

# 9310 Overhead Air Ionizer

## Installation, Operation and Maintenance



Figure 1. SCS 9310 Overhead Air Ionizer

### Description

The SCS 9310 Overhead Air Ionizer is a self-contained, ionized air blower designed to neutralize electrostatic charges from non-conductive objects (insulators) and isolated conductors. The SCS 9310 meets ANSI/ESD S20.20 tested per ANSI/ESD STM3.1 and ESD TR53. The ionizer is designed with a built-in automatic emitter points cleaner to periodically clean the emitter points therefore saving some manual work and time. The 3-fan construction ensures ionization over a wide workstation area.

The SCS 9310 Overhead Air Ionizer is available in one model:

| Item                    | Power Adapter Input |
|-------------------------|---------------------|
| <a href="#">9310-NO</a> | 100-240 VAC         |

The SCS 9310 Overhead Air Ionizer does not include a power cord. It must be purchased separately.

| Item                   | Description                         |
|------------------------|-------------------------------------|
| <a href="#">770000</a> | Power Cord, IEC C-13, North America |
| <a href="#">770001</a> | Power Cord, IEC C-13, UK            |
| <a href="#">770002</a> | Power Cord, IEC C-13, Europe        |
| <a href="#">770003</a> | Power Cord, IEC C-13, China         |

### Packaging

- 1 Overhead Air Ionizer Unit
- 1 Power Adapter, 100-240VAC Input, No Power Cord
- 1 Ground Wire
- 1 S-hook and Chain Set
- 1 Certificate of Calibration

### Features and Components

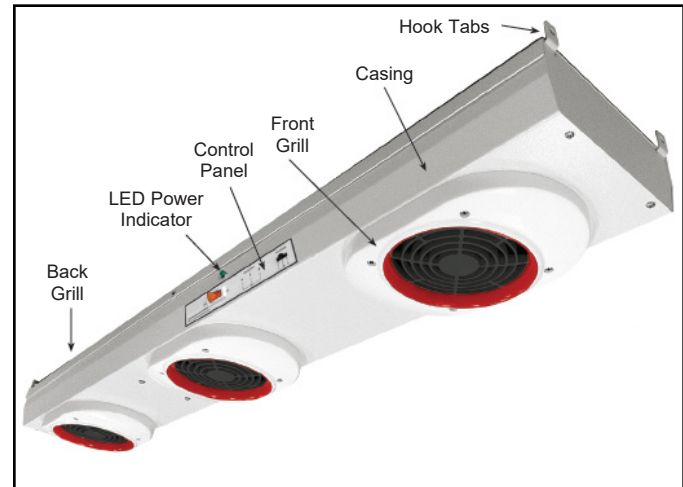


Figure 2. Overhead Air Ionizer features and components overview

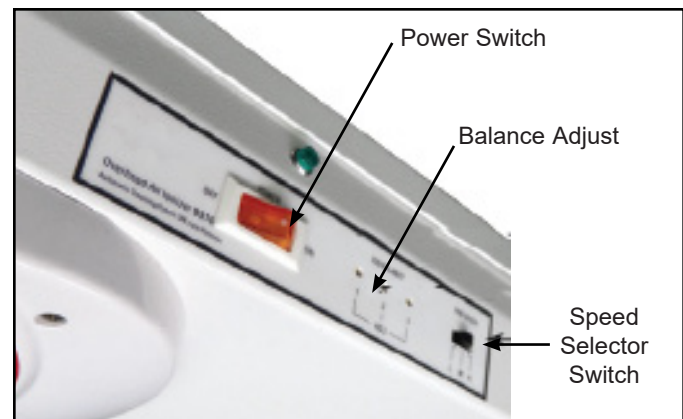


Figure 3. Overhead Air Ionizer controls



Figure 4. Overhead Air Ionizer features and components (left side view)



Figure 5. Power adapter (included) and SCS 770000 North America Power Cord (not included)

## Installation

The Overhead Air Ionizer mounts easily in a suspended position above a workstation with the provided chain and hook. Place the unit above the worksurface and point it at the area or object to be neutralized.

**WARNING:** The Overhead Air Ionizer is not designed to be used in explosive areas or flammable atmospheres. Sparks from the fan motor or emitter points may cause ignition.

The Overhead Air Ionizer cannot be used on table tops or bench tops. It must be installed using the mounting hardware provided. The safety of any system incorporating this equipment is the responsibility of the assembler of the system. The ionizer's performance is affected by its distance from the worksurface and its fan speed. As the distance increases or fan speed decreases, the discharge time at the worksurface will increase.

