

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: P545961

Luminaire Tested: **FMR-12-4-LD4-1LO-40-UNV-82-86-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: P545961  
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-40-UNV-82-86-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

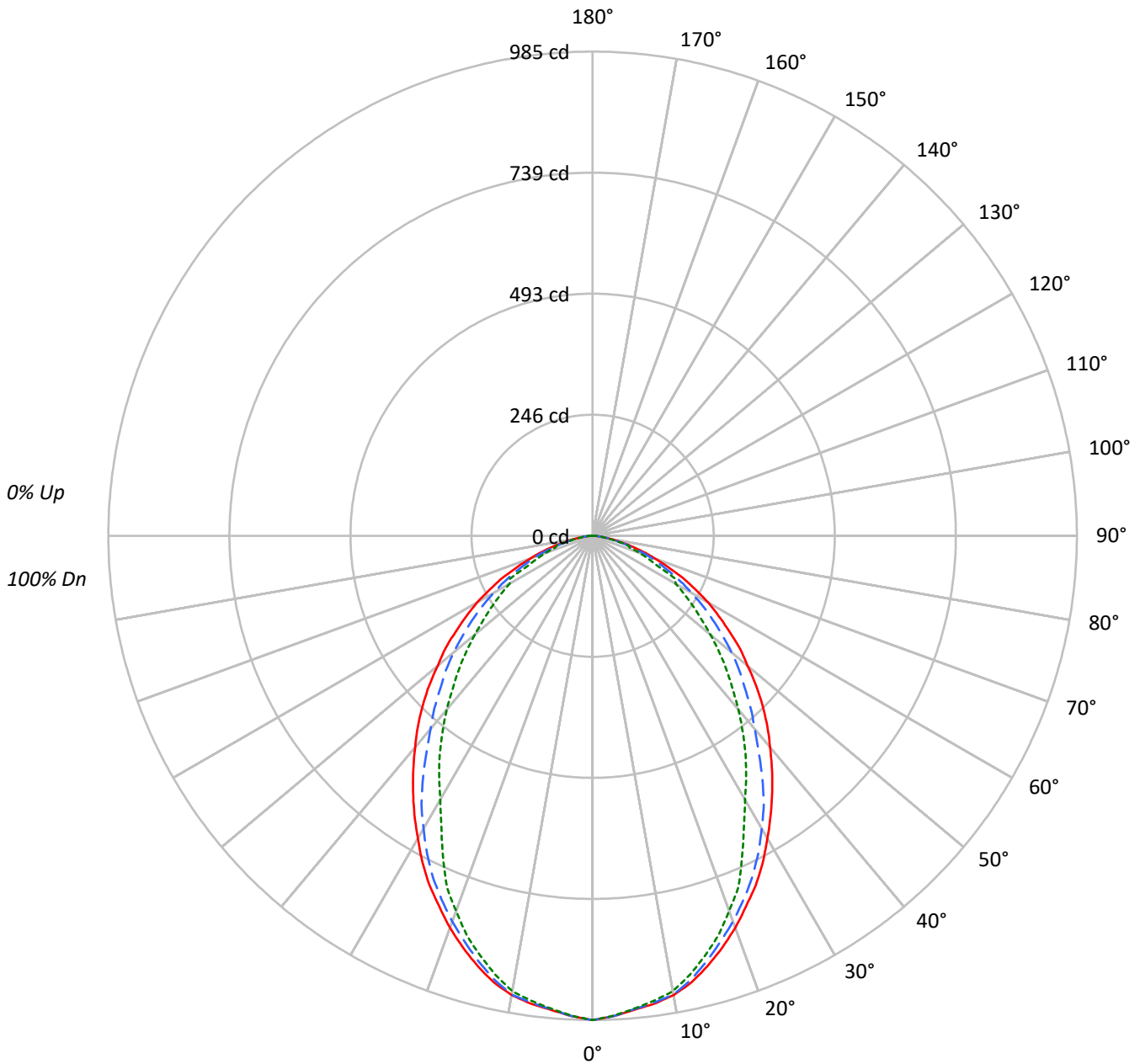
Lumens per Lamp: N/A  
Luminaire Lumens: 1934.0 lumens  
Efficiency: N/A  
Efficacy: 82.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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

