

Critical Environment In-tool Ionizing Bar with Software Control

# AEROBAR® 5225

Simco-Ion's Digital AeroBar with Software Control Model 5225 is designed to handle the demanding requirements of **in-tool ionization**. With high ion output providing fast neutralization of electric charge on wafers, E78 compliance at the most stringent levels can be achieved. An aerodynamic design and cleanroom compatible materials allow the Model 5225 to deliver complete and efficient ionization in mini-environments without disrupting laminar airflow. The AeroBar can be easily and seamlessly integrated with your tool mean a less costly solution to ionization, in addition to the benefits of reduced maintenance cost and better alarm handling. System alerts and messages are displayed at the tool controller for easy notification. Alternatively, simple FMS alarm output is available.

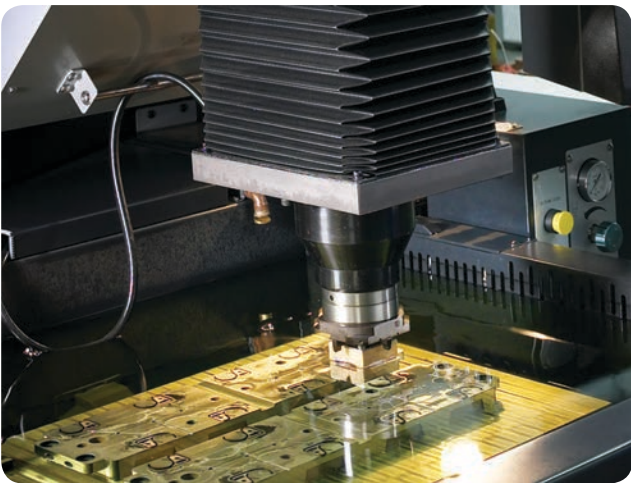


## Features

- Complete integration with tool control system
- Fully adjustable parameters for each AeroBar
- Ion current monitoring
- Several lengths available including three specifically designed for Equipment Front End Modules (EFEM)
- Single-crystal silicon emitter points





## Benefits

- Setup, operation and maintenance are controlled using existing tool or IonMonitor software GUI
- Fine-tune ionization for individual process requirements in each area of the tool
- More consistent ion output and stable performance
- Flexible lengths allow versatility for a variety of application designs
- Industry's proven cleanest emitter material, with no risk of wafer contamination from dopants or metals







Designed for front-end and back-end semiconductor manufacturing to control electrostatic discharge and particle contamination in mini-environment and workstations

## 5225 Specifications

<b>Alarm</b>	Alarm activates when the bar is no longer able to maintain the preset ion output level, alarm is displayed visually by a red LED in the middle of the ionizer chassis as well as on GUI, settable threshold alarm limits for predictive maintenance
<b>Cleanliness</b>	ISO 14644 Class 1
<b>Connectors</b>	RJ-11 modular jack receptacles
<b>Control Signal</b>	RS-485 from the Interface Module
<b>Current</b>	Output: <15 µA, current and voltage limited
<b>EMI</b>	Below background level
<b>Emitter Points</b>	Single crystal silicon, replaceable
<b>Indicators</b>	Individual red LEDs flash on for each polarity, middle red LED flashes rapidly when in alarm, all 3 LEDs blink at once when communication occurs, alarm relayed to tool GUI
<b>Regulation</b>	Output and balance stability is achieved by independently regulating the ion emission current of each polarity at each ionizer
<b>Technology</b>	Pulsed DC, Steady-state DC or standby
<b>Timing</b>	Both on and off timing for each polarity are settable from 0-10 sec @ 0.1 sec increments, LEDs on the bar indicate the polarity of the ion emission
<b>Voltage</b>	<b>Input:</b> 24 VAC, 50/60 Hz, 1W (typ), received from the Interface Module <b>Output:</b> 0-20 kVDC, ±10% for each polarity on an individual AeroBar; positive or negative output levels can be adjusted separately through GUI
<b>Enclosure</b>	ABS plastics, fire retardant
<b>Dimensions</b>	2.1"H x 1.2"W x 22.4, 28.4, 35.7, 44.4, 55.6, 64.4, 75.5, 84.4"L (53 x 30.5 x 569, 721, 907, 1128, 1412, 1636, 1918, 2144 mm)
<b>Weight</b>	1.5 lb (1.02 kg) for a 22" (56.9 cm) bar (approx 6 oz per additional ft/0.17 kg per additional 30 cm)
<b>Certifications</b>	SEMI-F47    

## 5200-IM6T Specifications

<b>Alarm Output</b>	FMS, relay closure to ground (available on V4.0 and above)
<b>Communication</b>	Ethernet (RJ-45) or serial (RS-232/DB9)
<b>Indicators</b>	Green power on, yellow communication, red alarm
<b>Output Ports</b>	Six RJ-11 ports connect to up to six Model 5225 AeroBars
<b>Voltage</b>	24 VDC, 1.0A, ±5%
<b>Dimensions</b>	2.9"H x 2.8"W x 12.4"L (7.4 x 7.1 x 31.5 cm)
<b>Weight</b>	4 lb (2 kg)
<b>Certifications</b>	   

## Intelligent Integration

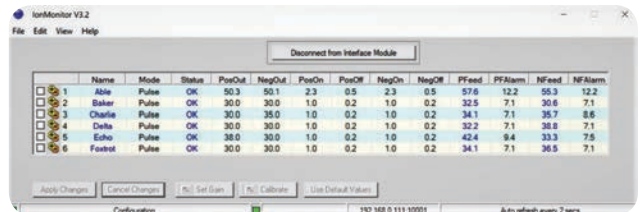
Simco-Ion's specially developed software eases integration into your system. Three different components are available to best suit your needs:

- A fully documented Application Programming Interface (API) minimizes integration time and cost.
- The open-source sample application in Visual C/C++ provides an example for use in developing your tool control software or can be used as a stand-alone application on your tool controller or laptop.
- An ionizer hardware simulator allows for easy software development in the absence of ionizer hardware.

