

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: P546813

Luminaire Tested: **FMR-24-4-LD4-2LO-40-UNV-80-96-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: P546813  
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-LD4-2LO-40-UNV-80-96-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC 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**

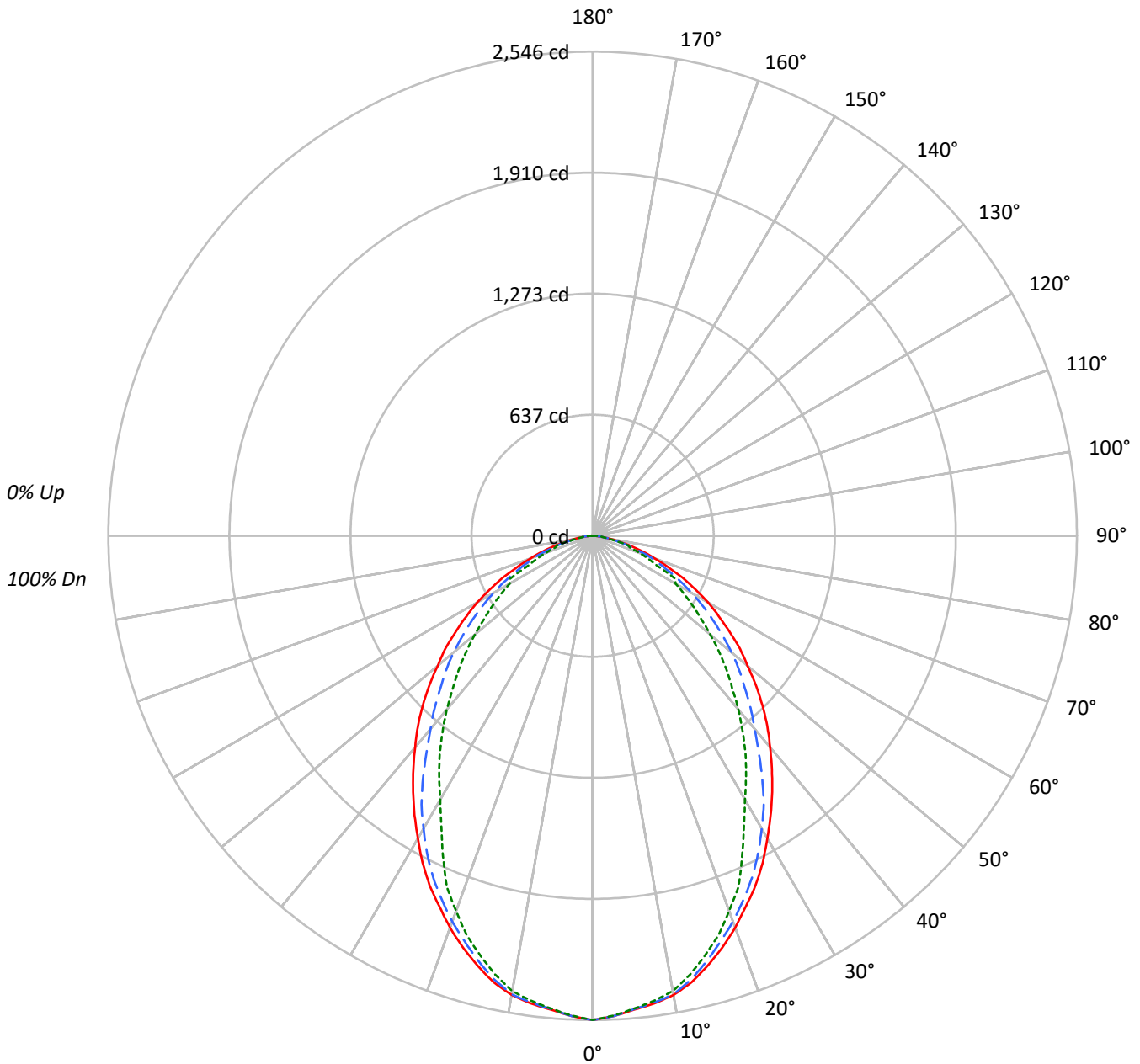
Lumens per Lamp: N/A  
Luminaire Lumens: 4998.0 lumens  
Efficiency: N/A  
Efficacy: 106.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	3425	3425	3425
5°	3379	3375	3371
10°	3350	3346	3321
15°	3259	3226	3182
20°	3140	3089	3005
25°	3011	2945	2761
30°	2853	2762	2488
35°	2702	2553	2301
40°	2549	2326	2094
45°	2403	2151	1893
50°	2224	1996	1688
55°	2057	1809	1512
60°	1885	1616	1354
65°	1659	1415	1199
70°	1366	1239	1019
75°	1087	949	994
80°	730	684	638
85°	454	545	636



