

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: P546210

Luminaire Tested: **FMR-12-4-LD4-2LO-35-UNV-81-87-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: P546210  
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-81-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

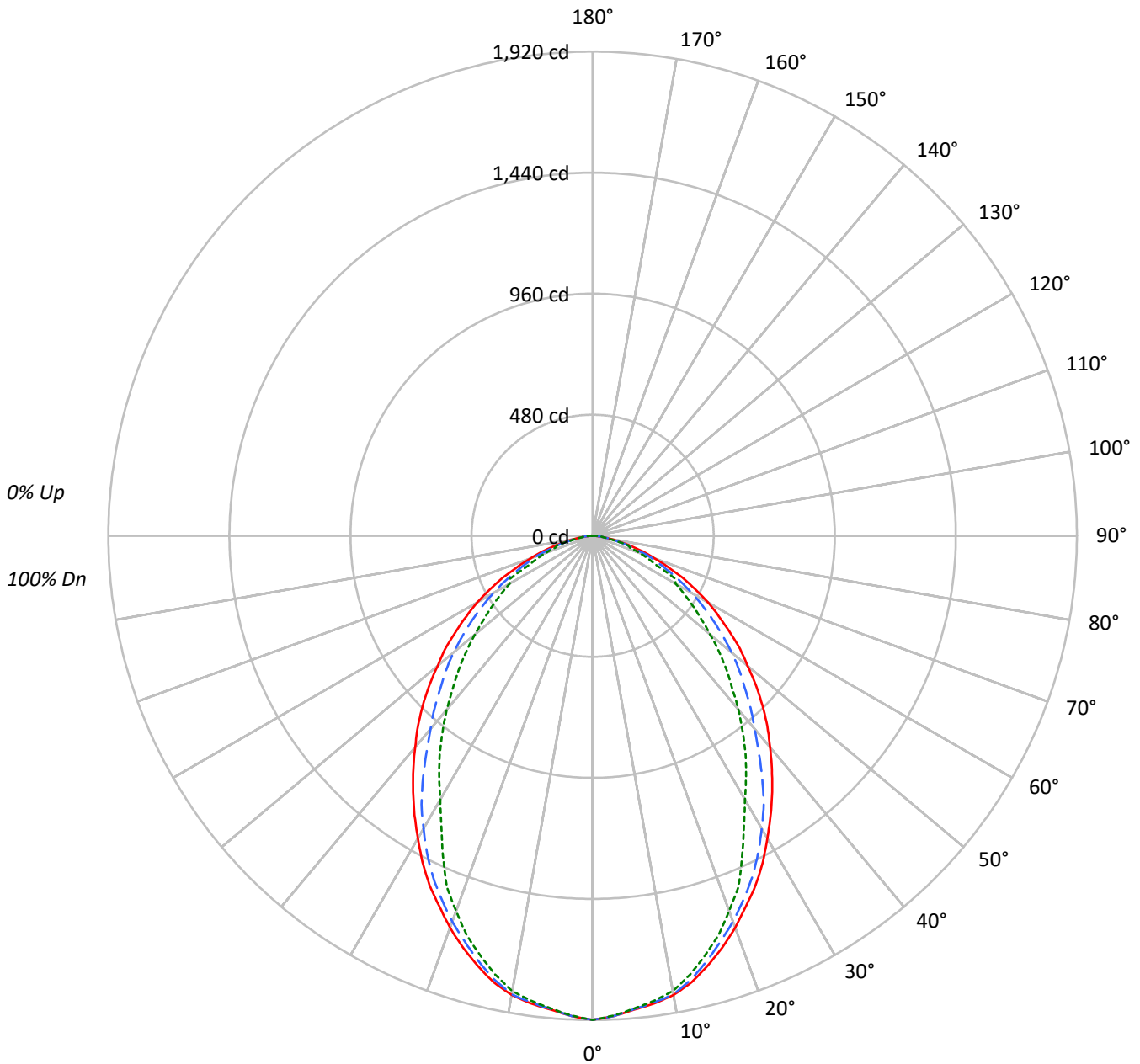
Lumens per Lamp: N/A  
Luminaire Lumens: 3769.0 lumens  
Efficiency: N/A  
Efficacy: 80.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	5166	5166	5166
5°	5096	5090	5084
10°	5052	5046	5009
15°	4916	4866	4798
20°	4735	4659	4532
25°	4540	4442	4165
30°	4304	4166	3752
35°	4076	3850	3471
40°	3844	3509	3158
45°	3624	3244	2855
50°	3354	3010	2546
55°	3103	2728	2281
60°	2843	2437	2042
65°	2502	2134	1809
70°	2061	1869	1537
75°	1639	1431	1500
80°	1100	1032	962
85°	685	821	960



