

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: P545940

Luminaire Tested: **FMR-12-4-LD4-1LO-35-UNV-93-94-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: P545940  
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-93-94-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

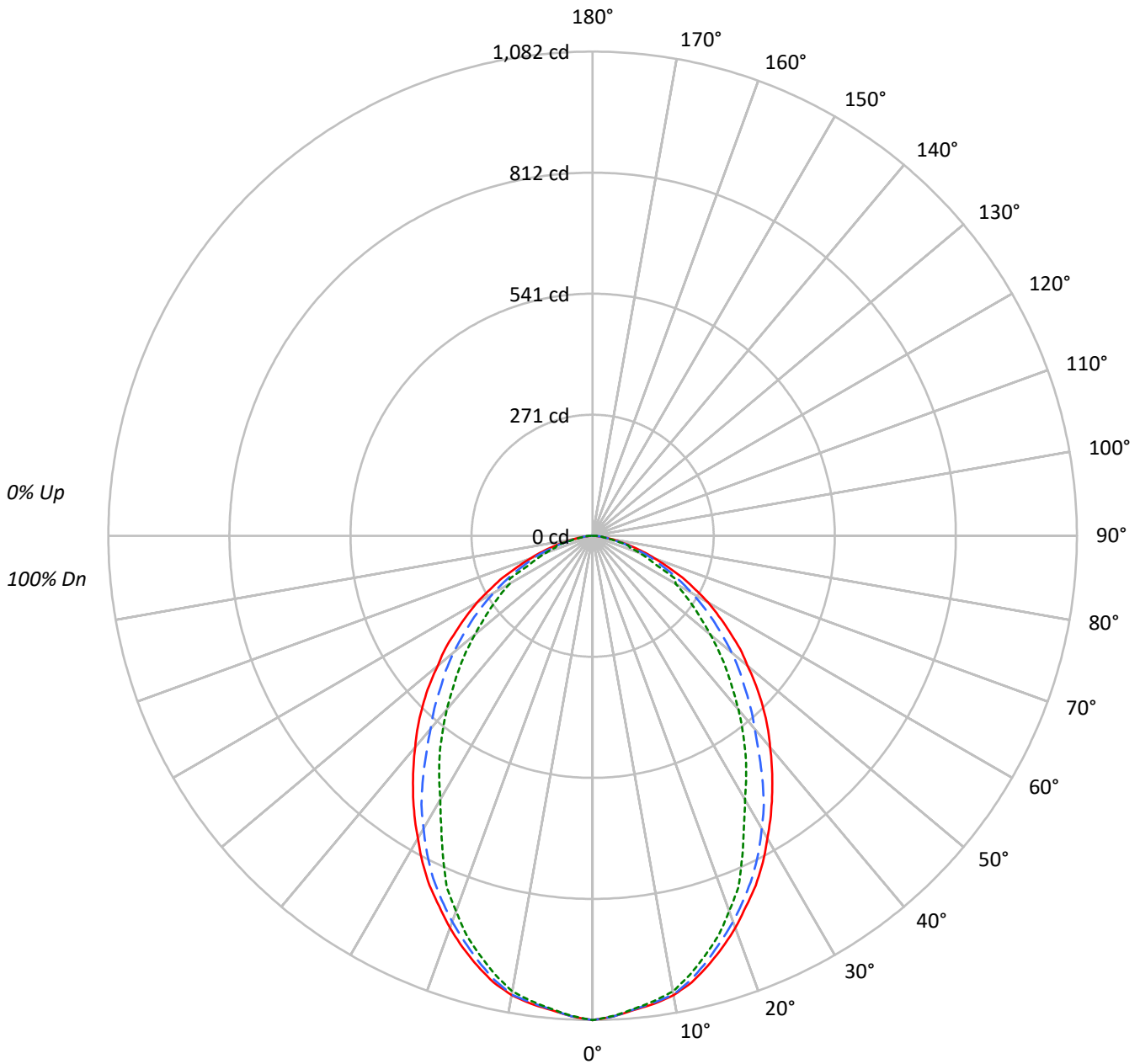
Lumens per Lamp: N/A  
Luminaire Lumens: 2125.0 lumens  
Efficiency: N/A  
Efficacy: 90.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	2913	2913	2913
5°	2873	2870	2867
10°	2848	2845	2824
15°	2771	2744	2705
20°	2670	2627	2555
25°	2560	2504	2348
30°	2426	2348	2115
35°	2298	2170	1957
40°	2167	1978	1780
45°	2043	1829	1610
50°	1891	1697	1436
55°	1749	1538	1286
60°	1603	1374	1152
65°	1410	1203	1020
70°	1162	1054	866
75°	923	807	845
80°	620	581	542
85°	386	463	540



