

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: P545938

Luminaire Tested: **FMR-12-4-LD4-1LO-35-UNV-93-87-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: P545938  
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-35-UNV-93-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

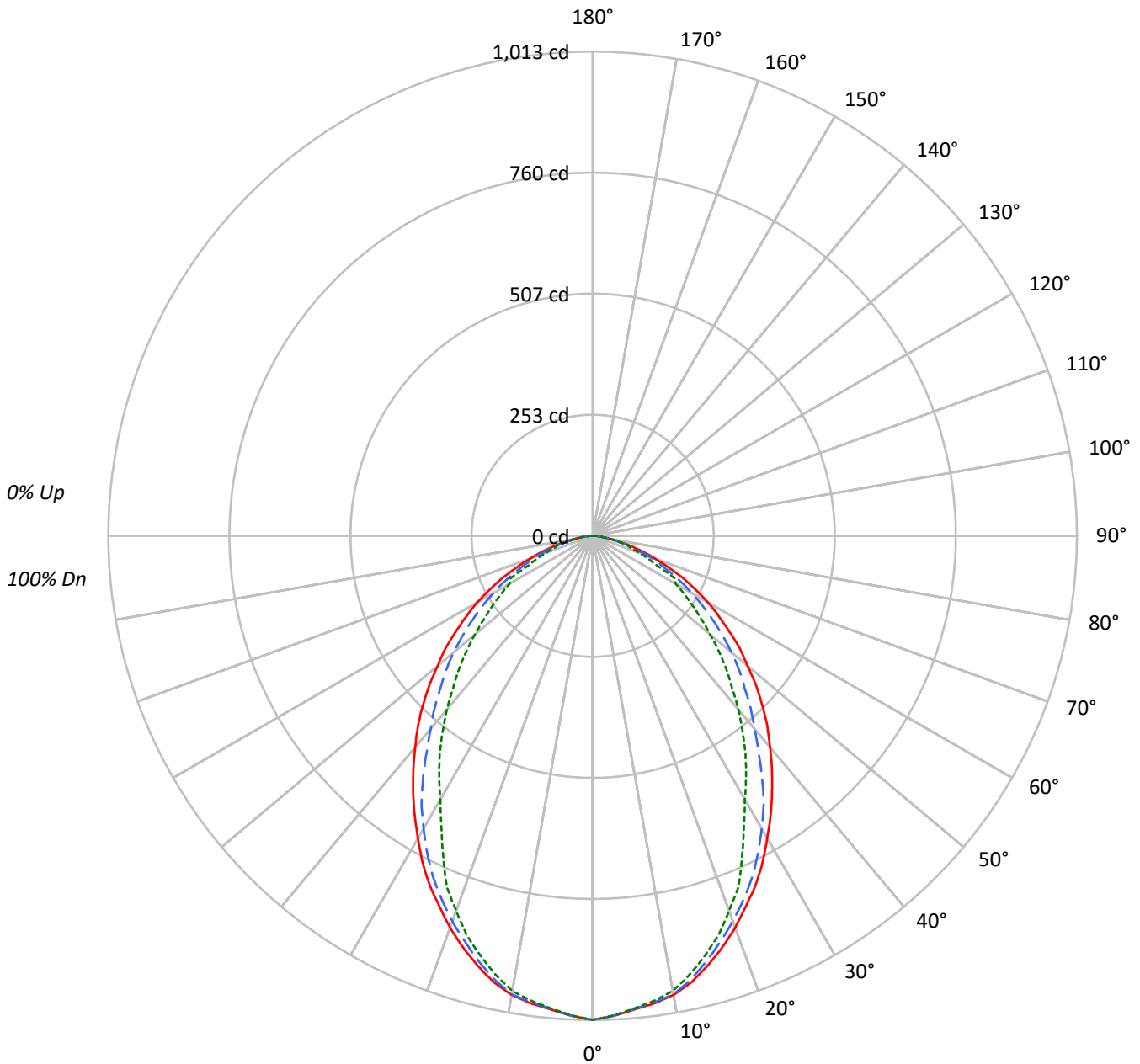
Lumens per Lamp: N/A  
Luminaire Lumens: 1988.0 lumens  
Efficiency: N/A  
Efficacy: 85.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	2725	2725	2725
5°	2688	2685	2682
10°	2665	2661	2642
15°	2593	2567	2531
20°	2498	2457	2390
25°	2395	2343	2197
30°	2270	2197	1979
35°	2150	2031	1831
40°	2028	1851	1665
45°	1911	1711	1506
50°	1769	1588	1343
55°	1637	1439	1203
60°	1499	1285	1077
65°	1319	1126	954
70°	1087	986	810
75°	864	755	791
80°	581	544	508
85°	361	432	506



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.3	4.7
10°-20°	258.7	13.0
20°-30°	358.2	18.0
30°-40°	381.9	19.2
40°-50°	348.4	17.5
50°-60°	272.9	13.7
60°-70°	177.9	8.9
70°-80°	78.8	4.0
80°-90°	16.9	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°	711.1	35.8
0°-40°	1093.0	55.0
0°-60°	1714.4	86.2
0°-90°	1988.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1988.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1013	1013	1013	1013	1013	
5°	995	994	994	993	993	94
15°	931	931	921	912	908	262
25°	807	802	789	761	740	370
35°	654	650	618	571	557	409
45°	502	492	450	412	396	387
55°	349	338	307	270	256	313
65°	207	196	177	180	150	204
75°	83	77	73	69	76	89
85°	12	13	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1012.7	1012.7	1012.7	1012.7	1012.7
2.5°	1005.6	1005.6	1005.6	1004.5	1004.5
5°	995.1	993.9	993.9	992.8	992.8
7.5°	986.9	985.7	984.6	983.4	981.1
10°	975.2	975.2	974.0	968.2	967.0
12.5°	956.5	955.3	950.6	942.4	940.1
15°	930.7	930.7	921.3	912.0	908.5
17.5°	902.6	901.4	889.7	880.4	875.7
20°	872.2	869.8	858.1	842.9	834.7
22.5°	838.2	838.2	824.2	804.3	796.1
25°	806.6	801.9	789.1	761.0	739.9
27.5°	770.3	763.3	749.3	709.4	684.9
30°	730.5	727.0	707.1	655.6	636.9
32.5°	693.1	687.2	666.1	612.3	597.1
35°	654.4	649.7	618.1	571.3	557.3
37.5°	615.8	609.9	570.1	532.7	515.1
40°	577.2	570.1	526.8	492.9	474.1
42.5°	540.9	531.5	489.4	453.1	432.0
45°	502.2	491.7	449.6	412.1	395.7
47.5°	463.6	454.2	415.6	377.0	358.2
50°	422.6	414.4	379.3	340.7	320.8
52.5°	388.7	375.8	341.8	303.2	286.8
55°	348.9	338.3	306.7	270.4	256.4
57.5°	312.6	302.0	272.8	238.8	227.1
60°	278.6	263.4	238.8	209.6	200.2
62.5°	241.2	229.5	208.4	183.8	195.5
65°	207.2	195.5	176.8	180.3	149.9
67.5°	169.8	163.9	147.5	131.1	126.4
70°	138.1	131.1	125.3	107.7	103.0
72.5°	110.0	103.0	94.8	85.5	81.9
75°	83.1	77.3	72.6	69.1	76.1
77.5°	57.4	55.0	51.5	48.0	46.8
80°	37.5	36.3	35.1	34.0	32.8
82.5°	22.2	22.2	22.2	22.2	22.2
85°	11.7	12.9	14.0	15.2	16.4
87.5°	7.0	7.0	8.2	9.4	10.5
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)