

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: P547156

Luminaire Tested: **FMR-24-4-LD4-3LO-50-UNV-93-94-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: P547156  
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-LD4-3LO-50-UNV-93-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

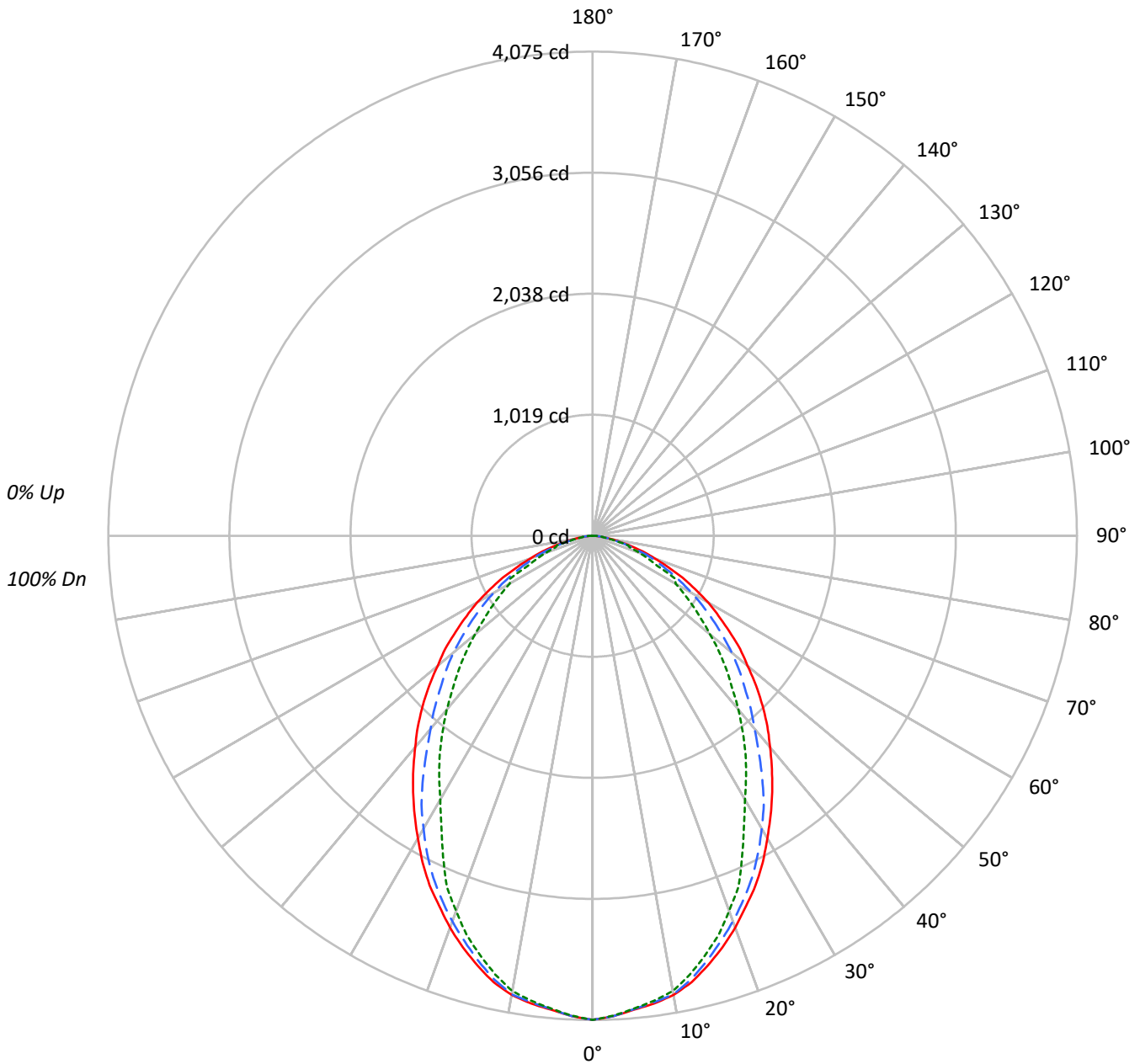
Lumens per Lamp: N/A  
Luminaire Lumens: 7999.0 lumens  
Efficiency: N/A  
Efficacy: 113.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70.2  
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: P547156

CATALOG NUMBER: FMR-24-4-LD4-3LO-50-UNV-93-94-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P547156

