

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: P547398

Luminaire Tested: **FMR-24-4-LD4-4LO-40-UNV-81-97-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: P547398  
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-LD4-4LO-40-UNV-81-97-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

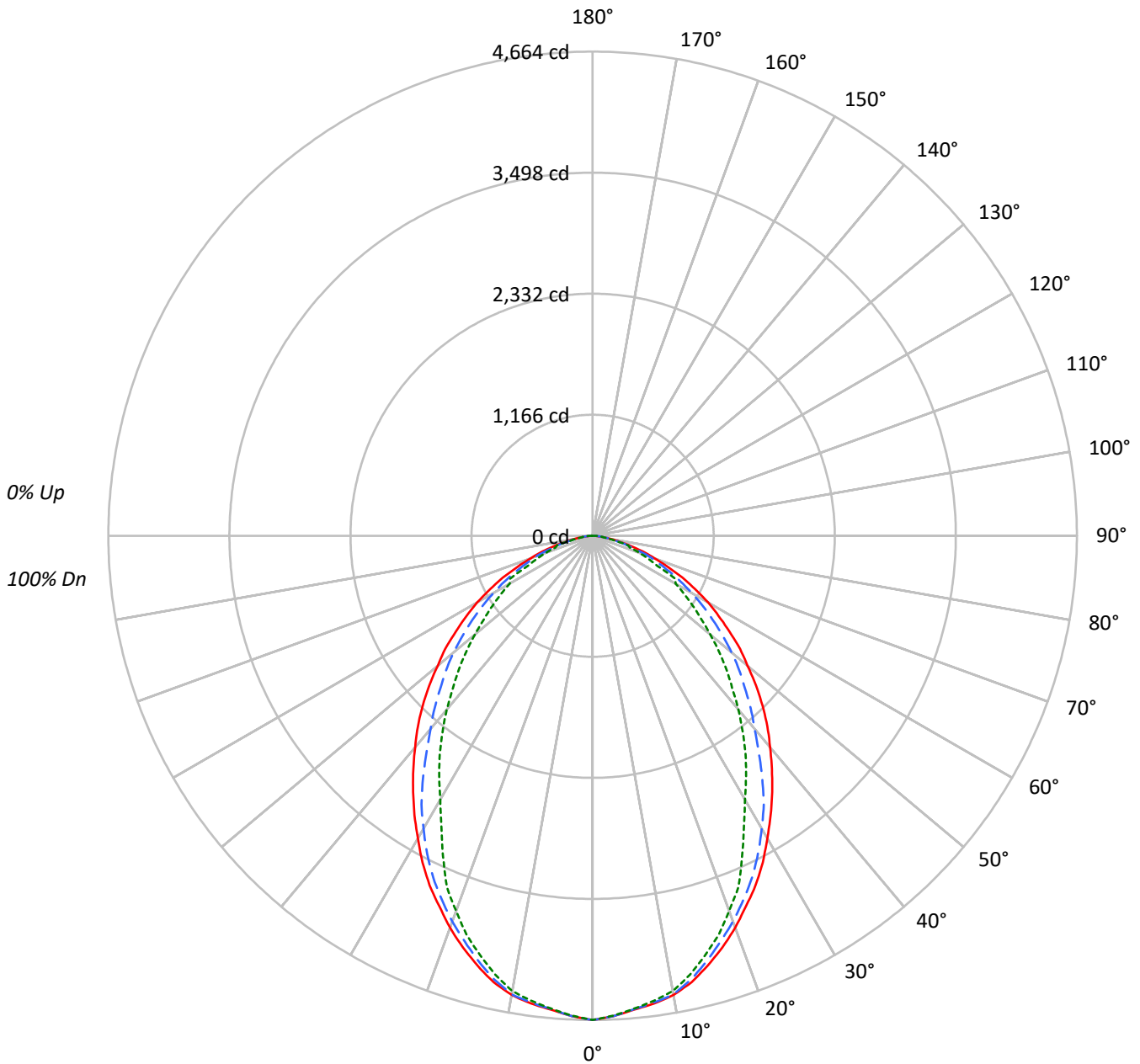
Lumens per Lamp: N/A  
Luminaire Lumens: 9156.0 lumens  
Efficiency: N/A  
Efficacy: 97.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
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°	6275	6275	6275
5°	6190	6183	6175
10°	6136	6129	6085
15°	5971	5911	5828
20°	5752	5659	5505
25°	5515	5395	5059
30°	5227	5060	4557
35°	4951	4676	4216
40°	4669	4262	3835
45°	4401	3940	3468
50°	4074	3657	3093
55°	3769	3314	2770
60°	3453	2960	2481
65°	3039	2592	2197
70°	2503	2269	1867
75°	1990	1738	1822
80°	1337	1254	1170
85°	832	999	1166



