

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: P545850

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-80-87-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: P545850  
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-80-87-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

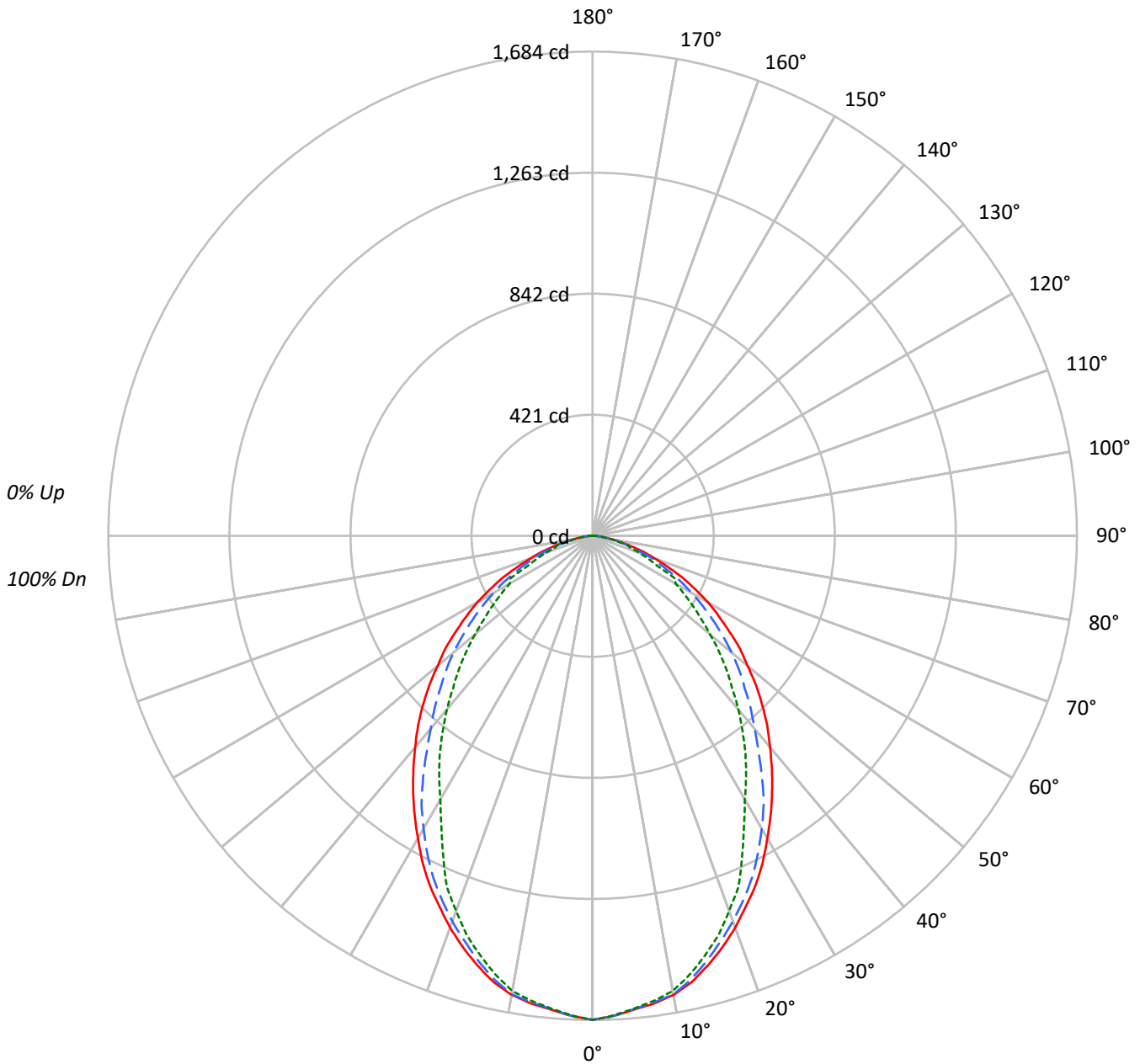
Lumens per Lamp: N/A  
Luminaire Lumens: 3305.0 lumens  
Efficiency: N/A  
Efficacy: 76.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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°	4530	4530	4530
5°	4469	4464	4458
10°	4430	4425	4393
15°	4311	4267	4208
20°	4152	4085	3974
25°	3982	3895	3652
30°	3774	3653	3290
35°	3574	3376	3043
40°	3371	3077	2769
45°	3177	2844	2503
50°	2941	2640	2233
55°	2721	2392	2000
60°	2493	2137	1791
65°	2194	1871	1586
70°	1807	1639	1348
75°	1437	1255	1315
80°	965	905	845
85°	602	722	840



