

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: P546530

Luminaire Tested: **FMR-24-4-LD4-1LO-40-UNV-81-87-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: P546530  
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-81-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

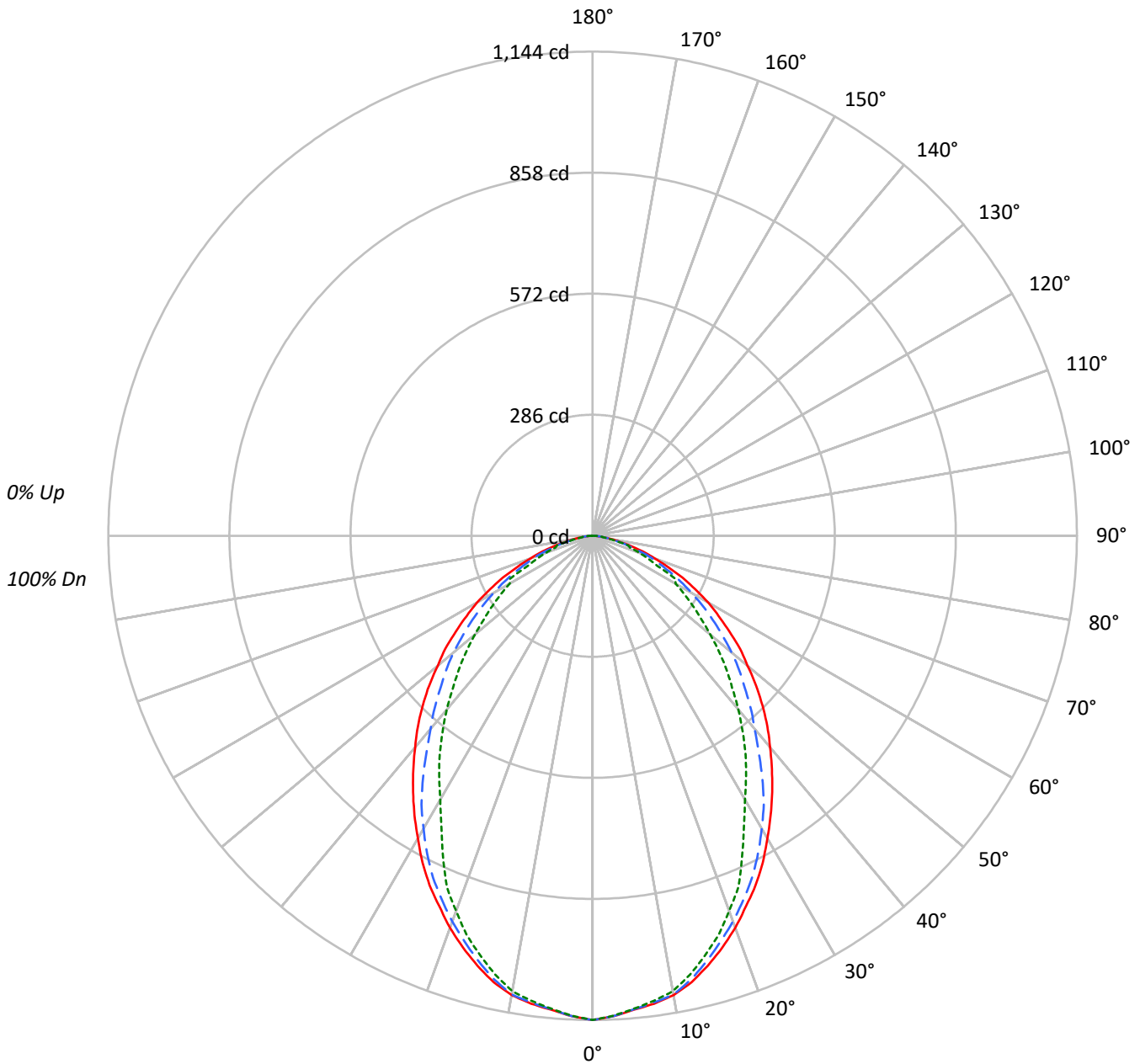
Lumens per Lamp: N/A  
Luminaire Lumens: 2246.0 lumens  
Efficiency: N/A  
Efficacy: 96.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
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°	1539	1539	1539
5°	1518	1517	1515
10°	1505	1503	1493
15°	1465	1450	1430
20°	1411	1388	1350
25°	1353	1324	1241
30°	1282	1241	1118
35°	1214	1147	1034
40°	1145	1045	941
45°	1080	966	851
50°	1000	897	759
55°	924	813	680
60°	847	726	609
65°	745	636	539
70°	614	557	458
75°	488	426	447
80°	328	308	287
85°	204	245	286



