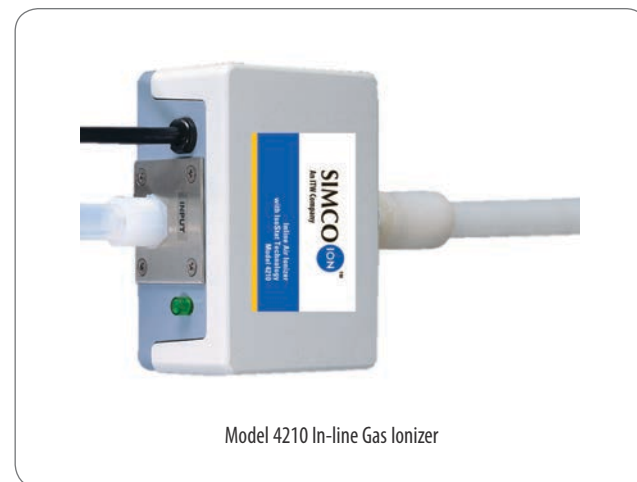


*In-line Ultra-clean Environment Gas Ionizer*

# Model 4210

Most high technology manufacturers rely on air ionization to control problems associated with static charge—thus increasing yields, minimizing downtime and microprocessor lock-up and reducing the cost of ownership. Unfortunately, mini-environments and process equipment prevent traditional ionizers from reaching one of the most important production areas—the inside of process equipment.

In the heart of process equipment, where limited space or proximity to sensitive products makes ionizing bars impractical, the Model 4210 In-line gas ionizer pipes compressed ionized gas for balanced charge neutralization. Either Clean Dry Air (CDA) or N<sub>2</sub> can be ionized, depending on process requirements. The ionized gas can be plumbed to the static-sensitive product or fixture using ultra-clean Teflon<sup>™</sup> tubing, bathing the area in ions. Manifolds can be custom designed which provide ions to the desired area, while staying clear of moving products and robotics.



Model 4210 In-line Gas Ionizer



## Features

- Easily connects to delivery manifolds
- Ionizes either Clean Dry Air or Nitrogen
- IsoStat technology
- Steady-state DC ion emission
- Ultra-clean emitter points (u/un models)
- Ultra-clean construction with carefully controlled current and geometry

## Benefits

- Precise delivery of balanced ionization to confined areas; ideal for use in caustic environments where emitter points cannot be exposed
- Can be used in a variety of applications
- No calibration needed
- Fast discharge times
- Provide ISO 14644 Class 3 cleanliness
- Maintenance-free for two years

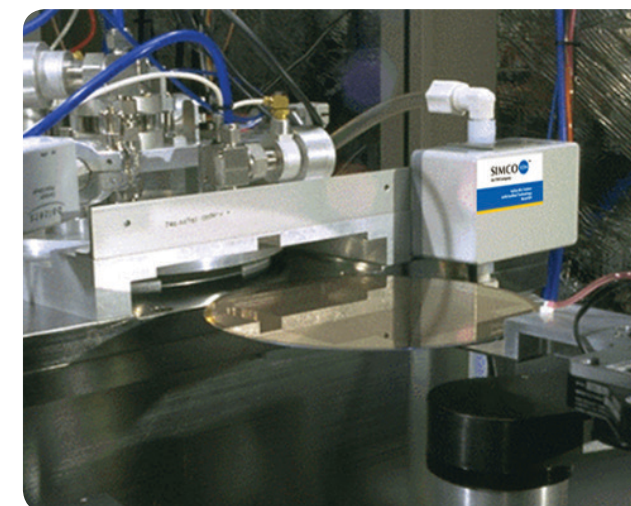
The 4210 comes in three versions. The 4210un is an ultra-clean nitrogen ionizer. The 4210u is an ultra-clean air ionizer. The 4210 is for ionizing air (CDA) and nitrogen in Class 100 environments or environments not requiring clean standards better than Class 100.



Model 4210UN In-line Gas Ionizer

### Model 4210 Product Family

Features	4210	4210u	4210un
Environment	ISO Class 5	ISO Class 3	ISO Class 3
Gas Ionization	CDA/Nitrogen	CDA	Nitrogen
Emitter Point Materials	Tungsten Wire	Silicon	Silicon



## 4210 Specifications

<b>Balance*</b>	±25V @ 6" from CPM
<b>Discharge</b>	4210: 10 sec, 4210u: 6 sec, 4210un: 10 sec measured through 6" long, 1/4" ID Teflon tube held 6" from CPM airflow rate of 120 scfh (2 scfm)
<b>Cleanliness</b>	4210: ISO 14644 Class 5 (Fed. Std. 209e Class 100 equivalent) 4210u: ISO 14644 Class 3 (Fed. Std. 209e Class 1 equivalent) 4210un: ISO 14644 Class 3 (Fed. Std. 2093 Class 1 equivalent)
<b>Emitter Points</b>	Tungsten or single-crystal silicon
<b>Gas</b>	<b>Connection:</b> 1/4" NPT female Teflon fittings at both gas input/output <b>Flow:</b> 1.5 cfm (min), max set by manifold back pressure <b>Supply:</b> Clean dry air (CDA) or nitrogen (N <sub>2</sub> )
<b>Manifold</b>	Teflon tubing with flare fittings for interconnects, nitrogen 3/8" (9.5 mm) ID tubing, CDA 1/4" (6 mm) ID tubing
<b>Pressure</b>	<b>Input:</b> 10-50 psi safe range <b>Manifold:</b> Model 4210 0-50 psi, Model 4210u 0-50 psi, Model 4210un 0-15 psi to achieve ionization
<b>Technology</b>	Steady-state DC
<b>Temperature</b>	Operating Env: Ambient -4 to -140°F (-20-60°C) max Inlet Gas Supply: 250-73°F (120-23°C)
<b>Voltage</b>	Input: 120 VAC, 50-60 Hz, approximately 2W (100/230 VAC available)
<b>Mounting</b>	Four 6/32 threaded holes provided (wall & bulkhead mount brackets available)
<b>Enclosure</b>	Power-coated white aluminum
<b>Dimensions</b>	2.4"D x 4.75"L x 3.13"W (6.1 x 12.1 x 8.0 cm)
<b>Weight</b>	37 oz (1.04 kg) including fittings and power cord
<b>Certifications</b>	CE, RoHS, ISO 9001, ISO 14644

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

### Ultra-clean Ionization

When provided with gas from an ultra-clean source, the 4210u and 4210un operate 10 times better than Class 3 cleanroom requirements. Careful material selection and control of internal geometry ensure ultra-clean ionized gas delivery.

### Applications

The 4210 has been used to solve static charge problems in a variety of wafer fab applications, including steppers, spin rinser dryers, load and unload stations, disk certifiers, wafer management systems and furnaces.

### 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 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.

