

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: P546356

Luminaire Tested: **FMR-12-4-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: P546356  
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-12-4-LD4-2STD-40-UNV-93-94-EDD  
Description: 1X4 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**

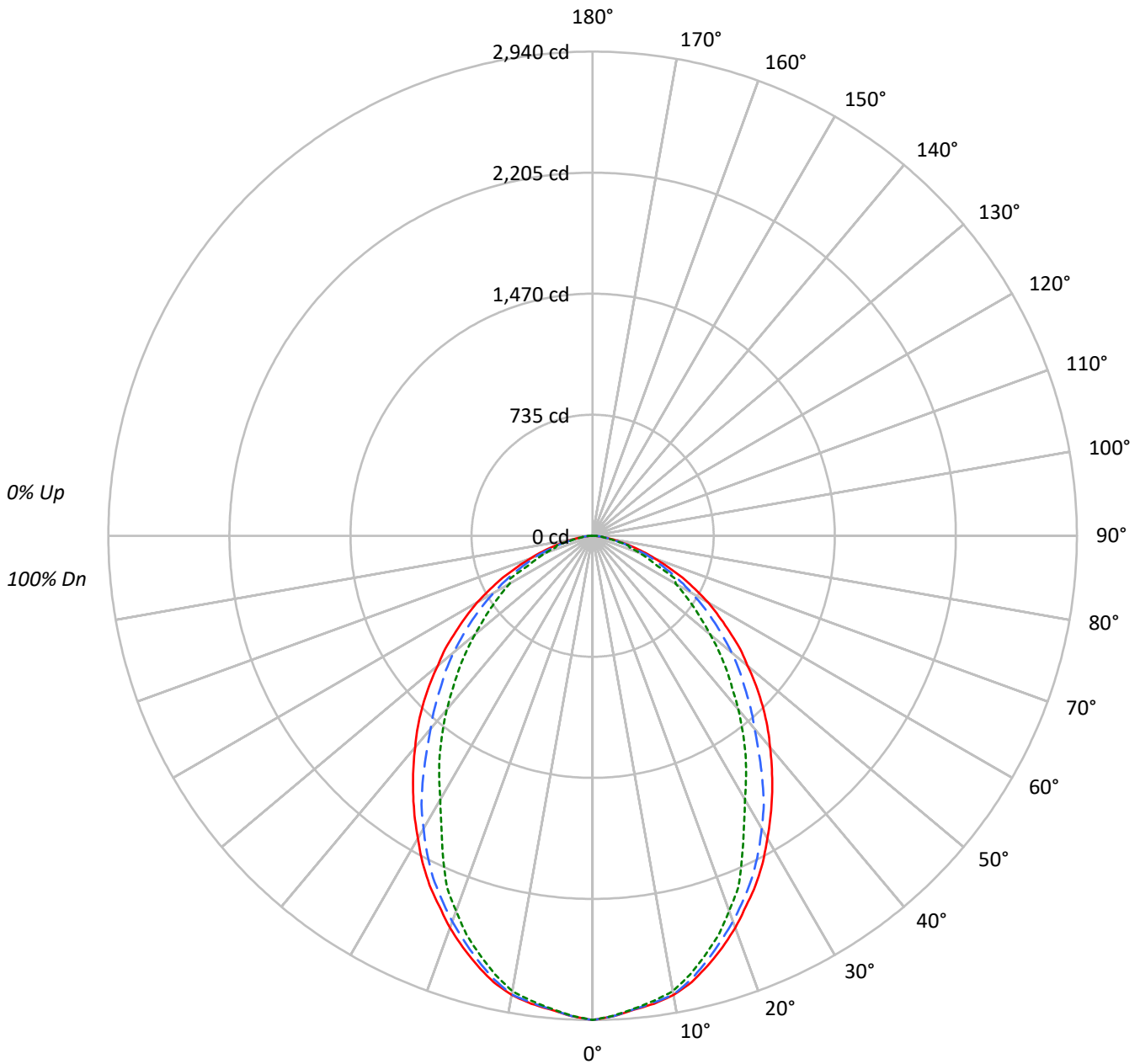
Lumens per Lamp: N/A  
Luminaire Lumens: 5772.0 lumens  
Efficiency: N/A  
Efficacy: 86.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7912	7912	7912
5°	7804	7795	7786
10°	7737	7727	7672
15°	7528	7453	7348
20°	7252	7135	6940
25°	6953	6802	6378
30°	6591	6379	5746
35°	6242	5896	5315
40°	5886	5373	4836
45°	5549	4967	4372
50°	5137	4611	3899
55°	4752	4178	3492
60°	4354	3732	3128
65°	3831	3268	2770
70°	3156	2862	2353
75°	2509	2191	2297
80°	1686	1581	1475
85°	1050	1260	1470



