

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: P546254

Luminaire Tested: **FMR-12-4-LD4-2LO-40-UNV-82-97-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: P546254  
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-82-97-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

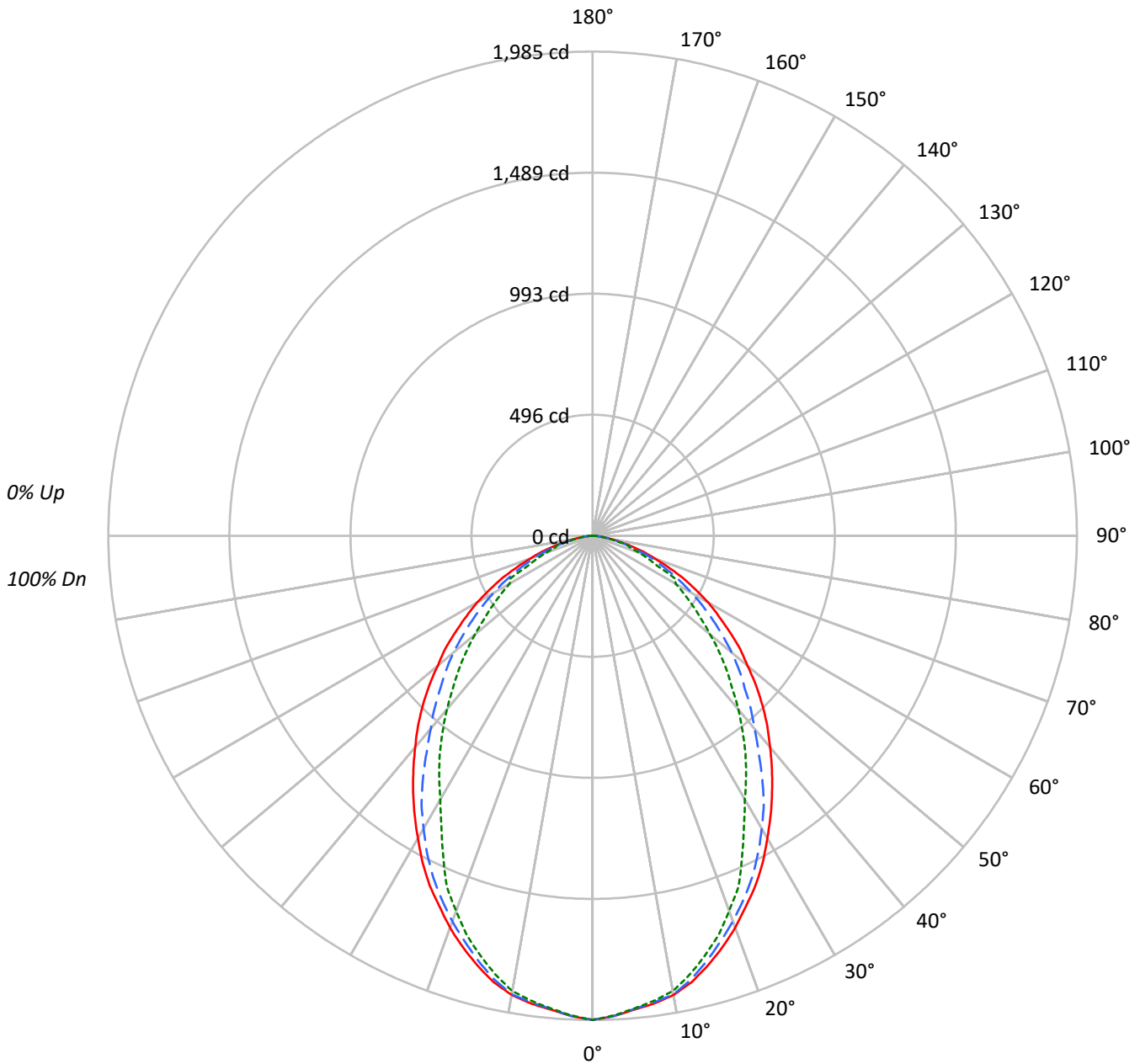
Lumens per Lamp: N/A  
Luminaire Lumens: 3896.0 lumens  
Efficiency: N/A  
Efficacy: 83.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	5341	5341	5341
5°	5268	5262	5256
10°	5222	5216	5178
15°	5081	5030	4960
20°	4895	4816	4684
25°	4694	4592	4305
30°	4448	4306	3878
35°	4213	3980	3588
40°	3973	3627	3264
45°	3746	3353	2951
50°	3467	3112	2632
55°	3208	2820	2358
60°	2939	2519	2111
65°	2586	2206	1870
70°	2130	1932	1589
75°	1694	1478	1550
80°	1137	1066	995
85°	707	849	991