Simco-Ion's powerful software provides complete control over the ionization system. Settings include adjustments for operating modes (including pulsed DC, Steady-state DC or standby), synchronization, on-times, off-times, power output levels and alarm thresholds for both positive and negative emitters, with independent control over each AeroBar. Sophisticated alarm and maintenance detection mean less downtime and costly diagnostic activity.

## IonMonitor Software

IonMonitor is industry-first graphical user interface (GUI) that monitors and controls the AeroBar Model 5225 and connects to the Interface Model 5200-IM6T. This software package centralizes all control and monitoring operations, simplifying operation and saving valuable time.



## Interface Module Model 5200-IM6T

This interface module powers up to six AeroBars. Model 5200-IM6T features an Ethernet port and an RS-232 port for communication with process equipment or EFEM controllers.



## Critical Environment Standalone Ionizing Bar

# AEROBAR® 5225S

Simco-Ion's Standalone Digital AeroBar Model 5225S ionizing bar is specifically designed to provide high performance with simple integration and operation. Adjustable and precise, easy-to-use digital settings allow the AeroBar to be used in a multitude of applications, ranging from inside tools to workstations and cleanroom areas. A choice of ionization modes, output voltage and timing provide versatility to meet static charge neutralization requirements. An aerodynamic design and cleanroom-compatible materials allow the Model 5225S to deliver complete and efficient ionization in mini-environments and cleanrooms without disrupting laminar airflow. Designed to operate as a standalone system, the Model 5225S AeroBar internally maintains critical settings, thereby ensuring continued optimal performance each time the system is powered up. AeroBar setup and adjustment is easy using the infrared Handheld Remote. An FMS output allows easy hardwired integration to a facility alarm system.

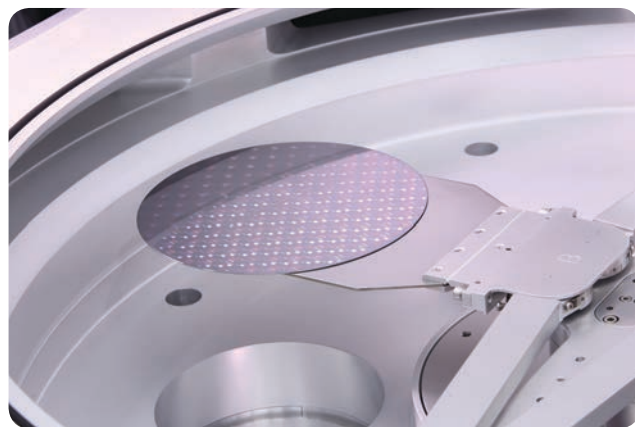
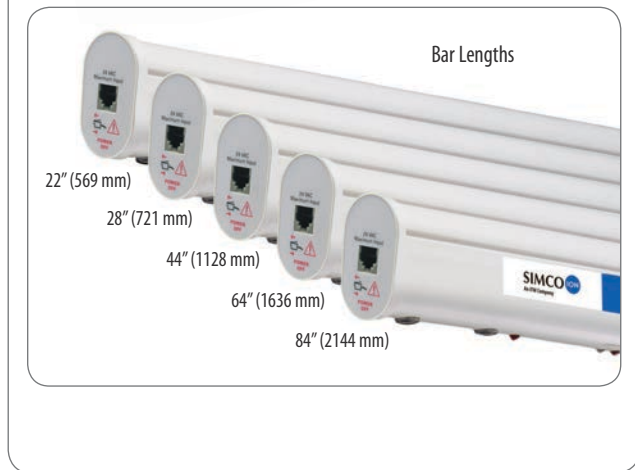


### Features

- Complete integration with tool control system; no controller required
- Fully adjustable parameters for each AeroBar utilizing Pulsed DC or Steady-state DC modes
- Ion current monitoring
- Several lengths available including three lengths specifically designed for Equipment Front End Modules (EFEM)
- Single-crystal silicon emitter points

### Benefits

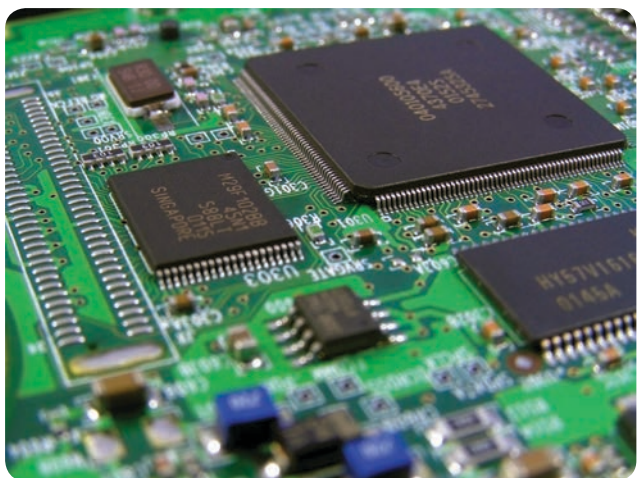
- Continued optimal performance each time the system is powered up
- Alarm capability of ensured performance
- Fine-tune ionization for individual process requirements in each area of the tool
- More consistent ion output and stable performance
- Flexible lengths allow versatility for a variety of application designs
- Ultra-clean emitter material, with no risk of wafer contamination from dopants or metals



Designed for Front-End and Back-End Semiconductor Manufacturing to Control Electrostatic Discharge, Particulate Contamination in Mini-Environment and Workstations

