

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: P546584

Luminaire Tested: **FMR-24-4-LD4-1STD-35-UNV-80-85-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: P546584  
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-80-85-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

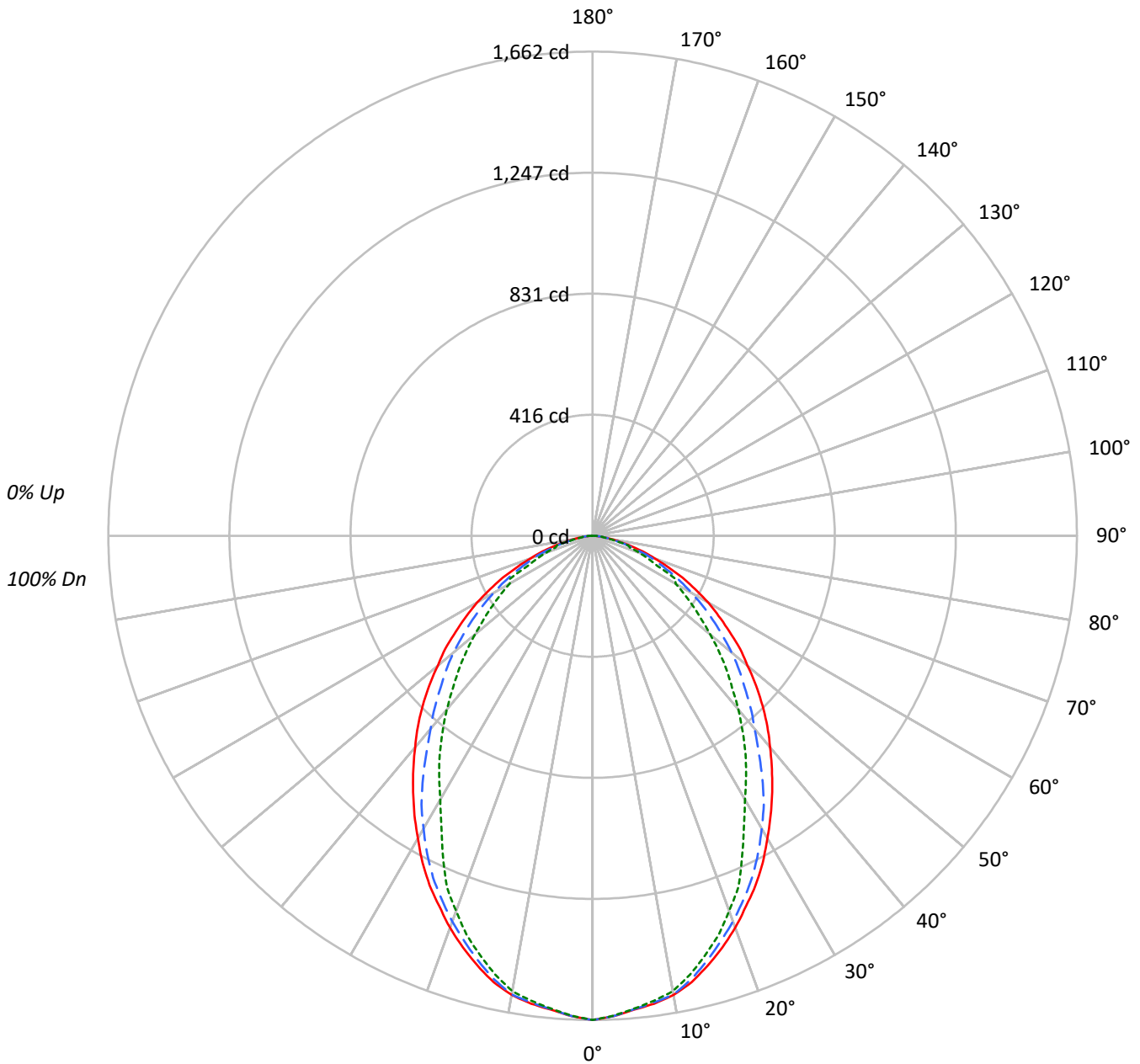
Lumens per Lamp: N/A  
Luminaire Lumens: 3263.0 lumens  
Efficiency: N/A  
Efficacy: 98.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	2236	2236	2236
5°	2206	2203	2201
10°	2187	2184	2169
15°	2128	2106	2077
20°	2050	2017	1962
25°	1965	1923	1803
30°	1863	1803	1624
35°	1764	1667	1502
40°	1664	1519	1367
45°	1568	1404	1236
50°	1452	1303	1102
55°	1343	1181	987
60°	1231	1055	884
65°	1083	924	783
70°	892	809	665
75°	709	619	649
80°	477	446	417
85°	296	357	415



