

Critical Environment Benchtop Blower Model 5802i

The Simco-lon Critical Environment Benchtop Blower Model 5802i provides reliable, fast static charge control for benchtop work areas and small spaces, allowing optimal electrostatics management that minimizes cost and maximizes protection for ESD-sensitive areas. An internal automatic balance correction system ensures ionization continues to reach the target with complete accuracy presenting a significant time and cost savings.

Model 5802i can operate with external sensors to maintain better than \pm 1V balance by altering ion output and adapting to environmental changes. With the optional sensor and collimator, it delivers precisely balanced and directed ionized air to the target without taking up valuable room in the environment.



Features

- ±3V or better balance ±1V with the optional external feedback system
- Cleanliness rated at ISO 14644 Class 4 (Fed Std. 209E Class 10)
- Options for sensor input, FMS connection, alarms, and management control
- Unique airflow directing collimator option
- Auto-clean system option
- Provides the best corona-based ESD protection for maximizing yields

Benefits

- Designed for use in an environment with a controlled level of contamination
- Increased control with immediate notification of alarms; prevention of unauthorized adjustment power/ fan speed
- Significantly improves airflow delivery with faster discharge times from greater distances
- Automates emitter point cleaning, reducing maintenance costs and time





5802i can operate with a Novx 3352, 3362 or 7000 to control its offset voltage at $\pm 1V$ or better performance

Typical Discharge Times (sec)





5802i Specifications

Airflow	108 cfm (typ)			
Audible Noise	61 dB (typ) fan high, 52 dB (typ) fan low (measured 1' front of blower)			
Balance	Better than $\pm 1V$ (typ) with external sensor, $\pm 3V$ (typ) without sensor			
Cleanliness	Meets ISO 14644 Class 4 (Fed Std. 209E Class 10)			
Controls	Power/fan speed slide switch with off/low/high (optional preset fixed high speed), balance adjust, optional sensor gain adjust, sensor type selection, FMS connections			
Discharge*	Better than 1 sec @ 1' (1000-100V) with collimator, better than 2 sec @ 1' (typ) without collimator (measured in-line from center of fan)			
Emitters	Titanium (8 per fan), ISO 14644 Class 4 (Fed. Std. 209e Class 10)			
Indicators	Green power, red fault with optional audible alarm			
Technology	Steady-state DC			
Temperature	Operating Env: 50-90°F (10-32°C), 30-70% RH (non-condensing)			
Options	External sensor inputs with FMS connection, audible alarm, collimator, internal preset fan speed on high, power cord bracket, auto-clean system			
Ozone	0.008 ppm (typ)			
Voltage	24 VDC			
Enclosure	Aluminum chassis with epoxy-polyester powder coat			
Mounting	Tilt lock mounting stand with optional wall mount bracket			
Dimensions	10.5"H x 7.6"W x 5"D (26.7 x 19.3 x 12.7 cm)			
Weight	3 lbs (1.36 kg)			
Certifications	(€			

* Tested in accordance with ANSI/ESD STM3.1-2015.

Directed Airflow

The optional collimator fits over the fan stack of the blower and directs ionized air straight to the target so that it can be placed further away from the target with continued excellent discharge times. This significantly improves discharge times by removing common ion disbursement and recombination problems.

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Blowers



±1V Balance Performance

The Model 5802i ionizer's optional external feedback sensor operates with the Novx 7000 Process Monitor and with the Novx 3352 Passive or Novx 3362 Active Closed-loop Ionizer Controllers to detect and automatically correct the balance. With the antenna placed at the target area, feedback is sent to the Model 5802i blower's internal control system. This ensures that your target maintains a $\pm 1V$ or better balance at all times.

Adaptable Options

- An internally preset fan speed on high, ensuring uninterrupted delivery of ionization in critical work areas
- An audible alarm can operate with the visible red LED on the blower to indicate operational failures including a stopped fan or loss of ionization
- The auto-clean system reduces maintenance periods by sweeping the emitter points when the blower is turned off and on, allowing the blower to continually perform at optimum ion output and balance





Critical Environment Overhead Ionizer

The Simco-Ion Critical Environment Overhead Ionizer Model 5810i is designed to provide industry-leading balanced ionization performance in cleanroom environments. It is certified for use in ISO 14644 Class 4 cleanrooms. It can operate with external sensors to maintain precise balance (better than $\pm 1V$) by altering ion output and adapting to environmental changes. With the reliability of steady-state DC and the established method for eliminating the effects of ESD and ESD-induced electromagnetic interference (EMI) in high-tech facilities, it delivers maximum ion output where and when needs it.

Designed with silicone-free air bearing fans to ensure complete compatibility with the operating conditions in today's cleanrooms. Each fan inside is engineered for cleanliness and sealed off from the rest of the chassis to meet critical cleanroom requirements. Ionizers that don't match these quality standards risk contaminating manufacturing processes and possibly reducing product yields.

Model 5810i is daisy-chainable in series, up to 10 units, using the female AC outlet provided on one end.



