



# Extreme Temperature Ionization System

## MODEL 4612 PRECISION IONIZER MODEL 4062E CONTROLLER MODEL 550 ANTENNA

Simco-Ion's new Extreme Temperature Ionization System provides  $\leq \pm 10V$  balance in extreme environments from  $-122^{\circ}F$  to  $302^{\circ}F$  ( $-50^{\circ}C$  to  $+150^{\circ}C$ ). The 4612 Ionizer, along with its 4062e Controller and 550 Extreme Temperature Antenna, use closed-loop control to ensure the ionizer's output is balanced at the critical location—the product location itself.

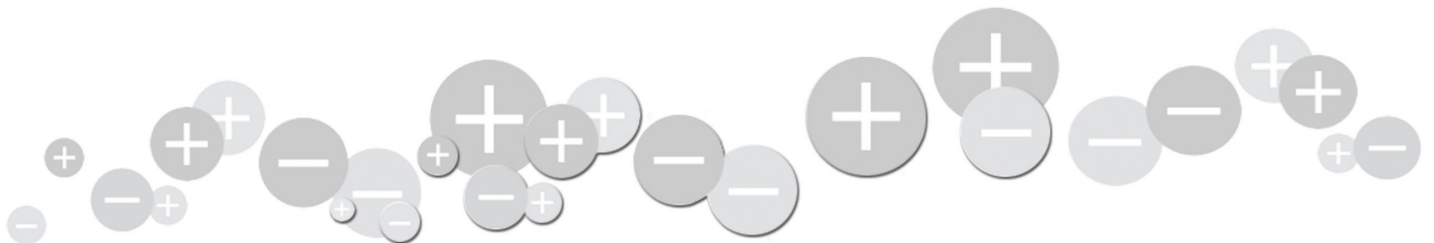
The compact size of the 4612 Precision Ionizer, 4062e Controller and 550 Antenna are the perfect answer to maintain tightly-controlled ionization in small test chambers with active robotics moving parts under extreme environments. The 4612 Precision Ionizer uses high voltage DC technology with tungsten emitters so it can be used in ISO 14661 Class 6 cleanliness environments.

### Features

- Operates in temperatures as high as  $302^{\circ}F$  ( $150^{\circ}C$ ) and as low as  $-122^{\circ}F$  ( $-50^{\circ}C$ )
- Balance control of better than  $\leq \pm 10V$  standard meets the new stringent requirements for S20.20
- Manual gain adjustment capability
- 550 Antenna to measure balance at the device location
- Optional feedback control using Novx Active Antenna with the Model 3362

### Benefits

- Eliminates static charge in extreme environments that cannot sustain any other static elimination method
- Self-balancing ionization eliminates calibration in the tight confines of the test chamber
- Adjust sensitivity to hold a steady balance over a wide range of air velocity and sensor distances
- Ensures that balance is maintained at the target where it matters, not just at the ionizer itself
- Eliminates the need for two antennas for process monitoring



