

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: P546632

Luminaire Tested: **FMR-24-4-LD4-1STD-40-UNV-82-85-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: P546632  
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-LD4-1STD-40-UNV-82-85-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

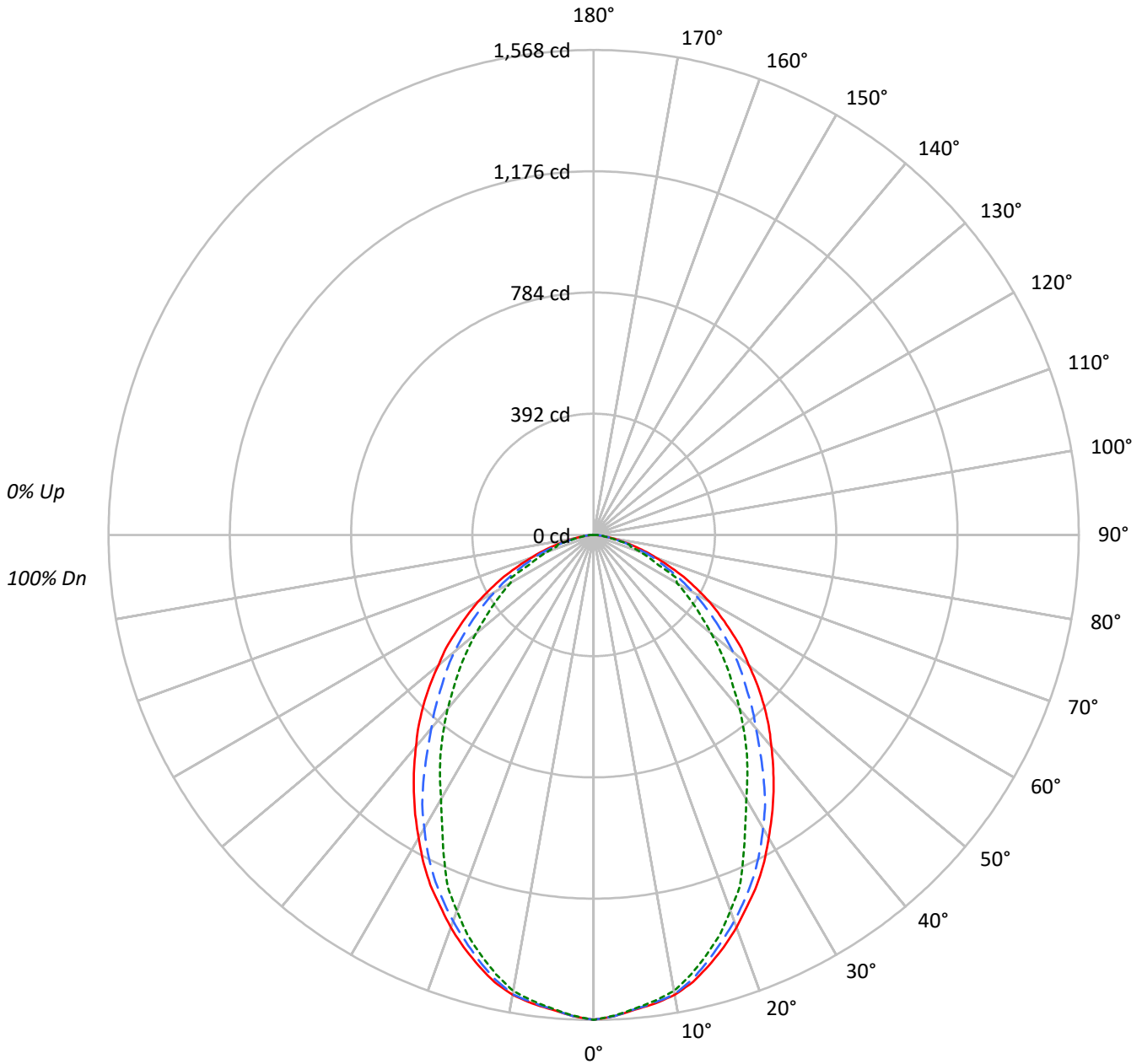
Lumens per Lamp: N/A  
Luminaire Lumens: 3078.0 lumens  
Efficiency: N/A  
Efficacy: 92.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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°	2110	2110	2110
5°	2081	2078	2076
10°	2063	2060	2046
15°	2007	1987	1959
20°	1934	1902	1851
25°	1854	1814	1701
30°	1757	1701	1532
35°	1664	1572	1417
40°	1570	1433	1289
45°	1480	1324	1166
50°	1370	1229	1040
55°	1267	1114	931
60°	1161	995	834
65°	1021	871	739
70°	841	763	627
75°	669	584	612
80°	449	422	394
85°	279	337	392