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	154.7	4.7
10°-20°	424.6	13.0
20°-30°	587.9	18.0
30°-40°	626.8	19.2
40°-50°	571.8	17.5
50°-60°	448.0	13.7
60°-70°	292.0	8.9
70°-80°	129.4	4.0
80°-90°	27.8	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°	1167.2	35.8
0°-40°	1794.0	55.0
0°-60°	2813.9	86.2
0°-90°	3263.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3263.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1662	1662	1662	1662	1662	
5°	1633	1631	1631	1630	1630	155
15°	1528	1528	1512	1497	1491	429
25°	1324	1316	1295	1249	1214	608
35°	1074	1066	1015	938	915	672
45°	824	807	738	676	650	635
55°	573	555	503	444	421	514
65°	340	321	290	296	246	335
75°	136	127	119	113	125	146
85°	19	21	23	25	27	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1662.1	1662.1	1662.1	1662.1	1662.1
2.5°	1650.6	1650.6	1650.6	1648.7	1648.7
5°	1633.3	1631.4	1631.4	1629.5	1629.5
7.5°	1619.9	1617.9	1616.0	1614.1	1610.2
10°	1600.6	1600.6	1598.7	1589.1	1587.2
12.5°	1569.9	1568.0	1560.3	1546.8	1543.0
15°	1527.6	1527.6	1512.2	1496.9	1491.1
17.5°	1481.5	1479.6	1460.4	1445.0	1437.3
20°	1431.5	1427.7	1408.5	1383.5	1370.1
22.5°	1375.8	1375.8	1352.8	1320.1	1306.6
25°	1323.9	1316.3	1295.1	1249.0	1214.4
27.5°	1264.4	1252.8	1229.8	1164.5	1124.1
30°	1199.0	1193.3	1160.6	1076.1	1045.3
32.5°	1137.5	1127.9	1093.4	1005.0	980.0
35°	1074.1	1066.5	1014.6	937.7	914.7
37.5°	1010.7	1001.1	935.8	874.3	845.5
40°	947.3	935.8	864.7	809.0	778.2
42.5°	887.7	872.4	803.2	743.6	709.0
45°	824.3	807.0	737.9	676.4	649.5
47.5°	760.9	745.6	682.1	618.7	588.0
50°	693.7	680.2	622.6	559.2	526.5
52.5°	637.9	616.8	561.1	497.7	470.8
55°	572.6	555.3	503.4	443.9	420.8
57.5°	513.1	495.8	447.7	392.0	372.8
60°	457.3	432.3	392.0	344.0	328.6
62.5°	395.8	376.6	342.0	301.7	320.9
65°	340.1	320.9	290.2	295.9	246.0
67.5°	278.6	269.0	242.1	215.2	207.5
70°	226.7	215.2	205.6	176.8	169.1
72.5°	180.6	169.1	155.6	140.3	134.5
75°	136.4	126.8	119.1	113.4	124.9
77.5°	94.2	90.3	84.5	78.8	76.9
80°	61.5	59.6	57.6	55.7	53.8
82.5°	36.5	36.5	36.5	36.5	36.5
85°	19.2	21.1	23.1	25.0	26.9
87.5°	11.5	11.5	13.5	15.4	17.3
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)