DAVUM TMC

EQUIPEMENTS POUR L'INDUSTRIE

ELECTRONIQUE

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SALLE BLANCHE IONISATION

SALLE BLANCHE

ÉLECTRONIQUE

LABORATOIRE

BIOTECHNOLOGIE

ESD
Electrostatic Discharge
PROTECTION

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IONISATION

ÉLIMINATION DES CHARGES ÉLECTROSTATIQUES ET DES POUSSIÈRES

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Compact Ionizing Blower

minION™2

Simco-Ion's minION2 Ionizing Blower is designed to control electrostatic charges in sensitive electronics assembly and automated tool applications requiring stable operation with fast discharge time performance. The minION2 is built to deliver big performance and reliability in a compact package with a practical feature set.

A combination of unique, patented features incorporated in this product make it possible for the minION2 to deliver industry-leading performance. Simco-Ion's steady-state DC corona ion technology provides a patented control circuitry to deliver consistent performance. Performance is enhanced by use of patented radial ion emitter design. Our unique geometry and airflow control provide performance meeting the demands of electronics and critical assembly manufacturers with corona ion technology.

minION2 uses a modular wiring system that allows power delivery by "daisy-chaining" up to 3 units on one standard, modular power supply. Hard wiring of power can be accommodated by use of a terminal block located on the back of the unit. The terminal block also features a relay contact output of the fault signal to enable remote monitoring.

An optional clamp-on articulating arm stand is available for applications requiring an elevated position or to save work surface space.

Features

- Compact Design
- Self-balancing control circuit technology
- Modular Wiring System
- Local LED and relay contact alarm signal

Benefits

- Portable enough for field service applications; large enough for permanent benchtop or in-tool operation
- Self-monitoring to ensure controlled and consistent ion output
- 24 VDC input power supplied by wall ac adapter or by local tool power; up to 3 units daisy chained from one power source
- Convenient indication of fault ionization operation

Ionization Solutions

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Specifications

Input Voltage	24 VDC, 250 mA, 6W
Balance	±10V using auto-adjust
Discharge	2 sec @ 1'; fan high (1000-100V)*
Coverage	1' x 3' area
Controls	Two position OFF/ON
Fan Speed	Recessed potentiometer.
LED Indicators	Green POWER; Red FAULT
Airflow	21-42 cfm
Audible Noise	52 dBA (max), fan speed high (2' from unit)
Operating Env.	Temperature 32-122°F (0-50°C); humidity 30-70% RH, non-condensing
Emitters	Six stainless steel
Connectors	Two 4P4C "handset" modular/power; plug-type terminal block/power and fault signal
Power Supply	Universal 100-240 VAC input (IEC-320)/24 VDC, 1.66A output (suitable to power up to 3 units)
Mounting	Stainless steel; optional articulating arm
Enclosure	White reinforced polycarbonate
Dimensions	3.875W x 5.375H x 2.375D in. (98 x 136 x 60 mm)
Weight	1.1 lb (0.5 kg)
Warranty	Two year limited warranty
Certifications	CE c UL us RoHS 2 Compliant

* Tested in accordance with ANSI/ESD STM3.1-2006.

Ordering Information

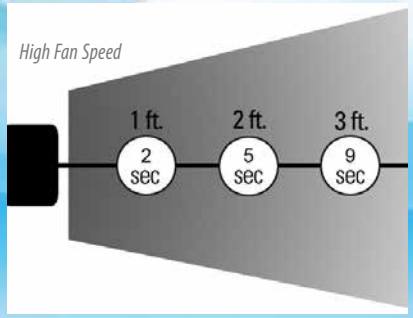
4112230	minION2 (no DC power supply), locking stand, 4P cable
4011424	minION2 (no DC power supply)
4011425	minION2 with 100/120 VAC to 24 VDC power supply, North America
4011426	minION2 with 230 VAC to 24 VDC power supply, Continental Europe
4011427	minION2 with 230 VAC to 24 VDC power supply, United Kingdom
4025592	MinION2 with 230 VAC to 24 VDC power supply, China
5051141	Articulating Arm Kit

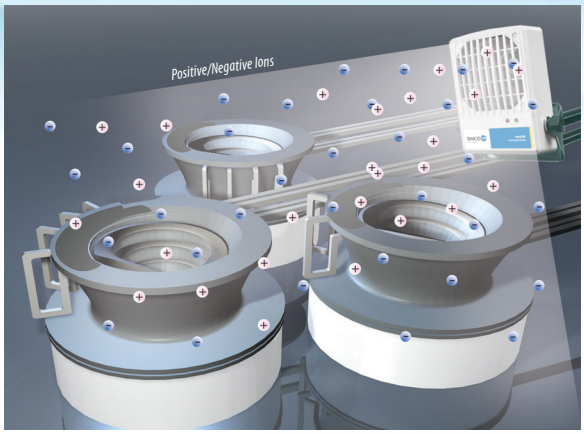
Designed for Convenient Mounting

The minION2 ionizer is designed for portable or permanent operation. The stand provided can be used in a permanent operation by bolting it to a sturdy flat surface such as a wall or shelf. The optional Articulating Arm offers flexibility for directed ionization into hard to reach target areas.

minION2 with Optional Articulating Arm

Discharge Time (typical)





minION2 ionization for bowl feeder application.

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Ionizing Air Blower

AEROSTAT® PC

Simco-Ion's Aerostat PC Ionizing Air Blower provides localized coverage with superior charge decay efficiency. The Aerostat PC operates on AC technology and is designed to provide ionization to a targeted work surface.

Distinguished by its variable fan speed control, heater element, and emitter point cleaner, the Aerostat PC is an excellent choice for eliminating static in production processes. While helping to protect products and personnel from the effects of static discharge, the Aerostat PC is lightweight, small, and quiet – making it easy for the user to direct the ionization where it is needed.

Features	Benefit
• Discharge time of 1.5 seconds at 1 foot*	• Fast, targeted neutralization of static charges
• Lightweight, compact and quiet for unobtrusive use	• Directed ionization designed for workbench area
• Built-in emitter point cleaner	• Minimizes the time required to perform normal maintenance
• Variable speed fan for airflow control	• Matches ionization performance to targeted work area
• Status lamp indicates high voltage is present at the emitter points	• Minimizes component loss due to unintentional ionization stoppage
• Integrated heater for warm air flow	• User comfort helps to insure that ionization remains on
• Optional Fan Air Filter	• Protection for internal components from environmental contamination

* Tested in accordance with ANSI/ESD STM3.1-2006.

Ionization Solutions

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Specifi ations

Input Voltage	120 VAC, 60 Hz: 1.7A (fan high, heater on); 0.1A (fan low, heater off) 230 VAC, 50 Hz: 0.9A (fan high, heater on); 0.05A (fan low, heater off)
Discharge	1.5 sec @ 1′ (1000-100V)[1] fan high
Balance	±10V @ 1′
Ion Emission	AC Ionization
Emitter Points	Stainless Steel
Coverage	1′ x 5′ area
Controls	HEATER ON/OFF switch; BLOWER ON fan speed control knob
Indicator Lights	Orange IONIZATION STATUS
Airflow	35-70 cfm
Heated Air Temp	Fan low 25°F (14°C) above ambient; fan high 11°F (6°C) above ambient
Audible Noise	Fan speed low 50 dB; fan speed high 57 dB (2′ from unit)
Air Velocity[2]	1′ 2′ 3′ 4′ Fan Low: 250 200 150 125 Fan High: 500 400 300 250
Operating Env.	Temperature 59-95°F (15-35°C); humidity 30-70% RH, non-condensing
Ozone	0.005 ppm measured 6″ in front of unit; test conducted in accordance with EPA EQQA-0577-019 using Dasibi Ozone Monitor Model 10030AH
Air Filter	30 ppi open cell polyurethane foam (optional)
Mounting	Metal Mounting Stand/Bracket included
Enclosure	Aluminum/Polyester Epoxy
Weight	5.7 lbs (2.6 kg)
Dimensions	8.625H x 5.5W x 3.25D in. (14 x 22 x 8.4 cm)
Warranty	Two year limited warranty
Certifications	RoHS 2 Compliant CE 230V, 50 Hz c UL us 120V, 60 Hz

1. Tested in accordance with ANSI/ESD STM3.1-2006.
2. Velocity is FPM measured at center line of airstream.

Ordering Information

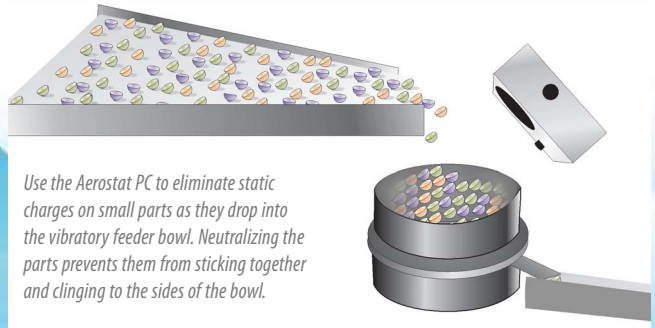
4003367	Aerostat PC with Heater, 120V, 60 Hz, UL, North America
4003368	Aerostat PC with Heater, 230V, 50 Hz, CE, Continental Europe
4008087	Aerostat PC with Heater, 230V, 50 Hz, CE, United Kingdom
4015566	Aerostat PC with Heater, 230V, 50 Hz, CE, China
4710017	Aerostat Air Filter Retainer
4100810	Aerostat PC Air Filter (6-pack)

Emitter Point Cleaner

The Aerostat PC features a built-in emitter point cleaner. Using the emitter point cleaner takes only seconds. Cleaning the emitter points prevents the build-up of airborne debris. This keeps your Aerostat PC working in top form for the life of the unit.

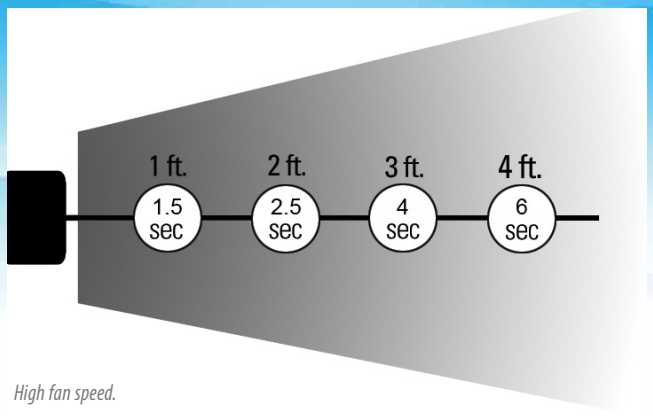
Applications

The Aerostat PC was designed for use with sensitive electronic components, where electrostatic charge is a problem. The Aerostat PC 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.



Use the Aerostat PC to eliminate static charges on small parts as they drop into the vibratory feeder bowl. Neutralizing the parts prevents them from sticking together and clinging to the sides of the bowl.

Discharge Times (typical)



High fan speed.