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	237.0	4.7
10°-20°	650.4	13.0
20°-30°	900.4	18.0
30°-40°	960.1	19.2
40°-50°	875.9	17.5
50°-60°	686.2	13.7
60°-70°	447.2	8.9
70°-80°	198.2	4.0
80°-90°	42.5	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°	1787.8	35.8
0°-40°	2747.9	55.0
0°-60°	4310.1	86.2
0°-90°	4998.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4998.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2546	2546	2546	2546	2546	
5°	2502	2499	2499	2496	2496	237
15°	2340	2340	2316	2293	2284	658
25°	2028	2016	1984	1913	1860	931
35°	1645	1634	1554	1436	1401	1029
45°	1263	1236	1130	1036	995	973
55°	877	851	771	680	645	787
65°	521	492	444	453	377	513
75°	209	194	182	174	191	224
85°	29	32	35	38	41	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2545.9	2545.9	2545.9	2545.9	2545.9
2.5°	2528.3	2528.3	2528.3	2525.3	2525.3
5°	2501.8	2498.8	2498.8	2495.9	2495.9
7.5°	2481.2	2478.2	2475.3	2472.3	2466.4
10°	2451.7	2451.7	2448.8	2434.1	2431.1
12.5°	2404.6	2401.7	2389.9	2369.3	2363.4
15°	2339.9	2339.9	2316.3	2292.8	2284.0
17.5°	2269.2	2266.3	2236.9	2213.3	2201.6
20°	2192.7	2186.8	2157.4	2119.1	2098.5
22.5°	2107.4	2107.4	2072.1	2022.0	2001.4
25°	2027.9	2016.1	1983.8	1913.1	1860.1
27.5°	1936.7	1919.0	1883.7	1783.6	1721.8
30°	1836.6	1827.8	1777.7	1648.2	1601.1
32.5°	1742.4	1727.7	1674.7	1539.3	1501.1
35°	1645.3	1633.5	1554.0	1436.3	1401.0
37.5°	1548.2	1533.4	1433.4	1339.2	1295.0
40°	1451.0	1433.4	1324.5	1239.1	1192.0
42.5°	1359.8	1336.2	1230.3	1139.0	1086.1
45°	1262.7	1236.2	1130.2	1036.0	994.8
47.5°	1165.5	1142.0	1044.9	947.7	900.6
50°	1062.5	1041.9	953.6	856.5	806.5
52.5°	977.2	944.8	859.4	762.3	721.1
55°	877.1	850.6	771.1	679.9	644.6
57.5°	785.8	759.4	685.8	600.4	571.0
60°	700.5	662.2	600.4	526.8	503.3
62.5°	606.3	576.9	523.9	462.1	491.5
65°	521.0	491.5	444.4	453.3	376.7
67.5°	426.8	412.1	370.8	329.6	317.9
70°	347.3	329.6	314.9	270.8	259.0
72.5°	276.7	259.0	238.4	214.9	206.0
75°	209.0	194.3	182.5	173.7	191.3
77.5°	144.2	138.3	129.5	120.7	117.7
80°	94.2	91.2	88.3	85.4	82.4
82.5°	55.9	55.9	55.9	55.9	55.9
85°	29.4	32.4	35.3	38.3	41.2
87.5°	17.7	17.7	20.6	23.5	26.5
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)