

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: P546932

Luminaire Tested: **FMR-24-4-LD4-2STD-40-UNV-93-94-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: P546932  
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-LD4-2STD-40-UNV-93-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

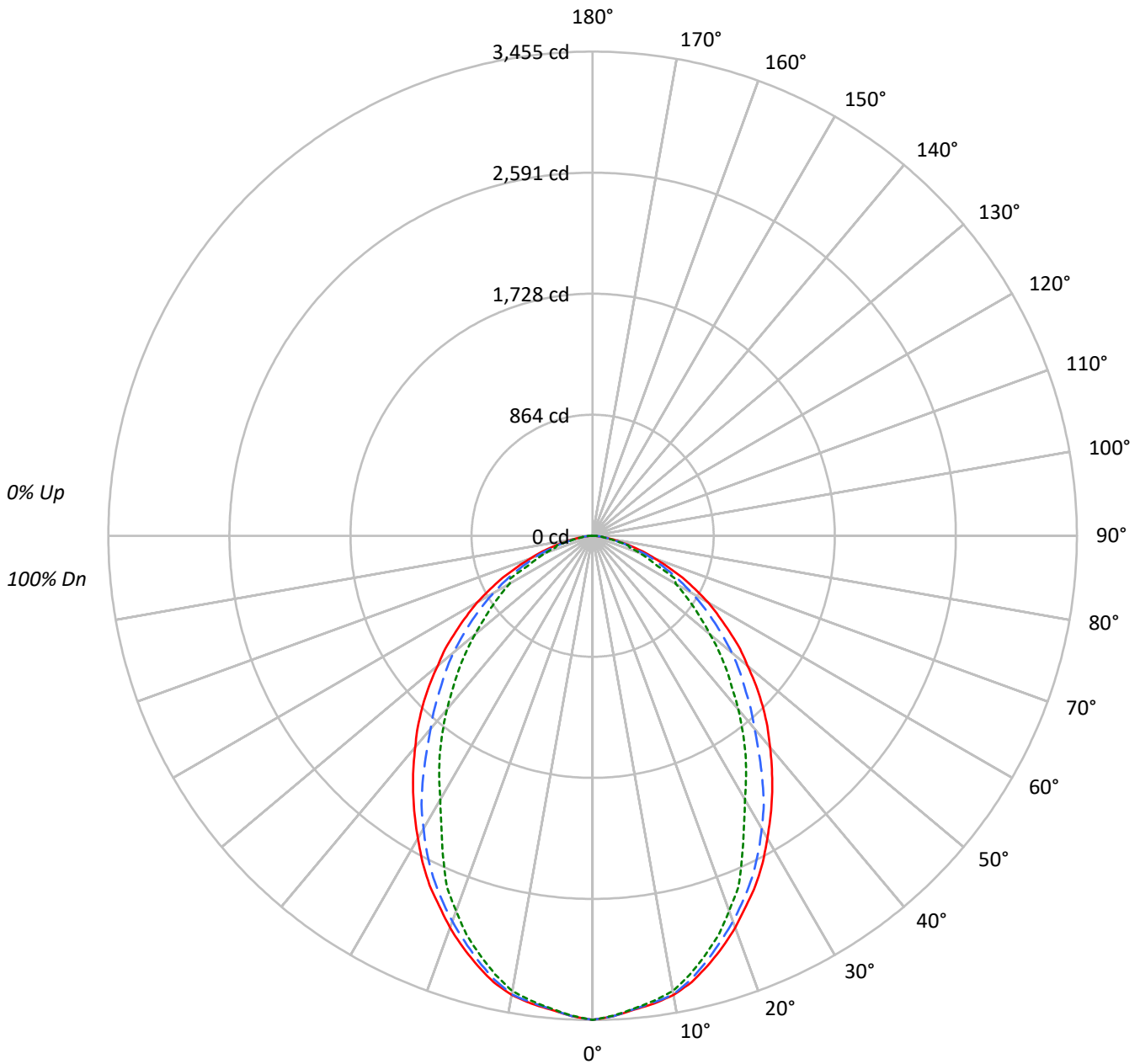
Lumens per Lamp: N/A  
Luminaire Lumens: 6782.0 lumens  
Efficiency: N/A  
Efficacy: 101.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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°	4648	4648	4648
5°	4585	4580	4574
10°	4545	4540	4507
15°	4423	4378	4317
20°	4260	4192	4077
25°	4085	3996	3747
30°	3872	3748	3375
35°	3667	3464	3123
40°	3458	3157	2841
45°	3260	2918	2569
50°	3018	2709	2291
55°	2792	2455	2052
60°	2558	2192	1838
65°	2251	1920	1628
70°	1854	1681	1383
75°	1474	1287	1350
80°	990	928	866
85°	616	739	863



