

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: P546278

Luminaire Tested: **FMR-12-4-LD4-2LO-50-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: P546278  
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-81-97-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

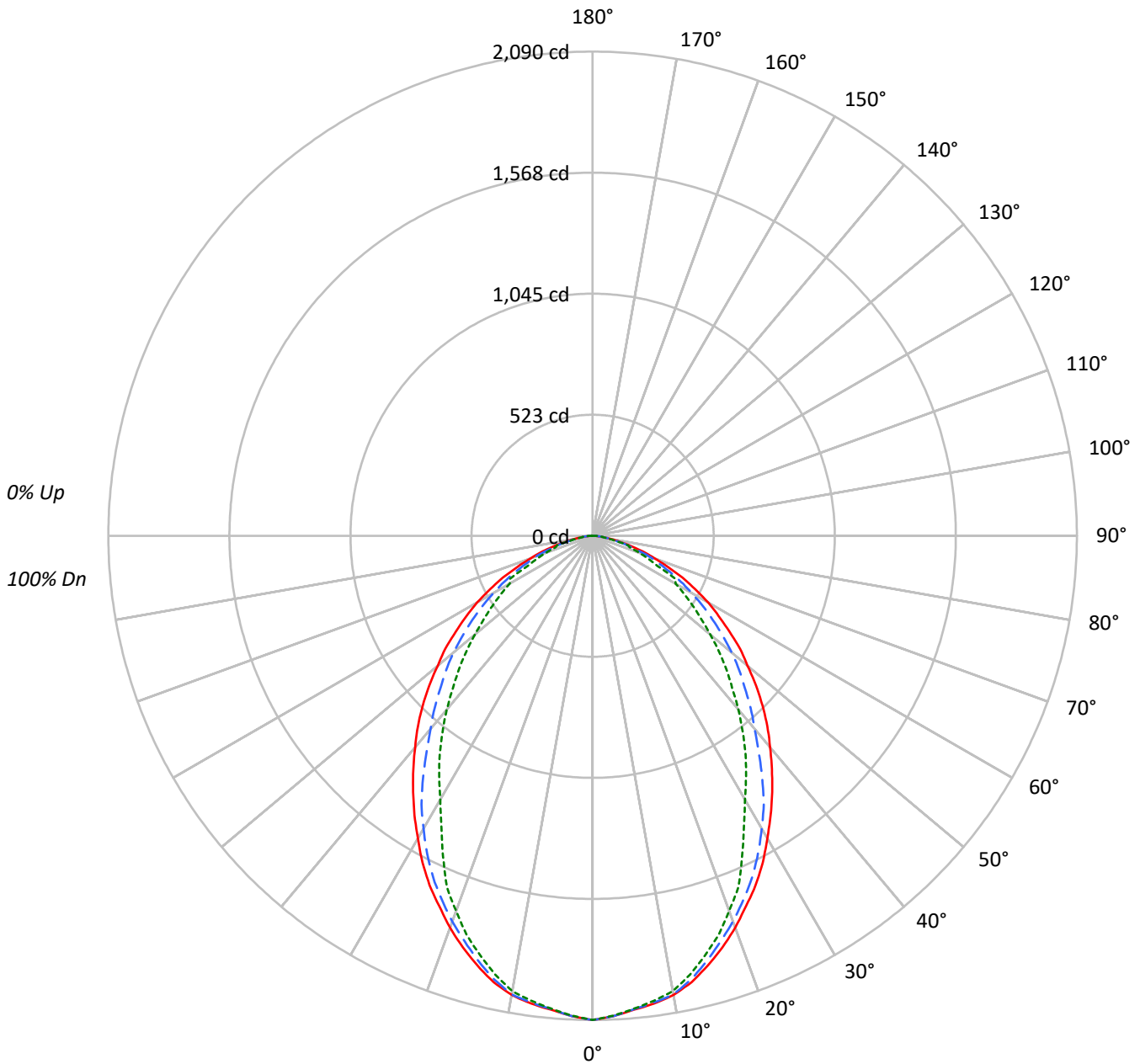
Lumens per Lamp: N/A  
Luminaire Lumens: 4103.0 lumens  
Efficiency: N/A  
Efficacy: 87.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	5624	5624	5624
5°	5548	5541	5535
10°	5500	5493	5454
15°	5351	5297	5224
20°	5155	5072	4934
25°	4943	4835	4534
30°	4685	4535	4084
35°	4437	4191	3778
40°	4184	3819	3438
45°	3945	3531	3108
50°	3651	3277	2771
55°	3378	2970	2482
60°	3095	2653	2224
65°	2723	2323	1969
70°	2243	2034	1673
75°	1784	1557	1633
80°	1198	1124	1049
85°	747	895	1044



