

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: P547021

Luminaire Tested: **FMR-24-4-LD4-3HI-40-UNV-82-96-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: P547021  
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-LD4-3HI-40-UNV-82-96-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

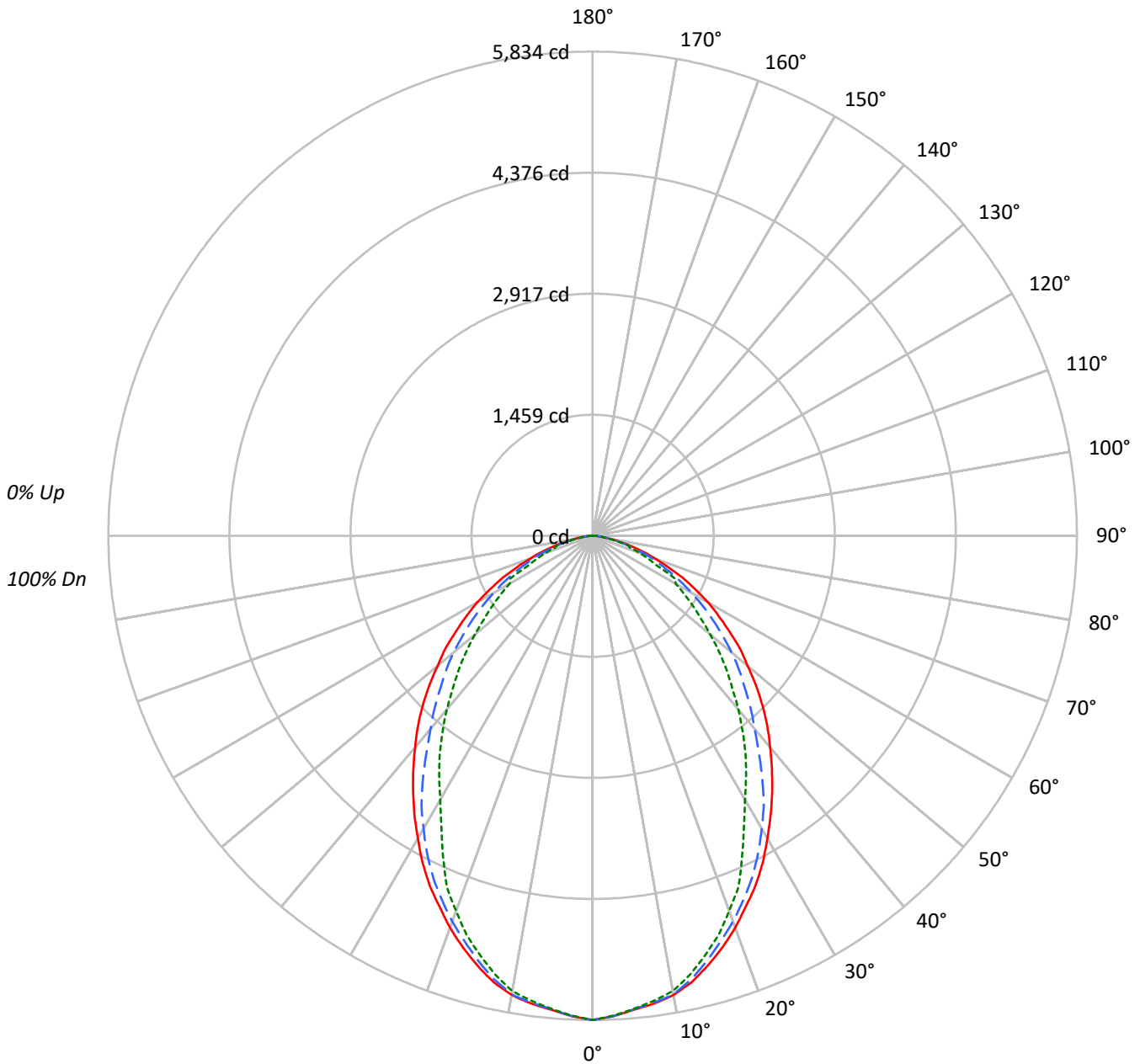
Lumens per Lamp: N/A  
Luminaire Lumens: 11453.0 lumens  
Efficiency: N/A  
Efficacy: 88.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 129.6  
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°	7850	7850	7850
5°	7743	7734	7725
10°	7676	7667	7611
15°	7469	7394	7290
20°	7195	7079	6885
25°	6899	6749	6328
30°	6539	6329	5700
35°	6193	5849	5273
40°	5840	5331	4798
45°	5506	4928	4338
50°	5097	4574	3868
55°	4715	4145	3465
60°	4320	3703	3104
65°	3801	3242	2748
70°	3131	2839	2335
75°	2490	2174	2279
80°	1672	1567	1463
85°	1041	1249	1457