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Extended Coverage Area Ionizing Blower

AEROSTAT® XC2

Simco-Ion's new Aerostat XC2 provides complete wide area ionization protection. As with its' predecessor, the Aerostat XC Ionizing Blower, the Aerostat XC2 is designed and built for reliable, long-term static control for a variety of electronic, semiconductor, flat-panel display and medical assembly applications. The XC2 offers outstanding coverage for larger areas with <12 second discharge times at 6 feet (1.8m) distance from the face of the blower. The weight-saving design allows the Aerostat XC2 to be mounted above the work surface, which is especially effective for flat panel display module assembly.

The Aerostat XC2 offers inherent balance to 0 ±10V for protection of sensitive electronic components. The XC2 is loaded with usability features including a built-in emitter point cleaner, adjustable locking stand, fan speed control, optional airflow heater and separate balance and fan stall alarm LEDs with optional audible alarm. These features, plus its stylish design, make the Aerostat XC2 the ideal extended coverage ionization blower for assembly, test and packaging areas.

Features

- Large, near symmetric Ionization area coverage
- Weight saving design
- Easy to use, built-in emitter cleaner
- ±10V self-balancing ("Micropulse") technology
- Local alarm LEDs, Facility Monitoring System (FMS) connection and optional audible alarm
- Integrated heater for warm air flow

Benefit

- Designed for complete static neutralization across the entire work surface area
- Light enough to be easily mounted on or above the work surface
- Insures consistent, balanced performance over a long time
- High precision balance never needs calibrating
- Ionization status can easily be monitored locally and at a remote location
- User comfort helps to insure that ionization remains on

Ionization Solutions

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Specifications

Input Voltage	100-240 VAC, 50/60 Hz
Input Current	0.5A, 55W max (no heater); 3.5A, 420W (with 100-120 VAC heater); 1.9A, 460W (with 220-240 VAC heater)
Discharge	1.0 sec @ 1′ (1000-100V high fan speed)[1]
Balance	0 ±10V
Coverage Area	3′W x 6′L (effective coverage area is up to 6′ from the blower face)
Ion Emission	Micropulse AC Ionization
Emitter Points	Stainless Steel
Controls	Power on/off; fan speed control low/medium/high; emitter point cleaner push button; heater on/off (optional)
Indicator Lights	Green POWER on, red FAULT alarm, red FAN STALL alarm
Connectors	IEC AC Power Cord outlet, FMS fault alarm output connector
Air Volume	95 cfm (low), 150 cfm (high fan speed)
Air Velocity[2]	620 fpm @ 12″, 435 fpm @ 24″, 325 fpm @ 36″, 265 fpm @ 48″ (high fan)
Heated Air Temp	4-5°F (2-3°C) above ambient, measured at 12′ in front of blower (optional)
Audible Noise	58 dB (low fan speed), 70 dB (high fan speed) measured at 2′ in front of blower
Cleanroom Class	Meets ISO 14644-1 Class 6 (Fed Std. 209E Class 1000)
Ozone	<0.05 ppm measured at 1′ in front of blower
Operating Env[3]	Temperature 50-95°F (10-35°C), humidity 30-60% RH, non-condensing
Audible Alarm	Fault and fan stall (optional)
Mounting	Powder-coated steel stand with skid resistant rubber feet
Enclosure	Powder-coated aluminum chassis
Dimensions	14.13W x 7.2H x 6.55D in. (35.9W x 18.3H x 16.6D cm) with stand
Weight	7 lbs (3.2 kg) with stand
Warranty	2 year limited warranty
Certifications	RoHS 2 Compliant

1. Tested in accordance with ANSI/ESD STM3.1-2006.
2. Velocity in fpm measured at center line of air stream; all values ±10%.
3. Will provide specified (to specification) performance when operated in an environment meeting the cleanliness requirements for ISO Class 6.

Ordering Information

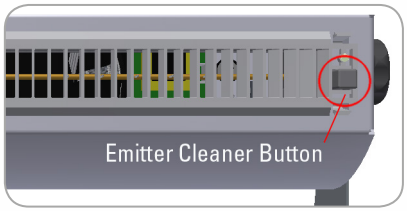
91-XC2-xx-04	Aerostat XC2 Ionizing Blower
91-XC2-xx-04A	Aerostat XC2 Ionizing Blower with Audible Alarm
91-XC2-xx-04H	Aerostat XC2 Ionizing Blower with Heater
91-XC2-xx-04HA	Aerostat XC2 Ionizing Blower with Heater and Audible Alarm
33-6002-01	Aerostat XC2 Replacement Emitter Cartridge
33-6003-01	Aerostat XC2 Air Filter Kit
33-6004-01	Aerostat XC2 Replacement Air Filters (6 pack)

Note: Part numbers above where xx = US (120V, 60 Hz with North America power cord); xx = EU (230V, 50 Hz with Continental Europe power cord); xx = UK (230V, 50 Hz with United Kingdom power cord); xx = CN (230V, 50 Hz with China power cord); xx = JP (100V, 60 Hz with Japan power cord).

Balance Stability with Low Product Maintenance

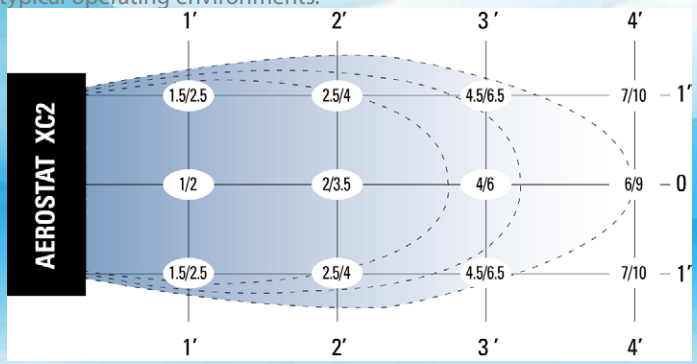
The Aerostat XC2 utilizes MicroPulse technology applied to a emitter system for optimal performance. MicroPulse technology reduces ion recombination at the emitter, thus increasing product efficiency and performance. Using this breakthrough technology, the Aerostat XC2 maintains long-term peak performance and balance stability for extended periods between cleanings.

The only maintenance required for the Aerostat XC2 is periodic cleaning of the emitter points using the easy, built-in push button. The cleaning mechanism slides over the emitter points, removing any debris and ensuring balanced, continuous ion output.



Discharge Times

Each point identifies the 1000V to 100V discharge times (in seconds) with high fan/low fan speed across the target area. Times are slightly higher with 230V/50 Hz unit. Times have shown to be less under typical operating environments.



Discharge times are tested in accordance with ANSI/ESD STM3.1-2006.

Adaptable Options

- An integrated heater which warms the air at the face of the XC2 for increased user comfort.
- An audible alarm that operates in addition to the visible red LED on the blower to indicate operational failures including a stopped fan or loss of ionization.

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DS-XC2_V4 - 3/15

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Overhead Ionizing Blower

AEROSTAT® GUARDIAN

Simco-Ion's Aerostat Guardian Overhead Ionizing Blower provides superior static charge decay over an entire work surface area. Equipped with task lighting and an integrated heater, the Guardian offers user-friendly operation while effectively protecting sensitive components from ESD damage.

Featuring Simco-Ion's patented inherent balance and built-in emitter point cleaners, the Guardian is the lowest maintenance overhead ionizer available. Like Simco-Ion's other Aerostat series ionizing air blowers, the Guardian operates on AC technology to provide stable balance performance over long periods of use. It is available with airflow diffusers for superior static charge decay efficiency over a large work surface area. Without diffusers, the Guardian provides fast charge decay directly under the unit for targeted work surface coverage.

Features

- Inherently balanced to 0 ±5V
- Integrated heater and task lights
- AC technology
- Ionization light
- Integrated emitter point cleaner

Benefit

- Protects even the most sensitive electronic components
- User-friendly—enhances operator comfort and efficiency
- Stable balance over extended periods of use
- Verifies that the unit is ionizing
- Easy to maintain

Ionization Solutions

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Specifi ations

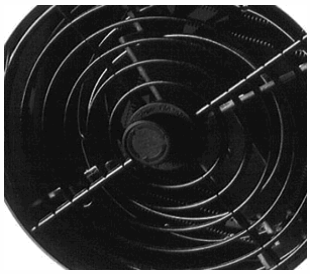
Input Voltage	120 VAC, 60 Hz, 0.5A (fan low, heater/light off); 2.5A (fan high, heater/light on) 230 VAC, 50 Hz, 0.2A (fan low, heater/light off); 1.5A (fan high, heater/light on)
Discharge	3.0 sec @ 18" center blower position; fan high-no diffusers (1000-100V)[1]
Balance	0 ±5V @ 18" from blower face
Ion Emission	AC Ionization
Coverage	2' x 4' area
Cleanroom Class	Meets ISO 14644-1 Class 5; Fed std. 209E Class 100
Emitter Points	Stainless Steel
Controls	Fan speed control knob BLOWER ON; on/off switch HEATER & TASK LIGHT
Indicator Lights	Orange IONIZATION STATUS; orange within on/off switches HEATER & TASK LIGHT
Air Volume	150-300 cfm (low to high), combined 3-fan output
Heated Air Temp	25°F (14°C) fan low; 11°F (6°C) fan high measured @ 6" in front of center fan above ambient;
Audible Noise	50 dBA fan low; 60 dBA fan high
Operating Env.	Temperature 32-122°F (0-50°C); humidity 30-70% RH, non-condensing
Ozone	0.02 ppm, measured @ 12" in front of unit[2]
Lamp	13W twin tube, compact fluorescent, 1650 lumen total task light output
Air Filter	30 ppi open cell polyurethane foam (optional)
Mounting	Adjustable brackets and S-hooks provided
Enclosure	Powder-coated white enamel aluminum
Weight	16 lb (7.3 kg)
Dimensions	42.75W x 4H x 6.75D in. (108.6 x 10.2 x 17.1 cm)
Warranty	Two year limited warranty
Certifications	RoHS Compliant CE 230V, 50 Hz c UL us 120V, 60 Hz

1. Tested in accordance with ANSI/ESD STM3.1-2006.
2. Test conducted in accordance with EPS EQQA-9577-019 using Dashibi Ozone Monitor Model 1003AH.

