

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: P546738

Luminaire Tested: **FMR-24-4-LD4-2HI-40-UNV-93-87-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: P546738  
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-LD4-2HI-40-UNV-93-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

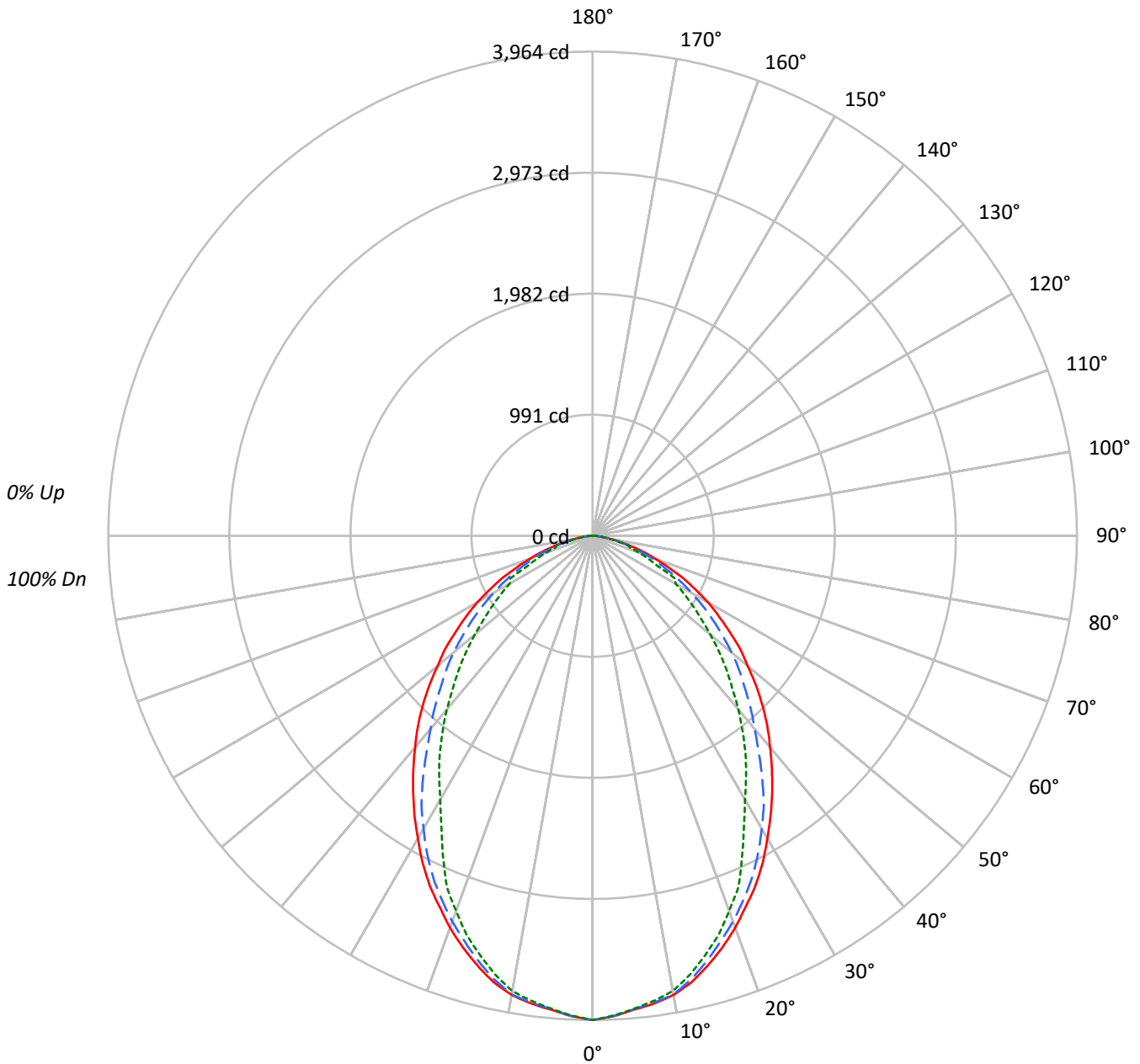
Lumens per Lamp: N/A  
Luminaire Lumens: 7782.0 lumens  
Efficiency: N/A  
Efficacy: 90.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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°	5334	5334	5334
5°	5261	5255	5249
10°	5216	5209	5172
15°	5075	5024	4954
20°	4888	4810	4679
25°	4688	4585	4300
30°	4443	4300	3873
35°	4208	3974	3583
40°	3968	3622	3260
45°	3741	3349	2947
50°	3463	3108	2628
55°	3203	2817	2354
60°	2935	2516	2109
65°	2582	2203	1868
70°	2127	1929	1587
75°	1692	1477	1549
80°	1136	1065	994
85°	707	849	991



