

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: P546768

Luminaire Tested: **FMR-24-4-LD4-2HI-50-UNV-93-85-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: P546768  
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-93-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

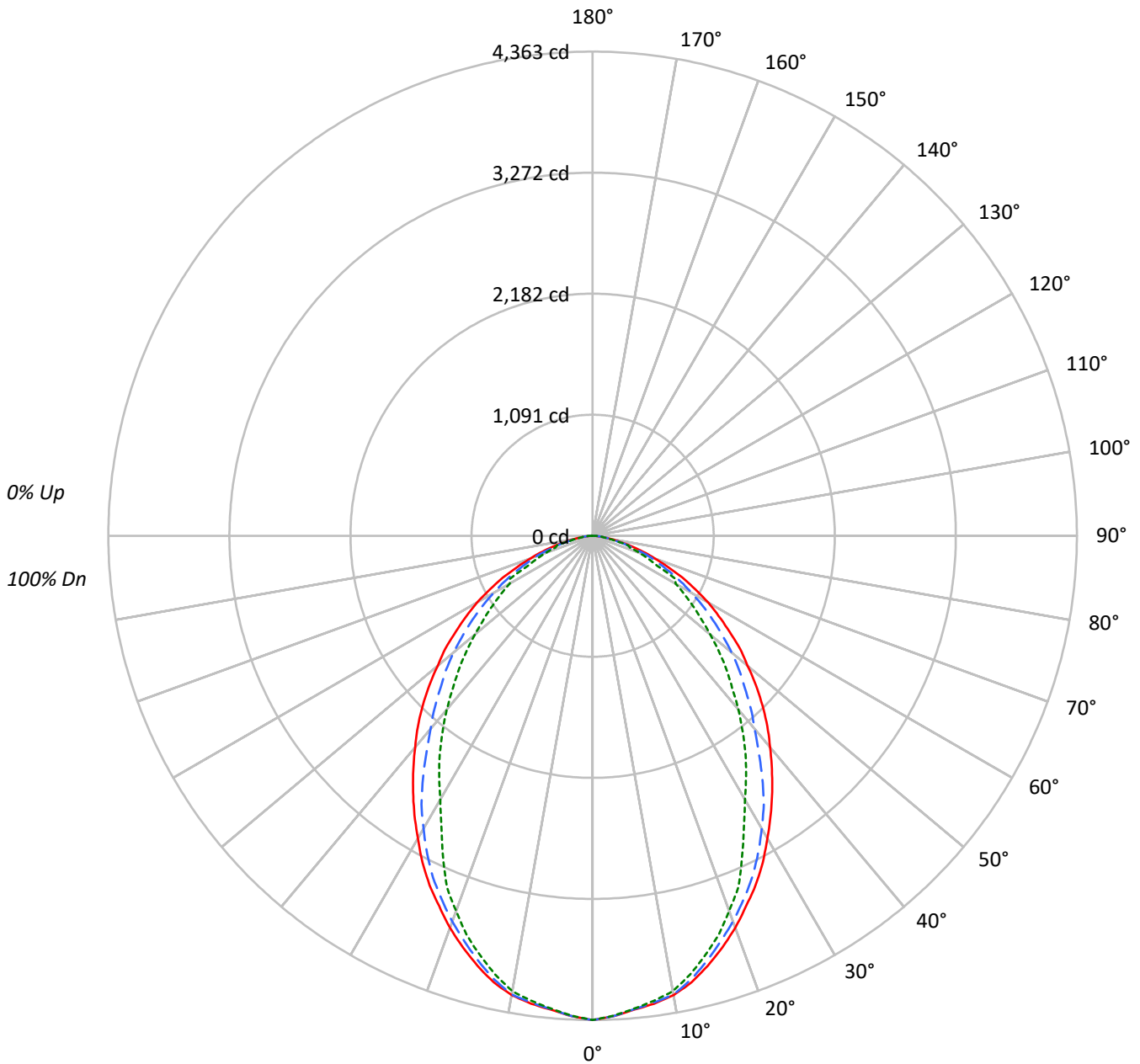
Lumens per Lamp: N/A  
Luminaire Lumens: 8566.0 lumens  
Efficiency: N/A  
Efficacy: 99.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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									
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°	5871	5871	5871
5°	5791	5784	5778
10°	5741	5734	5693
15°	5586	5530	5453
20°	5381	5294	5150
25°	5160	5047	4733
30°	4890	4734	4263
35°	4632	4375	3944
40°	4368	3987	3588
45°	4118	3686	3244
50°	3812	3421	2893
55°	3526	3100	2591
60°	3231	2769	2321
65°	2843	2425	2056
70°	2341	2124	1746
75°	1862	1626	1705
80°	1251	1172	1094
85°	778	934	1090



