



## Digital Ceiling Emitter

### MODEL 5511

Simco-Ion's Model 5511, along with digital controllers Model 5580 or 5520, are designed to provide uniform ionization throughout the entire cleanroom area. The system enables either centralized control of individual emitters through bi-directional communication between the Model 5511 and 5580/5520 controllers, or direct field programmability of the ceiling emitters with the Model 5570 handheld infrared (IR) remote control.

Digital technology allows the flexibility to control and address the operational settings of the Model 5511 system including alarm sensitivity, ion output (down to percentage levels), ion pulse timing, and polling frequency. The Model 5511 offers flexible settings to fit any environment—any specification.

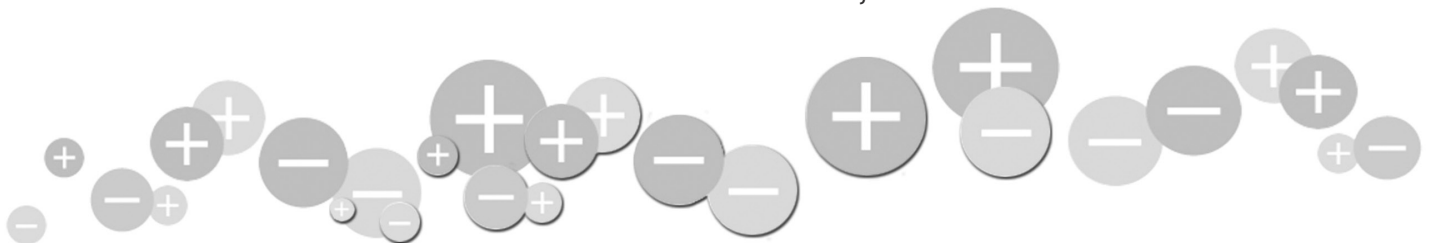
The 5511 digital ceiling emitter system has specifically proved its success in addressing Current Good Manufacturing Practices (CGMP) regarding contamination control by the FDA. In addition to a reduction in yield losses, the 5511 can improve the quality and safety of products produced by life science (medical device, pharmaceutical and biotech) manufacturers. The 5511 ceiling emitter system can be the solution in meeting the FDA's Quality System Requirement for contamination control.




#### Features

- ISO 14644-1 Cleanliness Design Traceability
- Bi-directional infrared remote control with alphanumeric LCD display for emitter adjustment
- Available with single-crystal silicon emitter points
- Pulse off-times separate positive and negative ion delivery with less recombination
- Addressable emitters
- Pulse polarity synchronization

#### Benefits

- Ensures integrity of components used in life science CGMP (Current Good Manufacturing Practice)
- Effortless calibration of individual emitter operating ion balance, timing and ion output at the point-of-use in real-time
- Semiconductor industry standard, ultra-clean, silicon wafer compatible emitter point material
- Extends emitter point cleaning intervals and life, due to the reduced duty cycle
- Allows fast identification in case of alarm
- Optimizes ion delivery, reducing recombination in adjacent areas



