

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: P546575

Luminaire Tested: **FMR-24-4-LD4-1LO-50-UNV-93-84-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: P546575  
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-LD4-1LO-50-UNV-93-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

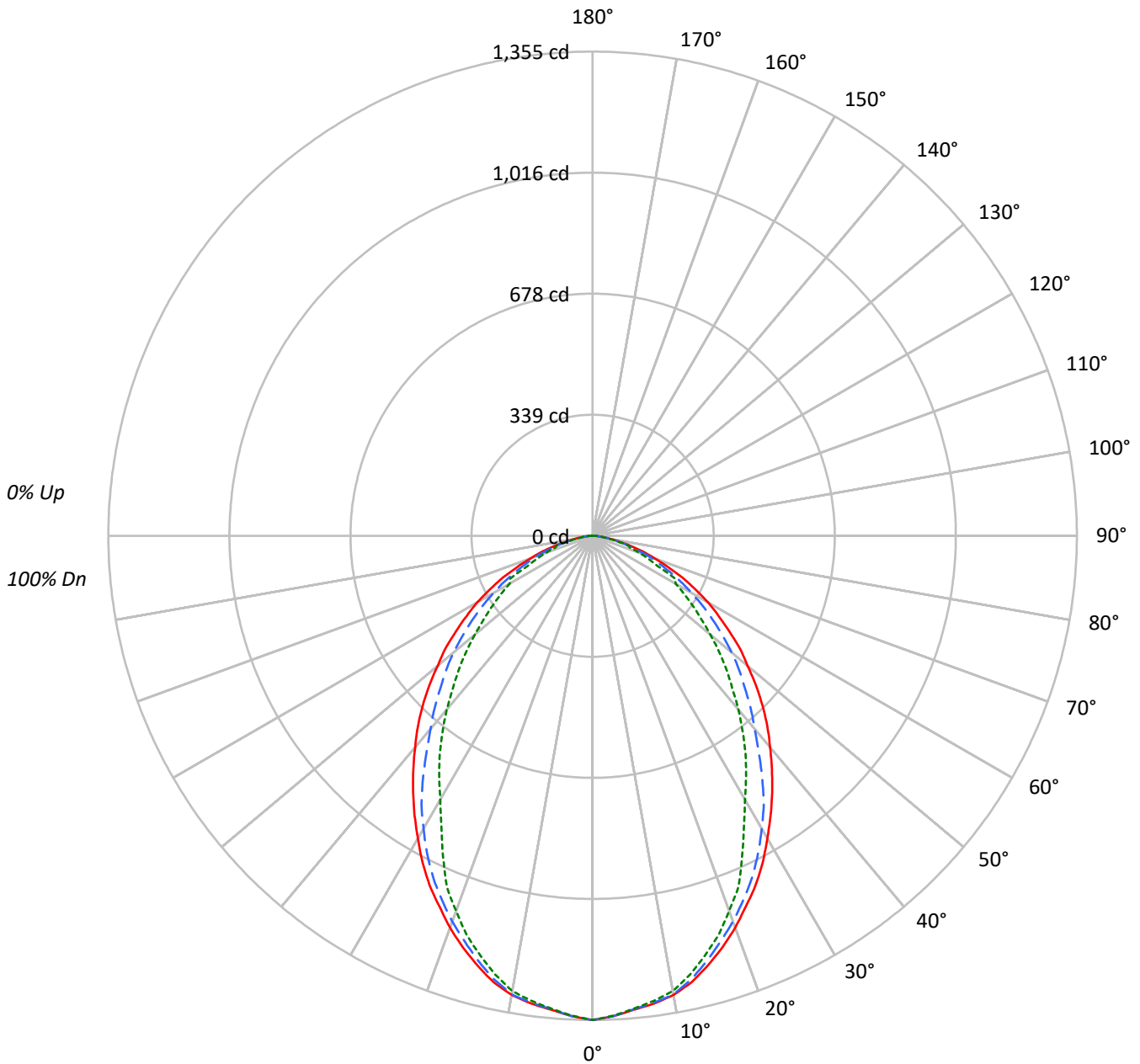
Lumens per Lamp: N/A  
Luminaire Lumens: 2660.0 lumens  
Efficiency: N/A  
Efficacy: 113.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
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°	1823	1823	1823
5°	1798	1796	1794
10°	1783	1781	1768
15°	1735	1717	1693
20°	1671	1644	1599
25°	1602	1567	1470
30°	1519	1470	1324
35°	1438	1359	1225
40°	1356	1238	1114
45°	1279	1145	1008
50°	1184	1062	898
55°	1095	963	805
60°	1003	860	721
65°	883	753	638
70°	727	659	542
75°	578	505	529
80°	388	364	340
85°	242	290	338



