

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: P547430

Luminaire Tested: **FMR-24-4-LD4-4LO-50-UNV-81-97-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: P547430  
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-LD4-4LO-50-UNV-81-97-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

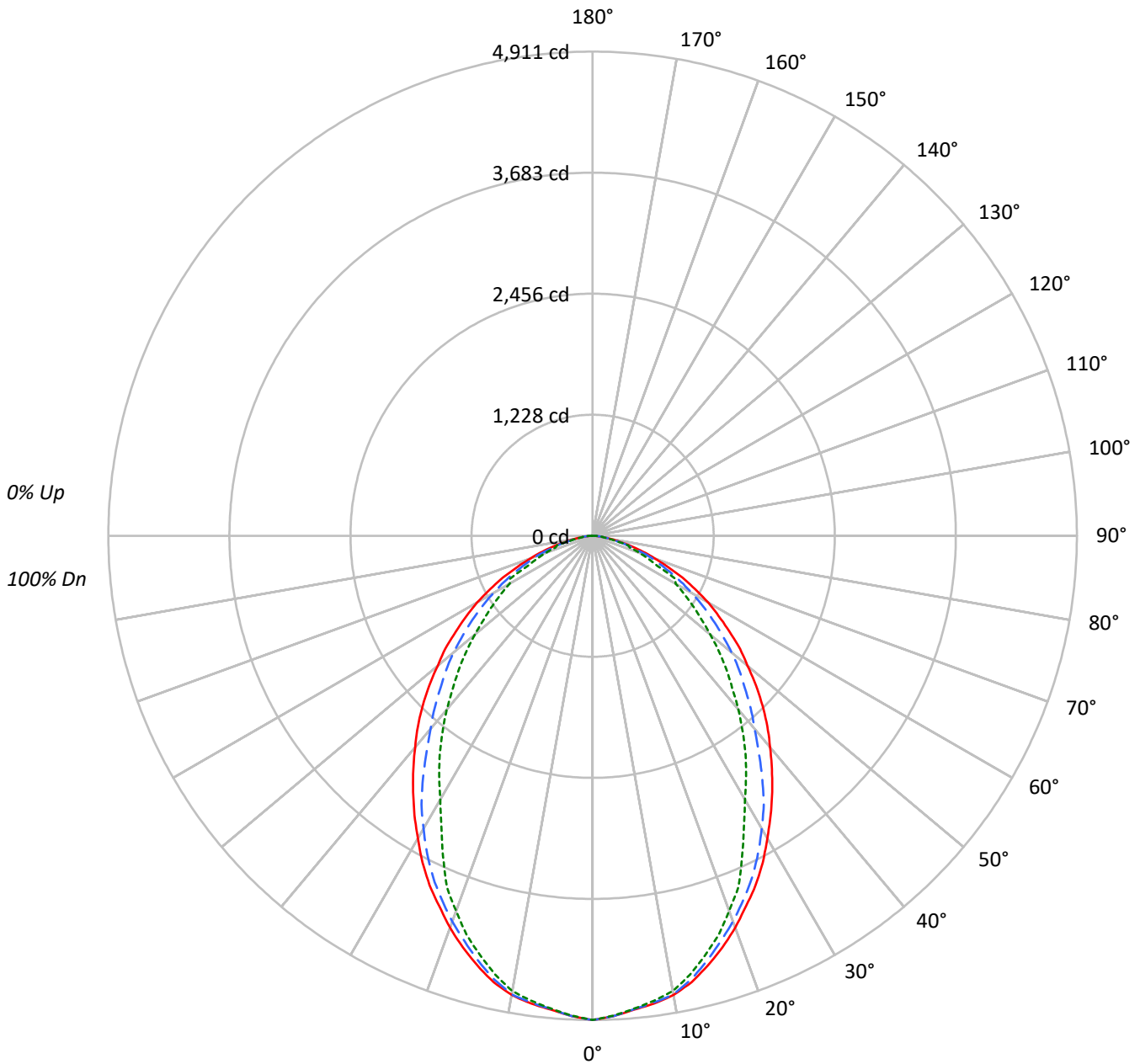
Lumens per Lamp: N/A  
Luminaire Lumens: 9641.0 lumens  
Efficiency: N/A  
Efficacy: 103.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
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°	6608	6608	6608
5°	6518	6510	6503
10°	6461	6454	6407
15°	6287	6224	6137
20°	6056	5959	5796
25°	5807	5681	5327
30°	5504	5328	4798
35°	5213	4924	4439
40°	4916	4487	4039
45°	4634	4148	3651
50°	4290	3850	3256
55°	3969	3489	2917
60°	3636	3117	2612
65°	3199	2729	2314
70°	2635	2390	1965
75°	2096	1830	1918
80°	1408	1320	1232
85°	877	1051	1227



