SIMCO ION™
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In-line 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 Nitrogen can be ionized, depending on process requirements. The ionized gas can be plumbed to the static-sensitive product or fixture using ultra-clean Teflon™ tubing, bathing the area in ions. Manifolds can be custom designed which provides ions to the desired area while staying clear of moving products and robotics.

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 is needed
- Fast discharge times
- Provide ISO 14644-1, Class 3 cleanliness
- Maintenance-free for two years

Ionization Solutions

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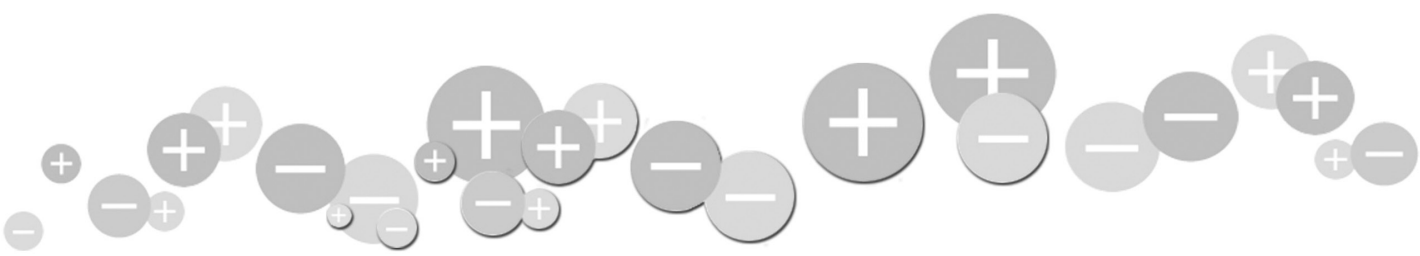

Model 4210	
Input Voltage	120 VAC, 50-60 Hz, approximately 2W; 100/230 VAC models available
Discharge	4210: 10 sec 4210u: 5 sec 4210un: 10 sec Measured through 6" long, 1/4" ID Teflon tube held 6" from the CPM, airflow rate of 2 scfm
Balance	±25V at specified flow and pressure measured at 6" from CPM; tested in accordance with Standard ANSI/ESD STM3.1-2015 Ionization
Ion Emission	IsoStat Technology
Emitter	Tungsten or Single-crystal Silicon
Cleanroom Class	4210: ISO 14644-1 Class 5 standards 4210u: ISO 14644-1 Class 3 standards 4210un: ISO 14644-1 Class 3 standards
Air Supply	Input: Clean Dry Air (CDA) or Nitrogen Flow: 1.5 cfm (min); maximum set by manifold back pressure Temperature: 250°F (120°C) max, 73°F (23°C); ambient environment Connector: 1/4" NPT female Teflon fittings at both gas input and output
Input Pressure	10-50 psi safe range; unit is NOT designed to withstand high pressures; should be installed downstream from any valves with the output open to atmospheric pressure
Manifold	Teflon tubing with flare fittings for interconnects; nitrogen 3/8" (1 cm) ID tubing; CDA 1/4" (0.6 cm) ID tubing; refer to Simco-Ion Technical Note TN-006, In-line Gas Ionization Considerations 4210 Use and Application Guide Back Pressure: With nitrogen, the limit is 12 psi; and with air (CDA), the limit is 50 psi; measured at the outlet of the 4210
Operating Env	Ambient -4°F to -140°F (-20°C to 60°C) max
Mounting	4-6/32 threaded holes provided; wall and bulkhead mount brackets available
Enclosure	Power-coated white aluminum
Dimension	2.38"D x 4.75"L x 3.13"W (6.06 x 12.0 x 7.95 cm)
Weight	2.31 lb (1.04 kg) including fittings and power cord
Warranty	Two-year limited warranty
Certification	CE, TÜVRheinland, RoHS2, UKCA

Ultra-clean Ionization

When provided with gas from an ultra-clean source, the 4210u and 4210un operate 10 times better than ISO 14644-1 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 rinse dryers, load and unload stations, disk certifiers, wafer management systems, and furnaces.

The 4210 Family

Versions of the 4210 are available for use with both CDA and nitrogen, using either ultra-clean emitter points or high output tungsten alloy points.

Ordering Information

91-4210-01	4210 Ionizer w/tungsten emitter points for CDA/Nitrogen; 120 VAC, US wall plug
91-4210-100V-01	4210 Ionizer w/tungsten emitter points for CDA/Nitrogen; 100 VAC, US wall plug
91-4210-230V-01	4210 Ionizer w/tungsten emitter points for CDA/Nitrogen; 230 VAC, German Schuko wall plug
91-4210-UK-01	4210 Ionizer w/tungsten emitter points for CDA/Nitrogen; 230 VAC, UK wall plug
91-4210U-01	4210U Ionizer w/silicon emitter points for CDA; 120 VAC, US wall plug
91-4210U-100V-01	4210U Ionizer w/silicon emitter points for CDA; 100 VAC, US wall plug
91-4210U-230V-01	4210U Ionizer w/silicon emitter points for CDA; 230 VAC, German Schuko wall plug
91-4210U-UK-01	4210U Ionizer w/silicon emitter points for CDA; 230 VAC, UK wall plug
91-4210UN-01	4210UN Ionizer w/silicon emitter points for nitrogen; 120 VAC, US wall plug
91-4210UN-100V-01	4210UN Ionizer w/silicon emitter points for nitrogen; 100 VAC, US wall plug
91-4210UN-230V-01	4210UN Ionizer w/silicon emitter points for nitrogen; 230 VAC, German Schuko wall plug
91-4210UN-UK-01	4210UN Ionizer w/silicon emitter points for nitrogen; 230 VAC, UK wall plug

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Simco-Ion, Technology Group
1141 Harbor Bay Parkway, Suite 201
Alameda, CA 94502
Tel: +1 (800) 367-2452 (in USA)
Tel: +1 (510) 217-0460
ioninfo@simco-ion.com
www.simco-ion.com/technology