### 5225S Specifications

<b>Alarm</b>	Alarm activates when the bar is no longer able to maintain the preset ion output level, alarm is displayed visually by a red LED in the middle of the ionizer chassis, settable threshold alarm limits for predictive maintenance
<b>Cleanliness</b>	ISO 14644 Class 1
<b>Connectors</b>	RJ-11 modular jack receptacles
<b>Current</b>	Output: <15 $\mu$ A, current and voltage limited
<b>EMI</b>	Below background level
<b>Emitter Points</b>	Single crystal silicon, replaceable
<b>Indicators</b>	Individual red LEDs flash for each polarity, middle red LED flashes rapidly in alarm, all 3 LEDs blink when communication occurs
<b>Ozone</b>	<0.005 ppm
<b>Regulation</b>	Output and balance stability is achieved by independently regulating the ion emission current of each polarity at each ionizer
<b>Technology</b>	Pulsed DC, Steady-state DC or standby
<b>Timing</b>	Both on/off timing for each polarity are settable from 0-10 sec @ 0.1 sec increments, LEDs on the bar indicate the polarity of the ion emission
<b>Voltage</b>	<b>Input:</b> 24 VAC, 50/60 Hz, 1W (typ) <b>Output:</b> 0-20 kVDC, $\pm 10\%$ for each polarity on an individual AeroBar, positive or negative output levels can be adjusted separately with IR Handheld Remote
<b>Enclosure</b>	ABS plastics, fire retardant
<b>Dimensions</b>	2.1"H x 1.2"W x 22.4, 28.4, 35.7, 44.4, 55.6, 64.4, 75.5, 84.4"L (53 x 30.5 x 569, 721, 907, 1128, 1412, 1636, 1918, 2144 mm)
<b>Weight</b>	1.5 lb (1.02 kg) for a 22" (56.9 cm) bar (approx. 6 oz per additional ft/0.17 kg per additional 30 cm)
<b>Certifications</b>	SEMI F47



Specially Designed for Front-End and Back-End Semiconductor Manufacturing Process to Provide High Performance with Simple Integration and Operation

### Simple Integration

The AeroBar Model 5225S is powered by a 24 VAC source, eliminating the need for an external controller. Wall transformer kits (24 VAC output) are available for easy installation using flat modular cables. A Facility Monitoring System (FMS) output signal from the bar provides an immediate warning in the event of an alarm. Several lengths of the AeroBar are available, including three specially designed for two, three and four EFEM load port applications. Multiple AeroBars can be installed in either a daisy-chain or drop-tee configuration, creating a system that is versatile and easy to install in any customized equipment or application

### Infrared Handheld Remote

As part of our line of digital ionizers, the Model 5225S provides excellent reliability and performance. Exacting parameters and easy setup using the infrared Handheld Remote means that the Model 5225S is ideal for retrofits, low volume tools, systems with programmable logic controllers (PLC) or cleanroom work areas where the performance, stability, and reliability of digital ionization is desired.



### Optional Bar Lengths for use in 300 EFEMs

Option lengths available with optimized placement of emitter points over the Front Opening Unified/Universal Pod (FOUP) for use in 300 EFEMs.





## Ultra-Clean Metal-free Modulated Pulse Bar

# AEROBAR® MP 5635 / 5635M

The AeroBar 5635 and 5635M AeroBar Modulated Pulse (MP) ionizing bar are specifically designed to eliminate static charge in semiconductor and other ultra-clean manufacturing processes where fast discharge time, low swing voltages and precision balance are required. This breakthrough technology enables AeroBar mounting within 150 mm of the wafer. MP technology, combined with ultra clean silicon emitter points and precision adjustment, provides ISO 14644 Class 12 ionization (0.01 µm particles or nanoparticles) and ISO 14644 Class 1 (0.1 µm particles) cleanliness, critical for smaller technology nodes. 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.

Model 5635M (metal-free) specially designed for applications where exposed metallic surfaces are not permitted.

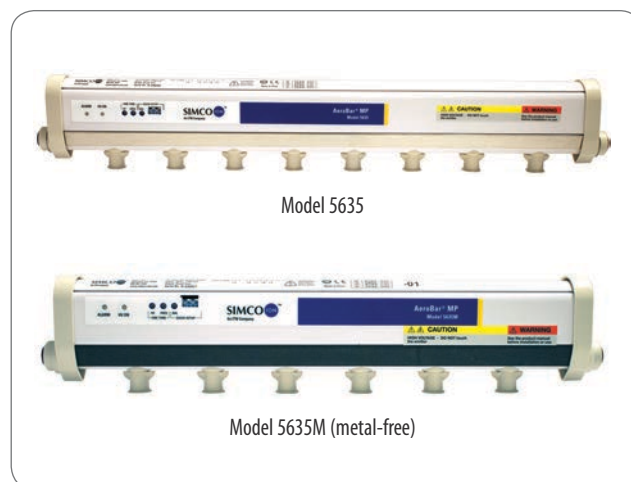


## Features

- ISO 14644 Class 1 (0.1 µm particles) and ISO 14644 Class 12 (2018) (0.01 µm particles)
- Modulated pulse technology
- Low field voltages
- Air-assist capability
- Optional software with an easy-to-use interface with wide adjustability

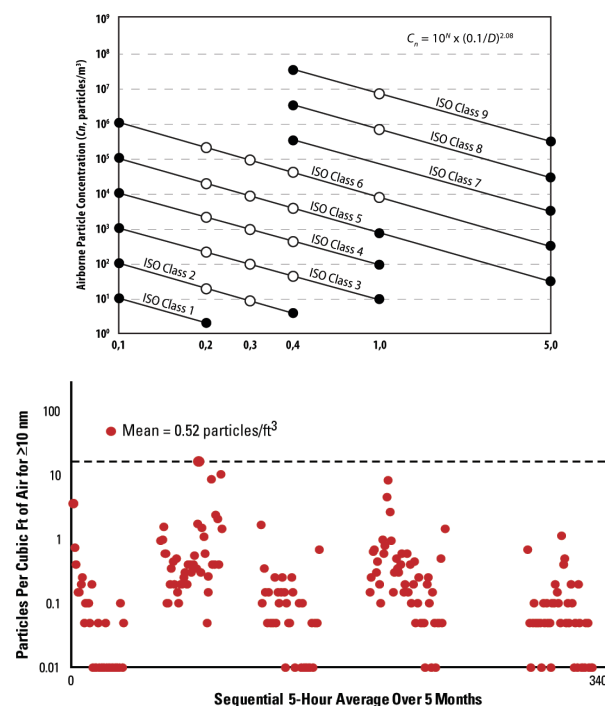
## Benefits

- Compatible with all wafer technology nodes including 14 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
- Model 5635M is perfect for “no metal” applications



