

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: P547364

Luminaire Tested: **FMR-24-4-LD4-4LO-35-UNV-81-94-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: P547364  
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-81-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

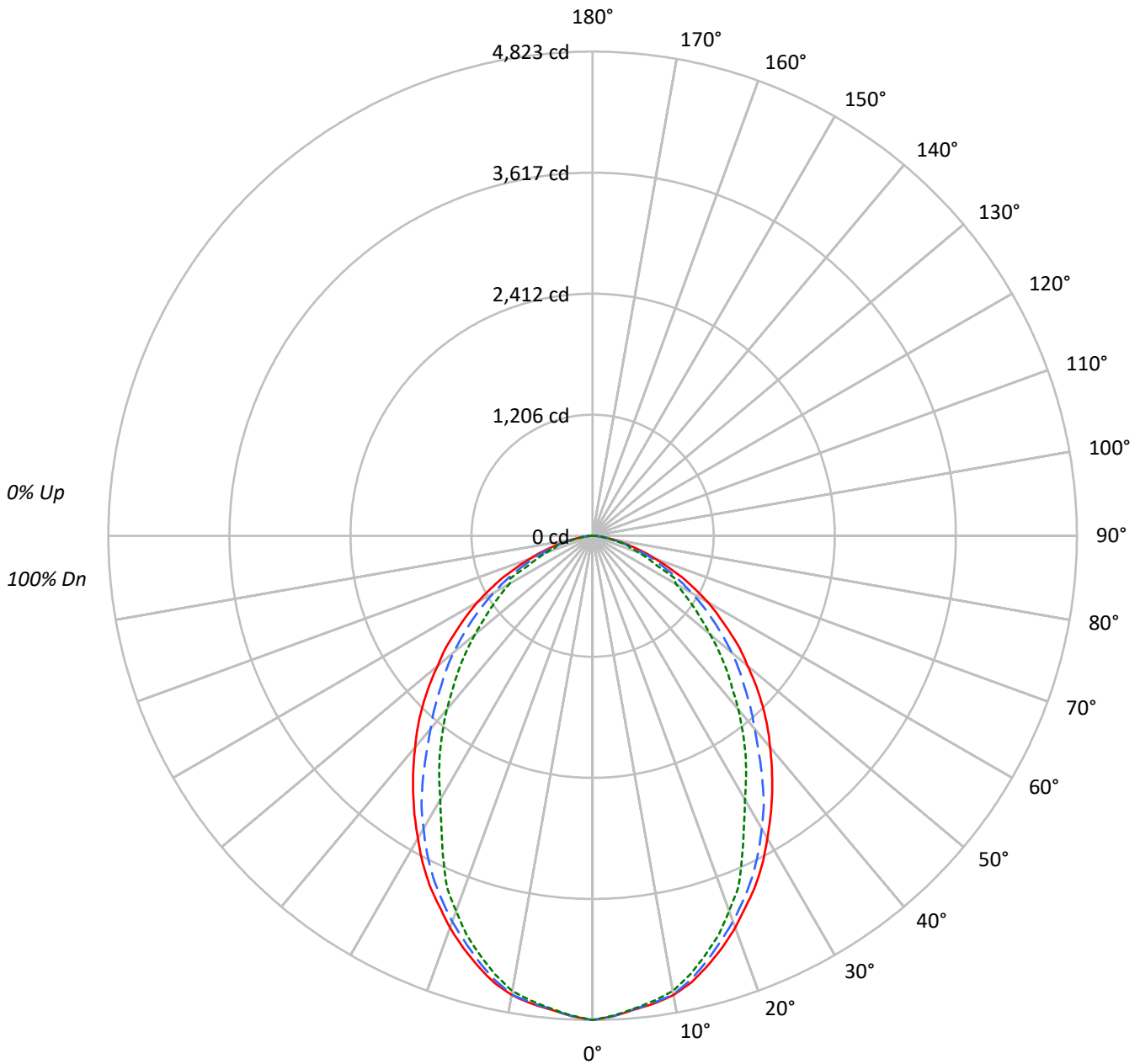
Lumens per Lamp: N/A  
Luminaire Lumens: 9468.0 lumens  
Efficiency: N/A  
Efficacy: 101.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	6489	6489	6489
5°	6401	6393	6386
10°	6346	6338	6292
15°	6174	6112	6027
20°	5948	5852	5692
25°	5703	5579	5231
30°	5405	5232	4712
35°	5119	4835	4359
40°	4828	4407	3966
45°	4551	4074	3586
50°	4213	3781	3198
55°	3898	3427	2864
60°	3571	3061	2566
65°	3142	2680	2272
70°	2588	2347	1930
75°	2058	1797	1884
80°	1382	1296	1210
85°	861	1033	1206



