

AI-LC Ionizing Air Blower



Small, quiet and lightweight, yet uncompromising in performance, No-STAT's Ionizing blower, AI--LC provides superior static charge decay rates over a targeted work surface area. It provides optimum protection from the destructive effects of ESD by preventing contaminants from being attached to surfaces.

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SECTION 1: Description

No-Stat ionizing blower, AI-LC, produces an air flow that is rich in positive and negative ions. Directing the air flow on at object that has a static charge will neutralize the charge. If the object has a negative static charge, it will attract positive ions from the airflow. Conversely, if the object has a positive static charge, it will attract negative ions from the airflow. The ions are attracted to the oppositely charged object and neutralize the electrostatic charge on the object. The ionizing blow AI-LC is portable ionized air blower. It uses a small fan to produce air flow. The volume of air flow is controlled by a variable speed control which provides a wide range of air flow setting. The low wattage heating element (where applicable) can be turned on at any time for user's comfort. The ionizing elements are energized with a low current, high voltage transformer. The transformer contains a current limiting resistor which enhances ionization stability and provides for safety. The high voltage AC is applied to a circuit arrangement of stainless steel ion emitter points which result in an intense alternating electric field at the tip of the emitter points. It is this electric field that creates alternating polarity ions in the air flow. To be sure that the unit working properly, the high voltage AC is monitored by an ionization indicator lamp. The ionizer of the ionizing blower AI-LC features a patented balance circuit. The ionizing blower AI-LC also features a patented built-in emitter point on

weekly basis prevents the build-up of airborne debris all electrical ionizers are prone to. This keeps your ionizing blower AI-LC working in top form for the life of the unit. The ionizing blower AI-LC was designed for use with sensitive electronic components where electrostatic discharge is a problem. The ionizing blower AI-LC can also be used where static electricity causes problems such as attraction of dirt to product, misalignment of small parts due to electrostatic jumping and undesirable adhesion of plastic films due to electrostatic charge.

SECTION 2: Features

- 2.1 Small, lightweight and portable
- 2.2 Rapidly neutralizes static charge
- 2.3 Covers an extended distance with ionized air
- 2.4 Variable speed fan with wide range of air flow
- 2.5 Low wattage heater for operation comfort (where applicable)
- 2.6 Inherently balanced ion output
- 2.7 Patented ion emitter cleaner
- 2.8 Ionization indicator lamp
- 2.9 Durable electrically grounded metal enclosure

SECTION 3: Specifications

Bokar Part Number	AI-LC/12	AI-LC/22H	AI-LC/22	
Unit Part Number	4009885 *with Heater	4003368 *with Heater	4004442	
Line Voltage	120V AC, 60Hz	230V AC, 50Hz	230V AC, 50Hz	
Maximum Current Draw	1.7Amp *with Heater On	0.9Amp *with Heater On	0.15Amp	
Minimum Current Draw	0.1Amp	0.05Amp	0.05Amp	
Air Volume Output (Fan Setting – Low)	60CFM			
Air Volume Output (Fan Setting – High)	100CFM			
Air Velocity (Fan Speed – Low)	250FPM **1ft	200FPM **2ft	150FPM **3ft	125FPM **4ft

Air Velocity (Fan Speed – High)	500FPM **1ft	400FPM **2ft	300FPM **3ft	250FPM **4ft
Air Velocity	1' x 5' Area Coverage			
Heated Air Temp. (where applicable) (Fan Setting – Low)	25°F (14°C)			
Heated Air Temp. (where applicable) (Fan Setting – High)	11°F (6°C)			
Operating Temp.	25°F (0°C) - 122°F (50°C)			
Ozone Production	0.01ppm measured 6' in front of unit, fan setting low			
Audible Noise (Fan Setting Low)	50dB			
Audible Noise	57dB			
Enclosure	Aluminum			
Finish	Acrylic Enamel			
Weight	5.3 lbs (2.4 kgs)	5.7 lbs (2.6 kgs)		
Size	5-1/2" x 8-5/8" x 3-1/4" (14.0cm x 2.0cm x 8.4cm)			
Bench Stand Feet	Nonconductive, Non Staining Polymer			
Optional Air Filter	30PPI Open Cell Polyurethane Foam			
Fan Speed at High	5 **1ft (6 inches)	7 **2ft (6 inches)	9 **3ft (6 inches)	12 *4ft (6 inches)
	1.5 **1ft (center)	2.5 **2ft (center)	4 **3ft (center)	5 **4ft (center)
Fan Speed at Low	10 **1ft (6 inches)	18 **2ft (6 inches)	26 **3ft (6 inches)	34 **4ft (6 inches)
	3 **1ft (center)	6 **2ft (center)	10 **3ft (center)	16 **4ft (center)

*Air Velocity measured at center line of air stream

*Measured 6" in front of unit

*Audible Noise measured at 2ft from the unit

*Fan speed measured at 6" center line

**Offset voltage and discharge time determined as per ESD Associated Standard No.3 using 6" x 6" 20pF late (charged plate monitor). Discharge times are in second from 1000volts to 100 volts at locations shown

