AI-200 Instruction Manual

Bokar International 650 Scranton Pocono Hwy., Covington Twp., 18444 PA USA
www.bokar.com e-mail: bokar@bokar.com

Please read before using the product

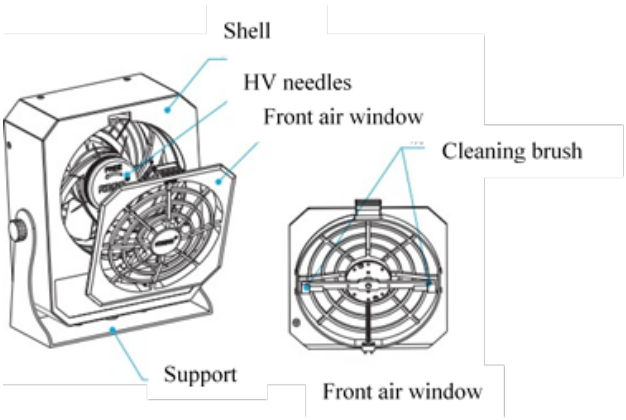
- Thank you for purchasing the AI-200 Ionizer
- Carefully read the manual before operating the product
- Store the manual in a safe, accessible place
- Only use the product in accordance with the manual. The manufacturer assumes no responsibility for improper operation

Observe the following safety precautions

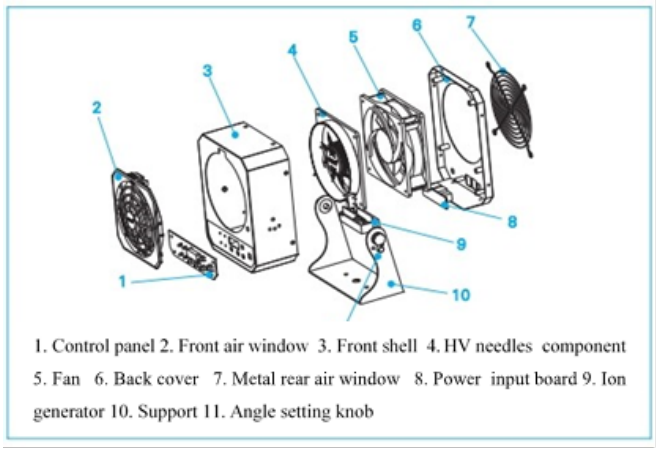
- Make sure the AI-200 unit is always grounded to avoid electric shock and guarantee ionizing properties
- Do not use the AI-200 unit where there are fire hazards or explosive hazards
- Keep the unit dry to prevent product failure and electric shock from short-circuiting
- Avoid putting the AI-200 power line in parallel to high voltage wires to prevent disturbance
- Carry out regular maintenance. The service life of the high voltage needle varies according to the application environment. If the unit is in an unfavorable environment (e.g. high humidity) or if the needle is dirty, performance may be decreased
- Only input the specified voltage. If the wrong voltage is input, the unit may not reach the specified parameters and may be damaged
- If the unit emits a strange smell or sound, immediately stop using it
- Avoid physical impacts. They may damage the internal components