## Space Requirements

Restricted space may prevent electrostatic elimination due to insufficient airflow. The Overhead Air Ionizer should be located 23 to 35 inches (600 to 900 mm) above the worksurface with the center fan directly above the critical area. There should be no cross flow of air between the unit and the worksurface. Drafts from air conditioning or heating air outlets can affect the performance of this device.

## Mounting

The Overhead Air Ionizer unit may be suspended using the S-hook and chain provided in the package. Chain and mounting hardware must have a minimum safe working load of 33 lbs (15 kg).

1. S-hooks, 6 pieces
2. Chain link, 12 inches

3. Mounting on Workbench - Mounting brackets are designed for use on a variety of workbench frames such as: perforated steel angle metal framing and wire shelving. Install the Overhead Air Ionizer unit using the mounting tabs. Place a lock washer and flat washer on the bolt before inserting it into the mounting tab. Insert the bolt into the mounting tab, and then place another lock washer and flat washer on the bolt before placing the nut onto the bolt. Tighten the nut onto the bolt; securing the unit to the frame.

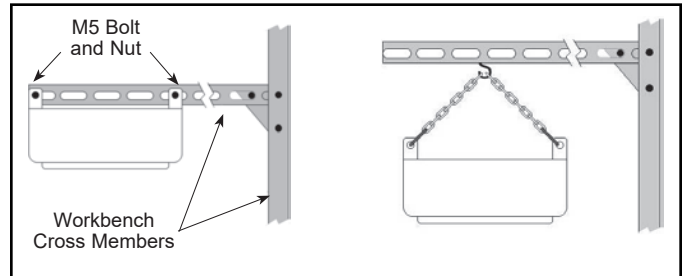


Figure 6. Mounting on a workbench

## Electrical

Use the included AC/DC power adapter. The unit must be grounded for proper operation.

## Grounding

The Overhead Air Ionizer must be connected to ground through the GROUND Terminal on the side of the unit. Connect the included ground wire to a known electrical ground point. Failure to connect the ground terminal may cause the unit to malfunction.

## Operation

1. Insert the AC/DC power adapter plug into an electrical outlet. Make certain that power line voltage is within the operating range of the AC/DC power adapter. The use of improper power line voltages may impair operation or damage the unit. This will void the warranty.
2. The switch on the front of the unit turns the power on or off. The LED Power Indicator will light up when the unit is on. Use the slide switch to set the fan speed to low, medium or high.

## Maintenance

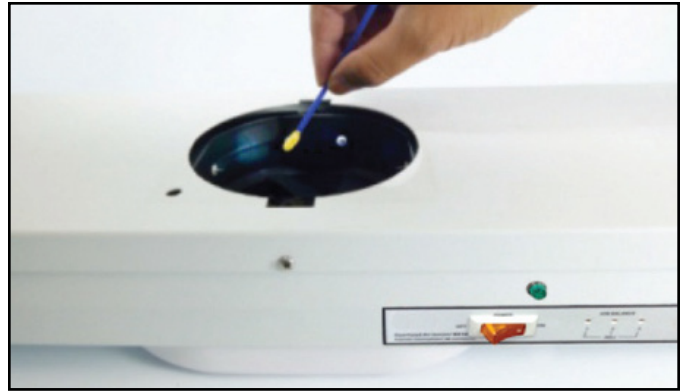
1. When performing emitter needle maintenance, disconnect the Power Adapter AC plug from the outlet. Do not connect or disconnect the power plug with wet hands as doing so puts you at risk of electrical shock or injury.
2. Occasional cleaning of the case is required. Although the emitter points have a built-in automatic cleaner, a check is still necessary for any abnormality within the emitter points. Verification and adjustment may be required to keep the balance within the specification range.

3. **Cleaning the Case** - Wipe the case with a soft cloth and deionized water. Fully squeeze the wiping cloth or sponge to remove any excess liquid. If a stronger cleaning solution is required, dab a soft cloth with mixture of isopropyl alcohol and deionized water (70% IPA and 30% DI water). Do not use any other solvents that may damage the coating of the case.
4. **Inspect the Emitter Points** - The emitter points and auto-cleaning brushes are accessible through the back grill. Access to the points is available by removing the two screws behind the grill, pressing the side tabs, and pulling off the grill (see Figure 7). To clean them, turn off the unit; clean the points and brushes with a cotton swab. Be careful not to bend the needle points during cleaning. The emitter points are fixed and therefore non-replaceable.
5. **Re-attach the back grill** after cleaning the emitters and fan blades. Re-install the two tab screws on each side of the grill.
6. **Service** - If you believe that a unit is not functioning properly, disconnect the unit from power. If the unit is covered by Warranty, contact your SCS sales representative or distributor.

