

worldwide leaders in ionization for electronics manufacture

You've come to expect the best in static control from SIMCO, the world's largest manufacturer of static control products.

With 65 years of leadership in the business, we understand the static control solutions you need to keep ESD and particle contamination levels under control. SIMCO's superior products incorporate years of engineering and field experience, providing money-saving integrated solutions for cleanroom, tool, or electronics manufacturing environments. You can be sure of maximum performance and reliability at reasonable cost.

See how the quality of SIMCO products enhances the quality and yield of your cleanroom operations. Call SIMCO today at **800-538-0750** for more information.

SIMCO®

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worldwide leaders in ionization for electronics manufacture

*Semiconductor Manufacturing
Disk Drive Manufacturing
Cleanroom Ionization Systems Flat
Panel Displays
Electronics Assembly*

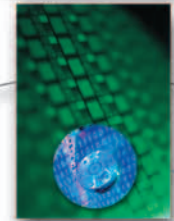
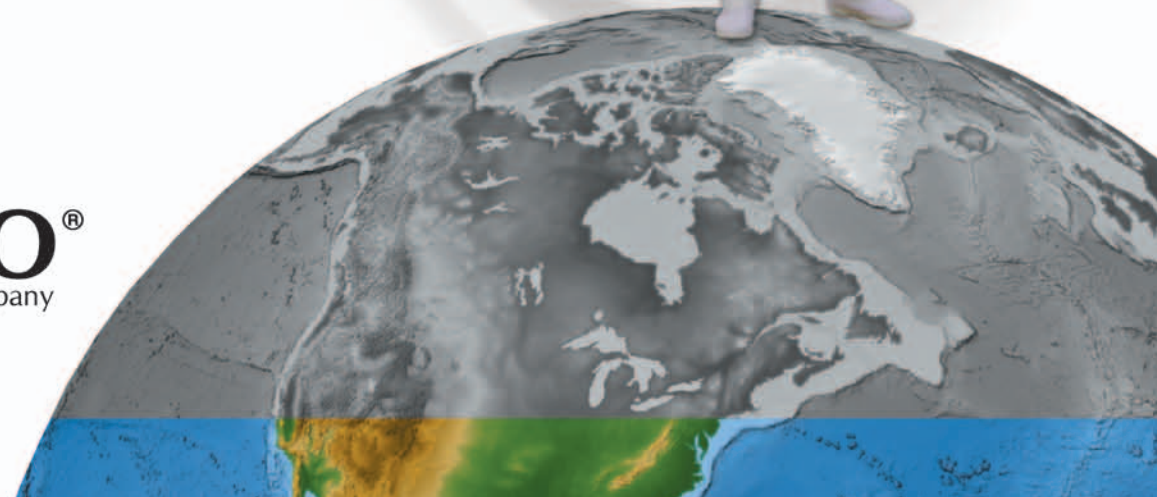













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We have been providing static control solutions for 65 years, and are the only multinational manufacturer of ionization equipment. Only SIMCO provides manufacturing, technical support, and product development capability from locations in the United States, the Netherlands, and Japan.

worldwide leaders in ionization for electronics manufacture



United States



Japan



Holland

To find the most appropriate ionization products for your application, use this Selector Chart. Select your Cleanroom Class or Environment, then type of Ionization product required.
 For more information, call SIMCO Customer Service at 800-538-0750 (in USA) or 1-215-997-0590.

CleanRoom Class or Environment	Overhead Ionizers	Benchtop Ionizers	Ionizing Guns	Ionizing Nozzles	Ionizing Bars	Room Ionizing Systems
Unclassified	Guardian	Aerostat PC Aerostat XC minion VSE 3000	Pulse Gun 5 Top Gun	Airsnake PulsePoint orION orION SldeKick	Pulse Bar Air Assist Pulse Bar labRAT	
ISO 7 (Class 10,000 - 209E)	centrulON CR 2000 Guardian	minION Aerostat PC Aerostat XC	Pulse Gun 5 Top Gun	Airsnake PulsePoint orION orION SldeKick	Pulse Bar Air Assist Pulse Bar labRAT SnapTrac	
ISO 6 (Class 1000 - 209E)	centrulON CR 2000		Pulse Gun 5 Top Gun	Airsnake PulsePoint orION orION SldeKick	Air Assist Pulse Bar Pulse Bar labRAT SnapTrac	Gemini Profile Gemini EP
ISO 5 (Class 100 - 209E)	centrulON CR 2000		Pulse Gun 8	Airsnake PulsePoint orION orION SldeKick	Air Assist Pulse Bar Pulse Bar CleanTrac labRAT SnapTrac scorplON fusION	Gemini Profile Gemini EP
ISO 4 (Class 10 - 209E)	centrulON		Pulse Gun 8	Airsnake PulsePoint	CleanTrac scorplON fusION SnapTrac	Gemini Profile Gemini EP
ISO 3 (Class 1 - 209E)			Pulse Gun 8	PulsePoint	CleanTrac scorplON fusION SnapTrac	Gemini Profile Gemini EP

Unsurpassed in product performance and customer service, SIMCO is ISO 9001 certified and has locations worldwide. Please contact SIMCO for additional information or an on-site evaluation.

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Although every attempt is made to ensure that the information contained in this catalog is accurate and up-to-date, please check with your SIMCO representative or SIMCO Customer Service before specifying or purchasing this equipment to confirm availability, exact specifications, and suitability for your applications. Specifications are subject to change without notice.

TERMS AND CONDITIONS OF SALE

Freight Policy

- UPS Prepay and Add
- Other modes freight: COLLECT
- FOB-Shipping point
- Major Credit Card

Terms

- Net 30

Outside USA

- Cash in Advance
- Letter of Credit
- Sight Draft

OBSOLETE PRODUCTS

If you are looking for information on a previously purchased SIMCO/Richmond product and do not find it in this catalog, contact SIMCO Customer Service directly at 215-997-0590. Replacement parts and service of obsolete SIMCO/Richmond products may still be available. Some products may no longer be offered because they have been replaced by new, enhanced product offerings. Please call for more information about products that do not appear in this catalog.

TERMS AND WARRANTY

Warranty

SIMCO equipment has been carefully tested and inspected at the factory and is warranted to be free of defects in components, workmanship, and materials for a period of one year from the date of purchase.

SIMCO will, under this warranty, repair or replace any equipment which proves, upon our examination, to have become defective within the Warranty period from the date of purchase. Equipment is to be returned by the purchaser to SIMCO, 2257 North Penn Road, Hatfield, PA, 19440, with transportation prepaid and insured for its full purchase price. Prior to returning goods for any reason, contact SIMCO for a Return Authorization Number, which must accompany all returns.

The Warranty does not apply when the equipment has been tampered with, misused, improperly installed, altered, has received damage through abuse, carelessness, negligence, accident, connected to improper line voltage, or has been serviced or modified by anyone other than a SIMCO authorized technician. Any unit that has had its serial number altered or removed will be ineligible for Warranty.

SIMCO 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 SIMCO be liable for incidental or consequential damages except where state 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.

SIMCO makes no Warranty, expressed or implied, nor accepts any obligation, liabilities or responsibility in connection with the use of this product other than the repair or replacement of parts as stated herein.

PRODUCT TESTING

At SIMCO, we are constantly subjecting our products to safety and technical compliance examination by nationally recognized testing laboratories (NRTL). Some of the applicable file numbers for approved products are listed below as well as brief explanations of the listing types. If the approval you require does not appear, consult SIMCO with your needs.



Product Listed: Listing and Follow-up Service for U.S. and Canada. File E11455: Listed - Static Neutralizing Equipment

Products in this file listing include many of the neutralizers with integrated power supplies such as the Aerostat ionizers and the Top Gun ionizing blowoff gun and power supply units.

Listing and Follow-up Service applies to products which have been evaluated with respect to reasonably foreseeable hazards to life and property, and in which the risk of such hazards have been reduced to an acceptable degree.

UL is a registered trademark of Underwriters Laboratories, Inc.

CE CE Products are determined compliant with applicable directives for Europe, through self-declaration or nationally recognized testing laboratories (NRTL).



SIMCO products examined under the CB Scheme established by the International Electrotechnical Committee for Testing to Standards for Electrical Equipment (IECEE). The scheme is based on the principal of mutual recognition of testing results by participating National Certification Bodies (NCBs) to facilitate the international trade of products.

SIMCO products contained in this catalog are covered by one or more U.S. patents and corresponding foreign patents or U.S. and foreign patents pending. Detailed foreign patent information is available upon request.

