

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: P545860

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-81-94-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: P545860  
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-81-94-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

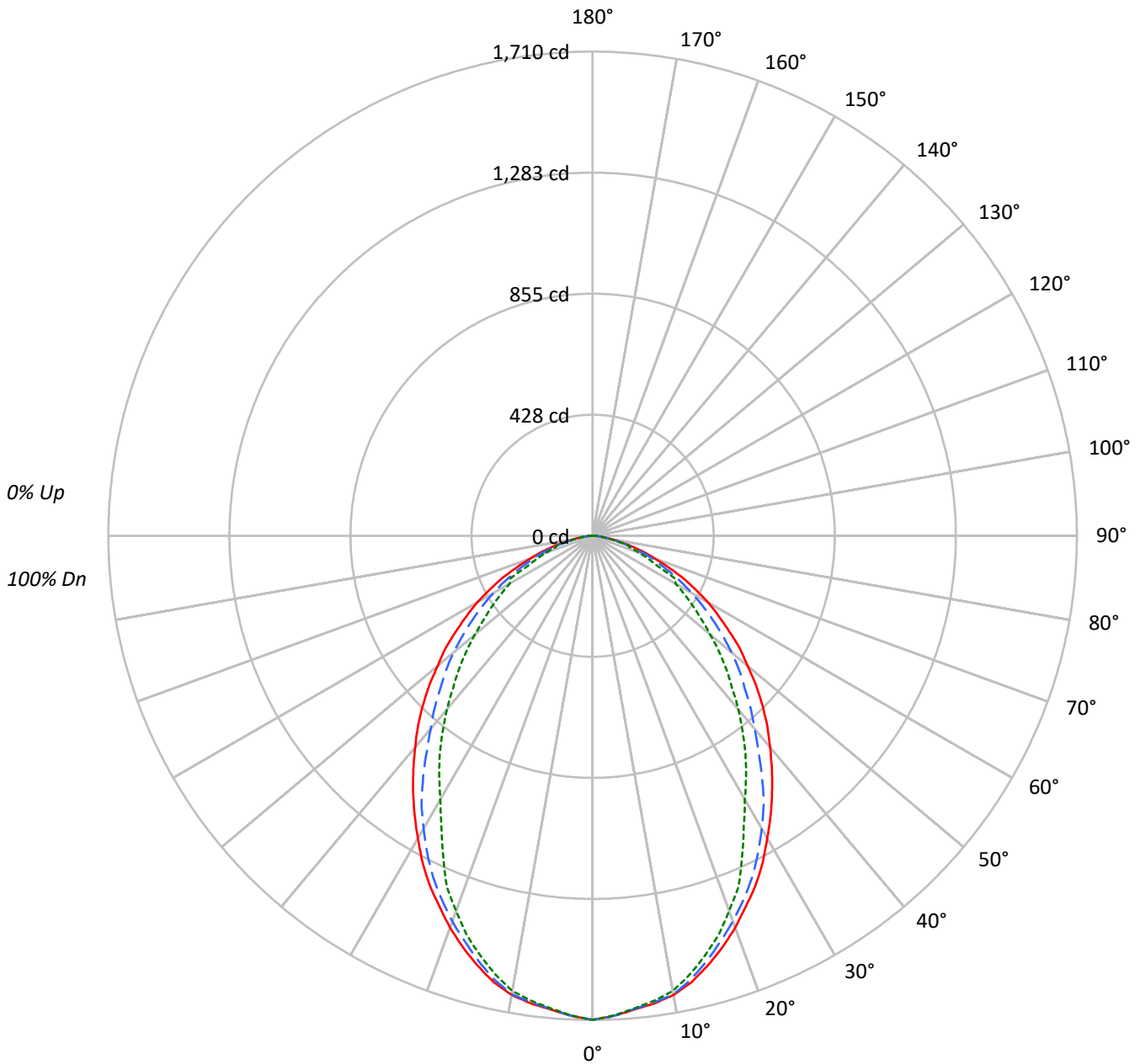
Lumens per Lamp: N/A  
Luminaire Lumens: 3356.0 lumens  
Efficiency: N/A  
Efficacy: 77.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	4600	4600	4600
5°	4538	4532	4527
10°	4499	4493	4461
15°	4377	4333	4272
20°	4216	4148	4035
25°	4043	3955	3708
30°	3832	3709	3341
35°	3629	3428	3090
40°	3423	3124	2812
45°	3226	2888	2542
50°	2987	2681	2267
55°	2763	2429	2031
60°	2532	2170	1819
65°	2227	1900	1611
70°	1835	1664	1368
75°	1459	1274	1336
80°	979	919	857
85°	611	732	855



