

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: P546959

Luminaire Tested: **FMR-24-4-LD4-2STD-50-UNV-93-84-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: P546959  
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-LD4-2STD-50-UNV-93-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

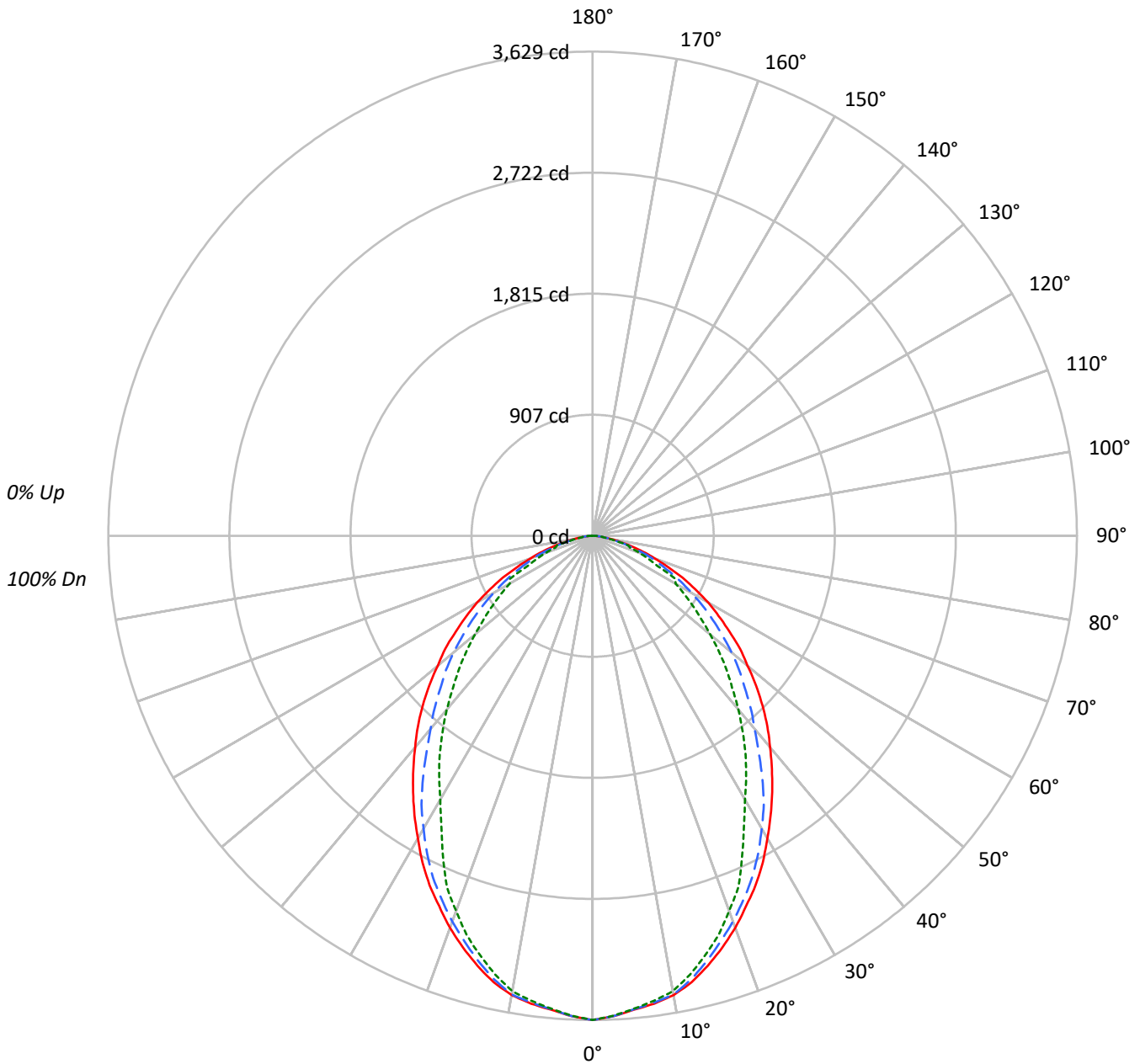
Lumens per Lamp: N/A  
Luminaire Lumens: 7125.0 lumens  
Efficiency: N/A  
Efficacy: 107.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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°	4883	4883	4883
5°	4817	4811	4806
10°	4775	4769	4735
15°	4646	4600	4535
20°	4476	4404	4283
25°	4292	4198	3937
30°	4068	3937	3546
35°	3853	3639	3280
40°	3633	3316	2985
45°	3425	3066	2699
50°	3171	2846	2407
55°	2933	2579	2156
60°	2687	2303	1931
65°	2365	2017	1710
70°	1948	1766	1452
75°	1549	1352	1418
80°	1041	976	910
85°	648	777	906



