Bench Top Zero Volt Ionizer Installation, Operation and Maintenance

Made in the United States of America

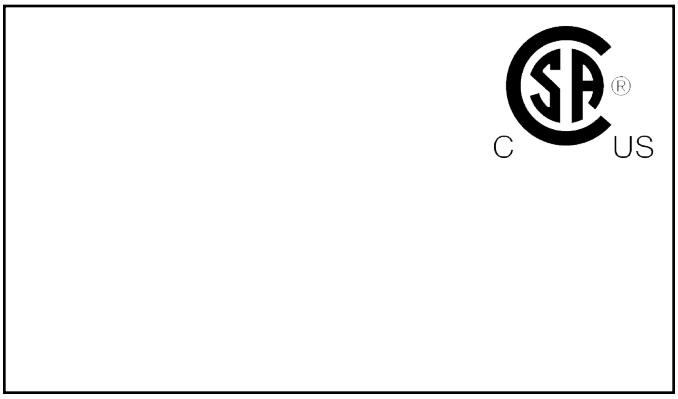

Figure 1. EMIT Bench Top Zero Volt Ionizer, Stainless Steel

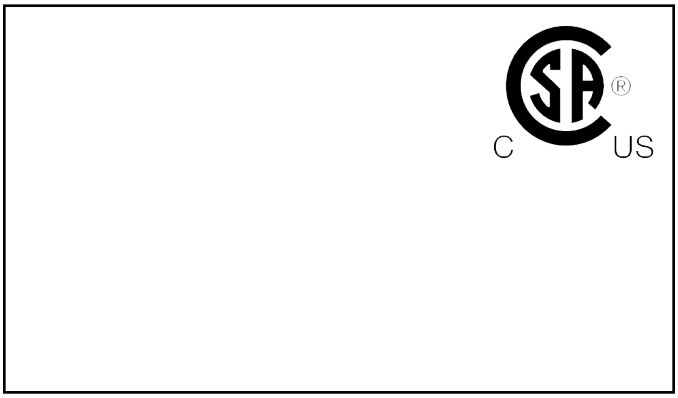

Figure 2. EMIT Bench Top Zero Volt Ionizer, Powder Coat

Description

The EMIT Bench Top Zero Volt Ionizer is a compact and lightweight steady state DC auto-balancing bench top worksurface ionizer with integrated closed-loop feedback. The unit is normally placed at one end of the workbench or area to be neutralized. It may also be mounted to a wall or shelf. The Ionizer's neutralization discharge time will be best approximately 12" to 48" directly in front of the unit and will increase as the distance from the unit increases.

Ionizers are useful in preventing electrostatic charge generation, ElectroStatic Discharge, ElectroStatic Attraction, as well as preventing equipment latch-up. Per ANSI/ESD S20.20 section 6.2.3.1. Protected Areas Requirement states: "Ionization or other charge mitigating techniques shall be used at the workstation to neutralize electrostatic fields on all process essential insulators if the electrostatic field is considered a threat." "Air ionization can neutralize the static charge on insulated and isolated objects by producing separate charges in the molecules of the gases of the surrounding air. When an electrostatic charge is present on objects in the work environment, it will be neutralized by attracting opposite polarity charges from the ionized air. Note that ionization systems should not be used as a primary means of charge control on conductors or people." (Reference: EN 61340-5-2:1 clause 5.2.9)

"The primary method of static charge control is direct connection to ground for conductors, static dissipative materials, and personnel. A complete static control program must also deal with isolated conductors that cannot be grounded, insulating materials (e.g., most common plastics), and moving personnel who cannot use wrist or heel straps or ESD control flooring and footwear.

Air ionization is not a replacement for grounding methods. It is one component of a complete static control program. Ionizers are used when it is not possible to properly ground everything and as backup to other static control methods. In clean rooms, air ionization may be one of the few methods of static control available." (ESD Handbook ESD TR20.20 Ionization, section 5.3.6.1 Introduction and Purpose / General Information)

The EMIT Bench Top Zero Volt Ionizer operates on Steady State DC. Steady State DC systems consist of separate negative and positive ion emitters connected by a pair of high-voltage cables to their respective high-voltage power supplies. The spacing between emitters varies depending on the design, and DC power is constantly applied to the emitter points. The ionizer utilizes feedback from the internal sensor grill to continuously adjust the output to maintain balance

Ionizer Selection

ANSI/ESD S20.20 section 6.1.1.2. ESD Control Program Plan Guidance states: "The Plan should include a listing of the specific type of ESD protective materials and equipment used in the Program." When selecting an ionizer, life cycle costs should be considered, including:

- equipment cost
- installation cost
- operation and maintenance cost

EMIT ionizers meet the ANSI/ESD S20.20 minimum recommended technical requirement range of less than +/- 50 volts offset voltage balance tested in accordance with ANSI/ESD STM3.1. All EMIT Bench Top Ionizers greatly exceed the requirement providing ±5 to ±25 volt auto-balancing.

