SIMCO ION™
An ITW Company

IONIZATION SOLUTIONS

Point of Use Ionizing Blower

Model 6432e

User's Manual

About Simco-Ion

Simco-Ion develops, manufactures, and markets system solutions to manage electrostatic charge. As the world's largest provider of electrostatics management products and services, Simco-Ion improves its customers' business results by providing a total solution to their electrostatic discharge and electromagnetic interference challenges. Simco-Ion Technology Group is a division of Illinois Tool Works (ITW), located in Alameda, California. For more information about Simco-Ion visit www.simco-ion.com or call 800-367-2452. Simco-Ion is ISO 9001 and ANSI ESD S20.20 certified.

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Description

1.1 Point of Use Ionizing Blower Model 6432e

The Point of Use Ionizing Blower Model 6432e controls static discharge in areas where static build-up can cause contamination, ESD, material-handling problems, or microprocessor lock-up. The internal emitter points are electrostatically shielded to eliminate field-induced charging. Steady-state DC ion emission provides fast discharge with low airflow.

The Model 6432e features a red alarm indicator LED on the front of the Blower. See **2.8 Alarms** section for a discussion of the alarm function. The eight-pin terminal strip provides a 4-20 mA current loop and relay output connection to your facility monitoring system (FMS) in addition to the 24 VDC input connection.

Figure 1. Front of the Model 6432e Blower

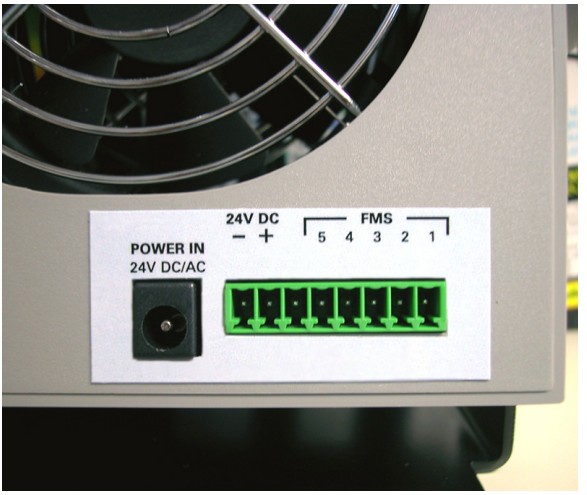


Figure 2. Back of Model 6432e Blower

1.2 IsoStat® Technology

IsoStat technology makes Simco-Ion ionizing Blowers the most reliable ionizers available. IsoStat enables them to operate without grounding wires or cables and still maintain ionizer balance. The Model 6432e Blower's internal emitter points are electrostatically shielded to eliminate field-induced charging. Steady-state DC ion emission provides fast discharge with low airflow.

Ionizers incorporating IsoStat technology never need calibration and require very little maintenance. IsoStat is based on a law of physics, Conservation of Charge, which states that charge cannot be created or destroyed in an isolated system. By isolating the ionizer's emitter points from ground, IsoStat ensures equal numbers of positive and negative ions.

1.3 Performance

The Blower will reduce a static charge of ±1,000V down to ±100V in approximately 4 seconds at a distance of 1 ft. (30.48 cm) when powered with 24 VAC. See the table below for typical discharge times as determined by distance. Distance is measured from the front center of the Blower. Ionization balance is better than ±20V at 1 ft. (30.48 cm).

Distance	Discharge Time
1 foot (30.48 cm)	4 seconds
2 feet (61 cm)	7 seconds
3 feet (91.44 cm)	11 seconds
4 feet (122 cm)	17 seconds

Table 1. Distance/Discharge Time when Powered with 24 VAC

Testing was performed with a charged plate monitor in accordance with ionization standard ANSI/ESD STM3.1-2006 of the ESD Association.

Note: The performance of the Model 6432 will be reduced slightly when the unit is powered with 24 VDC.

