

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: P546249

Luminaire Tested: **FMR-12-4-LD4-2LO-40-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: P546249  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

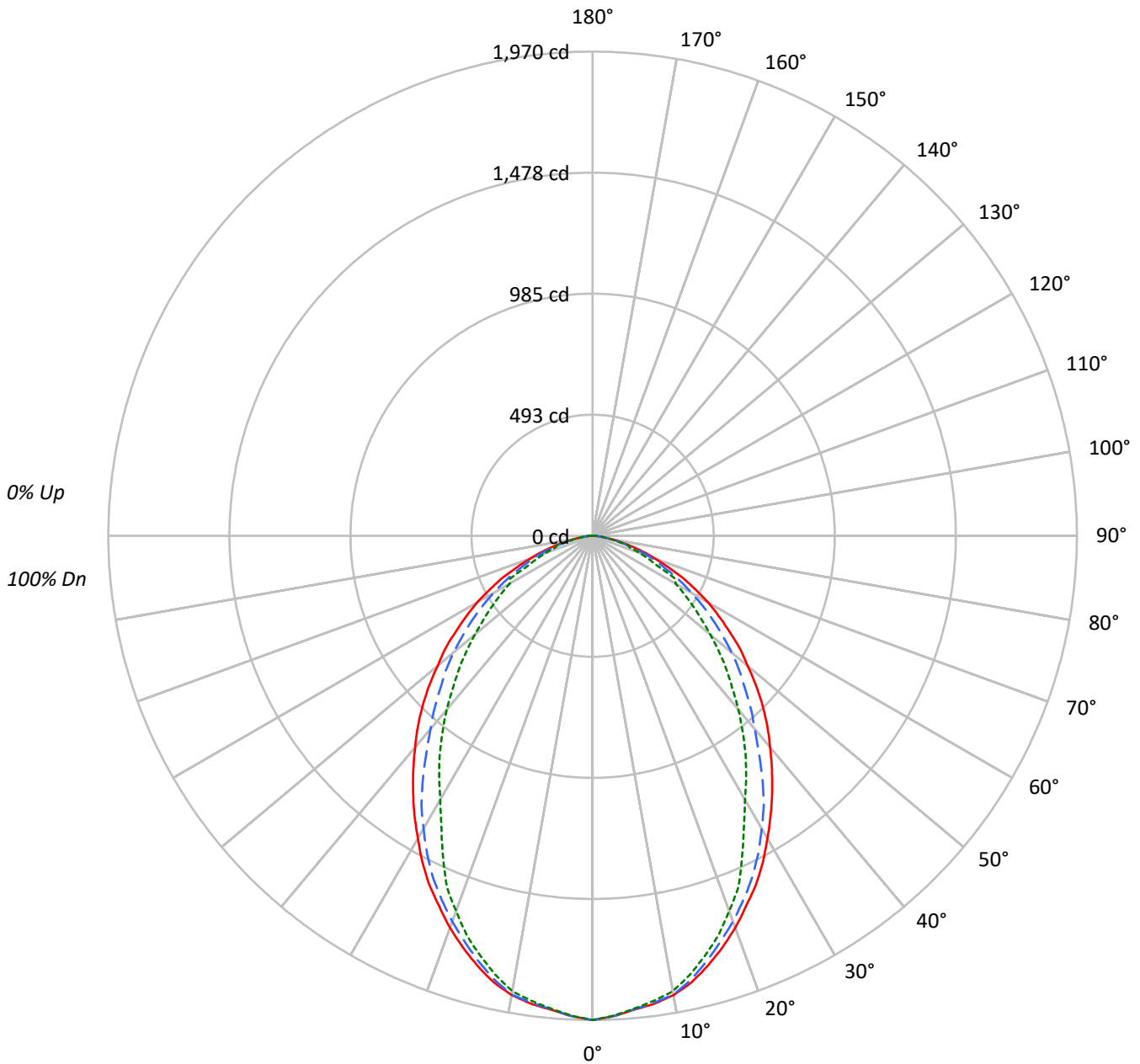
Lumens per Lamp: N/A  
Luminaire Lumens: 3868.0 lumens  
Efficiency: N/A  
Efficacy: 82.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	5302	5302	5302
5°	5230	5224	5218
10°	5185	5178	5141
15°	5045	4994	4924
20°	4860	4781	4651
25°	4660	4558	4274
30°	4417	4275	3850
35°	4183	3951	3562
40°	3945	3601	3241
45°	3719	3329	2930
50°	3442	3090	2613
55°	3185	2800	2340
60°	2918	2501	2096
65°	2567	2190	1857
70°	2115	1917	1577
75°	1681	1468	1540
80°	1130	1058	989
85°	704	843	985



