

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: P546754

Luminaire Tested: **FMR-24-4-LD4-2HI-50-UNV-81-87-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: P546754  
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-50-UNV-81-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

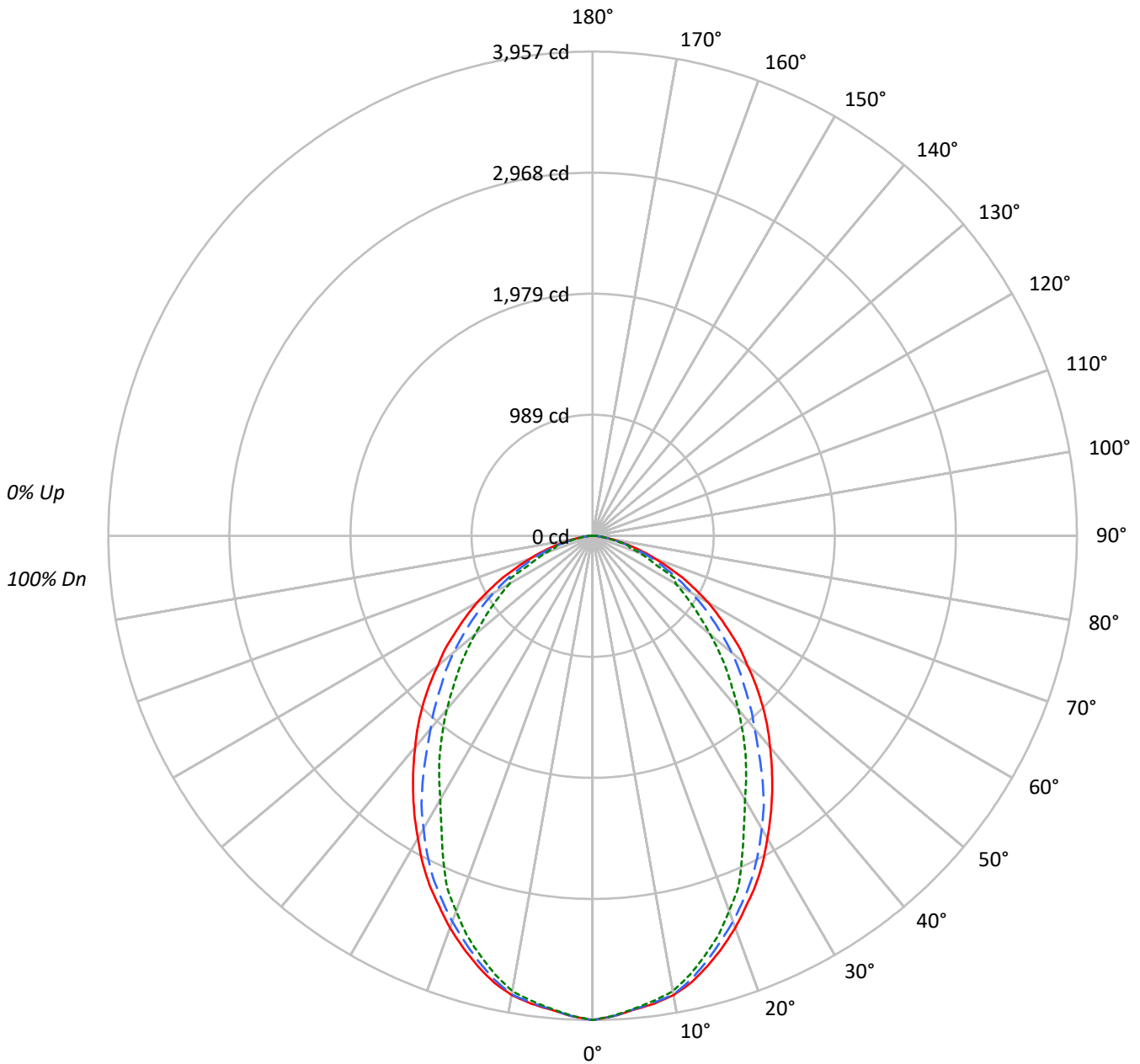
Lumens per Lamp: N/A  
Luminaire Lumens: 7769.0 lumens  
Efficiency: N/A  
Efficacy: 89.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	5325	5325	5325
5°	5252	5246	5240
10°	5207	5200	5163
15°	5066	5015	4945
20°	4880	4802	4671
25°	4680	4578	4293
30°	4435	4293	3867
35°	4201	3968	3577
40°	3962	3616	3254
45°	3735	3343	2943
50°	3457	3103	2624
55°	3198	2812	2350
60°	2930	2511	2105
65°	2578	2199	1864
70°	2124	1926	1584
75°	1688	1475	1546
80°	1134	1064	993
85°	707	848	990