SIMCO, Aerostat, AirRing, PulseFlow, PulseBar, CleanTrac, and AirFlow are registered trademarks of SIMCO. Top Gun, PC, Guardian, Centurion, orION, minION, scorpION, fusION, Gemini, SnapTrac, CleanTrac, AirSnake, and PulseGun are trademarks of SIMCO.



Flat Panel Displays

Electronics Assembly

Semiconductor Manufacturing

Disk Drive Manufacturing

Cleanroom Ionization Systems

SIMCO® products incorporate years of research, engineering, and field experience that add up to effective, integrated solutions in the most demanding environments. SIMCO is your single-source supplier for a complete line of ionizing equipment.

Headquartered in Hatfield, PA, USA, SIMCO specializes in controlling electrostatic discharge (ESD) events, electrostatic attraction (ESA contamination), and electromagnetic interference (EMI) resulting from ESD events. Our comprehensive line of equipment is designed for use in the semiconductor, data storage, display, medical device, and electronics assembly industries.

SIMCO capabilities are unique in the world. Our multi-national experience, expertise and capability allow us to offer either AC or DC corona technology, and the ability to recommend the product technology best suited to each application. SIMCO holds more patents than any other ion equipment manufacturer-more than twice the number of patents held by our nearest competitor.



SIMCO® ionization solutions are designed for critical applications

SIMCO takes a customized and comprehensive approach to total cleanroom ionization. Proper grounding procedures can efficiently neutralize charges on conductors, but only ionization can eliminate harmful charges on isolated conductors and insulative materials such as plastics. SIMCO's patented Gemini Room Ionization Systems deliver next generation performance with unprecedented system control. Gemini System features include patented Germanium emitters for use in ultra-clean environments.

- Static charges are found in many phases of semiconductor manufacturing-wafer production, fabrication, packaging, and testing. Controlling static charges is vital because ESD has a significant impact on device yields. Defects caused by electrostatically-attracted foreign matter and ESD events can contribute to manufacturing yield losses.
- Stringent contamination control standards for flat panel display manufacturing often require the use of mini-environments or complete room ionization systems to isolate sensitive products from ambient particle contamination during fabrication.
- Sensitive MR heads are easily damaged or destroyed by ESD events. SIMCO's overhead and benchtop ionizers quickly neutralize harmful electrostatic charges with stable balance performance and protect critical drive assembly and production processes.
- ESD can seriously damage sensitive electronic components and assemblies. SIMCO's extensive line of Aerostat ionizers protect production processes such as PCB manufacturing and assembly, surface mount technology, device programming, medical device manufacturing, and testing.

IN A PUBLISHED STUDY GERMANIUM WAS FOUND TO SHED LESS PARTICULATES, UNDER HIGH VOLTAGE STRESS THAN SILICON

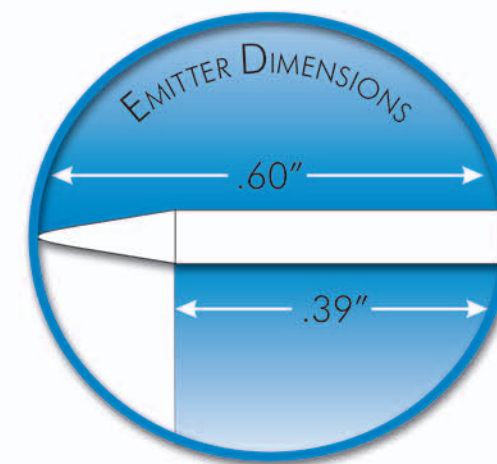
SIMCO's patented (US Patent No. 6,215,248 B1) non-metallic Germanium emitters certified 99.999% pure are the new standard in ionization designed for ultra-clean environments.

Static eliminators use the principle of electric corona to ionize air. In electric corona, high voltage at low current is concentrated on emitter points. High voltage on the tip of the emitter can result in the generation of particulates. In environments that must be free from particles and impurities, this can cause yield and process problems.

Since impurities cause damage in advanced technologies, contaminant must be suppressed to the lowest possible level. Simco recommends non-metallic Germanium emitter points for these applications. In a study published in the Journal of Electrostatics (Noll, C.G. and P.A. Lawless, Comparison of Germanium and silicon needles as emitter electrodes for air ionizers 144 (1998) 221-238), Germanium was found to shed less particulates, under high voltage stress than silicon. The use of 99.999% pure, Type N, non-metallic Germanium doped with antimony for ionizing emitter points patented by SIMCO, minimizes particulates.

Ultra-clean environments are required in many production processes including:

- Semiconductor Manufacturing
- Flat Panel Display Manufacturing
- Medical and Electronic Device Assembly



SIMCO's Ionization Systems provide the solution for production processes in ultra-clean environments that require static control.

- Made of Germanium certified 99.999% pure, N-Type polycrystalline doped with antimony for conductivity
- Precision ground with an extra fine finish
- Certification of compliance maintained for traceability





GEMINI™ EP

DESCRIPTION

The Gemini EP has been designed to provide Essential Performance in the control of electrostatic charges in semiconductor manufacturing facilities and in cleanroom environments such as display and medical device manufacturing. An array of Ion emitter modules are attached to the cleanroom ceiling grid and connected to a controller in a daisy-chain manner using modular telephone type wire and connectors. The system's flexibility allows for ease of installation and blanket area protection.

SIMCO's patented Gemini EP features superior flexibility that allows easy positioning of emitter modules around ceiling. The Gemini EP emitter modules can be adjusted individually using a handheld remote control transmitter or all the emitter modules can be adjusted together using the system controller.

Each emitter module contains emitter points, switching power supplies and Microcontroller Intelligence, designed to maintain critical ion output and balance. Each module produces both positive and negative ions, which neutralize electrostatic charges in the work area. The cleanroom's unidirectional airflow sends the ions downward through the room providing blanket protection, helping to keep all surfaces and product free of static charge.

Each emitter module stores a balance reference value and an ion output current reference value, a patented feature of the Gemini Systems. These values are used by automatic balance control and automatic ion output current control circuitry to ensure stable operation and consistent performance. Profile emitter modules send fault condition information to the system controller, and from the controller to the PC monitoring software provided with the system.

Gemini EP system functions are maintained by a micro controller-based communication network. The System Controller maintains contact with every Emitter Module to verify conditions. The system displays "System OK" to provide assurance that no fault conditions exist. Should a system fault occur, the controller identifies the fault on its display and the emitter identifies itself by illuminating a red LED. To adjust each module's ion output and balance, the remote transmitter is used. To adjust the entire group, the system controller is used.

FEATURES

- Self monitoring to assure controlled, consistent ion output
- Easy mounting on flush or T-grid ceiling systems
- Individually adjustable with remote transmitter
- System flexibility allows ideal positioning of modules where most needed
- Designed to minimize unidirectional airflow turbulence



SPECIFICATIONS

- Size** - 17.5" x 1.5" x 1.25" (L x W x D) (44.9 x 3.8 x 3.2 cm) without emitters
- Weight** - 20 oz. (544 g)
- Input** - <28 VDC, 2.0 watts nominal
- Operating Mode** - Pulse
- Control Signal** - 0±5 VDC, RS-485, 2 wire control signal from the system controller
- Connector** - RJ-45 telephone type modular jack at each end of the emitter module
- Indicators** - Two bi-color LEDs located near each emitter. Green indicates the polarity and duration of the ion emission. Flashing LED(s) confirm communications with the remote transmitter. Red LEDs indicate a Fault condition
- Status Software** - Included; requires Windows® based PC with RS-232 comm port
- Emitter Points** - Germanium for ultra-clean requirements; 100% tungsten for Class 1 compatible; easily replaceable
- Emitter Rods** - Available in 4", 6" and 10" lengths
- Mounting** - Attaches to the "T" grid or inside ceiling channel of all leading designs of flushmount ceiling systems. Emitters and indicators project below the ceiling

ANSI/ESD S20.20 program assessment

The standard was developed by the ESD Association for industry and the military, in support of an expressed need for a comprehensive electrostatic discharge (ESD) program design. The standard provides manufacturers and electronics users with an effective ESD control program framework that defines minimum requirements for enhancing product reliability and productivity.

PROCESS

SIMCO experts assess compliance with plan elements. Steps in the compliance assessment process require development of an ESD control plan based on S20.20 and are tied into your facility quality control program, such as ISO 9000. Implementation of the Plan may then take place with training and installation of ESD controls. In the final step we develop and begin Plan inspections and audits. These steps prepare you to pursue facility certification.

