

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: P546046

Luminaire Tested: **FMR-12-4-LD4-1STD-40-UNV-80-97-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: P546046  
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-LD4-1STD-40-UNV-80-97-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC 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**

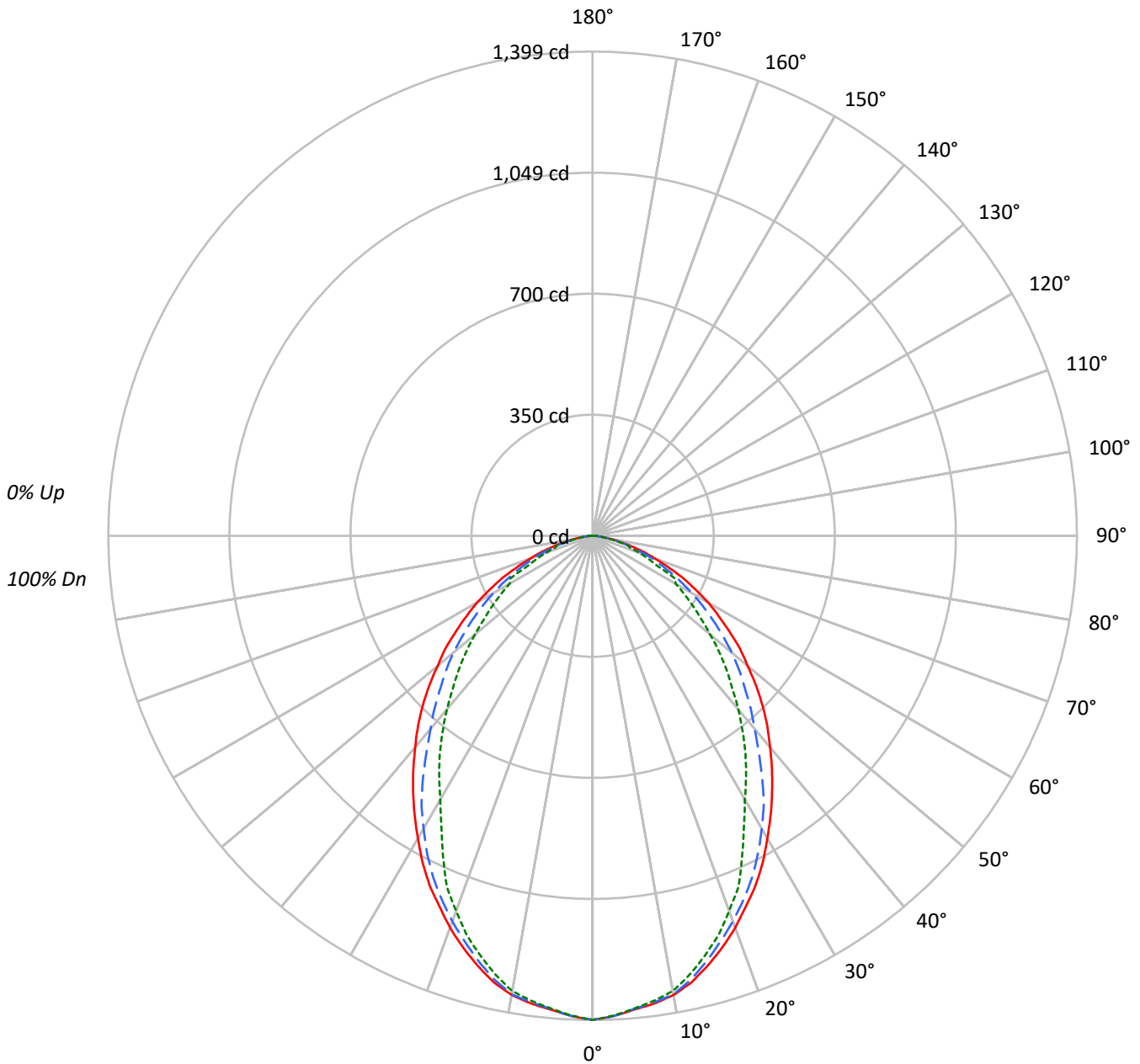
Lumens per Lamp: N/A  
Luminaire Lumens: 2746.0 lumens  
Efficiency: N/A  
Efficacy: 82.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	3764	3764	3764
5°	3713	3709	3704
10°	3681	3676	3650
15°	3582	3545	3496
20°	3450	3394	3302
25°	3308	3236	3034
30°	3136	3035	2733
35°	2969	2805	2529
40°	2800	2556	2301
45°	2640	2363	2080
50°	2444	2193	1855
55°	2261	1988	1661
60°	2072	1776	1488
65°	1822	1555	1318
70°	1501	1361	1120
75°	1194	1043	1093
80°	801	752	702
85°	500	599	698



