

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: P546478

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-82-97-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: P546478  
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-40-UNV-82-97-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

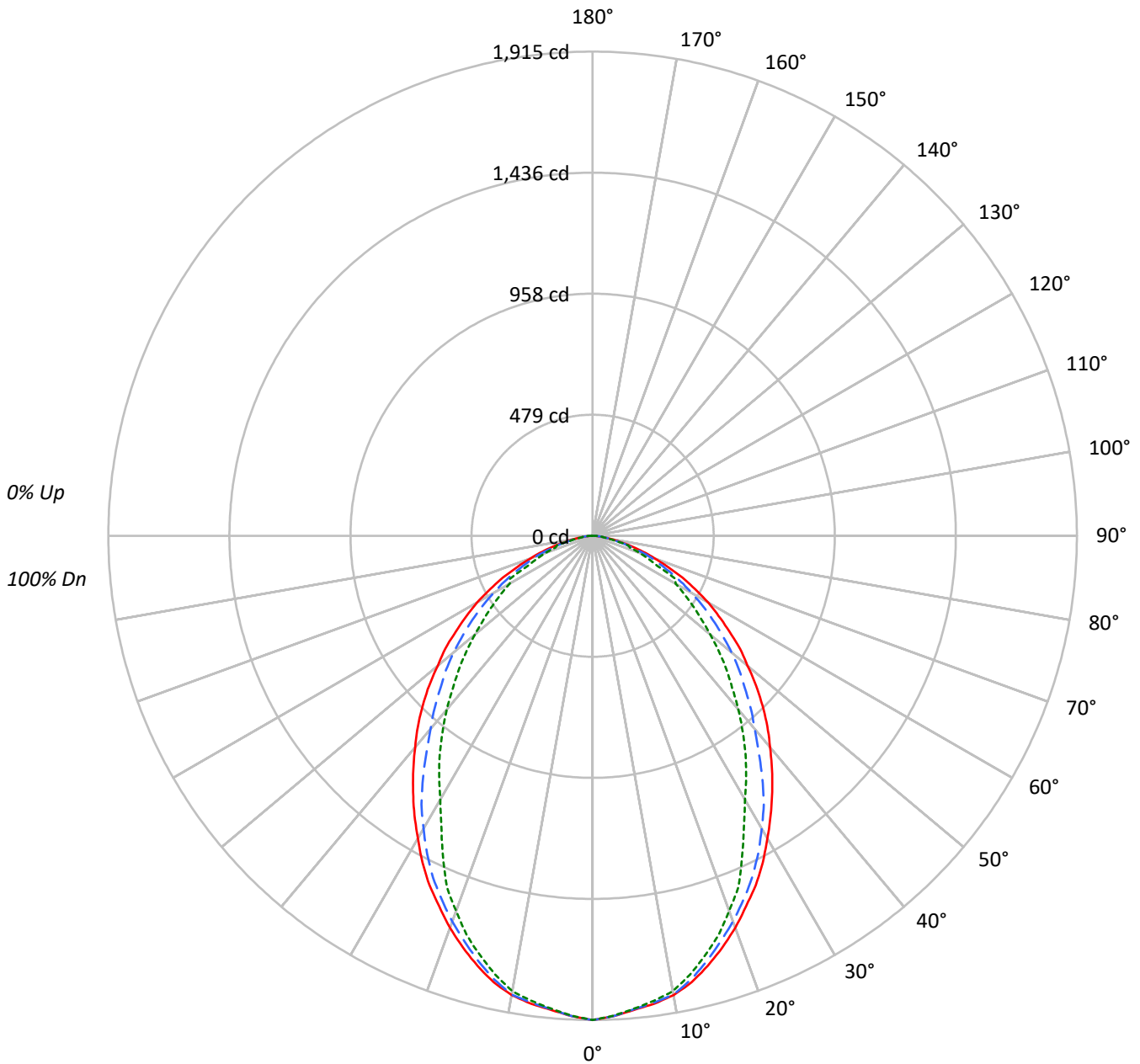
Lumens per Lamp: N/A  
Luminaire Lumens: 3760.0 lumens  
Efficiency: N/A  
Efficacy: 87.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2577	2577	2577
5°	2542	2539	2536
10°	2520	2517	2499
15°	2452	2427	2393
20°	2362	2324	2260
25°	2265	2216	2078
30°	2147	2078	1871
35°	2033	1920	1731
40°	1917	1750	1575
45°	1807	1618	1424
50°	1673	1502	1270
55°	1548	1361	1137
60°	1418	1216	1019
65°	1248	1064	902
70°	1028	932	767
75°	817	714	748
80°	549	514	480
85°	341	411	479



