

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: P546658

Luminaire Tested: **FMR-24-4-LD4-1STD-50-UNV-81-87-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: P546658  
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-LD4-1STD-50-UNV-81-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

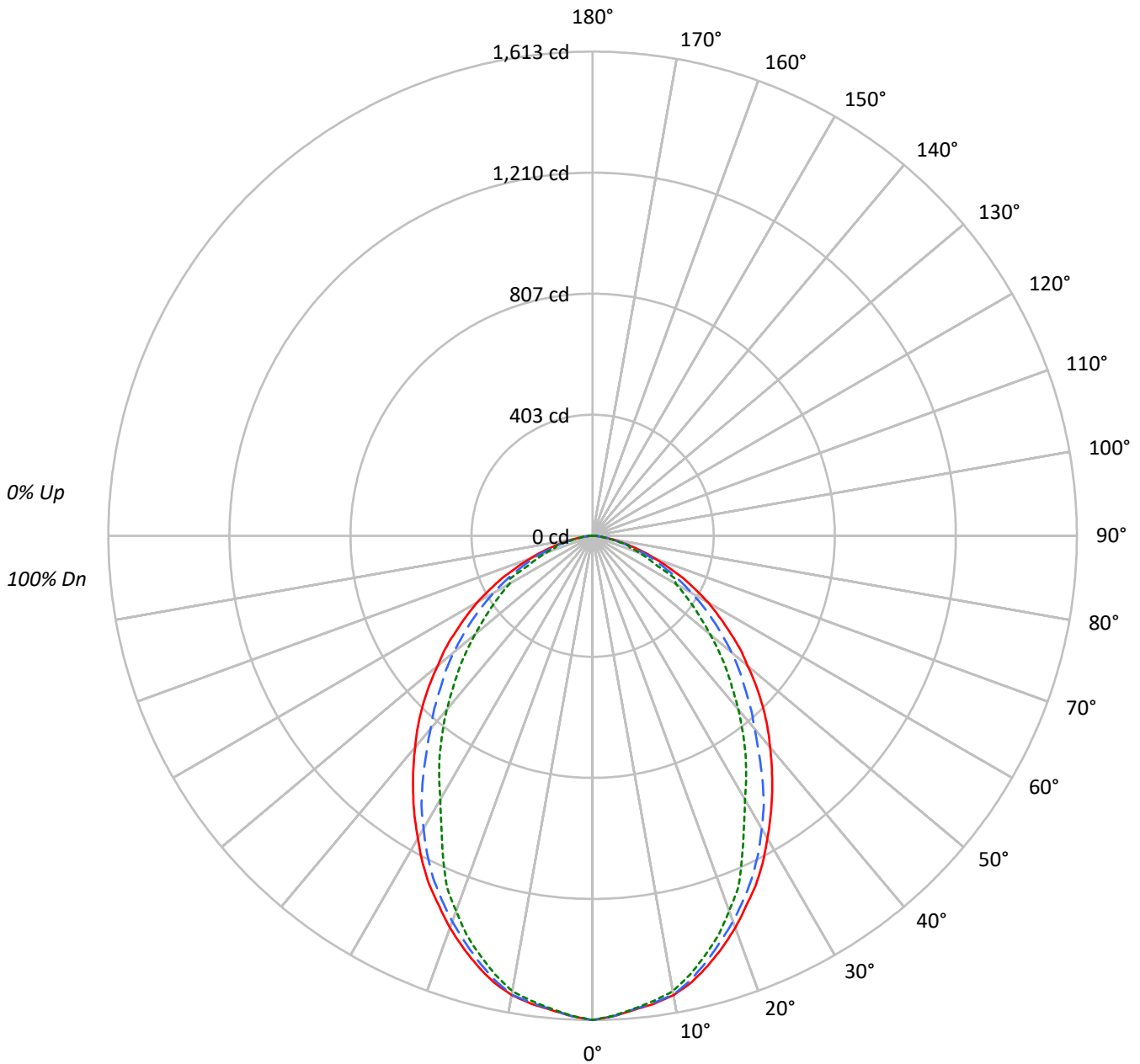
Lumens per Lamp: N/A  
Luminaire Lumens: 3167.0 lumens  
Efficiency: N/A  
Efficacy: 95.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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°	2171	2171	2171
5°	2141	2139	2136
10°	2122	2120	2105
15°	2065	2045	2016
20°	1989	1957	1904
25°	1908	1866	1750
30°	1808	1750	1576
35°	1712	1617	1458
40°	1615	1474	1327
45°	1522	1363	1200
50°	1409	1265	1070
55°	1304	1146	958
60°	1195	1024	858
65°	1051	897	760
70°	866	785	646
75°	688	601	630
80°	463	434	404
85°	289	346	403



