

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: P547136

Luminaire Tested: **FMR-24-4-LD4-3LO-50-UNV-81-85-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: P547136  
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-81-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

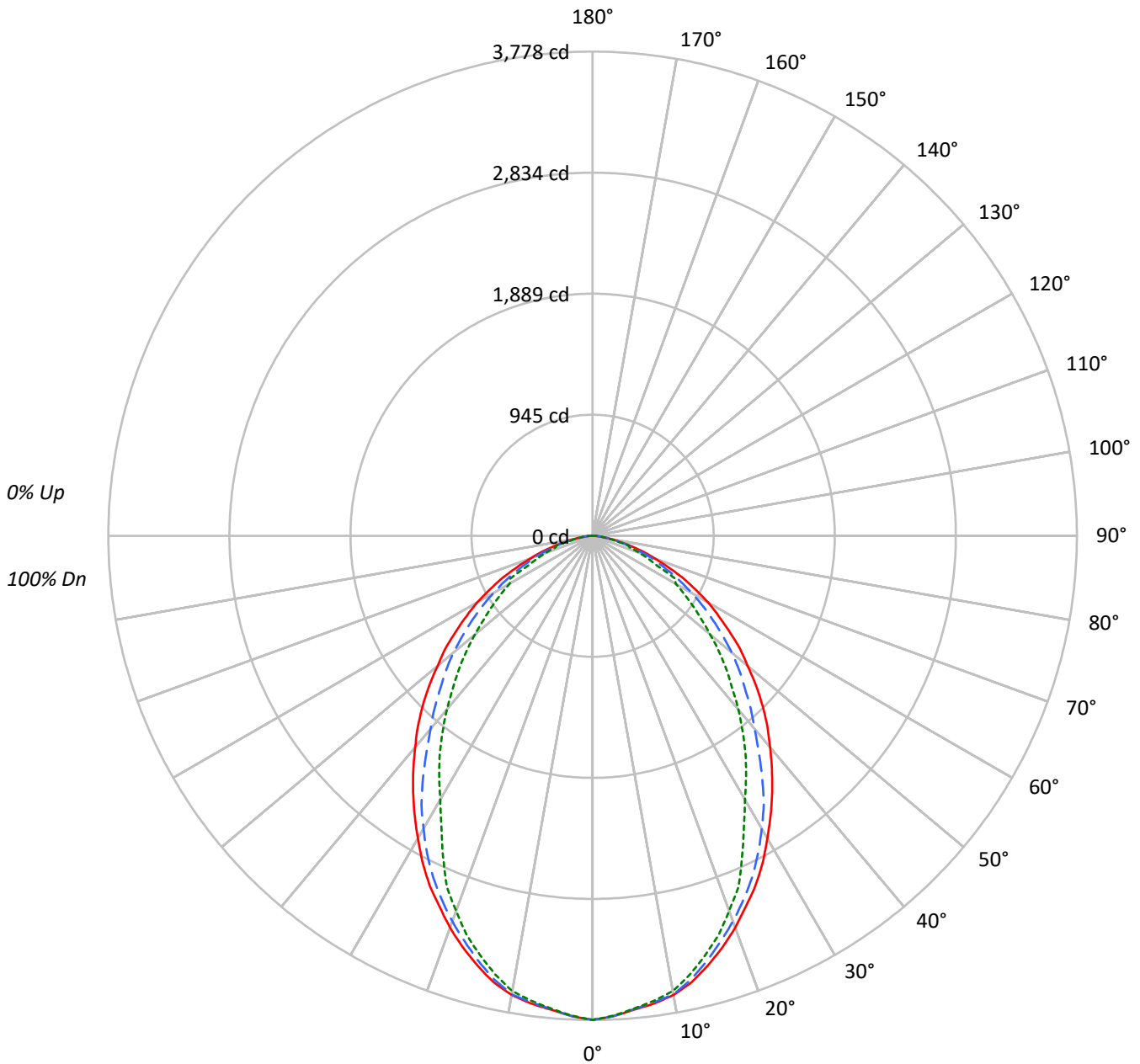
Lumens per Lamp: N/A  
Luminaire Lumens: 7416.0 lumens  
Efficiency: N/A  
Efficacy: 105.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	5083	5083	5083
5°	5014	5008	5002
10°	4970	4964	4928
15°	4836	4788	4721
20°	4658	4583	4458
25°	4467	4370	4098
30°	4234	4098	3691
35°	4010	3788	3415
40°	3782	3452	3107
45°	3565	3191	2809
50°	3300	2962	2505
55°	3053	2684	2244
60°	2797	2397	2010
65°	2461	2099	1780
70°	2027	1838	1512
75°	1612	1408	1476
80°	1082	1015	948
85°	675	809	943



