

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: P546513

Luminaire Tested: **FMR-24-4-LD4-1HI-50-UNV-93-86-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: P546513  
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-50-UNV-93-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

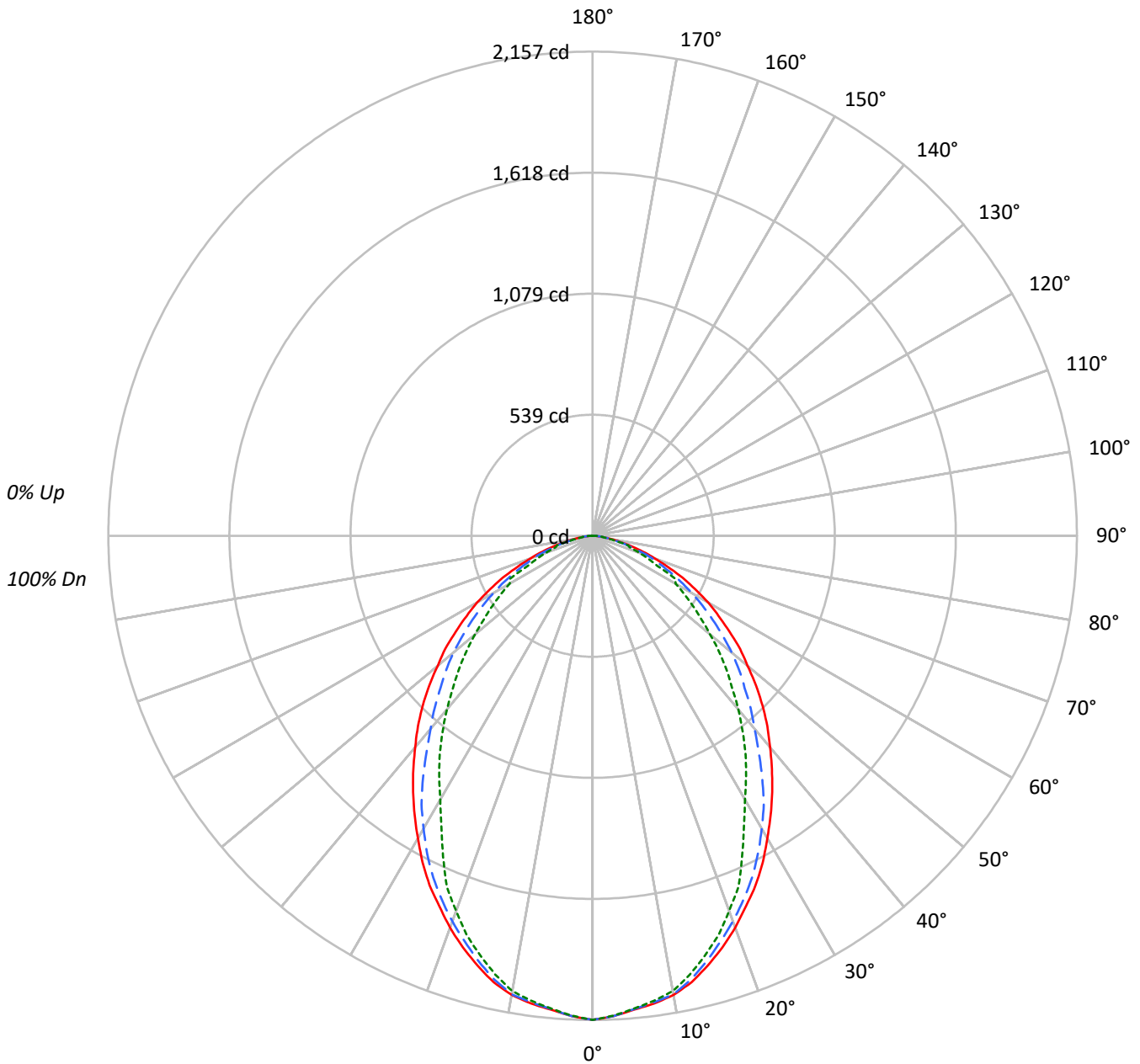
Lumens per Lamp: N/A  
Luminaire Lumens: 4234.0 lumens  
Efficiency: N/A  
Efficacy: 98.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2902	2902	2902
5°	2862	2859	2856
10°	2838	2834	2814
15°	2761	2733	2695
20°	2660	2617	2546
25°	2550	2495	2339
30°	2417	2340	2107
35°	2289	2162	1949
40°	2159	1971	1774
45°	2035	1822	1604
50°	1884	1691	1430
55°	1743	1533	1281
60°	1597	1369	1147
65°	1405	1199	1016
70°	1157	1050	863
75°	920	804	843
80°	618	580	541
85°	384	462	539



