

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: P547108

Luminaire Tested: **FMR-24-4-LD4-3LO-40-UNV-81-94-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: P547108  
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-LD4-3LO-40-UNV-81-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

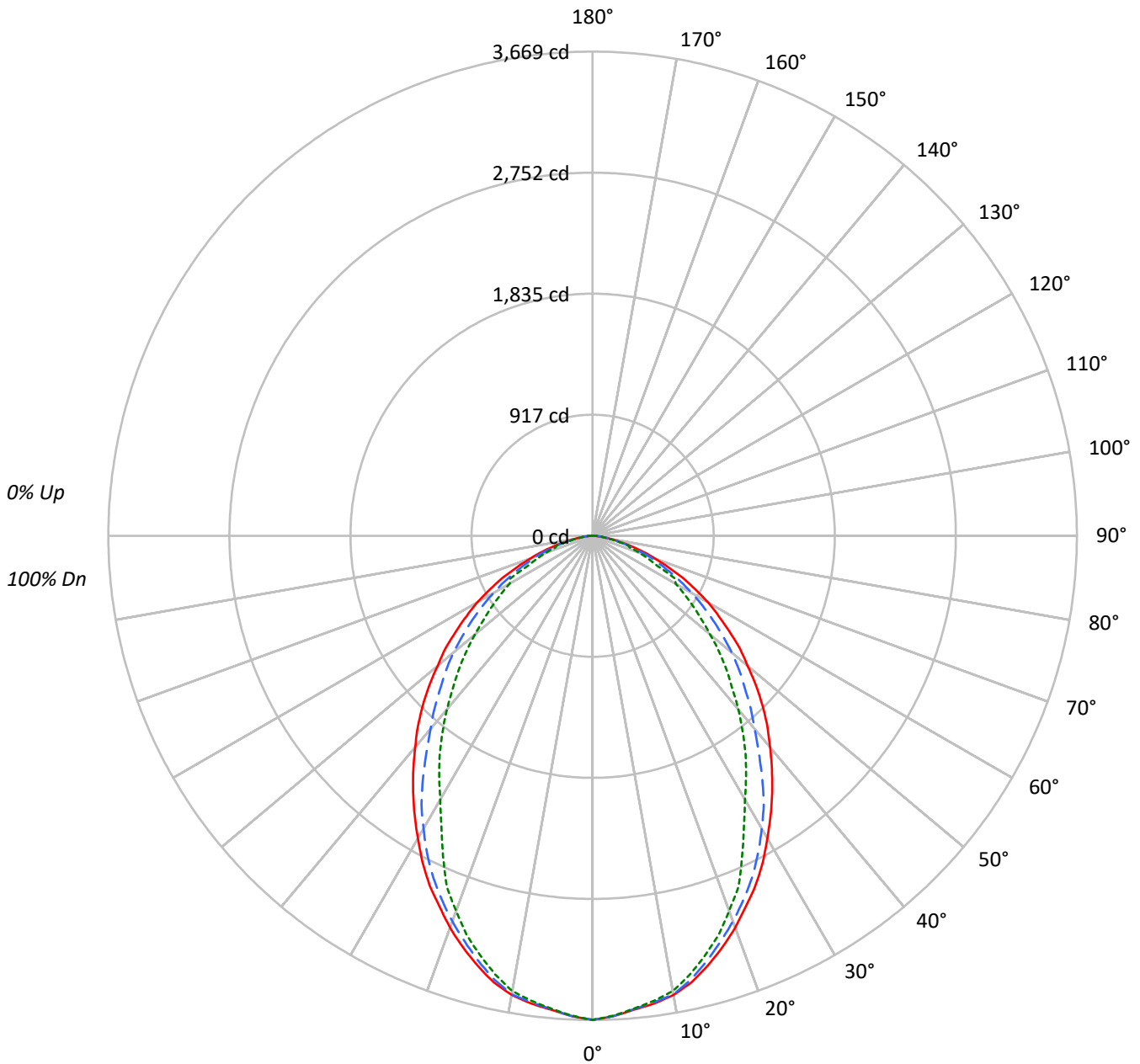
Lumens per Lamp: N/A  
Luminaire Lumens: 7202.0 lumens  
Efficiency: N/A  
Efficacy: 102.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70.2  
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°	4936	4936	4936
5°	4869	4863	4858
10°	4827	4821	4786
15°	4697	4649	4584
20°	4524	4451	4330
25°	4338	4244	3979
30°	4112	3980	3585
35°	3894	3678	3316
40°	3672	3352	3017
45°	3462	3099	2728
50°	3205	2876	2433
55°	2965	2607	2179
60°	2716	2328	1951
65°	2390	2039	1728
70°	1969	1785	1468
75°	1565	1367	1433
80°	1051	986	921
85°	655	786	917



