

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: P547286

Luminaire Tested: **FMR-24-4-LD4-4HI-35-UNV-93-97-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: P547286  
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-35-UNV-93-97-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

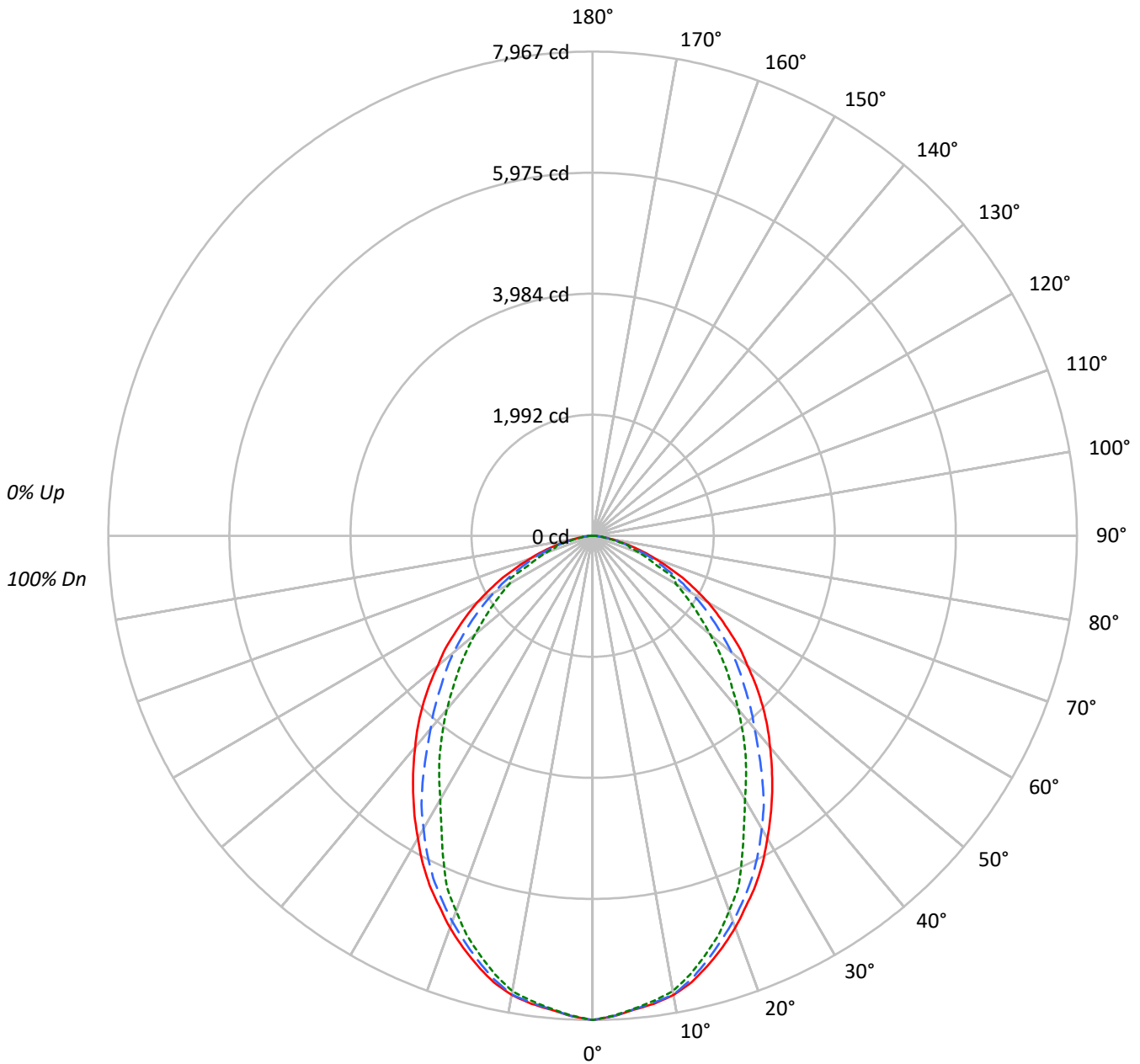
Lumens per Lamp: N/A  
Luminaire Lumens: 15641.0 lumens  
Efficiency: N/A  
Efficacy: 90.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 172.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	10720	10720	10720
5°	10574	10562	10549
10°	10483	10470	10395
15°	10200	10097	9956
20°	9825	9667	9403
25°	9421	9216	8642
30°	8930	8643	7785
35°	8457	7988	7201
40°	7976	7280	6552
45°	7519	6730	5924
50°	6960	6247	5283
55°	6439	5661	4732
60°	5899	5056	4238
65°	5190	4428	3754
70°	4276	3877	3188
75°	3400	2969	3112
80°	2283	2141	1998
85°	1422	1706	1991



