Ionizer User Manual

Model 6100 / 6200

Static Ion Bar / Air Knife Static Ion Bar

CORE INSIGHT
코어인사이트(주)

Contents

1. CORE INSIGHT INTRODUCTION

Core Insight is an ionization system manufacturer and supplier to ESD and contamination control areas. Core also provide general ESD Test & Measurement, Professional Audit Kits, EMI Noise Filter and Device Testing Equipment for HBM, TLP, VF TLP and CDM. Technical services are ESD Training, Process Assessment, ESD Control Program, Product Qualification Testing per ANSI/ESD Standards, Device Testing and System Level ESD Testing per IEC 61000-4-2.

Core Insight is major ESD distribution supplier in the field of semiconductor, flat panel display, automotive and electronic manufacturing working environment. Core founded in 2003 and represent for Prostat, On-Filter, Monroe Electronics, Electro-Tech Systems, Grund Technical Solutions, Lucas Signatone, iT2, SH&A, Dangelmayer Associate etc.

2. Ionization Technology

Core Insight's CoreStat® Auto-Balanced Ionization System is exact same technology of SIMCO-ION (previously as known Ion Systems) which is their exclusive patents has been expired since 2009 and it has open for everybody. CoreStat® is a steady-state DC ionization technology with isolated high voltage section of power supply and maintain intrinsically balanced its offset voltage performance in specification ranges. All of Model 300 series and Model 3000 series ionizers are CoreStat® steady-state DC technology which aren't need adjust ion output for balance performance. It just need periodic cleaning emitter points for maintain decay performance.

Core Insight also offer traditional AC ionization technology for industrial applications such as roll to roll, winding & unwinding of films for static related contamination issues.

Core offer bipolar Pulsed AC ionizers which is lower frequency than conventional AC and output parameters are adjustable for each application such as FPD's manufacturing environment and others.

High Frequency AC is alternative solution for replacement of conventional AC for ESD control application and very small package ionization products. This technology applied lower high voltage level than conventional AC ionizers, but much faster switching time from

16kHz to 70kHz. This can achieve low offset voltage from ionizers and can be use ESD control application areas.

Pulsed DC ionization technology is the strength of Core Insight's ionization products for cleanroom particle contamination controls. There are many forms and configuration in this type of products which improves particle contamination issues in many places such as semiconductor front-end, back-end, flat panel display fab and many other industrial applications.

Core Insight offer several types of Charge Plate Monitor (CPM) or Test Kits for ionizer performance testing of qualification and compliance verification. Monroe Electronics' Model 288 is the latest version of CPM and highly accurate measurement equipment based on the original voltage following technology. Model 300 is cost effective ionizer measurement CPM equipment. Both two CPMs can remotely control and make measurement by software for detail analysis and test result reporting. These two equipments are perfectly compliance to ANSI/ESD STM3.1 standard requirement test.

Also, there are hand-held fieldmeter based test kit which is smaller plater, external charging source and integrated decay timer for compliance verification measurement per ANSI/ESD SP3.3 test requirement.

For more detail information about ionization and its test equipment, please feel free to contact our sales representative at sales@coreinsight.co.kr or local contacts.

3. Application Guide

A. Basic ESD Control

It is mandatory requirements such as personal grounding, ESD safe worksurfaces and use ESD safe packaging material for all electronics industry. These are well known and easy to establish in ESD protected area (EPA) compare with following issues.

B. Ionization for CDM/CBE Controls

Every device has their own ESD sensitivities and they can damage by beyond this sensitivity limits. According to many IC manufacturing suppliers, over 99% of device ESD failures are CDM or CDM like and not HBM or pretty low possibility. Due to automation and device sensitivity continue to lowering, vulnerability of device CDM are increasing. Not only CDM, but also Charge Board Event like ESD issues are increasing due to their complexity and large amount of charge stored on printed circuit board.

There are two strategical guidance has proposed by ESD Association. Lowering device charge level and increase resistance of contact materials are the key strategical elements to prevent ESD damage. As per ANSI/ESD S20.20-2014 latest version described, maximum allowing

field strength is 125V/inch for 200V CDM withstand threshold devices. To achieve this, using proper ionization is important solution to meet these requirements and less CDM/CBE ESD failures in production or field return from customer side.

Core Insight provides the best solution for static related issues with several types of ionization products and systems such as steady-state DC, AC, pulsed AC, high frequency AC and pulsed DC ionizations.

For more detail information about ionization and ESD controls in production, please feel free to contact our sales representative at sales@coreinsight.co.kr or local contacts.

4. Cautions and Personal Safety

A. Cautions

The use of improper input voltage may result in poor performance or damage of the unit.

The transformer should not be operated beyond the specified electrical limits as described in the Specification section of this document.

Damage caused to the transformer from operation in an environment that exceeds the specified limits will void the warranty.

Do not use this blower in an explosive environment. Poorly maintained ionizers could produce minuscule electric arcs at the emitter points. This may cause detonation in an explosive environment.

Damage to the product because of improper wiring connections at rear FMS terminal or failure to heed maximum voltage limits will not be covered by the warranty.

There are no user serviceable parts inside this blower. Any

unauthorized service will void the warranty and may result in additional repair charge.

Before performing any maintenance on emitter points, remove the power plug from the ionizer. Allow a minute for high voltage power supply to discharge.

