

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: P546630

Luminaire Tested: **FMR-24-4-LD4-1STD-40-UNV-81-97-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: P546630  
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-40-UNV-81-97-EDD  
Description: 2X4 FMR TROFFER WITH .156 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**

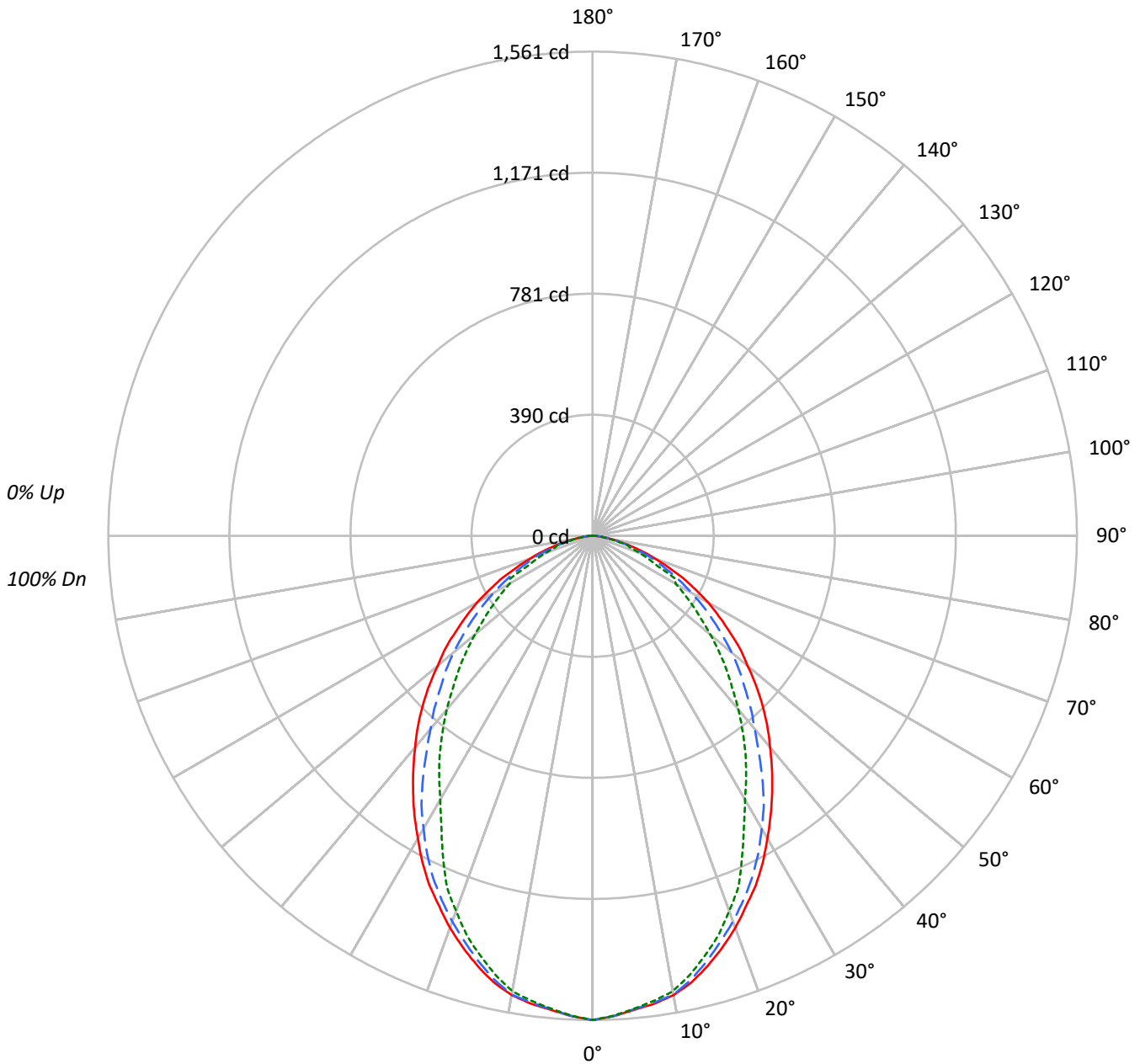
Lumens per Lamp: N/A  
Luminaire Lumens: 3065.0 lumens  
Efficiency: N/A  
Efficacy: 92.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2101	2101	2101
5°	2072	2070	2067
10°	2054	2052	2037
15°	1999	1979	1951
20°	1925	1894	1843
25°	1846	1806	1693
30°	1750	1694	1526
35°	1657	1565	1411
40°	1563	1427	1284
45°	1473	1319	1161
50°	1364	1224	1035
55°	1262	1109	927
60°	1156	991	830
65°	1017	868	735
70°	838	760	625
75°	666	582	610
80°	448	419	391
85°	278	335	391