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	741.6	4.7
10°-20°	2035.4	13.0
20°-30°	2817.9	18.0
30°-40°	3004.7	19.2
40°-50°	2741.1	17.5
50°-60°	2147.5	13.7
60°-70°	1399.6	8.9
70°-80°	620.1	4.0
80°-90°	133.1	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°	5594.9	35.8
0°-40°	8599.6	55.0
0°-60°	13488.2	86.2
0°-90°	15641.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15641.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7967	7967	7967	7967	7967	
5°	7829	7820	7820	7811	7811	743
15°	7323	7323	7249	7175	7148	2059
25°	6346	6309	6208	5987	5821	2914
35°	5149	5112	4863	4495	4384	3219
45°	3951	3868	3537	3242	3113	3044
55°	2745	2662	2413	2128	2017	2462
65°	1630	1538	1391	1418	1179	1607
75°	654	608	571	543	599	701
85°	92	101	110	120	129	128
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7967.3	7967.3	7967.3	7967.3	7967.3
2.5°	7912.1	7912.1	7912.1	7902.8	7902.8
5°	7829.2	7819.9	7819.9	7810.7	7810.7
7.5°	7764.7	7755.5	7746.3	7737.0	7718.6
10°	7672.6	7672.6	7663.4	7617.3	7608.1
12.5°	7525.2	7516.0	7479.1	7414.7	7396.2
15°	7322.6	7322.6	7248.9	7175.2	7147.6
17.5°	7101.5	7092.3	7000.2	6926.5	6889.7
20°	6862.0	6843.6	6751.5	6631.8	6567.3
22.5°	6594.9	6594.9	6484.4	6327.8	6263.3
25°	6346.2	6309.4	6208.1	5987.0	5821.2
27.5°	6060.7	6005.4	5894.9	5581.7	5388.3
30°	5747.5	5719.9	5563.3	5158.0	5010.7
32.5°	5452.8	5406.7	5240.9	4817.2	4697.5
35°	5148.8	5112.0	4863.3	4494.9	4384.3
37.5°	4844.9	4798.8	4485.6	4190.9	4052.7
40°	4540.9	4485.6	4144.8	3877.7	3730.4
42.5°	4255.4	4181.7	3850.1	3564.6	3398.8
45°	3951.4	3868.5	3536.9	3242.2	3113.2
47.5°	3647.5	3573.8	3269.8	2965.9	2818.5
50°	3325.1	3260.6	2984.3	2680.3	2523.8
52.5°	3058.0	2956.7	2689.5	2385.6	2256.6
55°	2744.8	2661.9	2413.2	2127.7	2017.2
57.5°	2459.3	2376.4	2146.1	1879.0	1786.9
60°	2192.2	2072.4	1879.0	1648.7	1575.0
62.5°	1897.4	1805.3	1639.5	1446.1	1538.2
65°	1630.3	1538.2	1390.8	1418.5	1179.0
67.5°	1335.6	1289.5	1160.6	1031.6	994.8
70°	1086.9	1031.6	985.6	847.4	810.5
72.5°	865.8	810.5	746.1	672.4	644.8
75°	654.0	607.9	571.1	543.4	598.7
77.5°	451.3	432.9	405.3	377.6	368.4
80°	294.7	285.5	276.3	267.1	257.9
82.5°	175.0	175.0	175.0	175.0	175.0
85°	92.1	101.3	110.5	119.7	129.0
87.5°	55.3	55.3	64.5	73.7	82.9
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)