Features

- ±3V or better (±1V with the optional external feedback system)
- Cleanliness rated at ISO 14644 Class 4 (Fed. Std. 209e Class 10)
- Options for sensor input, FMS connection, alarms, and management control
- Auto-Clean System option

Benefits

- Provides the best corona-based ESD protection for maximizing yields
- Designed for use in an environment with a controlled level of contamination
- Increased control with immediate notification of alarms and the prevention of unauthorized adjustment to power or fan speed
- Automated emitter point cleaning for reduced maintenance cost and time



Typical Discharge Times (sec)





5810i Specifications

Airflow	108 cfm per fan (typ)			
Audible Noise	61 dB (typ) fan high, 52 dB (typ) fan low (measured 1' below fan)			
Balance	\pm 3V or better balance (\pm 1V with optional external feedback system)			
Cleanliness	Meets ISO 14644 Class 4 (Fed Std. 209E Class 10)			
Controls	Balance adjust trimpot (1/fan), 3-position fan switch (high/low/off)/ fixed speed, sensor gain trimpot (optional 1/fan), sensor type/no sensor slide switch			
Discharge*	$\pm 1000100V \ensuremath{@}\xspace <3$ sec fan high measured 18" from blower			
Emitters	ISO 14644 Class 4 (Fed. Std. 209e Class 10) titanium, 8 per fan			
Indicators	Green power, red fault with optional audible alarm			
Ozone	0.02 ppm or less			
Technology	Steady-state DC			
Temperature	Operating Env: 50-90°F (10-32°C), 30-70% RH (non-condensing)			
Voltage	Input: 100-240 VAC (±10%), 50/60 Hz Output: 100-240 VAC, 50-60 Hz unfused, 5A max			
Enclosure	Aluminum chassis with epoxy-polyester powder coat			
Mounting	Eye-bolts/S-hooks provided (U-shape bracket available)			
Dimensions	3.8"H x 6.1"D x 32"L (9.6 x 15.5 x 81.3 cm), 3.8"H x 6.1"D x 40"L (9.6 x 15.5 x 101.6 cm), 3.8"H x 6.1"D x 44"L (9.6 x 15.5 x 111.8 cm)			
Weight	Aluminum 44" blower 10.3 lbs (4.6 kg)			
Certifications	(€			

* Tested in accordance with ANSI/ESD STM3.1-2015.



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±1V Balance Performance

The Model 5810i ionizer's optional external feedback sensor operates with the Novx 7000 Process Monitor and with the Novx 3352 Passive or Novx 3362 Active Closed-loop lonizer Controllers to detect and automatically correct the balance. With the antenna placed at the target area, feedback is sent to the Model 5810i blower's internal control system. This ensures that your target maintains a \pm 1V or better balance at all times.

Fan Speed Choices

The 5810i was designed specifically for use in cleanrooms up to and including ISO 14644 Class 4 (Fed. Std. 209(e) Class 10) in cleanliness. To minimize disruption of laminar airflow, the unit has a 3-position fan setting that optimizes static discharge performance with the smallest volume and velocity of airflow.

Factory Monitoring System

The blower includes an LED alarm light that indicates a range of possible conditions, including the absence of ionization or a stopped fan. An optional audible alarm is available. The optional Facility Monitoring System (FMS) feature provides an industry-standard 4-20 mA signal output for remotely monitoring error detection.

Auto-clean System

The optional Auto-clean System is an automated feature that provides reduced operating costs due to lower maintenance. It features a brush mechanism that sweeps the emitter points when the blower is turned off and on, allowing the Model 5810i to continually perform at optimum ion output and balance.

Daisy-chain Connections

The Model 5810i blower may connect with up to 10 other Model 5810i blowers (daisy-chain) in series using the female AC outlet provided on one end of the blower. Up to 10 blowers may be connected together.





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Critical Environment In-tool Ionizer Model 5822i

The compact design of the Critical Environment In-tool lonizing Blower Model 5822i is designed to meet small-footprint ionizer requirements in automated process tools, offering exceptional performance in hard disk drive manufacturing and back-end semiconductor environments. The ionizer maintains a $\pm 3V$ or better balance standard and exceptional $\pm 1V$ with the optional external feedback system. An internal, automatic balance correction system ensures the target is ionized accurately, presenting significant reduction in calibration and maintenance time resulting in cost savings. A collimator installed over the fan directs precisely balanced ionized air to the target without taking up valuable room in the environment.



Features

- + $\pm 3V$ or better $\pm 1V$ with the optional external feedback system
- Facility Monitoring System (FMS) connection and audible alarm
- Separate control box
- Cleanliness rated at ISO 14644 Class 4
 (Fed. Std. 209e Class 10)

Benefits

- Provides the best corona-based ESD critical environment protection available for maximizing yields
- Faster response to ionization failure with notification through tool or FMS
- Allows the blower to be situated close to the target area for fast electrostatic discharge
- Designed for use in an environment with a controlled level of contamination





Typical Discharge Times (sec)





