

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: P546599

Luminaire Tested: **FMR-24-4-LD4-1STD-35-UNV-82-84-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: P546599  
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-35-UNV-82-84-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC 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**

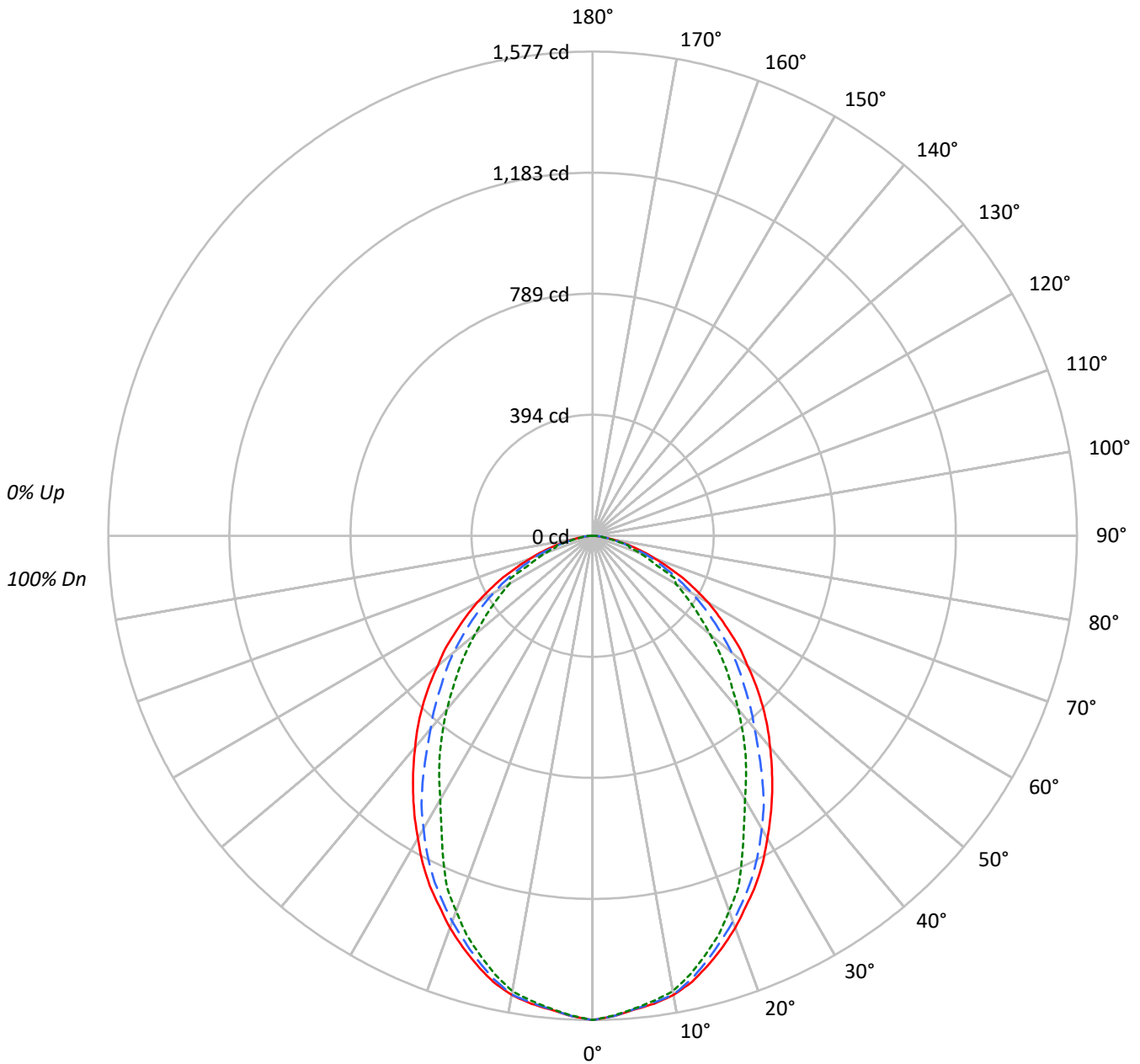
Lumens per Lamp: N/A  
Luminaire Lumens: 3096.0 lumens  
Efficiency: N/A  
Efficacy: 93.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2122	2122	2122
5°	2093	2091	2088
10°	2075	2072	2058
15°	2019	1999	1971
20°	1945	1914	1861
25°	1865	1824	1711
30°	1768	1711	1541
35°	1674	1581	1425
40°	1579	1441	1297
45°	1488	1332	1173
50°	1378	1236	1046
55°	1274	1121	937
60°	1168	1001	839
65°	1027	876	743
70°	846	768	631
75°	673	587	616
80°	452	424	395
85°	281	338	394