SIMCO's capability in the design, development, and manufacture of electrostatic charge control equipment is second to none.

Equipment maintenance & calibration

All corona ionization systems cause deposits to form on the emitter tips over time. Periodic cleaning of emitters makes a valuable contribution to optimum system performance and life. Service frequency depends on several factors including the cleanliness and relative humidity of the operating environment. Process and system performance demands are considered when SIMCO makes recommendations for your maintenance and calibration interval.

In most environments cleaning should be scheduled on a quarterly basis. Simco recommends initial cleaning and evaluation after 90 days. Emitter cleaning frequency is determined through observation. Cleaning does not harm the emitters. Regular cleaning of emitters removes deposits that can reduce emitter life and effect system performance.

CALIBRATION

System calibration requires analysis of the operating parameters of the ionizer, its operating environment and includes any adjustments that may be necessary to correct operation. This service is performed after maintenance and cleaning of the emitters has been completed.

Standard performance tests include discharge time and offset voltage. Evaluations of the system are made in accordance with ESD Association Standard Test Method ESD STM3.1-2000 Ionization.

SEMI E-78 compliance evaluation

In response to the semiconductor industries continuing focus to improving overall equipment efficiency (OEE) and insure consistent yield performance the SEMI organization developed the E78 Electrostatic Compatibility-Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment. E78 defines specification levels and test methods used to measure charge and electrostatic fields on wafers and handlers.

This SEMI document describes leading problems caused by uncontrolled electrostatic charge as they affect tool operation and performance in the semiconductor and related clean-manufacturing industries. The E78 document is designed to guide device and equipment manufacturers in determining acceptable electrostatic charge control levels based on manufacturing process and technology considerations.

PROCESS

Simco experts offer a complete evaluation of your control level need based on your product, process, and technology.

Simco's experience and comprehensive approach ensure engineered assessment and solutions.

why static charges are a problem

Control of electrostatic discharge in cleanroom manufacturing processes is critical because it can have a significant impact on productivity and device yields. Serious problems often result from:

- Damage to product, components, or process tools resulting from a direct electrostatic discharge (ESD) event
- Contamination on surfaces due to electrostatic attraction (ESA) of particles
- Process equipment latch-up caused by electrostatic discharge and resulting electromagnetic interference (EMI)

Many of the processes used to manufacture products in the semiconductor, flat panel display, disk drive and medical device manufacturing industries require use of non-conductive materials and isolated conductors. These materials generate and retain large charge potentials. In addition, process equipment and materials facilitate charge introduction on the wafers, glass substrates, magnetic media, and magnetic heads produced by these industries.

Wafers and FPDs which become charged through handling and transporting act as a magnet for airborne contaminants, which can significantly affect yields in critical processes such as photolithography, coating, and etching. A dependable ionization system is needed to keep static charges at a low level so contaminants are not attracted to sensitive surfaces during these critical assembly and manufacturing processes.

Grounding, using items such as wrist straps and conductive foot wear, is the first line of defense in controlling static charge and will dissipate static very rapidly. But in many cases grounding is impractical or impossible. Ionized air can bridge the gap between charged objects and ground potential. "Conductive air" allows electron flow to or from any charged object, satisfying any charge imbalance. A charged insulator can remain charged for many hours. Opposite polarity charges can exist on an insulator at the same time. Charges will not migrate on insulators. Grounding insulators neither remove nor prevent surface charges.

Corona Ionization



Charged air molecules cover and surround a surface within range of the ion emitter system. Charge on the surface will attract ions of the opposite polarity and repel like polarity ions until charges are neutral.

Air Ionization

Air ionization complements and completes any program that intends to eliminate all electrostatic charge sources. In many areas, such as cleanrooms and mini environments, air ionization is the only practical method of static control. A typical room ionization system can remove 1,000 volts in less than 1 minute. Research has shown that room ionization typically reduces particle counts by 50% to 90%. Room ionization can increase equipment uptime and decrease tool repair costs up to 50%.

Ionizers give molecules in the air the ability to carry charge. These charged air molecules are able to neutralize electrostatic charge on both insulators and conductors. An air ionizer is capable of neutralizing charge because it produces mobile positive and negative charge carriers. Two mechanisms allow these ions to neutralize charge; conduction and exchange. Neutralization of charge by air ions is dependent on a number of complex interactions. Ions move by electrostatic force and are often assisted by airflow to the target object or surface.

Air ionizers are capable of delivering many benefits including: control of particle contamination, protection of electrostatic discharge sensitive devices, and reduction of process equipment lock-up. The requirements for ionizer discharge time and ion balance performance should be determined as a consideration of your process or product.

ROOM IONIZATION SYSTEMS ... GEMINITM

THE "SMART" GEMINI CONTROLLER POLLS EACH EMITTER MODULE TO VERIFY SYSTEM OPERATION, PROVIDING ASSURANCE THE SYSTEM IS OPERATING AS YOU HAVE SPECIFIED.



GEMINITM ROOM IONIZATION CONTROLLER

DESCRIPTION

The system controller is the "smart" center of SIMCO's patented Gemini Room Ionization System. Gemini System functions are maintained by a multi-drop microcontroller-based communication network. The system controller maintains contact between each emitter module and itself to verify system operations. Under normal conditions, the unit displays "System OK" to provide assurance that no fault conditions exist. Should a system fault occur, the controller identifies the address and type on its LCD.

Operating mode and pulse frequency are adjusted from the system controller. Adjustment to ion output and balance can be made to individual emitter modules or to the entire group (Steady State or Pulse mode) using the system controller or the hand-held remote control transmitter.

Our patented miswire protection design speeds and simplifies installation and prevents wiring problems.

A data port for communications to a PC or facility monitoring system is provided. SIMCO provides professional installation, a two-year warranty, and factory-direct technical support from our worldwide manufacturing facilities. Free system training is provided after installation.

FEATURES

- Microcontroller Intelligence
- Self-monitoring and adjusting
- Fully integrated two-way communications network
- Continual polling of emitter modules and display of operating status
- Pulse or Steady-State DC operation
- Data port for communications to a PC or facility monitoring system

SPECIFICATIONS

Size - 16.25" x 8.75" x 4.5" (W x L x D)
(41.7 x 22.4 x 11.5 cm)

Weight - 25 lbs. (11.3 kg)

Input - Universal 100 to 240 VAC, 50/60 Hz, 15 Amp max

Capacity - 30 or 100 emitter modules

Operating Mode - Steady State or Pulse DC

Pulse Rate - 0.5 to 12-second timing control of ionization output; centrally controlled to avoid timing conflicts

Output Connector - 10 each, 8-pin RJ-45 telephone-type modular jacks

Wiring Run - Up to 800 ft.

CONTROLS

- Lockout key switch has STANDBY-SETUP-RUN modes
- Recessed push button selection of system setup mode
- Two-button menu scroll
- Two-button function adjustment

GEMINITM REMOTE CONTROL TRANSMITTER

DESCRIPTION

Gemini Systems include a remote control transmitter that allows you to adjust ion output and balance independently for each individual emitter module. Just enter the module's unique two-digit code, then change ion output current and adjust balance to the preset ion output parameter. You'll save time by simplifying routine maintenance and adjustments.

SPECIFICATIONS

Size - 2.75" x 4.5" x 1" (W x L x D)
(7 x 11.7 x 2.9 cm)

Output - Infrared Signal

Controls - Address one individual emitter

Indicators - Green LED indicates signal transmission module at a time. Balance is adjusted with two buttons, one positive and one negative. Ion output is adjusted with two recessed push buttons, one positive and one negative.

Power - 9 VDC Alkaline Battery



IN IONIZATION
TECHNOLOGY,
THE PROOF
IS IN THE
PERFORMANCE.

SIMCO's Gemini™ Room Ionization System (US Patent No. 6,252,756B1 and international patents) features unprecedented levels of performance and control. Ion output and balance can be easily adjusted for individual emitter modules using either the system controller or a hand-held remote transmitter. Operating reference values are stored in a software adjustable memory. The "smart" Gemini controller polls each emitter module to verify system operation, providing assurance the system is operating as you have specified.

Gemini Systems can be custom-installed either suspended or recessed in most cleanroom ceiling systems. Emitter modules are spaced around the room and connected to the controller(s) in a daisy-chain manner. The new Gemini Profile™ emitter module is designed to minimize turbulence in unidirectional airflow. Each emitter module contains separate positive and negative ion emitters with microprocessor control of output and balance. Modules are available with SIMCO's patented Germanium emitters, the new standard in ionization designed for ultra-clean environments.