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	156.7	4.7
10°-20°	430.1	13.0
20°-30°	595.4	18.0
30°-40°	634.9	19.2
40°-50°	579.2	17.5
50°-60°	453.8	13.7
60°-70°	295.7	8.9
70°-80°	131.0	4.0
80°-90°	28.1	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°	1182.2	35.8
0°-40°	1817.1	55.0
0°-60°	2850.1	86.2
0°-90°	3305.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3305.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1684	1684	1684	1684	1684	
5°	1654	1652	1652	1650	1650	157
15°	1547	1547	1532	1516	1510	435
25°	1341	1333	1312	1265	1230	616
35°	1088	1080	1028	950	926	680
45°	835	817	747	685	658	643
55°	580	562	510	450	426	520
65°	344	325	294	300	249	339
75°	138	128	121	115	126	148
85°	20	21	23	25	27	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1683.5	1683.5	1683.5	1683.5	1683.5
2.5°	1671.8	1671.8	1671.8	1669.9	1669.9
5°	1654.3	1652.4	1652.4	1650.4	1650.4
7.5°	1640.7	1638.8	1636.8	1634.9	1631.0
10°	1621.2	1621.2	1619.3	1609.6	1607.6
12.5°	1590.1	1588.2	1580.4	1566.7	1562.9
15°	1547.3	1547.3	1531.7	1516.1	1510.3
17.5°	1500.6	1498.6	1479.2	1463.6	1455.8
20°	1450.0	1446.1	1426.6	1401.3	1387.7
22.5°	1393.5	1393.5	1370.2	1337.1	1323.5
25°	1341.0	1333.2	1311.8	1265.1	1230.0
27.5°	1280.6	1269.0	1245.6	1179.4	1138.6
30°	1214.5	1208.6	1175.5	1089.9	1058.8
32.5°	1152.2	1142.5	1107.4	1017.9	992.6
35°	1088.0	1080.2	1027.6	949.8	926.4
37.5°	1023.7	1014.0	947.8	885.6	856.4
40°	959.5	947.8	875.8	819.4	788.2
42.5°	899.2	883.6	813.5	753.2	718.2
45°	834.9	817.4	747.4	685.1	657.8
47.5°	770.7	755.2	690.9	626.7	595.6
50°	702.6	689.0	630.6	566.4	533.3
52.5°	646.2	624.8	568.3	504.1	476.8
55°	580.0	562.5	509.9	449.6	426.2
57.5°	519.7	502.1	453.5	397.0	377.6
60°	463.2	437.9	397.0	348.4	332.8
62.5°	400.9	381.5	346.4	305.6	325.0
65°	344.5	325.0	293.9	299.7	249.1
67.5°	282.2	272.5	245.2	218.0	210.2
70°	229.7	218.0	208.3	179.1	171.3
72.5°	182.9	171.3	157.6	142.1	136.2
75°	138.2	128.5	120.7	114.8	126.5
77.5°	95.4	91.5	85.6	79.8	77.9
80°	62.3	60.3	58.4	56.4	54.5
82.5°	37.0	37.0	37.0	37.0	37.0
85°	19.5	21.4	23.4	25.3	27.2
87.5°	11.7	11.7	13.6	15.6	17.5
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)