1.4 Power Requirements

The Model 6432e Blower can receive power from four different sources. Three different power supplies are available as options for the Blower, providing 24 VDC or 24 VAC. The fourth power source for the Blower is 24 VDC from your process equipment using the terminal block and eight pin connector on the rear of the Blower.

Caution:	The use of improper input voltage may result in poor performance or damage to the unit. The transformer should not be operated beyond the specified electrical limit as described in the **Specifications** section of this manual. Damage caused to the transformer from operation in an environment that exceeds the specified limits will void the warranty.

Achtung:	Unzulässige Eingangsspannung kann zu schlechter Leistung und Beschädigung des Gerätes führen. Der Transformator sollte nicht außerhalb der spezifizierten Grenzen, wie in diesem Handbuch angegeben, betrieben werden. Schäden am Transformator, verursacht durch Betrieb außerhalb der festgelegten Grenzwerte, fallen nicht unter die Garantiebestimmungen.

The maximum power requirement for the Blower is 6W.

Simco-Ion offers three power supplies for use with this product:

- Transformer (part number 14-1320-01) for use with 120 VAC/60 Hz systems.
- Transformer (part number 14-1330) for use with 230 VAC/50 Hz systems.

Both 14-1320-01 and 14-1330 provide the Blower with appropriate 24 VAC power.

- Universal power supply (part number 14-1322) for use with 100-240 VAC systems provides 24 VDC output.

2

Setup & Operation

2.1 Box Contents

The Blower is supplied with:

- Two round mounting stand knobs.
- Two truss-head screws for securing the bracket (p/n 28-3328).
- One 8-pin terminal block plug for connecting to tool power (p/n 18-2308).
- Certificate of Compliance.

In addition, the following options may be included if they have been ordered:

- A benchtop or in-tool mounting stand.
- One of the following three power supplies:
    - 120 VAC transformer (#14-1320-01)
    - 230 VAC transformer (#14-1330)
    - AC/DC universal power supply (#14-1322).

If you ordered an AC/DC universal power supply (#14-1322), you will have one of the following plug adapters:

- US wall outlet adapter (p/n 18-0285)
- UK wall outlet adapter (p/n 18-0286)
- Europe wall outlet adapter (p/n 18-0287)
- Australia/China wall outlet adapter (p/n 18-0288).

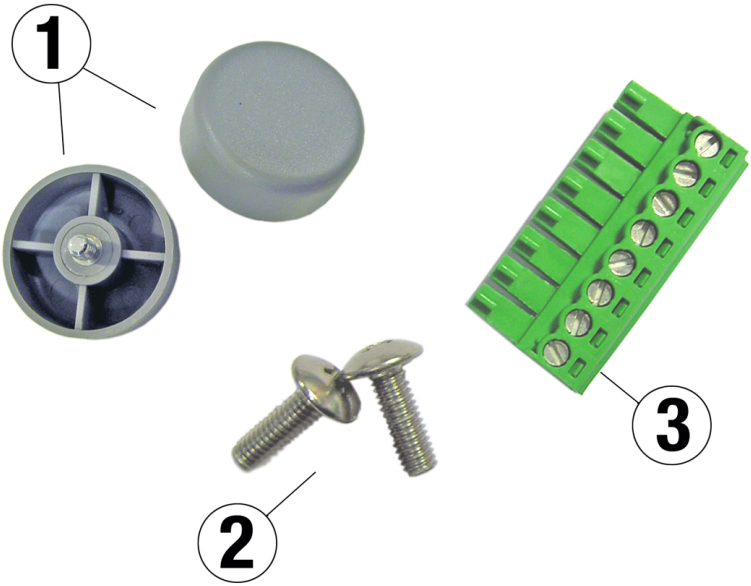


Figure 3. Mounting Stand Knobs, Screws, and 8-pin Terminal Block

2.2 Mounting Stand Installation and Placement

Two mounting stands are available with the Blower.