5822i Specifications

Airflow	20.5 cfm (typ)
Audible Noise	<56 dB (typ), measured 1' from blower
Balance	$\pm 3V$ or better balance ($\pm 1V$ with optional external feedback system)
Cleanliness	Meets ISO 14644 Class 4 (Fed Std. 209E Class 10)
Controls	Balance adjust, sensor gain adjust, slow/off/fast fan switch, variable slow fan speed
Discharge*	2-2.5 sec @ 1' ($\pm 1000V\text{-}100V)$ measured in-line from center of fan
Emitters	Tungsten alloy, 8 per blower (titanium optional)
Indicators	Control Box: green power, red fault
Technology	Steady-state DC
Temperature	Operating Env: 50-95°F (10-35°C), 30-65% RH (non-condensing)
Voltage	24 VDC @ 1A ext power supply (100-240 VAC 50/60 Hz) or tool power
Enclosure	Stainless steel
Mounting	2 mounting screw holes bottom of blower 1.20" (3.05 cm) apart
Dimensions	Blower: 4.5″H x 3.3″W x 2.4″D (11.5 x 8.3 x 6.1 cm) Control Box: 1.0″H x 5.2″W x 2.4″D (2.5 x 13.2 x 6.0 cm)
Weight	Blower: 1.14 lbs (0.51 kg) Control Box: 0.56 lbs (0.25 kg)
Certifications	(E 🙆 🔛

* Tested in accordance with ANSI/ESD STM3.1-2015.

Ionizing Blowers



±1V Balance Performance

The Model 5822i ionizer's optional external feedback sensor operates with the Novx 7000 Process Monitor and with the Novx 3352 Passive or Novx 3362 Active Closed-loop Ionizer Controllers to detect and automatically correct the balance. With the antenna placed at the target area, feedback is sent to the Model 5822i blower's internal control system. This ensures that your target maintains a \pm 1V or better balance at all times, no matter what environmental variables exist.



Directed Airflow

The collimator fits over the air outlet of the blower and directs ionized air straight to the target. This means that the blower can be placed further away from the target with continued excellent discharge times and good performance at extended distances. This faster, directed airflow method improves ion and static elimination, significantly minimizing ion recombination.



Control Box

The modular remote control box was developed to accommodate limited tool footprints. The control box connects to the optional Novx 7000 Process Monitor and with the Novx 3352 Passive or Novx 3362 Active Closed-loop lonizer Controllers and common FMS (Facility Monitoring System) interfaces. This allows the ionizer to be installed into tight, hard-to-reach spaces.





Critical Environment Benchtop Blower Model 5832

Model 5832 Critical Environment Benchtop Blower provides reliable, fast static charge control for benchtop work area and small spaces, allowing optimal electrostatics management that minimizes cost and maximizes protection for ESD-sensitive areas. The ionizer can operate with an external sensor to maintain precise balance (better than \pm 1V) by altering ion output and adapting to environmental changes. With the optional remote sensor or Novx feedback/control, the Model 5832 delivers precisely balanced and directed ionized air to your target without taking up valuable room in your environment. A greater concentration of emitter points and internal circuitry suited for high humidity applications makes the Model 5832 the standard choice for environments that need quality ESD protection with a solid design.



Features

- ±3V or better balance (±1V with the optional external feedback system)
- Cleanliness rated at ISO 14644 Class 4
 (Fed. Std. 209e Class 10)
- Options for sensor input, FMS connection, alarms, and management control
- Auto-Clean System

Benefits

- Provides the best corona-based ESD protection for maximizing yields
- Designed for use in an environment with a controlled level of contamination
- Increased control with immediate notification of alarms and the prevention of unauthorized adjustment to power or fan speed
- Automates emitter point cleaning, reducing maintenance costs and time





5832 Specifications

Airflow	129 cfm (typ)
Audible Noise	High fan speed 61 dB (typ), Iow fan speed 52 dB (typ), measurements taken 12″ (30.5 cm) from fan
Balance	${<}{\pm}1V$ (typ) with external sensor, ${\pm}3V$ (typ) without sensor
Cleanliness	Meets ISO 14644 Class 4 (Fed Std. 209E Class 10)
Controls	Power/fan speed DIP switch with 4 speed/velocity settings, balance adjustment, sensor type selection, FMS connections
Discharge*	(±1000-100V) <2 sec @ 1 ft (typ), taken in-line from the center of the fan
Emitter Points	Titanium, 8 per fan
Indicators	Green power on, red fan stall, red fault with optional audible alarm
Temperature	Operating Env: 50-90°F (10-32°C), 30-70% RH (non-condensing)
Options	External sensor inputs with FMS connection, audible alarm
Ozone	0.005 ppm (typ)
Mounting	Tilt lock mounting stand
Technology	Steady-state DC (corona discharge)
Voltage	Input: 24 VDC (470 mA max)
Enclosure	Aluminum chassis with epoxy-polyester powder coat
Dimensions	7.27"H x 5.12"W x 2.76"D (18.5 x 13 x 7.0 cm)
Weight	2.2 lb (1 kg)
Certifications	(€.⊕. 🕅 🕅

* Tested in accordance with ANSI/ESD STM3.1-2015.

Adaptable Options

±1V Balance Performance

The Model 5832's optional external feedback sensor operates with the Novx 7000 Process Monitor and with the Novx 3352 Passive or Novx 3362 Active Closed-loop Ionizer Controllers to detect and automatically correct the balance. With the antenna placed at the target area, feedback is sent to the Model 5832 blower's



internal control system (RJ Connector). This ensures that your target maintains a $\pm 1V$ or better balance at all times.

Remote Antenna

The Model 5832 can be ordered and operated with the remote antenna option which allows any of the standard Novx Passive Antenna assemblies to be connected directly to the 5832 (SMA connector).

Audible Alarm Option

An audible alarm that operates in addition to the visible array of 3 each LED's on the front of the blower indicate operational failures including a stalled fan or loss of ionization.

