

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: P546923

Luminaire Tested: **FMR-24-4-LD4-2STD-40-UNV-82-88-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: P546923  
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-82-88-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

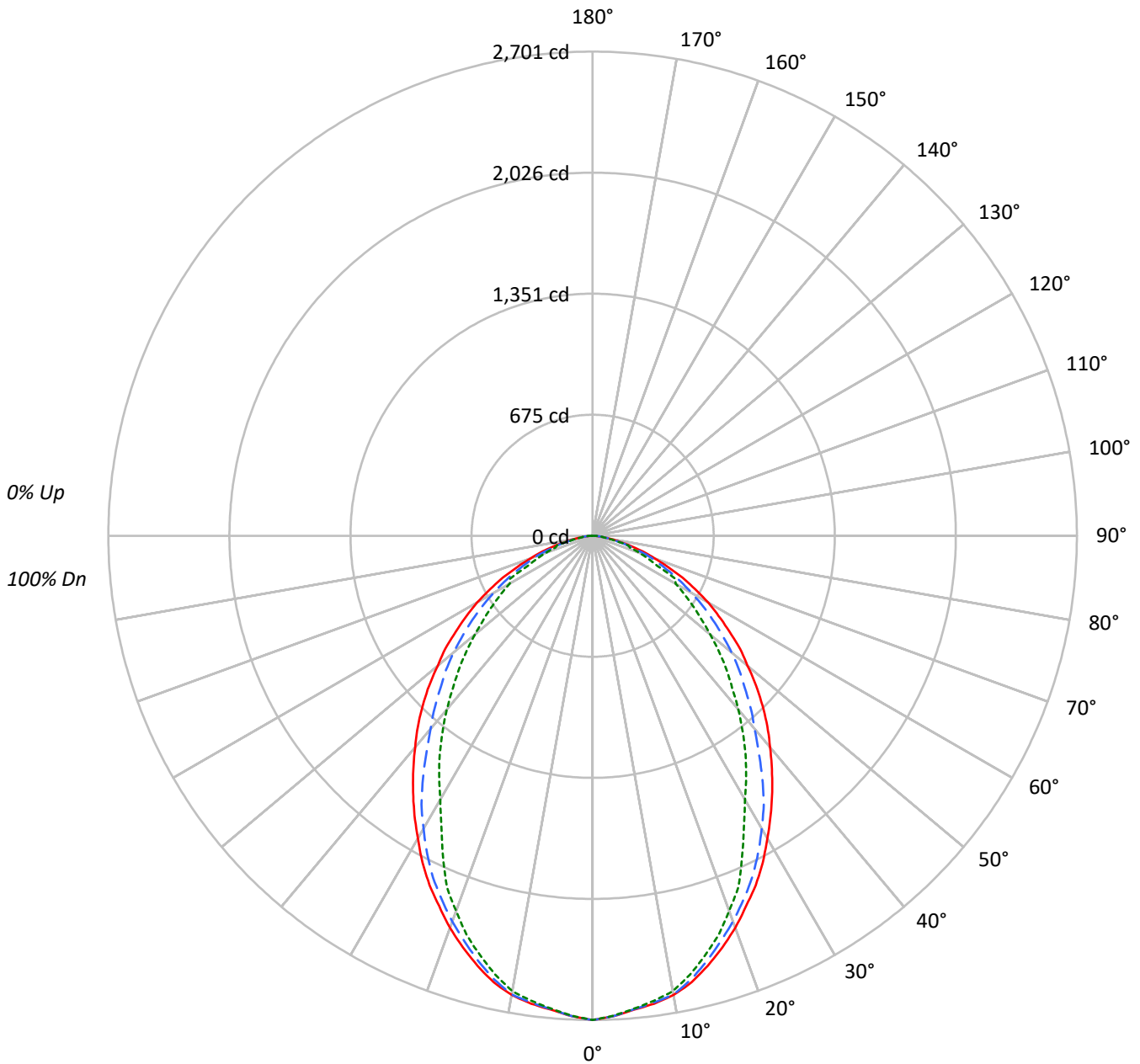
Lumens per Lamp: N/A  
Luminaire Lumens: 5303.0 lumens  
Efficiency: N/A  
Efficacy: 79.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	3635	3635	3635
5°	3585	3581	3577
10°	3554	3550	3524
15°	3458	3423	3376
20°	3331	3278	3188
25°	3194	3125	2930
30°	3028	2930	2639
35°	2867	2708	2442
40°	2704	2468	2222
45°	2549	2282	2008
50°	2360	2118	1791
55°	2183	1919	1604
60°	2000	1714	1437
65°	1760	1501	1273
70°	1450	1314	1081
75°	1153	1006	1055
80°	774	726	677
85°	482	579	675