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	406.2	4.7
10°-20°	1114.7	13.0
20°-30°	1543.2	18.0
30°-40°	1645.5	19.2
40°-50°	1501.2	17.5
50°-60°	1176.1	13.7
60°-70°	766.5	8.9
70°-80°	339.6	4.0
80°-90°	72.9	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°	3064.1	35.8
0°-40°	4709.7	55.0
0°-60°	7387.0	86.2
0°-90°	8566.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8566.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4363	4363	4363	4363	4363	
5°	4288	4283	4283	4278	4278	407
15°	4010	4010	3970	3930	3914	1127
25°	3476	3455	3400	3279	3188	1596
35°	2820	2800	2663	2462	2401	1763
45°	2164	2119	1937	1776	1705	1667
55°	1503	1458	1322	1165	1105	1348
65°	893	842	762	777	646	880
75°	358	333	313	298	328	384
85°	50	56	60	66	71	70
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4363.4	4363.4	4363.4	4363.4	4363.4
2.5°	4333.1	4333.1	4333.1	4328.1	4328.1
5°	4287.7	4282.7	4282.7	4277.7	4277.7
7.5°	4252.4	4247.4	4242.3	4237.3	4227.2
10°	4202.0	4202.0	4196.9	4171.7	4166.7
12.5°	4121.3	4116.2	4096.1	4060.7	4050.7
15°	4010.3	4010.3	3969.9	3929.6	3914.5
17.5°	3889.2	3884.2	3833.7	3793.4	3773.2
20°	3758.1	3748.0	3697.5	3632.0	3596.7
22.5°	3611.8	3611.8	3551.3	3465.5	3430.2
25°	3475.6	3455.4	3399.9	3278.9	3188.1
27.5°	3319.2	3288.9	3228.4	3056.9	2951.0
30°	3147.7	3132.6	3046.8	2824.9	2744.2
32.5°	2986.3	2961.1	2870.3	2638.2	2572.6
35°	2819.8	2799.6	2663.4	2461.7	2401.1
37.5°	2653.4	2628.1	2456.6	2295.2	2219.5
40°	2486.9	2456.6	2270.0	2123.7	2043.0
42.5°	2330.5	2290.2	2108.6	1952.2	1861.4
45°	2164.0	2118.6	1937.0	1775.6	1705.0
47.5°	1997.6	1957.2	1790.8	1624.3	1543.6
50°	1821.0	1785.7	1634.4	1467.9	1382.2
52.5°	1674.7	1619.3	1473.0	1306.5	1235.9
55°	1503.2	1457.8	1321.6	1165.3	1104.7
57.5°	1346.9	1301.5	1175.3	1029.1	978.6
60°	1200.6	1135.0	1029.1	902.9	862.6
62.5°	1039.1	988.7	897.9	792.0	842.4
65°	892.9	842.4	761.7	776.8	645.7
67.5°	731.4	706.2	635.6	565.0	544.8
70°	595.2	565.0	539.8	464.1	443.9
72.5°	474.2	443.9	408.6	368.2	353.1
75°	358.2	332.9	312.8	297.6	327.9
77.5°	247.2	237.1	222.0	206.8	201.8
80°	161.4	156.4	151.3	146.3	141.2
82.5°	95.8	95.8	95.8	95.8	95.8
85°	50.4	55.5	60.5	65.6	70.6
87.5°	30.3	30.3	35.3	40.4	45.4
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)