

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: P546765

Luminaire Tested: **FMR-24-4-LD4-2HI-50-UNV-82-96-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: P546765  
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-82-96-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

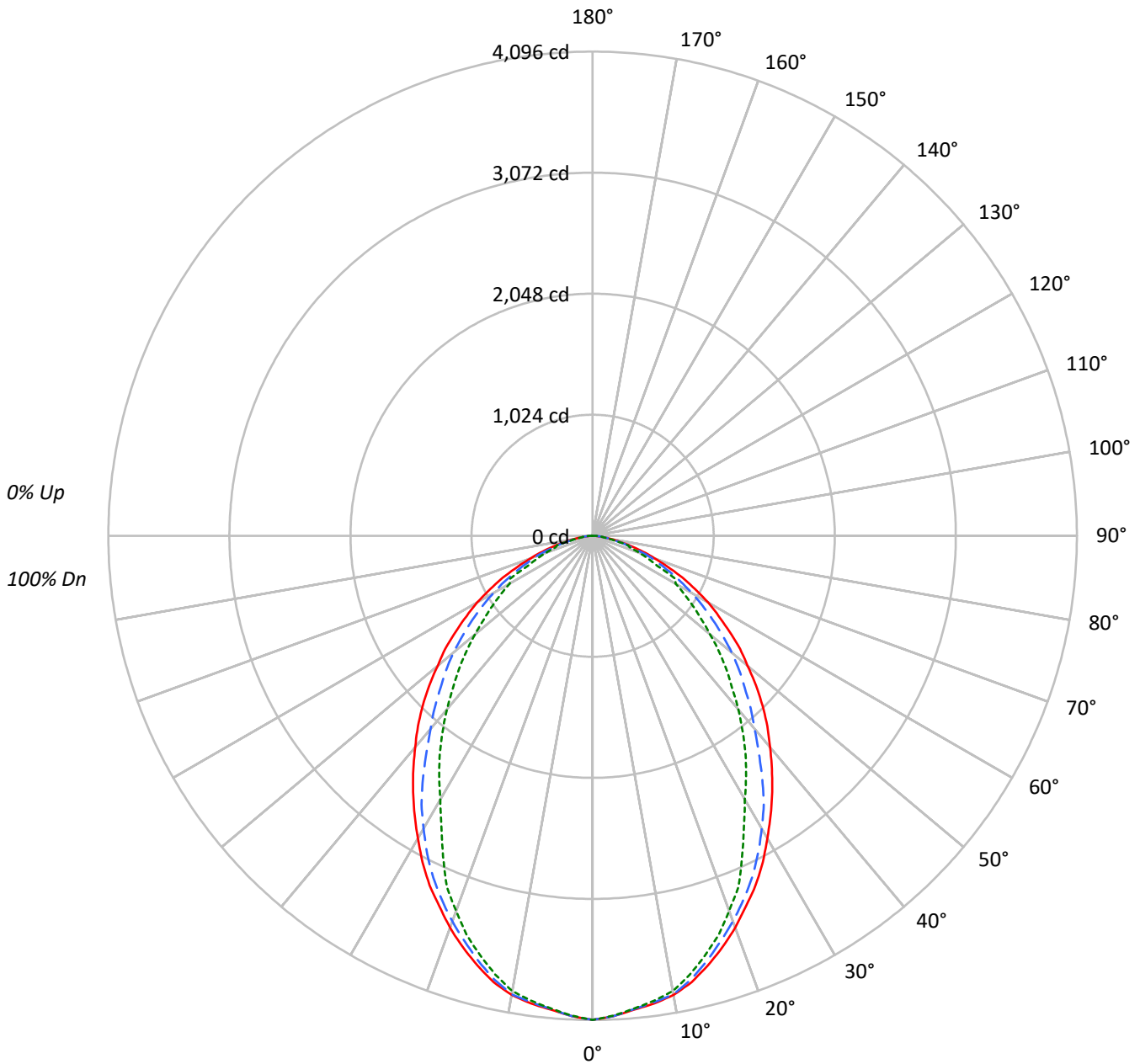
Lumens per Lamp: N/A  
Luminaire Lumens: 8040.0 lumens  
Efficiency: N/A  
Efficacy: 93.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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				20				
RC	80				70				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	100	100	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5510	5510	5510
5°	5435	5429	5423
10°	5388	5382	5343
15°	5243	5190	5118
20°	5051	4969	4834
25°	4843	4738	4442
30°	4590	4443	4002
35°	4347	4106	3702
40°	4100	3742	3368
45°	3865	3459	3045
50°	3578	3211	2716
55°	3310	2910	2432
60°	3032	2599	2179
65°	2668	2276	1929
70°	2198	1993	1639
75°	1748	1526	1600
80°	1174	1100	1027
85°	730	877	1024



