

# EMIT

## IRIS

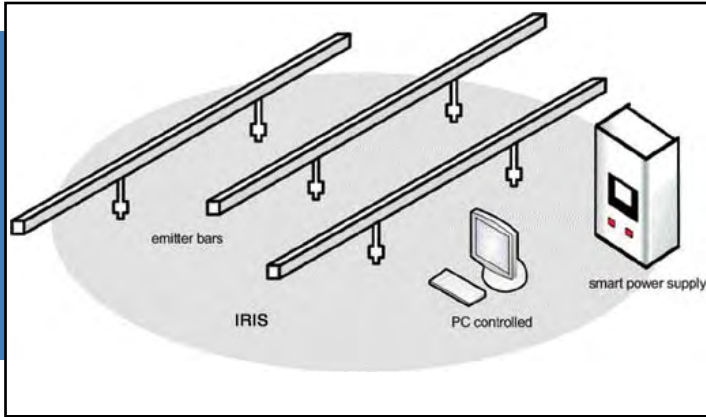
Digitally Controlled Room Ionization

**Absolute Protection for your Critical Processes**



# EMIT

## Applications



- Semiconductor fabrication
- Electronic assembly and packaging
- Biodevice manufacturing
- Pharmaceutical packaging
- Cleanroom particulate reduction
- Automated assembly facilities

## Absolute Protection for your Critical Processes

### FEATURES

- Bi-polar ionization from a single emitter tip - yields unsurpassed ion production
- Lightweight, modular emitter system - no heavy power supplies mounted overhead, easy to maintain emitters, easy to change room layout
- Precision sensing and cycle timing - offers superior balance
- White ABS construction - superior cleanroom performance
- Powered by a digital, high-accuracy, laboratory-grade power supply - only one power supply needed per room, substantially decreasing calibration time
- Controlled by personal touch screen computer management software - event and fault monitoring with alarms and logging
- Uninterrupted 24x7 operation - no operator interaction required

### BENEFITS

- Excellent performance in charge decay and particulate control - fully adjustable and biased ion output
- Industry leading with minimal total cost of ownership (TCO) - Single power supply architecture substantially reduces up front investment and subsequent maintenance costs compared to other systems on the market
- Reduced oversight by QA and production control - built for unattended operation; lowest maintenance cost in the industry
- Flexible, modular design - installation can be modified, added to, or moved without special tools or skill sets



IRIS smart power supply

**Tell us about your clean room project.**

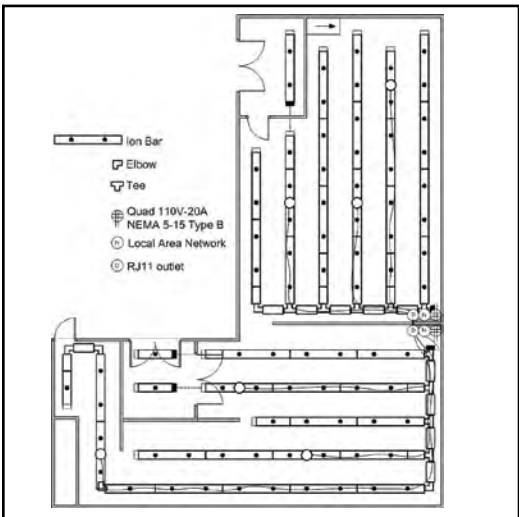
[DescoEMIT.com](http://DescoEMIT.com)

## Absolute protection for your critical processes

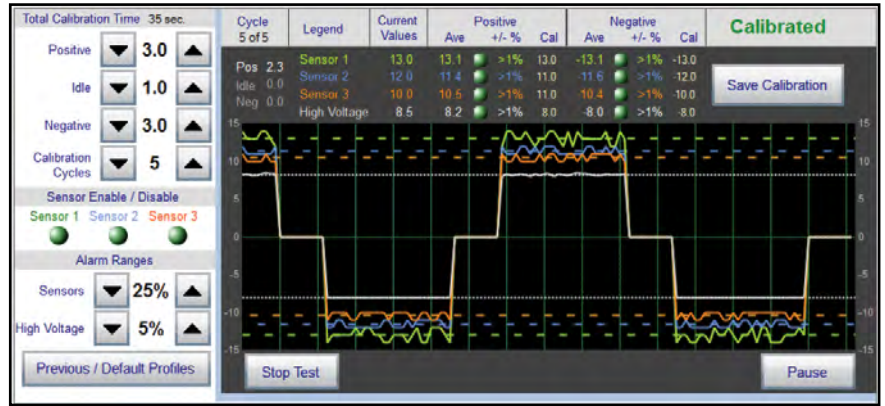
The EMIT IRIS Room Ionization System meets ANSI/ESD S20.20 and creates an ESD protective environment for your ESD sensitive devices by reducing electrostatic charges on surfaces and particles.

For superior ESD control, the entire cubic volume of the room atmosphere is flooded with positively and negative free ions. This allows static charges on surfaces to attract ions in a process that continually brings all objects in the area towards a neutral state, regardless of where they may be located in the work environment. In an environment controlled by a comprehensive IRIS ESD control program, objects do not charge to the high levels or maintain a static charge as they do in an unprotected area or an area protected only by point-of-use or worksurface ionizers.