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	321.6	4.7
10°-20°	882.6	13.0
20°-30°	1221.8	18.0
30°-40°	1302.8	19.2
40°-50°	1188.6	17.5
50°-60°	931.1	13.7
60°-70°	606.9	8.9
70°-80°	268.9	4.0
80°-90°	57.7	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°	2426.0	35.8
0°-40°	3728.8	55.0
0°-60°	5848.5	86.2
0°-90°	6782.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6782.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3455	3455	3455	3455	3455	
5°	3395	3391	3391	3387	3387	322
15°	3175	3175	3143	3111	3099	893
25°	2752	2736	2692	2596	2524	1263
35°	2232	2217	2109	1949	1901	1396
45°	1713	1677	1534	1406	1350	1320
55°	1190	1154	1046	923	875	1068
65°	707	667	603	615	511	697
75°	284	264	248	236	260	304
85°	40	44	48	52	56	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3454.7	3454.7	3454.7	3454.7	3454.7
2.5°	3430.7	3430.7	3430.7	3426.7	3426.7
5°	3394.8	3390.8	3390.8	3386.8	3386.8
7.5°	3366.8	3362.8	3358.8	3354.8	3346.8
10°	3326.9	3326.9	3322.9	3302.9	3298.9
12.5°	3263.0	3259.0	3243.0	3215.0	3207.0
15°	3175.1	3175.1	3143.1	3111.2	3099.2
17.5°	3079.2	3075.2	3035.3	3003.4	2987.4
20°	2975.4	2967.4	2927.5	2875.6	2847.6
22.5°	2859.6	2859.6	2811.7	2743.8	2715.8
25°	2751.7	2735.8	2691.8	2596.0	2524.1
27.5°	2627.9	2604.0	2556.0	2420.3	2336.4
30°	2492.1	2480.2	2412.3	2236.5	2172.6
32.5°	2364.3	2344.4	2272.5	2088.8	2036.9
35°	2232.5	2216.6	2108.7	1949.0	1901.1
37.5°	2100.8	2080.8	1945.0	1817.2	1757.3
40°	1969.0	1945.0	1797.2	1681.4	1617.5
42.5°	1845.1	1813.2	1669.4	1545.6	1473.7
45°	1713.4	1677.4	1533.6	1405.8	1349.9
47.5°	1581.6	1549.6	1417.8	1286.0	1222.1
50°	1441.8	1413.8	1294.0	1162.2	1094.3
52.5°	1326.0	1282.0	1166.2	1034.4	978.5
55°	1190.2	1154.2	1046.4	922.6	874.6
57.5°	1066.4	1030.4	930.6	814.7	774.8
60°	950.5	898.6	814.7	714.9	682.9
62.5°	822.7	782.8	710.9	627.0	667.0
65°	706.9	667.0	603.1	615.0	511.2
67.5°	579.1	559.1	503.2	447.3	431.3
70°	471.3	447.3	427.3	367.4	351.5
72.5°	375.4	351.5	323.5	291.5	279.6
75°	283.6	263.6	247.6	235.6	259.6
77.5°	195.7	187.7	175.7	163.7	159.8
80°	127.8	123.8	119.8	115.8	111.8
82.5°	75.9	75.9	75.9	75.9	75.9
85°	39.9	43.9	47.9	51.9	55.9
87.5°	24.0	24.0	28.0	32.0	35.9
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)