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Blowers



Auto-Clean System

The Auto-clean System reduces maintenance periods by sweeping the emitter points in both directions when the blower is turned on and off or on a preset time interval or user activated through the Facility Monitoring System (FMS).









Point-of-Use, In-tool Ionizing Blower Model 6422e / 6422e-AC

The Simco-Ion's Point-of-Use Ionizing Blower Model 6422e is the most efficient small blower of its kind for controlling static discharge in hard-to-reach areas. In the tight confinement of process tools, ionization must be easy and cost-effective but carry the same level of sophistication found in larger ionizers. The model 6422e meets the challenge of cost and features that process demands by delivering worry-free ionization. It utilizes IsoStat[®] technology, making it the most reliable blower of its kind.

The Model 6422e-AC incorporates our auto-clean system that cleans the emitter points each time the unit power down. Automated cleaning reduces maintenance time, extends emitter point life and assures balanced performance.



Features

- IsoStat technology
- Small form factor available in Steady-state DC ion
 emission blowers
- 24 VDC or 24 VAC input
- · Fan-stall indication and alarm output
- Facility Monitoring System (FMS) interface
- Operational failure alarm
- U-bracket mounting
- Auto-clean system

Benefits

- Intrinsically balanced; no calibration needed
- Offers fast discharge times in confined areas
- Can connect directly to either equipment's power
 source or wall power
- Faster response to failure with notification
- Immediate notification if the fan stops rather than continue operations without ionization
- Flush or angled mounting means the blower will reach constrained spaces
- Reduced maintenance time, longer emitter point life, and assured balanced performance





Typical Discharge Times (sec)





Power Options

The Model 6422e blower may be powered by 24 VAC or 24 VDC, from power supplies or directly from process equipment to fit your application.

- 24 VAC or 24 VDC Input power
- DC or with other 24 VDC source

6422e / 6422e-AC Specifications

Airflow	23 cfm (typ)
Balance	±20V @ 1' (30 cm)
Cleanliness	Meets ISO 14644 Class 5 (Fed Std. 209E Class 100)
Discharge*	<4 sec @ 1' (1000-100V) 24 VAC (<5 sec @ 1' 24 VDC)
Emitters	Tungsten wire, internally shielded
Indicators	Green power, red alarm
Technology	Steady-state DC
Temperature	Operating Env: 50-95°F (10-35°C), 20-60% RH (non-condensing)
Ozone	<0.004 ppm (typ)
Voltage	Input: 24 VDC ($\pm 10\%)$ 6W max or 24 VAC ($\pm 10\%)$ 50-60 Hz 6W max Output: 5-6 kV at emitter points
Mounting	U-bracket, factory installed
Dimensions	4.95"H x 4.10"W x 2.48"D (125 x 104 x 63 mm) with bracket 4.36"H x 3.26"W x 2.48"D (111 x 83 x 63 mm) without bracket
Weight	12.7 oz (357g) with bracket, 11.2 oz (314g) without bracket
Certifications	(€ @. ▲ 🔝

* Tested in accordance with ANSI/ESD STM3.1-2015.

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Blowers





Auto-Clean System

The Auto-Clean System features a brush mechanism that sweeps the emitter points when the blower is turned off and on, which significantly reduces the need for manual cleaning. Simco-lon recommends activating the Auto-Clean System at least once a week. Cleaning schedules will vary depending on environmental conditions.



Enhanced Capabilities

An alarm LED on the front indicates a high voltage circuitry failure and a five-pin facility monitoring system (FMS) interface is on the rear of the blower, which provides a 4-20 mA current loop and relay output connection. With a 24 VDC input connection, the FMS output is situated on a convenient terminal block, designed for easy integration.





Compact, In-tool or Focused Coverage Blower Model 6432e

Simco-lon's Point-of-Use Ionizing Blower Model 6432e controls static discharge in assembly, inspection and packaging areas. The Model 6432e can also be used in-tool to control static build-up problems such as product contamination, material mishandling or microprocessor lock-up.

IsoStat technology provides several useful benefits for the 6432e blower. It's small size and ability to operate in balance without grounding wires or cables allows easy and quick installation and setup. The blower's internal emitter points are electrostatically shielded to eliminate field-induced charging. Steady-state DC operation provides fast discharge with low airflow for greater operator comfort.



Features

- IsoStat technology
- Steady-state DC ion emission
- 24 VDC or 24 VAC input power
- Facility Monitoring System (FMS) interface
- Operational failure alarm
- Small footprint design with in-tool stand or benchtop stand

Benefits

- Intrinsically balanced; no calibration needed
- Minimum ion recombination provides maximum static control
- Convenient power options, well-provided AC or toolprovided DC
- Faster response to ionization failure with notification through tool or facility monitoring system
- Provides visual notification of any operational failures
- Occupies little work or tool space, cleanroomcompatible (minimizes disruption of laminar flow)





Typical Discharge Times (sec)