| Model 5511             |   |
|------------------------|---|
| <b>Input Voltage</b>   | 24 VAC, 50/60 Hz, 1W (typ)  |
| <b>Output Voltage</b>  | 0-20 kVDC, $\pm 10\%$ each polarity; pos/neg output levels adjusted globally or individually at controller or locally at each emitter with the 5570   |
| <b>Output Current</b>  | 20 microamps, current and voltage limited to eliminate shock hazard   |
| <b>Ion Emission</b>    | Pulsed DC, Steady-state DC, or standby  |
| <b>Emitter</b>         | Single-crystal Silicon or machined Titanium replaceable   |
| <b>Emitter Rod</b>     | 2.5, 5, 10, 15, 24, 36, 60" (6.4, 12.7, 253.4, 38.1, 61.0, 91.4, 152.4 cm)  |
| <b>Cleanroom Class</b> | Single-crystal Silicon ISO 14644-1 Class 1, Titanium ISO 14644-1 Class 3  |
| <b>Connector</b>       | Telephone-type RJ-11 modular jack receptacle on each end of emitter   |
| <b>Control Signal</b>  | Output levels and timing are adjusted with the 5570 remote control or with the 5520/5580 controller RS-485 connection   |
| <b>Timing</b>          | Precise timing (0-10 sec @ 0.1 sec revolution) generated by a local microcontroller; LEDs on each emitter indicate polarity of the ion emission   |
| <b>Regulation</b>      | Output and balance stability is achieved by independently regulating the ion emission current of each polarity at each ionizer  |
| <b>Alarm</b>           | Alarm operates when ionizer is no longer able to maintain preset ion output level; visual alarm red LED in the middle of the ionizer chassis flashes at a high rate to distinguish it from the output indicators; optional audible alarm sounds at the 5520/5580 controller when an alarm event occurs at any emitter; selectable with the 5571 handheld terminal |
| <b>Maintenance</b>     | Annual, semi-annual, or quarterly emitter point cleaning depending on process sensitivity and presence of AMCs in environment   |
| <b>Ozone</b>           | <0.005 ppm  |
| <b>EMI</b>             | Below background level  |
| <b>Operating Env</b>   | 59-95°F (15-35°C) nominal; 20-60% RH non-condensing   |
| <b>Dimension</b>       | 1.2"H x 1.4"W x 17.5"L (3.1 x 3.6 x 44.5 cm)  |
| <b>Weight</b>          | 1.03 lb (0.465 kg)  |
| <b>Warranty</b>        | Two year limited warranty   |
| <b>Certification</b>   | SEMI F47      |

## Advanced Feedback Technology

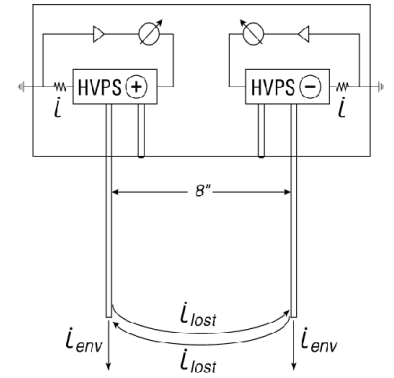
The Model 5511 enhanced ion emitters provide an unprecedented level of control and protection, using a Self-Regulating Air Ionizing Apparatus sensing method. This feedback system assures the tightest feedback control available, unique in offering sensing, feedback and alarm capabilities at every emitter point in the system.

Simco-Ion uses a proprietary feedback circuit in the Model 5511 emitter. Each emitter has sensing circuits that accurately monitor the ion emission current from both the positive and negative emitter points. These circuits produce a signal proportional to the total ion production at each emitter point.

By monitoring and controlling every point of emission, the ionization system can consistently deliver highly accurate ion levels throughout an entire area. Each emitter can be fine-tuned to its local ionization requirements.

## Digital Technology

Digital technology allows the flexibility to control and address the operational settings of the Model 5511 system including, alarm sensitivity, ion output (down to percentage levels), ion pulse timing and polling frequency. The Model 5511 offers flexible settings to fit any environment—any specification.



*Simco-Ion design for maintaining stable ion current flow despite fluctuating environmental conditions, point erosion and point "agglomeration" (+HVPS Alarm - level set at factory).*

## Ordering Information

|                        |   |
|------------------------|---|
| <b>91-5511C-xxSDLR</b> | Emitter with titanium emitter points available in 2.5, 5, 10, 15, 24, 36, 60" rod lengths |
| <b>91-5511U-xxSDLR</b> | Emitter with silicon emitter points available in 2.5, 5, 10, 15, 24, 36, 60" rod lengths  |
| <b>91-5520R</b>        | Digital Controller, supports up to 20 ionizers  |
| <b>91-5580R</b>        | Digital Controller, supports up to 80 ionizers  |
| <b>91-5570</b>         | Infrared Remote Controller  |
| <b>91-5571</b>         | Handheld Terminal for 5520/5580 Controller  |



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DS-5511\_V11 - 1/23  
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