

## High Temperature Ionizer

# Model 4610TF

Simco-Ion's High Temperature Ionizer Model 4610TF neutralizes static charge in environments with extreme conditions. Together with the High Temperature Controller Model 4052E, the High Temperature Ionizer Model 4610TF creates a uniquely capable ionization system that can withstand high heat and extreme cold, two challenging environments that cannot support other means of static elimination.



### Features

- Withstands temperatures up to 302°F (150°C) and down to -94°F (-70°C)
- IsoStat technology
- Available with tungsten alloy or single-crystal silicon emitter points
- Unique ion guides help direct airflow towards the target

### Benefits

- Eliminates static charge in extreme environments that cannot sustain any other static elimination method
- Self-balanced; no calibration needed
- Ensures safe operation and static elimination in confined, high temperature areas
- The industry standard for semiconductor processing offering ideal compatibility and ISO 14644 Class 2 cleanliness
- Ions are directed using existing airflow toward any point inside the smallest areas while protecting emitter points from dirt and buildup



Ionizing Bar System



Controller Model 4052e

### 4052e Controller

The 4052e Controller powers and provides alarm indications (high voltage output failure) for the 4610TF ionizer. A green LED lights when power is applied to the controller, and a red LED provides visual notification of an alarm. An additional eight-pin connector is provided on the front of the box for connection to a remote indication system.

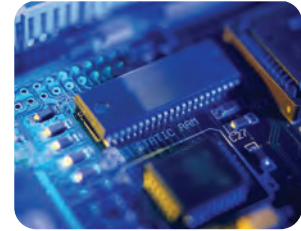
## Emitter Point Technology

**Single Crystal Silicon:** Simco-Ion's patented single crystal silicon emitter points represent the cleanest option available in the industry. Far exceeding ISO Class 3 (Fed Std 209e 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).

**Tungsten Alloy:** The most common material in industrial ionization applications, tungsten alloy, offers long emitter point life and low maintenance requirements. Simco-Ion's tungsten alloy emitter points will not erode as quickly as conventional tungsten wire, and fewer particle bursts result in cleaner operation.

## Target Applications

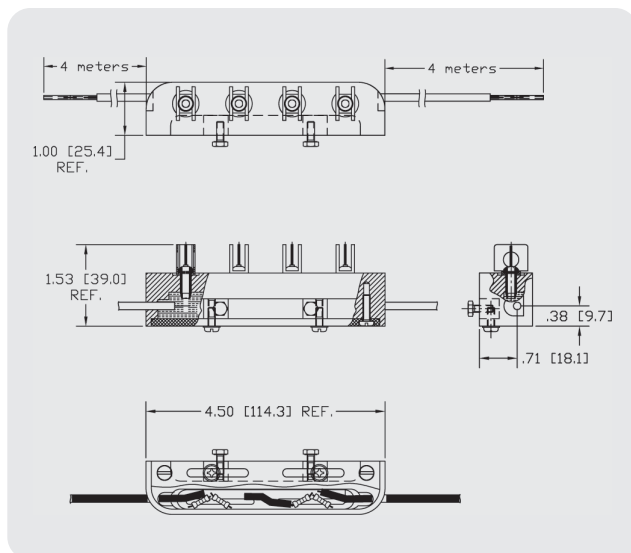
The back-end semiconductor industry uses a series of extensive reliability testing that will ensure the conformance of integrated chips and modules. Testing of the product at extreme high and low temperatures will ensure the conformance of integrated chips and modules; designed to accelerate real life conditions where the product will be used.



## 4610TF Specifications

|                       |                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Airflow</b>        | 60-100 fpm (18.3-30.5 mpm) recommended                                                                                                                                                                                                                                                                                                          |
| <b>Cabling</b>        | 30 kV, 13.3' (4m) / 21.7' (6m)                                                                                                                                                                                                                                                                                                                  |
| <b>Discharge*</b>     | <3 sec @ 6" (15 cm) distance between ionizer and CPM<br><5 sec @ 10" (25 cm)<br><10 sec @ 18" (45.7 cm)                                                                                                                                                                                                                                         |
| <b>Emitter Points</b> | Four Tungsten alloy or single-crystal silicon points                                                                                                                                                                                                                                                                                            |
| <b>Power</b>          | Powered by 4052E controller (connects to the controller via interchangeable HV cable connectors)                                                                                                                                                                                                                                                |
| <b>Temperature</b>    | Operating Env: -94°F to 302°F (-70°C to 150°C), max 85% RH (non-condensing)                                                                                                                                                                                                                                                                     |
| <b>Voltage</b>        | Output: 8 kVDC                                                                                                                                                                                                                                                                                                                                  |
| <b>Mounting</b>       | Two slots (methods varies depending on environment)                                                                                                                                                                                                                                                                                             |
| <b>Enclosure</b>      | Teflon body, fins/rivet PEEK                                                                                                                                                                                                                                                                                                                    |
| <b>Dimensions</b>     | 1.5"H x 1.2"W x 4.5"L (3.8 x 3.5 x 11.4 cm)                                                                                                                                                                                                                                                                                                     |
| <b>Weight</b>         | 4 oz (117g)                                                                                                                                                                                                                                                                                                                                     |
| <b>Certifications</b> |     |

\* ±1000-100V with 90 fpm hood airflow velocity (tested in accordance with ANSI/ESD STM3.1-2000).



## 4052e Specifications

|                       |                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Controls</b>       | On/off power switch                                                                                                                                                                                                                                                                                                                                  |
| <b>Current</b>        | <20 µA                                                                                                                                                                                                                                                                                                                                               |
| <b>Fuse</b>           | 250 VAC, 250 mA, 5 x 20 slow blow                                                                                                                                                                                                                                                                                                                    |
| <b>Indicators</b>     | Green power, red alarm (indicates HV power supply failure)                                                                                                                                                                                                                                                                                           |
| <b>Temperature</b>    | Operating Env: -20 to 104°F (-29 to 40°C), max 85% RH (non-condensing)                                                                                                                                                                                                                                                                               |
| <b>Voltage</b>        | <b>Input:</b> 110/200/220/240 VAC, 50/60 Hz, 3.6W, 30 mA @ 120 VAC<br><b>Output:</b> 9 kVDC                                                                                                                                                                                                                                                          |
| <b>Enclosure</b>      | Stainless steel                                                                                                                                                                                                                                                                                                                                      |
| <b>Dimensions</b>     | 2.3"H x 3.8"D x 8.3"L (5.7 x 9.5 x 21 cm)                                                                                                                                                                                                                                                                                                            |
| <b>Weight</b>         | 3 lb (1.6 kg)                                                                                                                                                                                                                                                                                                                                        |
| <b>Certifications</b> |     |