6432e Specifications

Airflow	49 cfm (typ)
Balance	±20V @ 1' (30 cm)
Cleanliness	Meets ISO 14644 Class 5 (Fed Std. 209E Class 100)
Discharge*	<4 sec @ 1′ (1000-100V) 24 VAC (<5 sec @ 1′ 24 VDC)
Emitters	Tungsten wire, internally shielded
Indicators	Power green, red fault
Ozone	<0.005 ppm (typ)
Technology	Steady-state DC
Temperature	Operating Env: 150-95°F (10-35°C), 20-60% RH (non-condensing)
Voltage	24 VDC (±10%) 6W max, 24 VAC (±10%) 50-60 Hz 6W max
Mounting	1.8" x 5.1"(45 x 129 mm) small bracket, 4.1" x 5.1"(108 x 129 mm) large bracket (both with 1/4" mounting hole & 10-32 truss head screws)
Dimensions	5.3"H x 5.0"W x 2.5"D (133 x 127 x 63 mm), 1.8" (45 mm) small bracket, 1.8" (45 mm) small bracket, 4.1" (108 mm) large bracket
Weight	21 oz (595g) with stand
Certifications	(€ @. ▲ 😫

* Tested in accordance with ANSI/ESD STM3.1-2015.



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Enhanced Features

An alarm LED on the front indicates a high voltage circuitry failure and a five-pin facility monitoring system (FMS) interface is on the rear of the blower, which provides a 4-20 mA current loop and relay output connection. With 24 VDC input connection, the FMS output is situated on a convenient terminal block, designed for easy integration.



Power Options

For increased flexibility, the Model 6432e Blower can be directlypowered by process equipment or 24 VDC/VAC power to fit the needsof your environment. Input power: for 100-120 VAC, use transformer #14-1420-01; for 230 VAC, use #14-1430-01; for DC, use #14-1322 (with other 24 VDC source (performance may be reduced).



General Electronics Benchtop Blower Model 6832

The Simco-lon General Electronic Blower Model 6832 provides reliable, fast static charge control for benchtop work areas or mounted in confined spaces, allowing optimal electrostatics management that minimizes cost and maximizes protection for ESD-sensitive areas. An internal automatic balance control system ensures ionization continues to reach your target with complete accuracy presenting a significant time and cost savings.

Model 6832 delivers precisely balanced and directed ionization to your target without taking up valuable room in your environment. A greater concentration of emitter points and internal circuitry suited for high humidity applications makes the Model 6832 the standard choice for environments that need quality ESD protection with a proven design.



Features

- IsoStat technology
- Cleanliness rated at ISO 14644 Class 4
 (Fed. Std. 209e Class 10)
- FMS connection and alarms for management control
- Manual emitter point cleaning system

Benefits

- Provides the best corona-based ESD protection for maximizing yields
- Designed for use in an environment with a controlled level of contamination
- Increased control with immediate notification of alarms
- Reducing maintenance costs and improved performance



Typical Discharge Times (sec)



(1000-100V) fan speed set to high, blower 12" from charge plate monitor (CPM). CPM test plate 7.2" from table. Discharge times slightly longer for 230 VAC, 50 Hz unit. Yellow cell without value = decay time over 30 seconds.

6832 Specifications

Airflow	129 cfm (typ)
Audible Noise	61 dB (typ) fan high, 52 dB (typ) low fan; measured @ 12" (30.5 cm) from fan
Balance	<±10V (typ)
Cleanliness	Meets ISO 14644 Class 4 (Fed Std. 209E Class 10)
Controls	Power/fan speed DIP switch with 4 speed/velocity settings, balance adjustment, sensor type selection and FMS connections
Discharge*	${<}2$ sec @ 1' (30 cm) (typ), taken in-line center of fan ($\pm1000100\text{V})$
Emitter Points	Titanium, 8 per fan
Indicators	Green power on, red fan stall, red fault with optional audible alarm
Mounting	Tilt lock mounting stand
Options	External sensor inputs with FMS connection, audible alarm
Ozone	0.005 ppm (typ)
Technology	Steady-state DC (corona discharge)
Temperature	Operating Env: 50-90°F (10-32°C), 30-70% RH (non-condensing)
Voltage	24 VDC (470 mA max)
Enclosure	Powder-coated aluminum
Dimensions	7.33"H x 5.12"W x 2.36"D (18.6 x 13 x 6.0 cm)
Weight	2.03 lb (0.92 kg)
Certifications	(🗧 🔍 🖉

* Tested in accordance with ANSI/ESD STM3.1-2015.



Ionizing Blowers



Balance Performance

Performance test results for **high fan** speed per ANSI/ESD STM3.1-2015 standard are shown below. High fan speed is one of four high, medium-high, medium-low and low fan speed.



Fan Speed DIP Switch Settings

The 2 dip switches control the fan speed (4 speeds are available). The switch settings for each fan speed are shown in the table on the right.

Fan Speed Selection		
Switch Setting Fan Speed		
	Low	
	Medium-Low	
	Medium-High	
	High	

Options

An audible alarm that operates in addition to the visible array of 3 each LEDs on the front of the blower indicate operational failures including a stalled fan or loss of ionization.







Wide Coverage Overhead/Benchtop Blower AEROSTAT[®] FPD

The Aerostat FPD series of products has been designed to control electrostatic charges in flat panel assembly and electronics manufacturing applications requiring stable operation with exceptionally fast discharge time performance. The FPD ionizing blowers are built for reliability and simplicity.

Aerostat FPD utilizes reliable, low maintenance AC corona technology with high flow rate fans to provide fast static discharge performance. The inherent stability of the Aerostat FPD reduces maintenance frequency, and a built-in emitter cleaner reduces maintenance time. Our unique geometry and airflow control provides consistent performance, meeting the demands of product assembly operations.

