

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: P546281

Luminaire Tested: **FMR-12-4-LD4-2LO-50-UNV-82-86-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: P546281  
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-12-4-LD4-2LO-50-UNV-82-86-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

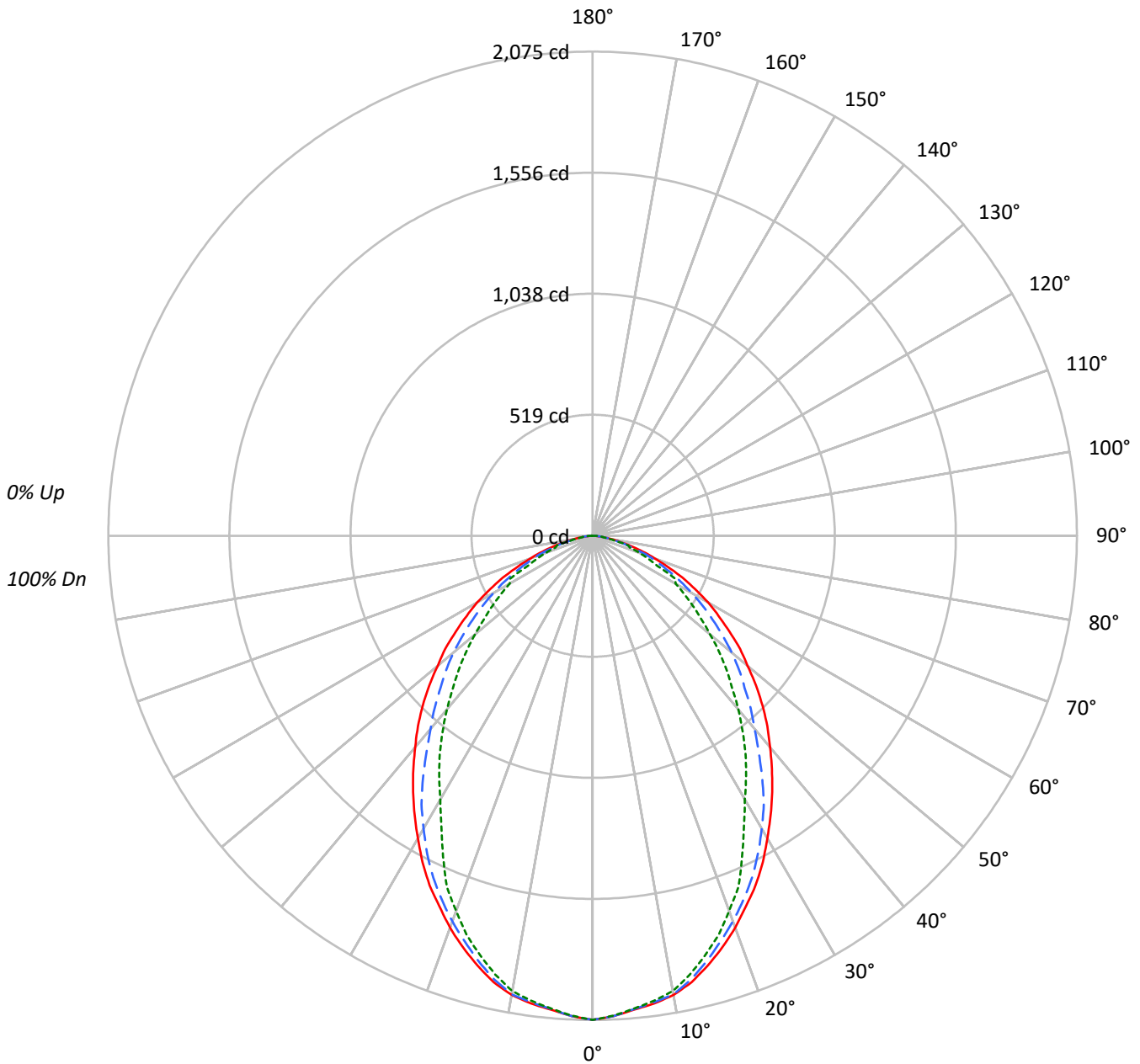
Lumens per Lamp: N/A  
Luminaire Lumens: 4073.0 lumens  
Efficiency: N/A  
Efficacy: 87.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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°	5583	5583	5583
5°	5507	5501	5494
10°	5460	5453	5414
15°	5312	5259	5185
20°	5117	5035	4897
25°	4907	4800	4501
30°	4651	4502	4054
35°	4405	4160	3751
40°	4154	3791	3412
45°	3916	3505	3085
50°	3625	3253	2751
55°	3354	2948	2464
60°	3073	2633	2207
65°	2703	2306	1955
70°	2227	2019	1661
75°	1771	1546	1621
80°	1190	1116	1041
85°	741	889	1037



