

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: P545854

Luminaire Tested: **FMR-12-4-LD4-1HI-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: P545854  
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-LD4-1HI-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**

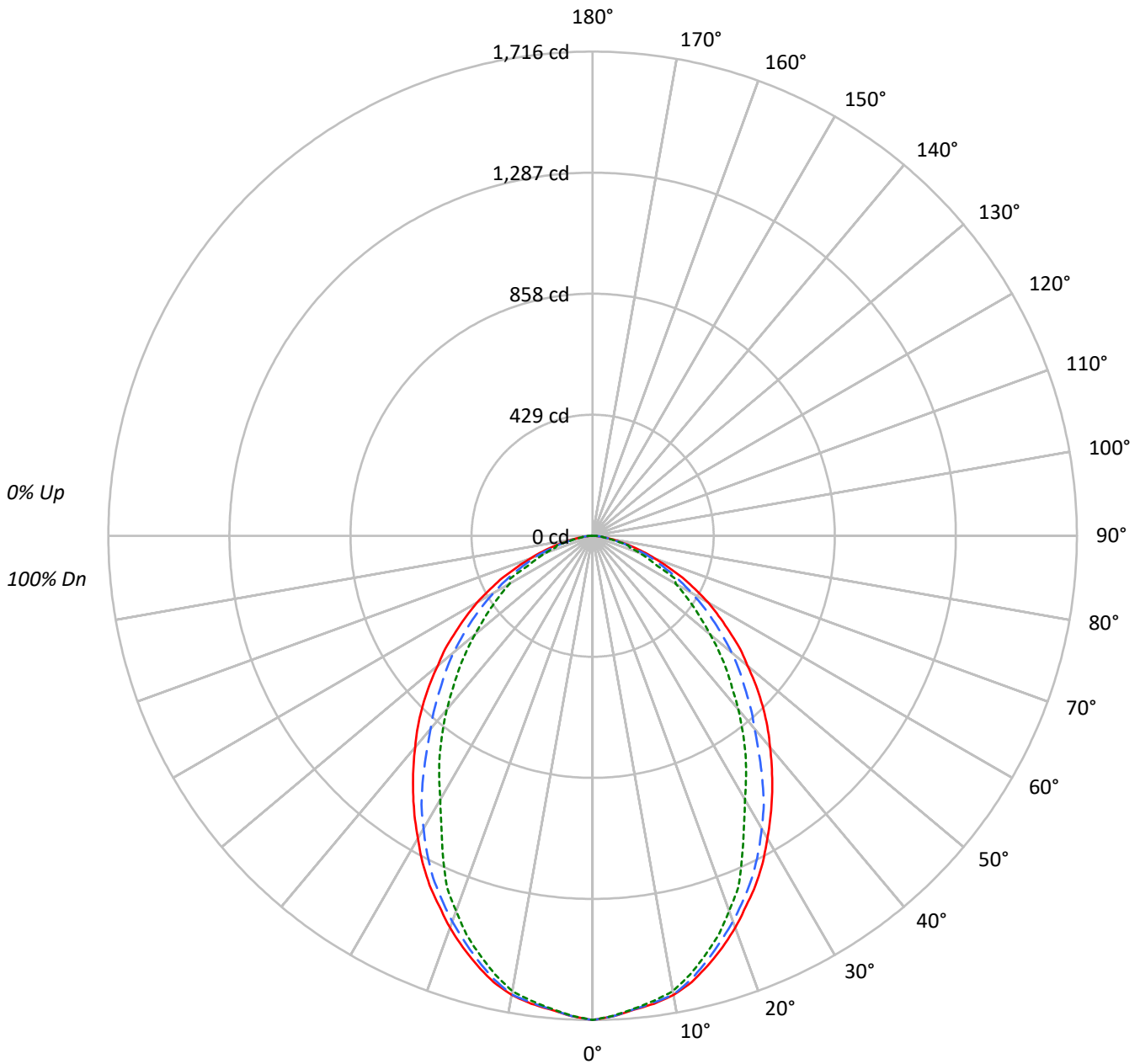
Lumens per Lamp: N/A  
Luminaire Lumens: 3369.0 lumens  
Efficiency: N/A  
Efficacy: 78.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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°	4618	4618	4618
5°	4555	4550	4545
10°	4516	4511	4478
15°	4394	4350	4289
20°	4233	4164	4051
25°	4059	3970	3723
30°	3847	3723	3354
35°	3643	3441	3102
40°	3436	3136	2823
45°	3239	2899	2552
50°	2998	2691	2276
55°	2774	2439	2038
60°	2541	2178	1826
65°	2236	1908	1617
70°	1842	1670	1374
75°	1465	1279	1341
80°	984	922	862
85°	611	735	858