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	183.4	4.7
10°-20°	503.3	13.0
20°-30°	696.9	18.0
30°-40°	743.1	19.2
40°-50°	677.9	17.5
50°-60°	531.1	13.7
60°-70°	346.1	8.9
70°-80°	153.3	4.0
80°-90°	32.9	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°	1383.6	35.8
0°-40°	2126.7	55.0
0°-60°	3335.6	86.2
0°-90°	3868.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3868.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1970	1970	1970	1970	1970	
5°	1936	1934	1934	1932	1932	184
15°	1811	1811	1793	1774	1768	509
25°	1569	1560	1535	1481	1440	721
35°	1273	1264	1203	1112	1084	796
45°	977	957	875	802	770	753
55°	679	658	597	526	499	609
65°	403	380	344	351	292	397
75°	162	150	141	134	148	173
85°	23	25	27	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1970.3	1970.3	1970.3	1970.3	1970.3
2.5°	1956.6	1956.6	1956.6	1954.4	1954.4
5°	1936.1	1933.9	1933.9	1931.6	1931.6
7.5°	1920.2	1917.9	1915.6	1913.4	1908.8
10°	1897.4	1897.4	1895.1	1883.8	1881.5
12.5°	1861.0	1858.7	1849.6	1833.6	1829.1
15°	1810.9	1810.9	1792.6	1774.4	1767.6
17.5°	1756.2	1753.9	1731.1	1712.9	1703.8
20°	1697.0	1692.4	1669.6	1640.0	1624.1
22.5°	1630.9	1630.9	1603.6	1564.9	1548.9
25°	1569.4	1560.3	1535.2	1480.6	1439.6
27.5°	1498.8	1485.1	1457.8	1380.4	1332.5
30°	1421.4	1414.5	1375.8	1275.6	1239.1
32.5°	1348.5	1337.1	1296.1	1191.3	1161.7
35°	1273.3	1264.2	1202.7	1111.6	1084.2
37.5°	1198.1	1186.7	1109.3	1036.4	1002.2
40°	1123.0	1109.3	1025.0	959.0	922.5
42.5°	1052.3	1034.1	952.1	881.5	840.5
45°	977.2	956.7	874.7	801.8	769.9
47.5°	902.0	883.8	808.6	733.5	697.0
50°	822.3	806.3	738.0	662.8	624.1
52.5°	756.2	731.2	665.1	590.0	558.1
55°	678.8	658.3	596.8	526.2	498.8
57.5°	608.2	587.7	530.7	464.7	441.9
60°	542.1	512.5	464.7	407.7	389.5
62.5°	469.2	446.5	405.5	357.6	380.4
65°	403.2	380.4	343.9	350.8	291.6
67.5°	330.3	318.9	287.0	255.1	246.0
70°	268.8	255.1	243.7	209.6	200.4
72.5°	214.1	200.4	184.5	166.3	159.4
75°	161.7	150.3	141.2	134.4	148.1
77.5°	111.6	107.1	100.2	93.4	91.1
80°	72.9	70.6	68.3	66.1	63.8
82.5°	43.3	43.3	43.3	43.3	43.3
85°	22.8	25.1	27.3	29.6	31.9
87.5°	13.7	13.7	15.9	18.2	20.5
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)