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	200.8	4.7
10°-20°	551.0	13.0
20°-30°	762.8	18.0
30°-40°	813.4	19.2
40°-50°	742.0	17.5
50°-60°	581.3	13.7
60°-70°	378.9	8.9
70°-80°	167.9	4.0
80°-90°	36.0	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°	1514.5	35.8
0°-40°	2327.9	55.0
0°-60°	3651.2	86.2
0°-90°	4234.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4234.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2157	2157	2157	2157	2157	
5°	2119	2117	2117	2114	2114	201
15°	1982	1982	1962	1942	1935	557
25°	1718	1708	1680	1621	1576	789
35°	1394	1384	1316	1217	1187	871
45°	1070	1047	957	878	843	824
55°	743	721	653	576	546	666
65°	441	416	376	384	319	435
75°	177	165	155	147	162	190
85°	25	27	30	32	35	35
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2156.7	2156.7	2156.7	2156.7	2156.7
2.5°	2141.8	2141.8	2141.8	2139.3	2139.3
5°	2119.3	2116.8	2116.8	2114.4	2114.4
7.5°	2101.9	2099.4	2096.9	2094.4	2089.4
10°	2077.0	2077.0	2074.5	2062.0	2059.5
12.5°	2037.1	2034.6	2024.6	2007.1	2002.2
15°	1982.2	1982.2	1962.3	1942.3	1934.8
17.5°	1922.4	1919.9	1894.9	1875.0	1865.0
20°	1857.5	1852.6	1827.6	1795.2	1777.8
22.5°	1785.2	1785.2	1755.3	1712.9	1695.5
25°	1717.9	1707.9	1680.5	1620.7	1575.8
27.5°	1640.6	1625.7	1595.7	1511.0	1458.6
30°	1555.8	1548.4	1506.0	1396.3	1356.4
32.5°	1476.1	1463.6	1418.7	1304.0	1271.6
35°	1393.8	1383.8	1316.5	1216.8	1186.8
37.5°	1311.5	1299.0	1214.3	1134.5	1097.1
40°	1229.2	1214.3	1122.0	1049.7	1009.8
42.5°	1151.9	1132.0	1042.2	964.9	920.0
45°	1069.6	1047.2	957.4	877.7	842.8
47.5°	987.4	967.4	885.1	802.9	763.0
50°	900.1	882.6	807.8	725.6	683.2
52.5°	827.8	800.4	728.1	645.8	610.9
55°	743.0	720.6	653.3	576.0	546.0
57.5°	665.7	643.3	580.9	508.6	483.7
60°	593.4	561.0	508.6	446.3	426.4
62.5°	513.6	488.7	443.8	391.5	416.4
65°	441.3	416.4	376.5	384.0	319.1
67.5°	361.5	349.1	314.2	279.3	269.3
70°	294.2	279.3	266.8	229.4	219.4
72.5°	234.4	219.4	202.0	182.0	174.5
75°	177.0	164.6	154.6	147.1	162.1
77.5°	122.2	117.2	109.7	102.2	99.7
80°	79.8	77.3	74.8	72.3	69.8
82.5°	47.4	47.4	47.4	47.4	47.4
85°	24.9	27.4	29.9	32.4	34.9
87.5°	15.0	15.0	17.5	19.9	22.4
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)