

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: P546432

Luminaire Tested: **FMR-24-4-LD4-1HI-35-UNV-81-85-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: P546432  
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-LD4-1HI-35-UNV-81-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

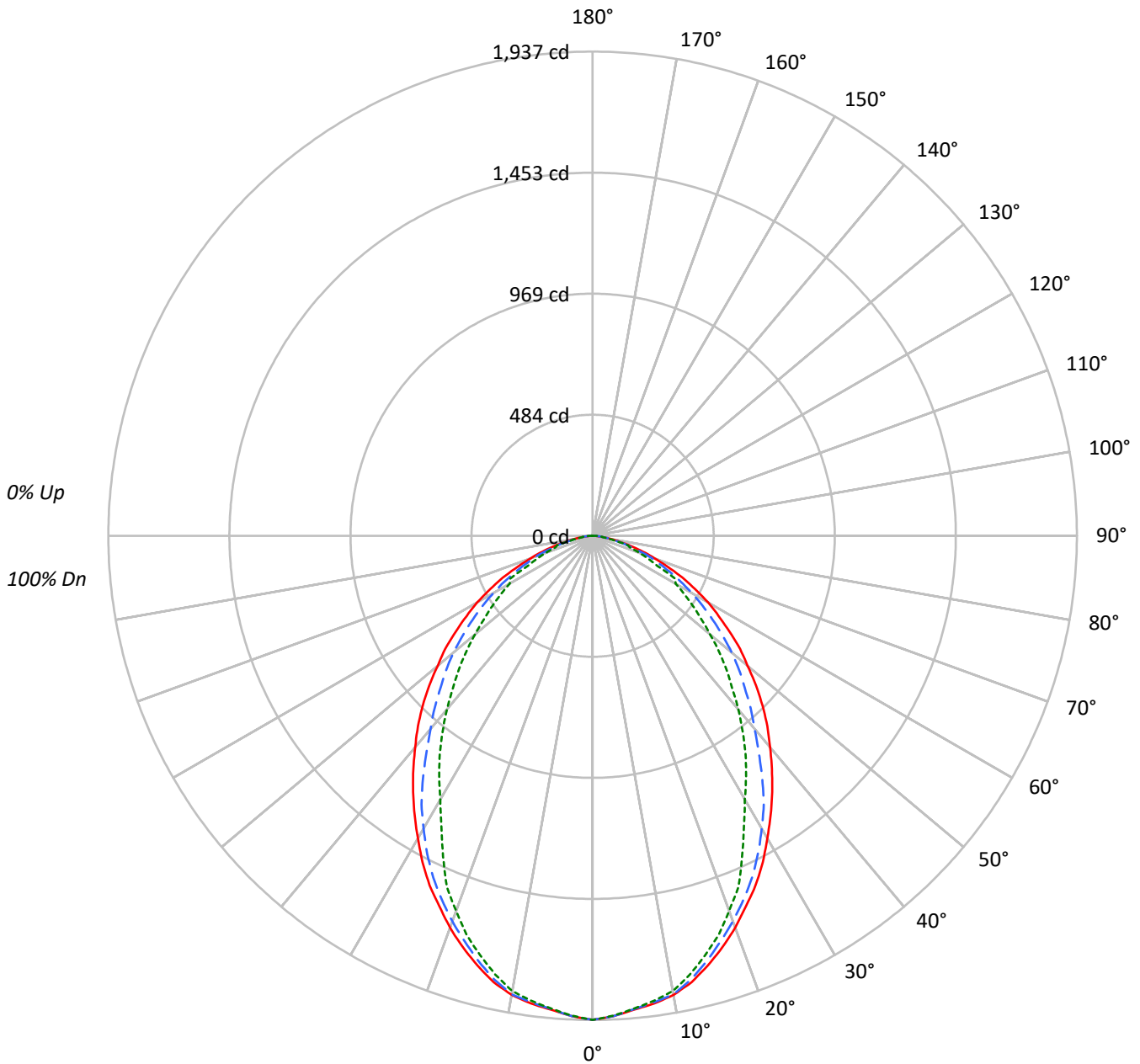
Lumens per Lamp: N/A  
Luminaire Lumens: 3802.0 lumens  
Efficiency: N/A  
Efficacy: 88.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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°	2606	2606	2606
5°	2570	2567	2564
10°	2548	2545	2527
15°	2479	2455	2420
20°	2388	2350	2286
25°	2290	2240	2101
30°	2171	2101	1892
35°	2056	1942	1750
40°	1939	1770	1593
45°	1828	1636	1440
50°	1692	1518	1284
55°	1565	1376	1150
60°	1434	1229	1030
65°	1262	1076	912
70°	1039	943	775
75°	827	722	756
80°	555	521	486
85°	346	415	483



