

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: P546772

Luminaire Tested: **FMR-24-4-LD4-2HI-50-UNV-93-94-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: P546772  
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-93-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

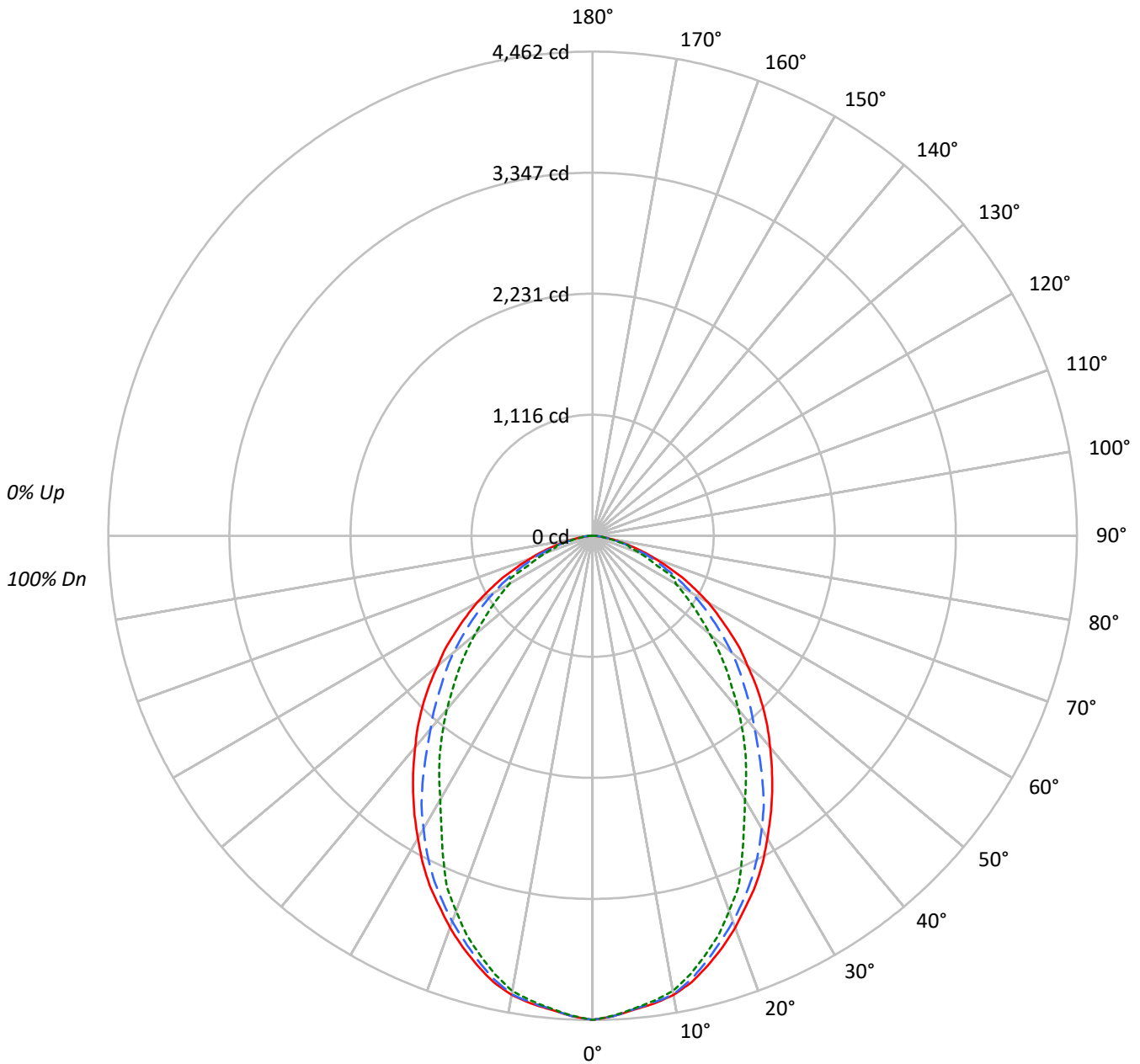
Lumens per Lamp: N/A  
Luminaire Lumens: 8759.0 lumens  
Efficiency: N/A  
Efficacy: 101.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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				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°	6003	6003	6003
5°	5922	5915	5908
10°	5870	5863	5821
15°	5712	5655	5576
20°	5502	5414	5266
25°	5276	5161	4840
30°	5001	4840	4360
35°	4736	4473	4033
40°	4466	4077	3669
45°	4211	3769	3317
50°	3898	3498	2958
55°	3606	3170	2650
60°	3303	2831	2373
65°	2907	2480	2102
70°	2395	2171	1786
75°	1904	1663	1743
80°	1279	1199	1119
85°	797	956	1115



