

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: P547185

Luminaire Tested: **FMR-24-4-LD4-3STD-35-UNV-93-86-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: P547185  
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-LD4-3STD-35-UNV-93-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

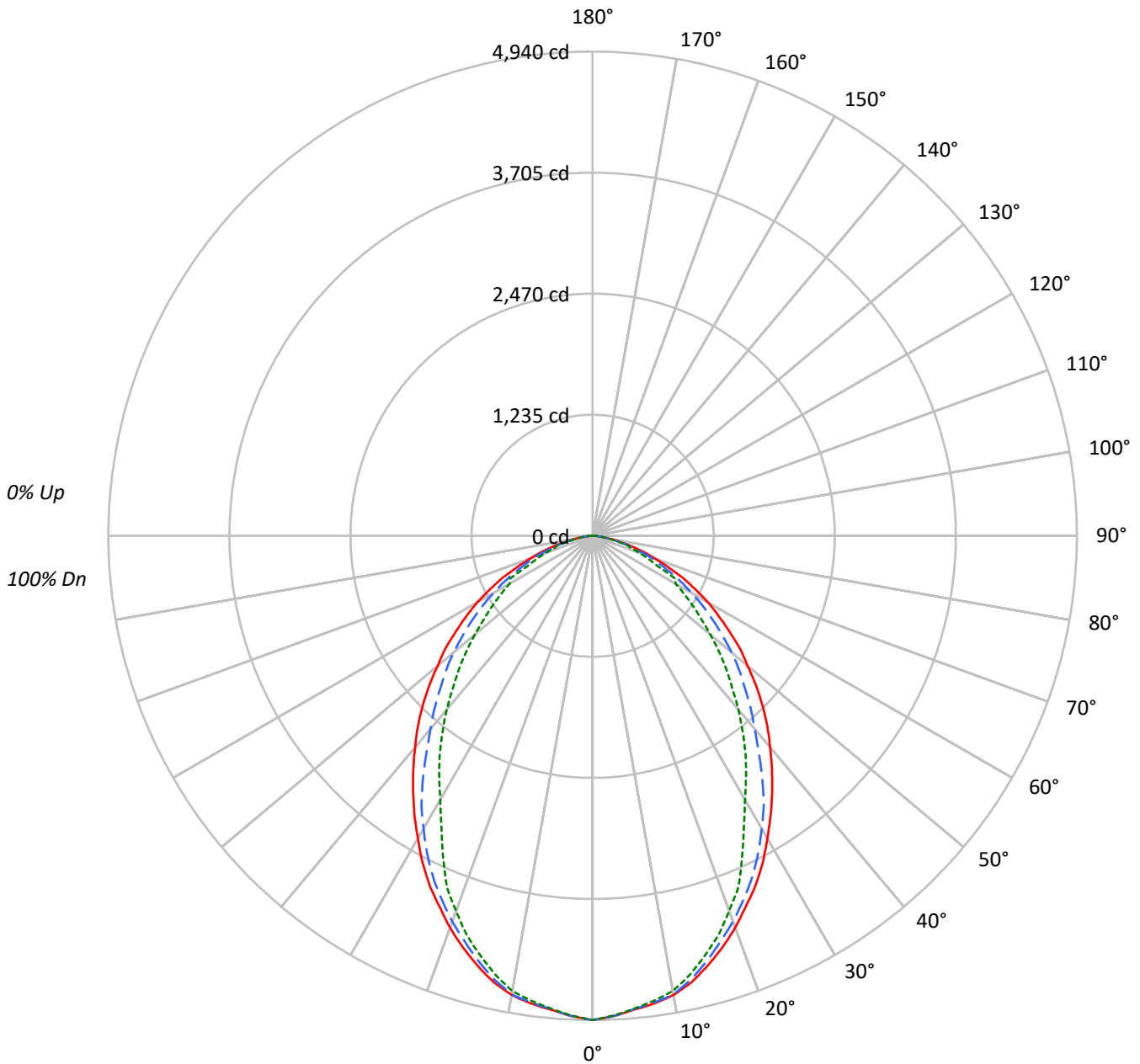
Lumens per Lamp: N/A  
Luminaire Lumens: 9698.0 lumens  
Efficiency: N/A  
Efficacy: 97.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
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°	6647	6647	6647
5°	6556	6549	6541
10°	6500	6492	6445
15°	6324	6261	6173
20°	6092	5994	5830
25°	5842	5714	5358
30°	5537	5359	4827
35°	5244	4953	4465
40°	4945	4514	4063
45°	4662	4173	3673
50°	4316	3873	3275
55°	3992	3510	2934
60°	3658	3135	2628
65°	3218	2746	2327
70°	2651	2404	1977
75°	2108	1841	1930
80°	1416	1327	1239
85°	881	1057	1235