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.8	4.7
10°-20°	402.9	13.0
20°-30°	557.8	18.0
30°-40°	594.7	19.2
40°-50°	542.6	17.5
50°-60°	425.1	13.7
60°-70°	277.0	8.9
70°-80°	122.7	4.0
80°-90°	26.3	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°	1107.5	35.8
0°-40°	1702.2	55.0
0°-60°	2669.9	86.2
0°-90°	3096.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3096.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1550	1548	1548	1546	1546	147
15°	1449	1449	1435	1420	1415	407
25°	1256	1249	1229	1185	1152	577
35°	1019	1012	963	890	868	637
45°	782	766	700	642	616	602
55°	543	527	478	421	399	487
65°	323	304	275	281	233	318
75°	129	120	113	108	118	139
85°	18	20	22	24	26	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1577.1	1577.1	1577.1	1577.1	1577.1
2.5°	1566.1	1566.1	1566.1	1564.3	1564.3
5°	1549.7	1547.9	1547.9	1546.1	1546.1
7.5°	1537.0	1535.1	1533.3	1531.5	1527.8
10°	1518.7	1518.7	1516.9	1507.8	1506.0
12.5°	1489.5	1487.7	1480.4	1467.7	1464.0
15°	1449.4	1449.4	1434.9	1420.3	1414.8
17.5°	1405.7	1403.9	1385.6	1371.0	1363.7
20°	1358.3	1354.6	1336.4	1312.7	1299.9
22.5°	1305.4	1305.4	1283.5	1252.5	1239.8
25°	1256.2	1248.9	1228.8	1185.1	1152.3
27.5°	1199.7	1188.7	1166.8	1104.9	1066.6
30°	1137.7	1132.2	1101.2	1021.0	991.8
32.5°	1079.3	1070.2	1037.4	953.5	929.8
35°	1019.2	1011.9	962.6	889.7	867.8
37.5°	959.0	949.9	887.9	829.6	802.2
40°	898.8	887.9	820.4	767.6	738.4
42.5°	842.3	827.7	762.1	705.6	672.8
45°	782.1	765.7	700.1	641.8	616.2
47.5°	722.0	707.4	647.2	587.1	557.9
50°	658.2	645.4	590.7	530.5	499.6
52.5°	605.3	585.2	532.4	472.2	446.7
55°	543.3	526.9	477.7	421.2	399.3
57.5°	486.8	470.4	424.8	371.9	353.7
60°	433.9	410.2	371.9	326.4	311.8
62.5°	375.6	357.3	324.5	286.2	304.5
65°	322.7	304.5	275.3	280.8	233.4
67.5°	264.4	255.2	229.7	204.2	196.9
70°	215.1	204.2	195.1	167.7	160.4
72.5°	171.4	160.4	147.7	133.1	127.6
75°	129.4	120.3	113.0	107.6	118.5
77.5°	89.3	85.7	80.2	74.8	72.9
80°	58.3	56.5	54.7	52.9	51.0
82.5°	34.6	34.6	34.6	34.6	34.6
85°	18.2	20.1	21.9	23.7	25.5
87.5°	10.9	10.9	12.8	14.6	16.4
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)