



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.

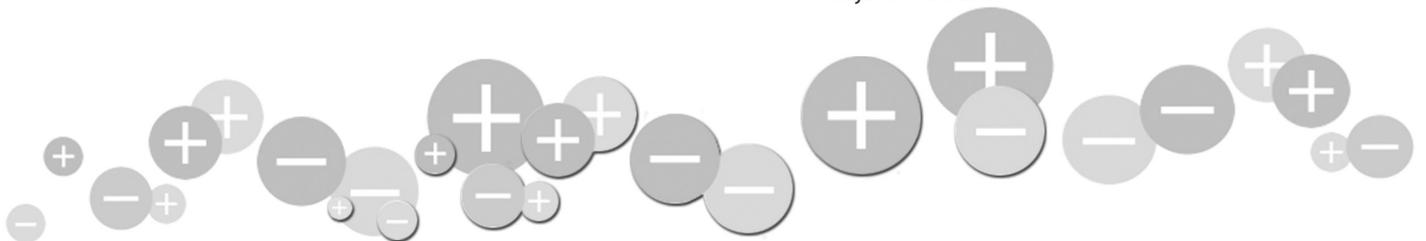
The 5511 digital ceiling emitter system has specifically proved its success in addressing Current Good Manufacturing Practices (CGMP) regarding contamination control by the FDA. In addition to a reduction in yield losses, the 5511 can improve the quality and safety of products produced by life science (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	
Voltage	Input: 24 VAC, 50/60 Hz, 1W (typ) Output: 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
Output Current	20 mA, current and voltage limited to eliminate shock hazard
Ion Emission	Pulsed DC, Steady-state DC, or Standby
Emitter	Single-crystal Silicon or Titanium, replaceable
Emitter Rod	2.5, 5, 10, 15, 24, 36, 48, 60, 66 inch (6.35, 12.7, 25.4, 38.1, 61.0, 91.4, 122, 152, 168 cm)
Cleanroom Class	Single-crystal Silicon ISO 14644-1 Class 1, Titanium ISO 14644-1 Class 3
Connector	Telephone-type RJ-11 modular jack receptacle on each end of emitter
Control Signal	Output levels and timing are adjusted with the 5570 Remote Controller or with the 5520/5580 Controller RS-485 connection
Timing	Precise timing (0-10 sec @ 0.1 sec revolution) generated by a local microcontroller; LEDs on each emitter indicate polarity of the ion emission
Regulation	Output and balance stability is achieved by independently regulating the ion emission current of each polarity at each ionizer
Alarm	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
Maintenance	Annual, semi-annual, or quarterly emitter point cleaning depending on process sensitivity and presence of AMCs in environment
Ozone	<0.005 ppm
EMI	Below background level
Operating Env	59-95°F (15-35°C) nominal; 20-60% RH non-condensing
Dimension	1.2"H x 1.4"W x 17.5"L (3.05 x 3.56 x 44.5 cm)
Weight	1.03 lb (0.47 kg)
Warranty	10-year limited warranty
Certification	SEMI F47  

Controller Model 5580	
Power	10W + 1W per emitter
Voltage	Input: 100/115/220-240 VAC $\pm 10\%$; 50/60 Hz voltage selectable and fuse protected Output: 24 VAC
Output Signal	RS-485 link to emitters
Capacity	80 ceiling emitters
Interface	On-board LCD screen, 6 keys limited access to operating variables; Handheld Terminal Model 5571 full access; second multidrop RS-485 channel for communication to host PC or FMS system; relay or 4-20 mA outputs for remote alarm indication
LED Indicator	Green POWER ON, Red ALARM
Audible Alarm	Beep to indicate alarm and/or other conditions
Operating Env	65-80°F (18-27°C); 40-60% RH, non-condensing (not intended for tropical climate regions and at altitudes above 2000m)
Dimension	6.20"H x 4.37"W x 13.2"L (15.75 x 11.10 x 33.53 cm)
Weight	7 lb (3.18 kg)
Warranty	10-year limited warranty
Certification	SEMI F47  

Ordering Information

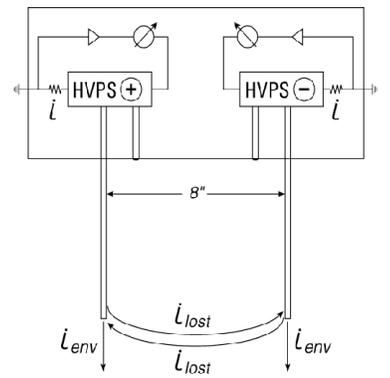
91-5511C-xxSDLR	Emitter w/Titanium emitter points (2.5, 5, 10, 15, 24, 36, 48, 60, 66 inch rod lengths)
91-5511U-xxSDLR	Emitter w/Silicon emitter points (2.5, 5, 10, 15, 24, 36, 48, 60, 66 inch rod lengths)
91-5520R	Digital Controller, supports up to 20 ionizers
91-5580R	Digital Controller, supports up to 80 ionizers
91-5570	Infrared Remote Controller
91-5571	Handheld Terminal for 5520/5580 Controller

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.



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

Digital Technology

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