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	159.7	4.7
10°-20°	438.4	13.0
20°-30°	607.0	18.0
30°-40°	647.2	19.2
40°-50°	590.4	17.5
50°-60°	462.6	13.7
60°-70°	301.5	8.9
70°-80°	133.6	4.0
80°-90°	28.7	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°	1205.1	35.8
0°-40°	1852.3	55.0
0°-60°	2905.3	86.2
0°-90°	3369.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3369.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1716	1716	1716	1716	1716	
5°	1686	1684	1684	1682	1682	160
15°	1577	1577	1561	1546	1540	443
25°	1367	1359	1337	1290	1254	628
35°	1109	1101	1048	968	944	693
45°	851	833	762	698	671	656
55°	591	573	520	458	434	530
65°	351	331	300	306	254	346
75°	141	131	123	117	129	151
85°	20	22	24	26	28	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1716.1	1716.1	1716.1	1716.1	1716.1
2.5°	1704.2	1704.2	1704.2	1702.2	1702.2
5°	1686.4	1684.4	1684.4	1682.4	1682.4
7.5°	1672.5	1670.5	1668.5	1666.5	1662.6
10°	1652.6	1652.6	1650.7	1640.7	1638.7
12.5°	1620.9	1618.9	1611.0	1597.1	1593.1
15°	1577.2	1577.2	1561.4	1545.5	1539.6
17.5°	1529.6	1527.6	1507.8	1491.9	1484.0
20°	1478.0	1474.1	1454.2	1428.4	1414.6
22.5°	1420.5	1420.5	1396.7	1363.0	1349.1
25°	1366.9	1359.0	1337.2	1289.6	1253.9
27.5°	1305.4	1293.5	1269.7	1202.3	1160.6
30°	1238.0	1232.0	1198.3	1111.0	1079.3
32.5°	1174.5	1164.6	1128.9	1037.6	1011.8
35°	1109.0	1101.1	1047.5	968.2	944.4
37.5°	1043.6	1033.6	966.2	902.7	872.9
40°	978.1	966.2	892.8	835.2	803.5
42.5°	916.6	900.7	829.3	767.8	732.1
45°	851.1	833.3	761.8	698.4	670.6
47.5°	785.6	769.8	704.3	638.8	607.1
50°	716.2	702.3	642.8	577.3	543.6
52.5°	658.7	636.9	579.3	513.8	486.1
55°	591.2	573.4	519.8	458.3	434.5
57.5°	529.7	511.9	462.3	404.7	384.9
60°	472.2	446.4	404.7	355.1	339.3
62.5°	408.7	388.9	353.1	311.5	331.3
65°	351.2	331.3	299.6	305.5	253.9
67.5°	287.7	277.8	250.0	222.2	214.3
70°	234.1	222.2	212.3	182.5	174.6
72.5°	186.5	174.6	160.7	144.8	138.9
75°	140.9	130.9	123.0	117.1	129.0
77.5°	97.2	93.2	87.3	81.3	79.4
80°	63.5	61.5	59.5	57.5	55.6
82.5°	37.7	37.7	37.7	37.7	37.7
85°	19.8	21.8	23.8	25.8	27.8
87.5°	11.9	11.9	13.9	15.9	17.9
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)