

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: P546541

Luminaire Tested: **FMR-24-4-LD4-1LO-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: P546541  
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-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**

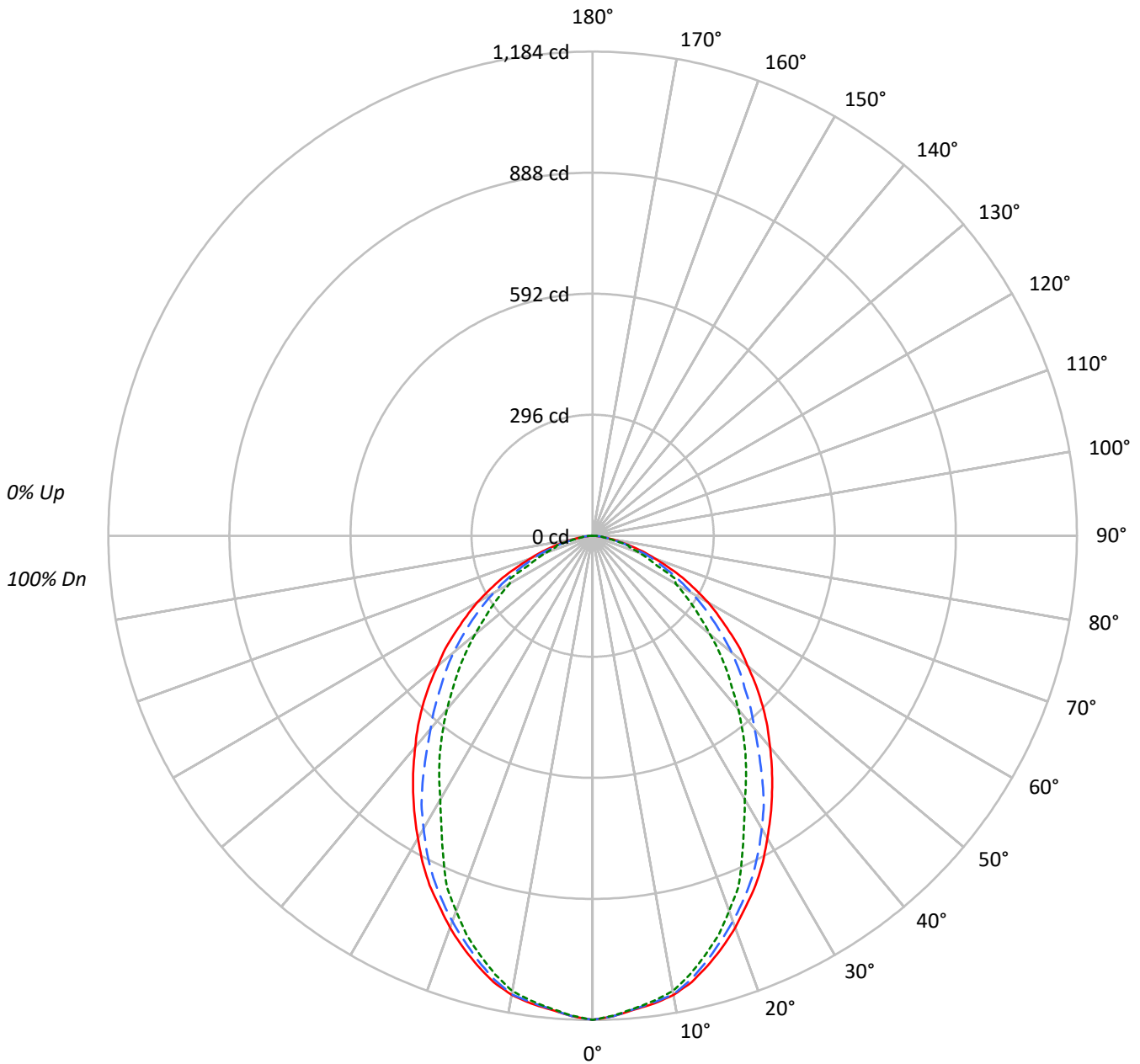
Lumens per Lamp: N/A  
Luminaire Lumens: 2324.0 lumens  
Efficiency: N/A  
Efficacy: 99.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	1593	1593	1593
5°	1571	1569	1567
10°	1558	1556	1544
15°	1516	1500	1479
20°	1460	1436	1397
25°	1400	1369	1284
30°	1327	1284	1157
35°	1257	1187	1070
40°	1185	1082	974
45°	1117	1000	880
50°	1034	928	785
55°	957	841	703
60°	876	751	630
65°	771	658	558
70°	635	576	474
75°	505	441	463
80°	339	318	297
85°	211	253	296