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.7	4.7
10°-20°	507.0	13.0
20°-30°	701.9	18.0
30°-40°	748.4	19.2
40°-50°	682.8	17.5
50°-60°	534.9	13.7
60°-70°	348.6	8.9
70°-80°	154.4	4.0
80°-90°	33.2	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°	1393.6	35.8
0°-40°	2142.1	55.0
0°-60°	3359.8	86.2
0°-90°	3896.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3896.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1985	1985	1985	1985	1985	
5°	1950	1948	1948	1946	1946	185
15°	1824	1824	1806	1787	1780	513
25°	1581	1572	1546	1491	1450	726
35°	1282	1273	1211	1120	1092	802
45°	984	964	881	808	776	758
55°	684	663	601	530	502	613
65°	406	383	346	353	294	400
75°	163	151	142	135	149	175
85°	23	25	28	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1984.6	1984.6	1984.6	1984.6	1984.6
2.5°	1970.8	1970.8	1970.8	1968.5	1968.5
5°	1950.2	1947.9	1947.9	1945.6	1945.6
7.5°	1934.1	1931.8	1929.5	1927.2	1922.6
10°	1911.2	1911.2	1908.9	1897.4	1895.1
12.5°	1874.4	1872.1	1863.0	1846.9	1842.3
15°	1824.0	1824.0	1805.6	1787.3	1780.4
17.5°	1768.9	1766.6	1743.7	1725.3	1716.1
20°	1709.3	1704.7	1681.7	1651.9	1635.8
22.5°	1642.7	1642.7	1615.2	1576.2	1560.1
25°	1580.8	1571.6	1546.4	1491.3	1450.0
27.5°	1509.7	1495.9	1468.4	1390.3	1342.2
30°	1431.6	1424.8	1385.8	1284.8	1248.1
32.5°	1358.2	1346.8	1305.5	1199.9	1170.1
35°	1282.5	1273.3	1211.4	1119.6	1092.1
37.5°	1206.8	1195.3	1117.3	1043.9	1009.5
40°	1131.1	1117.3	1032.4	965.9	929.2
42.5°	1060.0	1041.6	959.0	887.9	846.6
45°	984.3	963.6	881.0	807.6	775.5
47.5°	908.5	890.2	814.5	738.8	702.1
50°	828.2	812.2	743.4	667.6	628.6
52.5°	761.7	736.5	669.9	594.2	562.1
55°	683.7	663.1	601.1	530.0	502.5
57.5°	612.6	591.9	534.6	468.0	445.1
60°	546.0	516.2	468.0	410.7	392.3
62.5°	472.6	449.7	408.4	360.2	383.1
65°	406.1	383.1	346.4	353.3	293.7
67.5°	332.7	321.2	289.1	257.0	247.8
70°	270.7	257.0	245.5	211.1	201.9
72.5°	215.7	201.9	185.8	167.5	160.6
75°	162.9	151.4	142.2	135.4	149.1
77.5°	112.4	107.8	100.9	94.1	91.8
80°	73.4	71.1	68.8	66.5	64.2
82.5°	43.6	43.6	43.6	43.6	43.6
85°	22.9	25.2	27.5	29.8	32.1
87.5°	13.8	13.8	16.1	18.4	20.6
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)