Ordering Information

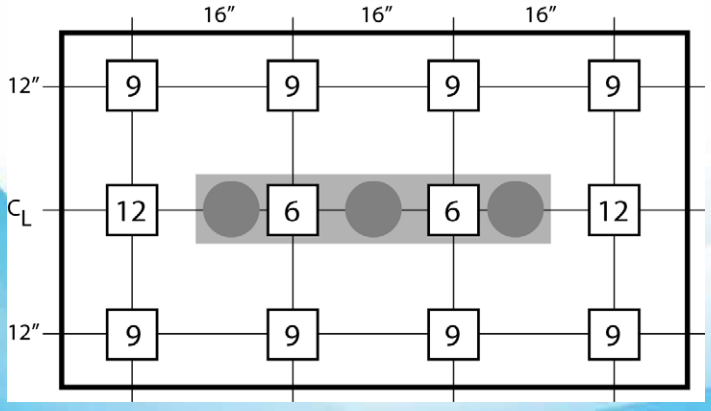
4004063	Aerostat Guardian, 120V, 60 Hz, UL, North America
4005306	Aerostat Guardian (no diffusers), 120V, 60 Hz, UL, North America
4004261	Aerostat Guardian, 230V, 50 Hz, CE,Continental Europe
4009890	Aerostat Guardian, 230V, 50 Hz, CE, United Kingdom
4710017	Aerostat Guardian Air Filter Retainer (1 per fan required)
4100810	Aerostat Guardian Air Filter Pack (6 filters)
4610811	Aerostat Guardian Task Light Fluorescent Lamp, 13W (2 per blower)

Emitter Point Cleaner

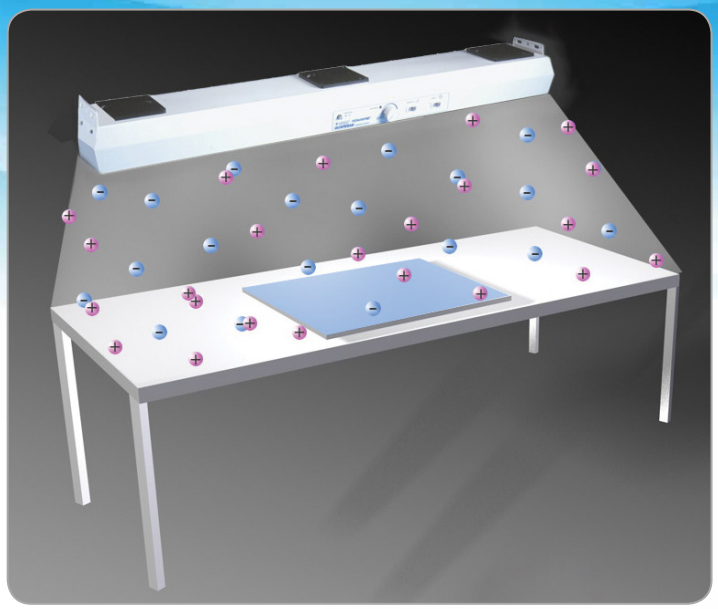


The Aerostat Guardian features a built-in emitter point cleaner for each fan.. Using the emitter point cleaner takes only seconds. Cleaning the emitter points prevents the build-up of airborne debris. This keeps your Aerostat Guardian working in top form for the life of the unit.

Discharge Times Performance



Discharge time in seconds (1000-100V), fan speed set to high. Guardian blower 18" from CPM measuring plate. CPM test plate 1" from table. Discharge times slightly longer for 230 VAC, 50 Hz unit.



Overhead Ionization application

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Cleanroom-rated Overhead Ionizing Blower

GUARDIAN CR2000

Simco-Ion's Guardian CR2000 Cleanroom-rated Overhead Ionizing Blower is designed specifically for use in cleanroom applications. 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 ±5V. Balance stability is further enhanced by use of Simco-Ion'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 free of silicones. Fan assemblies are particle-tested to ISO 14644-1 Class 4 (Fed Std. 209E Class 10) particle limits.

The Guardian CR2000 is also equipped with Simco-Ion's patented built-in emitter point cleaner. A lockout switch prevents tampering with the desired performance level. Built-in balance and ion output monitors verify the presence of balanced, ionized air. A standard power outlet on each Guardian CR2000 blower allows for daisy-chaining up to 10 units.

Unlike some overhead ionizers which link to an external device to provide real-time monitoring, the Guardian CR2000 has sophisticated internal monitoring circuitry which provides assurance that the unit is ionizing and that the balance circuit is functioning.

Features

- Inherently balanced to 0 ±5V
- Ion balance and ion output monitors
- Lockout key switch
- Silicone-free component surfaces
- Integrated emitter point cleaner

Benefit

- Protects even the most sensitive electronic components
- Verifies that the unit is ionizing and balanced
- Helps maintain desired ionization performance level
- ISO 14644-1 Class 4 (Fed Std. 209E Class 10) cleanroom compatibility
- Provides fast, easy maintenance

Specifi ations

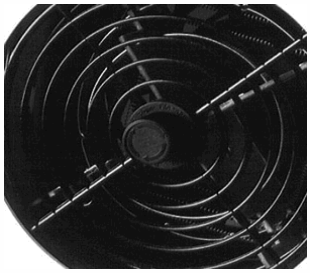
Input Voltage	2-fan 120 VAC, 50/60 Hz, 0.2A; 230 VAC, 50/60 Hz, 0.1A; 3-fan 120 VAC, 50/60 Hz, 0.3A; 230 VAC, 50/60 Hz, 0.15A
Balance	0 ±5V @ 18" from blower face
Discharge	3.0 sec @ 18" center blower position fan high (1000-100V)[1]
Coverage	2' x 3' area 2-fan; 2' x 4' area 3-fan
Cleanroom Class	Meets ISO 14644-1 Class 4; Fed std. 209E Class 10
Emitter Points	Stainless Steel
Controls	3-position key switch OFF, ADJUSTABLE, HIGH; recessed fan speed control
LED Indicators	Ionization Status: green NORMAL, red MAINTENANCE
Air Volume	2-fan 90 cfm fan low, 180 cfm high fan; 3-fan 135 cfm fan low, 270 cfm high fan
Air Velocity	200 fpm (1.0 m/s) fan low; 400 fpm (2.0 m/s) fan high measured @ 18" (46 cm)
Audible Noise	48 dBA fan low; 58 dBA fan high measured @ 2' (61 cm)
Operating Env.	Temperature 32-122°F (0-50°C); humidity 30-70% RH, non-condensing
Ozone	0.02 ppm measured @ 18" above test plate
Power Outlets	Input IEC 320; output IEC 320, allows power connection (daisy-chain) of up to 10 units in series from one power source
Mounting	Adjustable brackets and S hooks provided
Enclosure	Aluminum with glossy white polyurethane finish
Dimensions	31.75W x 4H x 6.75D in. (81 x 10 x 17 cm) 2-fan; 42.75W x 4H x 6.75D in. (109 x 10 x 17 cm) 3-fan
Weight	12 lb (5.5 kg) 2-fan; 15 lb (6.8 kg) 3-fan
Warranty	Two year limited warranty
Certifications	CE 230V, 50 Hz c UL us 120V, 60 Hz

1. Tested in accordance with ANSI/ESD STM3.1-2006.

Ordering Information

4008729	Guardian CR2000 2-fan, 120V, 60 Hz, UL, North America
4008730	Guardian CR2000 2-fan, 230V, 50 Hz, CE, Continental Europe
4008804	Guardian CR2000 2-fan, 230V, 50 Hz, CE, United Kingdom
4008630	Guardian CR2000 3-fan, 120V, 60 Hz, UL, North America
4008705	Guardian CR2000 3-fan, 230V, 50 Hz, CE, Continental Europe
4008805	Guardian CR2000 3-fan, 230V, 50 Hz, CE, United Kingdom
5050542	Overhead Blower Daisy-chain Kit, 10' power cord

Emitter Point Cleaner

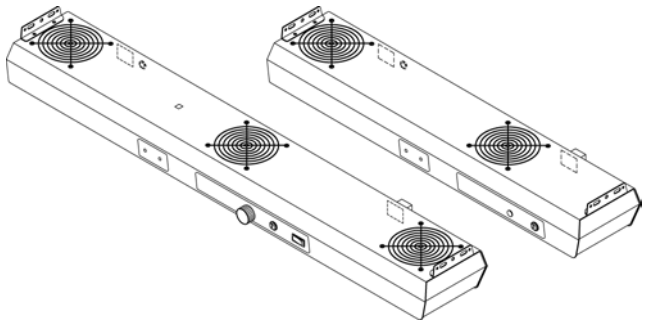


The Guardian CR2000 features a built-in emitter point cleaner for each fan.. Using the emitter point cleaner takes only seconds. Cleaning the emitter points prevents the build-up of airborne debris. This keeps your Guardian CR2000 working in top form for the life of the unit.

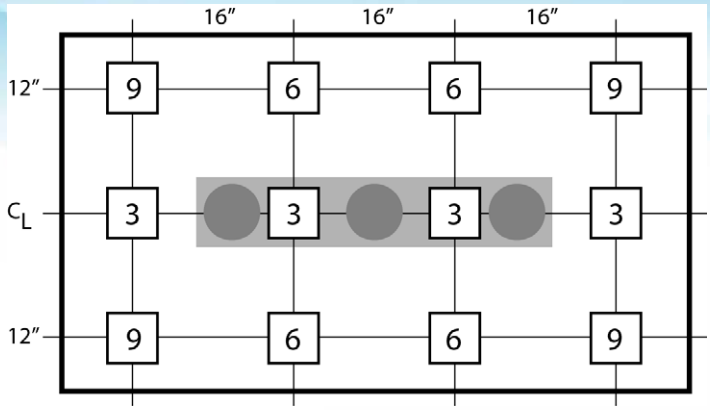
Application-specific Blower Lengths

The Guardian CR2000 Overhead Ionizing Blower comes in either 2-fan or 3-fan chassis lengths. Each length is designed for optimal coverage area and for a variety of applications:

- A 2-fan overhead blower will provide coverage for 2 foot by 3 foot area
- A 3-fan overhead blower covers a 2 foot by 4 foot area



Discharge Time Performance



Discharge time in seconds (1000-100V), fan speed set to high; Guardian CR2000 blower 18" from CPM measuring plate; CPM test plate 6" from table; discharge times slightly longer for 230 VAC, 50 Hz unit.

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DS-Guardian CR2000_V2 - 10/14

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Top Gun™ Ionizing Air Gun

TOP GUN

Simco-Ion's Top Gun Ionizing Air Gun is a high-performance ionizing air gun designed for a wide variety of electronic manufacturing, medical and assembly applications. Balanced to 0±15V, the Top Gun features high blow-off force and low air consumption providing high efficiency cleaning and maximum static charge decay. A filter at the exit of the gun ensures that the air is clean.