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	100.8	4.7
10°-20°	276.5	13.0
20°-30°	382.8	18.0
30°-40°	408.2	19.2
40°-50°	372.4	17.5
50°-60°	291.8	13.7
60°-70°	190.2	8.9
70°-80°	84.2	4.0
80°-90°	18.1	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°	760.1	35.8
0°-40°	1168.3	55.0
0°-60°	1832.5	86.2
0°-90°	2125.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2125.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1082	1082	1082	1082	1082	
5°	1064	1062	1062	1061	1061	101
15°	995	995	985	975	971	280
25°	862	857	843	813	791	396
35°	700	694	661	611	596	437
45°	537	526	480	440	423	413
55°	373	362	328	289	274	334
65°	222	209	189	193	160	218
75°	89	83	78	74	81	95
85°	12	14	15	16	18	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1082.4	1082.4	1082.4	1082.4	1082.4
2.5°	1074.9	1074.9	1074.9	1073.7	1073.7
5°	1063.7	1062.4	1062.4	1061.2	1061.2
7.5°	1054.9	1053.7	1052.4	1051.2	1048.7
10°	1042.4	1042.4	1041.2	1034.9	1033.6
12.5°	1022.4	1021.1	1016.1	1007.4	1004.9
15°	994.8	994.8	984.8	974.8	971.1
17.5°	964.8	963.6	951.1	941.0	936.0
20°	932.3	929.8	917.3	901.0	892.2
22.5°	896.0	896.0	881.0	859.7	850.9
25°	862.2	857.2	843.4	813.4	790.9
27.5°	823.4	815.9	800.9	758.3	732.1
30°	780.9	777.1	755.8	700.8	680.8
32.5°	740.8	734.6	712.0	654.5	638.2
35°	699.5	694.5	660.7	610.7	595.7
37.5°	658.2	652.0	609.4	569.4	550.6
40°	616.9	609.4	563.1	526.8	506.8
42.5°	578.1	568.1	523.1	484.3	461.8
45°	536.8	525.6	480.5	440.5	423.0
47.5°	495.5	485.5	444.2	402.9	382.9
50°	451.7	443.0	405.4	364.2	342.9
52.5°	415.5	401.7	365.4	324.1	306.6
55°	372.9	361.6	327.9	289.1	274.1
57.5°	334.1	322.9	291.6	255.3	242.8
60°	297.8	281.6	255.3	224.0	214.0
62.5°	257.8	245.3	222.7	196.5	209.0
65°	221.5	209.0	189.0	192.7	160.2
67.5°	181.5	175.2	157.7	140.2	135.1
70°	147.7	140.2	133.9	115.1	110.1
72.5°	117.6	110.1	101.4	91.4	87.6
75°	88.8	82.6	77.6	73.8	81.3
77.5°	61.3	58.8	55.1	51.3	50.1
80°	40.0	38.8	37.5	36.3	35.0
82.5°	23.8	23.8	23.8	23.8	23.8
85°	12.5	13.8	15.0	16.3	17.5
87.5°	7.5	7.5	8.8	10.0	11.3
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)