

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: P545896

Luminaire Tested: **FMR-12-4-LD4-1HI-50-UNV-82-85-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: P545896  
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-50-UNV-82-85-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

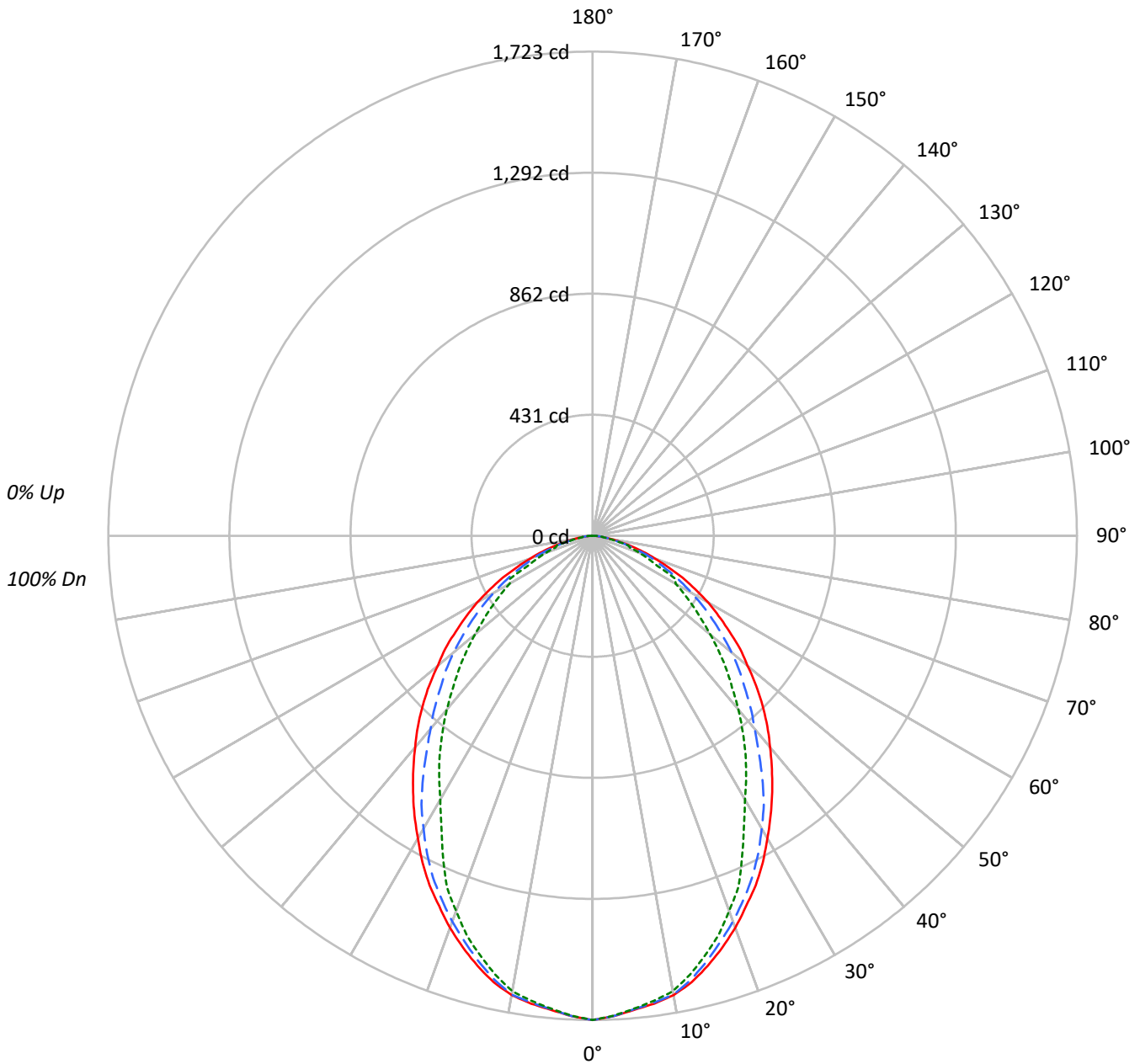
Lumens per Lamp: N/A  
Luminaire Lumens: 3383.0 lumens  
Efficiency: N/A  
Efficacy: 78.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	4637	4637	4637
5°	4574	4569	4564
10°	4535	4529	4497
15°	4412	4368	4307
20°	4250	4182	4068
25°	4075	3987	3738
30°	3863	3739	3368
35°	3658	3456	3115
40°	3450	3149	2834
45°	3253	2911	2563
50°	3011	2702	2285
55°	2785	2449	2047
60°	2552	2187	1834
65°	2245	1915	1624
70°	1850	1677	1379
75°	1470	1284	1346
80°	989	927	865
85°	614	738	861