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	180.3	4.7
10°-20°	494.8	13.0
20°-30°	685.0	18.0
30°-40°	730.4	19.2
40°-50°	666.3	17.5
50°-60°	522.0	13.7
60°-70°	340.2	8.9
70°-80°	150.7	4.0
80°-90°	32.3	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°	1360.0	35.8
0°-40°	2090.4	55.0
0°-60°	3278.7	86.2
0°-90°	3802.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3802.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1937	1937	1937	1937	1937	
5°	1903	1901	1901	1899	1899	181
15°	1780	1780	1762	1744	1737	500
25°	1543	1534	1509	1455	1415	708
35°	1252	1243	1182	1093	1066	782
45°	960	940	860	788	757	740
55°	667	647	587	517	490	598
65°	396	374	338	345	287	391
75°	159	148	139	132	146	170
85°	22	25	27	29	31	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1936.7	1936.7	1936.7	1936.7	1936.7
2.5°	1923.3	1923.3	1923.3	1921.0	1921.0
5°	1903.1	1900.9	1900.9	1898.6	1898.6
7.5°	1887.4	1885.2	1883.0	1880.7	1876.2
10°	1865.0	1865.0	1862.8	1851.6	1849.4
12.5°	1829.2	1827.0	1818.0	1802.4	1797.9
15°	1780.0	1780.0	1762.1	1744.1	1737.4
17.5°	1726.2	1724.0	1701.6	1683.7	1674.7
20°	1668.0	1663.5	1641.1	1612.0	1596.4
22.5°	1603.1	1603.1	1576.2	1538.2	1522.5
25°	1542.6	1533.7	1509.0	1455.3	1415.0
27.5°	1473.2	1459.8	1432.9	1356.8	1309.8
30°	1397.1	1390.4	1352.3	1253.8	1218.0
32.5°	1325.5	1314.3	1274.0	1171.0	1141.9
35°	1251.6	1242.6	1182.2	1092.6	1065.7
37.5°	1177.7	1166.5	1090.4	1018.7	985.1
40°	1103.8	1090.4	1007.5	942.6	906.8
42.5°	1034.4	1016.5	935.9	866.5	826.2
45°	960.5	940.4	859.8	788.1	756.8
47.5°	886.6	868.7	794.8	720.9	685.1
50°	808.3	792.6	725.4	651.5	613.5
52.5°	743.3	718.7	653.8	579.9	548.5
55°	667.2	647.1	586.6	517.2	490.3
57.5°	597.8	577.6	521.7	456.7	434.4
60°	532.9	503.8	456.7	400.8	382.9
62.5°	461.2	438.8	398.5	351.5	373.9
65°	396.3	373.9	338.1	344.8	286.6
67.5°	324.6	313.5	282.1	250.8	241.8
70°	264.2	250.8	239.6	206.0	197.0
72.5°	210.5	197.0	181.4	163.4	156.7
75°	159.0	147.8	138.8	132.1	145.5
77.5°	109.7	105.2	98.5	91.8	89.6
80°	71.6	69.4	67.2	64.9	62.7
82.5°	42.5	42.5	42.5	42.5	42.5
85°	22.4	24.6	26.9	29.1	31.3
87.5°	13.4	13.4	15.7	17.9	20.2
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)