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	434.1	4.7
10°-20°	1191.5	13.0
20°-30°	1649.5	18.0
30°-40°	1758.9	19.2
40°-50°	1604.6	17.5
50°-60°	1257.1	13.7
60°-70°	819.3	8.9
70°-80°	363.0	4.0
80°-90°	77.9	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°	3275.2	35.8
0°-40°	5034.1	55.0
0°-60°	7895.8	86.2
0°-90°	9156.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9156.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4664	4664	4664	4664	4664	
5°	4583	4578	4578	4572	4572	435
15°	4286	4286	4243	4200	4184	1205
25°	3715	3693	3634	3505	3408	1706
35°	3014	2992	2847	2631	2566	1884
45°	2313	2265	2070	1898	1822	1782
55°	1607	1558	1413	1246	1181	1441
65°	954	900	814	830	690	941
75°	383	356	334	318	350	410
85°	54	59	65	70	76	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4663.9	4663.9	4663.9	4663.9	4663.9
2.5°	4631.6	4631.6	4631.6	4626.2	4626.2
5°	4583.1	4577.7	4577.7	4572.3	4572.3
7.5°	4545.3	4539.9	4534.5	4529.1	4518.4
10°	4491.4	4491.4	4486.0	4459.1	4453.7
12.5°	4405.1	4399.7	4378.2	4340.4	4329.6
15°	4286.5	4286.5	4243.4	4200.2	4184.1
17.5°	4157.1	4151.7	4097.8	4054.7	4033.1
20°	4016.9	4006.1	3952.2	3882.1	3844.4
22.5°	3860.6	3860.6	3795.9	3704.2	3666.5
25°	3715.0	3693.4	3634.1	3504.7	3407.6
27.5°	3547.8	3515.5	3450.8	3267.5	3154.2
30°	3364.5	3348.3	3256.7	3019.4	2933.2
32.5°	3192.0	3165.0	3068.0	2819.9	2749.8
35°	3014.0	2992.5	2846.9	2631.2	2566.5
37.5°	2836.1	2809.2	2625.8	2453.3	2372.4
40°	2658.2	2625.8	2426.3	2270.0	2183.7
42.5°	2491.0	2447.9	2253.8	2086.6	1989.6
45°	2313.1	2264.6	2070.5	1897.9	1822.4
47.5°	2135.2	2092.0	1914.1	1736.2	1649.9
50°	1946.5	1908.7	1747.0	1569.0	1477.4
52.5°	1790.1	1730.8	1574.4	1396.5	1321.0
55°	1606.8	1558.2	1412.7	1245.5	1180.8
57.5°	1439.6	1391.1	1256.3	1099.9	1046.0
60°	1283.3	1213.2	1099.9	965.1	922.0
62.5°	1110.7	1056.8	959.7	846.5	900.4
65°	954.4	900.4	814.2	830.3	690.2
67.5°	781.8	754.9	679.4	603.9	582.3
70°	636.2	603.9	576.9	496.0	474.5
72.5°	506.8	474.5	436.7	393.6	377.4
75°	382.8	355.9	334.3	318.1	350.5
77.5°	264.2	253.4	237.2	221.1	215.7
80°	172.5	167.1	161.8	156.4	151.0
82.5°	102.4	102.4	102.4	102.4	102.4
85°	53.9	59.3	64.7	70.1	75.5
87.5°	32.4	32.4	37.7	43.1	48.5
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)