AI-P Lux Features

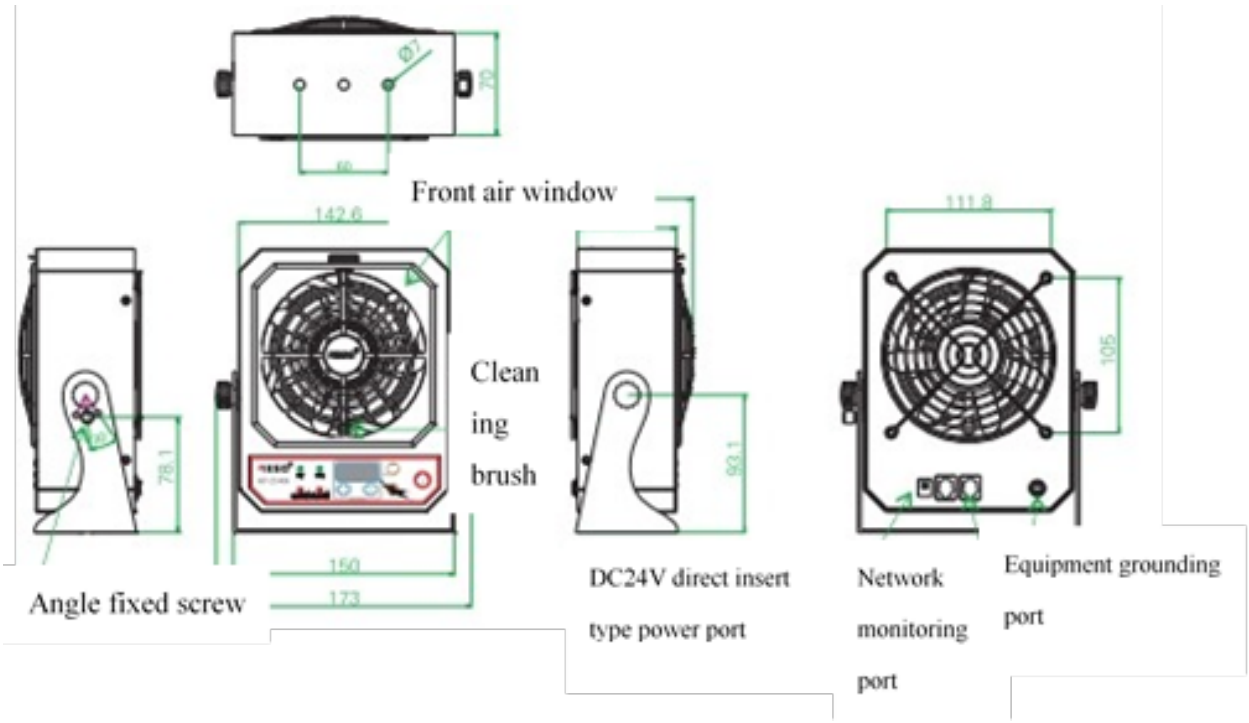
- Automatic system to balance ions within ±10V
- Automatic cleaning of the high voltage needles
- LED indicator light shows when additional cleaning is required (adjustable between 1-999 hours)
- LED indicator lights show when operation is abnormal
- Real-time wireless monitoring through a wireless receiver and transmitter
- Durable emitter needles constructed from a special tungsten alloy
- Easy removal of the front fan cover and high voltage needle module for maintenance



Product Structure



Exploded View



Overall Dimensions

Bokar International 650 Scranton Pocono Hwy., Covington Twp., 18444 PA USA
www.bokar.com e-mail: bokar@bokar.com

LED Indicators

H.V.	Indicates normal operation
H.V. Alarm	Indicates abnormal discharge or the electric circuit is over capacity. An alarm also rings
Fan	Indicates normal operation
Fan Alarm	Indicates abnormal fan operation. An alarm also rings

Specifications

Input Voltage	DC 24V ±5%
Method of Generating Ions	Corona Discharge
Fan Air Flow	2.56-4.07 m^3/min
Voltage Regulation Mode	High Frequency AC
Applied Voltage	12,200 V
Ion Balance	±10V (measured at 300mm)
Decay Time	2s (measured at 300mm)
Ozone Generation	<0.004ppm (measured 50mm)
Operating Temperature	0-40 ℃
Operating Humidity Range	15~75%
Size (mm)	192 x 173 x 82.3
Weight (Kg)	2.5

Test Results

Ionizing and Static Decay Time Test Results			
Operating Voltage	AC 110V/60Hz or AC 220V/50HZ		
Testing Voltage	±1000V ±100V		
Environment Temperature	23℃±2℃		
Distance (mm)	300	600	900
Positive Decay Time (s)	1.0	2.3	4.0
Negative Decay Time (s)	1.2	2.8	4.4
Positive Offset Voltage	<0±10V		
Negative Offset Voltage	<0±10V		

Note: Ionizing measurement value is determined according to the American EOS/ESD-STM3.3-2006 standard specifications. Test data will change with the test environment.

Front Panel Controls and Indicators

Fan operation Indicator light.

Normal operation: Solid Green

Abnormal operation (e.g. Front cover removed):

Blinking Green and beeping sound

Indicator light for normal Ionizing operation

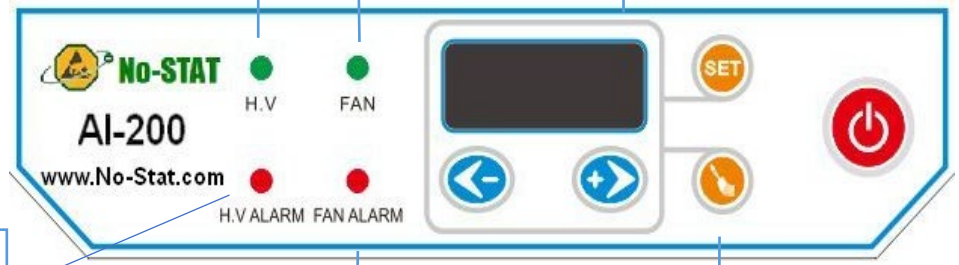
High Voltage Output: ±2200V; Frequency: 69KHz

Indicator light for abnormal high voltage operation

High Voltage Output: <±1800V; Frequency: <6569KHz

Indicator light for abnormal fan operation

Indicates that the fan is stuck, doesn't rotate, or is otherwise inoperable



Display:

After the unit is powered on, the display shows the previously set fan speed. It can be set in 7 steps (01 to 07). The display may also display an error number if operation is abnormal.