The Bench Top Zero Volt Ionizer is available in three models:

Item	Voltage	Enclosure
50663	120 VAC	Stainless Steel
50670	220 VAC	Stainless Steel
50690	120 VAC	Powder Coat
50691	220 VAC	Powder Coat

EMIT - 3651 Walnut Avenue, Chino, CA 91710 • (909) 664-9980 • Website: DescoEMIT.com

EMIT SIM Software

The EMIT Bench Top Zero Volt Ionizer is compatible with EMIT SIM Software. EMIT SIM provides a platform to monitor and record the activity of your EMIT Smart Products. Save costs by using EMIT SIM to eliminate the need to rely on people to physically check the status of monitors and ionizers every day. This software also features tools for generating activity reports and calibration / maintenance schedule management.

Click here to learn more.

Packaging

1 Bench Top Zero Volt Ionizer
1 Power Cord (50663, 50690 only)
1 Emitter Point Cleaner Pack
1 Certificate of Calibration

Features and Components

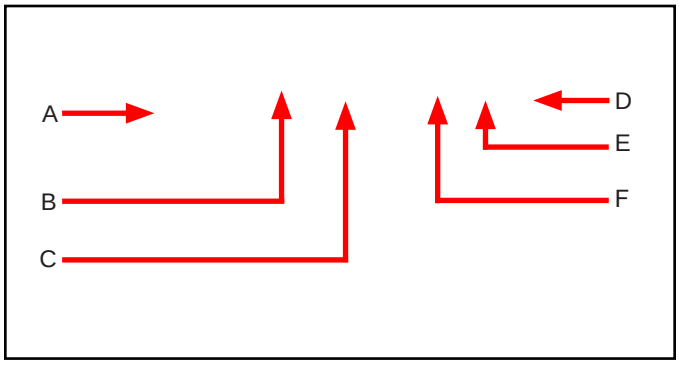

Figure 3. Bench Top Zero Volt Ionizers features and components

A. Power Cord Connection: Connect the power cord here.

B. Power Switch: Toggle the switch to the left to turn the ionizer OFF. Toggle the switch to the right to turn the ionizer ON.

C. Fan Speed Switch: Toggle the switch to the left to set the fan speed to LOW. Toggle the switch to the middle to set the fan speed to MEDIUM. Toggle the switch to the right to set the fan speed to HIGH.

D. RS-485 IN: Software communication input. To be used with EMIT SIM Software for real time data acquisition.

E. RS-485 OUT: Software communication output. To be used with EMIT SIM Software for real time data acquisition.

F. Balance Adjustment: Turn the potentiometer clockwise for positive adjustment. Turn the potentiometer counter-clockwise for negative adjustment.

Installation

Place the unit at a desired location where that the airflow will not be restricted. Be sure that the ON/OFF switch located on the rear of the unit is in the OFF position. Plug the power cord into the unit and then into the appropriate AC power source.

Operation

1. Set the fan speed switch on the rear of the unit to the LOW, MED, or HI position (see Figure 3). Higher airflow will result in faster neutralization rates.
2. Position the ionizer so that maximum airflow is directed towards the items or area to be neutralized.
3. Turn the unit ON. When the unit is first turned on, it conducts a self-test. The audible alarm will sound and the LED will cycle through the colors red, yellow, and green. The LED will remain green during normal operation.

Maintenance

"All ionization devices will require periodic maintenance for proper operation. Maintenance intervals for ionizers vary widely depending on the type of ionization equipment and use environment. Critical clean room uses will generally require more frequent attention. It is important to set-up a routine schedule for ionizer service. Routine service is typically required to meet quality audit requirements." (ESD Handbook TR20.20 section 5.3.6.7 Maintenance / Cleaning)

EIA-625, recommends checking ionizers every 6 months, but this may not be suitable for many programs particularly since an out-of-balance may exist for months before it is checked again. ANSI/ESD S20.20 section 6.1.3.1 Compliance Verification Plan Requirement states: "Test equipment shall be selected to make measurements of appropriate properties of the technical requirements that are incorporated into the ESD program plan."

CLEANING THE EMITTER POINTS

Under normal conditions, the ionizer will attract dirt and dust (especially on the emitter points). To maintain optimum neutralization efficiency and operation, cleaning should be performed on a regular basis.

In the event of circuit failure, the unit will enter shutdown mode.

When the unit enters shutdown mode, ionization will be stopped, the LED on the front of the unit will illuminate a constant red, and the audible alarm will continuously sound. The user must then reset the unit by turning it OFF and back ON.

The emitter points should be cleaned using the included Emitter Point Cleaners or a swab dampened with Isopropyl alcohol.