## Cleanliness

Model 5635 is designed to operate in and maintain ISO 14644-1 cleanliness (10 particles or less per m³ for particles of 0.1 micron and larger). Model 5635 will also perform to ISO 14644-12 cleanliness (1200 particles or less per m³ (34 particles per ft³) for particles of 0.01 micron and larger) when operated at 45-50% output voltage setting and OpenJet nozzles with single crystal silicon emitters.

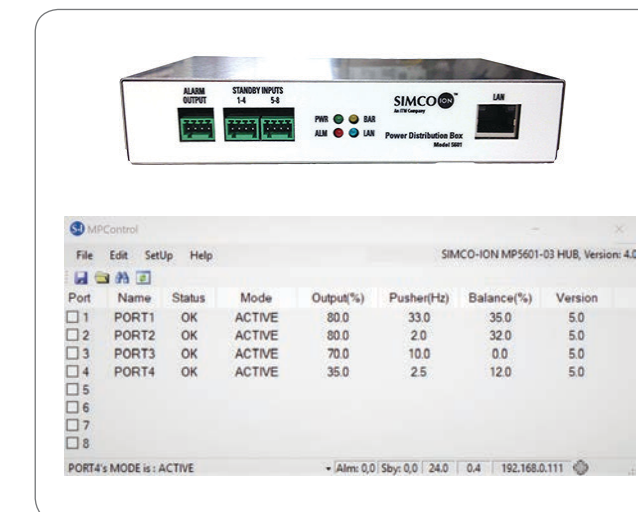


## 5635 / 5635M Specifications

<b>Airflow</b>	45 psi max gas pressure, 1-3.5 lpm/nozzle thru 8 mm OD one-touch fitting (optional)
<b>Air Supply</b>	Clean dry air (CDA) or nitrogen ( $N_2$ <10 psi)
<b>Balance</b>	<±20V over time and across the bar length (measured in a controlled environment at 24" distance)
<b>Bar Settings</b>	Balance, frequency and power output
<b>Cleanliness</b>	Meets ISO 14644-12 cleanliness (0.01 µm particles or nanoparticles) and ISO 14644 Class 1 (0.1 µm particles) using 45-50% output voltage setting and OpenJet nozzles with single-crystal silicon emitters
<b>Distance</b>	150-1000 mm distance to surface (application and customer specification dependent)
<b>EMI</b>	Below background level
<b>Emitter Pitch</b>	50 mm or 75 mm spacing between nozzles, 50 mm spacing only on the 450 mm and 600 mm lengths
<b>Emitters</b>	Single crystal silicon emitter points
<b>Frequency</b>	Default setting at 5 Hz, adjustable from 1-33 Hz
<b>Ozone</b>	<0.05 ppm
<b>Performance</b>	15 sec (typ) with no air-assist, Vp-p Swing of 80 Vp-p (measured @ 24" below an emitter center group of points)
<b>Temperature</b>	Operating Env: 59-95°F (15-35°C), 30-60% RH (non-condensing)
<b>Technology</b>	Modulated pulse (MP) technology
<b>Voltage</b>	Input: 24 VDC ±10% Output: 13.5 kV p-p (max), adjustable
<b>Enclosure</b>	ABS chassis, stainless steel rails on the outside of the bar
<b>Dimensions</b>	3.1"H x 1.3"W x 18", 24", 34", 39", 45", 51", 57", 63", 69", 75", 81", 87", 93"L (78 x 34 x 450, 600, 850, 1000, 1150, 1300, 1450, 1600, 1750, 1900, 2050, 2200, 2350 mm)
<b>Certifications</b>	CE, UL, RoHS

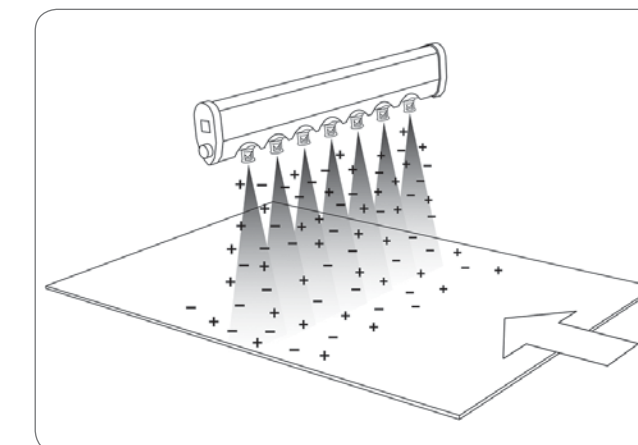
## Power Distribution Box with MP Control Software

The Model 5601 Power Distribution Box with the MP Control Software can be used to centralize power and software control for up to 8 MP AeroBars.