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	457.1	4.7
10°-20°	1254.6	13.0
20°-30°	1736.9	18.0
30°-40°	1852.1	19.2
40°-50°	1689.6	17.5
50°-60°	1323.7	13.7
60°-70°	862.7	8.9
70°-80°	382.2	4.0
80°-90°	82.1	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°	3448.7	35.8
0°-40°	5300.7	55.0
0°-60°	8314.0	86.2
0°-90°	9641.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9641.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4911	4911	4911	4911	4911	
5°	4826	4820	4820	4814	4814	458
15°	4514	4514	4468	4423	4406	1269
25°	3912	3889	3827	3690	3588	1796
35°	3174	3151	2998	2771	2702	1984
45°	2436	2384	2180	1998	1919	1876
55°	1692	1641	1488	1312	1243	1518
65°	1005	948	857	874	727	990
75°	403	375	352	335	369	432
85°	57	62	68	74	80	79
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4911.0	4911.0	4911.0	4911.0	4911.0
2.5°	4876.9	4876.9	4876.9	4871.3	4871.3
5°	4825.8	4820.2	4820.2	4814.5	4814.5
7.5°	4786.1	4780.4	4774.7	4769.1	4757.7
10°	4729.3	4729.3	4723.6	4695.3	4689.6
12.5°	4638.5	4632.8	4610.1	4570.3	4559.0
15°	4513.6	4513.6	4468.2	4422.7	4405.7
17.5°	4377.3	4371.6	4314.9	4269.4	4246.7
20°	4229.7	4218.3	4161.6	4087.8	4048.0
22.5°	4065.1	4065.1	3996.9	3900.4	3860.7
25°	3911.8	3889.1	3826.6	3690.3	3588.2
27.5°	3735.8	3701.7	3633.6	3440.5	3321.3
30°	3542.7	3525.7	3429.2	3179.4	3088.5
32.5°	3361.1	3332.7	3230.5	2969.3	2895.5
35°	3173.7	3151.0	2997.7	2770.6	2702.5
37.5°	2986.3	2958.0	2764.9	2583.2	2498.1
40°	2799.0	2764.9	2554.9	2390.2	2299.4
42.5°	2623.0	2577.6	2373.2	2197.2	2095.0
45°	2435.6	2384.5	2180.1	1998.5	1919.0
47.5°	2248.3	2202.9	2015.5	1828.1	1737.3
50°	2049.6	2009.8	1839.5	1652.1	1555.6
52.5°	1884.9	1822.5	1657.8	1470.5	1391.0
55°	1691.9	1640.8	1487.5	1311.5	1243.4
57.5°	1515.9	1464.8	1322.8	1158.2	1101.4
60°	1351.2	1277.4	1158.2	1016.3	970.8
62.5°	1169.6	1112.8	1010.6	891.4	948.1
65°	1004.9	948.1	857.3	874.3	726.7
67.5°	823.2	794.8	715.4	635.9	613.2
70°	669.9	635.9	607.5	522.3	499.6
72.5°	533.7	499.6	459.9	414.5	397.4
75°	403.1	374.7	352.0	335.0	369.0
77.5°	278.2	266.8	249.8	232.8	227.1
80°	181.7	176.0	170.3	164.6	159.0
82.5°	107.9	107.9	107.9	107.9	107.9
85°	56.8	62.5	68.1	73.8	79.5
87.5°	34.1	34.1	39.7	45.4	51.1
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)