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.1	4.7
10°-20°	346.2	13.0
20°-30°	479.2	18.0
30°-40°	511.0	19.2
40°-50°	466.2	17.5
50°-60°	365.2	13.7
60°-70°	238.0	8.9
70°-80°	105.4	4.0
80°-90°	22.7	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°	951.5	35.8
0°-40°	1462.5	55.0
0°-60°	2293.9	86.2
0°-90°	2660.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2660.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1355	1355	1355	1355	1355	
5°	1332	1330	1330	1328	1328	126
15°	1245	1245	1233	1220	1216	350
25°	1079	1073	1056	1018	990	496
35°	876	869	827	764	746	547
45°	672	658	602	551	530	518
55°	467	453	410	362	343	419
65°	277	262	236	241	200	273
75°	111	103	97	92	102	119
85°	16	17	19	20	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1355.0	1355.0	1355.0	1355.0	1355.0
2.5°	1345.6	1345.6	1345.6	1344.0	1344.0
5°	1331.5	1329.9	1329.9	1328.3	1328.3
7.5°	1320.5	1318.9	1317.4	1315.8	1312.7
10°	1304.8	1304.8	1303.3	1295.4	1293.9
12.5°	1279.8	1278.2	1271.9	1261.0	1257.8
15°	1245.3	1245.3	1232.8	1220.3	1215.6
17.5°	1207.7	1206.2	1190.5	1178.0	1171.7
20°	1167.0	1163.9	1148.2	1127.8	1116.9
22.5°	1121.6	1121.6	1102.8	1076.1	1065.2
25°	1079.3	1073.0	1055.8	1018.2	990.0
27.5°	1030.7	1021.3	1002.5	949.3	916.4
30°	977.5	972.8	946.1	877.2	852.1
32.5°	927.3	919.5	891.3	819.2	798.9
35°	875.6	869.4	827.1	764.4	745.6
37.5°	823.9	816.1	762.9	712.7	689.2
40°	772.3	762.9	704.9	659.5	634.4
42.5°	723.7	711.2	654.8	606.2	578.0
45°	672.0	657.9	601.5	551.4	529.5
47.5°	620.3	607.8	556.1	504.4	479.3
50°	565.5	554.5	507.5	455.8	429.2
52.5°	520.1	502.8	457.4	405.7	383.8
55°	466.8	452.7	410.4	361.8	343.0
57.5°	418.2	404.1	365.0	319.6	303.9
60°	372.8	352.4	319.6	280.4	267.9
62.5°	322.7	307.0	278.8	245.9	261.6
65°	277.3	261.6	236.5	241.2	200.5
67.5°	227.1	219.3	197.4	175.4	169.2
70°	184.8	175.4	167.6	144.1	137.8
72.5°	147.2	137.8	126.9	114.3	109.7
75°	111.2	103.4	97.1	92.4	101.8
77.5°	76.8	73.6	68.9	64.2	62.7
80°	50.1	48.6	47.0	45.4	43.9
82.5°	29.8	29.8	29.8	29.8	29.8
85°	15.7	17.2	18.8	20.4	21.9
87.5°	9.4	9.4	11.0	12.5	14.1
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)