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	337.8	4.7
10°-20°	927.2	13.0
20°-30°	1283.6	18.0
30°-40°	1368.7	19.2
40°-50°	1248.7	17.5
50°-60°	978.2	13.7
60°-70°	637.6	8.9
70°-80°	282.5	4.0
80°-90°	60.6	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°	2548.7	35.8
0°-40°	3917.4	55.0
0°-60°	6144.3	86.2
0°-90°	7125.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7125.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3629	3629	3629	3629	3629	
5°	3566	3562	3562	3558	3558	339
15°	3336	3336	3302	3268	3256	938
25°	2891	2874	2828	2727	2652	1327
35°	2346	2329	2215	2048	1997	1466
45°	1800	1762	1611	1477	1418	1387
55°	1250	1213	1099	969	919	1121
65°	743	701	634	646	537	732
75°	298	277	260	248	273	319
85°	42	46	50	54	59	58
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3629.4	3629.4	3629.4	3629.4	3629.4
2.5°	3604.2	3604.2	3604.2	3600.0	3600.0
5°	3566.4	3562.2	3562.2	3558.1	3558.1
7.5°	3537.1	3532.9	3528.7	3524.5	3516.1
10°	3495.1	3495.1	3490.9	3469.9	3465.7
12.5°	3428.0	3423.8	3407.0	3377.6	3369.2
15°	3335.7	3335.7	3302.1	3268.5	3256.0
17.5°	3235.0	3230.8	3188.8	3155.3	3138.5
20°	3125.9	3117.5	3075.5	3021.0	2991.6
22.5°	3004.2	3004.2	2953.9	2882.5	2853.2
25°	2890.9	2874.1	2828.0	2727.3	2651.8
27.5°	2760.8	2735.7	2685.3	2542.7	2454.6
30°	2618.2	2605.6	2534.3	2349.7	2282.5
32.5°	2483.9	2462.9	2387.4	2194.4	2139.9
35°	2345.5	2328.7	2215.4	2047.6	1997.2
37.5°	2207.0	2186.0	2043.4	1909.1	1846.2
40°	2068.5	2043.4	1888.1	1766.4	1699.3
42.5°	1938.5	1904.9	1753.9	1623.8	1548.3
45°	1800.0	1762.2	1611.2	1476.9	1418.2
47.5°	1661.5	1628.0	1489.5	1351.1	1283.9
50°	1514.7	1485.3	1359.4	1221.0	1149.7
52.5°	1393.0	1346.9	1225.2	1086.7	1028.0
55°	1250.4	1212.6	1099.3	969.2	918.9
57.5°	1120.3	1082.5	977.6	855.9	814.0
60°	998.6	944.1	855.9	751.1	717.5
62.5°	864.3	822.4	746.9	658.7	700.7
65°	742.7	700.7	633.6	646.2	537.1
67.5°	608.4	587.4	528.7	469.9	453.1
70°	495.1	469.9	449.0	386.0	369.2
72.5°	394.4	369.2	339.9	306.3	293.7
75°	297.9	276.9	260.1	247.6	272.7
77.5°	205.6	197.2	184.6	172.0	167.8
80°	134.3	130.1	125.9	121.7	117.5
82.5°	79.7	79.7	79.7	79.7	79.7
85°	42.0	46.2	50.3	54.5	58.7
87.5°	25.2	25.2	29.4	33.6	37.8
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)