

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: P546001

Luminaire Tested: **FMR-12-4-LD4-1LO-50-UNV-93-86-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: P546001  
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-LD4-1LO-50-UNV-93-86-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

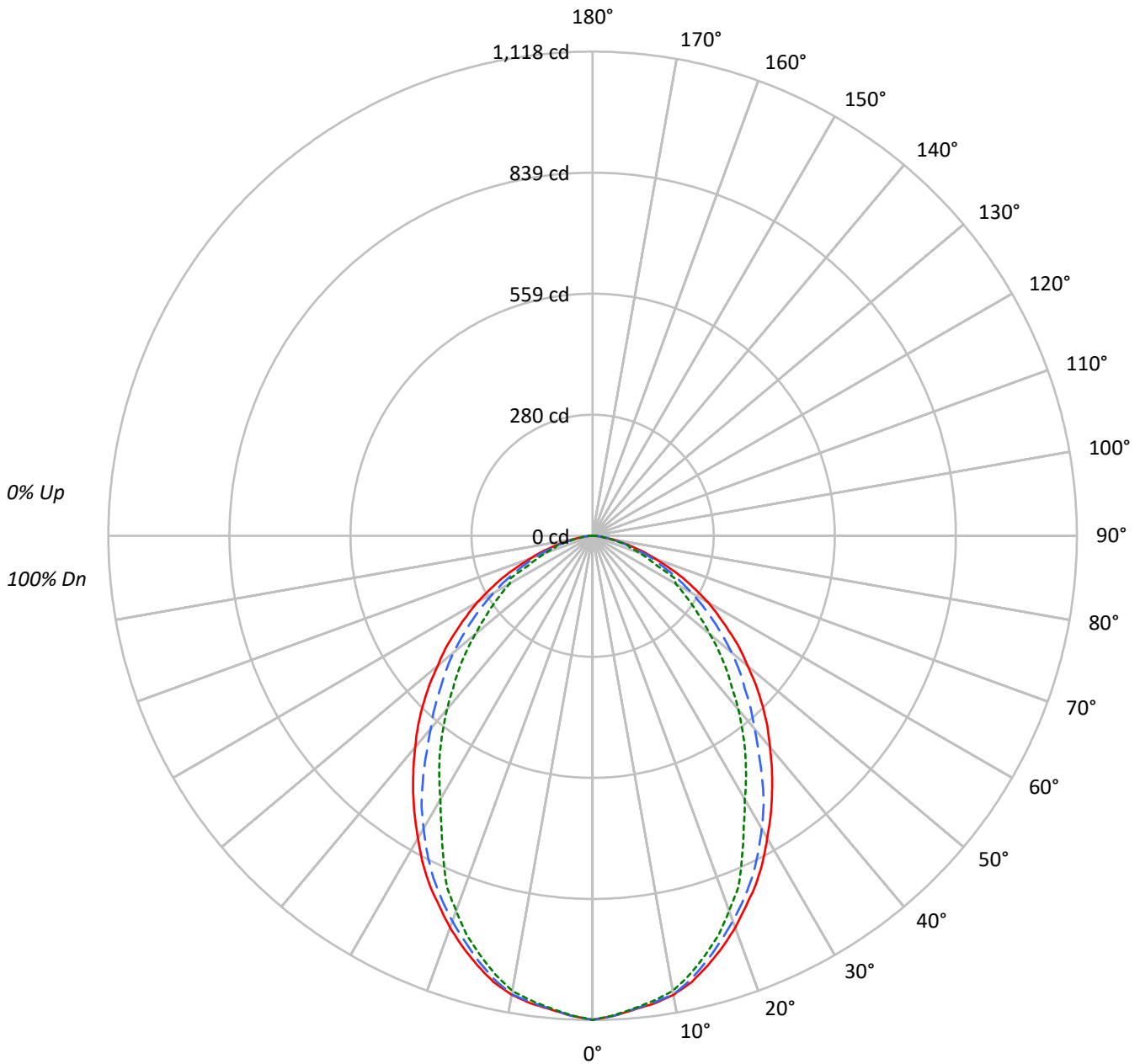
Lumens per Lamp: N/A  
Luminaire Lumens: 2194.0 lumens  
Efficiency: N/A  
Efficacy: 93.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
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°	3007	3007	3007
5°	2967	2963	2959
10°	2941	2937	2916
15°	2862	2833	2793
20°	2757	2712	2638
25°	2643	2586	2425
30°	2505	2425	2184
35°	2372	2241	2020
40°	2238	2042	1838
45°	2109	1888	1662
50°	1953	1752	1482
55°	1806	1588	1328
60°	1655	1419	1189
65°	1456	1242	1053
70°	1200	1087	895
75°	953	833	873
80°	640	601	561
85°	398	479	559