TYPICAL APPLICATIONS

- Semiconductor Manufacturing
- Display Manufacturing
- Storage Media
- Medical and Electronic Device Assembly



GEMINI™ ROOM
IONIZATION
SYSTEM

Profile
Emitter
Modules

DESCRIPTION

SIMCO's patented Gemini Room Ionization System features individually addressable Profile emitter modules. Each module has an individual identification that allows the system controller or the remote control transmitter to address and control each emitter. The Gemini System's flexibility allows easy positioning of emitter modules in the ceiling or where they are most needed in the cleanroom. The System is designed to minimize unidirectional airflow turbulence. It is available with SIMCO's patented (US Patent No. 6,215,248 B1) non-metallic Germanium emitters, the new standard for ultra-clean ionization.

Each emitter module contains emitter points, switching power supplies, and Microcontroller Intelligence, designed to maintain critical ion output and balance. Each module produces both positive and negative ions, which neutralize electrostatic charges in the work area. The cleanroom's unidirectional airflow sends the ions downward through the room. In this way, the Gemini System modules provide blanket protection, helping to keep all surfaces and product free of static charge and particles.

FEATURES

- Easy mounting in all leading designs of flush, or on T-grid ceiling systems
- Drop link communications
- Active closed-loop feedback system
- Individually adjustable via system controller or remote transmitter
- Steady State and Pulse modes can be universal or mixed
- Addressable emitter modules
- Choice of Germanium or tungsten emitters

SPECIFICATIONS

Size - 17.5" x 1.5" x 1.25" (W x L x D)
(44.9 x 3.8 x 3.2 cm) (without emitter rods)

Weight - 20 oz. (544 g)

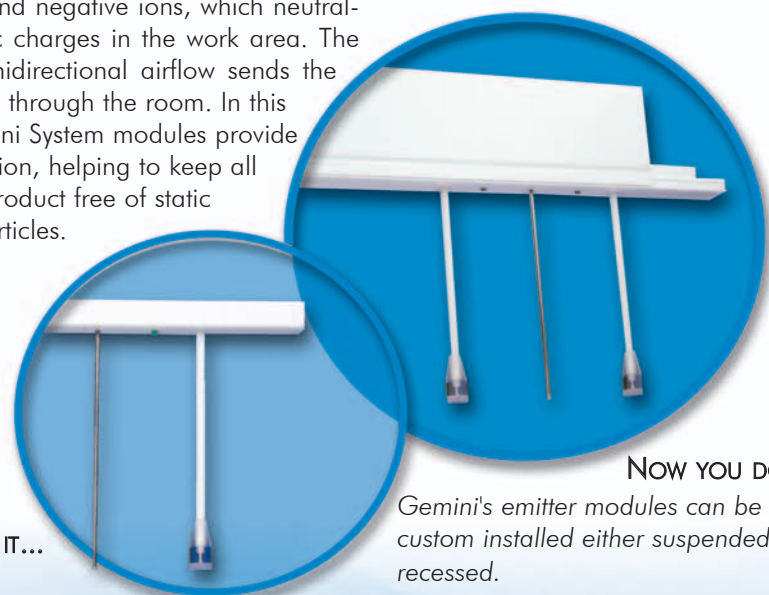
Operating Mode - Selectable Pulse or Steady State

Status Software - Included; requires Windows® based PC with RS-232 comm port

Address Control - Establish a unique address

Indicators - Two bi-color LEDs, one located near each emitter. Green indicates the respective polarity and duration of ion emission. Flashing green LED confirms communication with the remote transmitter. Red LEDs indicate a Fault condition.

Emitter Points - Germanium for ultra-clean requirements; 100% tungsten for Class 1 compatible; easily replaceable.



NOW YOU SEE IT...

NOW YOU DON'T!

Gemini's emitter modules can be custom installed either suspended or recessed.



Electrically-based corona technology is most widely used ion generation method for static charge control. In this method, electrical ionizers generate ions by concentrating an electric field onto an emitter point. SIMCO designs and manufactures all three types of corona ionizers.

AC ionizers produce positive and negative ions by applying a high-voltage AC waveform at the line frequency. One emitter may be used to produce ions; both positive and negative ions are produced at each emitter. This is a unique feature and the defining characteristic of AC technology. The AC advantage is in part the result of the ability to produce bipolar ions from a single emitter. AC systems can be located closer to objects than DC systems since each emitter is bipolar and the time and distance between ion polarities is short.

Stability is enhanced since each emitter is uniformly subjected to the differing wear patterns characteristic of positive and negative emitter electrodes. The fast cycling of AC frequency reduces the build-up of emitter contaminants that attack electrode surfaces. Stable balance performance is offered by AC technology.

The fast AC cycle times produce a nearly continuous stream of bipolar ions. The short time separation helps to assure rapid and complete neutralization of charges. In AC systems, loss of an individual emitter typically has very little impact on overall system performance and will not result in a state of system ion imbalance.

Air Ionization Systems ...Typical Applications

Application	AC	Steady State DC	Pulse DC
Room Systems		+	+
Mini Environment		+	+
Compressed Gas	+	+	
Unidirectional Flow Bench	+	+	+
Work Surface	+	+	

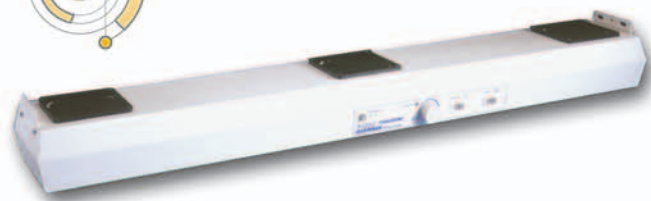
Steady State DC ionizers generate bipolar ions using independent positive and negative power supplies connected to dedicated emitters. SSDC systems require a minimum of two emitters to generate bipolar ions. Both positive and negative power supplies operate continuously, creating ions at each emitter. SSDC ionization creates a very high ion current, since it produces ions of both polarities with no off-time cycle. Properly designed systems and emitter spacing will result in a minimum of space charging and low offset voltage. Recombination of the bipolar ions can be reduced by controlling the distance between the positive and negative emitters. ON/OFF switching of DC power supplies can occasionally result in "noise" (RFI and EMI) that can affect electronic circuits and cause process equipment lock-up. Steady State DC avoids this consequence. SSDC systems are the preferred alternative in room systems applications that require low offset voltage.

Pulse DC is the newest development in corona ionization operating modes. It is more complex and more demanding in its operating requirements and setup. As in Steady State DC, in-dependent positive and negative power supplies are connected to dedicated emitters to generate bipolar ions. In this case a square wave oscillation of the independent power supplies is used. The pulse rate is slower than AC and performance becomes similar to SSDC when the frequency approaches 10 Hz.

Pulse frequency impacts balance and total ion output. Longer pulse times are used as the distance from the emitter to the target object increases. Longer pulse duration is also useful as air velocity in the environment decreases. The major advantage realized by pulsing positive and negative ions is optimizing the number of ions available to eliminate electrostatic charge. The technology allows bipolar ion separation in time. Separation reduces the chance positive and negative ions will recombine before they reach the intended target. Pulse DC makes it possible to effectively ionize the air in rooms.



OVERHEAD IONIZERS ... AEROSTAT[®] GUARDIAN[™]



TYPICAL APPLICATIONS

- Electronics Assembly
- Semiconductor Test
- Medical Device Parts Assembly and Packaging

AEROSTAT[®] GUARDIAN[™]



DESCRIPTION

The Guardian provides fast static charge decay efficiency over an entire work surface area. Equipped with task lighting, an ionization indicator light, and an integrated heater, it offers user-friendly operation while effectively protecting even the most sensitive components from ESD damage.

FEATURES

- AC technology for stable performance
- Inherently balanced to 0 ±5 V
- Integrated heater and task lights
- Ionization indicator light
- Patented built-in emitter point cleaner

SPECIFICATIONS

Discharge Time* < 6 sec. at 18"
 Size - 42.75" x 4" x 6.75" (W x H x D)
 (109 x 10 x 17 cm)
 Weight - 16 lbs. (7.3 kg.)

