

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: P546563

Luminaire Tested: **FMR-24-4-LD4-1LO-50-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: P546563  
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-24-4-LD4-1LO-50-UNV-81-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

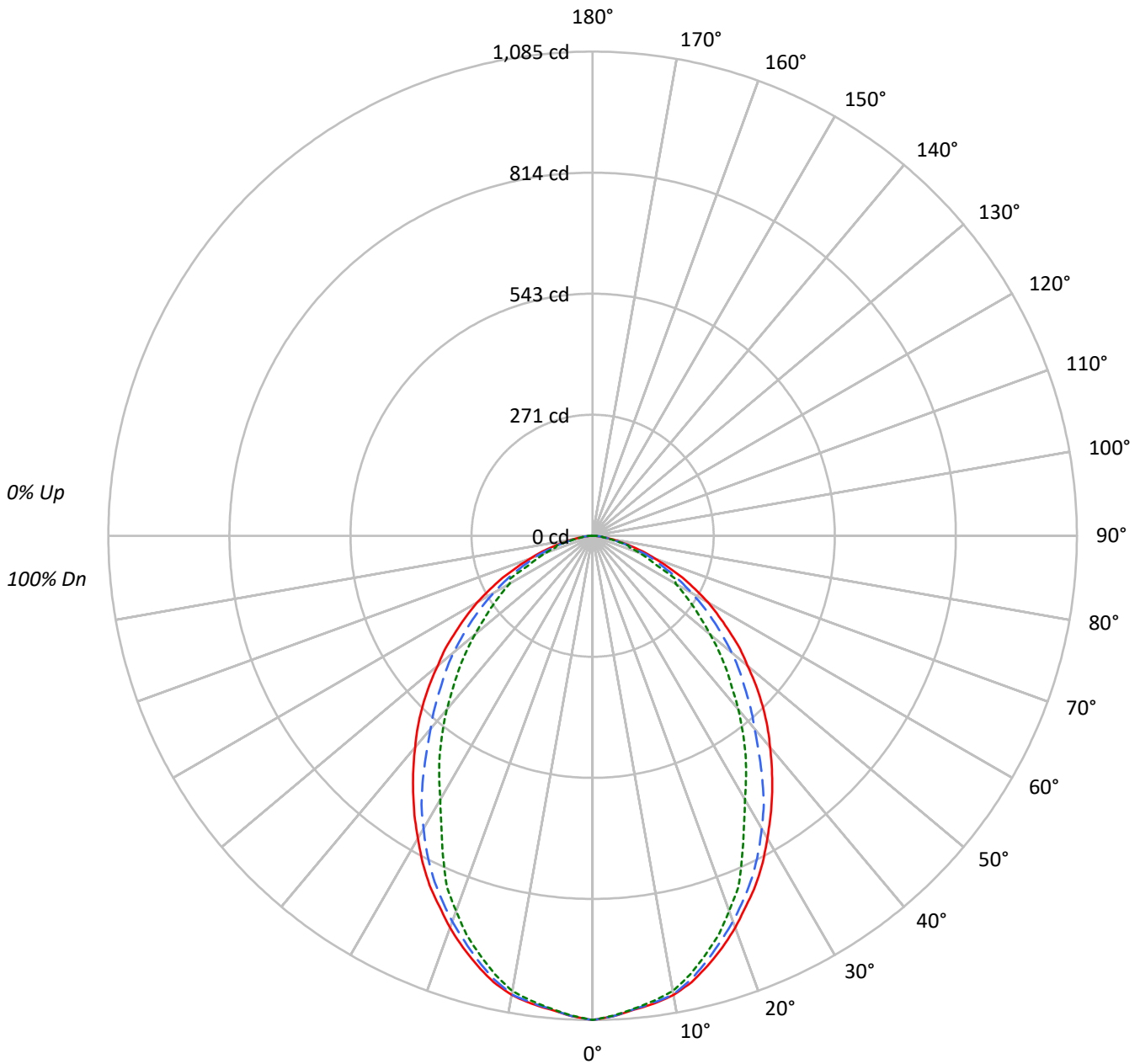
Lumens per Lamp: N/A  
Luminaire Lumens: 2130.0 lumens  
Efficiency: N/A  
Efficacy: 91.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	1460	1460	1460
5°	1440	1438	1437
10°	1428	1426	1416
15°	1389	1375	1356
20°	1338	1316	1280
25°	1283	1255	1177
30°	1216	1177	1060
35°	1152	1088	981
40°	1086	991	892
45°	1024	917	807
50°	948	851	719
55°	877	771	644
60°	803	689	577
65°	707	603	511
70°	582	528	434
75°	463	404	424
80°	311	291	272
85°	193	233	272



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	101.0	4.7
10°-20°	277.2	13.0
20°-30°	383.7	18.0
30°-40°	409.2	19.2
40°-50°	373.3	17.5
50°-60°	292.4	13.7
60°-70°	190.6	8.9
70°-80°	84.5	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°	761.9	35.8
0°-40°	1171.1	55.0
0°-60°	1836.8	86.2
0°-90°	2130.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2130.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1085	1085	1085	1085	1085	
5°	1066	1065	1065	1064	1064	101
15°	997	997	987	977	973	280
25°	864	859	845	815	793	397
35°	701	696	662	612	597	438
45°	538	527	482	442	424	414
55°	374	362	329	290	275	335
65°	222	210	189	193	161	219
75°	89	83	78	74	82	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°	1085.0	1085.0	1085.0	1085.0	1085.0
2.5°	1077.5	1077.5	1077.5	1076.2	1076.2
5°	1066.2	1064.9	1064.9	1063.7	1063.7
7.5°	1057.4	1056.1	1054.9	1053.6	1051.1
10°	1044.9	1044.9	1043.6	1037.3	1036.1
12.5°	1024.8	1023.5	1018.5	1009.7	1007.2
15°	997.2	997.2	987.2	977.1	973.4
17.5°	967.1	965.8	953.3	943.3	938.2
20°	934.5	932.0	919.4	903.1	894.3
22.5°	898.1	898.1	883.0	861.7	852.9
25°	864.2	859.2	845.4	815.3	792.7
27.5°	825.3	817.8	802.8	760.1	733.8
30°	782.7	778.9	757.6	702.4	682.4
32.5°	742.6	736.3	713.7	656.0	639.7
35°	701.2	696.2	662.3	612.1	597.1
37.5°	659.8	653.5	610.9	570.7	551.9
40°	618.4	610.9	564.4	528.1	508.0
42.5°	579.5	569.5	524.3	485.4	462.8
45°	538.1	526.8	481.7	441.5	424.0
47.5°	496.7	486.7	445.3	403.9	383.8
50°	452.8	444.0	406.4	365.0	343.7
52.5°	416.4	402.6	366.3	324.9	307.3
55°	373.8	362.5	328.6	289.7	274.7
57.5°	334.9	323.6	292.3	255.9	243.3
60°	298.5	282.2	255.9	224.5	214.5
62.5°	258.4	245.8	223.3	196.9	209.5
65°	222.0	209.5	189.4	193.2	160.6
67.5°	181.9	175.6	158.0	140.5	135.5
70°	148.0	140.5	134.2	115.4	110.4
72.5°	117.9	110.4	101.6	91.6	87.8
75°	89.1	82.8	77.8	74.0	81.5
77.5°	61.5	59.0	55.2	51.4	50.2
80°	40.1	38.9	37.6	36.4	35.1
82.5°	23.8	23.8	23.8	23.8	23.8
85°	12.5	13.8	15.1	16.3	17.6
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)