The Aerostat FPD's self-monitoring feature assures the user of controlled, consistent ion output. A light indicates both that power is applied to the unit and that ions are being produced. Performance is enhanced by the use of Simco-Ion's industry-leading and highly reliable AC technology.



Features

- High output, high-velocity fans
- Inherently balanced ionization
- Ionization indicator light
- Built-in emitter point cleaner
- Optional fan air filter

Benefits

- Extremely fast static charge neutralization over a wide horizontal or vertical application area
- Offers consistent performance with low maintenance frequency
- Visual indication that the target product is being
 neutralized
- Continued blower operation will require little maintenance
- Protection for internal components from environmental contamination



Typical Discharge Times (sec)



Direct Downward, Maximum Fan Speed



FPD Specifications

Air Filter	30 ppi ope	30 ppi open cell polyurethane foam				
Air Velocity*	Fan Iow Fan high	<u>1' (0.3m)</u> 500 1000	<u>2' (0.6m)</u> 350 700	<u>3' (0.9m)</u> 250 500	<u>4' (1.2m)</u> 200 400	<u>5' (1.5m)</u> 150 300
Audible Noise	59-69 dBA	(measured @	⊉ 2′ (0.6m) i	n in front of	blower)	
Balance	$0\pm10V$					
Controls	Power on/o	Power on/off switch, recessed variable fan speeds ionization				
Discharge**	1.0 sec @ 1	1.0 sec @ 1' (0.3m) (1000-100V) high fan				
Indicators	Orange ion	Orange ionization light				
Technology	AC ionizati	AC ionization				
Temperature	Operating	Operating Env: 50-90°F (10-32°C), 30-70% RH (non-condensing)				
Ozone	Equilibrium	i concentrati	on <0.02 pp	om		
Voltage	120 VAC 60 230 VAC 50	120 VAC 60 Hz 0.3A (2-fan), 0.4A (3-fan), 0.5A (4-fan) 230 VAC 50 Hz 0.2A (2-fan), 0.2A (3-fan), 0.3A (4-fan)				
Enclosure	Powder-co	ated white e	namel alum	inum		
Mounting	Stainless st	eel bracket				
Dimensions	2-fan: 23.2 3-fan: 35.5 4-fan: 47.7	5″L x 4.0″H > 0″L x 4.0″H > 5″L x 4.0″H >	x 6.25″D (59 x 6.25″D (90 x 6.25″D (12	0 x 100 x 16 0 x 100 x 16 15 x 100 x 1	0 mm) 0 mm) 60 mm)	
Weight	2-fan: 10 ll	os (4.5 kg), 3	-fan: 13 lbs	(5.9 kg), 4-fa	an: 16 lbs (7.3	kg)
Certifications	(6 🗎					

** Velocity in fpm and (m/s) measured at center of air stream. ** Tested in accordance with ANSI/ESD STM3.1-2015.



Ionizing Blowers





FPD Coverage Areas

The Aerostat FPD ionization blower comes in either 2-fan, 3-fan or 4-fan chassis lengths. Each length is designed for optimal coverage area and a variety of applications:

Blower	Overhead Applications	Benchtop Applications
2-fan	2'W x 2'L (0.6m x 0.6m)	2'W x 5'L (0.6m x 1.5m)
3-fan	2'W x 3'L (0.6m x 0.9m)	3'W x 5'L (0.9m x 1.5m)
4-fan	2'W x 4'L (0.6m x 1.2m)	4'W x 5'L (1.2m x 1.5m)





Overhead Ionizing Blower AEROSTAT® GUARDIAN

Simco-lon's Aerostat Guardian Overhead lonizing 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.

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 ±10V
- Integrated heater and task lights
- AC Technology
- Ionization light
- Integrated manual emitter point cleaner

Benefits

- 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



Typical Discharge Times (sec)



(1000-100V), high fan 18" from charge plate monitor (CPM). CPM test plate 1" from table. Discharge times slightly longer for 230 VAC, 50 Hz unit.



Robust grill with diffuser

Guardian Specifications

Airflow	150-300 cfm (low to high), combined 3-fan output				
Audible Noise	50 dBA fan Iow, 60 dBA fan high				
Balance	0 ± 10 V, measured 18" (45.7 cm) from blower				
Cleanliness	Meets ISO 14644 Class 5 (Fed std. 209E Class 100)				
Controls	Blower on/fan speed control knob, heater/task light on/off switch				
Coverage	2' x 4' (61 x 122 cm) area				
Discharge*	3 sec @ 18" (1000-100V), measured center of blower, fan high-no diffusers				
Emitter Points	Stainless Steel				
Indicators	Orange ionization status, orange on/off, heater/task light				
Temperature	Operating Env: 32-122°F (0-50°C), 30-70% RH (non-condensing) Warm Air: 25°F (14°C) fan Iow, 11°F (6°C) fan high				
Voltage	2-fan: 120 VAC, 0.2A, 230 VAC, 0.1A 3-fan: 120 VAC, 0.3A, 230 VAC, 0.15A				
Enclosure	Powder-coated white enamel aluminum				
Dimensions	42.75"W x 4"H x 6.75"D (108 x10.2 x 17.1 x 108 cm)				
Weight	16 lbs (7.3 kg)				
Certifications	(€₀⊕₀₀				

* Tested in accordance with ANSI/ESD STM3.1-2015.