- Benchtop
- In-tool

Benchtop Stand

Figure 4. Benchtop Stand

1. Fasten the Blower to the mounting stand using the molded knobs supplied with the chassis.
2. To adjust the stand, loosen the side knobs on the Blower and adjust the Blower to the appropriate angle.
3. Re-tighten the knobs to secure the Blower in place.
4. Aim the Blower so that its airflow travels directly to your target.

In-tool Stand

1. Fasten the Blower to the mounting stand using the molded knobs supplied with the chassis.
2. To adjust the benchtop stand, loosen the side knobs on the Blower and adjust the Blower to the appropriate angle.
3. Re-tighten the knobs to secure the Blower in place.
4. Aim the Blower so that its airflow travels directly to your target.

Figure 5. In-tool Stand

In-tool stand placement: Use the included truss-head screws (see **Figure 3**) to secure the bracket to a surface.

Caution:	To ensure proper Blower stability, the “in-tool” stand should always be fastened to an underlying support structure and not used as an unsecured, free-standing unit.

Achtung:	Um eine ausreichende Stabilität des Blowers zu gewährleisten, sollte der "In-Tool"-Stand immer auf einer darunter liegenden Tragkonstruktion befestigt werden und nicht als ungesicherte, freistehende Einheit verwendet werden.

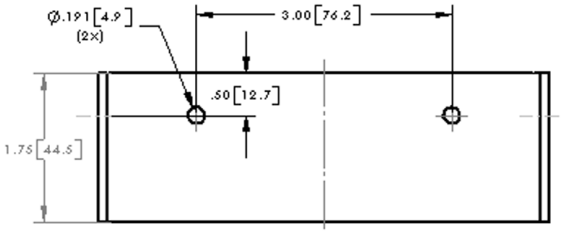


Figure 6. In-tool Bracket--Mounting Hole Locations on Underside of Bracket

2.3 Mounting Stand Knob Replacement

The standard knobs on the mounting stand may be replaced with the truss head screws that are packaged with the Blower if desired. The screws allow for an improved grip on the mounting stand as they can be tightened down using a standard Phillips screwdriver. To install the screws:

1. One side at a time, unscrew and remove the knobs from the sides of the Blower.
2. Thread the machine screws through the mounting stand and into the chassis. Use a Phillips screwdriver to tighten the screws.

Figure 7. Machine Screw Installed in a Benchtop Mounting Stand

2.4 Blower Placement

Place the Model 6432e Blower in the desired in-tool or benchtop location. (See **Table 1 on page 5** for discharge time distance recommendations.)

Caution:	Do not use this Blower in an explosive environment. Poorly maintained ionizers could produce minuscule electric arcs at the emitter points. This may cause detonation in an explosive environment.

Achtung:	Verwenden Sie dieses Gebläse nicht in explosionsgefährdeten Bereichen. Schlecht gewartete Ionisatoren können an den Emitter-Punkten Lichtbögen erzeugen und in explosiver Umgebung eine Explosion auslösen.

2.5 Power Connections

The Blower may be powered by an optional 24 VAC 120 or 220 volt transformer or a 24 VDC universal AC adapter, sold separately by Simco-Ion. Plug the transformer or universal AC adapter into a properly grounded VAC receptacle with the correct voltage for your power supply.

Power Supply Connection

Insert the power cable from the transformer or AC adapter into the **Power In** receptacle on the back of the Blower. See the **Performance** and **Power Requirements** sections for additional information.

AC Adapter Connection

The AC adapter (Simco-Ion p/n 14-1322) output is 24 VDC at 400 mA, maximum.

The AC adapter is shipped with its plug adapter uninstalled. To install the plug adapter, slide it into the bay on the AC adapter. Push it in until it clicks into place, see figure below.

Figure 8. Push the Adapter into the Power Supply

Process Equipment Power Connection

Two pins on the eight-pin terminal strip on the rear of the Blower can receive 24 VDC power from your process equipment. An included terminal block (Simco-Ion p/n 18-2308) is used to connect 24 VDC power to the Blower from your process equipment. The terminals are designed to accept wiring between 22 AWG and 16 AWG.