## 5601 Specifications

<b>Alarm Output</b>	Relay closure to ground
<b>Communication</b>	Ethernet (RJ-45) to/from PC, individual bar standby inputs
<b>Indicators</b>	Green power, yellow communication, red alarm, blue USB
<b>Output</b>	8 RJ-45 ports (1 for each 5635 bar)
<b>Voltage</b>	Input: 24 VDC for each bank of 4 bars, 5.6A total (0.7A max/port)
<b>Dimensions</b>	1.2H x 6.3L x 3.6W in (3.1 x 16.0 x 9.2 cm)
<b>Weight</b>	15 oz (420g)



Model 5635 AeroBar MP with OpenJet Nozzles

## Steady-state DC Ionization Bar & Controller

# AEROBAR® 5685

Simco-Ion's AeroBar Ionizer Model 5685 is designed to control static charge in mini-environments, laminar flow hoods and workstations. The Model 5685 features a unique aerodynamic design that ionizes a local area without disrupting laminar flow. Ideal in 12-24 inch distance applications with laminar air flow, the Model 5685 utilizes Steady-state DC ion emission and Simco-Ion's IsoStat technology. IsoStat technology guarantees intrinsically balanced ionization. No complicated feedback circuits are required to maintain balance and adjustment is never needed. The Model 5685 is available in four different lengths and installation is fast, using easy-mount clips. Plug and play, the ionizer provides balanced ionization upon power up. Available with ultra-clean single crystal silicon emitter points, the Model 5685 meets ISO 14644 Class 3 standards (Fed. Std. 209e) Class 1 equivalent.



### Features

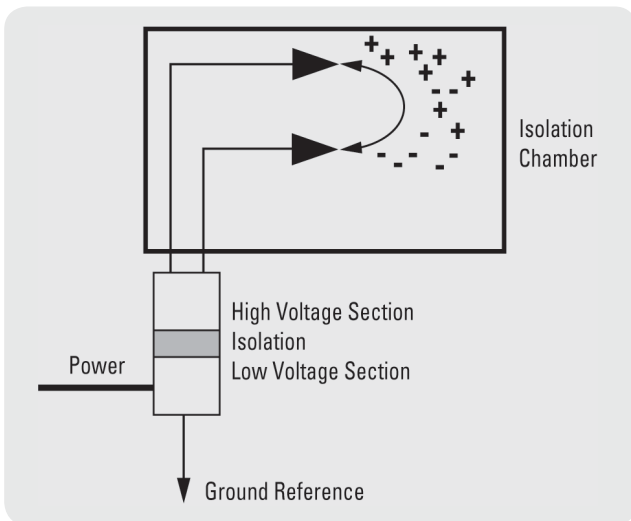
- IsoStat technology
- Steady-state DC ion emission for high ion density
- Single-crystal silicon or titanium emitter points
- Multiple lengths, including short 11-inch AeroBars

### Benefits

- Intrinsically balanced output of both positive and negative ions, making it ideal for any surface charge applications, low offset voltages, no calibration needed
- Fast discharge when combined with typical laminar air flows for ion delivery
- Compatible material choices for any process, silicon and titanium, ISO 14644 Class 3 (Fed. Std. 209e Class 1) equivalent
- Ability to install in a multitude of hood, workstation, and mini-environment sizes



### IsoStat Technology



### 5685 Specifications

<b>Airflow</b>	60 fpm (min) required at bar for proper operation
<b>Balance</b>	±50V @ 24" measured directly below two opposite polarity emitter points (Model 5685 must be mounted at least 6" away from grounded surfaces for optimum balance performance)
<b>Discharge*</b>	25 sec or less for ±1000V to ±100V discharge @ 24" with min 60 fpm airflow
<b>Emitters</b>	Machined titanium or single-crystal silicon, replaceable every 2-3 years depending on environment conditions
<b>Indicators</b>	Green power
<b>Mounting</b>	Two mounting clips provided, various clips and hangers available
<b>Technology</b>	Steady-state DC
<b>Temperature</b>	Operating Env: 59-95°F (15-35°C), 20-60% RH (non-condensing)
<b>Voltage</b>	Input: 24 VAC (±10%), 50-60 Hz, 3.5W (max) Output: 7.5 kV (typ)
<b>Dimensions</b>	2.1"H x 1.13"W x 11", 22", 44", 64"L (5.3 x 2.9 x 27.9, 55.9, 111.8, 162.6 cm)
<b>Weight</b>	9 oz per foot of bar length (255g per 0.3m)
<b>Certifications</b>	CE, UL, ENEC

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

### Convenient Power Choices

The Model 5685 may be powered by either of these available transformers for 24 VAC:

- 120 VAC input, use the 33-1420-01 transformer
- 230 VAC input, use the 33-1430-01 & 33-1433-01 transformer

### Emitter Point Technology

**Single Crystal Silicon:** Simco-Ion's patented single crystal silicon emitter points represent the cleanest option available in the industry. Far exceeding Class 1 cleanliness requirements, these non-metallic points produce no particle bursts and emit an average of less than 5 particles per cubic foot (less than 0.05 microns in size verified with condensation nucleus (CNC) and optical particle counters).

**Machined Titanium:** Simco-Ion's titanium needles are recommended for many clean-rooms. Titanium emitters meet Class 1 requirements for particle emissions, erode less quickly than tungsten, produce no particle bursts, and are easily maintained.





## μWire "Microwire" Ionization Bar AEROBAR® 5710

Simco-Ion's μWire ("Microwire") AeroBar Model 5710 is a cost-effective, high-performance ionizer specifically designed to eliminate static charge on large surface areas. It is particularly suited for sensitive flat panels where fast discharge times and low swing voltages are desired. The use of Micropulse technology applied to a corona wire system reduces ion recombination thus increasing production efficiency and performance.

The μWire Bar with its unique corona wire design not only produces more ions than emitter points, but the corona wire design also permits the bar to be placed closer to substrates without causing the "striping effect" that emitter point bars can generate.

The μWire AeroBar 5710 includes a 2nd air input connector which improves performance on bars 2500 mm and longer. Shields have also been added to protect wire contacts, making it truly a "one swipe to clean" bar.

