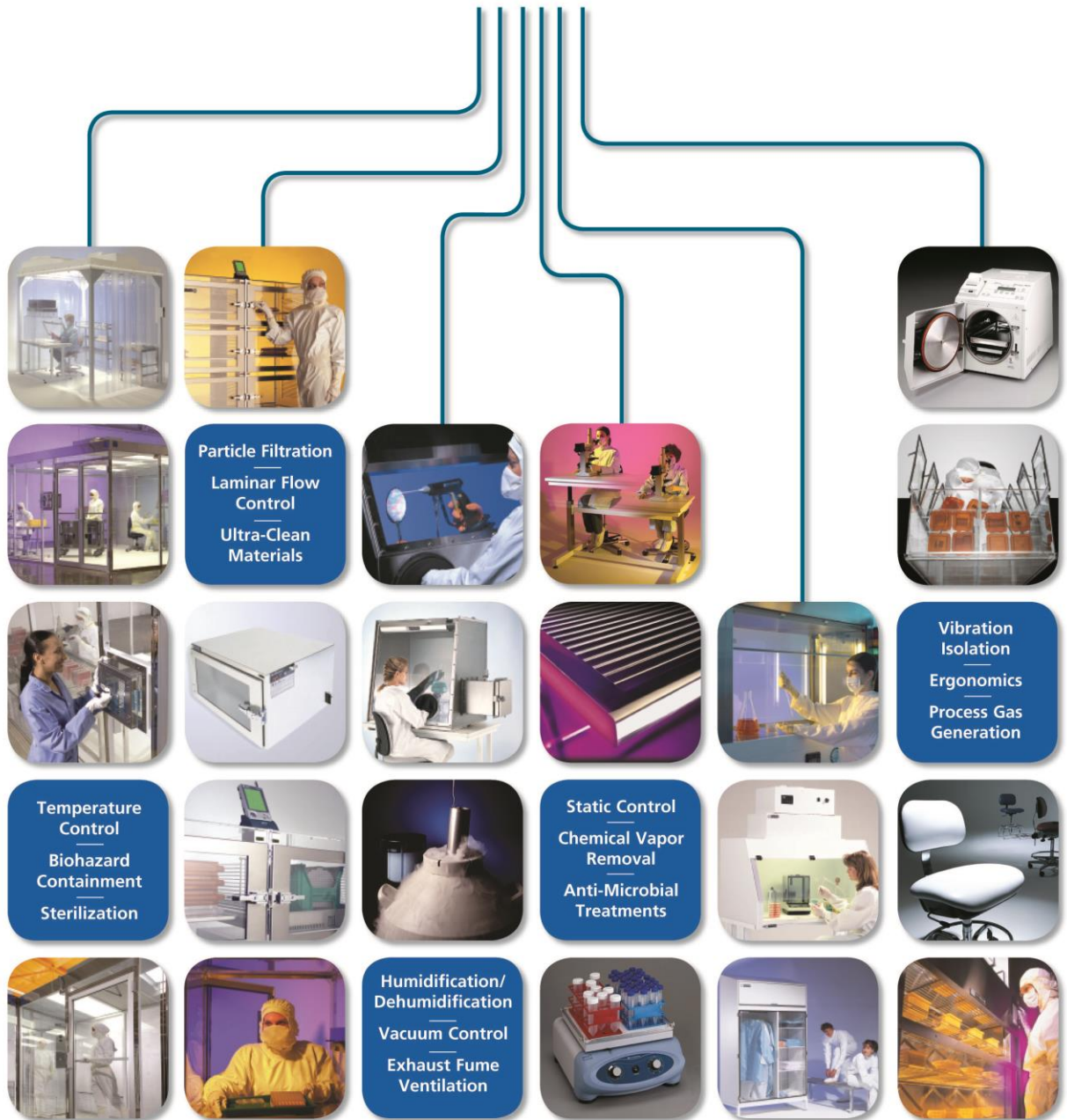


IonBar™ (Ionizing Bar)

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Your Comprehensive Equipment Source





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Safety Notice

A thorough familiarity with all operating guidelines is essential to safe operation of the product. Failure to observe safety precautions could result in poor performance, damage to the system or other property, or serious bodily injury or death.

The following symbols are intended to call your attention to two levels of hazard involved in operation:

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CAUTION

Cautions are used when failure to observe instructions could result in significant damage to equipment.