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	415.3	4.7
10°-20°	1139.8	13.0
20°-30°	1578.0	18.0
30°-40°	1682.6	19.2
40°-50°	1535.0	17.5
50°-60°	1202.6	13.7
60°-70°	783.8	8.9
70°-80°	347.2	4.0
80°-90°	74.6	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°	3133.2	35.8
0°-40°	4815.8	55.0
0°-60°	7553.4	86.2
0°-90°	8759.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8759.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4462	4462	4462	4462	4462	
5°	4384	4379	4379	4374	4374	416
15°	4101	4101	4059	4018	4003	1153
25°	3554	3533	3476	3353	3260	1632
35°	2883	2863	2724	2517	2455	1803
45°	2213	2166	1981	1816	1743	1705
55°	1537	1491	1351	1192	1130	1379
65°	913	861	779	794	660	900
75°	366	340	320	304	335	393
85°	52	57	62	67	72	72
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4461.7	4461.7	4461.7	4461.7	4461.7
2.5°	4430.8	4430.8	4430.8	4425.6	4425.6
5°	4384.3	4379.2	4379.2	4374.0	4374.0
7.5°	4348.2	4343.1	4337.9	4332.8	4322.5
10°	4296.7	4296.7	4291.5	4265.7	4260.6
12.5°	4214.1	4209.0	4188.3	4152.2	4141.9
15°	4100.7	4100.7	4059.4	4018.1	4002.7
17.5°	3976.9	3971.7	3920.1	3878.9	3858.2
20°	3842.8	3832.4	3780.9	3713.8	3677.7
22.5°	3693.2	3693.2	3631.3	3543.6	3507.5
25°	3553.9	3533.3	3476.5	3352.7	3259.9
27.5°	3394.0	3363.1	3301.2	3125.8	3017.5
30°	3218.6	3203.2	3115.5	2888.5	2806.0
32.5°	3053.6	3027.8	2934.9	2697.7	2630.6
35°	2883.4	2862.7	2723.5	2517.1	2455.2
37.5°	2713.1	2687.3	2512.0	2346.9	2269.5
40°	2542.9	2512.0	2321.1	2171.5	2089.0
42.5°	2383.0	2341.8	2156.1	1996.2	1903.3
45°	2212.8	2166.4	1980.7	1815.6	1743.4
47.5°	2042.6	2001.3	1831.1	1660.9	1578.4
50°	1862.1	1826.0	1671.2	1501.0	1413.3
52.5°	1712.5	1655.7	1506.2	1335.9	1263.7
55°	1537.1	1490.7	1351.4	1191.5	1129.6
57.5°	1377.2	1330.8	1201.8	1052.2	1000.7
60°	1227.6	1160.6	1052.2	923.3	882.0
62.5°	1062.6	1011.0	918.1	809.8	861.4
65°	913.0	861.4	778.9	794.3	660.2
67.5°	747.9	722.1	649.9	577.7	557.1
70°	608.7	577.7	551.9	474.5	453.9
72.5°	484.9	453.9	417.8	376.5	361.1
75°	366.2	340.4	319.8	304.3	335.3
77.5°	252.7	242.4	227.0	211.5	206.3
80°	165.1	159.9	154.7	149.6	144.4
82.5°	98.0	98.0	98.0	98.0	98.0
85°	51.6	56.7	61.9	67.1	72.2
87.5°	30.9	30.9	36.1	41.3	46.4
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)