**CAUTION:** There are no user replaceable parts. Unauthorized replacement of parts will void the warranty.



*Figure 7. Remove the back grill by removing the screws, pressing the latch tabs on each side and pulling off.*

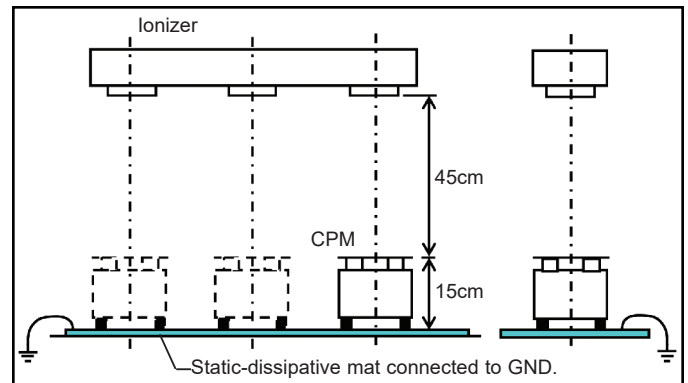


*Figure 8. Wipe the emitter tips, brushes and fan blades with a cotton swab or brush. After cleaning, re-install the front grill and the screws.*

## Calibration

### Offset Voltage Calibration

1. The equipment needed to measure the offset voltage is a calibrated charged plate monitor or equivalent set to voltmeter mode. Refer to the User's Guide accompanying the CPM for proper operation and setup.
2. Position the Overhead Air Ionizer and CPM as shown below.



*Figure 9. Position of Overhead Air Ionizer and CPM*

3. Turn on the power for the ionizer and the CPM. Let it warm up for 5 minutes.
4. Set the ionizer fan speed to maximum.
5. Set the CPM to voltmeter mode and select a smaller scale, example: 25 Volts.
6. Locate the Offset Voltage Adjust trimpot and slowly turn the small screw head using a mini screwdriver. Observe the CPM reading as you turn. Stop turning as soon as the CPM reads as close to zero volts as possible.
7. Proceed to do the Decay Time and Offset Voltage verification.

## Decay Time and Offset Voltage Verification

1. Set the CPM to Decay/Offset mode. Refer to the User's Guide accompanying the CPM for proper operation and setup.
2. Set the CPM to decay and offset voltage mode with a starting charge at either + or – 1 KV and a stopping charge at either + or -100 Volts.
3. Start the decay/offset test sequence on the CPM. This will take a few seconds.
4. Record the decay time, and offset voltage as displayed on the CPM.

## Troubleshooting

| Problem                                                                                                                          | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The fan does not turn.                                                                                                           | Turn off the unit. Disconnect the AC plug from the outlet. Be sure to contact a SCS sales representative or authorized dealer to request inspection and repair. Repairing the product yourself is dangerous and will void the warranty. Do not attempt to repair the product yourself.                                                                                                                                                                                                                                                                                      |
| Unbalanced ion levels. Ion balance cannot be adjusted to 0V.                                                                     | <p>Check that the environmental conditions at the installation site fall within the service environment conditions of the unit.</p> <p>Perform cleaning of the emitter points as described in the "Maintenance" section.</p> <p>Turn off the unit if the above step does not improve the situation. Disconnect the AC plug from the outlet. Be sure to contact a SCS sales representative or authorized dealer to request inspection and repair. Repairing the product yourself is dangerous and will void the warranty. Do not attempt to repair the product yourself.</p> |
| Others<br>Examples:<br>Abnormally slow rotation of the fan, the unit being abnormally hot, a burning odor, abnormal noises, etc. | Turn off the unit. Disconnect the AC plug from the outlet. Be sure to contact a SCS sales representative or authorized dealer to request inspection and repair. Repairing the product yourself is dangerous and will void the warranty. Do not attempt to repair the product yourself.                                                                                                                                                                                                                                                                                      |