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	178.3	4.7
10°-20°	489.3	13.0
20°-30°	677.4	18.0
30°-40°	722.3	19.2
40°-50°	658.9	17.5
50°-60°	516.2	13.7
60°-70°	336.5	8.9
70°-80°	149.1	4.0
80°-90°	32.0	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°	1345.0	35.8
0°-40°	2067.3	55.0
0°-60°	3242.5	86.2
0°-90°	3760.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3760.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1915	1915	1915	1915	1915	
5°	1882	1880	1880	1878	1878	179
15°	1760	1760	1743	1725	1718	495
25°	1526	1517	1492	1439	1399	700
35°	1238	1229	1169	1080	1054	774
45°	950	930	850	779	748	732
55°	660	640	580	512	485	592
65°	392	370	334	341	283	386
75°	157	146	137	131	144	168
85°	22	24	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°	1915.3	1915.3	1915.3	1915.3	1915.3
2.5°	1902.0	1902.0	1902.0	1899.8	1899.8
5°	1882.1	1879.9	1879.9	1877.7	1877.7
7.5°	1866.6	1864.4	1862.2	1859.9	1855.5
10°	1844.4	1844.4	1842.2	1831.2	1828.9
12.5°	1809.0	1806.8	1797.9	1782.4	1778.0
15°	1760.3	1760.3	1742.6	1724.9	1718.2
17.5°	1707.2	1704.9	1682.8	1665.1	1656.2
20°	1649.6	1645.2	1623.0	1594.2	1578.7
22.5°	1585.4	1585.4	1558.8	1521.2	1505.7
25°	1525.6	1516.7	1492.4	1439.2	1399.4
27.5°	1457.0	1443.7	1417.1	1341.8	1295.3
30°	1381.7	1375.0	1337.4	1240.0	1204.5
32.5°	1310.8	1299.7	1259.9	1158.0	1129.2
35°	1237.7	1228.9	1169.1	1080.5	1054.0
37.5°	1164.7	1153.6	1078.3	1007.5	974.3
40°	1091.6	1078.3	996.4	932.2	896.8
42.5°	1023.0	1005.3	925.5	856.9	817.0
45°	949.9	930.0	850.3	779.4	748.4
47.5°	876.8	859.1	786.0	713.0	677.5
50°	799.3	783.8	717.4	644.3	606.7
52.5°	735.1	710.8	646.6	573.5	542.5
55°	659.8	639.9	580.1	511.5	484.9
57.5°	591.2	571.3	515.9	451.7	429.6
60°	527.0	498.2	451.7	396.3	378.6
62.5°	456.1	434.0	394.1	347.6	369.8
65°	391.9	369.8	334.3	341.0	283.4
67.5°	321.1	310.0	279.0	248.0	239.1
70°	261.3	248.0	236.9	203.7	194.9
72.5°	208.1	194.9	179.4	161.6	155.0
75°	157.2	146.1	137.3	130.6	143.9
77.5°	108.5	104.1	97.4	90.8	88.6
80°	70.9	68.6	66.4	64.2	62.0
82.5°	42.1	42.1	42.1	42.1	42.1
85°	22.1	24.4	26.6	28.8	31.0
87.5°	13.3	13.3	15.5	17.7	19.9
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)