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

Features

- Lightweight, Ergonomic Design
- Flow Control Valve for Adjustable Airflow
- Electrically balanced ion output
- Integrated, Replaceable Filter-Nozzle
- Ionization Indicator Light

Benefits

- Maximum user comfort prevents operator fatigue and increases productivity
- Airflow use that meets the specific application requirements
- Protects ESD senstive components and assemblies
- Insures air contacting the target area is clean
- Eliminates the guesswork of ionization at target area

Specifications

Top Gun 3	
Input Voltage	120 VAC, 60 Hz, 0.2A; 230 VAC, 50 Hz, 0.1A
Discharge	1.3 sec @ 6" (15.2 cm), 30 psi (±1000-100V); 0.5 sec @ 2" (5 cm), 60 psi (±1000-100V)[1]
Balance	±15V
Flow	2.4 scfm @ 30 psi (68/min, 2 bar); 4.6 scfm @ 60 psi (130/min, 4 bar); 7.4 scfm @ 100 psi (210/min, 7 bar)
Blow-off Force	180g @ 100 psi, 2" diameter target 3" from the gun
Air Pressure	Pressure relief in nozzle complies with OSHA requirements
Audible Noise	76 dbA @ 30 psi input (2 bar); 89 dbA @ 60 psi input (4 bar); 97 dbA @ 100 psi input (7 bar); measured 24" (600 mm) from nozzle
Operating Env.	Temperature: 32-104°F (0-40°C); humidity: 30-60% RH (non-condensing)
Ozone	0.001 ppm measured 18" (450 mm) from gun, operation @ 15 psi (1 bar)
Filter	0.01 micron rating; replacement filters available
Gas Input	100 psi max; Clean Dry Air (CDA) or Nitrogen
Gas Connection	1/4" NPT (female)
Air Hose	Static dissipative polyurethane, 7' or 14' standard, 5' or 14' with optical sensor (integral to gun and control module)
Enclosure	Gun: Static dissipative polycarbonate/ABS blend; cable: static dissipative polyurethane
Dimensions	Gun: 6.5 oz (185g); air hose: 1.25 ounces/ft (115g/m)
Warranty	2 year limited warranty
Certification	CE 230V, 50 Hz c UL us 120V, 60 Hz (except versions w/optical sensor)
Control Module	
Power	120 VAC, 50/60 Hz, .10A; 230 VAC, 50/60 Hz, .05A
Power Inlet	IEC 320
Pressure	Maximum 100 psi Clean Dry Air Or Nitrogen (7 bar) 1/4" NPT connector, female
Dimensions	5.20W x 6.45H x 3.35D in. (132 x 164 x 85 mm)
Enclosure	Powder-coated steel
Weight	6 lbs (2.7 kg)

1. Tested in accordance with ANSI/ESD STM3.1-2006.

Ordering Information

4005105	Top Gun 3, 120V, 7' Cable/Hose Assembly, 60 Hz, UL, cUL, North America
4005106	Top Gun 3, 230V, 7' Cable/Hose Assembly, 50 Hz, CE, cUL, Continental Europe
4009894	Top Gun 3, 230V, 7' Cable/Hose Assembly, 50 Hz, CE, United Kingdom
4015642	Top Gun 3, 230V/50 Hz, 7 ft , Cable/Hose Assembly, China CE
4006599	Top Gun 3, 120V, 14' Cable/Hose Assembly, 60 Hz, UL, cUL, North America
4006600	Top Gun 3, 230V, 14' Cable/Hose Assembly, 50 Hz, CE, cUL, Continental Europe
4009895	Top Gun 3, 230V, 14' Cable/Hose Assembly, 50 Hz, CE, United Kingdom
4015643	Top Gun 3, 230V/50 Hz, 14 ft Cable/Hose Assembly, China CE
4012199	Top Gun 3, 120V, 5' Cable/Hose Assembly, optical sensor, 60 Hz, North America
4012200	Top Gun 3, 230V, 5' Cable/Hose Assembly, optical sensor, 50 Hz, CE, Continental Europe
4012201	Top Gun 3, 230V, 5' Cable/Hose Assembly, optical sensor, 50 Hz, CE, United Kingdom
4012202	Top Gun 3, 120V, 14' Cable/Hose Assembly, optical sensor, 60 Hz, North America
4012203	Top Gun 3, 230V, 14' Cable/Hose Assembly, optical sensor, 50 Hz, CE, Continental Europe
4012204	Top Gun 3, 230V, 14' Cable/Hose Assembly, optical sensor, 50 Hz, CE, United Kingdom
4006992	Top Gun 3, 120V, Sidekick (hands-free stand), 60 Hz, UL, cUL, North America
4007005	Top Gun 3, 230V, Sidekick (hands-free stand), 50 Hz, CE, cUL, Continental Europe
4015644	Top Gun 3, 230V/50 Hz, Sidekick (hands-free stand), China
4012205	Top Gun 3, 120V, Sidekick (hands-free stand), optical sensor, 60 Hz, North America
4012206	Top Gun 3, 230V, Sidekick (hands-free stand), optical sensor, 50 Hz, CE, Continental Europe
5050696	Filter/Nozzle Kit (2 per pkg)
5051416	Filter Premium Replacement Kit (2 per pkg)

Top Gun with Optional Sidekick

The Top Gun with Sidekick offers hands-free operation and flexible positioning during assembly and manufacturing processes. A foot pedal controls both ionization and airflow, which reduces compressed air costs and extends the life of the ionizer. The flexible gun mount allows the operator to focus the ionized airflow where it is needed. The stand includes a steel bracket for easy bench-top mounting.


Top Gun Sidekick

- Fully adjustable 18 inch neck focuses the ionized airflow
- Tabletop bracket provides easy mounting
- Foot pedal permits hands-free operation

Top Gun with Optical Sensor

For automated assembly, all versions of the Top Gun are available with an optional Optical Sensor, which automatically activates the gun when an object is in range. The Optical Sensor has an "adjustable range" from 1-30 inches.


Optical Sensor

Applications

- Medical device manufacturing and packaging
- Precision parts assembly
- Particulate removal in optics
- Cleaning glass or molded parts prior to finishing
- Cleaning thermo-formed trays

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AirForce Ionizing Blow-off Gun

MODEL 6115

The Simco-Ion AirForce Ionizing Blow-off Gun was designed with the operator in mind. The AirForce's lightweight, flexible air hose—just 3/8" in diameter—moves with the operator and makes work easier. No high voltage cable means improved operator safety. The gun's ergonomic design—with a light touch trigger and easy-view LED—minimizes fatigue and eliminates wrist hyperextension. The compact console can be mounted anywhere, so it doesn't take up valuable workspace but is still easily accessible. To make the work environment more pleasant, the AirForce also features low audible noise.

Strong blow-off power makes the AirForce effective in removing particle contamination and ideal for use in clean process applications. The 6115 is the only gun product rated at ISO 14644-1 Class 4 cleanliness (Fed. Std. 209e Class 10 equivalent). Steady-state DC ion emission provides efficient ionization with an average discharge time of less than 1.0 second. Results are even better because Simco-Ion IsoStat technology means static charge is controlled with constantly balanced ionization.

Features

- Ergonomic gun design
- Flexible, lightweight air hose with integral low voltage power cable
- Replaceable emitter point assembly and quick-eject filter
- Strong blow-off force
- Steady-state DC ion emission
- IsoStat® technology
- Durable static-dissipative materials
- ISO 14644-1 Class 4 cleanliness operation

Benefits

- Reduces fatigue and wrist hyperextension
- Moves with operator and does not interfere with work
- Minimizes maintenance downtime
- Effective removal of particle contamination
- Fast discharge times; efficient ion delivery
- Intrinsically balanced; no calibration needed
- Holds up to high impact; ESD-safe
- Suitable for use in cleanroom applications for semiconductor, medical and HDD applications

Specifications

Discharge	±1000-100V 1.0 sec @ 6" (15.2 cm), 30 psi[1]
Balance	±30V
Cleanroom Class	Meets ISO 14644-1 Class 4 (Fed Std. 209E Class 10)
Console Power	24 VAC, 10W powered from wall transformer
LED Indicators	Green on both console and gun
Ion Emission	Steady-state DC
Emitter Points	Tungsten emitter points
Audible Noise	70 dBA @ 1m, 30 psi
Conducted EMI	29 dbµV; average level 100 KHz to 1.1 MHz
Ozone	<0.005 ppm (typ)
Blow-off Force	41g @ 30 psi; measured @ 3" (7.6 cm) from a 2" (5.1 cm) dia. target
Air Hose	Static-dissipative polyurethane, 3/8" outside diameter; 7 ft (2.1m)/65 psi
Gas Input	20-65 psi, Clean Dry Air (CDA) or nitrogen
Gas Connection	1/4" male industrial interchange quick disconnect
Gas Air Filter	99.9% efficient, 0.01 micron or larger air particles; 99.9% coalescing efficiency
Mounting	Metal mounting plate attaches to back of console
Enclosure	Gun/console: static-dissipative polycarbonate (gun hanger 302 stainless steel); optional mounting stand for hands-free operation
Dimensions	Gun: 8L x 3W x 1D in. (20.3L x 7.6W x 2.5D cm); console: 8.5L x 3.0W x 1.6D in. (21.6L x 7.6W x 4.1D cm)
Weight	Gun: 12 oz (341g) with 7 ft (2.1m) air hose; console: 11.5 oz (326g)
Warranty	2 year limited warranty
Certifications	CE cULus RoHS 2 Compliant
Transformer 14-21527	
Input Voltage	120 VAC ±10%, 60 Hz, 250 mA
Output Voltage	24 VAC ±5%, 1670 mA
Certifications	RoHS 2 Compliant cULus
Transformer 14-21570	
Input Voltage	230 VAC ±10%, 50 Hz, 410 mA
Output Voltage	24 VAC ±5%, 1670 mA
Certifications	RoHS 2 Compliant CE

1. Tested in accordance with ANSI/ESD STM3.1-2006.

Ordering Information

91-6115-NXFMR	Model 6115 with 8' hose
92-6115-US	Model 6115 with 8' hose; 120 VAC Wall Transformer
33-6115	Optional Gooseneck Mounting Stand
91-6115SWT	Optional Foot Pedal
91-6115FLT	Replacement In-line Air Filter (3-pack)
91-6115T-EMT	Replacement Tungsten Emitter Point
14-21527	120 VAC Transformer (includes 6' hardwired US power cord)
14-21570	230 VAC Transformer (requires power cord)

High Reliability

IsoStat technology also guarantees that the AirForce is calibration-free and requires little maintenance when used with CDA or nitrogen. When the air filter or emitter points need replacement, they snap in and out in less than a minute—reducing gun down-time and improving long-term performance. To avoid replacement costs, the AirForce is made from durable polycarbonate that holds up to high impact. The gun body, air hose and control console are static-dissipative and ESD-safe. And an extremely low EMI level ensures the AirForce won't interfere with other electronic equipment or operations.

IsoStat Technology

Simco-Ion's IsoStat technology is the first balancing technology for ionizers to guarantee intrinsically balanced ionization and elimination of complicated feedback circuits. 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. Characteristics of IsoStat ionizers include:

- Ionizers never need calibration and require very little maintenance.
- Small size and operation without grounding wires.

The AirForce is lightweight, flexible and easy-to-use. With strong blow-off power the AirForce is effective in removing particle contamination.

Optional hands free Gooseneck mounting stand.

Optional hands free foot pedal.

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Modulated Pulse AeroBar® for Extended ISO Class 1

MODEL 5635

The Model 5635 AeroBar MP ionizing bar is specifically designed to eliminate static charge in semiconductor and other clean manufacturing processes where fast discharge time, low swing voltages, and precision balance are required. The Model 5635 utilizes MP technology, combining a high-frequency sine wave with modulated pulses (MP) for high ion output and delivery. This breakthrough technology enables AeroBar mounting within 150 mm of the wafer. MP technology, combined with ultraclean emitter points and precision adjustment, provides "Extended ISO Class 1*" cleanliness, critical for smaller technology nodes. For processes that do not require extreme cleanliness, the optional air-assist accelerates ion delivery, providing faster discharge times and performance over longer distances.