When wiring the Blower directly to a 24 VDC source, observe the maximum voltage and power requirements for the unit [24 VDC (±10%), 400 mA DC maximum].

Use a small flatblade screwdriver to secure cables into the terminal block. See figure below.

Pins	State
8	24 VDC return
7	+24V
6-1	Not used

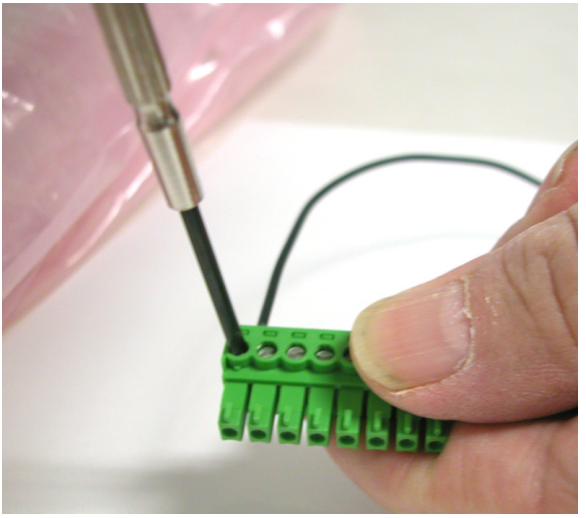


Figure 9. Use a Small Flatblade Screwdriver to Secure Connecting Cables

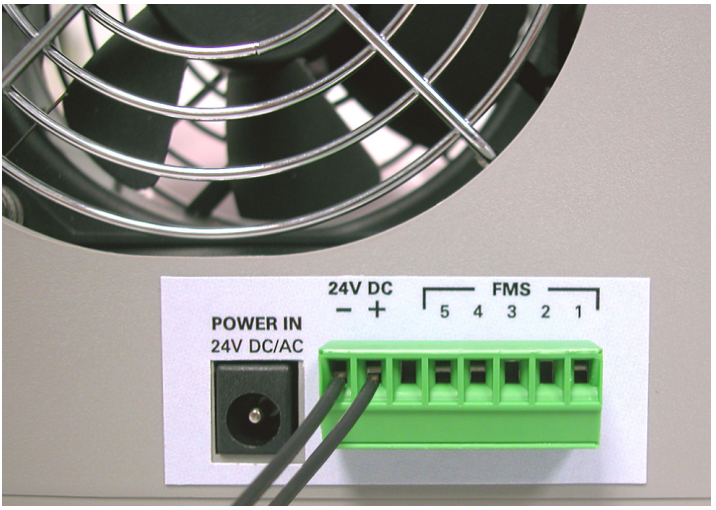


Figure 10. Connected Terminal Block

Caution:	Damage to the product as a result of improper wiring connections or failure to heed maximum voltage limits will not be covered by the warranty.

Achtung:	Schäden am Produkt infolge unsachgemäßer Verdrahtung oder wegen unterlassener Beachtung von maximal zulässigen Spannungen werden nicht durch die Garantie abgedeckt.

2.6 FMS Connection

The Model 6432e Blower provides a non-isolated 4-20 mA current loop and relay closure output for indicating alarm status to your process equipment or facility monitoring system (FMS). In addition to connecting 24 VDC power to the Blower, the included terminal block (Simco-Ion p/n 18-2308) connects the Blower to the FMS using pins 1-5.