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	459.9	4.7
10°-20°	1262.0	13.0
20°-30°	1747.2	18.0
30°-40°	1863.0	19.2
40°-50°	1699.6	17.5
50°-60°	1331.5	13.7
60°-70°	867.8	8.9
70°-80°	384.5	4.0
80°-90°	82.5	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°	3469.1	35.8
0°-40°	5332.1	55.0
0°-60°	8363.2	86.2
0°-90°	9698.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9698.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4940	4940	4940	4940	4940	
5°	4854	4849	4849	4843	4843	461
15°	4540	4540	4495	4449	4432	1276
25°	3935	3912	3849	3712	3609	1807
35°	3192	3170	3015	2787	2718	1996
45°	2450	2399	2193	2010	1930	1887
55°	1702	1650	1496	1319	1251	1526
65°	1011	954	862	880	731	996
75°	406	377	354	337	371	435
85°	57	63	68	74	80	79
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4940.0	4940.0	4940.0	4940.0	4940.0
2.5°	4905.8	4905.8	4905.8	4900.1	4900.1
5°	4854.4	4848.7	4848.7	4842.9	4842.9
7.5°	4814.4	4808.7	4803.0	4797.3	4785.8
10°	4757.3	4757.3	4751.6	4723.0	4717.3
12.5°	4665.9	4660.2	4637.3	4597.4	4585.9
15°	4540.3	4540.3	4494.6	4448.9	4431.8
17.5°	4403.2	4397.5	4340.4	4294.7	4271.8
20°	4254.7	4243.3	4186.2	4111.9	4072.0
22.5°	4089.1	4089.1	4020.6	3923.5	3883.5
25°	3934.9	3912.0	3849.2	3712.2	3609.4
27.5°	3757.9	3723.6	3655.1	3460.9	3340.9
30°	3563.7	3546.5	3449.5	3198.2	3106.8
32.5°	3380.9	3352.4	3249.6	2986.9	2912.6
35°	3192.5	3169.6	3015.4	2787.0	2718.4
37.5°	3004.0	2975.4	2781.3	2598.5	2512.8
40°	2815.5	2781.3	2570.0	2404.3	2313.0
42.5°	2638.5	2592.8	2387.2	2210.2	2107.4
45°	2450.0	2398.6	2193.0	2010.3	1930.3
47.5°	2261.6	2215.9	2027.4	1838.9	1747.6
50°	2061.7	2021.7	1850.4	1661.9	1564.8
52.5°	1896.1	1833.2	1667.6	1479.2	1399.2
55°	1701.9	1650.5	1496.3	1319.2	1250.7
57.5°	1524.8	1473.4	1330.7	1165.0	1107.9
60°	1359.2	1285.0	1165.0	1022.3	976.6
62.5°	1176.5	1119.4	1016.6	896.6	953.7
65°	1010.9	953.7	862.4	879.5	731.0
67.5°	828.1	799.5	719.6	639.6	616.8
70°	673.9	639.6	611.1	525.4	502.6
72.5°	536.8	502.6	462.6	416.9	399.8
75°	405.5	376.9	354.1	337.0	371.2
77.5°	279.8	268.4	251.3	234.2	228.4
80°	182.8	177.0	171.3	165.6	159.9
82.5°	108.5	108.5	108.5	108.5	108.5
85°	57.1	62.8	68.5	74.2	80.0
87.5°	34.3	34.3	40.0	45.7	51.4
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)