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	106.5	4.7
10°-20°	292.3	13.0
20°-30°	404.6	18.0
30°-40°	431.5	19.2
40°-50°	393.6	17.5
50°-60°	308.4	13.7
60°-70°	201.0	8.9
70°-80°	89.0	4.0
80°-90°	19.1	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°	803.4	35.8
0°-40°	1234.9	55.0
0°-60°	1936.9	86.2
0°-90°	2246.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2246.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1144	1144	1144	1144	1144	
5°	1124	1123	1123	1122	1122	107
15°	1052	1052	1041	1030	1026	296
25°	911	906	892	860	836	418
35°	739	734	698	645	630	462
45°	567	556	508	466	447	437
55°	394	382	346	306	290	354
65°	234	221	200	204	169	231
75°	94	87	82	78	86	101
85°	13	14	16	17	18	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1144.1	1144.1	1144.1	1144.1	1144.1
2.5°	1136.1	1136.1	1136.1	1134.8	1134.8
5°	1124.2	1122.9	1122.9	1121.6	1121.6
7.5°	1115.0	1113.7	1112.3	1111.0	1108.4
10°	1101.8	1101.8	1100.4	1093.8	1092.5
12.5°	1080.6	1079.3	1074.0	1064.7	1062.1
15°	1051.5	1051.5	1040.9	1030.3	1026.4
17.5°	1019.8	1018.4	1005.2	994.6	989.3
20°	985.4	982.7	969.5	952.3	943.0
22.5°	947.0	947.0	931.1	908.7	899.4
25°	911.3	906.0	891.5	859.7	835.9
27.5°	870.3	862.4	846.5	801.5	773.7
30°	825.3	821.4	798.9	740.7	719.5
32.5°	783.0	776.4	752.6	691.7	674.5
35°	739.4	734.1	698.4	645.4	629.6
37.5°	695.7	689.1	644.1	601.8	582.0
40°	652.1	644.1	595.2	556.8	535.7
42.5°	611.1	600.5	552.9	511.9	488.1
45°	567.4	555.5	507.9	465.6	447.1
47.5°	523.8	513.2	469.5	425.9	404.7
50°	477.5	468.2	428.5	384.9	362.4
52.5°	439.1	424.6	386.2	342.6	324.0
55°	394.1	382.2	346.5	305.5	289.7
57.5°	353.1	341.2	308.2	269.8	256.6
60°	314.8	297.6	269.8	236.8	226.2
62.5°	272.5	259.2	235.4	207.7	220.9
65°	234.1	220.9	199.7	203.7	169.3
67.5°	191.8	185.2	166.7	148.1	142.8
70°	156.1	148.1	141.5	121.7	116.4
72.5°	124.3	116.4	107.1	96.6	92.6
75°	93.9	87.3	82.0	78.0	86.0
77.5°	64.8	62.2	58.2	54.2	52.9
80°	42.3	41.0	39.7	38.4	37.0
82.5°	25.1	25.1	25.1	25.1	25.1
85°	13.2	14.5	15.9	17.2	18.5
87.5°	7.9	7.9	9.3	10.6	11.9
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)