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	178.7	4.7
10°-20°	490.5	13.0
20°-30°	679.0	18.0
30°-40°	724.0	19.2
40°-50°	660.5	17.5
50°-60°	517.5	13.7
60°-70°	337.3	8.9
70°-80°	149.4	4.0
80°-90°	32.1	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°	1348.2	35.8
0°-40°	2072.2	55.0
0°-60°	3250.2	86.2
0°-90°	3769.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3769.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1920	1920	1920	1920	1920	
5°	1887	1884	1884	1882	1882	179
15°	1764	1764	1747	1729	1722	496
25°	1529	1520	1496	1443	1403	702
35°	1241	1232	1172	1083	1056	776
45°	952	932	852	781	750	733
55°	661	641	582	513	486	593
65°	393	371	335	342	284	387
75°	158	146	138	131	144	169
85°	22	24	27	29	31	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1919.9	1919.9	1919.9	1919.9	1919.9
2.5°	1906.6	1906.6	1906.6	1904.3	1904.3
5°	1886.6	1884.4	1884.4	1882.1	1882.1
7.5°	1871.0	1868.8	1866.6	1864.4	1860.0
10°	1848.9	1848.9	1846.6	1835.5	1833.3
12.5°	1813.3	1811.1	1802.2	1786.7	1782.3
15°	1764.5	1764.5	1746.8	1729.0	1722.3
17.5°	1711.2	1709.0	1686.8	1669.1	1660.2
20°	1653.5	1649.1	1626.9	1598.0	1582.5
22.5°	1589.2	1589.2	1562.5	1524.8	1509.3
25°	1529.2	1520.4	1496.0	1442.7	1402.7
27.5°	1460.4	1447.1	1420.5	1345.0	1298.4
30°	1385.0	1378.3	1340.6	1242.9	1207.4
32.5°	1314.0	1302.9	1262.9	1160.8	1132.0
35°	1240.7	1231.8	1171.9	1083.1	1056.5
37.5°	1167.5	1156.4	1080.9	1009.9	976.6
40°	1094.2	1080.9	998.8	934.4	898.9
42.5°	1025.4	1007.7	927.8	859.0	819.0
45°	952.2	932.2	852.3	781.3	750.2
47.5°	878.9	861.2	787.9	714.7	679.2
50°	801.2	785.7	719.1	645.9	608.1
52.5°	736.9	712.5	648.1	574.9	543.8
55°	661.4	641.4	581.5	512.7	486.1
57.5°	592.6	572.6	517.1	452.8	430.6
60°	528.2	499.4	452.8	397.3	379.5
62.5°	457.2	435.0	395.1	348.5	370.7
65°	392.9	370.7	335.1	341.8	284.1
67.5°	321.8	310.7	279.7	248.6	239.7
70°	261.9	248.6	237.5	204.2	195.3
72.5°	208.6	195.3	179.8	162.0	155.4
75°	157.6	146.5	137.6	131.0	144.3
77.5°	108.8	104.3	97.7	91.0	88.8
80°	71.0	68.8	66.6	64.4	62.1
82.5°	42.2	42.2	42.2	42.2	42.2
85°	22.2	24.4	26.6	28.9	31.1
87.5°	13.3	13.3	15.5	17.8	20.0
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)