CATALOG NUMBER: FMR-24-4-LD4-3LO-50-UNV-93-94-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°	5482	5482	5482
5°	5408	5401	5395
10°	5361	5354	5316
15°	5216	5164	5092
20°	5025	4944	4809
25°	4818	4713	4420
30°	4567	4420	3981
35°	4325	4085	3683
40°	4079	3723	3351
45°	3845	3442	3029
50°	3560	3195	2702
55°	3293	2895	2420
60°	3017	2586	2168
65°	2655	2265	1919
70°	2186	1983	1631
75°	1738	1519	1592
80°	1168	1095	1022
85°	727	872	1017



TEST NUMBER: P547156

CATALOG NUMBER: FMR-24-4-LD4-3LO-50-UNV-93-94-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	379.3	4.7
10°-20°	1040.9	13.0
20°-30°	1441.1	18.0
30°-40°	1536.6	19.2
40°-50°	1401.9	17.5
50°-60°	1098.2	13.7
60°-70°	715.8	8.9
70°-80°	317.1	4.0
80°-90°	68.1	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°	2861.3	35.8
0°-40°	4397.9	55.0
0°-60°	6898.0	86.2
0°-90°	7999.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7999.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4075	4075	4075	4075	4075	
5°	4004	3999	3999	3994	3994	380
15°	3745	3745	3707	3670	3655	1053
25°	3246	3227	3175	3062	2977	1490
35°	2633	2614	2487	2299	2242	1646
45°	2021	1978	1809	1658	1592	1557
55°	1404	1361	1234	1088	1032	1259
65°	834	787	711	725	603	822
75°	334	311	292	278	306	358
85°	47	52	56	61	66	65
90°	0	0	0	0	0	



TEST NUMBER: P547156

CATALOG NUMBER: FMR-24-4-LD4-3LO-50-UNV-93-94-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4074.6	4074.6	4074.6	4074.6	4074.6
2.5°	4046.3	4046.3	4046.3	4041.6	4041.6
5°	4003.9	3999.2	3999.2	3994.5	3994.5
7.5°	3971.0	3966.2	3961.5	3956.8	3947.4
10°	3923.8	3923.8	3919.1	3895.6	3890.9
12.5°	3848.5	3843.8	3824.9	3792.0	3782.5
15°	3744.8	3744.8	3707.2	3669.5	3655.3
17.5°	3631.8	3627.1	3580.0	3542.3	3523.5
20°	3509.3	3499.9	3452.8	3391.6	3358.6
22.5°	3372.7	3372.7	3316.2	3236.1	3203.1
25°	3245.5	3226.7	3174.9	3061.8	2977.0
27.5°	3099.5	3071.2	3014.7	2854.6	2755.6
30°	2939.4	2925.2	2845.1	2637.9	2562.5
32.5°	2788.6	2765.1	2680.3	2463.6	2402.4
35°	2633.2	2614.3	2487.1	2298.7	2242.2
37.5°	2477.7	2454.2	2294.0	2143.3	2072.6
40°	2322.3	2294.0	2119.7	1983.1	1907.8
42.5°	2176.3	2138.6	1969.0	1823.0	1738.2
45°	2020.8	1978.4	1808.8	1658.1	1592.1
47.5°	1865.4	1827.7	1672.2	1516.8	1441.4
50°	1700.5	1667.5	1526.2	1370.8	1290.7
52.5°	1563.9	1512.1	1375.5	1220.0	1154.1
55°	1403.7	1361.3	1234.2	1088.1	1031.6
57.5°	1257.7	1215.3	1097.5	960.9	913.8
60°	1121.1	1059.9	960.9	843.2	805.5
62.5°	970.4	923.3	838.5	739.5	786.7
65°	833.8	786.7	711.3	725.4	602.9
67.5°	683.0	659.5	593.5	527.6	508.7
70°	555.8	527.6	504.0	433.4	414.5
72.5°	442.8	414.5	381.6	343.9	329.7
75°	334.4	310.9	292.1	277.9	306.2
77.5°	230.8	221.4	207.3	193.1	188.4
80°	150.7	146.0	141.3	136.6	131.9
82.5°	89.5	89.5	89.5	89.5	89.5
85°	47.1	51.8	56.5	61.2	65.9
87.5°	28.3	28.3	33.0	37.7	42.4
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)