

Negative-Ion Concentration Testing

Preface

MAXMAC measures negative-ion output with a controlled airflow fixture, a defined measurement distance and recorded laboratory conditions. Each module is linked to its instrument indication, measurement photograph and pass judgment.

Six modules were measured at a 100 mm evaluation distance. All six displayed -1, recorded as an over-range indication above 20 million ions/cm³. This note presents the test conditions, fixture dimensions, annotated equipment, enlarged readings and individual sample evidence.

Specified Measurement Conditions

Parameter	Test condition
Ambient temperature	23 ± 5 °C
Relative humidity	45-75% RH
Measurement distance	100 mm
Air-speed setting	5.5 m/s
Recorded mass-flow setting	120 kg/h

Recorded Laboratory Environment

Stage	Temperature	Humidity
Start	25 °C	65% RH
End	25 °C	66% RH

Fixture Cross Sections

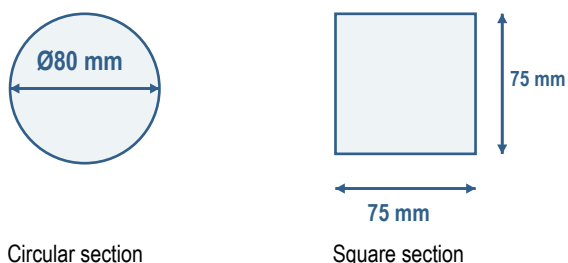


Figure 1 Circular and square sections recorded for the airflow fixture.

$$A_{\text{circle}} = \pi \times (80 / 2)^2 \approx 5.03 \times 10^3 \text{ mm}^2$$

$$A_{\text{square}} = 75 \times 75 = 5,625 \text{ mm}^2$$

Annotated Measurement Bench

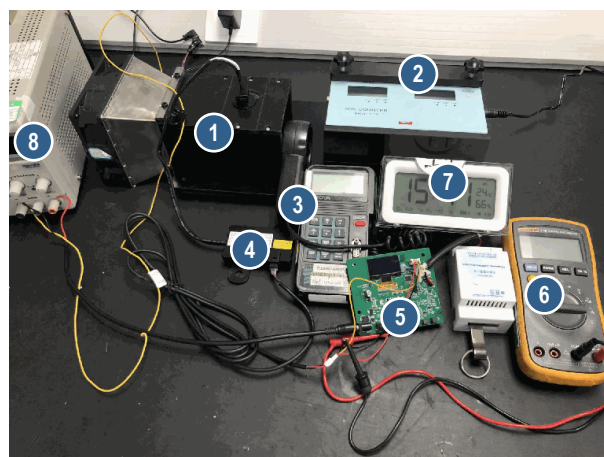


Figure 2 Original test bench with numbered equipment references.

No.	Equipment / function
1	Airflow fixture
2	NKMH-103 ion counter; E-143
3	PROVA AVM-07 air-speed meter; YC-14
4	Ion module under test
5	Module monitoring / interface board
6	Multimeter recording supply voltage
7	Clock with temperature / RH display
8	Bench power supply

Test basis: **Ion Generator DVP&R, V1.7**. Measurement date: **9 July 2025**.

Measurement Evidence and Sample Results

Measurement Procedure

1. Arrange

Identify the module and set the measurement distance to **100 mm** using the airflow fixture and ion counter.

2. Establish the conditions

Set the **5.5 m/s** air speed and check the environment and airflow.

3. Operate and record

Operate the module. Record the ion-counter indication and photograph the instruments with the sample.

4. Evaluate

Compare with **>20 million ions/cm³** and record the sample judgment.

Sample-Level Results

Sample	Display	Concentration result	Judgment
59#	-1	>20 million	Pass
60#	-1	>20 million	Pass
61#	-1	>20 million	Pass
62#	-1	>20 million	Pass
63#	-1	>20 million	Pass
64#	-1	>20 million	Pass

Table 1 Concentration unit: ions/cm³. Each row corresponds to the same-numbered photograph below.

All six samples received a **Pass** judgment. The report identifies -1 as the over-range indication above 20 million ions/cm³.

Key Instrument Readings: Sample 59#



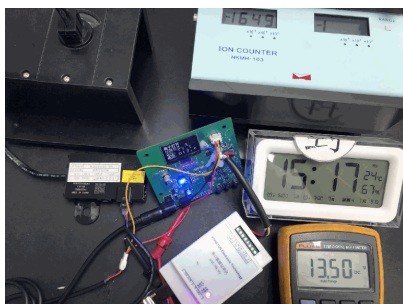
-1: recorded over-range indication.



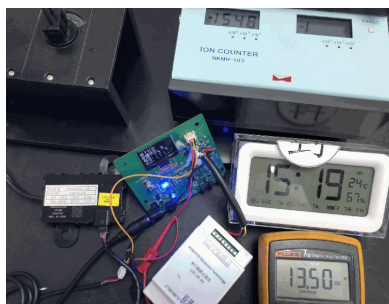
13.50 V DC: supply-voltage reading in the measurement photograph.

Figure 3 Enlarged details from the original measurement photograph for Sample 59#.

Individual Measurement Photographs



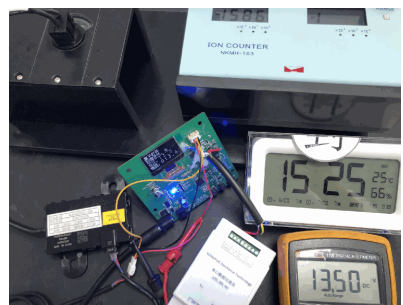
Sample 59# | -1 | Pass



Sample 60# | -1 | Pass



Sample 61# | -1 | Pass



Sample 62# | -1 | Pass



Sample 63# | -1 | Pass



Sample 64# | -1 | Pass

Figure 4 Source photographs for all six samples, shown in the same order as Table 1.

Source: MAXMAC Leg8 report, pp. 58-61. | Revision 1.1: 26 October 2026.