



Compressed Air Ionization

Compressed Gas Ionizer

- Deals effectively with ElectroStatic Attraction (ESA)
- Controls charged particle contamination and visual imperfections
- Most blow-off guns use compressed air or nitrogen

Benefits of Ionizers

- Studies show ionizers improve quality
- Ionization is the only ESD tool if the ESDS includes insulators or isolated conductors
- Use ionization when grounding is not recommended, such as possible exposure to over 250 VAC
- Use ionizers to provide redundancy and a more robust ESD control program
- Dust and particulate control



50627 Portable Ionizing Air Gun

Periodic Verification Testing

- Ionizers should be tested when installed and periodically thereafter
- Test offset voltage (balance) and both polarity's discharge times
- Test with Charged Plate Analyzer (S3.1) or Ionization Test Kit (SP3.3)
- Ionizers should be identified and have a maintenance / calibration schedule
- Per ESD TR53 ionizers should be tested where ESDS items are handled

Have you ever had some plastic film on your hand that you flick and flick and it continues to stick to your hand? That plastic has an electrostatic charge. For industry, EMIT offers the Ion Python Air Nozzle and Hand Gun and the Portable Ionizing Air Gun which companies use to neutralize the charge on particles. The compressed air easily blows off the particles. Charged particles cause significant contamination problems and/or visual imperfections for many products.

Point-of-use compressed air ionizers are usually in the form of blow-off guns that work with a supply of compressed air or nitrogen.

Compressed Gas Ionizer

“Compressed Gas Ionizer: Ionization devices that can be used to neutralize charged surfaces and/or remove surface particles with pressurized gas. This type of ionizer may be used to ionize the gas within production equipment.” (ANSI/ESD STM3.1-2006 section 3.0 Definition of Terms)





Ionizers Improve Quality

“Many studies have shown fewer product defects occur when ionizers are in use” (ESD Handbook TR20.20 section 5.3.6.9.2)

How Do I Know That I Need Ionizers?

- Insulators (or isolated conductors) are part of your ESD sensitive product. Insulators should be removed from the ESD protected workstation, and as non-conductors, insulators cannot be grounded.
- Where, for example for safety, grounding methods cannot be used such as possible exposure to over 250 VAC
- To provide redundancy and a more robust ESD control program; for example providing protection when non-essential insulators are overlooked and not removed from the ESD protected workstation.
- Dust / particulate control. For example, particulates will be attracted and held by charged insulators. In some assemblies, like cell phones, there are clear plastic face plates. Dust on the inside of the face plate can be a cause for customer rejection.



50645 Chargebuster Ion Gun

Periodic Verification Testing

“Once ionizers have been installed, it is desirable to measure their performance. This provides a baseline against which to monitor their long term operation. The test methods and guidelines of ESD STM 3.1 may be used to perform this periodic verification testing of ionizers. Simplified test methods for this purpose will be found in ESD SP3.3 - Periodic Verification of Air Ionizers.

Ionizers should be tested for discharge time and balance after they have been installed in the use location. A certification document detailing the test conditions and test locations should be generated

at that time. The time intervals for subsequent measurements will depend on the user's requirements. Less critical applications may require only appropriate maintenance and annual performance checks. More critical uses may demand maintenance schedules and semi-annual or quarterly recertification. Users should be very aware of the costs and responsibilities involved.” (ESD Handbook TR20.20 section 5.3.6.6.5 Periodic Verification Testing)