MP technology is easy to adjust and features the ability to fine-tune voltage, frequency and balance to meet differing environmental and product sensitivity requirements. Available with either 50 mm or 75 mm nozzle spacing, the Model 5635 provides solutions for a variety of applications.

Features

- Extended ISO Class I cleanliness (using the optimized default settings and without air-assist)
- Modulated pulse technology
- Excellent lateral uniformity
- Low field voltages
- Air-assist capability
- Quarter-turn nozzles
- Optional software with easy-to-use interface with wide adjustability
- Alarm output signal

Benefits

- Compatible with all wafer technology nodes, including 22 nm and below
- Precision balance, high ion output with long-term stability
- Uniform balance across the AeroBar
- Safe placement as close as 150 mm of the wafer or reticle
- Enhanced static charge neutralization at fast automation speeds
- Fast emitter point replacement for less downtime
- Fast setup and easy optimization in any environment
- Communicate to tool or facility monitoring system

* Extended ISO Class 1 is defined on the back side of this datasheet.

Ionization solutions

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Specifications

Input Voltage	24 VDC ±10%
Output Voltage	13.5 kV p-p (max), adjustable
Distance	150-1000 mm distance to surface; application & customer specification dependent
Frequency	Default setting at 5 Hz; adjustable from 1-33 Hz
Balance	Auto balancing system <±20V over time and across the bar length (measured in a controlled environment at 24" distance)
Ion Emission	Modulated pulse (MP) technology
Emitter Points	Single Crystal Silicon emitter points
Emitter Pitch	50 mm or 75 mm spacing between nozzles; 50 mm spacing only on the 450 mm and 600 mm lengths
Air Supply	Clean dry air (CDA) or nitrogen
Airflow (optional)	45 psi max gas pressure; 1-3.5 lpm/nozzle through 8 mm OD one-touch fitting
Operating Temp	15-35°C (59-95°F)
Humidity	30-60% RH, non-condensing
Ozone	<0.05 ppm
EMI	Below background level
Bar Settings	DIP switches for general power settings; trimpots for fine tuning balance, frequency, and power output or use the serial output to the MP 5635 Bar Control software for fine adjustments
Material	ABS chassis
Dimensions	3.1H x 1.3W x 18/24/34/39/45/51/57/63/69/75/81/87/93L in. (78H x 34W x 450/600/850/1000/1150/1300/1450/1600/1750/1900/2050/2200/2350L mm)
Certifications	RoHS Compliant CE

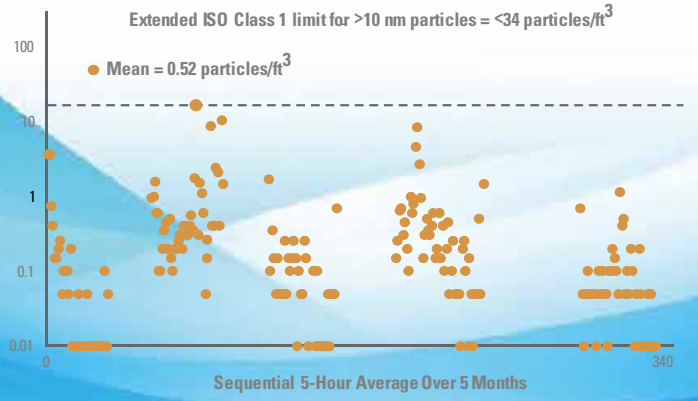
Ordering Information

91-5635U-xxxx	xxxx (bar lengths): -450*/600*/850/1000/1150/1300/1450/1600/1750/1900/2050/2200/2350 mm
91-5635U-xxxx-yy	yy (nozzle spacing): -50 for 50 mm; -75 for 75 mm
91-5600-DFC	Demand Flow Controller, one per AeroBar
33-21491	Signal and Power Distribution Box
14-21324	24 VDC Power Junction Box for AeroBar
33-25625	Combined 24 VDC Power Junction Box with Signal and Power Distribution Box
28-6370	Flat mounting clips. Recommended usage: 450-1100 mm, 2 clips; 1350-1650 mm, 3 clips, 2000+mm, 4 clips
32-22210	Horizontal rotatable mounting bracket. Recommended usage: 450-1150 mm bars, 2 brackets; 1300-1750 mm bars, 3 brackets; 1900+mm bars, 4 brackets
32-22220	Vertical rotatable mounting bracket. Requires 2 brackets for each ionizer bar to hold one at the top and one at the bottom
33-5353	Flat Mounting Clip with Active/Screw Fasteners (2) for AeroBar. Recommended usage 450-1100 mm, 2 clips; 1350-1650 mm, 3 clips; 2000+mm, 4 clips
25-0510	10 ft CAT-5 RJ-45 Network Cable for AeroBar MP Connection to an Interface Module or Power Junction Box, also available in 4 ft and 20 ft lengths

*The 450 mm and 600 mm are only available with 50 mm nozzle spacing.

Defining Extended ISO Class 1 Cleanliness

To meet current technology node cleanliness requirements, Simco-Ion utilizes an in-house standard that extrapolates ISO 14644-1 down to >0.01 micron (>10 nm) particles. Greater than 10 nm particle size is typically measured using a condensation nucleus counter (CNC). The result is defined as "Extended ISO Class 1". The basis of the extrapolation employs the formula which was used to define the existing ISO 14644-1 class limit lines. The formula is provided in ISO Standard 14644-1, and when extrapolated the permitted number of particles sized 0.01 micron and larger = 1200 particles/m^3 (or 34 particles/ft^3). The Simco-Ion in-house standard makes no changes to ISO 14644-1. It only extrapolates ISO 14644-1 to smaller particle sizes. Additional information regarding the ISO 14644-1 standard can be found at www.iso.org. Long-term testing over 5 months shows that the Model 5635 AeroBar MP meets Extended ISO Class 1 cleanliness, making it the cleanest corona ionizing bar on the market.



Simple Installation

The Model 5635 ionizing bar is quickly installed by simply plugging into a 24 VDC source and connecting an air line, (if air-assist is desired). Set the DIP switches for general power levels as defined in the user's manual to activate factory settings for a base discharge performance. Users can then fine-tune the control parameters from the bar or through the easy to use software GUI for installations where optimized balance, swing voltage and discharge times are desired. An alarm connection in the Signal and Power Junction Box enables a signal output to the tool or central computer for FMS monitoring.

Optional Demand Flow Controller

The Model 5600-DFC Demand Flow Controller provides an easily integrated, cost-effective solution for controlling air consumption and AeroBar power. The DFC's control of both air and power allow users to rapidly turn the ionizer on and off for applications where ionization is only required intermittently.

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Clean Ionizing Bar

scorpION3™

Simco-Ion's scorpION3 Ionizing Bar is designed to meet today's requirements for cleanliness and performance for the semiconductor front-end, semiconductor back-end, and general electronics markets. It's unique combination of available air assist, "Peak-reduction" technology, multiple emitter point materials and lengths make it suitable for a wide range of applications. It can be used to reduce charge on surfaces to minimize ESD events, as well as to reduce airborne particle contamination landing on product surfaces during manufacturing.

The scorpION3 is available with two different emitter point materials, single-crystal silicon (the standard for the semiconductor industry for its cleanliness) and tungsten (for general purposes where ISO Class 1 cleanliness is not required).

An Air-assist version is available for use in applications where laminar air flow is not present. By providing a stream of Compressed Dry Air (CDA) around each emitter point, ions can be delivered to product surfaces further away, as well as provide a "sheath" of clean air around the emitter points themselves to lengthen the cleaning cycle.

Features

- Air assist versions
- "Peak-reduction" technology
- Daisy-chain feature with "master/slave" capability

Benefits

- Provides longer working distances for applications where HEPA airflow is not present, as well as lengthening cleaning cycles
- Reduces swing voltages for pulsed-DC ionization applications that need good performance with minimal voltage offsets
- Allows one easily-accessed bar to direct and monitor the settings on other bars inside a tool

Ionization Solutions

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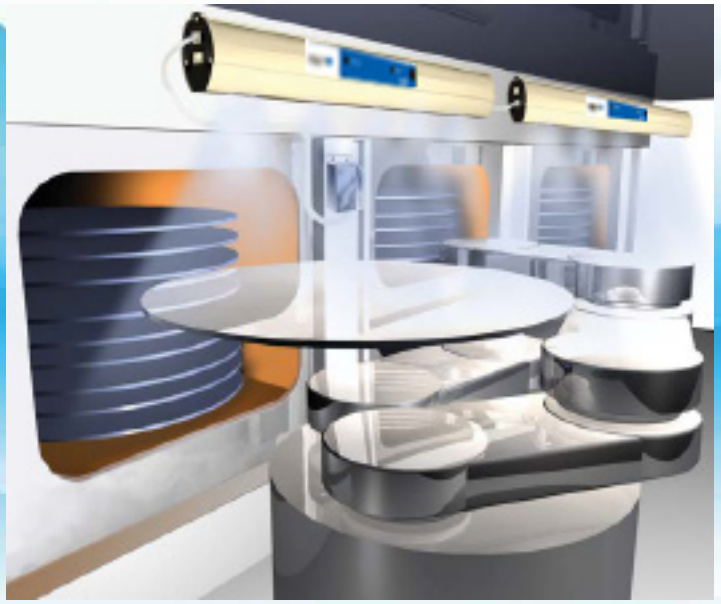
Specifications

scorpION3 Ionizing Bar	
Input Voltage	24 VDC, 200 mA per bar
Discharge	<10 sec (typ), 24" with 90 fpm unidirectional airflow[1]
Balance	<30V (typ), 24" with 90 fpm unidirectional airflow
Output Current	<15 µA, each polarity
Timing	0-10 sec @ 0.1 sec increments, adjustable
Connectors	6-pin RJ-11 modular jack receptacles provide power and RS-485 communications
Communications	RS-485
Address Control	Each bar can be set to one of 10 unique addresses
Output Control	Performance stability is maintained using real time feedback, comparison to a value stored in the bar and adjusting via a micro controller located in the bar
Operating Modes	Steady state DC, Pulsed DC, Peak Reduction; peak reduction overlap adjustable 0-90%
Mode Control	Each bar in a series can be set to operate independently or under control of a Master (Slave mode). Independent bars can be set to any operating mode
Fault Interface	1/8" (3.5 mm) phone jack, opto-isolated transistor can be set to normally off or normally on
LED Indicators	Flash on with POS/NEG power supplies; green NORMAL & PULSE DURATION; red FAULT; communicated through RS-485 interface; rapid simultaneous flashing identifies bar address
Emitter Points	Replaceable Ultra-clean Silicon or Tungsten
Cleanliness	ISO 14644-1 Class 1 (Ultra-clean Silicon), ISO 14644-1 Class 4 (Fed. Std. 209e Class 10) (Tungsten)
Operating Env.	Temperature 15-35°C (59-95°F) recommended; relative humidity 20-65%
Ozone	<0.020 ppm
EMI	Below background level
AC Adapter	Universal 100-240 VAC 50/60 Hz input, (IEC320); powers up to 3 bars max, any length
Option	Air assist model available; computer interface RS-485 or Ethernet capable
Mounting	Stainless steel brackets, adjustable mounting centers
Enclosure	ABS chassis
Dimensions	18, 24, 36, 44, 64, 74, 84L x 2.95H x 1.89W in. (45.7, 61, 91.4, 111.8, 162.6, 188, 213.4 x 75H x 48W cm)
Weight	0.8 kg (1.8 lb), 1 kg (2.1 lb), 1.3 kg (2.8 lb), 1.5 kg (3.2 lb), 2.0 kg (4.3 lb), 2.2 kg (4.9 lb), 2.5 kg (5.5 lb)
Warranty	Two year limited warranty
Certifications	CE cULus RoHS 2 Compliant
scorpION3 MMI Module Remote	
Power	9 VDC Alkaline Battery, Type 1604
Communication	IR (infrared) and wired RS-485
Connections	RJ-11 modular jack receptacles provide power and RS-485 communications
Display	4-line LCD; menu driven interface
Controls	Up/Down Arrow, Left/Right Arrow, Enter
Power	ON/OFF Slide Switch
LED Indicators	Green TRANSMIT, red RECEIVE
Dimensions	4.40H x 7.70W x 1.25D in. (110 x 196 x 32 mm)
Weight	0.75 lb (0.34 kg) with battery

