

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: P546559

Luminaire Tested: **FMR-24-4-LD4-1LO-50-UNV-81-84-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: P546559  
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-50-UNV-81-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC 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**

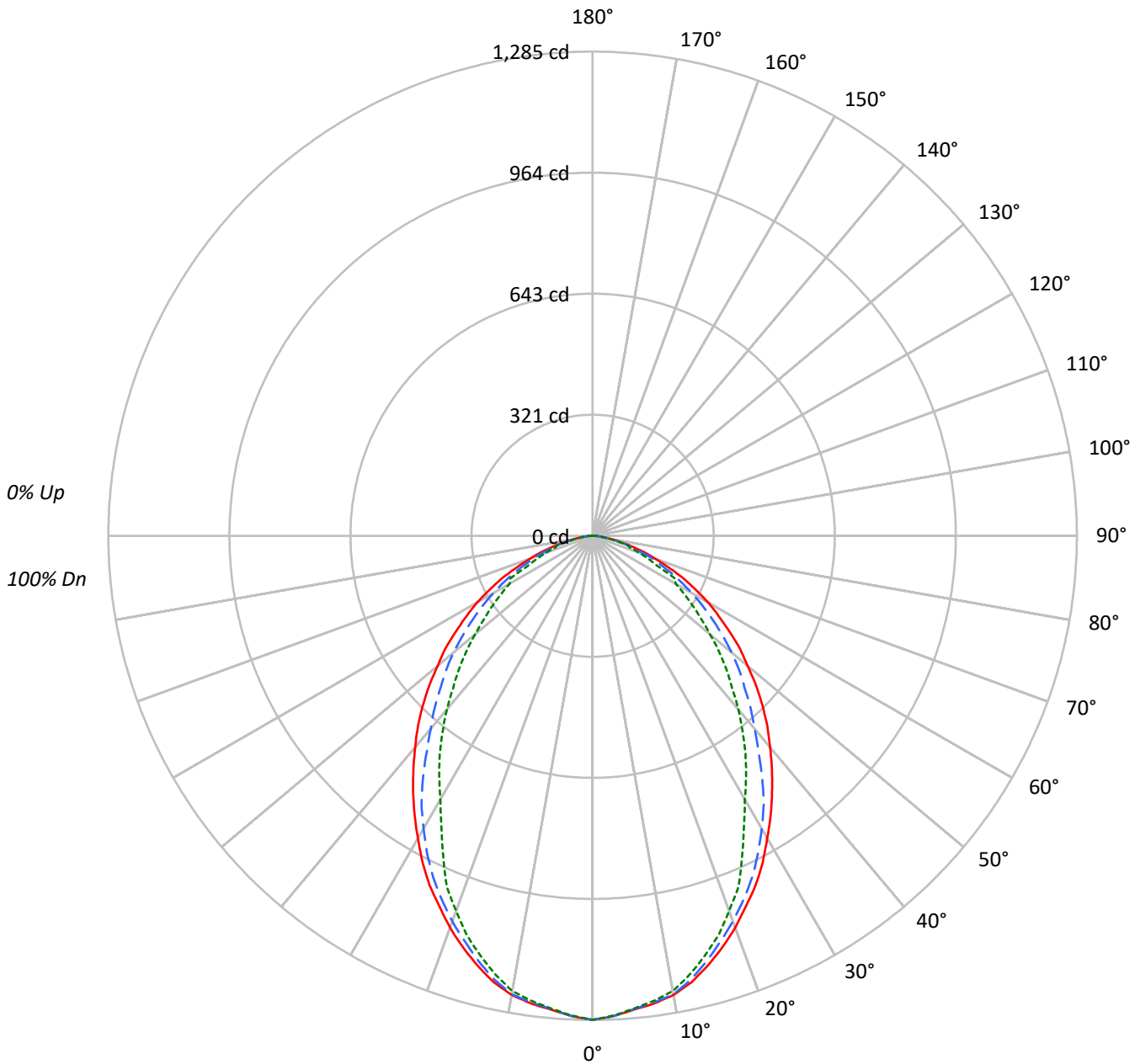
Lumens per Lamp: N/A  
Luminaire Lumens: 2522.0 lumens  
Efficiency: N/A  
Efficacy: 107.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	1729	1729	1729
5°	1705	1703	1701
10°	1690	1688	1676
15°	1645	1628	1605
20°	1584	1559	1516
25°	1519	1486	1393
30°	1440	1394	1255
35°	1364	1288	1161
40°	1286	1174	1056
45°	1212	1085	955
50°	1122	1007	852
55°	1038	913	763
60°	951	815	684
65°	837	714	605
70°	690	625	514
75°	548	479	502
80°	368	346	322
85°	230	275	321