Air Volume Output -
 150 CFM - 300 CFM (low to high)
 Combined three-fan output
 Effective Coverage - 2' x 4' Area

Air Temperature (Heater On)

Fan Speed	Above Ambient
Low	+25°F (14°C)
High	+11°F (6°C)

(Measured 6" in front of center fan)

MODEL NUMBERS

120 V, 60 Hz 4004063
 230 V, 50 Hz 4004261

* Tested in accordance with ESD-STM 3.1-2000 Ionization



AEROSTAT[®] GUARDIAN[™] CR2000



DESCRIPTION

The Guardian CR2000 features a patented circuit that results in balanced delivery of positive and negative ions, which ensures that the unit will maintain an ion balance of 0±5 V. Balance stability is further enhanced by use of SIMCO's unique "ion shields" at the fan outputs to reduce parasitic ion loss.

The Guardian CR2000 ensures cleanroom compatibility using specially chosen components and materials. All fan and air bearing surfaces are manufactured to insure cleanliness. Fan assemblies are particle-tested to Class 10 (209E; ISO class 4) particle limits. The Guardian CR2000's final assembly, final test, and packaging take place in a Class 100 cleanroom to minimize risk of contamination.

for additional information visit www.simcolON.biz, email us at info@esimco.com or call 215.997.0590

TYPICAL APPLICATIONS

- Disk Drive Assembly
- Medical Electronic Device Manufacturing

FEATURES

- Inherently balanced to 0±5 V
- Ion balance and ion output monitors
- Lockout key switch
- Class 10 cleanroom ISO-4 compatible
- Patented emitter point cleaner

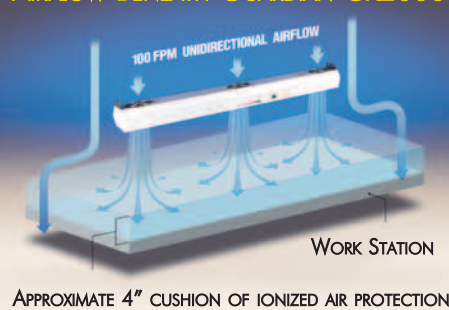
SPECIFICATIONS

Offset Voltage* - 0±5 V; ±3 V typical

MODEL NUMBERS

Two Fan 120 V, 60 Hz - 4008729
 230 V, 50 Hz - 4008730
 Three Fan 120 V, 60 Hz - 4008630
 230 V, 50 Hz - 4008705

AIRFLOW BENEATH GUARDIAN CR2000



GUARDIAN CR2000 COMPARISON CHART

MODEL	Guardian CR2000 Two Fan	Guardian CR2000 Three Fan
DISCHARGE TIME* at 18"	at 18"	at 18"
1000-100 V	<3 seconds	<3 seconds
1000 - 10 V	<5 seconds	<5 seconds
AIR VOLUME		
FAN SPEED LOW	90 CFM (40 l/s)	135 CFM (60 l/s)
FAN SPEED HIGH	180 CFM (80 l/s)	270 CFM (120 l/s)
AIR COVERAGE	2' x 3'	2' x 4'
WEIGHT	12 lbs. (5.5 kg.)	15 lbs. (6.8 kg.)
SIZE (OVERALL L x W x D)	31.75"x4"x6.75" (81 x 10 x 17 cm)	42.75"x4"x6.75" (109 x 10 x 17 cm)

* Tested in accordance with ESD-STM 3.1-2000 Ionization

IONIZATION BARS AND FIELDMETER... FUSION[™] AND FMX 002

FUSION[™] AND FUSION[™] WITH FAN



DESCRIPTION

The fusION is a bi-polar air ionizer capable of controlling electrostatic charge in the local area. Applications such as those found inside process equipment and mini-environments in the semiconductor, flat panel display, pharmaceutical, and medical device industries. Applications include tools, minienvironments, and load ports. It is especially well suited for applications with space constraints and low clearance.

Controlled airflow can improve performance of any ionizer. In applications that may benefit from improved

airflow an optional fan assembly is simply clipped to the fusION housing and power to the fan is supplied through a built in connection.

Multiple units can be linked together from one 24V DC power source allowing 4 units to be daisy-chained.

FEATURES

- Easy to install and operate
- Compact design
- Auto Regulating - patented
- System Integration Compatible
- Optional fan
- Choice of Germanium or tungsten emitters

SPECIFICATIONS

System Performance
 Discharge Time - ±1,000 - ±100V
 < 10 seconds at 6" (15.2cm)

Operational Specifications

Power Input - 24VDC
 Connectors - 4 x 4 modular; DC power IN
 Operating Mode - steady-state DC

Indicators - Green-Power On; Red-fault indicator (TTL lever alarm output)

Mechanical Specifications

Emitters - 4-Germanium for ultra-clean requirements; 100% tungsten for Class 1 compatible
 Dimensions - 3.0" H x 1.9" W x 3.8" L (7.5 x 4.8 x 9.8cm)

fusION Power Supply

Output - 24 VDC
 Input - 100-240 VAC, 50/60 Hz
 AC Power Inlet - IEC 320, Class 1
 Dimensions - 1.3" x 2.0" x 3.5" (H x W x L) (3.3 x 5.1 x 8.9 cm)

Fan Specifications- option

Output - 5 CFM
 Dimensions - 1.6" x 1.6" x 0.4" (H x W x L) (40 x 40 x 10 mm)
 Noise - 31 dB

MODEL NUMBERS

fusION GE 4010446
 fusION TG 4010577
 Fan Assembly 4010447
 Power Supplies
 North America/Japan . . . 4010448
 Continental Europe 4010449
 United Kingdom 4010450

FEATURES

- Bar graph indicates field polarity and intensity
- Battery condition display
- Multi-function audible alarm
- Easy plate attachment for ion balance measurement
- Auto shut off after 5 minutes
- Portable and lightweight
- Auto-ranging digital display
- Includes vinyl storage case, ground lead, and battery

SPECIFICATIONS

FMX-002 WITH CHARGE PLATE
 Size - 4.75" x 2.62" x 1" (L x W x H) (122 x 65 x 27 mm)
 Weight - 4.6 oz. (130 g) with battery
 7 oz. (200 g) with battery and charge plate

FMX-002

Low Range - ±1.5 kV High Range: ±20.0 kV
 Ion Balance Measurement (Charge Plate Installed)
 • Low Range: ±150 V
 • High Range: ±2.0 kV
 Power - 9 V battery
 Size - 4.5" L x 2.5" W x 1" H (115 mm x 65 mm x 25 mm)

MODEL NUMBERS

FMX-002 4008744
 FMX-002 with charge plate . . . 4008745
 FMX-002 charge plate only . . . 5051021



CLEANTRAC[®] AND VISION[™] CONTROLLER

DESCRIPTION

The CleanTrac Ultra-Clean Ionization Bar incorporates a patented air flow technology which utilizes Clean Dry Air (CDA) to minimize buildup of contaminants on emitters. It is specifically designed for use in Class 1 areas such as minienvironments and laminar flow benches where particle contamination and control of electrostatic charges are critical concerns.

CleanTrac's patented air flow technology inhibits the formation of particles on emitter electrodes, dramatically reducing maintenance requirements. It is powered by the visION Controller.

The CleanTrac's patented* Germanium emitters provide the most particle-free ionization available in the industry. The

compact visION Controller delivers superior ionization balance and charge neutralization efficiency for critical ESD applications. It is de-signed to be used with an emitter system such as the CleanTrac bar for control of electrostatic charges.

Three user-switchable operating modes provide maximum flexibility for a variety of application sensitivities, while minimizing the need for maintenance routines common to competitive designs. This regulated steady state DC power supply incorporates feedback circuitry that enables the unit to maintain performance for extended periods. A user interface allows for remote system control and system monitoring.

FEATURES

CLEANTRAC

- Patented air flow technology
- Available with Germanium emitters
- Aerodynamic "Teardrop" profile

VISION CONTROLLER

- Active feedback/control
- Remote Off/On control
- Local or remote status monitoring
- Universal power input

SPECIFICATIONS

Dimensions - 1" W x 1.85" H (25.4 mm x 47 mm)
 Weight - 3 oz. per ft. (85 grams per 30 cm)
 Input Voltage - ± 7 kV nominal
 Emitter Material - 100% Germanium
 Input Air Pressure - 15 PSI maximum (nominal operation < 5 PSI)
 Air Flow - 2 CFH per electrode nominal
 Input Air (< 500 ppm H₂O) - Clean Dry Air (CDA)
 Air Flow Gauge - 2-20 CFH or 5-50 CFH depending on number of electrodes

* U.S. Patent No. 6,215,248B1

** visION only

CLEANTRAC MODEL NUMBERS

Model	Lengths/Emitters	Number
CT103	10"/4	4006979
CT204	21"/6	4006980
CT304	33"/8	4006981
CT404	45"/12	4006982
CT504	57"/14	4006983
CT604	69"/18	4006984

VISION MODEL NUMBERS

visION 100-120 V	4008832
visION 230 V	4008899

FMX-002 ELECTROSTATIC FIELDMETER

DESCRIPTION

SIMCO's Model FMX-002 Electrostatic Fieldmeter is a compact, portable survey instrument for measuring electrostatic charge. The FMX-002 measures positive and negative polarity electrostatic charges to 20 kV (20,000 V) at a distance of one inch (25 mm). Two LED guide ring lights on the measuring side of the unit converge at the proper distance from a test object. The conductive case and ground lead facilitate reference grounding for accurate measurement.