Note: Discharge times for high speed are 10% longer for 230V, 50Hz

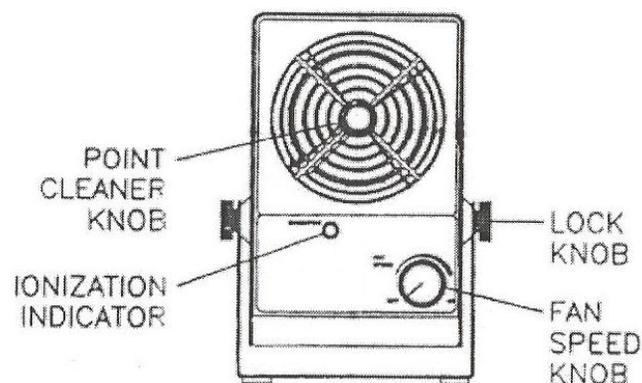
SECTION 4: Safety

- 4.1 Read instruction manual before installing or operating device.
- 4.2 Make sure that the unit is grounded before operating
- 4.3 Do not insert objects into the intake or the outlet grille.
- 4.4 Do not operate unit in flammable or explosive atmospheres.
- 4.5 Internal repairs the or servicing must be done by qualified personnel.

SECTION 5: Installation

The AI-LC is designed for portable or permanent operation. The bench stand can be used in permanent operation by bolting it to a sturdy flat surface such as a wall or under a shelf. If the bench stand is bolted in place, use ¼ inch diameter screw or bolts to secure it. The AI-LC should be placed approximately 1 to 3 feet from the critical work area or objects to be neutralized. It should be positioned to cover as much of the area as possible with the ionized airstream. The air stream can be directed upward or downward by tilting the unit in its stand. Tightening the lock knobs on each side of the unit secures it in position. The unit must be grounded for safe operation. Plug the unit into a standard (continental European) 3-terminal grounded receptacle. If an extension cord is necessary use only a 3 wire extension cord that provides grounding. The unit comes with line cord, without plug. A plug must be installed on the line cord for operation. Installation of the plug must be performed by qualified personnel. The color code for wiring the ply is as follow: Brown-Line, Blue-Neutral, Green/Yellow-Ground.

SECTION 6: Operation



Activate the AI-LC by turning the FAN SPEED knob clockwise, out of the OFF position. The IONIZATION INDICATOR will illuminate to indicate the presence of ionized air. Set the air flow as desired by adjusting the FAN SPEED knob. If warm air is available for operator comfort, set the WARM AIR switch to the ON position. The direction of the air stream can be adjusted upward or downward by loosening the LOCK KNOB, tilting the unit and retightening the knobs. To clean the ion emitter points, rotate the POINT CLEANER KNOB clockwise to the STOP (approximately one turn) and release. The ionizing blower PC produces an ionized air stream that covers a targeted area. The time required to neutralize a static charge on an item in the air stream depends on many factors. Two important factors are distance to ionizer and air velocity. Air ions constantly “neutralize” each other. Positive and negative ions are electrostatically attracted to each other when they contact, the charge transfers and the ions “with high air velocity, the ions travel further before they “recombine” with high air velocity. Setting the fan speed as high as acceptable result in more rapid neutralization. For fast neutralizing, the item should be held within 1 to 3 feet from the ionizing blower. For virtually instantaneous neutralization, the item may be held as close as 6 inches. When using the ionizing blower in an electronics assembly area, the ionized air stream should cover as much of the work area as possible. Charged items introduced into the work area will be neutralized and will remain neutral while in the ionized air steam.

SECTION 7: Maintenance

The ionizing blower AI-LC has been designed with low maintenance in mind. The only regular maintenance suggested is emitter point cleaning takes only seconds with the patented point cleaner. The ionizing blow PC contains a patented balancing circuit that is inherently self-balancing. This circuit compensates for dirt build-up on emitters, emitter point wear, line voltage fluctuations and variations in air velocity audit requirements.

7.1 Emitter Cleaning

To clean ion emitter points: simply rotate POINT CLEANER KNOB located at center of each outlet clockwise to the stop (approximately one turn) and release. The spring-loaded point cleaning brush will return to its parking spot.

Recommended frequency of cleaning is once a week

7.2 Air Inlet and Outlet Cleaning

The air inlet grille on the rear of the unit and the ionized air outlet should remain clean to prevent restriction of air flow. They can be cleaned with a soft brush or vacuum.

7.3 Air Filter Cleaning

Remove the air filter from the rear of the unit by unsnapping the filter retainer. Rinse the filter in plain water while gently squeezing. If the dirt is stubborn, wash the filter in mild soap and water then rinse. Blot the filter dry with paper towels and allow to dry. Install filter on air inlet and secure by snapping the filter retainer in place.