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.2	4.7
10°-20°	357.3	13.0
20°-30°	494.7	18.0
30°-40°	527.5	19.2
40°-50°	481.2	17.5
50°-60°	377.0	13.7
60°-70°	245.7	8.9
70°-80°	108.9	4.0
80°-90°	23.4	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°	982.3	35.8
0°-40°	1509.8	55.0
0°-60°	2368.0	86.2
0°-90°	2746.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2746.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1399	1399	1399	1399	1399	
5°	1374	1373	1373	1371	1371	130
15°	1286	1286	1273	1260	1255	361
25°	1114	1108	1090	1051	1022	512
35°	904	898	854	789	770	565
45°	694	679	621	569	547	534
55°	482	467	424	374	354	432
65°	286	270	244	249	207	282
75°	115	107	100	95	105	123
85°	16	18	19	21	23	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1398.8	1398.8	1398.8	1398.8	1398.8
2.5°	1389.1	1389.1	1389.1	1387.5	1387.5
5°	1374.5	1372.9	1372.9	1371.3	1371.3
7.5°	1363.2	1361.6	1360.0	1358.3	1355.1
10°	1347.0	1347.0	1345.4	1337.3	1335.7
12.5°	1321.2	1319.5	1313.1	1301.8	1298.5
15°	1285.6	1285.6	1272.6	1259.7	1254.9
17.5°	1246.8	1245.2	1229.0	1216.0	1209.6
20°	1204.7	1201.5	1185.3	1164.3	1153.0
22.5°	1157.8	1157.8	1138.4	1110.9	1099.6
25°	1114.2	1107.7	1089.9	1051.1	1022.0
27.5°	1064.0	1054.3	1034.9	980.0	946.0
30°	1009.1	1004.2	976.7	905.6	879.7
32.5°	957.3	949.2	920.1	845.7	824.7
35°	903.9	897.5	853.8	789.1	769.7
37.5°	850.6	842.5	787.5	735.8	711.5
40°	797.2	787.5	727.7	680.8	654.9
42.5°	747.1	734.2	675.9	625.8	596.7
45°	693.7	679.2	621.0	569.2	546.6
47.5°	640.4	627.4	574.1	520.7	494.8
50°	583.8	572.4	523.9	470.6	443.1
52.5°	536.9	519.1	472.2	418.8	396.2
55°	481.9	467.3	423.7	373.5	354.1
57.5°	431.8	417.2	376.8	329.9	313.7
60°	384.9	363.8	329.9	289.5	276.5
62.5°	333.1	316.9	287.8	253.9	270.1
65°	286.2	270.1	244.2	249.0	207.0
67.5°	234.5	226.4	203.8	181.1	174.6
70°	190.8	181.1	173.0	148.8	142.3
72.5°	152.0	142.3	131.0	118.0	113.2
75°	114.8	106.7	100.3	95.4	105.1
77.5°	79.2	76.0	71.2	66.3	64.7
80°	51.7	50.1	48.5	46.9	45.3
82.5°	30.7	30.7	30.7	30.7	30.7
85°	16.2	17.8	19.4	21.0	22.6
87.5°	9.7	9.7	11.3	12.9	14.6
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)