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	159.1	4.7
10°-20°	436.7	13.0
20°-30°	604.6	18.0
30°-40°	644.7	19.2
40°-50°	588.1	17.5
50°-60°	460.8	13.7
60°-70°	300.3	8.9
70°-80°	133.0	4.0
80°-90°	28.6	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°	1200.5	35.8
0°-40°	1845.2	55.0
0°-60°	2894.1	86.2
0°-90°	3356.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3356.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1710	1710	1710	1710	1710	
5°	1680	1678	1678	1676	1676	159
15°	1571	1571	1555	1540	1534	442
25°	1362	1354	1332	1285	1249	625
35°	1105	1097	1044	964	941	691
45°	848	830	759	696	668	653
55°	589	571	518	456	433	528
65°	350	330	298	304	253	345
75°	140	130	122	117	128	150
85°	20	22	24	26	28	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1709.5	1709.5	1709.5	1709.5	1709.5
2.5°	1697.6	1697.6	1697.6	1695.7	1695.7
5°	1679.9	1677.9	1677.9	1675.9	1675.9
7.5°	1666.0	1664.0	1662.1	1660.1	1656.1
10°	1646.3	1646.3	1644.3	1634.4	1632.4
12.5°	1614.6	1612.7	1604.8	1590.9	1587.0
15°	1571.2	1571.2	1555.3	1539.5	1533.6
17.5°	1523.7	1521.8	1502.0	1486.2	1478.3
20°	1472.3	1468.4	1448.6	1422.9	1409.1
22.5°	1415.0	1415.0	1391.3	1357.7	1343.9
25°	1361.7	1353.8	1332.0	1284.6	1249.0
27.5°	1300.4	1288.5	1264.8	1197.6	1156.1
30°	1233.2	1227.3	1193.7	1106.7	1075.1
32.5°	1170.0	1160.1	1124.5	1033.6	1007.9
35°	1104.8	1096.8	1043.5	964.4	940.7
37.5°	1039.5	1029.7	962.5	899.2	869.6
40°	974.3	962.5	889.3	832.0	800.4
42.5°	913.1	897.2	826.1	764.8	729.3
45°	847.8	830.0	758.9	695.7	668.0
47.5°	782.6	766.8	701.6	636.4	604.7
50°	713.4	699.6	640.3	575.1	541.5
52.5°	656.1	634.4	577.1	511.9	484.2
55°	588.9	571.2	517.8	456.5	432.8
57.5°	527.7	509.9	460.5	403.2	383.4
60°	470.4	444.7	403.2	353.8	337.9
62.5°	407.1	387.4	351.8	310.3	330.0
65°	349.8	330.0	298.4	304.4	253.0
67.5°	286.6	276.7	249.0	221.3	213.4
70°	233.2	221.3	211.5	181.8	173.9
72.5°	185.8	173.9	160.1	144.3	138.3
75°	140.3	130.4	122.5	116.6	128.5
77.5°	96.8	92.9	87.0	81.0	79.1
80°	63.2	61.3	59.3	57.3	55.3
82.5°	37.5	37.5	37.5	37.5	37.5
85°	19.8	21.7	23.7	25.7	27.7
87.5°	11.9	11.9	13.8	15.8	17.8
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)