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	369.0	4.7
10°-20°	1012.7	13.0
20°-30°	1402.0	18.0
30°-40°	1494.9	19.2
40°-50°	1363.8	17.5
50°-60°	1068.5	13.7
60°-70°	696.4	8.9
70°-80°	308.5	4.0
80°-90°	66.3	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°	2783.7	35.8
0°-40°	4278.6	55.0
0°-60°	6710.9	86.2
0°-90°	7782.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7782.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3964	3964	3964	3964	3964	
5°	3895	3891	3891	3886	3886	370
15°	3643	3643	3607	3570	3556	1024
25°	3158	3139	3089	2979	2896	1450
35°	2562	2543	2420	2236	2181	1602
45°	1966	1925	1760	1613	1549	1514
55°	1366	1324	1201	1059	1004	1225
65°	811	765	692	706	587	799
75°	325	302	284	270	298	349
85°	46	50	55	60	64	64
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3964.0	3964.0	3964.0	3964.0	3964.0
2.5°	3936.6	3936.6	3936.6	3932.0	3932.0
5°	3895.3	3890.7	3890.7	3886.1	3886.1
7.5°	3863.2	3858.6	3854.1	3849.5	3840.3
10°	3817.4	3817.4	3812.8	3789.9	3785.3
12.5°	3744.1	3739.5	3721.2	3689.1	3679.9
15°	3643.3	3643.3	3606.6	3569.9	3556.2
17.5°	3533.3	3528.7	3482.9	3446.2	3427.9
20°	3414.1	3405.0	3359.1	3299.6	3267.5
22.5°	3281.2	3281.2	3226.2	3148.3	3116.2
25°	3157.5	3139.2	3088.7	2978.8	2896.3
27.5°	3015.4	2987.9	2932.9	2777.1	2680.9
30°	2859.6	2845.9	2768.0	2566.3	2493.0
32.5°	2713.0	2690.1	2607.6	2396.8	2337.2
35°	2561.7	2543.4	2419.7	2236.4	2181.4
37.5°	2410.5	2387.6	2231.8	2085.1	2016.4
40°	2259.3	2231.8	2062.2	1929.3	1856.0
42.5°	2117.2	2080.6	1915.6	1773.5	1691.0
45°	1966.0	1924.7	1759.8	1613.1	1549.0
47.5°	1814.8	1778.1	1626.9	1475.6	1402.3
50°	1654.4	1622.3	1484.8	1333.6	1255.7
52.5°	1521.5	1471.1	1338.2	1186.9	1122.8
55°	1365.6	1324.4	1200.7	1058.6	1003.6
57.5°	1223.6	1182.3	1067.8	934.9	889.0
60°	1090.7	1031.1	934.9	820.3	783.6
62.5°	944.0	898.2	815.7	719.5	765.3
65°	811.1	765.3	692.0	705.7	586.6
67.5°	664.5	641.6	577.4	513.3	494.9
70°	540.8	513.3	490.4	421.6	403.3
72.5°	430.8	403.3	371.2	334.5	320.8
75°	325.4	302.5	284.1	270.4	297.9
77.5°	224.6	215.4	201.6	187.9	183.3
80°	146.6	142.1	137.5	132.9	128.3
82.5°	87.1	87.1	87.1	87.1	87.1
85°	45.8	50.4	55.0	59.6	64.2
87.5°	27.5	27.5	32.1	36.7	41.2
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)