B. Personal Safety

Do not wear wrist straps when access this units for maintenance reason as regular ESD control method and remove power connection from AC line source. Be sure that no wrist strap requires when service access to high voltage operational system.

5. Setup and Operation

A. Contents in the box

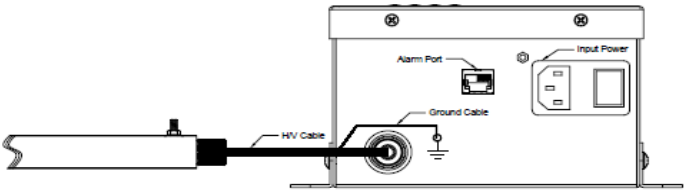
Static Ion Bar

Model 610 High Voltage Power Supply

B. Installation

Place the ionizer in the desired location. (See the discharge time performance data on specification for proper reference distance selection). Ionizer is powered by 100~240V AC and plug power cord into a properly grounded AC receptacle with the correct voltage for your power supply.

Do not pull the high voltage cable from Model 6100 static bar or power supply. It can damage when this high voltage cable folded. Users can't change or modify whole assembly. Ground cable of static bar must be attached of chassis of AC high voltage power supply which also has grounded through AC input voltage as shown below.



C. Turning on the ionizer

Use the on/off switch on the front of the power supply unit to turn on the ionizer. The green LED will light on power supply.

6. Maintenance

The performance of the ionizer is designed to be maintained primarily by the internal circuitry. Occasional cleaning of the case and emitter points is the only routine maintenance required. No adjustment of the ionizer is required after cleaning.

A. Recommended Cleaning Materials:

1) Cleanroom-compatible cleaning cloths (polyester cloth is recommended)
2) Cleanroom-compatible swabs
3) Cleanroom solution of 50% IPA (electronic-grade isopropanol) / 50% de-ionized water

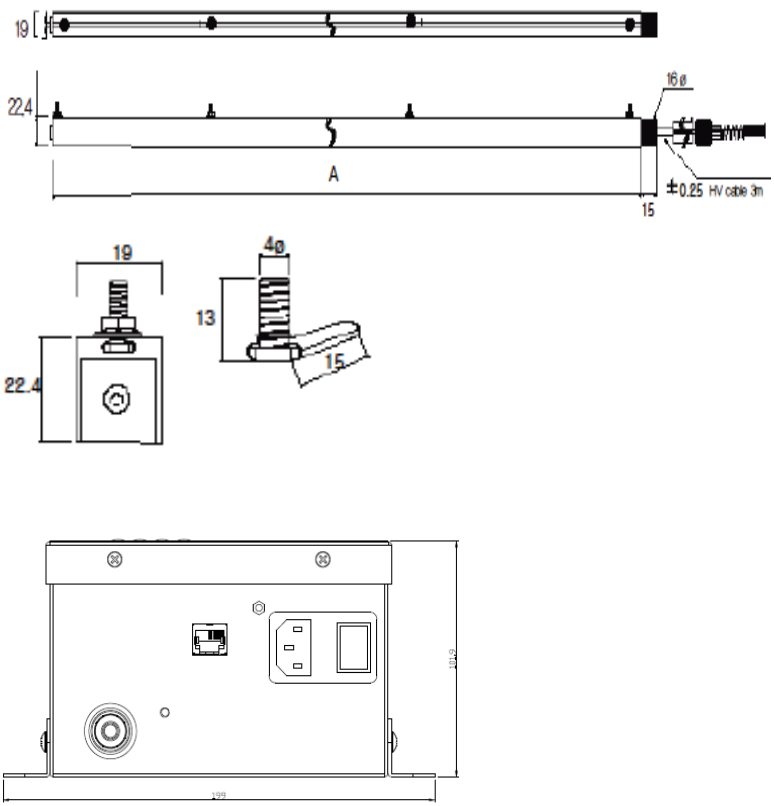
B. Cleaning the Emitter Points

Turn off the unit. Normally, the emitter points can be cleaned by using a jet of compressed air to blow off any dirt that may have accumulated on them. A swab moistened with the IPA solution may be used if required. If using a swab, gently wipe the tips of the emitter points until the dirt is removed. After cleaning make sure that the emitter point need to dry out about 20 minute.

7. Specification

Input Voltage	100~240V AC, 50/60Hz
Output Voltage	5kV AC, 2mA
Ion Emission	High Voltage AC
Emitter Points	Stainless Steel
Material	Aluminum Powder Coating for Power Supply Aluminum Anodizing Body for Static Bar
Operating Environment	Temperature: 15 ~ 35 ºC Relative Humidity: 35 ~ 75%
Warranty	Limited 1 Year

8. Drawings



10. Warranty and Service

Core Insight, Inc. provides a limited warranty for all ionizers. New products manufactured or sold by Core are guaranteed to be free from defects in material or workmanship for a period of one year from the date of initial shipment. Core's liability under its new product warranty is limited servicing (evaluating, repairing or replacement) any unit returned from customers that has not been subjected to misuse, neglect, lack of routine maintenance, repair, alteration or accident. In no event shall Core be liable for collateral or consequential damages.

To obtain service under this warranty, please contact sales representative at sales@coreinsight.co.kr or local contacts.