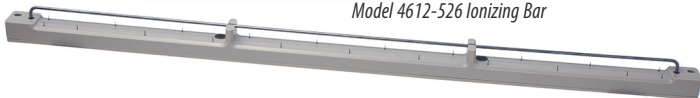
Ionizer Model 4612	
<b>Input Voltage</b>	+24 VDC, ±5% @ 0.25A, 6W (max)
<b>Balance</b>	±10V (typ) around initial set point
<b>Discharge<sup>1</sup></b>	10 sec (depending on environment) @ 12" (300 mm) with 100 fpm gas velocity (decay time for ±1000-100V)
<b>Ion Emission</b>	DC corona discharge
<b>Cleanliness</b>	ISO 14644 Class 6
<b>Emitters</b>	Tungsten
<b>Gas</b>	Clean dry air or Nitrogen with minimum purity 99.99%
<b>Gas Velocity</b>	100 fpm (min) velocity past 4612 Ionizer
<b>Gas Supply Temp</b>	302°F (150°C) max
<b>Operating Temp</b>	-122°F to 302°F (-50°C to +150°C) max
<b>Alarms</b>	Low input voltage; HV output fault; antenna signal too variable/noisy and/or out of range
<b>FMS</b>	Relay contact, rated ±24 VDC @ 0.2A, max 4-20 mA Current output
<b>Mounting</b>	4612-210 Ionizer: (2) M4 holes, 4612-526 Ionizer: (4) M4 holes
<b>Enclosure</b>	4612 Ionizer: PEEK; 550 Antenna: PTFE and Stainless Steel
<b>Dimensions</b>	4612-210 mm Ionizer: 8.3"L x 0.8"W x 1.2"H (210 x 21 x 30 mm) 4612-500 mm Ionizer: 20.7"L x 0.8"W x 1.2"H (526 x 21 x 30 mm) 550 Antenna: 1.7 dia x 0.9"H (44 x 22 mm)
<b>Weight</b>	4612-210 mm Ionizer: 12 oz (365g) 4612-500 mm Ionizer: 18 oz (515g) 550 Antenna: 0.3 lbs (0.14 kg) including cables
<b>Certifications</b>	
Controller Model 4062e	
<b>Input Voltage</b>	24 VDC ±5% @ 1.0A to 4062 Controller (optional external power supply to convert from 100-240 VAC to 24 VDC)
<b>Output Voltage</b>	±6.5 kV max, peak-to-peak
<b>Operating Env</b>	50-95°F (10-35°C); 30-60% RH, non-condensing
<b>Controls</b>	Balance adjust
<b>Indicators</b>	Green POWER, red ALARM (indicates instability or HV power failure)
<b>Connections</b>	RJ-11 connector for 24 VDC input; two HV connectors; RJ-9 connector for FMS output (relay closure & 4-20 mA); SMA connector for antenna
<b>Mounting</b>	(2) M4 holes
<b>Enclosure</b>	Stainless steel
<b>Dimensions</b>	7.9"L x 3.6"W x 2.2"H (201 x 91.5 x 56 mm)
<b>Weight</b>	2.4 lb (1.1 kg)
<b>Warranty</b>	Two-year limited warranty (4612 ionizer and 4062e controller)
<b>Certifications</b>	

1. Tested in accordance with ANSI/ESD STM3.1-2015.

Model 4612-210 Ionizing Bar

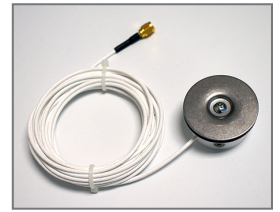


Model 4612-526 Ionizing Bar



## Ionizer Balance Control

The 4062e Controller, when paired with the 550 Antenna and 4612 Precision Ionizer, will provide balance to within ±10V, following industry-standard ANSI/ESD STM3.1-2015 protocols in a steady-state environment. Changes in temperature, humidity, air composition, and/or moving mechanical components in the area will temporarily impact balance. The use of the 550 Remote Antenna and closed-loop control provide the fastest, most accurate corrections for such changes.



## Balance Control & Decay Test Option

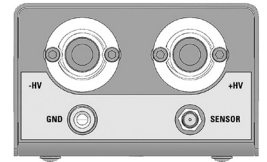
The standard Novx 3362 with its standard antenna's, can replace the 550 Antenna to monitor and control the extreme temperature. Using the Novx 3362 with the feedback control kit, will allow active feedback and control.

## Gain Control

Model 4062e Controller with enhanced external gain control provide manual adjustment to hold a steady balance over a wide range of air velocity and sensor distances.

## Compact Controller

The 4062e Controller is a physically small unit, to allow it to be mounted almost anywhere inside a tool within a few meters of the Precision Ionizer itself.



## Ordering Information

<b>91-4062e-02</b>	4062e Controller
<b>91-4612-210-01</b>	4612-210 Ionizer with 4m cable
<b>91-4612-210-6-01</b>	4612-210 Ionizer with 6m cable
<b>91-4612-526-01</b>	4612-526 Ionizer with 4m cable
<b>91-4612-526-6-01</b>	4612-526 Ionizer with 6m cable
<b>33-0550-4M-01</b>	550 Antenna
<b>33-1920-01</b>	Tungsten emitter wires replacement (9)
<b>33-1921-01</b>	Tungsten emitter wires replacement (21)
<b>33-2462-01</b>	Novx 3362 to 4062e feedback control kit
<b>33-5701-01</b>	24 VDC Power Supply
<b>25-20750</b>	China Power Cord
<b>25-20735</b>	Europe Power Cord
<b>25-20660</b>	Northern America Power Cord
<b>25-20710</b>	UK Power Cord

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