

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: P546211

Luminaire Tested: **FMR-12-4-LD4-2LO-35-UNV-81-88-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: P546211  
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-LD4-2LO-35-UNV-81-88-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

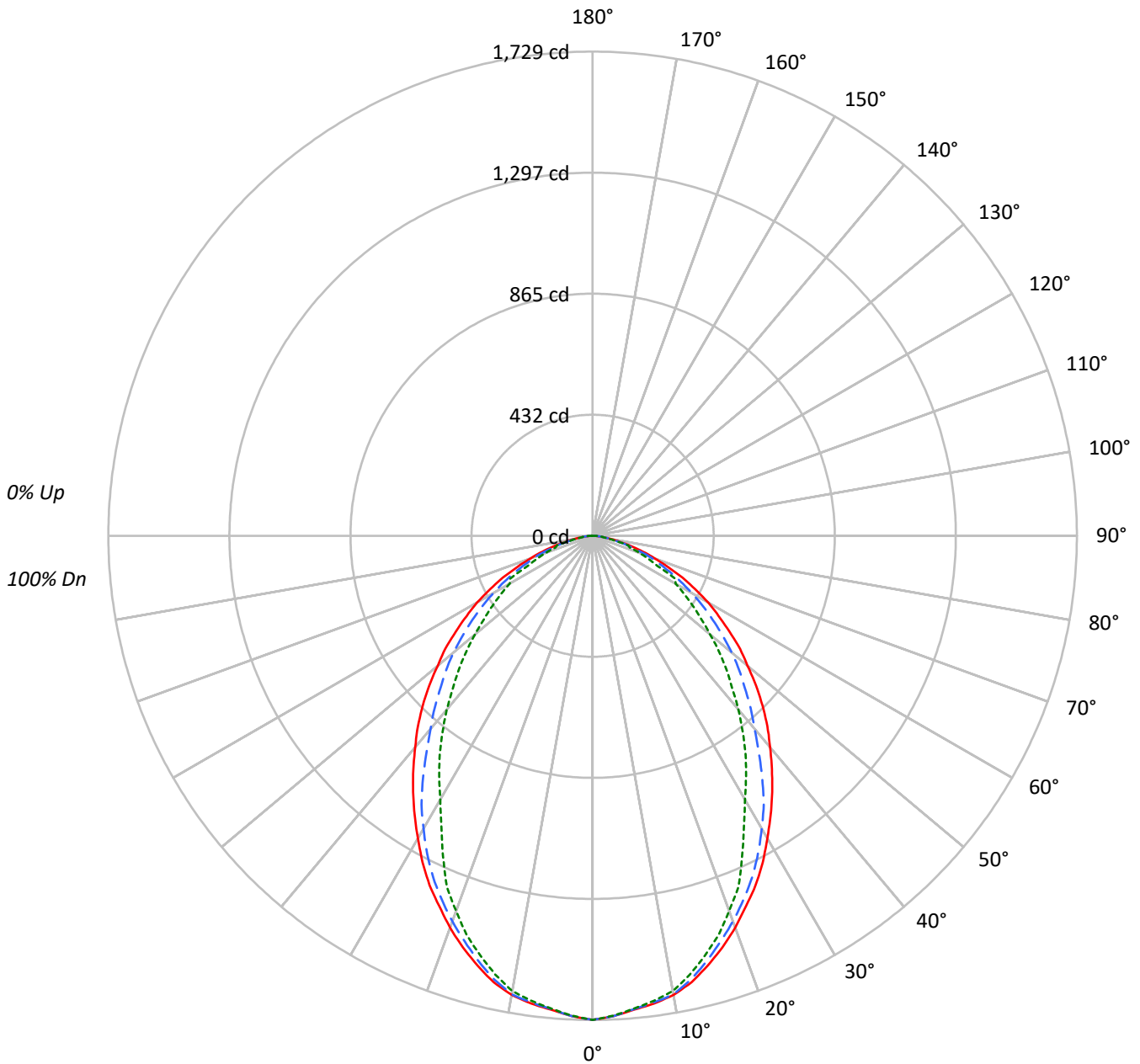
Lumens per Lamp: N/A  
Luminaire Lumens: 3394.0 lumens  
Efficiency: N/A  
Efficacy: 72.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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°	4652	4652	4652
5°	4589	4584	4578
10°	4549	4544	4511
15°	4427	4382	4321
20°	4264	4195	4081
25°	4089	4000	3751
30°	3875	3751	3379
35°	3670	3467	3125
40°	3461	3159	2844
45°	3263	2921	2571
50°	3021	2711	2292
55°	2794	2457	2054
60°	2560	2194	1840
65°	2253	1922	1629
70°	1855	1683	1384
75°	1475	1288	1351
80°	992	930	868
85°	618	741	865



