

# IONforce™

Bar Ionizer

*IONforce is a high performance ion bar specifically designed to exceed demanding application requirements in semiconductor, medical device, nano-technology, aerospace, communications, and other industry applications. The IONforce is designed to operate with a bipolar DC power supply operating in either steady state or pulse DC mode. IONforce can be operated with optional remote monitor or sensor connected to a Simco VisION2™ controller. It is available with an optional fitting for compressed gas assist.*

## Features:

- ▶ **Low profile**  
*Fits in low clearance applications.*
- ▶ **Available in custom lengths**  
*Can be sized for unique applications.*
- ▶ **Remote power supply**  
*Allows compact design, less obstruction in the work area.*
- ▶ **Available with CVD SiC emitters\***  
*Exceeds ISO Class 1 performance.*

Simco's IONforce bar produces bipolar ions in the air that neutralize electrostatic charges in the target area. It features a low profile with a height less than 3 centimeters and can be easily mounted on many types of equipment and in areas such as those using robotics with low clearance. IONforce is compatible with clean environments to ISO Class 10.

## DC Operating Mode Technology

IONforce is designed to operate with a power supply that produces either steady state DC or pulse DC output. Pulse DC operating mode intermittently cycles positive and negative ions into the surrounding environment resulting in faster discharge times. Pulse DC is efficient when operating an ionizer in low airflow or at long distance. Steady state DC operating mode delivers a low differential or offset voltage between the positive and negative polarity ions produced. The best performance is achieved when using the ion bar in laminar airflow applications, in close proximity to the target, or with the IONforce optional compressed gas delivery system. Laminar airflow and compressed gas carry ions to the target quickly, improving discharge time performance.

## Applications

Simco provides the expertise and delivers all the performance and control capability necessary, so you don't have to be an expert.

## IONforce™ Air Ionization Bar



\*Manufactured under US patents number 6,252,233; 6,826,030 and patents pending, and International patents and patents pending.

Typical applications for ion bars include use in equipment or laminar flow benches with air velocities of up to 27 Meters/minute (90fpm). With airflow a bar can be located up to a meter distance from the target with good results.

The bar can also be used over moving process, production lines and in equipment with little airflow. In these cases the bar should be located between 300mm to 450mm distance from the target area and operated in pulse DC mode.

## Available DC Power Supplies

The IONforce is designed to be used with Simco's PulseFlow® (PFC), the visION2 or visIONi Controllers. The PFC may be switched between pulse and steady state operating modes and provides independent control of positive and negative polarity. VisIONi is a precision steady state DC power supply. VisIONi includes a "warning" indicator for notice of maintenance as well as a fault indicator, enhanced functions including remote power switching and fault condition monitoring. VisION2 provides a sensor-operating mode to provide closed loop control for the most sensitive application.

## Air Assist IONforce Bar

Using the compressed air assist where no laminar airflow is present the IONforce bar can be located at distances up to one meter from the target. Compressed air flows through the bar, exits around the emitter electrodes and carries the ions at high velocity to the target area. The result is significantly faster discharge times.

 **SIMCO**  
An Illinois Tool Works Company

*Ionization for Electronics Manufacture*

### CVD Silicon Carbide Emitter Electrodes

CVD silicon carbide emitters are available only in ionizers for electrostatic charge control from Simco. CVD SiC is a material engineered to provide properties superior to silicon in plasma applications. Electrodes in ionizers create a

region of highly active plasma and plasma is a major contributor to the deterioration of emitter electrode materials. SiC resists plasma etch better than any other emitter electrode materials. Silicon Carbide emitters are qualified ISO Class 1.

#### Operational Specifications

- Input Voltage:** ± 14 KVDC maximum  
**Input Current:** 0.50 µA per emitter nominal  
**Operating Mode:** DC  
**Operating Temp:** 0° to 70°C (32° to 158°F)  
**Relative Humidity:** 0% to 85% non-condensing  
**Tube Fitting:\*\*** Option 6mm O.D. x 3.0M long (¼"O.D. x 120")  
**Gas Supply:\*\*** 0.17 to 0.31MPa (25 to 45psi)

#### Mechanical Specifications

- Enclosure:** Polycarbonate, stainless steel  
**Dimensions:** 28.7mm H x 25.0mm W x L (1.13" x 0.98" x L)

\*\* Optional

#### Part Numbers

Contact Simco for complete product availability. IONforce bars are supplied with a detachable 2.34M HV cable assembly (part #4108681) and instructions. Air Assist models are supplied with HV cable, 3.0M tubing kit (part #5051309) and instructions. Power Supply/controller is required.

Standard product w/tungsten emitters

Description	Part Number
IONforce 14" ion bar	4011442
IONforce 20" ion bar	4011444
IONforce 32" ion bar	4011446
IONforce 44" ion bar	4011448
IONforce 56" ion bar	4011450
IONforce 67" ion bar	4011452

Air Assist models w/tungsten emitters

Description	Part Number
IONforce AA 14" ion bar	4011455
IONforce AA 20" ion bar	4011457
IONforce AA 32" ion bar	4011459
IONforce AA 44" ion bar	4011461
IONforce AA 56" ion bar	4011463
IONforce AA 67" ion bar	4011465

Power Supply/Controller

Description	Part Number
PFC-20 Pulse Flow Controller 115V	4005184
PFC-20 Pulse Flow Controller 230V	4005185
VisIONi Controller 115V	4011154
VisIONi Controller 230V	4011155
High Purity Gas Kit x 120	5051309
Cable Assembly, PVC jacketed, 2.34M	4108681
Cable Assembly, 2.34M (RoHS compliant)	4108682

*In Ionization technology, SIMCO® clearly has the leadership role. Our research and manufacturing facilities are worldwide... our technical expertise is second to none...and our products simply inspire the competition. For a no-hassle assessment and quote call 800-538-0750 (in USA) or log on to [www.simcoION.biz](http://www.simcoION.biz).*