1. Tested in accordance with ANSI/ESD STM3.1-2006.

Ordering Information

4011546-4011552	scorpION3 Ionizing Bar, Tungsten (W) emitters in 18" (7), 24" (7), 36" (11), 44" (15), 64" (19), 74" (19), 84" (19) bar lengths
4015454-4015460	scorpION3 Ionizing Bar, Ultra-clean Silicon (SCSi) emitters in 18" (7), 24" (7), 36" (11), 44" (15), 64" (19), 74" (19), 84" (19) bar lengths
4011560-4011566	scorpION3 Ionizing Bar w/Air Assist, Tungsten (W) emitters in 18" (7), 24" (7), 36" (11), 44" (15), 64" (19), 74" (19), 84" (19) bar lengths
4015461-4015467	scorpION3 Ionizing Bar w/Air Assist, Ultra-clean Silicon (SCSi) emitters in 18" (7), 24" (7), 36" (11), 44" (15), 64" (19), 74" (19), 84" (19) bar lengths
5051328-5051330	scorpION3/3/3S Power Supply Kit (120V 60 Hz; 230V 50 Hz, EU or 230V 50 Hz, UK
4011574	scorpION3 MMI Module Remote
4371327	scorpION3 Replacement Ultra-clean Silicon (SCSi) emitter point
5051248-5051251	scorpION Replacement (W) emitter kit (7, 11, 15, 19 emitters)



Reducing In-tool Particles

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High Temperature Ionization System

MODEL 4610TF IONIZER & 4052E CONTROLLER

Simco-Ion's High Temperature Ionizer Model 4610TF neutralizes static charge in environments with extreme conditions. Together with the High Temperature Controller Model 4052E, the High Temperature Ionizer Model 4610TF creates a uniquely capable ionization system that can withstand high heat and extreme cold, two challenging environments that cannot support other means of static elimination.

The compact size of the Model 4610TF and unique guides surrounding the emitter points make the ionizer perfectly suited for tight areas of extreme environments where adequate airflow can be an issue. The vanes can be adjusted by rotating to match airflow orientation, increasing the delivery of ions.

Features

- Withstands temperatures up to 302°F (150°C) and down to -94°F (-70°C)
- IsoStat® technology
- Small form factor with large ion output
- Available with tungsten alloy or single-crystal silicon emitter points
- Unique ion guides

Benefits

- Eliminates static charge in extreme environments that cannot sustain any other static elimination method
- Self-balanced; no calibration needed
- Ensures safe operation and static elimination in confined, high temperature areas
- The industry standard for semiconductor processing offering ideal compatibility and ISO 14644-1 Class 2 cleanliness
- Ions are directed using existing airflow toward any point inside the smallest areas while protecting emitter points from dirt and buildup

Ionization Solutions

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Specifications

Power	Powered by Model 4052E Controller; connects to the controller via interchangeable HV cable connectors
Output Voltage	8 kVDC
Operating Env.	-94°F to 302°F (-70°C to 150°C); max 85% relative humidity, non-condensing
Discharge	<3 sec @ 6"; <5 sec @ 10", <10 sec @ 18" distance between ionizer and CPM (±1000-100V) with 90 fpm hood airflow velocity (tested in accordance with ANSI/ESD STM3.1-2000)
Airflow	60-100 fpm (18.3-30.5 mpm) recommended
Emitter Points	4 tungsten alloy or single-crystal silicon points
Cabling	Rated at 30 kV, available in 2 lengths, 13.3 and 21.7 ft (4 and 6m)
Enclosure	Body Teflon; Fins/rivet PEEK
Mounting	2 mounting slots provided; methods varies depending on environment
Dimensions	1.5H x 1.2W x 4.5L in. (3.8H x 3.5W x 11.4L cm)
Weight	4 oz (117g)
Warranty	Two-year limited warranty
Certifications	RoHS 2 Compliant
Controller Model 4052E	
Input	110/200/220/240 VAC, 50/60 Hz, 3.6W, 30 mA at 120 VAC, fuse protected
Output Voltage	9 kVDC
Load Current	<20 µA
Operating Env.	-20 to 104°F (-29 to 40°C), max 85% relative humidity, non-condensing
Controls	On/off power switch
LED Indicators	Green POWER; Red ALARM (indicates HV power supply failure)
Fuse	250 VAC, 250 mA, 5 x 20 slow blow
Enclosure	Stainless steel
Dimensions	2.3H x 3.8D x 8.3L in. (5.7H x 9.5W x 21L cm)
Weight	3 lb (1.6 kg)
Warranty	Two-year limited warranty
Certifications	RoHS 2 Compliant

Ordering Information

91-4610TF-TR	High-temp Ionizer with tungsten emitter points
91-4610TF-UR	High-temp Ionizer with silicon emitter points with 4m cable
91-4610TF-U-6R	High-temp ionizer with silicon emitter points and 6m cable
91-4052ER	Controller
33-4610TF-001	High Voltage Connector Kit

Different Configurations

The High Temperature Ionizing System can be customized to fit your specific application:

- Emitter points are available in single-crystal silicon or in tungsten alloy. Silicon emitter points are suitable for ultra-clean environments.
- The High Voltage Connector Kit is available for applications that require a convenient way to disconnect the ionizer from the controller.

IsoStat Technology

Simco-Ion's IsoStat technology is the first balancing technology for ionizers to guarantee intrinsically balanced ionization and elimination of complicated feedback circuits. 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. Characteristics of IsoStat ionizers include:

- Ionizers never need calibration and require very little maintenance.
- Small size and operation without grounding wires.

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ionization solutions

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Digital Room Ionization System

MODEL 5515 CEILING EMITTER, MODELS 5522/5582 CONTROLLERS & IONMANAGER PRO SOFTWARE

The Model 5515 Ceiling Emitter and Controller Models 5522/5582 comprise our state-of-the-art digital room ionization system. The two controller models enable the user to start with the Model 5522 controller capable of controlling a small system with 20 or fewer ceiling emitters and grow into a large system with full software monitoring capabilities by simply moving to the Model 5582 Controller. Digital technology allows each ceiling emitter's parameters, including ion output, ion pulse timing or digital address, to be either individually set at its location using the Model 5571 and Model 5572 handheld controllers, or remotely set through IonManager Pro when integrated with the software. Precision fine tuning of each ceiling emitter enables the ionization system to achieve maximum performance in any airflow condition and for each application.

IonManager Pro software provides a visual management tool to monitor and manage the system, including alarm conditions, room layouts, and individual emitter and controller status. Automated notifications for alarm conditions and maintenance alerts are user controlled. Data logging provides a history of system changes and security levels assure access by only authorized users.

Features

- Fully digital technology
- Single-crystal silicon or titanium emitter points
- Advanced Feedback Technology
- Small and large capacity controllers

Benefits

- Provides precision control of all ionization parameters with expansive data output capabilities
- Ensures ultra-clean performance with low maintenance; single-crystal silicon emitter points offer compatible material for leading-edge wafer processing applications
- Maintains balanced, high ion output over long periods for stable performance between emitter point cleanings
- Enables user to grow from a small system with FMS output only to a large system using IonManager Pro software as requirements change

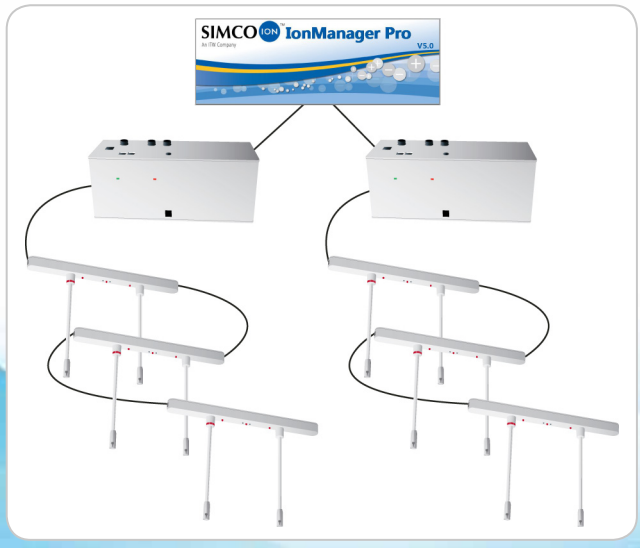
Specifications

Digital Emitter Model 5515	
Input Voltage	24 VAC, 50/60 Hz, 1W (typ)
Output Voltage	0-20 kVDC for each polarity; positive and negative output levels adjusted separately
Control Signal	Ionization parameters are adjusted with the 5571 Handheld Terminal, 5572 IR Remote, or via IonManager Pro software
Connectors	Telephone-type RJ-11 modular jack receptacle on each end of emitter
Regulation	Output and balance stability is achieved by independently regulating the ion emission current of each polarity at each emitter
Timing	Precise timing (0-10 sec @ 0.1 sec resolution) is generated by a local microcontroller; LEDs on each emitter indicate the polarity of the ion emission
Operating Mode	Pulsed DC, steady-state DC or standby
Emitter Points	Single-crystal silicon or titanium; all emitter points are field replaceable
Emitter Rods	2.5, 5, 10, 15, 24, 36, 60 or 66 in. length (6.4, 12.7, 253.4, 38.1, 61.0, 91.4, 152.4 or 167.6 cm)
Cleanliness	Single-crystal silicon ISO 14644-1 Class 1; titanium ISO 14644-1 Class 3 standards (better or equal to Fed. Std. 209(e) Class 1 equivalent)
Alarm	Alarm operates when emitter is no longer able to maintain preset ion output level; visual LED in the middle of the emitter; optional audible alarm at controller
Ozone	<0.005 ppm
Operating Env.	Temperature 59-95˚F (15-35˚C) nominal; humidity 20-60% RH non-condensing
Dimensions	1.2H x 1.4W x 17.5L in. (3.1H x 3.6W x 44.5L cm)
Weight	16.4 oz (465 grams)
Warranty	Two year limited warranty
Certifications	RoSH 2

Digital Controllers	
Input Voltage	100/115/220-240 VAC ±10%, 50/60 Hz voltage selectable and fuse protected
Output Voltage	24 VAC
Output Signal	RS-485 to Emitters (5522 & 5582); Ethernet or RS-485 to IonManager Pro (5582 only)
FMS Output	Relay or 4-20 mA output (available on both Model 5522 and 5582 controllers; no software capability on the Model 5522 controller)
Capacity	(80) Model 5515 Ceiling Emitters (Model 5582); (20) Model 5515 Ceiling Emitters (Model 5522)
LED Indicators	Green POWER; red ALARM, AUDIBLE ALARM
Dimensions	6.2H x 4.4W x 13.2L in. (15.8H x 11.1W x 33.5L cm) (Model 5582); 3.0H x 2.8W x 12.4L in. (7.5H x 7.0W x 31.6cm) (Model 5522)
Weight	7 lb (3.18 kg) (Model 5582); 3.2 lb (1.4kg) (Model 5522)
Certifications	RoSH 2

System Performance Security

The Model 5515 Ceiling Emitter, Model 5582 Controller and IonManager Pro software provide consistent ionization protection throughout your facility. The advance notification system communicates system alarms and warnings immediately so corrective action can be taken. The alarm notifications are user configurable and can be sent to multiple personnel via email, SMS or pager.



