

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: P546689

Luminaire Tested: **FMR-24-4-LD4-2HI-35-UNV-81-86-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: P546689  
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-LD4-2HI-35-UNV-81-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

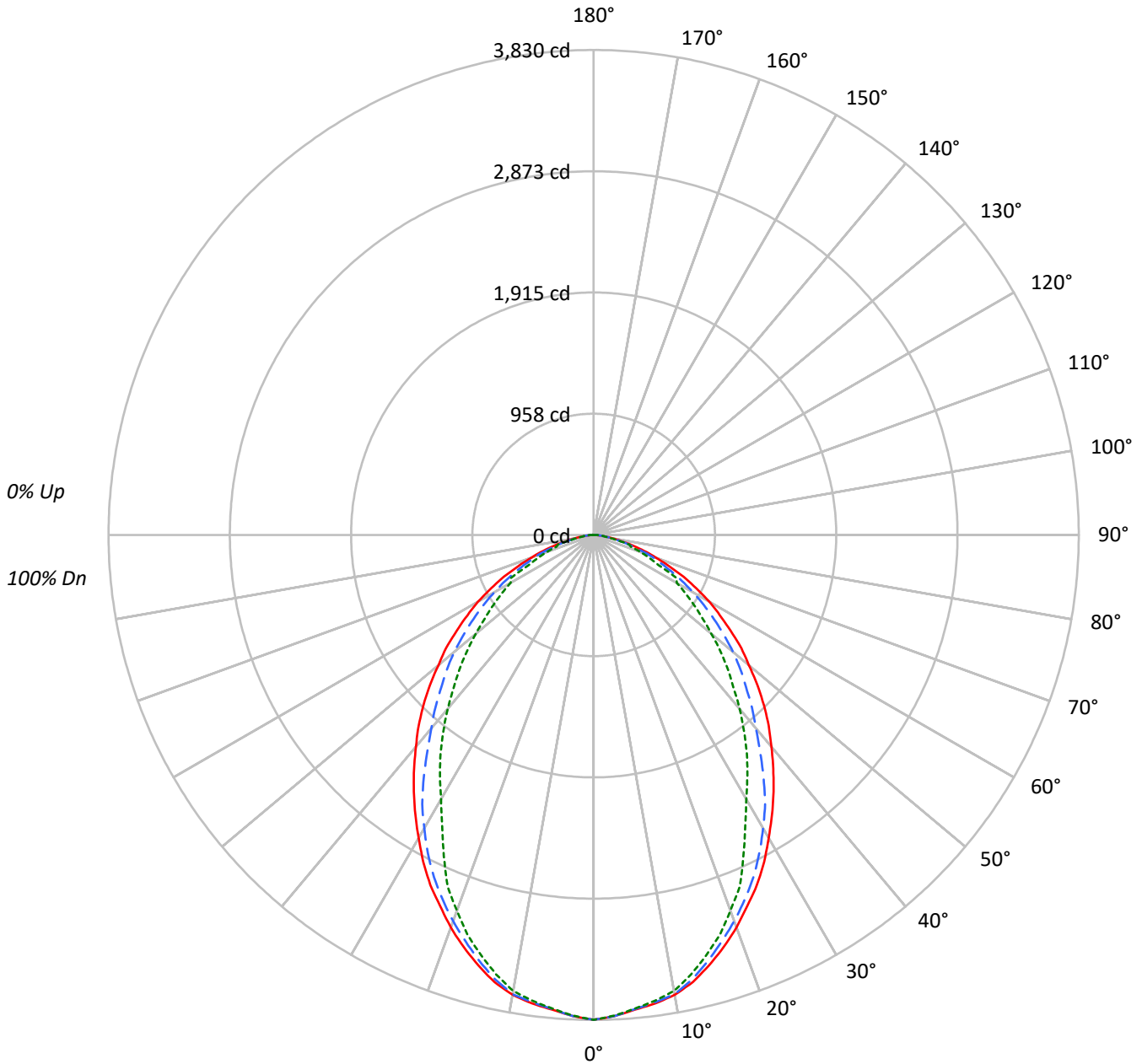
Lumens per Lamp: N/A  
Luminaire Lumens: 7518.0 lumens  
Efficiency: N/A  
Efficacy: 87.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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: P546689

CATALOG NUMBER: FMR-24-4-LD4-2HI-35-UNV-81-86-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546689

