

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: P545928

Luminaire Tested: **FMR-12-4-LD4-1LO-35-UNV-82-85-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: P545928  
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-35-UNV-82-85-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

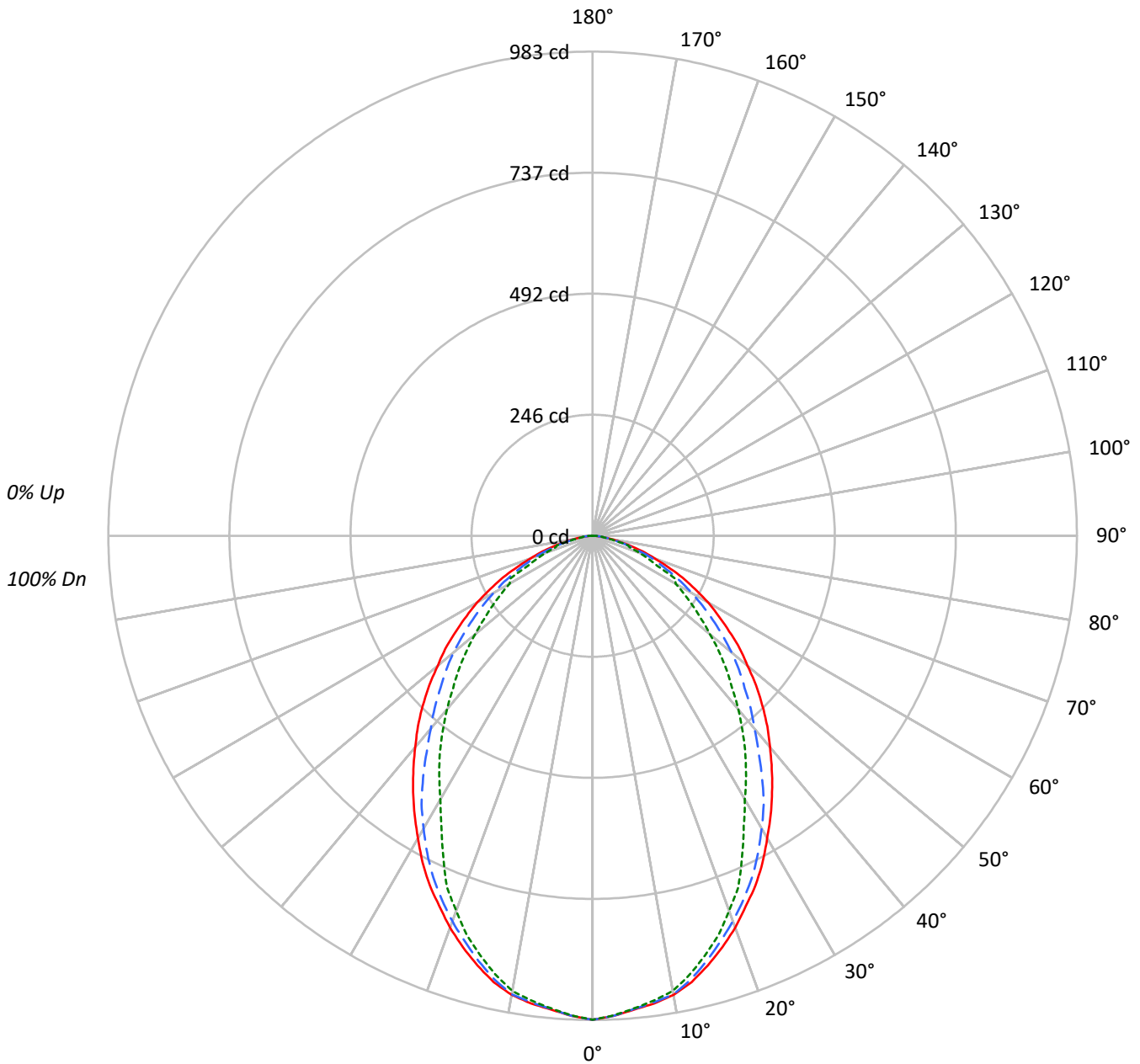
Lumens per Lamp: N/A  
Luminaire Lumens: 1929.0 lumens  
Efficiency: N/A  
Efficacy: 82.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
Input Voltage (V): NR  
Input Current (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°	2644	2644	2644
5°	2608	2605	2602
10°	2586	2582	2564
15°	2516	2491	2456
20°	2424	2385	2319
25°	2324	2273	2132
30°	2202	2132	1920
35°	2086	1970	1776
40°	1967	1796	1616
45°	1854	1660	1461
50°	1717	1541	1303
55°	1588	1396	1167
60°	1455	1247	1045
65°	1280	1092	926
70°	1054	956	787
75°	839	732	767
80°	564	528	493
85°	352	420	491