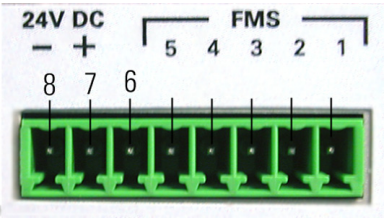


Figure 11. FMS and 24 VDC Pins

24 VDC process equipment power	8	-24 VDC return (Ground)
	7	+24V
	6	Do not use
4-20 mA current loop	5	- Current loop (Ground)
	4	+ Current loop
Relay output loop	3	Open for alarm active
	2	Relay common
	1	Closed for active alarm

Pins	Normal State	Alarm State	No Power
Pins 1-2 (relay)	Contact Open	Contact Closed	Contact Closed
Pins 2-3 (relay)	Contact Closed	Contact Open	Contact Open
Pins 4-5 (Current Loop)	4mA (OK)	20 mA (Alarm)	0 mA (Brownout)

Table 2. FMS Output Status

2.7 Turning on the Blower

Use the on/off switch on the front of the unit to turn on the Blower. The green Power LED will light.

Once the Blower is powered on, its position may be readjusted to achieve optimum discharge time within the air pattern of the Blower. To adjust the position of the Blower, loosen the knobs on the mounting stand. Move the Blower or mounting stand to the desired position and re-tighten the knobs.

2.8 Alarms

In the event of an alarm, the red LED on the front of the Model 6432e Blower will light. An alarm indicates that the Blower's internal high voltage power circuitry that drives the emitter points is not functioning correctly. Causes may include low or incorrect input voltage, or a compromised internal part.

The Blower's alarm is not a maintenance alert. In most cases, service will be required.

Before contacting Simco-Ion for service, make sure that the Blower is receiving proper input voltage per specifications.

Caution:	There are no user serviceable parts inside this Blower. Any unauthorized service will void the warranty and may result in additional repair charges.

Achtung:	Es gibt keine vom Anwender zu wartenden Teile in diesem Blower. Nicht autorisierter Service führt zum Erlöschen der Garantie und kann zu zusätzlichen Reparaturkosten führen.

3

Maintenance

3.1 Maintenance Requirements

The performance of the Blower is designed to be maintained primarily by the internal auto-balance circuitry. Occasional cleaning of the case and emitter points is the only routine maintenance required. No readjustment of the ionizer is required after cleaning.

The Blower can be easily removed from the universal bracket by unscrewing the side knobs.

Recommended cleaning materials:

- Cleanroom-compatible cleaning cloths (polyester cloth is recommended)
- Cleanroom-compatible swabs
- Cleaning solution of 50% IPA (electronic-grade isopropanol)/ 50% de-ionized water

3.2 Cleaning the Chassis

Moisten a cloth with the IPA solution. Wipe off any dirt that may have accumulated on the unit.

3.3 Cleaning the Emitter Points

Caution:	Before performing any maintenance on emitter points, remove the power plug from the ionizer. Allow a minute for the high voltage power supply to discharge.

Achtung:	Ziehen Sie vor der Durchführung von Wartungsarbeiten an Emitter-Punkten den Netzstecker aus dem Ionisator. Lassen Sie die Hochspannungs-Stromversorgung eine Minute entladen.

Turn off the unit. Normally, the emitter points can be cleaned by using a jet of compressed air to blow off any dirt that may have accumulated on them. A swab moistened with the IPA solution may be used if required. If using a swab, gently wipe the tips of the emitter points until all the dirt is removed.

Wire emitter points should not be bent or moved during cleaning. After cleaning make sure that the emitter wires point to the center of the fan and are on the same horizontal plane.

The Blower uses internally-shielded emitter points that will not normally require replacement during the service life of this product. If you believe that the emitter points need to be replaced, contact Simco-Ion Technical Support (techsupport@ion.com) for information.