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	119.6	4.7
10°-20°	328.2	13.0
20°-30°	454.4	18.0
30°-40°	484.5	19.2
40°-50°	442.0	17.5
50°-60°	346.3	13.7
60°-70°	225.7	8.9
70°-80°	100.0	4.0
80°-90°	21.5	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°	902.1	35.8
0°-40°	1386.6	55.0
0°-60°	2174.9	86.2
0°-90°	2522.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2522.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1285	1285	1285	1285	1285	
5°	1262	1261	1261	1259	1259	120
15°	1181	1181	1169	1157	1152	332
25°	1023	1017	1001	965	939	470
35°	830	824	784	725	707	519
45°	637	624	570	523	502	491
55°	443	429	389	343	325	397
65°	263	248	224	229	190	259
75°	105	98	92	88	96	113
85°	15	16	18	19	21	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1284.7	1284.7	1284.7	1284.7	1284.7
2.5°	1275.8	1275.8	1275.8	1274.3	1274.3
5°	1262.4	1260.9	1260.9	1259.4	1259.4
7.5°	1252.0	1250.5	1249.0	1247.5	1244.6
10°	1237.1	1237.1	1235.7	1228.2	1226.8
12.5°	1213.4	1211.9	1206.0	1195.6	1192.6
15°	1180.7	1180.7	1168.8	1156.9	1152.5
17.5°	1145.1	1143.6	1128.7	1116.8	1110.9
20°	1106.5	1103.5	1088.6	1069.3	1058.9
22.5°	1063.4	1063.4	1045.6	1020.3	1009.9
25°	1023.3	1017.3	1001.0	965.4	938.6
27.5°	977.2	968.3	950.5	900.0	868.8
30°	926.7	922.3	897.0	831.7	807.9
32.5°	879.2	871.8	845.1	776.7	757.4
35°	830.2	824.3	784.2	724.8	706.9
37.5°	781.2	773.8	723.3	675.8	653.5
40°	732.2	723.3	668.3	625.3	601.5
42.5°	686.1	674.3	620.8	574.8	548.0
45°	637.1	623.8	570.3	522.8	502.0
47.5°	588.1	576.2	527.2	478.2	454.5
50°	536.1	525.8	481.2	432.2	406.9
52.5°	493.1	476.7	433.7	384.7	363.9
55°	442.6	429.2	389.1	343.1	325.3
57.5°	396.5	383.2	346.0	303.0	288.1
60°	353.5	334.2	303.0	265.8	254.0
62.5°	305.9	291.1	264.4	233.2	248.0
65°	262.9	248.0	224.3	228.7	190.1
67.5°	215.3	207.9	187.1	166.3	160.4
70°	175.3	166.3	158.9	136.6	130.7
72.5°	139.6	130.7	120.3	108.4	104.0
75°	105.4	98.0	92.1	87.6	96.5
77.5°	72.8	69.8	65.3	60.9	59.4
80°	47.5	46.0	44.6	43.1	41.6
82.5°	28.2	28.2	28.2	28.2	28.2
85°	14.9	16.3	17.8	19.3	20.8
87.5°	8.9	8.9	10.4	11.9	13.4
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)