

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: P546447

Luminaire Tested: **FMR-24-4-LD4-1HI-35-UNV-93-84-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: P546447  
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-93-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

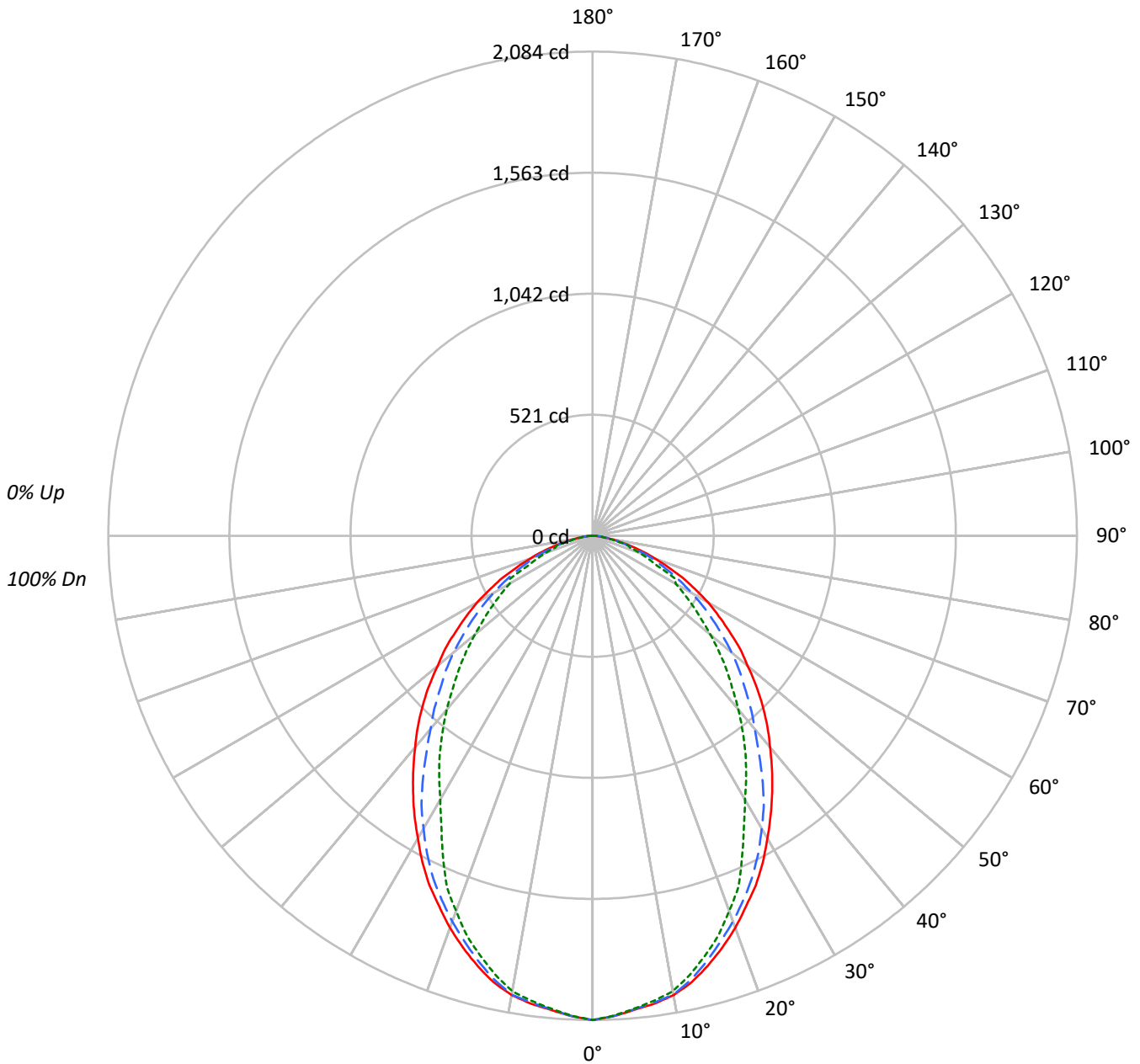
Lumens per Lamp: N/A  
Luminaire Lumens: 4092.0 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2805	2805	2805
5°	2766	2763	2760
10°	2742	2739	2719
15°	2668	2642	2605
20°	2570	2529	2460
25°	2465	2411	2261
30°	2336	2261	2037
35°	2213	2090	1884
40°	2087	1905	1714
45°	1967	1761	1550
50°	1821	1634	1382
55°	1685	1481	1238
60°	1543	1323	1109
65°	1358	1159	982
70°	1118	1014	834
75°	889	777	814
80°	597	560	523
85°	372	446	520