1. Pressing the blue arrows under the display changes the fan speed in increments between 01 and 07
2. If the unit malfunctions, the display will show the error number

Holding both arrows for more than 5 seconds will lock all buttons until both arrows are held down again for more than 5 seconds.

Button to set automatic tungsten needle cleaning time interval

When SET is pressed, the display shows H0XX (the previously set cleaning time interval; H = hours). The "0" will blink. Pressing the blue arrows under the display will change the setting from 0 to 9. Pressing SET again will confirm the first digit setting and move to the next digit, which will start to blink. Set the desired value using the blue arrows under the display. Repeat the process for the last digit of the time interval. Pressing SET again will return the display to normal operation.

Manual cleaning button

If the HV needles need to be manually cleaned, press . It causes the unit to suspend operation and the brush starts to carry out clockwise and anticlockwise cleaning for a few seconds.

Bokar International 650 Scranton Pocono Hwy., Covington Twp., 18444 PA USA

www.bokar.com e-mail: bokar@bokar.com

Maintenance

This section briefly describes the daily cleaning and maintenance required to ensure continuous satisfactory ion fan performance and to maximize service life.

When the fan is running, dust from the air may flow into the fan, stick to the protector or tungsten needles, or be absorbed into live parts. This will cause the affected needle to passivate. In turn, discharge declines sharply, and the ionizer fan will not perform as expected. The needles can be cleaned automatically. The following tables give suggested maintenance periods based on the cleanliness of the environment.

Recommended Maintenance Schedule

Cleanliness Class	Automatic Setting	Manual Cleaning
Class 10-100	192 Hours	30-60 Days
Class 100-1000	120 Hours	15-30 Days
Class 1000-10000	72 Hours	15-30 Days
General	60 Hours	15-30 Days
Dusty Workshop	24 Hours	10 Days

Manual Maintenance Instructions

Item	Procedure
Tungsten Needle	Remove the high voltage needles module by turning it counterclockwise. Then, clean it with a lint-free cloth dipped in ethanol
Front Air Window	Remove the Front Air Window and use a brush to clean it
Rear Air Window	Remove the Rear Air Window and use a brush to clean it

Network Monitoring System (design in progress)

The ionizer transmission module notifies the receiver of any abnormal operation. The receiver is connected to a computer and updates the status of the device in real time.

Example setup with PC support software

Future Features

- Monitor device operation in real time
- Display status and manage the device through the support software
- Support for up to 50 fans
- Transmission range of up to 180 meters
- Repeater to extend the range
- Support for monitoring the grounding conditions of up to five EPA work platforms

Note: The transmitter and the receiver are not included and must be purchased separately.

Service

During the Warranty Period

The warranty period is one year. Within one year of purchase, any fault caused by defects in manufacturing will be repaired by the company. Parts subjected to heavy wear and tear (e.g. O-rings and seals) are not covered.

After the Warranty Period

After the warranty expires, products will still be repaired by the company without charging labor. Parts cost and shipping will apply.

Note: The company reserves the right to modify product properties and technology at any time without further notification.

Parts List

The package should contain the following parts. Please confirm that all parts are included before using the product.

1 set: Ionizer Unit
1 pc: Computer Adapter
1 pc: Grounding Wire
1 pc: Manual
1 pc: Warranty Card

SMT: **www.Assembly-SMT.com** **www.FineRework.com** **www.X-Reflow306.com**
www.X-1003.com **www.SMTrepair.com** **www.SMTFocus.com**
www.SMTdispenser.com **www.BestBatchOven.com** **www.SMT-tool.com**
ESD: **www.ESDapparel.com** **www.ESDmeters.com** **www.ESDcarts.net**
www.ZeroCharge.net **www.No-Stat.com** **www.ESDchair.com**
www.ESDlabcoats.com **www.ESDbrushes.com** **www.SMT-ESD.com**
FX: www.FumeXtraction.com **www.Super-Iron.com** **www.ESDgloves.info**

Bokar International 650 Scranton Pocono Hwy., Covington Twp., 18444 PA USA
www.bokar.com **e-mail: bokar@bokar.com**