## Specifications

| Description                                    | Typical Values                                                                                                                                                              | Method                                                                                      |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Input Voltage and Frequency (External Adapter) | AC/DC Power Adapter<br>Power Input:<br>100-240VAC, 50/60 Hz<br>Power Output:<br>24VDC, 2.5A<br>Cable Length:<br>11 ft. (3.4 m) (including AC/DC Adapter)<br>Indoor Use Only | –                                                                                           |
| Operating Voltage                              | 24VDC, 2.5A maximum                                                                                                                                                         | –                                                                                           |
| Power Consumption                              | 43 Watts (normal operation)<br>60 Watts (auto cleaning operation)                                                                                                           | –                                                                                           |
| Emitter Point Cleaning                         | Two-way Automatic Cleaning<br>Interval: 1 time per hour (4 cycles each time)                                                                                                | –                                                                                           |
| Indicators                                     | LED: Green power ON                                                                                                                                                         | –                                                                                           |
| Fuse                                           | 5.0A, 250V, 5.2 x 20mm Glass Tube                                                                                                                                           | –                                                                                           |
| Ion Emission                                   | Steady-state DC                                                                                                                                                             | –                                                                                           |
| Balance Voltage                                | $\pm 15$ Volt ( $25 \pm 5^{\circ}\text{C}$ , $45 \pm 10\%$ RH)                                                                                                              | ANSI/ESD STM3.1<br>High fan speed, measurement taken 45 cm below fan.                       |
| Decay Time                                     | $\leq 3.5$ sec.                                                                                                                                                             | ANSI/ESD STM3.1<br>High fan speed, measurement taken 45 cm below fan.                       |
| Air Speed                                      | 200 ft./min, 61 m/min                                                                                                                                                       | Anemometer, high fan speed                                                                  |
| Audible Noise                                  | High Fan Speed: 57 dB (sustained), 60 dB (auto cleaning)<br>Low Fan Speed: 46 dB (sustained), 51 dB (auto cleaning)                                                         | Audible noise at normal run and auto cleaning operation. Measurement taken 100 cm from fan. |
| Ozone Level                                    | <0.05 ppm                                                                                                                                                                   | IEC 60335-2-65 ED.2.1<br>CLAUSE 32                                                          |

|            |                                                                                                        |   |
|------------|--------------------------------------------------------------------------------------------------------|---|
| Dimensions | 5" H x 42" W x 7" D<br>(120 mm H x 1080 mm<br>W x 172 mm D)<br>Inclusive of knobs and<br>mounting tabs | — |
|------------|--------------------------------------------------------------------------------------------------------|---|

|        |                                         |   |
|--------|-----------------------------------------|---|
| Weight | 4.9 Kg (without an<br>external adapter) | — |
|--------|-----------------------------------------|---|

|                               |                          |   |
|-------------------------------|--------------------------|---|
| Certifications<br>& Approvals | cULus, CE, RoHS,<br>WEEE | — |
|-------------------------------|--------------------------|---|

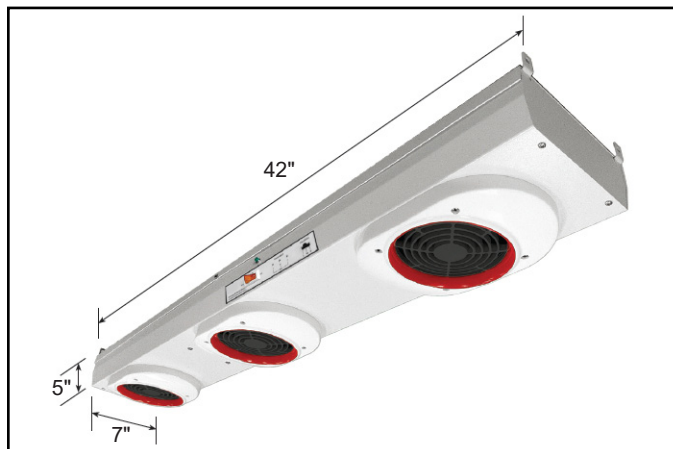


Figure 10. Overhead Air Ionizer dimensions

## Environmental Conditions

This equipment has been tested and found to be safe to operate within these environmental conditions. This is not a warranty of equipment performance within these conditions.

- Indoor use only
- Altitude: Up to 2000 m
- Pollution degree 2
- Temperature: 41°F - 104°F (5°C - 40°C)
- Humidity: Maximum 80% relative humidity for temperatures up to 87°F (31°C) decreasing linearly to 50% relative humidity at 104°F (40°C)

## Regulatory Information

This symbol, per "Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006," means that the product or part does not contain any substances in excess of the maximum concentration values as per "Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products." This information represents SCS's knowledge and belief, which may be based in whole or in part upon information provided by third party suppliers to SCS. In the event any product is proven not to conform with the material content-related information in this product literature, then SCS's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.



**RoHS 2011/65/EU Compliant** means that the product or part does not contain any of the substances in excess of the maximum concentration values ("MCVs") in EU RoHS Directive 2011/65/EU. The MCVs are by weight in homogeneous materials. This information represents SCS's knowledge and belief, which may be based in whole or in part on information provided by third party suppliers to SCS.

## WEEE Statement

The following information is only for EU-members States: The mark shown to the right is in compliance with Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE). The mark indicates the requirement NOT to dispose the equipment as unsorted municipal waste, but use the return and collection systems according to local law.

## cULus Statement

Meets cULus requirements.

## CE Statement

Meets CE (European Conformity) requirements.

Made in China

**Limited Warranty, Warranty Exclusions, Limit of Liability and RMA Request Instructions**