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# 9110 Benchtop Air Ionizer Installation, Operation and Maintenance



Figure 1. SCS 9110 Benchtop Air Ionizer

## Features and Components

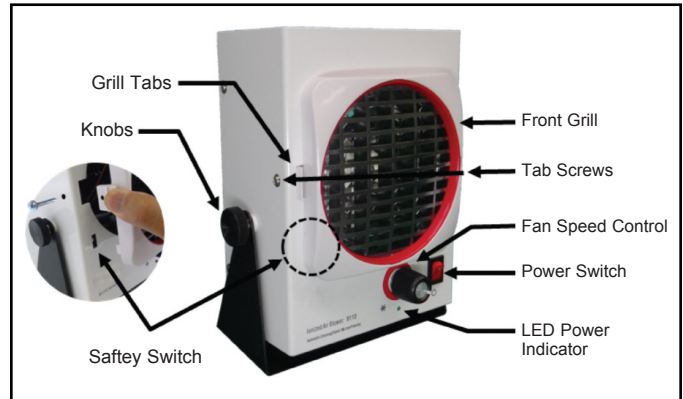


Figure 2. Benchtop Air Ionizer features and components (front view)

## Description

The SCS 9110 Benchtop Air Ionizers a self-contained, ionized air blower designed to neutralize electrostatic charges from non-conductive objects (insulators) and isolated conductors. The SCS 9110 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 SCS 9110 Benchtop Air Ionizer is available in one model:

Item	Power Adapter Input
<a href="#">9110-NO</a>	100-240 VAC

The SCS 9110 Benchtop 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 Benchtop Air Ionizer Unit
- 1 Power Adapter, 100-240VAC Input, No Power Cord
- 1 Ground Wire
- 1 Certificate of Calibration

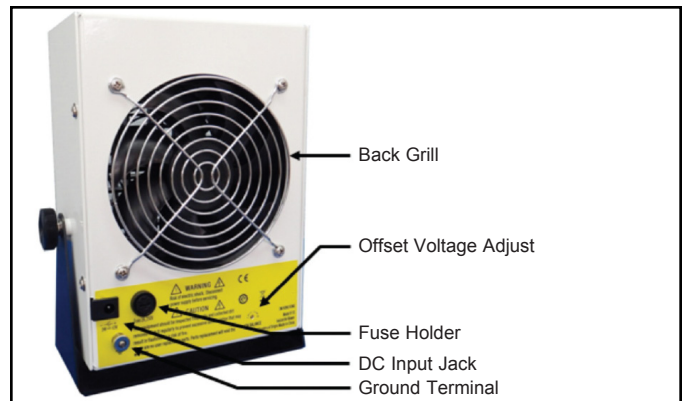


Figure 3. Benchtop Air Ionizer features and components (rear view)



Figure 4. Power adapter (included) and SCS 770000 North America Power Cord (not included)

## Installation

The Benchtop Air Ionizer mounts easily in a variety of positions using the provided tilting bracket/stand. Mount the bracket by following the illustration below. Secure the mounting bracket with screws on table top. Adjust the angle of air flow towards the target and secure it by tightening the side knobs.

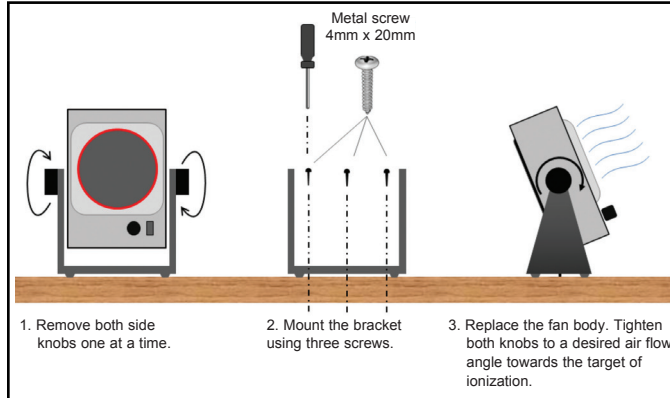


Figure 5. Installing the Benchtop Air Ionizer

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 fan speed. As distance increases or fan speed is reduced, the discharge time at the work surface will increase.

**WARNING:** The Benchtop 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.

## Electrical

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

## Grounding

The Benchtop Air Ionizer must be connected to ground through the GROUND Terminal behind the unit and the ground wire included in the package. Connect the ground wire to a known good electrical ground. 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 power switch on the front of the unit turns the power and LED Power Indicator illuminates when it's on. The dial knob adjusts the fan speed. Rotating it clockwise increases the fan speed.

## Maintenance

1. When performing emitter points 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 the only routine maintenance 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 moistened, fully squeezed soft cloth with deionized water. If a stronger cleaning solution is required, use a soft cloth with a mixture of alcohol and water (70% IPA and 30% DI water). Do not use any other solvents that can damage the coating of the case. Fully squeeze the cloth or sponge to remove any excess liquid.
4. Cleaning the Emitter Points - The emitter points and auto-cleaning brushes are accessible through the front grill. To clean them, turn off the unit; clean the points and brushes with a cotton swab. Use caution when accessing the emitter points to avoid injury. Access to the points is available by removing two tab screws on each side, pressing the side tabs, and pulling off the grill (see images below). Use caution when removing the grill to avoid breaking the cable that connects the grill. Be careful not to bend the emitter points during cleaning. The emitter points are fixed and therefore not replaceable.
5. The safety switch functions to turn off the power to the ionizer when the front grill is removed while the ionizer is in operation. Before any maintenance is performed on the emitter points and before removing the front grill, ensure the unit is powered off and the power cord is removed from the ionizer or the wall outlet.
6. Re-attach the front grill after cleaning the emitter points and fan blades. Replace the two tab screws on each side of the grill.
7. 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.

