

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: P547344

Luminaire Tested: **FMR-24-4-LD4-4HI-50-UNV-93-85-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: P547344  
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-LD4-4HI-50-UNV-93-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

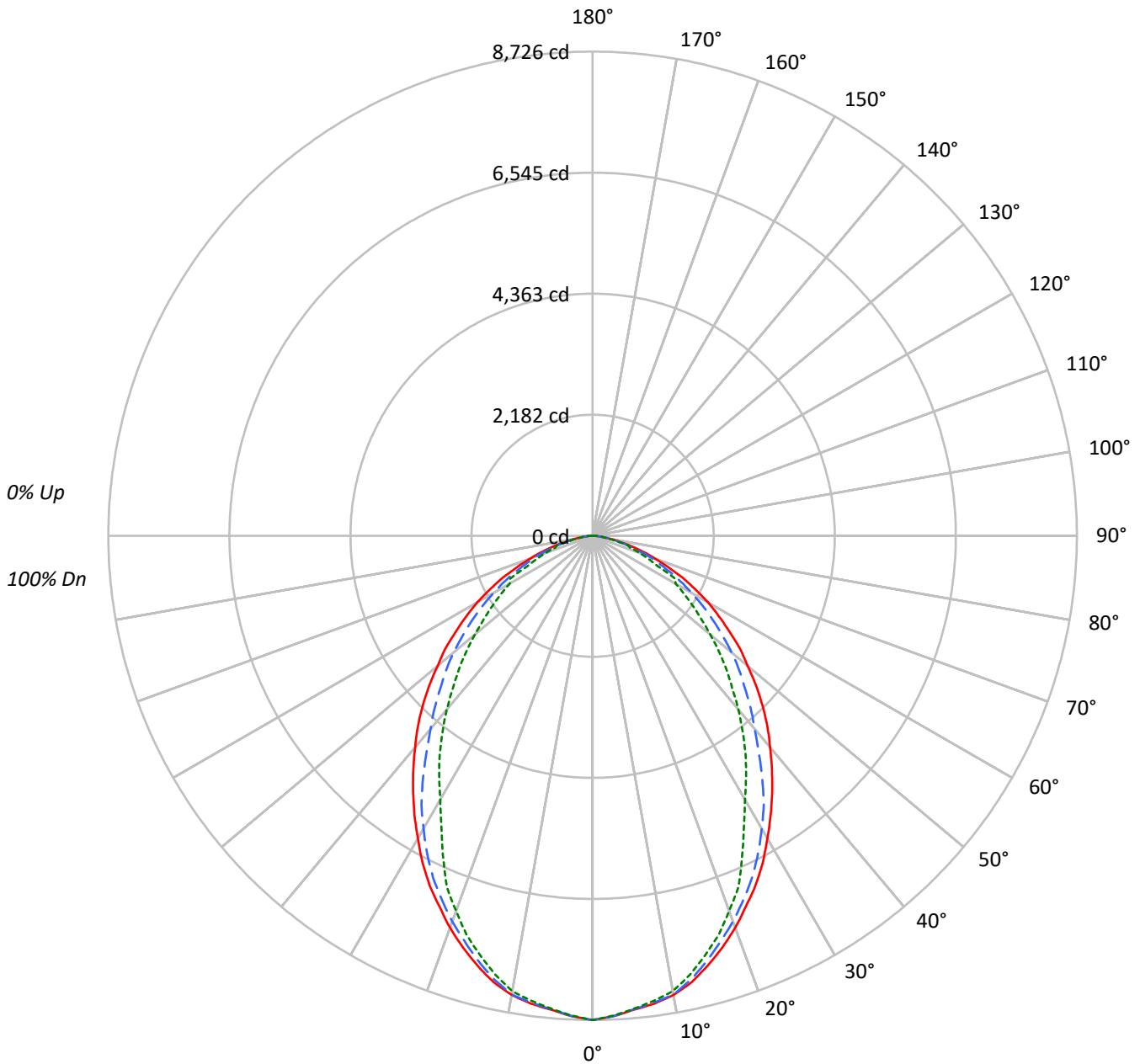
Lumens per Lamp: N/A  
Luminaire Lumens: 17131.0 lumens  
Efficiency: N/A  
Efficacy: 99.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 172.8  
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°	11741	11741	11741
5°	11582	11568	11554
10°	11481	11467	11385
15°	11172	11059	10905
20°	10761	10588	10299
25°	10319	10094	9465
30°	9780	9467	8526
35°	9263	8749	7887
40°	8736	7974	7176
45°	8235	7371	6488
50°	7623	6842	5786
55°	7052	6200	5183
60°	6461	5538	4642
65°	5685	4850	4111
70°	4683	4246	3493
75°	3724	3252	3409
80°	2501	2345	2189
85°	1558	1870	2180



