

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: P546151

Luminaire Tested: **FMR-12-4-LD4-2HI-40-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: P546151  
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-12-4-LD4-2HI-40-UNV-82-84-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

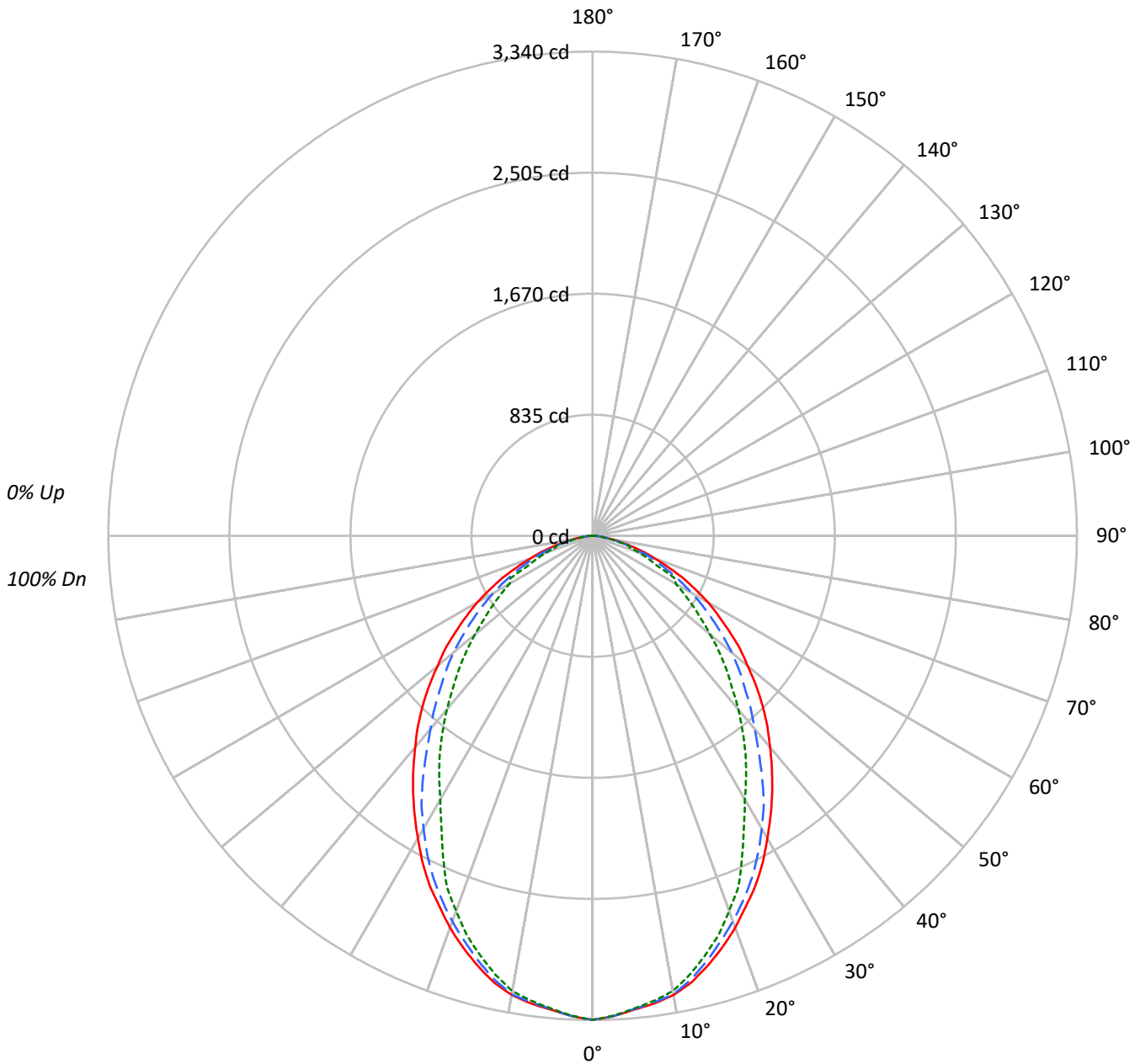
Lumens per Lamp: N/A  
Luminaire Lumens: 6556.0 lumens  
Efficiency: N/A  
Efficacy: 75.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	8987	8987	8987
5°	8864	8854	8844
10°	8788	8777	8714
15°	8551	8465	8346
20°	8237	8104	7883
25°	7898	7726	7245
30°	7486	7246	6526
35°	7090	6697	6037
40°	6686	6103	5493
45°	6303	5642	4966
50°	5835	5237	4428
55°	5398	4746	3967
60°	4945	4239	3553
65°	4351	3712	3147
70°	3585	3250	2673
75°	2850	2489	2609
80°	1914	1795	1675
85°	1192	1430	1670