Emitters are connected to the Model 5582 Controllers, which communicate with IonManager Pro to send email notifications to a facility monitoring system or agent.

Ordering Information

91-5515C-xxR	Digital Ceiling Emitter with titanium emitter points in 2.5, 5, 10, 15, 24, 36, or 60 inch rod lengths
91-5515U-xxR	Digital Ceiling Emitter with single-crystal silicon emitter points in 2.5, 5, 10, 15, 24, 36, 60 or 66 inch rod lengths
91-5522-01	Digital Controller, supports up to 20 emitters (not compatible with IonManager Pro)
91-5582R	Digital Controller, supports up to 80 emitters
91-5582-SW-Vx	IonManager Pro software (x represents current version number)
91-5572	Infrared Remote Controller
91-5571	Handheld Terminal

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Air Ionizing Cartridge

MODEL 6110/6110A

Simco-Ion's self-contained compressed Air Ionizing Cartridge controls static charge in production, packaging, laboratory and other environments where static build-up can cause contamination, ESD, material handling problems or microprocessor lock-up. Compact and rugged, the cartridge can be used either for in-line ionization or as an ionizing blow-off gun. For in-line use, connect the 6110 to a compressed air source and it is ready to ionize any type of production equipment. Or attach the 6110 to an ordinary air gun and the airstream is ionized for effective particle removal. An internal sensor initiates ionization only when the gun is triggered, ensuring on-demand control of static charge (Model 6110A).

Features

- IsoStat® technology
- Internal air flow sensor (Model 6110A)
- Shielded emitter points
- Compact size
- Optional blow-off gun kit

Benefits

- Intrinsically balanced; no calibration needed
- On-demand ionization during gun operation
- No shock hazard
- Adapts to compressed air lines
- Fits any air gun

Ionization Solutions

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Specifications

Input Voltage	24 VAC, <1W from transformer
Power Source	Wall transformer 120 VAC (powers up to 10 units); 100 VAC and 230 VAC models available
Indicators	Power green LED
Ion Emission	Steady state DC
Emitter Points	Tungsten alloy, estimated life 5 years of continuous use
Ion Balance	Better than ±25V @ 6 in. (15.2 cm)
Discharge Time	±1,000 to 100V, <4 sec; tested in accordance with ANSI/ESD STM3.1-2000
Airflow Requirements	At least 2 scfm
Air line Requirements	1/4 in. NPT female (input and output); 1/8 in. NPT adapter available
Internal Sensor	Turns ionizer off when air is not flowing (Model 6110A only); model without sensor also available for continuous flow applications
Dimensions	2.2D x 3.1L in. (5.6D x 7.9L cm) not including fittings
Weight	6 oz (170.1g)
Warranty	2 year limited warranty
Certifications	RoHS Compliant CE

Ordering Information

91-6110	Model 6110 Air Cartridge Ionizer
92-6110-US	Model 6110 Air Cartridge Ionizer;120V wall transformer
91-6110A	Model 6110A Air Cartridge Ionizer with airflow sensor
92-6110A-US	Model 6110 Air Cartridge Ionizer with air flow sensor; 120V wall transformer
91-6150	Optional air gun/hose kit
14-1306	100 VAC transformer (requires power cord)
14-1310	120 VAC wall transformer (no power cord required)
14-21570	230 VAC transformer (requires power cord)

Optional gun/hose kit (p/n 91-6150).

IsoStat Technology

Simco-Ion's IsoStat Technology guarantees intrinsically balanced ionization and eliminates complicated feedback circuits. Ionizers incorporating this 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.

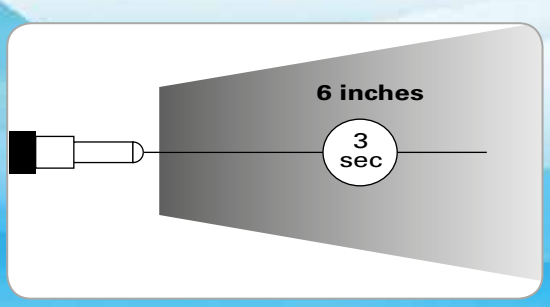
Applications

In-line ionization. Reduces ESD damage and microprocessor lock-up in:

- IC packaging and marking
- Surface-mount equipment
- Device testing equipment

Ionizing blow-off gun. Removes particles in:

- Printed circuit board assembly
- Medical device manufacturing
- Film processing



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VESSEL®

Super Compact Slim Body

A rotating nozzle enables to ionize anywhere.

STAT·CLEAN **N-1**

Super Slim Nozzle-Type Ionizer

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STAT·CLEAN N-1

SUPER SLIM NOZZLE

EDP No. 621639

Standard nozzle (straight)

Alarm outputs and daisy chains.

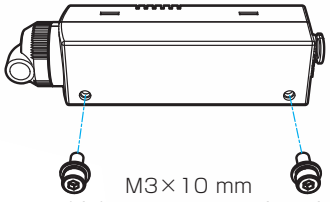
With the 6-pole terminals enabling the high voltage error signals to be output and the 24 VDC power to be supplied.

Lamps for easy recognition of operating status.

The blue lamp lights during normal operation.

The red lamp lights when high voltage error occurs.

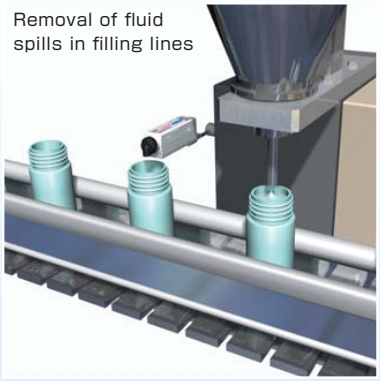
Simple and easy mounting with 2 screws.



M3×10 mm
+ thickness on mounting side

Applications

Removal of fluid spills in filling lines



Mounting onto chuck panels

Prevention of part feeder travel faults

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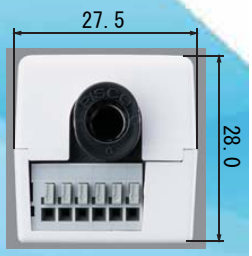
The N-1 features an outstanding ionizing performance with a new-concept rotating nozzle in a compact body for installation in confined spaces.

Super slim and compact design enabling to be installed at any place for any direction

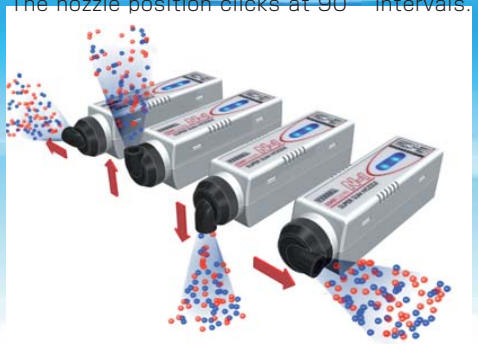
The newly developed high voltage transformer and control circuit further enhance the operability.



Corner nozzle (elbow)

Change the blow direction by turning the rotary corner nozzle (included as accessory).

The nozzle position clicks at 90° intervals.

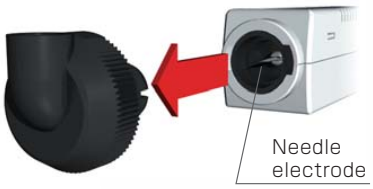


The corner nozzle minimizes resistance in a tube through which ions pass, and prevents the volume of ions from decreasing.

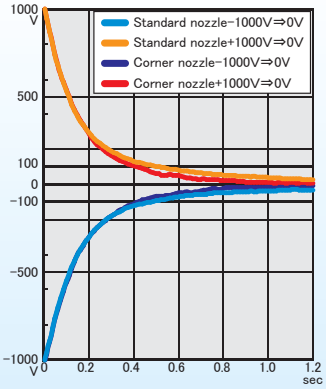
(In the case of using an air piping, mixture inside a long tube causes ions to decline, resulting in inferior ionizing performance.)

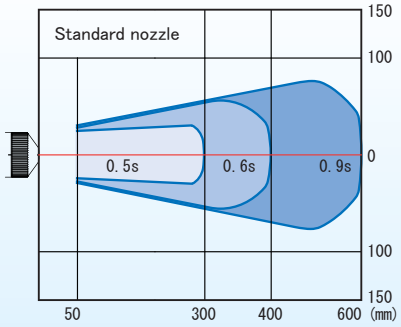
Easy to replace the nozzles and clean the electrode needle.

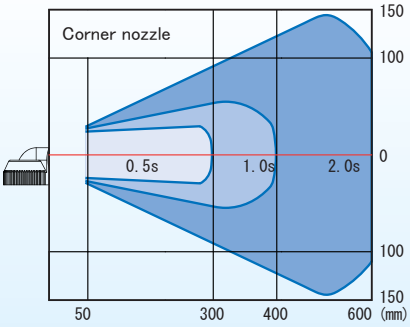
The screw-type nozzle can be removed easily. The needle electrode can be cleaned easily just after removing the screw-type nozzle.