CATALOG NUMBER: FMR-24-4-LD4-2HI-35-UNV-81-86-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°	5153	5153	5153
5°	5083	5077	5071
10°	5039	5033	4996
15°	4903	4853	4785
20°	4723	4647	4520
25°	4529	4430	4154
30°	4292	4155	3742
35°	4065	3840	3461
40°	3834	3499	3149
45°	3614	3235	2847
50°	3345	3003	2539
55°	3095	2721	2274
60°	2835	2430	2037
65°	2495	2128	1804
70°	2055	1864	1533
75°	1634	1427	1496
80°	1098	1029	961
85°	684	820	957



TEST NUMBER: P546689

CATALOG NUMBER: FMR-24-4-LD4-2HI-35-UNV-81-86-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	356.5	4.7
10°-20°	978.3	13.0
20°-30°	1354.4	18.0
30°-40°	1444.2	19.2
40°-50°	1317.6	17.5
50°-60°	1032.2	13.7
60°-70°	672.7	8.9
70°-80°	298.1	4.0
80°-90°	64.0	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°	2689.2	35.8
0°-40°	4133.5	55.0
0°-60°	6483.2	86.2
0°-90°	7518.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7518.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3830	3830	3830	3830	3830	
5°	3763	3759	3759	3754	3754	357
15°	3520	3520	3484	3449	3436	989
25°	3050	3033	2984	2878	2798	1400
35°	2475	2457	2338	2160	2107	1547
45°	1899	1859	1700	1558	1496	1463
55°	1319	1280	1160	1023	970	1183
65°	784	739	668	682	567	772
75°	314	292	274	261	288	337
85°	44	49	53	58	62	61
90°	0	0	0	0	0	



TEST NUMBER: P546689

CATALOG NUMBER: FMR-24-4-LD4-2HI-35-UNV-81-86-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3829.6	3829.6	3829.6	3829.6	3829.6
2.5°	3803.0	3803.0	3803.0	3798.6	3798.6
5°	3763.2	3758.7	3758.7	3754.3	3754.3
7.5°	3732.2	3727.7	3723.3	3718.9	3710.0
10°	3687.9	3687.9	3683.5	3661.3	3656.9
12.5°	3617.1	3612.6	3594.9	3563.9	3555.1
15°	3519.7	3519.7	3484.2	3448.8	3435.5
17.5°	3413.4	3409.0	3364.7	3329.3	3311.6
20°	3298.3	3289.4	3245.2	3187.6	3156.6
22.5°	3169.9	3169.9	3116.8	3041.5	3010.5
25°	3050.4	3032.7	2984.0	2877.7	2798.0
27.5°	2913.1	2886.6	2833.4	2682.9	2589.9
30°	2762.6	2749.3	2674.1	2479.3	2408.4
32.5°	2620.9	2598.8	2519.1	2315.5	2257.9
35°	2474.8	2457.1	2337.6	2160.5	2107.4
37.5°	2328.7	2306.6	2156.1	2014.4	1948.0
40°	2182.6	2156.1	1992.3	1863.9	1793.0
42.5°	2045.4	2010.0	1850.6	1713.3	1633.7
45°	1899.3	1859.4	1700.1	1558.4	1496.4
47.5°	1753.2	1717.8	1571.7	1425.6	1354.7
50°	1598.2	1567.2	1434.4	1288.3	1213.1
52.5°	1469.8	1421.1	1292.8	1146.7	1084.7
55°	1319.3	1279.5	1159.9	1022.7	969.6
57.5°	1182.1	1142.2	1031.5	903.2	858.9
60°	1053.7	996.1	903.2	792.5	757.1
62.5°	912.0	867.7	788.0	695.1	739.4
65°	783.6	739.4	668.5	681.8	566.7
67.5°	642.0	619.8	557.8	495.9	478.1
70°	522.4	495.9	473.7	407.3	389.6
72.5°	416.2	389.6	358.6	323.2	309.9
75°	314.3	292.2	274.5	261.2	287.8
77.5°	216.9	208.1	194.8	181.5	177.1
80°	141.7	137.2	132.8	128.4	124.0
82.5°	84.1	84.1	84.1	84.1	84.1
85°	44.3	48.7	53.1	57.6	62.0
87.5°	26.6	26.6	31.0	35.4	39.8
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)