4

Specifications

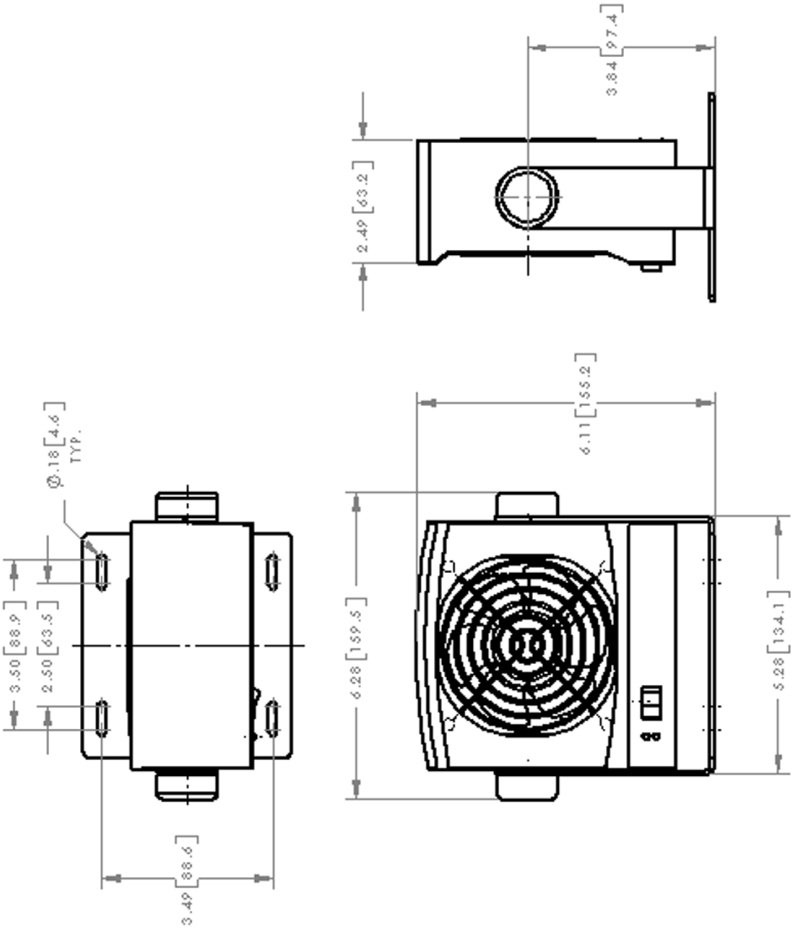
4.1 Specifications

Model 6432e Blower	
Input Voltage	24 VDC ±10%, 6W (max) or 24 VAC ±10%; 50/60 Hz, 6W (max)
Discharge	±1000-100V, <4 sec @ 1' using 24 VAC, tested in accordance with ANSI/ ESD STM3.1-2006 (performance of the Model 6432 will be reduced slightly when powered with 24 VDC)
Balance	±20V @ 1' away
Ion Emission	Steady-state DC
Emitter Points	Tungsten wire; internally shielded; 5-year life
Airflow	49 cfm (typ)
Ozone	<0.005 ppm (24-hour accumulation)
LED Indicators	Green POWER; red ALARM
Connectors	24 VAC/VDC power input, 8-pin terminal block with 24 VDC input from process equipment; 4-20 mA current loop FMS output and relay interface
Controls	On/off rocker switch
Operating Env.	Temperature 10-35°C (50-95°F); humidity 30-60% RH, non-condensing
Dimensions	5.3H x 5.0W x 2.3D in. (13.3 x 12.7 x 5.7 cm) without stand
Weight	16 oz (467g) without stand
Certifications	CE RoHS Compliant
14-1320-01 Transformer	
Input Voltage	120 VAC, 60 Hz
Output Voltage	24 VAC, 60 Hz @ 450 mA, ±5%
Short Circuit Protection	The power supply is provided with protection against short circuit by means of a primary thermal fuse.
Dimensions	3.4H x 2.3W x 1.9D (87 x 58.5 x 48 mm)
Weight	1 lb (0.45 kg)
Certifications	c UL us RoHS Compliant
14-1330 Transformer	
Input Voltage	230 VAC ±10%, 50 Hz
Output Voltge	24 VAC @ 750 mA, ±5%
Short Circuit Protection	The power supply is provided with protection against short circuit by means of a primary thermal fuse.
Dimensions	2.8H x 2.5W x 1.9D in. (72H x 63W x 49D mm)
Weight	0.8 oz (0.36 kg)