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	351.6	4.7
10°-20°	965.1	13.0
20°-30°	1336.1	18.0
30°-40°	1424.6	19.2
40°-50°	1299.7	17.5
50°-60°	1018.2	13.7
60°-70°	663.6	8.9
70°-80°	294.0	4.0
80°-90°	63.1	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°	2652.8	35.8
0°-40°	4077.4	55.0
0°-60°	6395.3	86.2
0°-90°	7416.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7416.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3778	3778	3778	3778	3778	
5°	3712	3708	3708	3703	3703	352
15°	3472	3472	3437	3402	3389	976
25°	3009	2992	2944	2839	2760	1381
35°	2441	2424	2306	2131	2079	1526
45°	1874	1834	1677	1537	1476	1443
55°	1301	1262	1144	1009	956	1167
65°	773	729	659	672	559	762
75°	310	288	271	258	284	332
85°	44	48	52	57	61	61
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3777.6	3777.6	3777.6	3777.6	3777.6
2.5°	3751.4	3751.4	3751.4	3747.0	3747.0
5°	3712.1	3707.7	3707.7	3703.4	3703.4
7.5°	3681.5	3677.2	3672.8	3668.4	3659.7
10°	3637.9	3637.9	3633.5	3611.7	3607.3
12.5°	3568.0	3563.6	3546.2	3515.6	3506.8
15°	3471.9	3471.9	3437.0	3402.0	3388.9
17.5°	3367.1	3362.7	3319.1	3284.1	3266.7
20°	3253.5	3244.8	3201.1	3144.4	3113.8
22.5°	3126.9	3126.9	3074.5	3000.3	2969.7
25°	3009.0	2991.5	2943.5	2838.7	2760.1
27.5°	2873.6	2847.4	2795.0	2646.5	2554.8
30°	2725.1	2712.0	2637.8	2445.6	2375.7
32.5°	2585.4	2563.5	2484.9	2284.0	2227.3
35°	2441.3	2423.8	2305.9	2131.2	2078.8
37.5°	2297.1	2275.3	2126.8	1987.1	1921.6
40°	2153.0	2126.8	1965.2	1838.6	1768.7
42.5°	2017.6	1982.7	1825.5	1690.1	1611.5
45°	1873.5	1834.2	1677.0	1537.2	1476.1
47.5°	1729.4	1694.5	1550.3	1406.2	1336.4
50°	1576.6	1546.0	1415.0	1270.8	1196.6
52.5°	1449.9	1401.9	1275.2	1131.1	1070.0
55°	1301.4	1262.1	1144.2	1008.8	956.4
57.5°	1166.0	1126.7	1017.6	890.9	847.2
60°	1039.4	982.6	890.9	781.7	746.8
62.5°	899.6	856.0	777.4	685.6	729.3
65°	773.0	729.3	659.4	672.5	559.0
67.5°	633.2	611.4	550.3	489.1	471.7
70°	515.3	489.1	467.3	401.8	384.3
72.5°	410.5	384.3	353.7	318.8	305.7
75°	310.1	288.2	270.8	257.7	283.9
77.5°	214.0	205.3	192.2	179.1	174.7
80°	139.7	135.4	131.0	126.6	122.3
82.5°	83.0	83.0	83.0	83.0	83.0
85°	43.7	48.0	52.4	56.8	61.1
87.5°	26.2	26.2	30.6	34.9	39.3
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)