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	341.5	4.7
10°-20°	937.2	13.0
20°-30°	1297.5	18.0
30°-40°	1383.5	19.2
40°-50°	1262.2	17.5
50°-60°	988.8	13.7
60°-70°	644.5	8.9
70°-80°	285.5	4.0
80°-90°	61.3	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°	2576.2	35.8
0°-40°	3959.7	55.0
0°-60°	6210.7	86.2
0°-90°	7202.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7202.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3669	3669	3669	3669	3669	
5°	3605	3601	3601	3596	3596	342
15°	3372	3372	3338	3304	3291	948
25°	2922	2905	2858	2757	2680	1342
35°	2371	2354	2239	2070	2019	1482
45°	1820	1781	1629	1493	1434	1402
55°	1264	1226	1111	980	929	1134
65°	751	708	640	653	543	740
75°	301	280	263	250	276	323
85°	42	47	51	55	59	59
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3668.6	3668.6	3668.6	3668.6	3668.6
2.5°	3643.2	3643.2	3643.2	3638.9	3638.9
5°	3605.0	3600.7	3600.7	3596.5	3596.5
7.5°	3575.3	3571.1	3566.8	3562.6	3554.1
10°	3532.9	3532.9	3528.6	3507.4	3503.2
12.5°	3465.0	3460.8	3443.8	3414.1	3405.7
15°	3371.7	3371.7	3337.8	3303.9	3291.1
17.5°	3269.9	3265.7	3223.3	3189.4	3172.4
20°	3159.7	3151.2	3108.8	3053.6	3023.9
22.5°	3036.7	3036.7	2985.8	2913.7	2884.0
25°	2922.2	2905.2	2858.5	2756.8	2680.4
27.5°	2790.7	2765.2	2714.3	2570.1	2481.1
30°	2646.5	2633.8	2561.7	2375.0	2307.2
32.5°	2510.8	2489.6	2413.2	2218.1	2163.0
35°	2370.8	2353.8	2239.3	2069.7	2018.8
37.5°	2230.8	2209.6	2065.4	1929.7	1866.1
40°	2090.9	2065.4	1908.5	1785.5	1717.7
42.5°	1959.4	1925.5	1772.8	1641.3	1565.0
45°	1819.5	1781.3	1628.6	1492.9	1433.5
47.5°	1679.5	1645.6	1505.6	1365.7	1297.8
50°	1531.1	1501.4	1374.1	1234.2	1162.1
52.5°	1408.1	1361.4	1238.4	1098.5	1039.1
55°	1263.9	1225.7	1111.2	979.7	928.8
57.5°	1132.4	1094.2	988.2	865.2	822.8
60°	1009.4	954.3	865.2	759.2	725.2
62.5°	873.7	831.3	754.9	665.9	708.3
65°	750.7	708.3	640.4	653.1	542.9
67.5°	615.0	593.8	534.4	475.0	458.0
70°	500.5	475.0	453.8	390.2	373.2
72.5°	398.7	373.2	343.5	309.6	296.9
75°	301.1	279.9	263.0	250.2	275.7
77.5°	207.8	199.3	186.6	173.9	169.6
80°	135.7	131.5	127.2	123.0	118.8
82.5°	80.6	80.6	80.6	80.6	80.6
85°	42.4	46.7	50.9	55.1	59.4
87.5°	25.4	25.4	29.7	33.9	38.2
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)