

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: P547153

Luminaire Tested: **FMR-24-4-LD4-3LO-50-UNV-93-86-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: P547153  
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-93-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

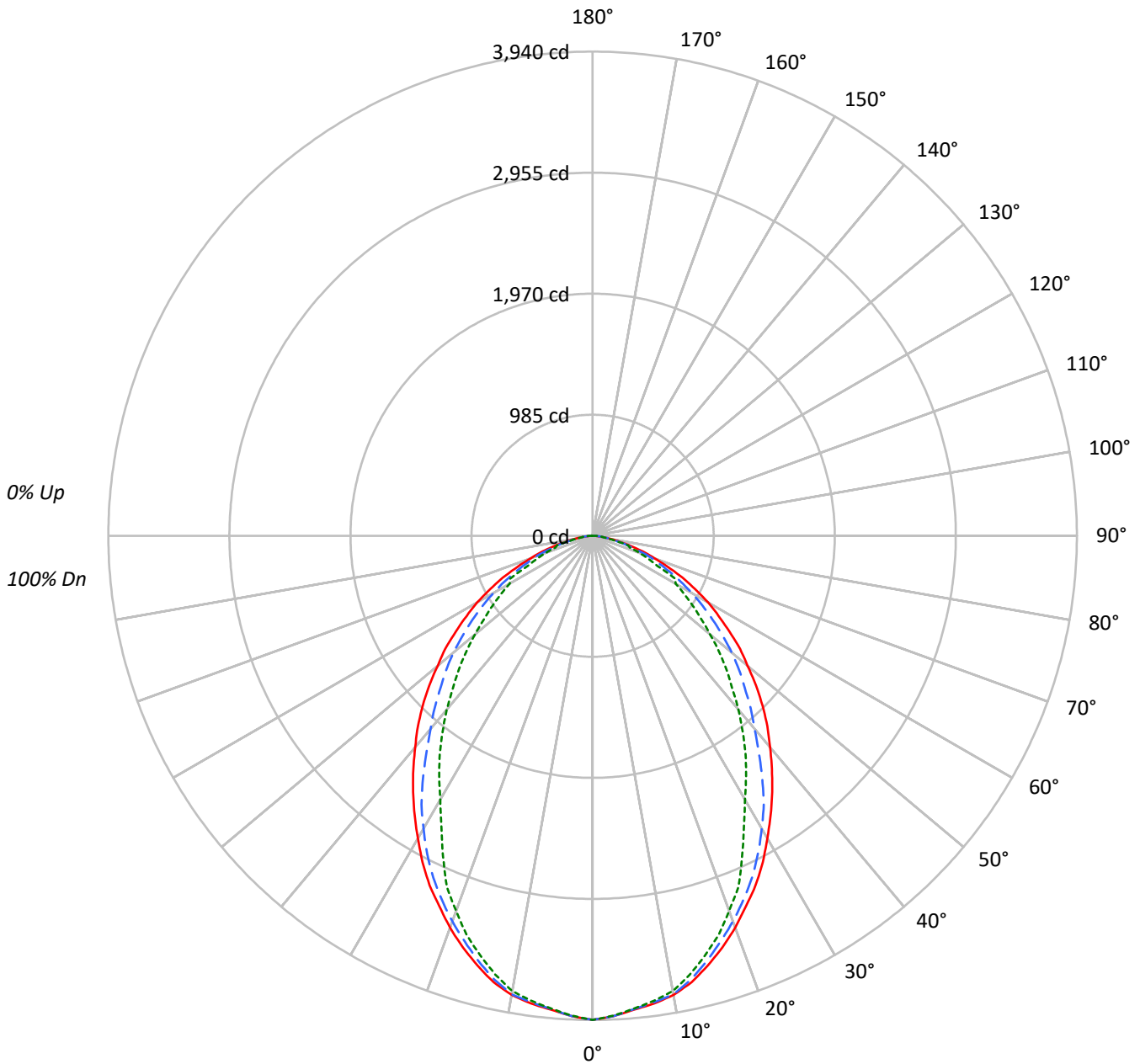
Lumens per Lamp: N/A  
Luminaire Lumens: 7734.0 lumens  
Efficiency: N/A  
Efficacy: 110.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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