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	812.3	4.7
10°-20°	2229.3	13.0
20°-30°	3086.3	18.0
30°-40°	3290.9	19.2
40°-50°	3002.3	17.5
50°-60°	2352.0	13.7
60°-70°	1532.9	8.9
70°-80°	679.1	4.0
80°-90°	145.8	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°	6127.9	35.8
0°-40°	9418.8	55.0
0°-60°	14773.1	86.2
0°-90°	17131.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	17131.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8726	8726	8726	8726	8726	
5°	8575	8565	8565	8555	8555	814
15°	8020	8020	7939	7859	7828	2255
25°	6951	6910	6800	6557	6376	3191
35°	5639	5599	5327	4923	4802	3526
45°	4328	4237	3874	3551	3410	3334
55°	3006	2916	2643	2330	2209	2696
65°	1786	1685	1523	1554	1291	1760
75°	716	666	626	595	656	768
85°	101	111	121	131	141	140
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8726.3	8726.3	8726.3	8726.3	8726.3
2.5°	8665.8	8665.8	8665.8	8655.7	8655.7
5°	8575.0	8564.9	8564.9	8554.8	8554.8
7.5°	8504.4	8494.3	8484.2	8474.1	8453.9
10°	8403.5	8403.5	8393.4	8343.0	8332.9
12.5°	8242.1	8232.0	8191.6	8121.0	8100.8
15°	8020.1	8020.1	7939.4	7858.7	7828.5
17.5°	7778.0	7767.9	7667.0	7586.3	7546.0
20°	7515.7	7495.5	7394.7	7263.5	7192.9
22.5°	7223.2	7223.2	7102.1	6930.6	6860.0
25°	6950.8	6910.4	6799.5	6557.3	6375.7
27.5°	6638.0	6577.5	6456.5	6113.5	5901.6
30°	6295.0	6264.8	6093.3	5649.4	5488.0
32.5°	5972.2	5921.8	5740.2	5276.1	5145.0
35°	5639.3	5599.0	5326.6	4923.0	4802.0
37.5°	5306.4	5256.0	4913.0	4590.1	4438.8
40°	4973.5	4913.0	4539.7	4247.1	4085.7
42.5°	4660.8	4580.0	4216.9	3904.1	3722.5
45°	4327.8	4237.0	3873.9	3551.1	3409.8
47.5°	3994.9	3914.2	3581.3	3248.4	3087.0
50°	3641.8	3571.2	3268.6	2935.7	2764.2
52.5°	3349.3	3238.3	2945.8	2612.8	2471.6
55°	3006.3	2915.5	2643.1	2330.4	2209.3
57.5°	2693.6	2602.8	2350.6	2058.0	1957.1
60°	2401.0	2269.8	2058.0	1805.8	1725.1
62.5°	2078.2	1977.3	1795.7	1583.8	1684.7
65°	1785.6	1684.7	1523.3	1553.6	1291.3
67.5°	1462.8	1412.3	1271.1	1129.9	1089.5
70°	1190.4	1129.9	1079.4	928.1	887.8
72.5°	948.3	887.8	817.1	736.4	706.2
75°	716.3	665.8	625.5	595.2	655.7
77.5°	494.3	474.1	443.9	413.6	403.5
80°	322.8	312.7	302.6	292.6	282.5
82.5°	191.7	191.7	191.7	191.7	191.7
85°	100.9	111.0	121.1	131.1	141.2
87.5°	60.5	60.5	70.6	80.7	90.8
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)