WARNING

Warnings are used when failure to observe instructions or precautions could result in injury or death.

The information presented here is subject to change without notice.

1.0 Description

Terra's IonBar™ uses pairs of ion emitters to generate a balanced stream of positive and negative ions, safely neutralizing electrostatic surface charges to protect sensitive devices. Available in lengths of 11", 22", 33" or 44", these bars are designed for installation in a laminar air stream, which distributes the positive and negative up to 48" from the emitter tips (see "Specifications" for static decay rates).

Because the IonBar™ operates at low voltage (24 VAC), it is safe to operate and generates minimal RFI/EMI. The PVC case contains the low-voltage power supply and titanium emitters, which can be replaced in a matter of minutes.



NOTE

For effective operation, the IonBar™ should be mounted in a laminar airflow traveling at least 50 fpm (90 fpm recommended for effective particle control).

Configurations

The IonBar™ is available in three application-specific configurations to simplify setup:

- IonBar™ for Fan/Filter Units (User Installed)
- IonBar™ for Gloveboxes (Preinstalled; includes fan module)
- IonBar™ for Laminar Flow Hoods (Preinstalled)

IonBars™ can also be purchased individually and installed by the user in the desired application. An installation kit with standard FFU mounting brackets is sold separately and includes the power supply transformer.



NOTE

For installation in a hood, the overall hood width should be at least 2" greater than the length of the desired IonBar™.



2.0 Installation

Carefully unpack your ionizing equipment. Report any shipping damage immediately to the freight company.

Installation on Fan/Filter Units

When ordered with a fan/filter unit, the IonBar™ includes a set of stainless steel mounting brackets designed to suspend the IonBar™ within the stream of HEPA-filtered air. The airflow is required for the ions to reach the targeted surface before they are dispersed, allowing for efficient neutralization of static charges.

Attach the mounting brackets according to the diagram below (one on each end), using the provided screws.

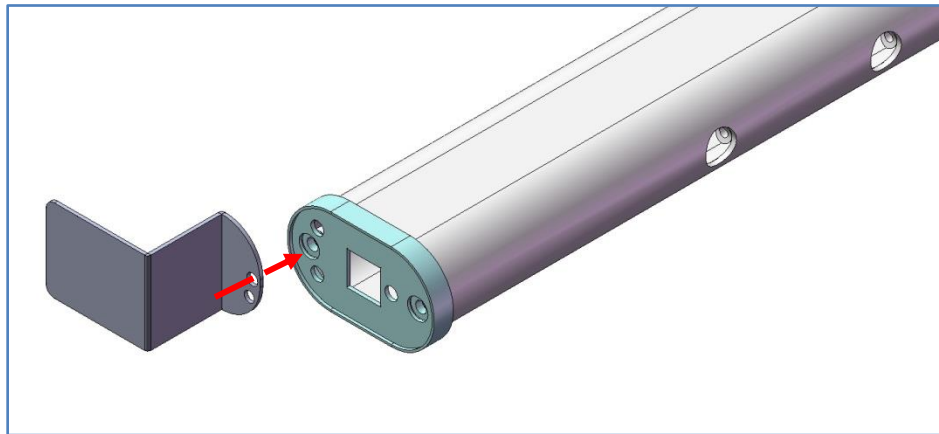


Figure 1: Fasten the mounting bracket in the orientation shown above.

With the mounting brackets installed, place the IonBar™ in the ceiling bay where the fan/filter unit goes. The mounting brackets will rest upon the frame of the ceiling bay; no other fasteners are required. Simply lower the FFU into the ceiling bay and allow the weight of the FFU to hold the IonBar™ in position.

Installation on Gloveboxes

When ordered with a glovebox, the IonBar™ will be mounted to a stainless steel fan module that will aid in the dispersal of ions. The IonBar™ assembly will be preinstalled in the chamber, in the orientation specified by the original order.

Typically, the ions need to be directed downward towards the main work area. However, in some cases, the application requires the ions to be directed towards the user, eliminating static around the gloves. The design of the mounting brackets allows for a wide range of mounting locations to best suit your application.



Figure 2: The airflow from the fan module is required to disperse the generated ions throughout the glovebox



Installation on Laminar Flow Hoods

When ordered with a laminar flow hood, the IonBar™ is installed in the exact same way as with a fan/filter unit in a cleanroom. The mounting brackets will rest on the top edges of the hood and the FFU will be placed directly on top of the brackets, holding the IonBar™ in position. The IonBar™ emitters will aim downwards toward the work surface.