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	91.5	4.7
10°-20°	251.0	13.0
20°-30°	347.5	18.0
30°-40°	370.6	19.2
40°-50°	338.1	17.5
50°-60°	264.8	13.7
60°-70°	172.6	8.9
70°-80°	76.5	4.0
80°-90°	16.4	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°	690.0	35.8
0°-40°	1060.6	55.0
0°-60°	1663.5	86.2
0°-90°	1929.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1929.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	983	983	983	983	983	
5°	966	964	964	963	963	92
15°	903	903	894	885	882	254
25°	783	778	766	738	718	359
35°	635	630	600	554	541	397
45°	487	477	436	400	384	375
55°	338	328	298	262	249	304
65°	201	190	172	175	145	198
75°	81	75	70	67	74	86
85°	11	12	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	982.6	982.6	982.6	982.6	982.6
2.5°	975.8	975.8	975.8	974.7	974.7
5°	965.6	964.4	964.4	963.3	963.3
7.5°	957.6	956.5	955.3	954.2	951.9
10°	946.3	946.3	945.1	939.4	938.3
12.5°	928.1	926.9	922.4	914.4	912.2
15°	903.1	903.1	894.0	884.9	881.5
17.5°	875.8	874.7	863.3	854.2	849.7
20°	846.3	844.0	832.7	817.9	809.9
22.5°	813.3	813.3	799.7	780.4	772.5
25°	782.7	778.1	765.6	738.4	717.9
27.5°	747.5	740.6	727.0	688.4	664.5
30°	708.8	705.4	686.1	636.1	618.0
32.5°	672.5	666.8	646.4	594.1	579.3
35°	635.0	630.5	599.8	554.3	540.7
37.5°	597.5	591.8	553.2	516.9	499.8
40°	560.0	553.2	511.2	478.2	460.1
42.5°	524.8	515.7	474.8	439.6	419.2
45°	487.3	477.1	436.2	399.9	384.0
47.5°	449.8	440.8	403.3	365.8	347.6
50°	410.1	402.1	368.1	330.6	311.3
52.5°	377.1	364.6	331.7	294.2	278.3
55°	338.5	328.3	297.6	262.4	248.8
57.5°	303.3	293.1	264.7	231.7	220.4
60°	270.4	255.6	231.7	203.3	194.2
62.5°	234.0	222.6	202.2	178.3	189.7
65°	201.1	189.7	171.5	174.9	145.4
67.5°	164.7	159.0	143.1	127.2	122.7
70°	134.0	127.2	121.5	104.5	100.0
72.5°	106.8	100.0	92.0	82.9	79.5
75°	80.7	75.0	70.4	67.0	73.8
77.5°	55.7	53.4	50.0	46.6	45.4
80°	36.4	35.2	34.1	32.9	31.8
82.5°	21.6	21.6	21.6	21.6	21.6
85°	11.4	12.5	13.6	14.8	15.9
87.5°	6.8	6.8	8.0	9.1	10.2
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)