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	194.0	4.7
10°-20°	532.5	13.0
20°-30°	737.2	18.0
30°-40°	786.1	19.2
40°-50°	717.1	17.5
50°-60°	561.8	13.7
60°-70°	366.2	8.9
70°-80°	162.2	4.0
80°-90°	34.8	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°	1463.7	35.8
0°-40°	2249.8	55.0
0°-60°	3528.8	86.2
0°-90°	4092.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4092.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2084	2084	2084	2084	2084	
5°	2048	2046	2046	2043	2043	194
15°	1916	1916	1896	1877	1870	539
25°	1660	1651	1624	1566	1523	762
35°	1347	1337	1272	1176	1147	842
45°	1034	1012	925	848	814	796
55°	718	696	631	557	528	644
65°	426	402	364	371	308	420
75°	171	159	149	142	157	183
85°	24	26	29	31	34	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2084.4	2084.4	2084.4	2084.4	2084.4
2.5°	2070.0	2070.0	2070.0	2067.5	2067.5
5°	2048.3	2045.9	2045.9	2043.4	2043.4
7.5°	2031.4	2029.0	2026.6	2024.2	2019.3
10°	2007.3	2007.3	2004.9	1992.8	1990.4
12.5°	1968.7	1966.3	1956.7	1939.8	1935.0
15°	1915.7	1915.7	1896.5	1877.2	1869.9
17.5°	1857.9	1855.5	1831.4	1812.1	1802.5
20°	1795.2	1790.4	1766.3	1735.0	1718.1
22.5°	1725.4	1725.4	1696.4	1655.5	1638.6
25°	1660.3	1650.7	1624.2	1566.3	1522.9
27.5°	1585.6	1571.1	1542.2	1460.3	1409.7
30°	1503.7	1496.4	1455.5	1349.4	1310.9
32.5°	1426.6	1414.5	1371.1	1260.3	1229.0
35°	1347.0	1337.4	1272.3	1175.9	1147.0
37.5°	1267.5	1255.5	1173.5	1096.4	1060.3
40°	1188.0	1173.5	1084.4	1014.5	975.9
42.5°	1113.3	1094.0	1007.3	932.6	889.2
45°	1033.8	1012.1	925.3	848.2	814.5
47.5°	954.3	935.0	855.5	775.9	737.4
50°	869.9	853.0	780.8	701.2	660.3
52.5°	800.0	773.5	703.6	624.1	590.4
55°	718.1	696.4	631.3	556.6	527.7
57.5°	643.4	621.7	561.5	491.6	467.5
60°	573.5	542.2	491.6	431.3	412.1
62.5°	496.4	472.3	428.9	378.3	402.4
65°	426.5	402.4	363.9	371.1	308.4
67.5°	349.4	337.4	303.6	269.9	260.3
70°	284.3	269.9	257.8	221.7	212.1
72.5°	226.5	212.1	195.2	175.9	168.7
75°	171.1	159.0	149.4	142.2	156.6
77.5°	118.1	113.3	106.0	98.8	96.4
80°	77.1	74.7	72.3	69.9	67.5
82.5°	45.8	45.8	45.8	45.8	45.8
85°	24.1	26.5	28.9	31.3	33.7
87.5°	14.5	14.5	16.9	19.3	21.7
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)