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	194.6	4.7
10°-20°	533.9	13.0
20°-30°	739.2	18.0
30°-40°	788.2	19.2
40°-50°	719.1	17.5
50°-60°	563.3	13.7
60°-70°	367.1	8.9
70°-80°	162.7	4.0
80°-90°	34.9	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°	1467.7	35.8
0°-40°	2255.9	55.0
0°-60°	3538.3	86.2
0°-90°	4103.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4103.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2090	2090	2090	2090	2090	
5°	2054	2051	2051	2049	2049	195
15°	1921	1921	1902	1882	1875	540
25°	1665	1655	1628	1570	1527	764
35°	1351	1341	1276	1179	1150	844
45°	1036	1015	928	850	817	798
55°	720	698	633	558	529	646
65°	428	404	365	372	309	421
75°	172	160	150	143	157	184
85°	24	27	29	31	34	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2090.0	2090.0	2090.0	2090.0	2090.0
2.5°	2075.5	2075.5	2075.5	2073.1	2073.1
5°	2053.8	2051.4	2051.4	2048.9	2048.9
7.5°	2036.9	2034.4	2032.0	2029.6	2024.8
10°	2012.7	2012.7	2010.3	1998.2	1995.8
12.5°	1974.0	1971.6	1962.0	1945.0	1940.2
15°	1920.9	1920.9	1901.5	1882.2	1875.0
17.5°	1862.9	1860.5	1836.3	1817.0	1807.3
20°	1800.1	1795.2	1771.1	1739.7	1722.8
22.5°	1730.0	1730.0	1701.0	1659.9	1643.0
25°	1664.8	1655.1	1628.5	1570.5	1527.0
27.5°	1589.9	1575.4	1546.4	1464.2	1413.5
30°	1507.7	1500.5	1459.4	1353.1	1314.4
32.5°	1430.4	1418.3	1374.8	1263.7	1232.3
35°	1350.7	1341.0	1275.8	1179.1	1150.1
37.5°	1270.9	1258.8	1176.7	1099.4	1063.1
40°	1191.2	1176.7	1087.3	1017.2	978.6
42.5°	1116.3	1097.0	1010.0	935.1	891.6
45°	1036.5	1014.8	927.8	850.5	816.7
47.5°	956.8	937.5	857.8	778.0	739.4
50°	872.2	855.3	782.8	703.1	662.0
52.5°	802.2	775.6	705.5	625.8	592.0
55°	720.0	698.3	633.0	558.1	529.1
57.5°	645.1	623.4	563.0	492.9	468.7
60°	575.1	543.6	492.9	432.5	413.2
62.5°	497.7	473.6	430.1	379.3	403.5
65°	427.7	403.5	364.8	372.1	309.3
67.5°	350.3	338.3	304.4	270.6	260.9
70°	285.1	270.6	258.5	222.3	212.6
72.5°	227.1	212.6	195.7	176.4	169.1
75°	171.6	159.5	149.8	142.6	157.1
77.5°	118.4	113.6	106.3	99.1	96.6
80°	77.3	74.9	72.5	70.1	67.7
82.5°	45.9	45.9	45.9	45.9	45.9
85°	24.2	26.6	29.0	31.4	33.8
87.5°	14.5	14.5	16.9	19.3	21.7
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)