Decay time / Static erasing area

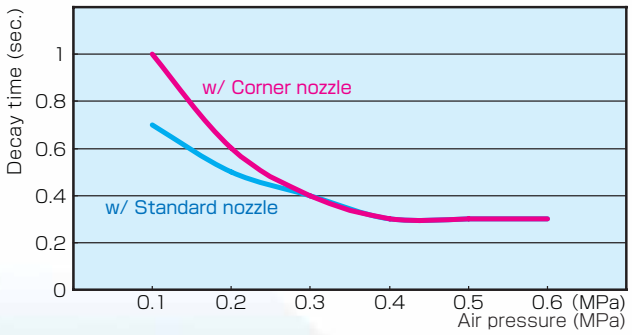






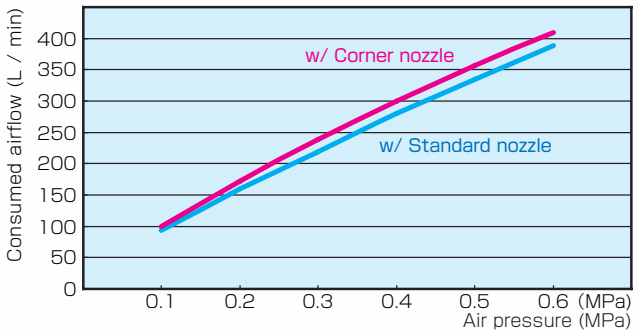
* The decay time is measured with the time for the voltage to decay from ± 1000 V to ± 100 V at an operating air pressure of 0.3 MPa and the CPM 20 pF (150×150 mm) installed 150 mm to the front.
The static erasing area is measured with the time for the voltage to decay from ± 1000 V to ± 100 V at an operating air pressure of 0.3 MPa and the CPM 20 pF (150×150 mm).

Decay time performance



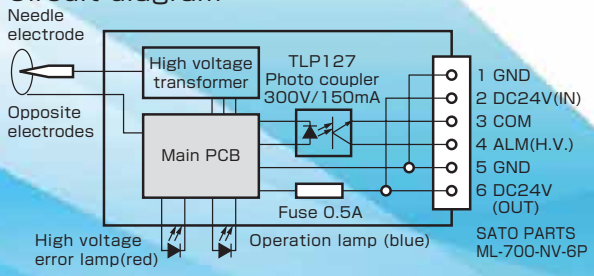
Measured the time to decay from - 1000 V to - 100 V by changing the supplied air pressure.
Measured with the CPM 20 pF (150×150 mm) installed 150 mm to the front.

Airflow consumption characteristics

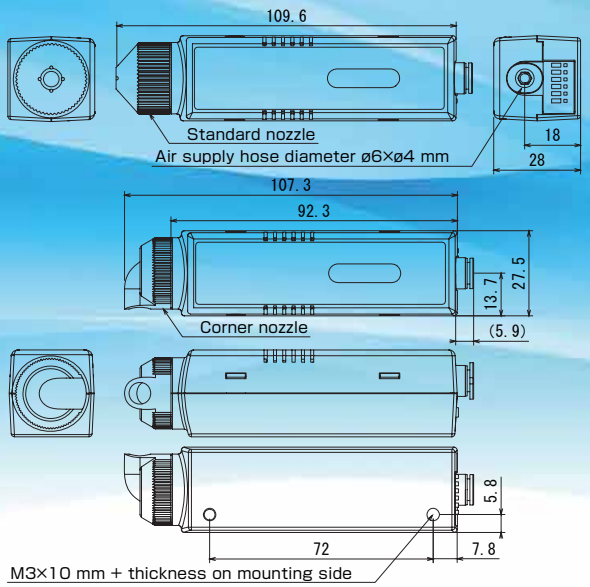


Measured the consumed airflow by changing the supplied air pressure.

Circuit diagram



External dimensions



Replacement parts

Needle electrode	N-1H	
Speed controller	G-7SC	EDP No. 621373
Micro-filter	G-7F	EDP No. 621702

Options

Screwdriver for needle electrode replacement
G-7DR EDP No. 806061

AC adapter(I/P:AC100V-240V O/P:DC24V 0.75A)
AD24-IT-EX EDP No. 806050

Specifications

Ionizing method	Piezo high-frequency AC Corona discharge method
Applied voltage	5.0 kVAC p-p
Input power	24 VDC ± 5 % ripple (P-P) 10 % or less
Current consumption	100 mA
Operating fluid	Clean dry air or nitrogen (N2)
Operating air pressure	0.1 to 0.6 MPa
Air consumption flow	Refer to table above (These are measured values and not guaranteed values)
Ion balance	± 10V (with Standard Nozzle, measured 150mm from device, at 0.3MPa)
Decay time	Refer to table above (These are measured values and not guaranteed values)
Ozone production rate	0.05 ppm or less (measured 50mm from device at 0.2MPa)
Safety functions	Red lamp lights when stopped with high voltage error (Blue lamp lights during normal operation) Current fuse 0.5 A / 60 VDC mounted on PCB
Weight	62 g (with standard nozzle mounted) 61 g (with corner nozzle mounted)
Dimensions	L 109.6 × W 27.5 × H 28 mm (with standard nozzle mounted) L 107.3 × W 27.5 × H 28 mm (with corner nozzle mounted)
Operating environment temperature and humidity	5 to 40 °C, 35 to 65 %RH (with no dew condensation or freezing)
Storage environment temperature and humidity	0 to 60°C, 35 to 85 %RH (with no dew condensation or freezing)
Vibration resistance	60 minute cycle at 10 to 55 Hz frequency in each direction X, Y and Z
Material	Body / Nozzle: Flame-retardant ABS resin Needle electrode: Stainless steel
Accessories	Instruction Manual, Standard nozzle×1, Corner nozzle×1

Noise level	0.1	0.2	0.3	0.4	0.5	0.6	MPa
(With standard nozzle mounted)	83.1	90.4	94.0	96.2	97.6	98.8	dBA
(With corner nozzle mounted)	80.7	88.5	92.0	94.4	96.7	98.2	dBA

* The noise is measured at 1 m from the side of the blowoff port.
(Note that the measurement probe must not be in direct contact with blowoff.)

⚠WARNING

- For safety purposes, read the instruction manual carefully before using the unit.
- Do not use this product in an explosion-proof area.
- A high voltage is applied on this product.
Make sure that water, oil, solvents, etc., do not come in contact.
- Avoid dew condensation as it can result in electric shock or product damage.
- Keep away metal objects such as tools or needles, or body parts such as fingers, hands or face from the needle electrode because a high voltage is applied on the needle electrode.

● For improvements, the product specifications, size, price and other information may be subject to change without prior notice.

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DAVUM TMC EQUIPEMENTS POUR L'INDUSTRIE ELECTRONIQUE AUTOSPORT AERONAUTIQUE

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Pistolet de Ionisation G2

Matériel

- Tension voltage：AC2.0 kV AC
- Alimentation：24 VDC ±5%
- Consommation électrique：100 mA
- Equilibrage d'ion：±10 V (à 150mm à 0.6 MPa)
- Temps de décharge：moins de 0.5sec (à 150mm à 0.3 MPa)
- Zone d'action ：50 mm ～300 mm
- Pression d'alimentation air：0.1 MPa à 0.6 MPa
- Diamètre tuyau d'alimentation air：Φ6 mm × Φ4 mm
- Consommation d'air：de 0.1 MPa à 0.6 MPa
- Niveau sonore (à 1m) ：77.3 dBA (à 0.3 MPa), 85.5 dBA (à 0.6 MPa)
- Production d'Ozone (à 50mm) ：0.05ppm ou moins (à 0.3 MPa)
- Conditions d'utilisation：5～40°C ／35～65% RH（pas de condensation, pas de gel）

Accessoires

- Accessoires：AC Adapter No.AD24-ITC / Manuel d'instructions
- Tension d'entrée：100-240VAC (50/60Hertz)　0.4A (TYP.)
- Tension de sortie：24VDC　0.75A

Fonctions

Méthode d'ionisation：Piezoelectrique haute fréquence AC effet corona.

Matière électrode：Tungstene.

● Modèle compact et léger avec une poignée ergonomique pour un confort optimal. (Boîtier réalisé en résine.)

● Système de poulis de renvoie industrielle (Voir photo ci-dessous).

● Conception sûre avec un transformateur de tension à haute fréquence intégré. Appliquée pour 24VDC basse tension, fourni avec l'adaptateur secteur.

Voyant de tension et d'alarme de sur tension des deux côtés de la poignée, permettant aux opérateurs de vérifier l'état de fonctionnement d'un regard.

● Adaptateur secteur avec un câble long, permettant d'utiliser le G2 dans une zone vaste.

Performances de ionisation

L	H	D	Poids	EDP No.
mm	mm	mm	g	
148	157	44	260	621659

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VESSEL

DAVUM TMC | EQUIPEMENTS POUR L'INDUSTRIE
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G7R-E Gun-type Ionizer
(EDP No. 621621)

Ionizing method: Piezoelectric high-frequency AC corona discharge
Electrode needles: Tungsten

This lightweight, easy-to-use design provides powerful, high-airflow dust elimination.
The gun features a high-brightness LED light, which makes dust visible.

CE RoHS

- Compact, lightweight plastic body incorporates an ergonomic grip that fits the hand comfortably.
- Includes LED illumination to make dust visible.
- Safe design features a built-in piezoelectric transformer.
- Electrode needles can be easily cleaned and replaced using Electrode Needle Replacement Screwdriver, G-7DR (separately sold).
- Both sides of the grip incorporate an operating LED and high-voltage malfunction alarm LED, allowing the user to check on the gun's operating status at any time.

LOW-VOLTAGE DRIVE 24 VDC | AIR/N2 MAX.0.6MPA | INCLUDED TRANSFORMER 100 - 240 VAC | ALARM H.V. | OPERATING STATE INDICATOR | LED ILLUMINATION

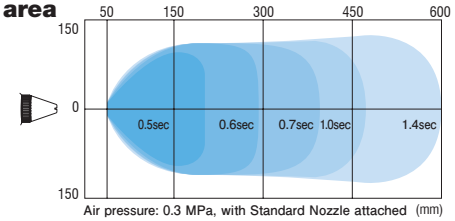
Primary specifications

Applied voltage	2.3 kVAC
Power supply and current consumption	24 VDC ±5%, 100 mA (max. when using LED illumination)
Weight	198 g
Air supply pressure	0.1 MPa to 0.6 MPa
Air supply hose diameter	6 mm × 4 mm
Airflow	202 L/min (at 0.3 MPa)
Noise level	84 dBA (measured 1 m from device at 0.3 MPa)
Ozone production	0.05 ppm or less(measured 50 mm from device at 0.3 MPa)
Operating temperature and humidity	5℃ to 40℃, 35% to 65% RH (non-condensing, non-freezing)
Accessories	Power supply transformer No. AD24-ITC-E
	Standard Nozzle (G-7SN)
Optional parts	Tube-fitting Nozzle (G-7TN), Brush (G-7B),
	Electrode Needle Replacement Screwdriver (G-7DR)

Static erasing performance

Ion balance: Within ±10 V; Decay time: 0.5 sec or less
(150 mm from surface, 0.3 MPa, Standard Nozzle)

Static erasing area



Air pressure: 0.3 MPa, with Standard Nozzle attached (mm)

Accessories

Standard Nozzle (included)
G-7SN
(EDP No. 806057)

Power Supply Transformer (included)
AD24-ITC-E (EDP No. 806067)

Option parts

Silent Nozzle
N-2WN
(EDP No. 806087)

Eco-friendly product

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