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	251.5	4.7
10°-20°	690.1	13.0
20°-30°	955.4	18.0
30°-40°	1018.7	19.2
40°-50°	929.4	17.5
50°-60°	728.1	13.7
60°-70°	474.5	8.9
70°-80°	210.2	4.0
80°-90°	45.1	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°	1896.9	35.8
0°-40°	2915.7	55.0
0°-60°	4573.1	86.2
0°-90°	5303.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5303.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2701	2701	2701	2701	2701	
5°	2654	2651	2651	2648	2648	252
15°	2483	2483	2458	2433	2423	698
25°	2152	2139	2105	2030	1974	988
35°	1746	1733	1649	1524	1486	1091
45°	1340	1312	1199	1099	1056	1032
55°	931	902	818	721	684	835
65°	553	522	472	481	400	545
75°	222	206	194	184	203	238
85°	31	34	38	41	44	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2701.3	2701.3	2701.3	2701.3	2701.3
2.5°	2682.5	2682.5	2682.5	2679.4	2679.4
5°	2654.4	2651.3	2651.3	2648.2	2648.2
7.5°	2632.6	2629.5	2626.3	2623.2	2617.0
10°	2601.3	2601.3	2598.2	2582.6	2579.5
12.5°	2551.4	2548.3	2535.8	2513.9	2507.7
15°	2482.7	2482.7	2457.7	2432.7	2423.3
17.5°	2407.7	2404.6	2373.4	2348.4	2335.9
20°	2326.5	2320.3	2289.1	2248.5	2226.6
22.5°	2236.0	2236.0	2198.5	2145.4	2123.5
25°	2151.7	2139.2	2104.8	2029.9	1973.7
27.5°	2054.8	2036.1	1998.6	1892.5	1826.9
30°	1948.7	1939.3	1886.2	1748.8	1698.8
32.5°	1848.7	1833.1	1776.9	1633.3	1592.7
35°	1745.7	1733.2	1648.9	1524.0	1486.5
37.5°	1642.6	1627.0	1520.8	1420.9	1374.1
40°	1539.6	1520.8	1405.3	1314.7	1264.8
42.5°	1442.8	1417.8	1305.4	1208.5	1152.3
45°	1339.7	1311.6	1199.2	1099.2	1055.5
47.5°	1236.7	1211.7	1108.6	1005.6	955.6
50°	1127.4	1105.5	1011.8	908.8	855.7
52.5°	1036.8	1002.4	911.9	808.8	765.1
55°	930.6	902.5	818.2	721.4	683.9
57.5°	833.8	805.7	727.6	637.1	605.8
60°	743.2	702.6	637.1	559.0	534.0
62.5°	643.3	612.1	555.9	490.3	521.5
65°	552.7	521.5	471.6	480.9	399.7
67.5°	452.8	437.2	393.5	349.8	337.3
70°	368.5	349.8	334.1	287.3	274.8
72.5°	293.5	274.8	253.0	228.0	218.6
75°	221.7	206.1	193.6	184.2	203.0
77.5°	153.0	146.8	137.4	128.0	124.9
80°	99.9	96.8	93.7	90.6	87.4
82.5°	59.3	59.3	59.3	59.3	59.3
85°	31.2	34.4	37.5	40.6	43.7
87.5°	18.7	18.7	21.9	25.0	28.1
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)