TEST NUMBER: P545961

CATALOG NUMBER: FMR-12-4-LD4-1LO-40-UNV-82-86-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P545961

CATALOG NUMBER: FMR-12-4-LD4-1LO-40-UNV-82-86-EDD

**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°	2651	2651	2651
5°	2615	2612	2609
10°	2592	2589	2570
15°	2522	2497	2462
20°	2430	2391	2325
25°	2330	2279	2137
30°	2208	2137	1925
35°	2091	1975	1781
40°	1972	1800	1620
45°	1859	1664	1465
50°	1721	1545	1307
55°	1592	1400	1170
60°	1459	1250	1048
65°	1284	1095	928
70°	1057	959	788
75°	841	734	769
80°	564	530	494
85°	352	423	491



TEST NUMBER: P545961

CATALOG NUMBER: FMR-12-4-LD4-1LO-40-UNV-82-86-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	91.7	4.7
10°-20°	251.7	13.0
20°-30°	348.4	18.0
30°-40°	371.5	19.2
40°-50°	338.9	17.5
50°-60°	265.5	13.7
60°-70°	173.1	8.9
70°-80°	76.7	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°	691.8	35.8
0°-40°	1063.3	55.0
0°-60°	1667.8	86.2
0°-90°	1934.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1934.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	985	985	985	985	985	
5°	968	967	967	966	966	92
15°	905	905	896	887	884	255
25°	785	780	768	740	720	360
35°	637	632	601	556	542	398
45°	489	478	437	401	385	376
55°	339	329	298	263	249	304
65°	202	190	172	175	146	199
75°	81	75	71	67	74	87
85°	11	12	14	15	16	16
90°	0	0	0	0	0	



TEST NUMBER: P545961

CATALOG NUMBER: FMR-12-4-LD4-1LO-40-UNV-82-86-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	985.2	985.2	985.2	985.2	985.2
2.5°	978.3	978.3	978.3	977.2	977.2
5°	968.1	966.9	966.9	965.8	965.8
7.5°	960.1	959.0	957.8	956.7	954.4
10°	948.7	948.7	947.6	941.9	940.7
12.5°	930.5	929.3	924.8	916.8	914.5
15°	905.4	905.4	896.3	887.2	883.8
17.5°	878.1	877.0	865.6	856.5	851.9
20°	848.5	846.2	834.8	820.0	812.0
22.5°	815.5	815.5	801.8	782.4	774.5
25°	784.7	780.2	767.6	740.3	719.8
27.5°	749.4	742.6	728.9	690.2	666.3
30°	710.7	707.3	687.9	637.8	619.6
32.5°	674.2	668.5	648.0	595.6	580.8
35°	636.6	632.1	601.3	555.8	542.1
37.5°	599.1	593.4	554.6	518.2	501.1
40°	561.5	554.6	512.5	479.5	461.3
42.5°	526.2	517.1	476.1	440.8	420.3
45°	488.6	478.3	437.3	400.9	385.0
47.5°	451.0	441.9	404.3	366.7	348.5
50°	411.1	403.2	369.0	331.4	312.1
52.5°	378.1	365.6	332.6	295.0	279.0
55°	339.4	329.1	298.4	263.1	249.4
57.5°	304.1	293.8	265.4	232.3	220.9
60°	271.1	256.3	232.3	203.9	194.8
62.5°	234.6	223.2	202.7	178.8	190.2
65°	201.6	190.2	172.0	175.4	145.8
67.5°	165.1	159.4	143.5	127.6	123.0
70°	134.4	127.6	121.9	104.8	100.2
72.5°	107.1	100.2	92.3	83.1	79.7
75°	80.9	75.2	70.6	67.2	74.0
77.5°	55.8	53.5	50.1	46.7	45.6
80°	36.4	35.3	34.2	33.0	31.9
82.5°	21.6	21.6	21.6	21.6	21.6
85°	11.4	12.5	13.7	14.8	15.9
87.5°	6.8	6.8	8.0	9.1	10.3
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)