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	448.9	4.7
10°-20°	1232.1	13.0
20°-30°	1705.7	18.0
30°-40°	1818.8	19.2
40°-50°	1659.3	17.5
50°-60°	1299.9	13.7
60°-70°	847.2	8.9
70°-80°	375.4	4.0
80°-90°	80.6	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°	3386.8	35.8
0°-40°	5205.6	55.0
0°-60°	8164.8	86.2
0°-90°	9468.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9468.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4823	4823	4823	4823	4823	
5°	4739	4734	4734	4728	4728	450
15°	4433	4433	4388	4343	4327	1246
25°	3842	3819	3758	3624	3524	1764
35°	3117	3094	2944	2721	2654	1949
45°	2392	2342	2141	1963	1884	1842
55°	1662	1611	1461	1288	1221	1490
65°	987	931	842	859	714	973
75°	396	368	346	329	362	424
85°	56	61	67	72	78	77
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4822.9	4822.9	4822.9	4822.9	4822.9
2.5°	4789.4	4789.4	4789.4	4783.8	4783.8
5°	4739.2	4733.7	4733.7	4728.1	4728.1
7.5°	4700.2	4694.6	4689.1	4683.5	4672.3
10°	4644.5	4644.5	4638.9	4611.0	4605.4
12.5°	4555.2	4549.7	4527.4	4488.3	4477.2
15°	4432.6	4432.6	4388.0	4343.4	4326.6
17.5°	4298.8	4293.2	4237.4	4192.8	4170.5
20°	4153.8	4142.7	4086.9	4014.4	3975.4
22.5°	3992.1	3992.1	3925.2	3830.4	3791.4
25°	3841.6	3819.3	3757.9	3624.1	3523.8
27.5°	3668.7	3635.3	3568.4	3378.8	3261.7
30°	3479.2	3462.4	3367.6	3122.3	3033.1
32.5°	3300.7	3272.9	3172.5	2916.0	2843.5
35°	3116.7	3094.4	2943.9	2720.9	2654.0
37.5°	2932.8	2904.9	2715.3	2536.9	2453.3
40°	2748.8	2715.3	2509.0	2347.3	2258.1
42.5°	2575.9	2531.3	2330.6	2157.7	2057.4
45°	2391.9	2341.7	2141.0	1962.6	1884.5
47.5°	2207.9	2163.3	1979.3	1795.3	1706.1
50°	2012.8	1973.8	1806.5	1622.5	1527.7
52.5°	1851.1	1789.8	1628.1	1444.1	1366.0
55°	1661.5	1611.3	1460.8	1288.0	1221.1
57.5°	1488.7	1438.5	1299.1	1137.4	1081.7
60°	1327.0	1254.5	1137.4	998.0	953.4
62.5°	1148.6	1092.8	992.5	875.4	931.1
65°	986.9	931.1	841.9	858.6	713.7
67.5°	808.5	780.6	702.5	624.5	602.2
70°	657.9	624.5	596.6	513.0	490.7
72.5°	524.1	490.7	451.6	407.0	390.3
75°	395.9	368.0	345.7	329.0	362.4
77.5°	273.2	262.1	245.3	228.6	223.0
80°	178.4	172.8	167.3	161.7	156.1
82.5°	105.9	105.9	105.9	105.9	105.9
85°	55.8	61.3	66.9	72.5	78.1
87.5°	33.5	33.5	39.0	44.6	50.2
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)