Remove two screws from each side to release the tab.



Push and pull the tabs slowly.



Wipe the emitter points, brushes, and fan with cotton swab or brush.



Replace the front grill and tighten two tab screws from each side to lock the tab.



## 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 Benchtop Air Ionizer and CPM as shown below.

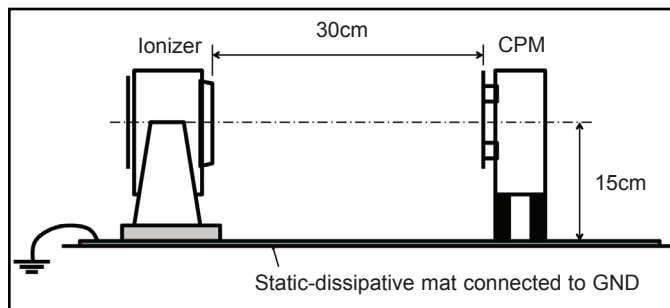


Figure 6. Position of Ionizer and CPM

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.	Check that the environmental conditions at the installation site fall within the service environment conditions of the unit.  Perform cleaning of the emitter points as described in the "Maintenance" section.  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.
Others Examples: 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 Power Input: 100-240VAC, 50/60 Hz Power Output: 24VDC, 2.5A Cable Length: 11 ft. (3.4 m) (including AC/DC Adapter) Indoor use only	—
Operating Voltage	24VDC, 1.8A maximum	—
Power Consumption	14 Watts (normal operation) 42 Watts (auto cleaning operation)	—
Emitter Point Cleaning	Two-way Automatic Cleaning Interval: 1 time per hour (4 cycles each time)	—
Indicators	LED: Red power ON	—
Fuse	2.0A, 250V, 5.2 x 20 mm 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 Maximum fan speed, measurement taken 30 cm from fan.
Decay Time	$\leq 2.0$ sec.	ANSI/ESD STM3.1 Maximum fan speed, measurement taken 30 cm from fan.
Air Speed	500 ft./min, 152 m/min	Maximum fan speed
Audible Noise	High Fan Speed: 54 dB (sustained), 57 dB (auto cleaning) Low Fan Speed: 48 dB (sustained), 55 dB (auto cleaning)	Audible noise during both ion output and auto cleaning operation. Measurement taken 100 cm from fan.
Ozone Level	<0.05 ppm	IEC 60335-2-65 Ed.2.1 CLAUSE 32

Dimensions	9" H x 7" W x 4" D (219 mm H x 181 mm W x 104 mm D) Inclusive of knobs and mounting stand	—
Weight	1.3 Kg (without an external adapter)	—
Certifications & Approvals	cULus, CE, RoHS, WEEE	—

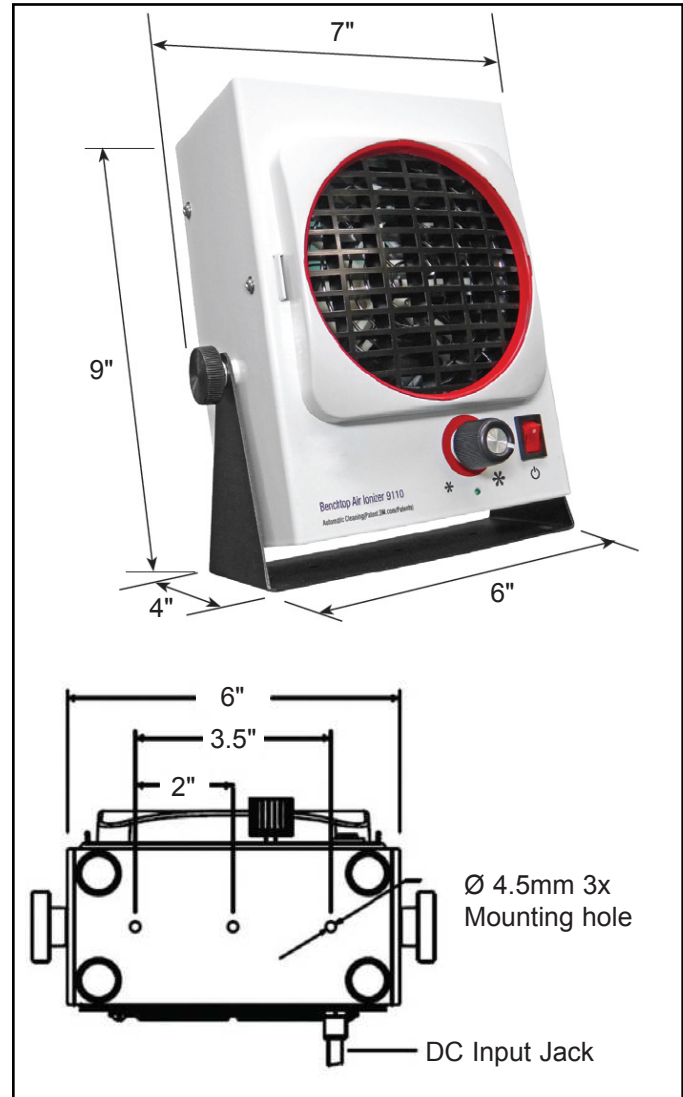


Figure 7. Benchtop Air Ionizer dimensions

## 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

See the SCS Warranty -

<http://staticcontrol.descoindustries.com/warranty.aspx>