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	543.1	4.7
10°-20°	1490.4	13.0
20°-30°	2063.4	18.0
30°-40°	2200.1	19.2
40°-50°	2007.2	17.5
50°-60°	1572.5	13.7
60°-70°	1024.9	8.9
70°-80°	454.1	4.0
80°-90°	97.5	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°	4096.8	35.8
0°-40°	6297.0	55.0
0°-60°	9876.6	86.2
0°-90°	11453.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11453.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5834	5834	5834	5834	5834	
5°	5733	5726	5726	5719	5719	544
15°	5362	5362	5308	5254	5234	1507
25°	4647	4620	4546	4384	4262	2133
35°	3770	3743	3561	3291	3210	2357
45°	2893	2833	2590	2374	2280	2229
55°	2010	1949	1767	1558	1477	1803
65°	1194	1126	1018	1039	863	1177
75°	479	445	418	398	438	513
85°	67	74	81	88	94	94
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5834.0	5834.0	5834.0	5834.0	5834.0
2.5°	5793.5	5793.5	5793.5	5786.8	5786.8
5°	5732.8	5726.1	5726.1	5719.3	5719.3
7.5°	5685.6	5678.9	5672.1	5665.4	5651.9
10°	5618.2	5618.2	5611.4	5577.7	5571.0
12.5°	5510.3	5503.5	5476.5	5429.3	5415.8
15°	5361.9	5361.9	5307.9	5254.0	5233.7
17.5°	5200.0	5193.3	5125.8	5071.9	5044.9
20°	5024.7	5011.2	4943.7	4856.1	4808.8
22.5°	4829.1	4829.1	4748.1	4633.5	4586.3
25°	4647.0	4620.0	4545.8	4383.9	4262.5
27.5°	4437.9	4397.4	4316.5	4087.2	3945.5
30°	4208.6	4188.3	4073.7	3776.9	3669.0
32.5°	3992.8	3959.0	3837.6	3527.4	3439.7
35°	3770.2	3743.2	3561.1	3291.3	3210.4
37.5°	3547.6	3513.9	3284.6	3068.8	2967.6
40°	3325.0	3284.6	3035.0	2839.4	2731.5
42.5°	3116.0	3062.0	2819.2	2610.1	2488.7
45°	2893.4	2832.7	2589.9	2374.1	2279.6
47.5°	2670.8	2616.9	2394.3	2171.7	2063.8
50°	2434.8	2387.6	2185.2	1962.7	1848.0
52.5°	2239.2	2165.0	1969.4	1746.8	1652.4
55°	2009.9	1949.2	1767.1	1558.0	1477.0
57.5°	1800.8	1740.1	1571.5	1375.9	1308.4
60°	1605.2	1517.5	1375.9	1207.3	1153.3
62.5°	1389.4	1321.9	1200.5	1058.9	1126.3
65°	1193.8	1126.3	1018.4	1038.7	863.3
67.5°	978.0	944.2	849.8	755.4	728.4
70°	795.9	755.4	721.7	620.5	593.5
72.5°	634.0	593.5	546.3	492.3	472.1
75°	478.9	445.1	418.2	397.9	438.4
77.5°	330.5	317.0	296.8	276.5	269.8
80°	215.8	209.1	202.3	195.6	188.8
82.5°	128.1	128.1	128.1	128.1	128.1
85°	67.4	74.2	80.9	87.7	94.4
87.5°	40.5	40.5	47.2	54.0	60.7
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)