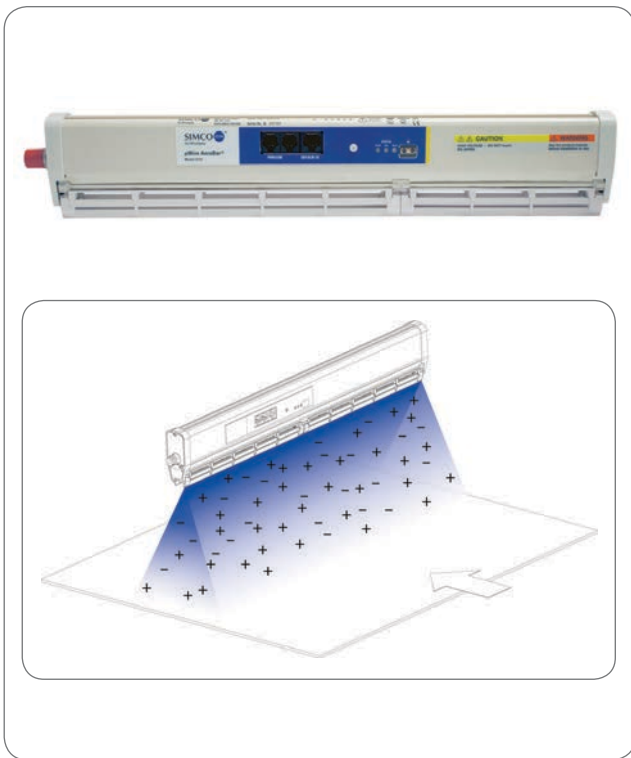


### Features

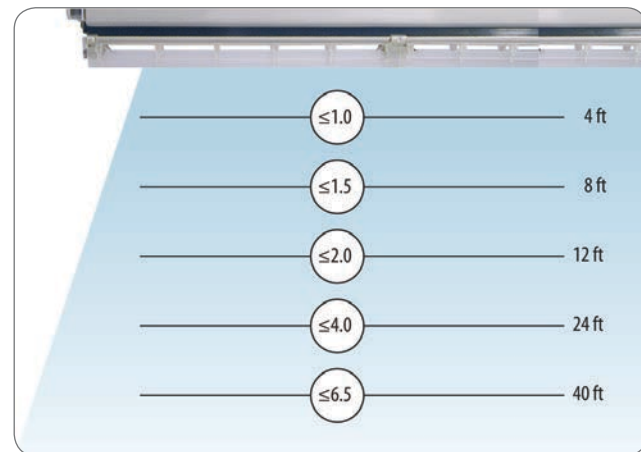
- Unique corona wire design, no emitter points
- Micropulse high voltage technology
- Flexible and powerful setup
- Daisy-chainable (3 max)

### Benefits

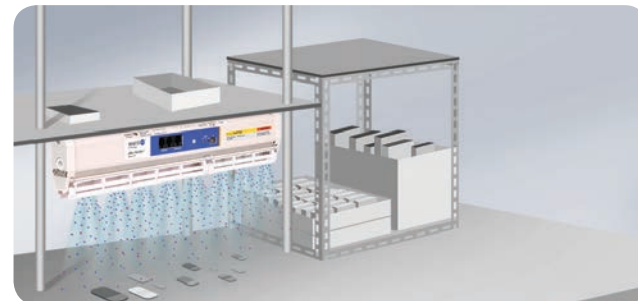
- Fast cleaning with a single swipe of the wire
- Allows mounting close to the product without danger of striping
- Long-term balance stability and discharge time performance
- Uniform balance over the length of the bar
- Lower cost-of-ownership than emitter-point technology ionizers
- Standard "plug-and-play" use or user-optimized performance for specialized applications performance



### Typical Discharge Times (sec)



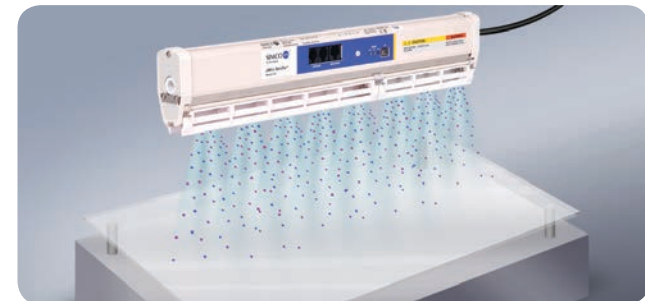
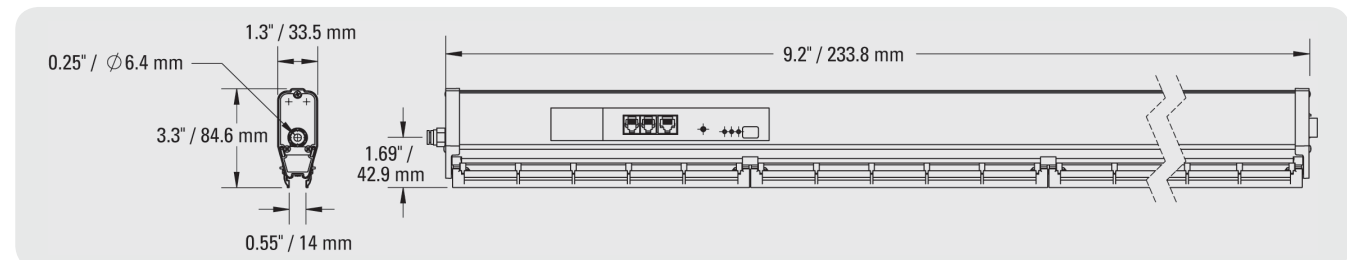
μWire AeroBar Model 5710 (500 mm length) with 50 mm Air Jet Spacing.  
Measured using Simco-Ion CPM Model 280A with HEPA flow (60 fpm or 0.3m/sec) and CDA flow at 50 lpm.