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	368.4	4.7
10°-20°	1011.0	13.0
20°-30°	1399.6	18.0
30°-40°	1492.4	19.2
40°-50°	1361.5	17.5
50°-60°	1066.7	13.7
60°-70°	695.2	8.9
70°-80°	308.0	4.0
80°-90°	66.1	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°	2779.0	35.8
0°-40°	4271.5	55.0
0°-60°	6699.7	86.2
0°-90°	7769.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7769.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3957	3957	3957	3957	3957	
5°	3889	3884	3884	3880	3880	369
15°	3637	3637	3601	3564	3550	1023
25°	3152	3134	3084	2974	2891	1447
35°	2558	2539	2416	2233	2178	1599
45°	1963	1922	1757	1610	1546	1512
55°	1363	1322	1199	1057	1002	1223
65°	810	764	691	705	586	798
75°	325	302	284	270	297	348
85°	46	50	55	60	64	63
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3957.4	3957.4	3957.4	3957.4	3957.4
2.5°	3930.0	3930.0	3930.0	3925.4	3925.4
5°	3888.8	3884.2	3884.2	3879.6	3879.6
7.5°	3856.8	3852.2	3847.6	3843.0	3833.9
10°	3811.0	3811.0	3806.4	3783.6	3779.0
12.5°	3737.8	3733.2	3714.9	3682.9	3673.8
15°	3637.2	3637.2	3600.6	3564.0	3550.2
17.5°	3527.4	3522.8	3477.0	3440.4	3422.1
20°	3408.4	3399.3	3353.5	3294.0	3262.0
22.5°	3275.7	3275.7	3220.8	3143.1	3111.0
25°	3152.2	3133.9	3083.6	2973.8	2891.4
27.5°	3010.4	2982.9	2928.0	2772.5	2676.4
30°	2854.8	2841.1	2763.3	2562.0	2488.8
32.5°	2708.4	2685.6	2603.2	2392.8	2333.3
35°	2557.5	2539.2	2415.6	2232.6	2177.7
37.5°	2406.5	2383.6	2228.1	2081.7	2013.0
40°	2255.5	2228.1	2058.8	1926.1	1852.9
42.5°	2113.7	2077.1	1912.4	1770.5	1688.2
45°	1962.7	1921.5	1756.8	1610.4	1546.4
47.5°	1811.7	1775.1	1624.1	1473.2	1400.0
50°	1651.6	1619.6	1482.3	1331.3	1253.6
52.5°	1518.9	1468.6	1335.9	1184.9	1120.9
55°	1363.4	1322.2	1198.7	1056.8	1001.9
57.5°	1221.5	1180.4	1066.0	933.3	887.6
60°	1088.9	1029.4	933.3	818.9	782.3
62.5°	942.5	896.7	814.4	718.3	764.0
65°	809.8	764.0	690.8	704.6	585.6
67.5°	663.4	640.5	576.5	512.4	494.1
70°	539.9	512.4	489.5	420.9	402.6
72.5°	430.1	402.6	370.6	334.0	320.3
75°	324.8	302.0	283.7	269.9	297.4
77.5°	224.2	215.0	201.3	187.6	183.0
80°	146.4	141.8	137.3	132.7	128.1
82.5°	86.9	86.9	86.9	86.9	86.9
85°	45.8	50.3	54.9	59.5	64.1
87.5°	27.5	27.5	32.0	36.6	41.2
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)