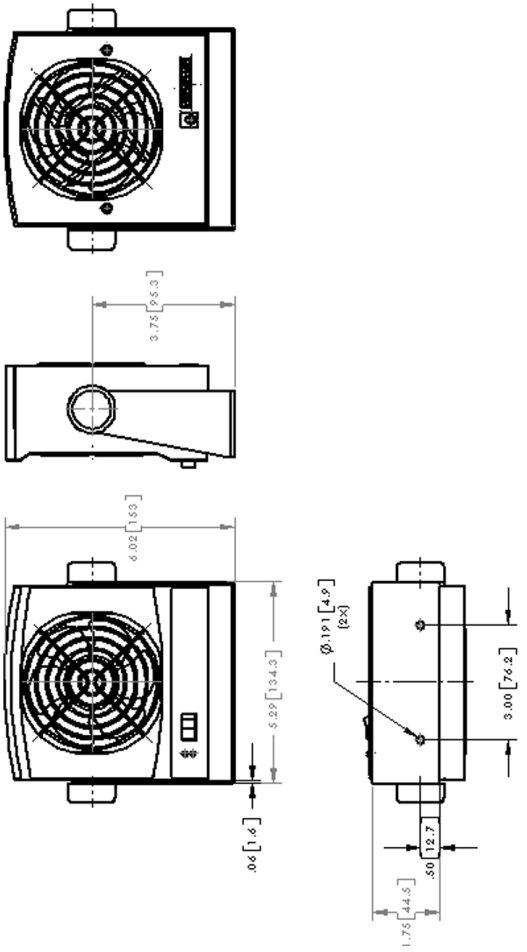
Certifications	 RoHS Compliant
14-1322 AC/DC Adapter	
Input Voltage	100-240 VAC ±10%, 50/60 Hz
Output Voltge	24 VDC @ 400 mA
Short Circuit Protection	The power supply is provided with protection against short circuit by means of a primary thermal fuse.
Dimensions	1.4H x 2.1W x 3.4L in. (36H x 53W x 86L mm)
Weight	0.25 lb (0.11 kg)
Certifications	  RoHS Compliant
Mounting Stands (Optional)	
Material/Finish	Aluminum/epoxy-polyester powder-coat (both In-tool and Benchtop gimbaled bracket/stands)
Depth	In-tool 45 mm; benchtop 108 mm
Mounting Holes	In-tool, 2 holes 3/16” dia; benchtop, 4 slots 5/8”L x 3/16”W
Mounting	In-tool always mount with screws (two truss head screws included with blower); benchtop use standalone on table or screw onto walls/ceilings
Stand Screws	Two truss head screws for replacement of mounting stand knobs (both in-tool and benchtop) are included with blower
Tilt Adjustable	Yes (both in-tool and benchtop)

4.2 Dimensional Drawings

Blower with Benchtop Stand



Blower with In-tool Stand



5

Warranty & Service

Simco-Ion provides a limited warranty for the Point of Use Ionizing Blower Model 6432e. New products manufactured or sold by Simco-Ion are guaranteed to be free from defects in material or workmanship for a period of two (2) years from date of initial shipment. Simco-Ion liability under its new product warranty is limited to servicing (evaluating, repairing, or replacing) any unit returned to Simco-Ion that has not been subjected to misuse, neglect, lack of routine maintenance, repair, alteration, or accident. In no event shall Simco-Ion be liable for collateral or consequential damages. Consumable items such as, but not exclusive to, emitter points, emitter wires, batteries, filters, fuses or light bulbs are only covered under this warranty if found defective as received with the new product.

To obtain service under this warranty, please contact Simco-Ion Technical Support at techsupport@simco-ion.com or (510) 217-0470.

Notes

Notes

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19-6432-M-01 Rev 4