

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: P545955

Luminaire Tested: **FMR-12-4-LD4-1LO-40-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: P545955  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

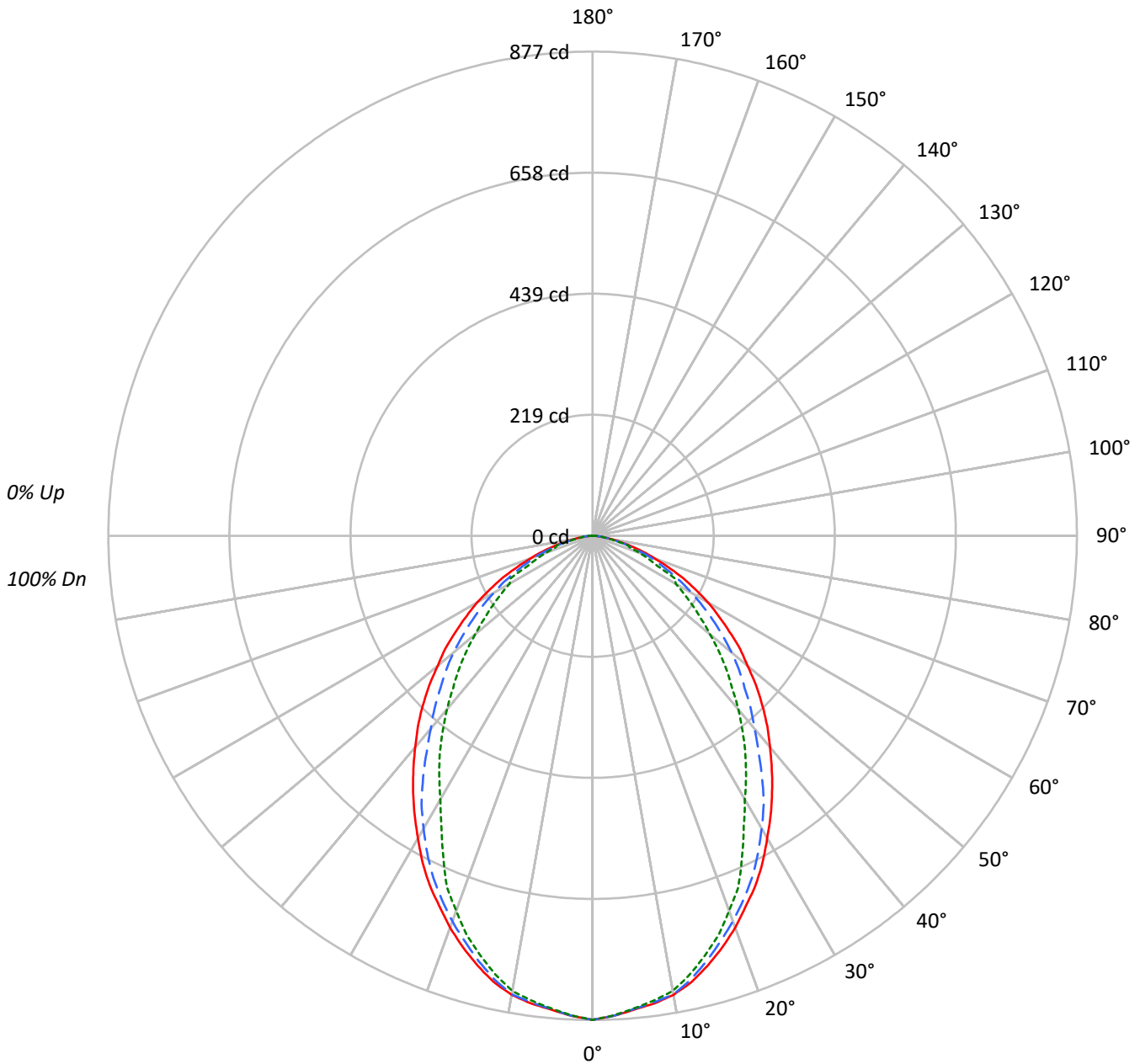
Lumens per Lamp: N/A  
Luminaire Lumens: 1721.0 lumens  
Efficiency: N/A  
Efficacy: 73.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	2359	2359	2359
5°	2327	2324	2321
10°	2307	2304	2287
15°	2245	2222	2191
20°	2162	2127	2069
25°	2073	2028	1902
30°	1965	1902	1713
35°	1861	1758	1585
40°	1755	1602	1442
45°	1655	1481	1304
50°	1532	1375	1163
55°	1417	1246	1042
60°	1298	1112	933
65°	1142	974	826
70°	941	853	702
75°	749	653	685
80°	502	471	440
85°	312	377	438



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	81.6	4.7
10°-20°	224.0	13.0
20°-30°	310.1	18.0
30°-40°	330.6	19.2
40°-50°	301.6	17.5
50°-60°	236.3	13.7
60°-70°	154.0	8.9
70°-80°	68.2	4.0
80°-90°	14.7	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°	615.6	35.8
0°-40°	946.2	55.0
0°-60°	1484.1	86.2
0°-90°	1721.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1721.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	877	877	877	877	877	
5°	862	860	860	859	859	82
15°	806	806	798	790	786	227
25°	698	694	683	659	640	321
35°	566	562	535	495	482	354
45°	435	426	389	357	343	335
55°	302	293	266	234	222	271
65°	179	169	153	156	130	177
75°	72	67	63	60	66	77
85°	10	11	12	13	14	14
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	876.7	876.7	876.7	876.7	876.7
2.5°	870.6	870.6	870.6	869.6	869.6
5°	861.5	860.4	860.4	859.4	859.4
7.5°	854.4	853.3	852.3	851.3	849.3
10°	844.2	844.2	843.2	838.1	837.1
12.5°	828.0	827.0	822.9	815.8	813.8
15°	805.7	805.7	797.6	789.5	786.5
17.5°	781.4	780.4	770.2	762.1	758.1
20°	755.0	753.0	742.9	729.7	722.6
22.5°	725.6	725.6	713.5	696.3	689.2
25°	698.3	694.2	683.1	658.8	640.5
27.5°	666.9	660.8	648.6	614.2	592.9
30°	632.4	629.4	612.1	567.5	551.3
32.5°	600.0	594.9	576.7	530.0	516.9
35°	566.5	562.5	535.1	494.6	482.4
37.5°	533.1	528.0	493.6	461.1	445.9
40°	499.6	493.6	456.1	426.7	410.5
42.5°	468.2	460.1	423.6	392.2	374.0
45°	434.8	425.7	389.2	356.7	342.6
47.5°	401.3	393.2	359.8	326.3	310.1
50°	365.9	358.8	328.4	294.9	277.7
52.5°	336.5	325.3	295.9	262.5	248.3
55°	302.0	292.9	265.5	234.1	222.0
57.5°	270.6	261.5	236.1	206.7	196.6
60°	241.2	228.0	206.7	181.4	173.3
62.5°	208.8	198.6	180.4	159.1	169.3
65°	179.4	169.3	153.0	156.1	129.7
67.5°	147.0	141.9	127.7	113.5	109.5
70°	119.6	113.5	108.4	93.2	89.2
72.5°	95.3	89.2	82.1	74.0	70.9
75°	72.0	66.9	62.8	59.8	65.9
77.5°	49.7	47.6	44.6	41.6	40.5
80°	32.4	31.4	30.4	29.4	28.4
82.5°	19.3	19.3	19.3	19.3	19.3
85°	10.1	11.1	12.2	13.2	14.2
87.5°	6.1	6.1	7.1	8.1	9.1
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)