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	150.2	4.7
10°-20°	412.1	13.0
20°-30°	570.6	18.0
30°-40°	608.4	19.2
40°-50°	555.0	17.5
50°-60°	434.8	13.7
60°-70°	283.4	8.9
70°-80°	125.6	4.0
80°-90°	27.0	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°	1132.9	35.8
0°-40°	1741.3	55.0
0°-60°	2731.1	86.2
0°-90°	3167.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3167.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1613	1613	1613	1613	1613	
5°	1585	1583	1583	1582	1582	150
15°	1483	1483	1468	1453	1447	417
25°	1285	1278	1257	1212	1179	590
35°	1042	1035	985	910	888	652
45°	800	783	716	656	630	616
55°	556	539	489	431	408	499
65°	330	312	282	287	239	325
75°	132	123	116	110	121	142
85°	19	20	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1613.2	1613.2	1613.2	1613.2	1613.2
2.5°	1602.0	1602.0	1602.0	1600.2	1600.2
5°	1585.3	1583.4	1583.4	1581.5	1581.5
7.5°	1572.2	1570.3	1568.5	1566.6	1562.9
10°	1553.5	1553.5	1551.7	1542.4	1540.5
12.5°	1523.7	1521.8	1514.4	1501.3	1497.6
15°	1482.7	1482.7	1467.8	1452.8	1447.2
17.5°	1437.9	1436.1	1417.4	1402.5	1395.0
20°	1389.4	1385.7	1367.0	1342.8	1329.7
22.5°	1335.3	1335.3	1313.0	1281.3	1268.2
25°	1285.0	1277.5	1257.0	1212.3	1178.7
27.5°	1227.2	1216.0	1193.6	1130.2	1091.0
30°	1163.8	1158.2	1126.5	1044.4	1014.6
32.5°	1104.1	1094.8	1061.2	975.4	951.2
35°	1042.5	1035.1	984.7	910.1	887.7
37.5°	981.0	971.7	908.3	848.6	820.6
40°	919.4	908.3	839.3	785.2	755.3
42.5°	861.6	846.7	779.6	721.8	688.2
45°	800.1	783.3	716.2	656.5	630.4
47.5°	738.5	723.6	662.1	600.5	570.7
50°	673.3	660.2	604.3	542.7	511.0
52.5°	619.2	598.7	544.6	483.0	456.9
55°	555.8	539.0	488.6	430.8	408.4
57.5°	498.0	481.2	434.5	380.5	361.8
60°	443.9	419.6	380.5	333.8	318.9
62.5°	384.2	365.5	332.0	292.8	311.5
65°	330.1	311.5	281.6	287.2	238.7
67.5°	270.4	261.1	235.0	208.9	201.4
70°	220.1	208.9	199.6	171.6	164.1
72.5°	175.3	164.1	151.1	136.1	130.6
75°	132.4	123.1	115.6	110.0	121.2
77.5°	91.4	87.7	82.1	76.5	74.6
80°	59.7	57.8	56.0	54.1	52.2
82.5°	35.4	35.4	35.4	35.4	35.4
85°	18.7	20.5	22.4	24.2	26.1
87.5°	11.2	11.2	13.1	14.9	16.8
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)