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	273.7	4.7
10°-20°	751.1	13.0
20°-30°	1039.9	18.0
30°-40°	1108.8	19.2
40°-50°	1011.6	17.5
50°-60°	792.5	13.7
60°-70°	516.5	8.9
70°-80°	228.8	4.0
80°-90°	49.1	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°	2064.7	35.8
0°-40°	3173.5	55.0
0°-60°	4977.5	86.2
0°-90°	5772.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5772.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2940	2940	2940	2940	2940	
5°	2889	2886	2886	2882	2882	274
15°	2702	2702	2675	2648	2638	760
25°	2342	2328	2291	2209	2148	1075
35°	1900	1886	1795	1659	1618	1188
45°	1458	1428	1305	1196	1149	1123
55°	1013	982	891	785	744	909
65°	602	568	513	524	435	593
75°	241	224	211	200	221	259
85°	34	37	41	44	48	47
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2940.2	2940.2	2940.2	2940.2	2940.2
2.5°	2919.8	2919.8	2919.8	2916.4	2916.4
5°	2889.2	2885.8	2885.8	2882.4	2882.4
7.5°	2865.4	2862.0	2858.6	2855.2	2848.4
10°	2831.4	2831.4	2828.0	2811.0	2807.6
12.5°	2777.0	2773.6	2760.0	2736.2	2729.4
15°	2702.2	2702.2	2675.1	2647.9	2637.7
17.5°	2620.7	2617.3	2583.3	2556.1	2542.5
20°	2532.3	2525.5	2491.5	2447.3	2423.5
22.5°	2433.7	2433.7	2392.9	2335.1	2311.4
25°	2341.9	2328.4	2291.0	2209.4	2148.2
27.5°	2236.6	2216.2	2175.4	2059.8	1988.4
30°	2121.0	2110.8	2053.0	1903.5	1849.1
32.5°	2012.2	1995.2	1934.1	1777.7	1733.5
35°	1900.1	1886.5	1794.7	1658.7	1617.9
37.5°	1787.9	1770.9	1655.3	1546.6	1495.6
40°	1675.7	1655.3	1529.6	1431.0	1376.6
42.5°	1570.4	1543.2	1420.8	1315.4	1254.3
45°	1458.2	1427.6	1305.2	1196.5	1148.9
47.5°	1346.0	1318.8	1206.7	1094.5	1040.1
50°	1227.1	1203.3	1101.3	989.1	931.3
52.5°	1128.5	1091.1	992.5	880.4	832.8
55°	1012.9	982.3	890.6	785.2	744.4
57.5°	907.5	877.0	792.0	693.4	659.4
60°	809.0	764.8	693.4	608.4	581.2
62.5°	700.2	666.2	605.0	533.7	567.6
65°	601.6	567.6	513.3	523.5	435.1
67.5°	492.9	475.9	428.3	380.7	367.1
70°	401.1	380.7	363.7	312.7	299.1
72.5°	319.5	299.1	275.3	248.1	237.9
75°	241.3	224.3	210.7	200.5	220.9
77.5°	166.6	159.8	149.6	139.4	136.0
80°	108.8	105.4	102.0	98.6	95.2
82.5°	64.6	64.6	64.6	64.6	64.6
85°	34.0	37.4	40.8	44.2	47.6
87.5°	20.4	20.4	23.8	27.2	30.6
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)