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	381.2	4.7
10°-20°	1046.3	13.0
20°-30°	1448.5	18.0
30°-40°	1544.5	19.2
40°-50°	1409.0	17.5
50°-60°	1103.9	13.7
60°-70°	719.4	8.9
70°-80°	318.7	4.0
80°-90°	68.4	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°	2876.0	35.8
0°-40°	4420.5	55.0
0°-60°	6933.4	86.2
0°-90°	8040.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8040.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4096	4096	4096	4096	4096	
5°	4024	4020	4020	4015	4015	382
15°	3764	3764	3726	3688	3674	1058
25°	3262	3243	3191	3078	2992	1498
35°	2647	2628	2500	2310	2254	1655
45°	2031	1989	1818	1667	1600	1565
55°	1411	1368	1240	1094	1037	1265
65°	838	791	715	729	606	826
75°	336	312	294	279	308	360
85°	47	52	57	62	66	66
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4095.5	4095.5	4095.5	4095.5	4095.5
2.5°	4067.1	4067.1	4067.1	4062.3	4062.3
5°	4024.4	4019.7	4019.7	4015.0	4015.0
7.5°	3991.3	3986.6	3981.8	3977.1	3967.6
10°	3944.0	3944.0	3939.2	3915.6	3910.8
12.5°	3868.2	3863.5	3844.5	3811.4	3801.9
15°	3764.0	3764.0	3726.2	3688.3	3674.1
17.5°	3650.4	3645.7	3598.3	3560.5	3541.5
20°	3527.3	3517.8	3470.5	3408.9	3375.8
22.5°	3390.0	3390.0	3333.2	3252.7	3219.6
25°	3262.2	3243.2	3191.2	3077.5	2992.3
27.5°	3115.4	3087.0	3030.2	2869.2	2769.8
30°	2954.4	2940.2	2859.7	2651.4	2575.6
32.5°	2802.9	2779.2	2694.0	2476.2	2414.7
35°	2646.7	2627.7	2499.9	2310.5	2253.7
37.5°	2490.4	2466.8	2305.8	2154.3	2083.2
40°	2334.2	2305.8	2130.6	1993.3	1917.5
42.5°	2187.4	2149.5	1979.1	1832.3	1747.1
45°	2031.2	1988.6	1818.1	1666.6	1600.3
47.5°	1874.9	1837.0	1680.8	1524.6	1448.8
50°	1709.2	1676.1	1534.0	1377.8	1297.3
52.5°	1571.9	1519.8	1382.5	1226.3	1160.0
55°	1410.9	1368.3	1240.5	1093.7	1036.9
57.5°	1264.2	1221.5	1103.2	965.9	918.5
60°	1126.8	1065.3	965.9	847.5	809.6
62.5°	975.3	928.0	842.8	743.3	790.7
65°	838.0	790.7	714.9	729.1	606.0
67.5°	686.5	662.9	596.6	530.3	511.3
70°	558.7	530.3	506.6	435.6	416.6
72.5°	445.1	416.6	383.5	345.6	331.4
75°	336.2	312.5	293.5	279.3	307.8
77.5°	232.0	222.5	208.3	194.1	189.4
80°	151.5	146.8	142.0	137.3	132.6
82.5°	90.0	90.0	90.0	90.0	90.0
85°	47.3	52.1	56.8	61.6	66.3
87.5°	28.4	28.4	33.1	37.9	42.6
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)