The FMX-002 uses field chopper sense technology, allowing periodic verification of ionizer balance performance by attaching a charge plate. The handy, compact design of this unit allows electrostatic survey measurements in work areas:

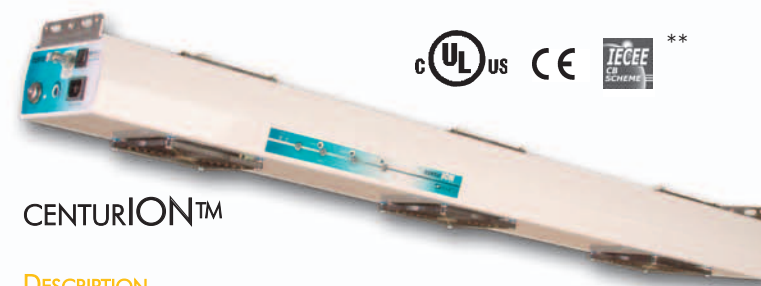
- Determining static charge levels
- Deciding the placement of ionizers
- Periodic verification readings



Accurately locating and treating static-related problems at the source can significantly increase product quality, output, and yields.

The FMX-002 provides the fundamental measuring tools needed to isolate and solve static problems.

for additional information visit www.simcoION.biz, email us at info@esimco.com or call 215.997.0590



CENTURION[™]

DESCRIPTION

The centurION ionizer is designed specifically for use in critical cleanroom applications. It offers superior balance performance with its patented emitter array design and high-gain dual feedback circuitry. Using steady state DC ion technology, the centurION eliminates charges cleanly, quickly and reliably in cleanroom workstation applications where electrostatic discharge (ESD) is a concern. It is designed for applications where even very low levels of static charge can damage sensitive components.

Specially selected components ensure cleanliness of the centurION's output air to meet or exceed Class 10 particle limits. The centurION's final assembly, final test, and packaging take place in a Class 100 cleanroom to minimize risk of contamination.



MINION[™]

DESCRIPTION

The minION OH overhead ionizer has been designed to control electrostatic charges in assembly and electronics manufacturing applications requiring stable performance in an affordable package.

The minION OH incorporates Simco's steady state DC corona ion technology and features active self-monitoring to assure the user of controlled, consistent ion output.

Performance is enhanced by use of Simco's patented radial emitter design. The products design stability reduces maintenance frequency. A built in emitter cleaner reduces maintenance time in the

FEATURES

- Rapid static charge neutralization +/-3 V offset voltage (balance)
- Class 10 cleanroom ISO-4 compatible
- Fan speed control
- Patented emitter design

SPECIFICATIONS

Offset Voltage* - ± 3 V from set point, set point adjustable to 0 V.
 Offset Balance - Adjustable to zero



Unique patented emitter array design with integrated cleaning brush

MODEL NUMBERS

NO. OF FANS	SINGLE	TWO	THREE
N.AM./Japan	4009408	4009430	4009423
Cont. Euro.	4009409	4009431	4009424
UK	4009410	4009432	4009425

* Tested in accordance with ESD-STM 3.1-2000 Ionization
 ** 2 & 3 fan only. one fan

CENTURION COMPARISON CHART

MODEL	centurION Single Fan	centurION Two Fan	centurION Three Fan
LINE VOLTAGE	100-240Vac, 50/60Hz	100-240Vac, 50/60Hz	100-240Vac, 50/60Hz
DISCHARGE TIME*	at 12"	at 18"	at 18"
1000-100 V	< 3 seconds	< 3 seconds	< 3 seconds
1000 - 5 V	< 5 seconds.	< 5 seconds.	< 5 seconds.
AIR VOLUME			
FAN SPEED LOW	50 CFM (23 l/s)	100 CFM (40 l/s)	150 CFM (60 l/s)
FAN SPEED HIGH	90 CFM (42 l/s)	260 CFM (80 l/s)	390 CFM (120 l/s)
AIR COVERAGE	1' x 4'	2' x 3'	2' x 4'
WEIGHT	3.5 lbs. (1.61 kg.)	8 lbs. (3.62 kg.)	11 lbs. (5 kg.)
SIZE (OVERALL X W X D)	9.37" x 8" x 3.37" (24 x 20.8 x 8.6 cm)	6" x 3" x 26" (15.25 x 7.62 x 66 cm)	6" x 3" x 40" (15.25 x 7.62 x 102 cm)



minION OH. Our unique geometry and airflow control provide stable performance, meeting the demands of product assembly operations using electrostatic sensitive IC components.

FEATURES

- Rapid static charge control
- Reliable performance
- Simco to install
- Simple to operate

SPECIFICATIONS

Discharge Time* - <5 sec. at 18"
 Size - 40" x 6" x 2.44" (W x H x D) (101.6 x 15.2 x 6.0 cm)
 Weight - 15 lbs. (6.8 kg.)

Power input - IEC320 power connect up to 10 units

Air Volume Output - 150 CFM - 300 CFM (low to high)
 Fan Speed -

Low 136 CFM (270 L/S)
 High 270 CFM (540 L/S)

Effective Coverage - 2' x 4' Area

MODEL NUMBERS

115 V, 60 Hz	4009100
230 V, 50 Hz	4009136





DESCRIPTION

Small and quiet, yet uncompromising in performance, SIMCO's Aerostat PC sets the standard for benchtop ionizers. It provides fast static charge decay rates over a targeted work surface area and provides optimum protection from the destructive effects of ESD. The PC features an integrated heater for operator comfort.

FEATURES

- Quickly neutralizes static charges
- Balanced to 0±5 V
- Patented emitter point cleaner
- Variable speed fan
- Ionization indicator

**AEROSTAT[®] PCTM
AIR BLOWER**



SPECIFICATIONS

Discharge Time* - <2 sec. at 12"
Size - 5.5" x 8.62" x 3.25" (W x H x D)
(14 x 22 x 8 cm)
Weight - 5.3 lbs (2.4 kg)
Air Volume Output - 35 CFM - 70 CFM
(low - high)
Effective Coverage - 1' x 5' area

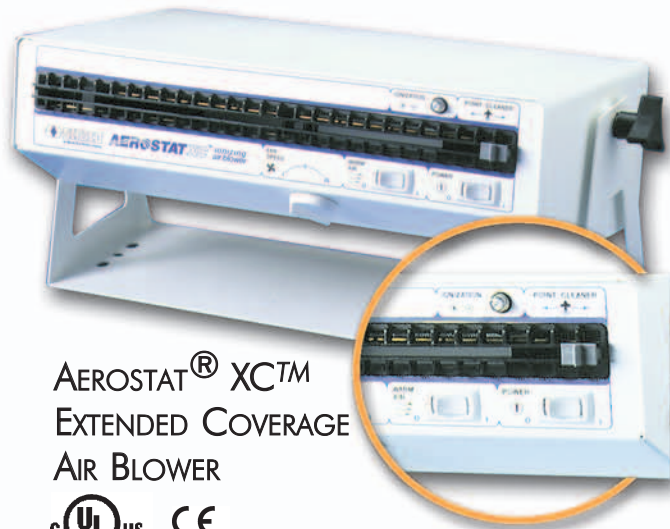
MODEL NUMBERS

120 V, 60 Hz 4003367
230 V, 50 Hz 4003368

ACCESSORY NUMBERS

Air Filter Retainer 4700017
Air Filter (6 each) 4100810

* Tested in accordance with ESD-STM 3.1-2000



FEATURES

- Rapid static discharge
- Balanced to 0±5 V
- Patented emitter point cleaner
- Three-speed fan
- Ionization status light
- Heater

**AEROSTAT[®] XCTM
EXTENDED COVERAGE
AIR BLOWER**



DESCRIPTION

The Aerostat XC Extended Coverage Ionizing Air Blower provides excellent coverage, stability of balance, and rapid static discharge times. The XC neutralizes static across an entire 2' x 6' benchtop area. User friendly controls allow selection of 3 fan speeds. Ionization status light indicates operating condition. Heat can be turned on or off.