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.0	4.7
10°-20°	400.5	13.0
20°-30°	554.5	18.0
30°-40°	591.3	19.2
40°-50°	539.4	17.5
50°-60°	422.6	13.7
60°-70°	275.4	8.9
70°-80°	122.0	4.0
80°-90°	26.2	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°	1101.0	35.8
0°-40°	1692.3	55.0
0°-60°	2654.4	86.2
0°-90°	3078.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3078.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1568	1568	1568	1568	1568	
5°	1541	1539	1539	1537	1537	146
15°	1441	1441	1426	1412	1407	405
25°	1249	1242	1222	1178	1146	573
35°	1013	1006	957	884	863	633
45°	778	761	696	638	613	599
55°	540	524	475	419	397	484
65°	321	303	274	279	232	316
75°	129	120	112	107	118	138
85°	18	20	22	24	25	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1567.9	1567.9	1567.9	1567.9	1567.9
2.5°	1557.0	1557.0	1557.0	1555.2	1555.2
5°	1540.7	1538.9	1538.9	1537.1	1537.1
7.5°	1528.0	1526.2	1524.4	1522.6	1519.0
10°	1509.9	1509.9	1508.1	1499.0	1497.2
12.5°	1480.9	1479.1	1471.8	1459.1	1455.5
15°	1441.0	1441.0	1426.5	1412.0	1406.6
17.5°	1397.5	1395.7	1377.6	1363.1	1355.8
20°	1350.4	1346.8	1328.6	1305.1	1292.4
22.5°	1297.8	1297.8	1276.1	1245.3	1232.6
25°	1248.9	1241.6	1221.7	1178.2	1145.6
27.5°	1192.7	1181.8	1160.1	1098.4	1060.4
30°	1131.1	1125.6	1094.8	1015.1	986.1
32.5°	1073.1	1064.0	1031.4	948.0	924.4
35°	1013.2	1006.0	957.0	884.5	862.8
37.5°	953.4	944.4	882.7	824.7	797.5
40°	893.6	882.7	815.7	763.1	734.1
42.5°	837.4	822.9	757.7	701.5	668.8
45°	777.6	761.3	696.0	638.0	612.7
47.5°	717.8	703.3	643.5	583.7	554.7
50°	654.3	641.7	587.3	527.5	496.7
52.5°	601.8	581.8	529.3	469.5	444.1
55°	540.2	523.8	474.9	418.7	397.0
57.5°	484.0	467.6	422.3	369.8	351.6
60°	431.4	407.8	369.8	324.5	310.0
62.5°	373.4	355.3	322.6	284.6	302.7
65°	320.8	302.7	273.7	279.1	232.0
67.5°	262.8	253.8	228.4	203.0	195.8
70°	213.9	203.0	193.9	166.8	159.5
72.5°	170.4	159.5	146.8	132.3	126.9
75°	128.7	119.6	112.4	106.9	117.8
77.5°	88.8	85.2	79.8	74.3	72.5
80°	58.0	56.2	54.4	52.6	50.8
82.5°	34.4	34.4	34.4	34.4	34.4
85°	18.1	19.9	21.8	23.6	25.4
87.5°	10.9	10.9	12.7	14.5	16.3
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)