

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: P547373

Luminaire Tested: **FMR-24-4-LD4-4LO-35-UNV-82-96-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: P547373  
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-35-UNV-82-96-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

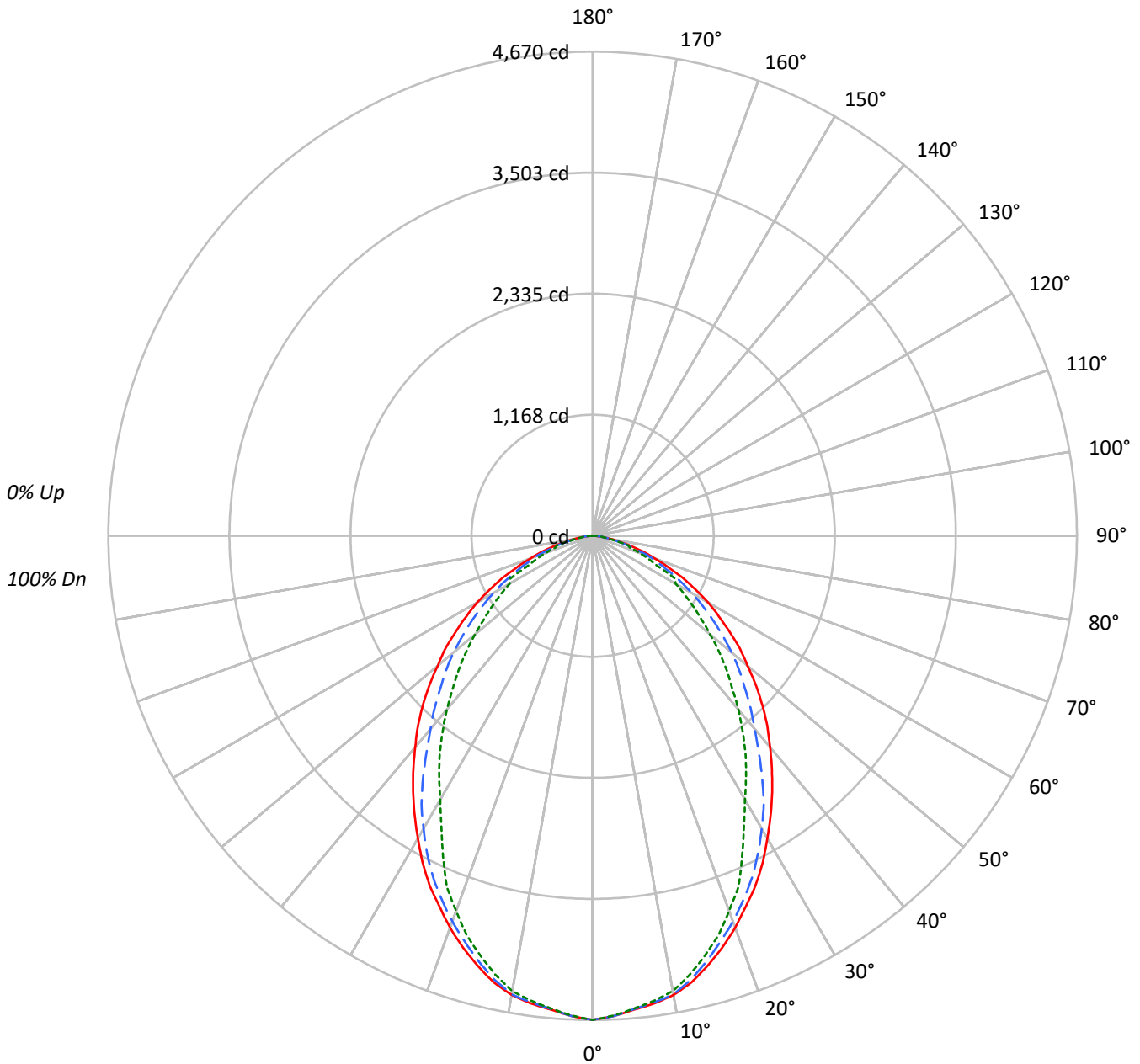
Lumens per Lamp: N/A  
Luminaire Lumens: 9167.0 lumens  
Efficiency: N/A  
Efficacy: 97.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	6283	6283	6283
5°	6197	6190	6183
10°	6144	6136	6092
15°	5978	5918	5835
20°	5758	5666	5511
25°	5522	5402	5065
30°	5234	5066	4563
35°	4957	4682	4221
40°	4675	4267	3840
45°	4407	3945	3472
50°	4079	3661	3096
55°	3774	3318	2773
60°	3457	2964	2484
65°	3042	2595	2200
70°	2506	2272	1869
75°	1993	1740	1824
80°	1338	1254	1172
85°	834	1000	1167