SPECIFICATIONS

Discharge Time* - <2 sec. at 12"
Size - 15.37" x 4.5" x 8.12" (W x H x D)
(39 x 11 x 21 cm)
Weight - 17.5 lbs (7.9 kg)
Air Volume Output -
• 70 CFM (low fan speed)
• 95 CFM (medium fan speed)
• 120 CFM (high fan speed)

Air Temperature (Heater On)

Fan Speed	Above Ambient
Low	+11°F (6°C)
Medium	+9°F (5°C)
High	+7°F (4°C)

(Measured 6" in front of center fan)

MODEL NUMBERS

120 V, 60 Hz 4002612
230 V, 50 Hz 4002667

ACCESSORY NUMBERS

XC Pedestal Mount . . .5050282
Air Filter Kit5050281
Replacement Filter4470059

* Tested in accordance with ESD-STM 3.1-2000

**PULSEBAR[®] AND PULSEFLOW[®]
CONTROLLER**

DESCRIPTION

The PulseBar eliminates troublesome electrostatic charges. Featuring a slimline yet rugged design, the versatile PulseBar can be installed on many types of equipment. The PulseBar can be operated in Steady State or Pulsed DC operating modes. It is powered by the PulseFlow Controller and easily maintained. Available in standard lengths from 12" to 74".

The PulseFlow Controller (PFC-20) can power up to 20 electrode pairs. The PFC's design is user adjustable to both Pulse and Steady State DC separating modes. Controls are on the front panel for easy access and mounting. It allows independent voltage level control and provides four different pulse rates.

FEATURES

- Extended range
- Slim design for easy mounting in restricted space
- Quickly reduces static charges
- Simple to maintain
- Choice of Germanium or tungsten emitters



SPECIFICATIONS

PULSEBAR
Size - 0.95" x 1.2" x varied length
(2.4 cm x 3.0 cm x varied length)
Cable Length - 7 ft. (2.1 m)
Material - ABS plastic/anodized aluminum
Emitter Points - Germanium for ultra-clean requirements; 100% tungsten for Class 1 compatible

PULSEFLOW CONTROLLER (PFC-20)
Size - 5.75" x 5" x 1.65" (L x W x D)
(14.6 x 12.7 x 4.2 cm)
Weight - 22.5 oz. (700 g)
Input Voltage -
100 to 120 VAC/200 to 240 VAC,
50/60 Hz, as required



PULSEBAR GE MODEL NUMBERS

(Germanium Emitters)

Model	Lengths/Emitters	Number
PBEG 120	12"/7	4010099
PBEG 240	24"/7	4010031
PBEG 360	36"/11	4010032
PBEG 440	44"/15	4010033
PBEG 640	64"/19	4010034
PBEG 740	74"/19	4010455

PULSEBAR W MODEL NUMBERS

(Tungsten Emitters)

Model	Lengths/Emitters	Number
PBET 120	12"/7	4010456
PBET 240	24"/7	4010457
PBET 360	36"/11	4010458
PBET 440	44"/15	4010459
PBET 640	64"/19	4010460
PBET 740	74"/19	4010461

PULSEFLOW CONTROLLER MODEL NUMBERS

PFC-20/115.	4005184
PFC-20/230.	4005185



LABRAT[™]



DESCRIPTION

The labRAT is a bi-polar air ionizer designed to control electrostatic charge in analytic laboratory environments such as those found in the pharmaceutical and medical device industries. labRat can be

installed to control electrostatic problems associated with the use of precision balances. Applications include tools, mini-environments and flow-hoods. The unit's aerodynamic shape minimizes disturbance of airflow in the environment.

The labRAT is simple to install, operate and maintain. It comes complete with a 24VDC power supply. A convenient swivel stand is included for tabletop use and the stand allows mounting on a wall or under a shelf.

FEATURES

- Fastest static control
- Easy to install and operate
- Compact design

SPECIFICATIONS

Discharge Time - < 5 seconds at 2" (5.1cm)
Power Input - 24VDC
Connectors - 5.5 x 2.5mm, DC power IN
Operating Mode - Steady State DC
Indicator - Green-Power On
Emitters - 5-Tungsten
Enclosure - polycarbonate
Dimensions - 3.0" x 1.9" x 3.8" (H x W x L)
(7.5 x 4.8 x 9.8cm)
Weight - 8ozs (227gms)

MODEL NUMBERS

labRAT , 100-120V	4009928
230V	4010090



SCORPION™



DESCRIPTION

The scorpION is a high performance air ionization bar designed to control electrostatic charge in front-end semiconductor tools, mini-environments, flow-hoods and other cleanroom processes. scorpION incorporates SIMCO's industry leading full digital ionization technology (US patent #6,252,756B1). Aerodynamic shape minimizes disturbance of unidirectional airflow in the environment.

Simplify installation and maintenance. SIMCO's patented digital technology provides the finest operational stability in the industry. Years of experience designing and building ionization equipment insure you the fastest decay times to provide the lowest in-process charge levels. No need for a controller and no need for intrusion of process tools. With the scorpION, periodic adjustments are made using the IR remote control held in the line of sight.

ScorpION provides Steady State and Pulse DC operating mode capability. Easy interconnect of multiple units using RJ-11 modular connectors and wiring. Input power requirement is 24V DC and no external controller is required!

FEATURES

- User interface allows remote system monitoring and control
- Fastest static control
- IR remote control setup
- Germanium emitters - the new standard
- Exceeds Class 1 cleanroom requirements
- 24V DC input

SPECIFICATIONS

SCORPION
 Discharge Time -1,000 - 100V < 10 seconds at 18" (45.7 cm)
 Emitters - Germanium (US Patent #6,215,248B1) for ultra clean requirements
 Dimensions - 2.8" H x 1.7" W (7 cm x 4.3 cm)
 Power Input - 24VDC; 5W nominal
 Operating Modes - Selectable Steady State or Pulse DC
 Indicators - Two bi-color LED's on front panel. Green indicates respective polarity and duration of ion output. Rapid flashing indicates IR communication. Red indicates a fault condition.
 ON/OFF - Controlled from IR remote

SPECIFICATIONS

SCORPION REMOTE CONTROL TRANSMITTER
 Output - Infrared Signal; 38KHz carrier
 Power - ON/OFF automatic
 Indicator - Green LED indicates signal transmission
 Power - 9VDC alkaline battery
 Dimensions - 5.87" x 3.31" x 0.95" (L x W x D), (14.9 x 8.4 x 2.4 cm)

MODEL NUMBERS

Lengths	Emitters	Number
18"	7	4009440
24"	7	4009441
36"	11	4009442
44"	15	4009443
64"	19	4009444
scorpION remote control transmitter		4009242

Power Supply Kits - Powers 3 ScorpION Bars, any size
 N.AM 120V 5051165
 Cont. Euro 230V 5051166
 UK 230V 5051167

*Tested in accordance with ESD-STM3.1-2000, IONIZATION. Tested at 18" (45.7 cm) on centerline, in 90cfm unidirectional airflow.



VSE 3000



DESCRIPTION

The Chapman brand VSE 3000 Volume Static Eliminator (manufactured by SIMCO) is an efficient workstation ionizer which effectively eliminates electrostatic charges quickly and reliably. The VSE 3000's variable speed fan and integral air flow diffuser floods the entire workstation with static eliminating ions. The VSE 3000's patented self-balancing circuitry maintains a balance range of 0+/-5 V. Exceptionally quiet, the unit delivers a powerful air flow with low energy loss. Noise levels are low due to the use of sound absorbing materials.

FEATURES

- Fast charge decay
- 0+/-5 V balance
- Long Range
- Wide coverage area
- Rugged enclosure

SPECIFICATIONS

Discharge Time* - <2.0 sec (1000 V to 100 V) at 12"
 Size - 12" X 6.25" x 10" (W x H x D) (305 x 159 x 254 mm)
 Weight - 8 lbs. (3.6 kg.)
 Air Volume Output - Variable: 80 to 160 cubic ft/min (38 to 76 liters/sec)

MODEL NUMBERS

115 V 10735-001
 230 V 10735-014

ACCESSORY NUMBERS

Air Filters (5 each) ... 10790

* Tested in accordance with ESD-STM 3.1-2000



MINION™ IONIZING AIR BLOWER



DESCRIPTION

SIMCO's minION is designed to control electrostatic charges in semiconductor and electronics manufacturing equipment and for benchtop applications requiring high performance in a small package.