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	160.9	4.7
10°-20°	441.7	13.0
20°-30°	611.5	18.0
30°-40°	652.0	19.2
40°-50°	594.8	17.5
50°-60°	466.0	13.7
60°-70°	303.7	8.9
70°-80°	134.5	4.0
80°-90°	28.9	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°	1214.1	35.8
0°-40°	1866.1	55.0
0°-60°	2926.9	86.2
0°-90°	3394.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3394.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1729	1729	1729	1729	1729	
5°	1699	1697	1697	1695	1695	161
15°	1589	1589	1573	1557	1551	447
25°	1377	1369	1347	1299	1263	632
35°	1117	1109	1055	975	951	698
45°	857	839	768	704	676	660
55°	596	578	524	462	438	534
65°	354	334	302	308	256	349
75°	142	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°	1728.9	1728.9	1728.9	1728.9	1728.9
2.5°	1716.9	1716.9	1716.9	1714.9	1714.9
5°	1698.9	1696.9	1696.9	1694.9	1694.9
7.5°	1684.9	1682.9	1680.9	1678.9	1674.9
10°	1664.9	1664.9	1662.9	1652.9	1650.9
12.5°	1632.9	1630.9	1622.9	1608.9	1604.9
15°	1589.0	1589.0	1573.0	1557.0	1551.0
17.5°	1541.0	1539.0	1519.0	1503.0	1495.0
20°	1489.0	1485.0	1465.0	1439.0	1425.1
22.5°	1431.1	1431.1	1407.1	1373.1	1359.1
25°	1377.1	1369.1	1347.1	1299.1	1263.2
27.5°	1315.1	1303.1	1279.2	1211.2	1169.2
30°	1247.2	1241.2	1207.2	1119.3	1087.3
32.5°	1183.2	1173.2	1137.2	1045.3	1019.3
35°	1117.3	1109.3	1055.3	975.4	951.4
37.5°	1051.3	1041.3	973.4	909.4	879.4
40°	985.3	973.4	899.4	841.4	809.5
42.5°	923.4	907.4	835.4	773.5	737.5
45°	857.4	839.4	767.5	703.5	675.6
47.5°	791.5	775.5	709.5	643.6	611.6
50°	721.5	707.5	647.6	581.6	547.6
52.5°	663.6	641.6	583.6	517.7	489.7
55°	595.6	577.6	523.7	461.7	437.7
57.5°	533.6	515.7	465.7	407.7	387.7
60°	475.7	449.7	407.7	357.8	341.8
62.5°	411.7	391.7	355.8	313.8	333.8
65°	353.8	333.8	301.8	307.8	255.8
67.5°	289.8	279.8	251.8	223.9	215.9
70°	235.8	223.9	213.9	183.9	175.9
72.5°	187.9	175.9	161.9	145.9	139.9
75°	141.9	131.9	123.9	117.9	129.9
77.5°	97.9	93.9	87.9	81.9	79.9
80°	64.0	62.0	60.0	58.0	56.0
82.5°	38.0	38.0	38.0	38.0	38.0
85°	20.0	22.0	24.0	26.0	28.0
87.5°	12.0	12.0	14.0	16.0	18.0
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)