### 5710 Specifications

<b>Airflow</b>	345 kPa (50 psi) optimal, 620 kPa (90 psi) max
<b>Air Input</b>	<b>Bars 400-1500 mm</b> with 50 mm air jet spacing: (1) 6 mm OD quick fitting connector; <b>bars 1650-2400 mm</b> with 50 mm air jet spacing or <b>bars 400-1500</b> with 25 mm air jet spacing: (1) 8 mm OD quick fitting connector; <b>bars 2500 mm and longer</b> with 50 mm air jet spacing with 50 mm air jet spacing: (2) 8 mm OD quick fitting connectors
<b>Balance</b>	Inherently self-balancing system <±25V over the length of the bar, maintain balance setting >6 months without cleaning in clean environments
<b>Bar Settings</b>	All operating parameters set via a wired handheld terminal (HHT)
<b>Cleanliness</b>	ISO 14644 Class 2 (better than Fed. Std. 209E Class 1)
<b>Corona Wire</b>	Tungsten, 80 micron dia.
<b>Discharge*</b>	<1.5 sec for ±1000V to ±100V discharge @ 12" (30 cm), 50 mm air jet spacing with min CDA 2 lpm/airjet
<b>EMI</b>	Below background level
<b>Frequency</b>	Default setting at 1 Hz, adjustable from 0.1-35 Hz
<b>Gas</b>	Clean dry air (CDA)
<b>Indicators</b>	Green power, yellow communication, red alarm
<b>Ozone</b>	<0.05 ppm
<b>Range</b>	150-2000 mm, application and specification dependent
<b>Technology</b>	Micropulsed high voltage
<b>Temperature</b>	Operating Env: 59-95°F (15-35°C), 30-60% RH (non-condensing)
<b>Voltage</b>	Input: 24 VDC ±10%, 12W (max) Output: Adjustable, 13 kV pk-pk (typ)
<b>Enclosure</b>	ABS chassis, stainless steel reference plates
<b>Dimensions</b>	<b>3.0"H x 1.3"W</b> x 15.75", 19.7", 25.6", 29.5", 35.4", 39.4", 45.3", 49.2", 55.1", 59.1", 65", 68.9", 74.8", 78.75", 84.65", 88.6", 94.5", 98.4", 104.3", 108.25", 114.15", 118.1"L ( <b>76 x 33</b> x 400, 500, 650, 750, 900, 1000, 1150, 1250, 1400, 1500, 1650, 1750, 1900, 2000, 2150, 2250, 2400, 2500, 2650, 2750, 2900, 3000 mm)
<b>Certifications</b>	CE, UL, IEC, A

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



### Application Flexibility

The μWire AeroBar can be operated with the factory default settings in "plug-and-play" mode or optimized for a specific Handheld Terminal. The bar's ability to perform well in either a vertical or horizontal position along with the μWire AeroBar low profile height design makes it easy to install in a variety of flat-panel tool locations, including mail-slot, conveyor and load/unload cassette areas. The Power-Signal Distribution Box accessory can be used to monitor the μWire AeroBar status in a convenient location.

A maximum of three μWire AeroBars may be electrically connected together in a serial fashion ("daisy-chained"). Chaining bars together can create a simpler electrical wiring scheme that provides power and communication to all of the connected bars.

### Handheld Terminal (HHT)

The HHT can be used to change the settings and use to monitor the bar's status and parameter, indicator LEDs is desired. The HHT can be used to monitor the 5710 AeroBar during operation such as bar address, frequency, power output, standby mode, alarm test and firmware version..



### Power/Signal Distribution Box

Available for use to monitor the μWire AeroBar status in a convenient location. (33-5700-01).



## μWire "Microwire" Ionization Bar AEROBAR® 5711

Simco-Ion's μWire ("Microwire") AeroBar Model 5711 is a cost-effective, high-performance ionizer specifically designed to eliminate static charge on large surface areas, particularly suited for sensitive flat panels where fast discharge times and low swing voltages are desired. The μWire AeroBar utilizes MicroPulse technology applied to a corona wire system for optimal performance. MicroPulse technology reduces ion recombination at the corona wire. Corona wire design produces more ions than emitter points and also permits the bar to be placed closer to substrates, diminishing the recombination of ions and the resulting "striping effect."

The 5711 includes all the latest design features of the μWire AeroBar to make the bar easier to clean and provide higher performance. Shields have been added to protect the corona wire contacts during the cleaning process, making it truly a "one swipe to clean" bar.



### Features

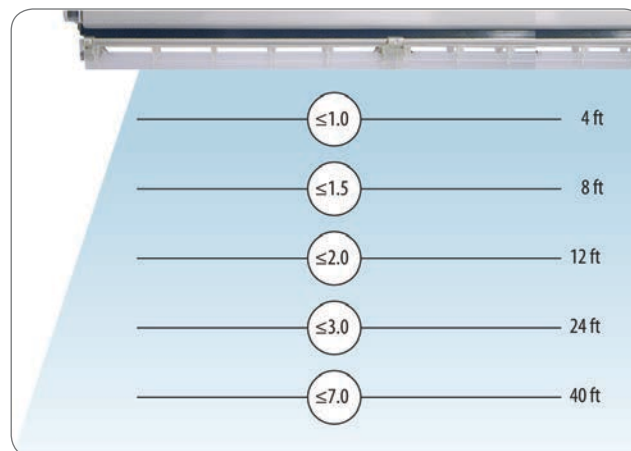
- Compact size 6 to 10 inches (150 to 250 mm length)
- Unique corona wire design, no emitter points
- Micropulse high voltage technology