****IMPORTANT:** if an air filter is used, clean the air filter regularly.

7.4 Ion Output Check

To test the unit for ion output, the use of a charged plate monitor is recommended. Discharge times can be measured and checked against the ion output tables in Section 3, Specifications. If a charged plate monitor is not available, but a static meter such as a No-Stat hand held electrostatic field-meters available, ion output may be checked with the following procedure. Take a piece of plastic and rub it with cloth until a static charge can be read with the static meter. Turn on the ionizing blower PC. Hold the plastic one foot away from the ionized air outlet for five seconds. Remove the plastic from the ionized air stream and **measure the static** charge. The plastic should be neutralized. If no instrument available, the unit's operation can be verified with the following procedure. Tear off about a 10 inches length of Scotch® brand (or equivalent) transparent tape. Approach the non-adhesive side of the tape with your hand and note the electrostatic attraction of the tape to your hand. Pass the tape through the ionized air stream approximately foot from the unit and again approach the non-adhesive side of the tape with your free hand, if the tape has been neutralized it will not attract.

CAUTION! ELECTRICAL SHOCK HAZARD!

Do not insert objects through intake or outlet grille

Do not try to verify operation of unit by drawing a spark from an ion emitter point. The design of the balancing circuit makes the "spark test" inconclusive.

7.5 Ion Balance Check

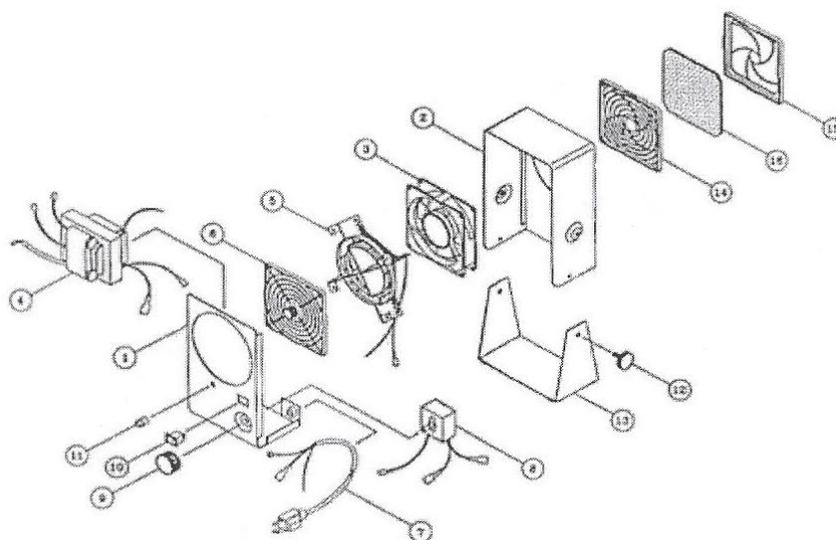
To test the unit for ion balance, the use of a charge plate monitor such as No-Stat Analyzer is recommended. Offset voltage should be measured and checked against the ion Balance in Section 3, Specifications.

Do not try to determine ion balance by holding a static meter in the ionized air stream. This will result meaningless reading.

7.6 Calibration

The ionizing blower AI-LC's ion output is inherently balanced by design. As a result, there is no calibration adjustment. After checking the ion balance as outlined above, if an unbalance or offset voltage exists in excess of ± 5 volts, contact No-Stat Customer Service.

SECTION 8: Replacement Parts



Item	Part Number	Description
1	REF	Chassis
2	REF	Lid
3	4104622	Fan, 120V AC
	4104639	Fan, 230V AC (with Heater)
	4105614	Fan, 230V AC (without Heater)
4	4630160	H.V. Transformer, 120V AC
	4630161	H.V. Transformer, 230V AC (with Heater)
	4630172	H.V. Transformer, 230V AC (without Heater)
5	4104523	Ionizer/Heater Assembly, 120V AC
	4104640	Ionizer/Heater Assembly, 230V AC
	4104578	Ionizer Assembly (without Heater)
6	4104515	Outlet Grille (includes Point Cleaner)

7	4104512	Line Cord Assembly, 120V AC (North America)
	4105947	Line Cord Assembly, 230V AC (Europe)
	4104541	Line Cord Assembly, 230V AC (without Plug)
8	4104526	Fan Speed Control, 120V AC
	4104542	Fan, Speed Control, 230V AC
9	4104514	Knob (for Speed Control)
10	4610783	Rocket Switch
11	4670900	Lock Knob (2 Required)
12	4610782	Indicator Lamp Lens
13	4104524	Bench Stand
14*	4710018	Inlet Grille
15*	4710017	Air Filter Retainer
16*	4100810	Air Filter Retainer (Package of 6)

*Optional parts

SECTION 9: Warranty

No-Stat warrants its products to be free of defects in components, workmanship or materials for a period of one year from the date of purchase. This warranty does not apply to any physical or electrical damage caused by misuse, abuse or negligence (such as any modifications made to the unit or service work done by any other than No-Stat authorized technicians). Any unit with altered or removed serial number is ineligible for warranty.

No-Stat will not be liable for loss or damage due directly or indirectly to an occurrence or use for which the product is not designed or intended. In no event shall No-Stat be liable for incidental or consequential damages except where state or regional laws override.

This warranty extends to the original purchaser and is not transferable. No person, agent, distributor, dealer or company is authorized to change, modify or amend the terms of this warranty in any manner whatsoever.

All products returned must have an "RA" (Return Authorization) number regardless of warranty status. Call No-Stat for an assigned "RA" number.

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