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	310.9	4.7
10°-20°	853.1	13.0
20°-30°	1181.1	18.0
30°-40°	1259.4	19.2
40°-50°	1149.0	17.5
50°-60°	900.1	13.7
60°-70°	586.7	8.9
70°-80°	259.9	4.0
80°-90°	55.8	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°	2345.1	35.8
0°-40°	3604.6	55.0
0°-60°	5653.6	86.2
0°-90°	6556.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6556.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3340	3340	3340	3340	3340	
5°	3282	3278	3278	3274	3274	312
15°	3069	3069	3038	3008	2996	863
25°	2660	2645	2602	2510	2440	1221
35°	2158	2143	2038	1884	1838	1349
45°	1656	1622	1482	1359	1305	1276
55°	1150	1116	1012	892	846	1032
65°	683	645	583	595	494	673
75°	274	255	239	228	251	294
85°	39	42	46	50	54	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3339.5	3339.5	3339.5	3339.5	3339.5
2.5°	3316.4	3316.4	3316.4	3312.5	3312.5
5°	3281.6	3277.8	3277.8	3273.9	3273.9
7.5°	3254.6	3250.7	3246.9	3243.0	3235.3
10°	3216.0	3216.0	3212.1	3192.8	3189.0
12.5°	3154.2	3150.4	3134.9	3107.9	3100.2
15°	3069.3	3069.3	3038.4	3007.5	2995.9
17.5°	2976.6	2972.8	2934.2	2903.3	2887.8
20°	2876.3	2868.5	2829.9	2779.7	2752.7
22.5°	2764.3	2764.3	2718.0	2652.3	2625.3
25°	2660.0	2644.6	2602.1	2509.5	2440.0
27.5°	2540.4	2517.2	2470.9	2339.6	2258.5
30°	2409.1	2397.5	2331.9	2162.0	2100.2
32.5°	2285.6	2266.3	2196.8	2019.2	1969.0
35°	2158.2	2142.7	2038.5	1884.0	1837.7
37.5°	2030.7	2011.4	1880.2	1756.6	1698.7
40°	1903.3	1880.2	1737.3	1625.4	1563.6
42.5°	1783.7	1752.8	1613.8	1494.1	1424.6
45°	1656.3	1621.5	1482.5	1359.0	1304.9
47.5°	1528.9	1498.0	1370.6	1243.2	1181.4
50°	1393.7	1366.7	1250.9	1123.5	1057.8
52.5°	1281.8	1239.3	1127.3	999.9	945.9
55°	1150.5	1115.8	1011.5	891.8	845.5
57.5°	1030.8	996.1	899.6	787.6	749.0
60°	918.9	868.7	787.6	691.1	660.2
62.5°	795.3	756.7	687.2	606.1	644.7
65°	683.4	644.7	583.0	594.6	494.2
67.5°	559.8	540.5	486.5	432.4	417.0
70°	455.6	432.4	413.1	355.2	339.7
72.5°	362.9	339.7	312.7	281.8	270.3
75°	274.1	254.8	239.4	227.8	250.9
77.5°	189.2	181.5	169.9	158.3	154.4
80°	123.5	119.7	115.8	112.0	108.1
82.5°	73.4	73.4	73.4	73.4	73.4
85°	38.6	42.5	46.3	50.2	54.1
87.5°	23.2	23.2	27.0	30.9	34.7
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)