Build-in manual emitter point cleaner with each fan



Designed for use with sensitive electronic components; provides fast static charge decay efficiency over an entire work surface area.



Extended Coverage Ionizing Blower AEROSTAT® PC2

Simco-lon's new Aerostat PC2 is designed and built for reliable, long-term static control for a variety of electronic, semiconductor, flat-panel display and life science assembly applications. It offers outstanding charge neutralization for targeted mini-environments and provides static control up to 4 feet (1.2m) across a benchtop work surface. The combination of size and its lightweight design allows easy mounting inside process tools.

Aerostat PC2 offers inherent balance to $0 \pm 10V$, loaded with usability features including an adjustable locking stand, fan speed control, separate balance and fan stall alarm LED with an optional audible alarm. These features make the Aerostate PC2 the ideal minienvironment ionization blower for assembly, test and packaging area.



Features

- Discharge time of <2 seconds at 1 foot (30 cm)
- Lightweight, compact and quiet for unobtrusive use
- Local alarm LEDs, Facility Monitoring System (FMS) connection and optional audible alarm
- ±10V self-balancing (Micropulse) technology
- Built-in emitter point cleaner

Benefits

- Fast, targeted neutralization of static charges
- Directed ionization designed for workbench or in-tool areas
- Worry-free ionization status can easily be locally monitored and at a remote location
- High precision balance ensures controlled and consistent ion output
- Minimizes the time required to perform normal maintenance



Typical Discharge Times (sec)





PC2 Specifications

Air Filter	30 ppi open cell polyurethane foam (optional)
Air Velocity	400 fpm fan high, 325 fpm fan med, 275 fpm fan low (typ)
Air Volume	Cubin feet per minute, 130 scfm max (high speed, typ)
Airflow	cfpm, 130 scfm max (fan high)
Alarm	Fault and fan stall (standard), audible alarm (optional)
Audible Noise	65 db @ 1' (30 cm) down centerline, 1' off center (fan high)
Balance	0 ±10V
Connectors	IEC320/C14 AC power cord outlet, FMS fault alarm output connector (RJ-9)
Controls	Power on/off, fan speed low/med/high, emitter point cleaner knob
Coverage	1'W x 4'L (30 x 122 cm) area
Current	140 mA
Discharge*	2 sec @ 1' (1000-100V) fan high
Emitters	Stainless steel
Indicators	Green power on, red fault alarm, red fan stall alarm
Ozone	<0.05 ppm (measured 1' in front of blower)
Technology	Micropulse AC ionization
Temperature	Operating Env: 50-95°F (10-35°C), 30-60% RH (non-condensing)
Voltage	100-240 VAC 50/60 Hz
Enclosure	Powder-coated aluminum chassis
Mounting	Metal stand with skid resistant rubber feet
Dimensions	9.1"H x 6.8"W x 3.3"D (23.1 x 17.3 x 8.4 cm) with stand
Weight	2.8 lbs (1.25 kg) with stand
Certification	A

* Tested in accordance with ANSI/ESD STM3.1-2015.

Ionizing Blowers



Emitter Point Cleaner

The Aerostat PC2 features a built-in emitter point cleaner which takes only seconds to clean the emitter points. This prevents the build-up of airborne debris and the PC2 keeps working in top form for the life of the unit



Alarm Capabilities

Separate alarm LEDs on the front of the blower for ionization balance fault and fan stall plus a facility monitoring system (FMS) interface for remote alarm status (accessible on the rear of the blower) offers worry-free static control for the production area.





Extended Coverage Ionizing Blower AEROSTAT® XC2

Simco-lon's new Aerostat XC2 provides complete wide area ionization protection. As with its predecessor, the Aerostat XC lonizing 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 lightweight 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 \pm 10V (with manual adjustment capability) 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, separate balance and fan-stall alarm LEDs with an 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 lonization 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

Benefits

- Designed for complete static neutralization across the entire work surface area
- Light enough to be easily mounted on or above the work surface
- Ensures consistent, balanced performance over a long time
- Long-term balance stability
- Ionization status can easily be monitored locally and at a remote location
- User comfort helps to ensure that ionization remains on





Typical Discharge Times (sec)





XC2 Specifications

Air Velocity [*]	620 fpm @ 12", 435 fpm @ 24", 325 fpm @ 36", 265 fpm @ 48" fan high
Airflow	95 cfm fan low, 150 cfm high fan
Alarm	Fault and fan stall (optional)
Audible Noise	58 dB fan low, 70 dB fan high (measured 2' in front of blower)
Balance	0 ±10V
Cleanliness	Meets ISO 14644 Class 6 (Fed Std. 209E Class 1000)
Connectors	IEC AC power cord outlet, FMS fault alarm output connector
Controls	Power on/off, fan speed control low/med/high, emitter point cleaner pushbutton, balance adjust, heater on/off (optional)
Coverage	3′W x 6′L (91 x 183 cm) area
Current	Input: 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
Emitters	Stainless steel
Indicators	Green power on, red fault alarm, red fan stall alarm
Ozone	<0.05 ppm (measured 1' in front of blower)
Technology	Micropulse AC ionization
Temperature	Operating Env: 50-95°F (10-35°C), 30-60% RH (non-condensing)
Temperature	Warm air: 4-5°F (2-3°C) measured 1' in front of blower
Voltage	100-240 VAC 50/60 Hz 0.5A 55W max (no heater) 3.5A 420W (with 100-120 VAC heater) 1.9A 460W (with 220-240 VAC heater)
Mounting	Powder-coated steel stand with skid resistant rubber feet
Enclosure	Powder-coated aluminum chassis
Dimensions	14.13"W x 7.2"H x 6.55"D (35.9 x 18.3 x 16.6 cm) with stand
Weight	7 lbs (3.2 kg) with stand
Certifications	

* Tested in accordance with ANSI/ESD STM3.1-2015.

