
50°	1614.6	1583.3	1449.1	1301.5	1225.5
52.5°	1484.9	1435.7	1306.0	1158.4	1095.8
55°	1332.8	1292.6	1171.8	1033.2	979.5
57.5°	1194.2	1153.9	1042.1	912.4	867.7
60°	1064.5	1006.3	912.4	800.6	764.8
62.5°	921.4	876.6	796.1	702.2	746.9
65°	791.6	746.9	675.4	688.8	572.5
67.5°	648.5	626.2	563.5	500.9	483.0
70°	527.8	500.9	478.6	411.5	393.6
72.5°	420.4	393.6	362.3	326.5	313.1
75°	317.6	295.2	277.3	263.9	290.7
77.5°	219.2	210.2	196.8	183.4	178.9
80°	143.1	138.7	134.2	129.7	125.2
82.5°	85.0	85.0	85.0	85.0	85.0
85°	44.7	49.2	53.7	58.1	62.6
87.5°	26.8	26.8	31.3	35.8	40.3
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)