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	145.3	4.7
10°-20°	398.9	13.0
20°-30°	552.2	18.0
30°-40°	588.8	19.2
40°-50°	537.2	17.5
50°-60°	420.8	13.7
60°-70°	274.3	8.9
70°-80°	121.5	4.0
80°-90°	26.1	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°	1096.4	35.8
0°-40°	1685.2	55.0
0°-60°	2643.1	86.2
0°-90°	3065.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3065.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1561	1561	1561	1561	1561	
5°	1534	1532	1532	1531	1531	146
15°	1435	1435	1420	1406	1401	403
25°	1244	1236	1216	1173	1141	571
35°	1009	1002	953	881	859	631
45°	774	758	693	635	610	596
55°	538	522	473	417	395	482
65°	320	301	272	278	231	315
75°	128	119	112	106	117	137
85°	18	20	22	24	25	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1561.3	1561.3	1561.3	1561.3	1561.3
2.5°	1550.4	1550.4	1550.4	1548.6	1548.6
5°	1534.2	1532.4	1532.4	1530.6	1530.6
7.5°	1521.6	1519.8	1518.0	1516.1	1512.5
10°	1503.5	1503.5	1501.7	1492.7	1490.9
12.5°	1474.6	1472.8	1465.6	1453.0	1449.4
15°	1434.9	1434.9	1420.5	1406.0	1400.6
17.5°	1391.6	1389.8	1371.8	1357.3	1350.1
20°	1344.7	1341.1	1323.0	1299.6	1286.9
22.5°	1292.3	1292.3	1270.7	1240.0	1227.4
25°	1243.6	1236.4	1216.5	1173.2	1140.7
27.5°	1187.6	1176.8	1155.2	1093.8	1055.9
30°	1126.3	1120.9	1090.2	1010.8	981.9
32.5°	1068.5	1059.5	1027.0	944.0	920.5
35°	1009.0	1001.7	953.0	880.8	859.1
37.5°	949.4	940.4	879.0	821.2	794.2
40°	889.8	879.0	812.2	759.9	731.0
42.5°	833.9	819.4	754.5	698.5	666.0
45°	774.3	758.1	693.1	635.3	610.1
47.5°	714.8	700.3	640.8	581.2	552.3
50°	651.6	638.9	584.8	525.2	494.6
52.5°	599.2	579.4	527.0	467.5	442.2
55°	537.9	521.6	472.9	416.9	395.3
57.5°	481.9	465.7	420.6	368.2	350.2
60°	429.6	406.1	368.2	323.1	308.6
62.5°	371.8	353.8	321.3	283.4	301.4
65°	319.5	301.4	272.5	278.0	231.0
67.5°	261.7	252.7	227.4	202.2	194.9
70°	213.0	202.2	193.1	166.1	158.8
72.5°	169.7	158.8	146.2	131.8	126.3
75°	128.2	119.1	111.9	106.5	117.3
77.5°	88.4	84.8	79.4	74.0	72.2
80°	57.8	56.0	54.1	52.3	50.5
82.5°	34.3	34.3	34.3	34.3	34.3
85°	18.0	19.9	21.7	23.5	25.3
87.5°	10.8	10.8	12.6	14.4	16.2
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)