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.2	4.7
10°-20°	302.4	13.0
20°-30°	418.7	18.0
30°-40°	446.5	19.2
40°-50°	407.3	17.5
50°-60°	319.1	13.7
60°-70°	208.0	8.9
70°-80°	92.1	4.0
80°-90°	19.8	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°	831.3	35.8
0°-40°	1277.8	55.0
0°-60°	2004.1	86.2
0°-90°	2324.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2324.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1184	1184	1184	1184	1184	
5°	1163	1162	1162	1160	1160	110
15°	1088	1088	1077	1066	1062	306
25°	943	938	922	890	865	433
35°	765	760	723	668	651	478
45°	587	575	526	482	463	452
55°	408	396	359	316	300	366
65°	242	229	207	211	175	239
75°	97	90	85	81	89	104
85°	14	15	16	18	19	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1183.8	1183.8	1183.8	1183.8	1183.8
2.5°	1175.6	1175.6	1175.6	1174.2	1174.2
5°	1163.3	1161.9	1161.9	1160.5	1160.5
7.5°	1153.7	1152.3	1151.0	1149.6	1146.9
10°	1140.0	1140.0	1138.7	1131.8	1130.4
12.5°	1118.1	1116.8	1111.3	1101.7	1099.0
15°	1088.0	1088.0	1077.1	1066.1	1062.0
17.5°	1055.2	1053.8	1040.1	1029.2	1023.7
20°	1019.6	1016.8	1003.2	985.4	975.8
22.5°	979.9	979.9	963.5	940.2	930.6
25°	942.9	937.5	922.4	889.6	864.9
27.5°	900.5	892.3	875.9	829.4	800.6
30°	854.0	849.9	826.6	766.4	744.5
32.5°	810.2	803.4	778.7	715.8	698.0
35°	765.0	759.6	722.6	667.9	651.4
37.5°	719.9	713.0	666.5	622.7	602.2
40°	674.7	666.5	615.9	576.2	554.3
42.5°	632.3	621.3	572.1	529.6	505.0
45°	587.1	574.8	525.5	481.7	462.6
47.5°	542.0	531.0	485.8	440.7	418.8
50°	494.1	484.5	443.4	398.3	375.0
52.5°	454.4	439.3	399.6	354.5	335.3
55°	407.8	395.5	358.6	316.1	299.7
57.5°	365.4	353.1	318.9	279.2	265.5
60°	325.7	307.9	279.2	245.0	234.0
62.5°	281.9	268.2	243.6	214.9	228.6
65°	242.2	228.6	206.7	210.8	175.2
67.5°	198.4	191.6	172.4	153.3	147.8
70°	161.5	153.3	146.4	125.9	120.4
72.5°	128.6	120.4	110.9	99.9	95.8
75°	97.2	90.3	84.9	80.7	89.0
77.5°	67.1	64.3	60.2	56.1	54.7
80°	43.8	42.4	41.1	39.7	38.3
82.5°	26.0	26.0	26.0	26.0	26.0
85°	13.7	15.1	16.4	17.8	19.2
87.5°	8.2	8.2	9.6	10.9	12.3
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)