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	160.4	4.7
10°-20°	440.2	13.0
20°-30°	609.5	18.0
30°-40°	649.9	19.2
40°-50°	592.9	17.5
50°-60°	464.5	13.7
60°-70°	302.7	8.9
70°-80°	134.1	4.0
80°-90°	28.8	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°	1210.1	35.8
0°-40°	1860.0	55.0
0°-60°	2917.4	86.2
0°-90°	3383.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3383.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1723	1723	1723	1723	1723	
5°	1693	1691	1691	1689	1689	161
15°	1584	1584	1568	1552	1546	445
25°	1373	1365	1343	1295	1259	630
35°	1114	1106	1052	972	948	696
45°	855	837	765	701	673	658
55°	594	576	522	460	436	532
65°	353	333	301	307	255	348
75°	141	132	124	118	130	152
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°	1723.3	1723.3	1723.3	1723.3	1723.3
2.5°	1711.3	1711.3	1711.3	1709.3	1709.3
5°	1693.4	1691.4	1691.4	1689.4	1689.4
7.5°	1679.4	1677.4	1675.4	1673.4	1669.5
10°	1659.5	1659.5	1657.5	1647.6	1645.6
12.5°	1627.6	1625.6	1617.7	1603.7	1599.7
15°	1583.8	1583.8	1567.9	1551.9	1545.9
17.5°	1536.0	1534.0	1514.1	1498.1	1490.2
20°	1484.2	1480.2	1460.3	1434.4	1420.4
22.5°	1426.4	1426.4	1402.5	1368.6	1354.7
25°	1372.6	1364.7	1342.7	1294.9	1259.1
27.5°	1310.9	1298.9	1275.0	1207.3	1165.4
30°	1243.1	1237.2	1203.3	1115.6	1083.8
32.5°	1179.4	1169.4	1133.6	1041.9	1016.0
35°	1113.6	1105.7	1051.9	972.2	948.3
37.5°	1047.9	1037.9	970.2	906.5	876.6
40°	982.2	970.2	896.5	838.7	806.8
42.5°	920.4	904.5	832.7	771.0	735.1
45°	854.7	836.7	765.0	701.3	673.4
47.5°	788.9	773.0	707.2	641.5	609.6
50°	719.2	705.2	645.5	579.7	545.9
52.5°	661.4	639.5	581.7	516.0	488.1
55°	593.7	575.7	522.0	460.2	436.3
57.5°	531.9	514.0	464.2	406.4	386.5
60°	474.1	448.2	406.4	356.6	340.7
62.5°	410.4	390.5	354.6	312.8	332.7
65°	352.6	332.7	300.8	306.8	255.0
67.5°	288.9	278.9	251.0	223.1	215.2
70°	235.1	223.1	213.2	183.3	175.3
72.5°	187.3	175.3	161.4	145.4	139.5
75°	141.4	131.5	123.5	117.5	129.5
77.5°	97.6	93.6	87.7	81.7	79.7
80°	63.8	61.8	59.8	57.8	55.8
82.5°	37.9	37.9	37.9	37.9	37.9
85°	19.9	21.9	23.9	25.9	27.9
87.5°	12.0	12.0	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)