

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: P546231

Luminaire Tested: **FMR-12-4-LD4-2LO-40-UNV-80-84-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: P546231  
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-80-84-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

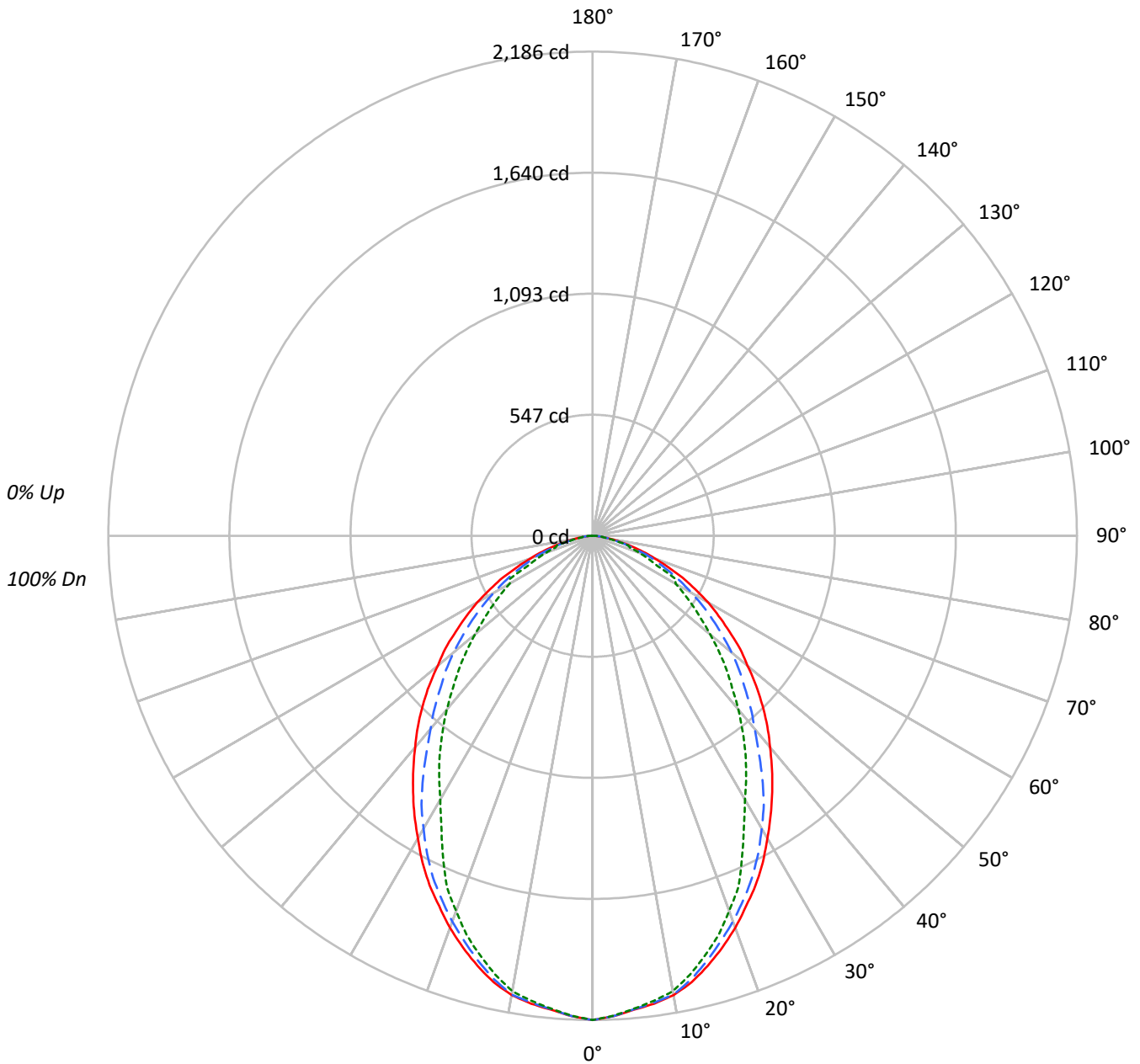
Lumens per Lamp: N/A  
Luminaire Lumens: 4292.0 lumens  
Efficiency: N/A  
Efficacy: 91.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	5883	5883	5883
5°	5803	5796	5790
10°	5753	5746	5705
15°	5598	5541	5464
20°	5392	5306	5161
25°	5171	5058	4743
30°	4901	4744	4273
35°	4641	4384	3952
40°	4377	3995	3596
45°	4126	3694	3251
50°	3820	3428	2899
55°	3534	3107	2597
60°	3237	2775	2326
65°	2849	2430	2060
70°	2346	2127	1750
75°	1866	1629	1708
80°	1254	1175	1097
85°	781	936	1093



