

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: P546005

Luminaire Tested: **FMR-12-4-LD4-1LO-50-UNV-93-96-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: P546005  
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-12-4-LD4-1LO-50-UNV-93-96-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

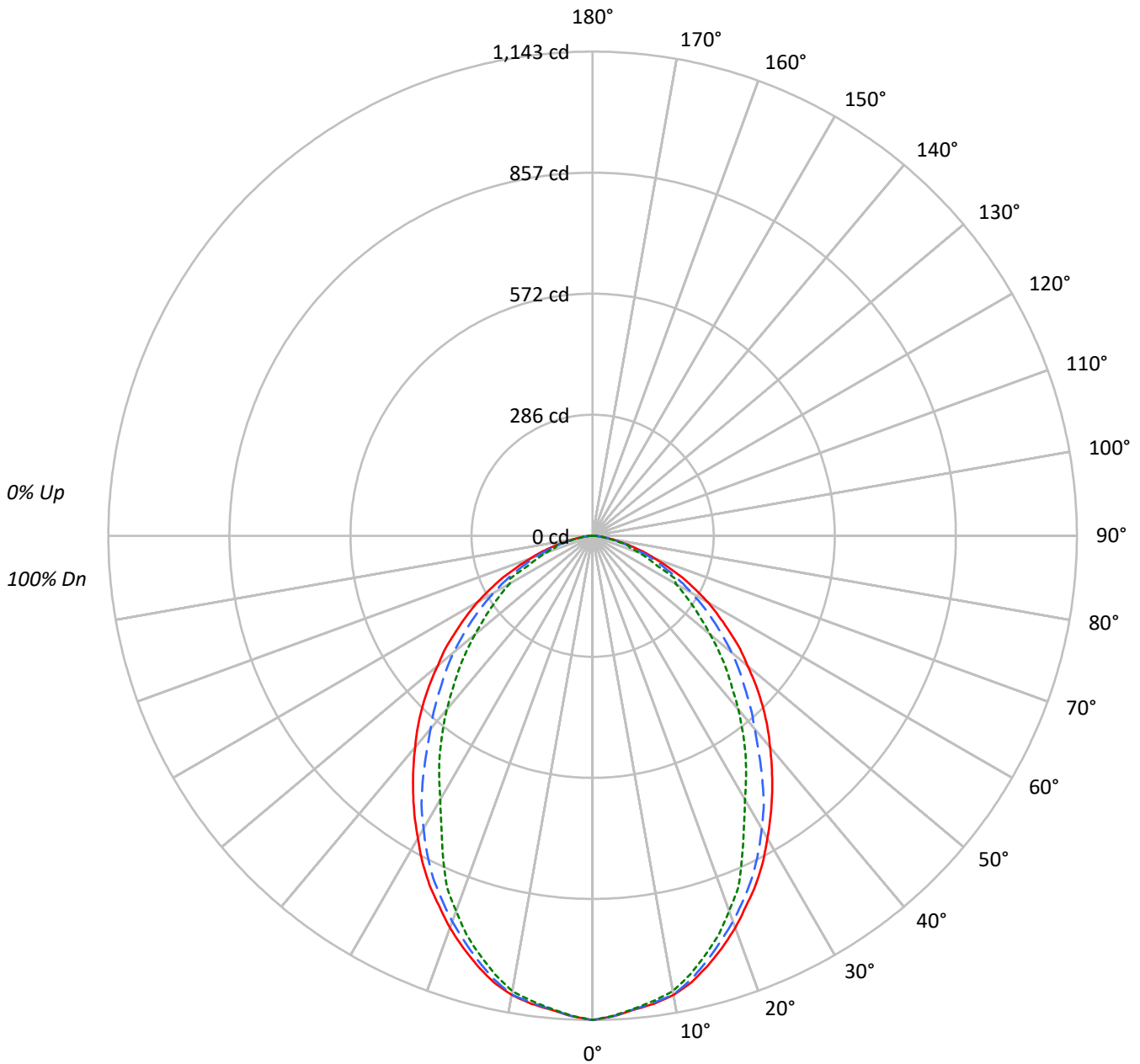
Lumens per Lamp: N/A  
Luminaire Lumens: 2244.0 lumens  
Efficiency: N/A  
Efficacy: 95.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3076	3076	3076
5°	3034	3031	3027
10°	3008	3004	2983
15°	2927	2897	2857
20°	2819	2774	2698
25°	2703	2645	2480
30°	2562	2480	2234
35°	2427	2292	2066
40°	2289	2089	1880
45°	2157	1931	1700
50°	1997	1793	1516
55°	1848	1624	1358
60°	1693	1451	1216
65°	1489	1270	1077
70°	1227	1113	915
75°	975	852	893
80°	656	614	573
85°	408	491	571



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	106.4	4.7
10°-20°	292.0	13.0
20°-30°	404.3	18.0
30°-40°	431.1	19.2
40°-50°	393.3	17.5
50°-60°	308.1	13.7
60°-70°	200.8	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°	802.7	35.8
0°-40°	1233.8	55.0
0°-60°	1935.1	86.2
0°-90°	2244.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2244.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1143	1143	1143	1143	1143	
5°	1123	1122	1122	1121	1121	107
15°	1051	1051	1040	1029	1026	295
25°	910	905	891	859	835	418
35°	739	733	698	645	629	462
45°	567	555	507	465	447	437
55°	394	382	346	305	289	353
65°	234	221	200	204	169	230
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°	1143.1	1143.1	1143.1	1143.1	1143.1
2.5°	1135.1	1135.1	1135.1	1133.8	1133.8
5°	1123.2	1121.9	1121.9	1120.6	1120.6
7.5°	1114.0	1112.7	1111.3	1110.0	1107.4
10°	1100.8	1100.8	1099.5	1092.8	1091.5
12.5°	1079.6	1078.3	1073.0	1063.8	1061.1
15°	1050.6	1050.6	1040.0	1029.4	1025.5
17.5°	1018.8	1017.5	1004.3	993.7	988.5
20°	984.5	981.8	968.6	951.5	942.2
22.5°	946.2	946.2	930.3	907.8	898.6
25°	910.5	905.2	890.7	858.9	835.2
27.5°	869.5	861.6	845.7	800.8	773.1
30°	824.6	820.6	798.2	740.0	718.9
32.5°	782.3	775.7	751.9	691.1	673.9
35°	738.7	733.4	697.7	644.9	629.0
37.5°	695.1	688.5	643.6	601.3	581.4
40°	651.5	643.6	594.7	556.3	535.2
42.5°	610.5	599.9	552.4	511.4	487.6
45°	566.9	555.0	507.4	465.2	446.7
47.5°	523.3	512.7	469.1	425.5	404.4
50°	477.0	467.8	428.2	384.5	362.1
52.5°	438.7	424.2	385.9	342.3	323.8
55°	393.8	381.9	346.2	305.3	289.4
57.5°	352.8	340.9	307.9	269.6	256.4
60°	314.5	297.3	269.6	236.5	226.0
62.5°	272.2	259.0	235.2	207.5	220.7
65°	233.9	220.7	199.5	203.5	169.1
67.5°	191.6	185.0	166.5	148.0	142.7
70°	155.9	148.0	141.4	121.6	116.3
72.5°	124.2	116.3	107.0	96.5	92.5
75°	93.8	87.2	81.9	78.0	85.9
77.5°	64.8	62.1	58.1	54.2	52.9
80°	42.3	41.0	39.6	38.3	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)