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	104.0	4.7
10°-20°	285.5	13.0
20°-30°	395.3	18.0
30°-40°	421.5	19.2
40°-50°	384.5	17.5
50°-60°	301.2	13.7
60°-70°	196.3	8.9
70°-80°	87.0	4.0
80°-90°	18.7	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°	784.8	35.8
0°-40°	1206.3	55.0
0°-60°	1892.0	86.2
0°-90°	2194.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2194.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1118	1118	1118	1118	1118	
5°	1098	1097	1097	1096	1096	104
15°	1027	1027	1017	1006	1003	289
25°	890	885	871	840	817	409
35°	722	717	682	630	615	452
45°	554	543	496	455	437	427
55°	385	373	338	298	283	345
65°	229	216	195	199	165	225
75°	92	85	80	76	84	98
85°	13	14	16	17	18	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1117.6	1117.6	1117.6	1117.6	1117.6
2.5°	1109.8	1109.8	1109.8	1108.6	1108.6
5°	1098.2	1096.9	1096.9	1095.6	1095.6
7.5°	1089.2	1087.9	1086.6	1085.3	1082.7
10°	1076.2	1076.2	1075.0	1068.5	1067.2
12.5°	1055.6	1054.3	1049.1	1040.1	1037.5
15°	1027.2	1027.2	1016.8	1006.5	1002.6
17.5°	996.1	994.9	981.9	971.6	966.4
20°	962.6	960.0	947.0	930.3	921.2
22.5°	925.1	925.1	909.6	887.6	878.6
25°	890.2	885.0	870.8	839.8	816.6
27.5°	850.1	842.4	826.9	783.0	755.8
30°	806.2	802.3	780.4	723.5	702.9
32.5°	764.9	758.4	735.2	675.7	658.9
35°	722.2	717.1	682.2	630.5	615.0
37.5°	679.6	673.1	629.2	587.9	568.5
40°	637.0	629.2	581.4	543.9	523.3
42.5°	596.9	586.6	540.1	500.0	476.8
45°	554.3	542.6	496.1	454.8	436.7
47.5°	511.6	501.3	458.7	416.0	395.4
50°	466.4	457.4	418.6	376.0	354.0
52.5°	428.9	414.7	377.3	334.6	316.5
55°	385.0	373.4	338.5	298.5	283.0
57.5°	345.0	333.3	301.0	263.6	250.7
60°	307.5	290.7	263.6	231.3	220.9
62.5°	266.2	253.2	230.0	202.8	215.8
65°	228.7	215.8	195.1	199.0	165.4
67.5°	187.3	180.9	162.8	144.7	139.5
70°	152.5	144.7	138.2	118.9	113.7
72.5°	121.4	113.7	104.7	94.3	90.4
75°	91.7	85.3	80.1	76.2	84.0
77.5°	63.3	60.7	56.8	53.0	51.7
80°	41.3	40.1	38.8	37.5	36.2
82.5°	24.5	24.5	24.5	24.5	24.5
85°	12.9	14.2	15.5	16.8	18.1
87.5°	7.8	7.8	9.0	10.3	11.6
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)