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	193.1	4.7
10°-20°	530.0	13.0
20°-30°	733.8	18.0
30°-40°	782.4	19.2
40°-50°	713.8	17.5
50°-60°	559.2	13.7
60°-70°	364.5	8.9
70°-80°	161.5	4.0
80°-90°	34.7	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°	1456.9	35.8
0°-40°	2239.4	55.0
0°-60°	3512.4	86.2
0°-90°	4073.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4073.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2075	2075	2075	2075	2075	
5°	2039	2036	2036	2034	2034	194
15°	1907	1907	1888	1868	1861	536
25°	1653	1643	1617	1559	1516	759
35°	1341	1331	1266	1170	1142	838
45°	1029	1007	921	844	811	793
55°	715	693	628	554	525	641
65°	424	401	362	369	307	418
75°	170	158	149	142	156	183
85°	24	26	29	31	34	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2074.7	2074.7	2074.7	2074.7	2074.7
2.5°	2060.3	2060.3	2060.3	2057.9	2057.9
5°	2038.8	2036.4	2036.4	2034.0	2034.0
7.5°	2022.0	2019.6	2017.2	2014.8	2010.0
10°	1998.0	1998.0	1995.6	1983.6	1981.2
12.5°	1959.6	1957.2	1947.6	1930.8	1926.0
15°	1906.8	1906.8	1887.6	1868.5	1861.3
17.5°	1849.3	1846.9	1822.9	1803.7	1794.1
20°	1786.9	1782.1	1758.1	1726.9	1710.2
22.5°	1717.4	1717.4	1688.6	1647.8	1631.0
25°	1652.6	1643.0	1616.6	1559.0	1515.9
27.5°	1578.2	1563.8	1535.1	1453.5	1403.1
30°	1496.7	1489.5	1448.7	1343.2	1304.8
32.5°	1419.9	1407.9	1364.8	1254.4	1223.3
35°	1340.8	1331.2	1266.4	1170.5	1141.7
37.5°	1261.6	1249.6	1168.1	1091.3	1055.4
40°	1182.5	1168.1	1079.3	1009.8	971.4
42.5°	1108.1	1088.9	1002.6	928.2	885.1
45°	1029.0	1007.4	921.0	844.3	810.7
47.5°	949.8	930.6	851.5	772.3	734.0
50°	865.9	849.1	777.1	698.0	657.2
52.5°	796.3	769.9	700.4	621.2	587.6
55°	714.8	693.2	628.4	554.1	525.3
57.5°	640.4	618.8	558.9	489.3	465.3
60°	570.9	539.7	489.3	429.3	410.1
62.5°	494.1	470.1	426.9	376.6	400.6
65°	424.5	400.6	362.2	369.4	307.0
67.5°	347.8	335.8	302.2	268.6	259.0
70°	283.0	268.6	256.6	220.7	211.1
72.5°	225.5	211.1	194.3	175.1	167.9
75°	170.3	158.3	148.7	141.5	155.9
77.5°	117.5	112.7	105.5	98.3	95.9
80°	76.8	74.4	72.0	69.6	67.2
82.5°	45.6	45.6	45.6	45.6	45.6
85°	24.0	26.4	28.8	31.2	33.6
87.5°	14.4	14.4	16.8	19.2	21.6
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)