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	203.5	4.7
10°-20°	558.5	13.0
20°-30°	773.2	18.0
30°-40°	824.5	19.2
40°-50°	752.2	17.5
50°-60°	589.3	13.7
60°-70°	384.1	8.9
70°-80°	170.1	4.0
80°-90°	36.5	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°	1535.3	35.8
0°-40°	2359.8	55.0
0°-60°	3701.2	86.2
0°-90°	4292.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4292.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2186	2186	2186	2186	2186	
5°	2148	2146	2146	2143	2143	204
15°	2009	2009	1989	1969	1961	565
25°	1741	1731	1704	1643	1597	799
35°	1413	1403	1334	1233	1203	883
45°	1084	1062	971	890	854	835
55°	753	730	662	584	554	676
65°	447	422	382	389	324	441
75°	180	167	157	149	164	192
85°	25	28	30	33	35	35
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2186.3	2186.3	2186.3	2186.3	2186.3
2.5°	2171.1	2171.1	2171.1	2168.6	2168.6
5°	2148.4	2145.8	2145.8	2143.3	2143.3
7.5°	2130.7	2128.2	2125.6	2123.1	2118.0
10°	2105.4	2105.4	2102.9	2090.2	2087.7
12.5°	2065.0	2062.4	2052.3	2034.6	2029.6
15°	2009.4	2009.4	1989.1	1968.9	1961.3
17.5°	1948.7	1946.2	1920.9	1900.7	1890.6
20°	1883.0	1877.9	1852.7	1819.8	1802.1
22.5°	1809.7	1809.7	1779.4	1736.4	1718.7
25°	1741.4	1731.3	1703.5	1642.9	1597.4
27.5°	1663.1	1647.9	1617.6	1531.7	1478.6
30°	1577.2	1569.6	1526.6	1415.4	1375.0
32.5°	1496.3	1483.6	1438.1	1321.9	1289.0
35°	1412.9	1402.8	1334.5	1233.4	1203.1
37.5°	1329.5	1316.8	1230.9	1150.0	1112.1
40°	1246.1	1230.9	1137.4	1064.1	1023.6
42.5°	1167.7	1147.5	1056.5	978.1	932.6
45°	1084.3	1061.5	970.6	889.7	854.3
47.5°	1000.9	980.7	897.3	813.9	773.4
50°	912.4	894.7	818.9	735.5	692.5
52.5°	839.1	811.3	738.0	654.6	619.2
55°	753.2	730.4	662.2	583.9	553.5
57.5°	674.8	652.1	588.9	515.6	490.3
60°	601.5	568.7	515.6	452.4	432.2
62.5°	520.7	495.4	449.9	396.8	422.1
65°	447.4	422.1	381.7	389.2	323.5
67.5°	366.5	353.8	318.5	283.1	273.0
70°	298.2	283.1	270.4	232.5	222.4
72.5°	237.6	222.4	204.7	184.5	176.9
75°	179.5	166.8	156.7	149.1	164.3
77.5°	123.8	118.8	111.2	103.6	101.1
80°	80.9	78.4	75.8	73.3	70.8
82.5°	48.0	48.0	48.0	48.0	48.0
85°	25.3	27.8	30.3	32.9	35.4
87.5°	15.2	15.2	17.7	20.2	22.7
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)