Using steady state DC corona ion technology, the minION features self-monitoring to ensure controlled, consistent ion output. Performance is enhanced by SIMCO's patented radial emitter pin array. Unique geometry and airflow control provide next-generation performance, meeting the demands of critical equipment manufacturers with corona ion technology.

The standard minION configuration allows for incoming air from the back, two sides and the top of the enclosure. In an optional configuration, the back is completely closed and air enters from the two sides and top of the unit. This configuration is especially useful for space-constrained applications, allowing the minION to be mounted flush against a wall or equipment enclosure housing.

FEATURES

- Compact
- Quickly controls static
- Can be flush mounted
- Simple to install and use

SPECIFICATIONS

Discharge Time* - 1,000 - 100 V <4 seconds at 12 inches (30.5 cm)
 Size - 5.5" x 6.37" x 2.18" (W x H x D) (14 x 16 x 5.6 cm) with stand
 Weight - 3.5 lbs. (1.6 kg.)
 Offset Voltage* - ±10 V
 Air Flow Volume -
 • Low Fan Speed: 17 CFM (23 l/s);
 • High Fan Speed: 34 CFM (42 l/s)
 Fan Speed - Low and high
 Coverage Area - 1' x 4'

MODEL NUMBERS

MINION 1 FAN	OPEN BACK	CLOSE BACK
N.AM./Japan	4009018	4009155
Cont. Euro.	4009049	4009156

ACCESSORY NUMBERS

Articulated Arm ... 5051141

* Tested in accordance with ESD-STM 3.1-2000



TOP GUN™



DESCRIPTION
SIMCO's Top Gun is a high-performance ionizing air gun for electronics manufacturing. Balanced to 0±15 V, the Top Gun features high blow-off force to provide efficient cleaning and rapid

static charge decay. A 0.01 micron filter at the exit of the gun ensures the air is clean.

The gun body is lightweight but durable. It features a light-touch trigger, making comfortable even for extended use. All functionality is built into the handle: flow control valve, balance adjustment for calibration, and a two-level LED which indicates both power and ionization. The gun and cable are static dissipative. A hanger is provided for easy mounting.

FEATURES

- Filter at gun exit to ensure clean air
- Lightweight ergonomic design for user comfort
- Adjustable airflow control
- Remote activation of ionization and air flow
- Ionization verification indicator light

SPECIFICATIONS

Discharge Time* - <1.3 sec. at 6"
Weight - 6.5 oz. (185 g.) (integral gun and 7' cable) 10 lbs. complete

Air Flow -

- 2.4 SCFM at 30 psi (68 l/min at 2 bar)
- 4.6 SCFM at 60 psi (130 l/min at 4 bar)
- 7.4 SCFM at 100 psi (210 l/min at 7 bar)

MODEL NUMBERS

Cable (ft)	Voltage	Number
7'	120V, 50/60Hz	4005105*
14'	120V, 50/60Hz	4006599*
7'	230V, 50/60Hz	4005106
14'	230V, 50/60Hz	4006600



ORION™



DESCRIPTION
orION provides the high performance and reliability of SIMCO's Top Gun model in a compact, compressed air nozzle. It has been designed for use in fixed applications on manufacturing lines, equipment, and tool applications in the telecommunications, consumer electronics, semiconductor, and medical device manufacturing industries.

The orION features high blow-off force capability combined with fast removal of electrostatic surface charge. Reliable balance stability is maintained at better than 0±15 Volts. An easily replaceable 0.01 micron particle filter is positioned at the nozzle air exit to provide the highest confidence that clean air is delivered to sensitive product.

An optional foot switch is available to activate the orION nozzle. The switch connects to the power supply, and when depressed, activates both airflow and power to the ion emitter assembly.

FEATURES

- Compact design
- Easy installation
- Fast charge neutralization
- Simple, reliable operation
- Low maintenance

SPECIFICATIONS

Discharge Time* - <1.5 sec. at 6"
Size -

- Nozzle - 6" x 2.5" x 1.25" (L x W x D)
 - Power Supply - 5.2" x 6.45" x 3.35" (W x H x D)
 - Cable Assembly - 3/8" dia. x 7'
- Weight - 6 oz. (integral nozzle and cable assembly)

MODEL NUMBERS

120 VAC, 7 ft. Cable	4009045
230 VAC, 7 ft. Cable	4009046



ORION™ SIDEKICK - HANDS-FREE OPERATION & FLEXIBLE POSITIONING

The Sidekick flexible neck frees the operator's hands during assembly and manufacturing processes. A foot pedal controls both ionization and airflow, which reduces compressed air costs. The flexible gun mount allows the orION operator to focus the ionization airflow where needed. Includes bracket for easy benchtop mounting. The Sidekick's model numbers are 4009245 (120 V) and 4009246 (230 V).



PULSEGUN

The AirSnake, PulsePoint Nozzle, PulseGun 5 and PulseGun 8 all utilize ionizing blow-off power to rapidly neutralize static charge in seconds and keep particles from contaminating product surfaces.

SPECIFICATIONS

Discharge Time* - <2 sec. at 6"
Size and Weight -

- Airsnake - 16.5" (42cm) length; 1 lb. 6 oz. (620 grams)
- PulsePoint Nozzle -3.4" L x 1" Dia. (86 mm Dia. x 25 mm L); 6 oz. (170 grams)

DESCRIPTION

The AirSnake (AS-2) is a hands-free flexible ionizing nozzle that can be positioned to produce a clean ionized stream onto a targeted location. The AirSnake uses a 0.02 micron filter. Powered by the AirFlow Controller, it can be mounted anywhere. The AS-2 nose cone meets OSHA requirements and contains easily replaced Class 1 emitters. The AirSnake 2 (AS-2) includes a foot pedal for on/off air control.

MODEL NUMBERS

AS-2** ... 4005181

AIRSNAKE™

PULSEPOINT™ NOZZLE

DESCRIPTION

The AN PulsePoint Air Nozzle (AN) fits at the end of a compressed air line to provide focused continual ionization. Its small footprint enables the nozzle to be mounted on equipment in physically restrictive areas. The PulsePoint Nozzle comes complete with two caps to allow you to choose either an in-line or exit point applications.

MODEL NUMBERS

AN ... 4009921

PULSEGUN™ 5 PULSEGUN™ 8

DESCRIPTION

Constructed of black Delrin, the PulseGun 5 (PG5) is designed for cleaning and assembly applications where constant or extended usage is required.

The PulseGun 8 (PG8) is a cleanroom ionizing gun with replaceable Class 1 electrodes designed for ultra-clean. An internal 0.02-micron filter eliminates particles in the gas supply line.

MODEL NUMBERS

PG-5** ... 4005149
PG-8** ... 4005150

- PulseGun - 1.25" Dia. x 5.75" L (32 mm Dia. x 146 mm L); 14 oz. (397 grams)
- PulsePoint Nozzle - 1.0 SCFM at 10 PSI; 6.5 SCFM at 50 PSI; 13.5 SCFM at 100 PSI
- PulseGun - PG5 PG8
SCFM at 10 PSI 1.5 0.8
SCFM at 50 PSI 6.5 5.5
SCFM at 100 PSI 13.0 11.5
- Airsnake - 0.8 SCFM at 10 PSI; 5.5 SCFM at 50 PSI, 11.5 SCFM at 100 PSI



AIRFLOW® CONTROLLER
CE

DESCRIPTION

The AirFlow Controller provides power and control of ion balance to the PulseGun, AirSnake, and PulsePoint Nozzles. It has independent voltage level controls and Pulse or Steady State DC indicator lights. A silent switch incorporated into the Controller allows voltage to be applied to the ionizer only when there is air flow. All controls are located on the front panel to accommodate mounting above or below any work area.

SPECIFICATIONS

Size - 5.75" x 5" x 1.65" (L x W x D) (14.6 x 12.7 x 4.2 cm)
Weight - 22.5 oz. (700 grams)
Input Voltage - 110-120 VAC/220 - 240 VAC, 50/60 Hz as required
Pulse Rate Dial Position - 10 Hz, 2.2 Hz, 1.3 Hz, 1.0 Hz, SS
Inlet and Outlet Fitting - 1/4" tube, push-in type

MODEL NUMBERS

AFC-2/115 ... 4005186
AFC-2/230 ... 4005187