### Benefits

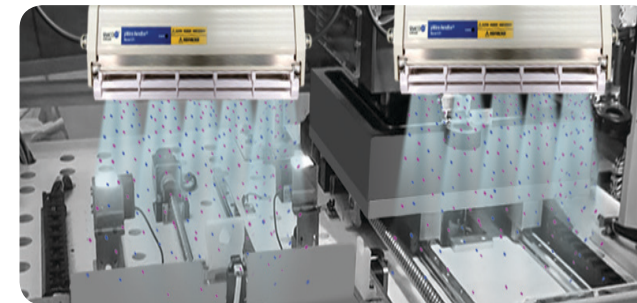
- Charge protection for even the most space-limited automation tools
- Bar mounted closed to target without ionization "striping"; one swipe cleaning with the bar in place
- Long-term balance stability and discharge time performance
- Uniform balance over the length of the bar
- Innovative ionization generation that translates to lower total-cost-of-ownership
- Convenient access to the power input, status lights and remote alarm connection



### Typical Discharge Times (sec)

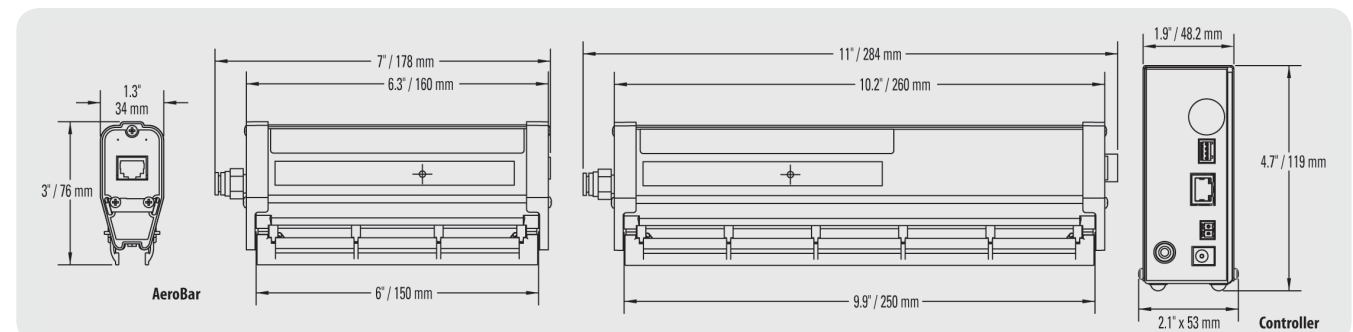


μWire AeroBar Model 5711 (250 mm length) with 25 mm Air Jet Spacing.  
Measured using Simco-Ion CPM Model 280A with CDA flow at 0.5 gpm or 2 lpm per air jet (4.8 gpm or 18 lpm total) and no HEPA flow.



### 5711 Specifications

<b>Airflow</b>	150 mm AeroBar = 2.6 gpm/10 lpm, overall per bar 250 mm AeroBar = 4.8 gpm/18 lpm, overall per bar
<b>Air Supply</b>	Clean dry air (CDA)
<b>Alarm Output</b>	Relay contact, rated ±24 VDC @ 0.2A max
<b>Balance</b>	<±25V over length of bar, maintains balance performance >6 months without cleaning (ISO 14644-1 Class 4 or better environment)
<b>Bar Settings</b>	All operating parameters are set via a Handheld Terminal (HHT) by either wired connection or battery powered IR control to the controller
<b>Cleanliness</b>	ISO 14644 Class 2 (better than Fed. Std. 209E Class 1)
<b>Corona Wire</b>	Tungsten, 80 micron diameter
<b>EMI</b>	Below background level
<b>Frequency</b>	Factory default setting is 1 Hz, adjustable from 0.1-35 Hz
<b>Indicators</b>	Green power, yellow communication, red alarm (combinations of LEDs indicate specific status conditions of the bar)
<b>Ozone</b>	<0.05 ppm
<b>Performance</b>	3.5 sec decay average @ 600 mm (typ) measured at AeroBar center and 25 mm straight air jet spacing, 18 l/m purging air, (250 mm long AeroBar), no laminar flow; setting 1 Hz, 100% output, CPM: balance <±10V, swing 100V pk-pk
<b>Range</b>	Target ionization 6-79" (150-2000 mm)
<b>Technology</b>	Micropulsed high voltage
<b>Temperature</b>	Operating Env: 59-95°F (15-35°C), 30-60% RH (non-condensing)
<b>Voltage</b>	Input: 24 VDC ±10%, 12W (max) Output: Adjustable, 13 kV pk-pk (typ)
<b>Enclosure</b>	AeroBar: ABS chassis, stainless steel reference plates Controller: Stainless steel chassis
<b>Dimensions</b>	AeroBar: 3.0"H x 1.3"W x 6.3 or 10.2"L (76 x 34 x 160 or 260 mm) Controller: 4.7"H x 1.9"W x 3.2"D (119 x 48 x 83 mm)
<b>Certifications</b>	CE, UL, IEC, ATEX



### Application Flexibility

The μWire AeroBar can be operated with the factory default settings in "plug-and-play" mode, or optimized for a specific application using the Handheld Terminal. The bar's ability to perform well in either a vertical or horizontal position along with the μWire AeroBar low profile height and length design makes it easy to install in a variety of flat-panel tool locations (mail-slot, conveyor and load/unload cassette areas as well as within many backend semiconductor assemblies and test areas.

### 5711-CTRL Controller

The 5711-CTRL controller can be placed in a convenient location for easy access to power input (local 24 VDC or power adapter from AC wall power), ionization status lights, handheld terminal setup connection and remote status connection.



### Handheld Terminal (HHT)

Use the Handheld Terminal (HHT) to change the settings of the 5711 AeroBar. The HHT can also be used to monitor operation status and parameter, such as bar address, frequency, power output, standby mode, alarm test and firmware version.



### Emitter Wire Cleaner

The 5711 μWire AeroBar has a specific design emitter wire cleaner, that places foam swap inside the swap along the emitter wire, so that accumulated dirt can be removed in a fast and simple way. The emitter cartridge can also be detached for replacement.