The IRIS can solve clean product particulate contamination issues by reducing the Electro Static Attraction (ESA) of particles and the resulting surface bond. The IRIS provides neutralizing free ions to all surfaces in the field of influence, this includes dust particles and clean products. Eliminating the potential voltage difference between particles and clean product surfaces reduces the ESA so that particles remain airborne while in the clean space and can exit through the return air system.



CAD of typical IRIS layout



IRIS software: Touch screen calibration

## Personal computer control for efficient, automated environmental management

As a stand alone system, the IRIS complements automated and monitored HVAC now found in all modern clean rooms. Controlled by a single personal touch screen computer interface, and monitored 24x7, the IRIS inspires confidence in a fully unattended operation.

Initial setup and calibration is simple to perform through the intuitive, graphical user interface (GUI). System performance can be charted on the screen in real-time, dramatically reducing zone calibration tasks often found in other room ionization systems. Access to the application is user name and password protected. Each room or zone is independently controlled by touch screen PC to eliminate single point of failure. Server software available providing summary status of each room or zone.

Output performance is monitored directly, verifying the ionization production measured at calibration. System operation is also continuously monitored with unusual events appended to a time-stamped log. If a fault is detected, such as an out-of-balance condition, audible alarms on both the power supply and software application are sounded and

system messages are displayed. In such an event, the power supply is automatically disabled. Simple log review pinpoints the problem for quick error correction so that operation can be resumed.

## MODULAR INSTALLATION ENCOURAGES MODIFICATION AS NEEDS CHANGE

While other systems are designed for permanent installation, the IRIS is intended to maintain its value as applications and facilities change. Modular, snap-together ion bars support plug-and-play emitters for quick moves or modifications. Unusual room layouts, walls, columns or other obstacles are easily navigated with a variety of interconnection pieces. The power supply and personal computer can be installed inside or outside of critical process areas as desired.

Maintenance may be performed by the client or can be provided under contract.

EMIT contracts with a team of specialists with extensive experience installing IRIS into operating cleanrooms. Installation can be scheduled around shift times, including nights and weekends. Installation costs are included as a separate line item on the quote.

# EMIT



## Specifications

**Description:** Single-wire, bipolar, corona ionization system conforming to ANSI/ESD S20.20 tested per ANSI/ESD STM3.1 and ESD TR53

**Charge Decay (Discharge Time):**  $\pm 1000V$  to  $\pm 100V$  in 300 seconds or less (60 seconds typical)

**Input Voltage:** 90VAC to 260VAC, 47 to 63Hz, 65 W

**Power Outlet:** NEMA 5-15, Type B

**Open Circuit Output Voltage:** 0 kVDC to 10 kVDC  $\pm 5\%$

**Voltage Resolution:** 0.1 kVDC

**Short Circuit Output Current:** 0.3mA MAX digitally controlled, additional current limitation via 100 megohm series resistor

**Emitter Capacity:** 250 per power supply

**Emitter Control:** fully programmable, 0-99.9 second ionization ON cycle for each polarity with selectable quiescent periods between cycles

**Power Supply Indicators:** power ON, alarm, positive and negative voltage output and neutral delay

**Zone Sensors:** Independent, cylindrical detectors with BNC connectors, RG58 or equivalent cabling (provided)

**Power Supply Dimensions:** 8.17" W x 19.5" H x 6.0" D (20.75cm W x 49.5cm H x 15.24cm D)

**Power Supply Weight:** 30 lbs. (11.2 kg)

**Offset Voltage (Balance):**  $< \pm 150V$  per S20.20

**Calibration:** Semi-annual calibration recommended

## Supported by application Design Team

Included in the price of the IRIS system is application, engineering and sales consulting provided by EMIT for the IRIS system. Our job is to create and quote a solution that addresses your particular needs. This includes accurately estimating the cost (purchase, installation, and maintenance) and layout of the system upfront\*, from a single room to a multi-floor facility. With the quote, EMIT will provide layout drawings, system specifications / certifications, detailed parts lists, and installation project plans to satisfy the requirements of a variety of decision-makers, from facility managers to production engineers to quality assurance. Working directly with the factory, the sales team coordinates delivery schedules and installation, as well as supporting the IRIS throughout its ownership.

The IRIS is intended to deliver superior performance and peace-of-mind without added overhead or personnel expense.

\*Quote accuracy depends on the availability of facility drawings and configuration details. Pricing subject to inspection of factory.

"Necessary non-conductors in the environment cannot lose their electrostatic charge by attachment to ground. Ionization systems provide neutralization of charges on these necessary non-conductive items (circuit board materials and some device packages are examples of necessary non-conductors)." ANSI/ESD S20.20 section Foreword

"In order to mitigate field-induced CDM (Charge Device Model) damage, the ESD program shall include a plan for the handling of process-required insulators. If the field exceeds 2,000 volts/inch, steps shall be taken to either: A) Separate the insulator from the ESD-sensitive device by a distance of 30 cm (12 inches); or B) Use ionization or other charge mitigating techniques to neutralize the charge." ANSI/ESD S20.20-2007 section 8.3

"Room ionization devices are used when static problems occur over a wide production area and it is difficult to localize the problem to a particular workstation." ESD Handbook ESD TR20.20 section 5.3.6.5.2.1 Room Ionization

See our five year limited warranty backed by Desco Industries, Inc.

[www.DescoEMIT.com/Warranty.aspx](http://www.DescoEMIT.com/Warranty.aspx)