** Velocity in fpm measured at center line of air stream; all values $\pm 10\%$

lonizing

Blowers



Low Maintenance

The Aerostat XC2 utilizes micropulse technology which reduces ion recombination at the emitter, thus increasing production 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 pushbutton to remove any debris and ensuring balanced, continuous ion output.









Overhead Cleanroom-rated Ionizing Blower GUARDIAN CR2000

Simco-lon's Guardian CR2000 Cleanroom-rated Overhead lonizing Blower is designed specifically for use in cleanroom applications. The Guardian CR2000 features a patented circuit that results in a balanced delivery of positive and negative ions, which ensures that the unit will maintain an ion balance of $0 \pm 10V$. Balance stability is further enhanced by the use of Simco-lon's unique "ion shields" at the fan outputs to reduce parasitic ion loss.

The Guardian CR2000 ensures cleanroom compatibility with all fan and air bearing silicone free surfaces. Fan assemblies are particletested to ISO 14644 Class 4 (Fed Std. 209E Class 10) particle limits.

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



Features

- Inherently balanced to 0 ±10V
- Ion balance and ion output monitors
- Lockout key switch
- Silicone-free component surfaces
- Integrated emitter point cleaner

Benefits

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





Typical Discharge Times (sec)



(1000-100V) fan speed set to high 18" from charge plate monitor (CPM). CPM test plate 6" from table. Discharge times slightly longer for 230 VAC, 50 Hz unit.



Guardian CR2000 Specifications

Airflow	2-fan 90 cfm low, 180 cfm high, 3-fan 135 cfm low, 270 cfm high
Air Velocity	200 fpm (1 m/s) low, 400 fpm (2 m/s) high (measured $18^{\prime\prime}$ from blower)
Audible Noise	48 dBA fan low, 58 dBA fan high (measured 2' from blower)
Balance	$0 \pm 10V$ (measured 18" from blower)
Cleanliness	Meets ISO 14644 Class 4 (Fed std. 209E Class 10)
Controls	3-position key switch off/adjustable/high, recessed fan speed control
Coverage	2-fan: 2' x 3' (61 x 91cm) area, 3-fan: 2' x 4'(61 x 122 cm) area
Discharge*	(1000-100V) 3 sec (measured 18" center of blower position fan high)
Emitter Points	Stainless Steel
Indicators	lonization status green normal, red maintenance
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
Temperature	Operating Env: 32-122°F (0-50°C), 30-70% RH (non-condensing)
Enclosure	Aluminum with glossy white polyurethane finish
Dimensions	2-fan: 31.75W x 4″H x 6.75″D (80 x 10.2 x 17.1 cm) 3-fan: 42.75″W x 4″H x 6.75″D (108 x 10.2 x 17.1 cm)
Weight	2-fan: 12 lbs (5.5 kg), 3-fan: 16 lbs (7.3 kg)
Certifications	

* Tested in accordance with ANSI/ESD STM3.1-2015.







Build-in manual emitter point cleaner with each fan



Compact Ionizing Blower minIONTM2

Simco-lon's minION2 lonizing 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 makes it possible for the minION2 to deliver industryleading performance. Simco-lon's steady-state DC corona ion technology provides a patented control circuitry to deliver consistent performance. Performance is enhanced by the use of patented radial ion emitter design.

minION2 uses a modular wiring system that allows power delivery by "daisy-chaining" up to 3 units on one standard, modular power supply. Hardwiring of power can be accommodated by the 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.



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





Typical Discharge Times (sec)





minION2 Specifications

Airflow	21-42 cfm
Audible Noise	52 dBA (max) fan high measured 2' from blower
Balance	\pm 10V using auto-adjust
Connectors	Two 4P4C "handset" modular/power
Controls	Two position off/on
Coverage	1'x 3' (30 x 91 cm) area
Discharge*	2 sec @ 1' (1000-100V) fan high
Emitters	Six stainless steel
Indicators	Green power, red fault
Power Supply	Universal 100-240 VAC input (IEC-320)/24 VDC, 1.66A output (suitable to power up to 3 units)
Temperature	1.66A output (suitable to power up to 3 units)
Voltage	24 VDC 250 mA 6W
Enclosure	White reinforced polycarbonate
Mounting	Stainless steel (optional articulating arm)
Dimensions	3.875"W x 5.375"H x 2.375"D (98 x 136 x 60 mm)
Weight	1.1 lbs (0.5 kg)
Certifications	

* Tested in accordance with ANSI/ESD STM3.1-2015.

Ionizing Blowers



Optional Articulating Arm 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.



Blower is designed to control electrostatic charges in sensitive electronics assembly and automated tool applications requiring stable operation with fast discharge time performance.