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	434.7	4.7
10°-20°	1192.9	13.0
20°-30°	1651.5	18.0
30°-40°	1761.0	19.2
40°-50°	1606.5	17.5
50°-60°	1258.6	13.7
60°-70°	820.3	8.9
70°-80°	363.4	4.0
80°-90°	78.0	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°	3279.1	35.8
0°-40°	5040.1	55.0
0°-60°	7905.3	86.2
0°-90°	9167.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9167.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4670	4670	4670	4670	4670	
5°	4589	4583	4583	4578	4578	436
15°	4292	4292	4248	4205	4189	1207
25°	3719	3698	3638	3509	3412	1708
35°	3018	2996	2850	2634	2570	1887
45°	2316	2267	2073	1900	1825	1784
55°	1609	1560	1414	1247	1182	1443
65°	956	902	815	831	691	942
75°	383	356	335	318	351	411
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°	4669.5	4669.5	4669.5	4669.5	4669.5
2.5°	4637.2	4637.2	4637.2	4631.8	4631.8
5°	4588.6	4583.2	4583.2	4577.8	4577.8
7.5°	4550.8	4545.4	4540.0	4534.6	4523.8
10°	4496.8	4496.8	4491.4	4464.4	4459.0
12.5°	4410.4	4405.0	4383.4	4345.6	4334.9
15°	4291.7	4291.7	4248.5	4205.3	4189.1
17.5°	4162.1	4156.7	4102.7	4059.5	4037.9
20°	4021.7	4011.0	3957.0	3886.8	3849.0
22.5°	3865.2	3865.2	3800.4	3708.6	3670.9
25°	3719.4	3697.8	3638.5	3508.9	3411.7
27.5°	3552.1	3519.7	3454.9	3271.4	3158.0
30°	3368.6	3352.4	3260.6	3023.1	2936.7
32.5°	3195.8	3168.8	3071.6	2823.3	2753.1
35°	3017.7	2996.1	2850.3	2634.4	2569.6
37.5°	2839.5	2812.5	2629.0	2456.2	2375.3
40°	2661.4	2629.0	2429.2	2272.7	2186.3
42.5°	2494.0	2450.8	2256.5	2089.2	1992.0
45°	2315.9	2267.3	2073.0	1900.2	1824.6
47.5°	2137.7	2094.5	1916.4	1738.3	1651.9
50°	1948.8	1911.0	1749.1	1570.9	1479.1
52.5°	1792.2	1732.9	1576.3	1398.2	1322.6
55°	1608.7	1560.1	1414.4	1247.0	1182.2
57.5°	1441.4	1392.8	1257.8	1101.3	1047.3
60°	1284.8	1214.6	1101.3	966.3	923.1
62.5°	1112.1	1058.1	960.9	847.5	901.5
65°	955.5	901.5	815.1	831.3	691.0
67.5°	782.8	755.8	680.2	604.6	583.0
70°	637.0	604.6	577.6	496.6	475.1
72.5°	507.4	475.1	437.3	394.1	377.9
75°	383.3	356.3	334.7	318.5	350.9
77.5°	264.5	253.7	237.5	221.3	215.9
80°	172.7	167.3	161.9	156.6	151.2
82.5°	102.6	102.6	102.6	102.6	102.6
85°	54.0	59.4	64.8	70.2	75.6
87.5°	32.4	32.4	37.8	43.2	48.6
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)