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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°	5301	5301	5301
5°	5229	5222	5216
10°	5183	5177	5140
15°	5044	4993	4923
20°	4858	4780	4650
25°	4659	4557	4273
30°	4415	4274	3849
35°	4182	3950	3561
40°	3944	3600	3240
45°	3718	3328	2929
50°	3442	3089	2612
55°	3184	2799	2340
60°	2917	2500	2096
65°	2566	2189	1856
70°	2114	1917	1577
75°	1681	1468	1539
80°	1129	1058	988
85°	702	844	985



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	366.7	4.7
10°-20°	1006.4	13.0
20°-30°	1393.4	18.0
30°-40°	1485.7	19.2
40°-50°	1355.4	17.5
50°-60°	1061.9	13.7
60°-70°	692.1	8.9
70°-80°	306.6	4.0
80°-90°	65.8	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°	2766.5	35.8
0°-40°	4252.2	55.0
0°-60°	6669.5	86.2
0°-90°	7734.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7734.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3940	3940	3940	3940	3940	
5°	3871	3867	3867	3862	3862	367
15°	3621	3621	3584	3548	3534	1018
25°	3138	3120	3070	2960	2878	1441
35°	2546	2528	2405	2223	2168	1592
45°	1954	1913	1749	1603	1539	1505
55°	1357	1316	1193	1052	997	1217
65°	806	761	688	701	583	794
75°	323	301	282	269	296	347
85°	46	50	55	59	64	63
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3939.6	3939.6	3939.6	3939.6	3939.6
2.5°	3912.3	3912.3	3912.3	3907.7	3907.7
5°	3871.3	3866.7	3866.7	3862.2	3862.2
7.5°	3839.4	3834.8	3830.3	3825.7	3816.6
10°	3793.9	3793.9	3789.3	3766.5	3762.0
12.5°	3721.0	3716.4	3698.2	3666.3	3657.2
15°	3620.8	3620.8	3584.3	3547.9	3534.3
17.5°	3511.5	3506.9	3461.4	3424.9	3406.7
20°	3393.1	3384.0	3338.4	3279.2	3247.3
22.5°	3261.0	3261.0	3206.3	3128.9	3097.0
25°	3138.0	3119.8	3069.7	2960.4	2878.4
27.5°	2996.8	2969.5	2914.8	2760.0	2664.4
30°	2842.0	2828.3	2750.9	2550.5	2477.6
32.5°	2696.2	2673.5	2591.5	2382.0	2322.8
35°	2545.9	2527.7	2404.7	2222.6	2167.9
37.5°	2395.6	2372.9	2218.0	2072.3	2004.0
40°	2245.3	2218.0	2049.5	1917.4	1844.6
42.5°	2104.2	2067.7	1903.8	1762.6	1680.6
45°	1953.9	1912.9	1748.9	1603.2	1539.4
47.5°	1803.6	1767.1	1616.8	1466.5	1393.7
50°	1644.2	1612.3	1475.6	1325.3	1247.9
52.5°	1512.1	1462.0	1329.9	1179.6	1115.8
55°	1357.2	1316.2	1193.3	1052.1	997.4
57.5°	1216.0	1175.0	1061.2	929.1	883.6
60°	1084.0	1024.8	929.1	815.2	778.8
62.5°	938.2	892.7	810.7	715.0	760.6
65°	806.1	760.6	687.7	701.4	583.0
67.5°	660.4	637.6	573.9	510.1	491.9
70°	537.4	510.1	487.3	419.0	400.8
72.5°	428.1	400.8	368.9	332.5	318.8
75°	323.4	300.6	282.4	268.7	296.0
77.5°	223.2	214.1	200.4	186.7	182.2
80°	145.7	141.2	136.6	132.1	127.5
82.5°	86.5	86.5	86.5	86.5	86.5
85°	45.5	50.1	54.7	59.2	63.8
87.5°	27.3	27.3	31.9	36.4	41.0
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)