Figure 3: Place the IonBar™ on the hood frame before lowering the fan/filter unit into position.

Whether incorporated into a laminar-flow system or used as a stand-alone device, the IonBar™ requires connection to a 24V power transformer. If the IonBar™ is ordered with the Installation Kit, the power transformer, power cable, and appropriate mounting clips will be included.

1. Use a telephone-type connector and low-voltage cable to connect the IonBar™ to the power transformer.
2. Connect the transformer to the appropriate power supply (120VAC or 240VAC).



NOTE

A single transformer provides ample power for up to 20 emitter pairs. Depending on the length of your IonBar™, multiple units can be interconnected using low-voltage telephone cable to daisy-chain the units.

Once connected to power, the IonBar™ immediately emits balanced streams of positive and negative ions through each emitter pair. Effective ion distribution requires an airflow speed of at least 50 fpm.



CAUTION

Do not block access to the power transformer. This connection serves as the main disconnect for the system in the event of an emergency.



3.0 Maintenance



Disconnect the unit from the power supply before servicing.

The IonBar™ requires little maintenance beyond occasional cleaning. Frequency of cleaning depends on the cleanliness of air in the immediate vicinity of the IonBar™.

The emitter housing may be cleaned using alcohol or other mild detergent and de-ionized water.

If deposits are observed on the emitter tips,

1. Disconnect the IonBar™ from system power.
2. Use a cleanroom swab moistened with a cleaning solution of 50% isopropyl alcohol and 50% de-ionized water to remove deposits from the emitter points.
3. If deposits cannot be removed, or if the tips appear worn or bent, the IonBar™ may not discharge surfaces with optimal efficiency. In this case, replace the tips. Use a pencil eraser or needle-nosed pliers to remove the old tip. Insert the new tip and gently press until it seats against the connector; no twisting is necessary.

4.0 Specifications

Replacement Parts	
Product	Catalog #
120VAC Power Transformer	2005-09A
220VAC Power Transformer	2005-09A-220
Replacement Titanium Emitters	2005-45
Low-Voltage Power Cable	2005-27

General IonBar™ Specifications	
Construction	
Exterior	PVC
Emitters	Machined titanium; 3-year estimated life (Field replaceable)
Emitter Output	12,000V
Power Ratings	
System Power	24 VAC
Input Power (Wall Transformer)	120/220VAC, 50/60Hz
Current Draw	104 mA (44" model)
Performance	
Static Decay Time	Discharge times directly under the IonBar™ average 28 seconds (from ± 1,000 volts to 100 volts), measured in a 4-foot laminar flow hood with air speed of 90 feet/minute.



IonBar™ Specifications Table

Environmental Conditions	
Use (Indoor/Outdoor)	Indoor Use Only
Altitude	Up to 2,000 m
Operating Temperature	5°C to 40°C
Maximum Room Relative Humidity	80% @ 31°C (50% @ 40°C)
Allowable Voltage Fluctuation	±10%
Equipment Ratings	
Voltage Rating	120/220VAC
Frequency Rating	50/60Hz
Power Rating	1A
List of Input Connections	Telephone cable connector (low voltage)
List of Output Connections	Telephone cable connector (wall transformer)
Equipment Installation	
Assembly	See Section 2: Installation (Page 3)
Protective Earthing (Grounding)	N/A
Utility Requirements	None
Equipment Operation	
Operating Controls	None
Disconnect Device	Wall transformer; see warning on Page 5
Accessory Connections	None
Specification of limits for intermittent operation	None
Safety Symbols	N/A
Service and Maintenance	User serviceable; see Section 3: Maintenance (Page 5)
Replacement Parts	See Section 4: Specifications (Page 5)
Cleaning/Decontamination	See Section 3: Maintenance (Page 5)
Poisonous/Hazardous Gas	N/A; no hazardous gases
Flammable Liquids	N/A; no flammable liquids



5.0 Warranty

Products Manufactured by Terra: Terra Universal, Inc., warrants products that it manufactures to be free from defects for a period of 12 months for parts and 90 days for labor, commencing from the date of shipment. Terra's sole responsibility is to repair or replace, at its option, any part of the product that proves defective or malfunctioning during this time limit. In some cases, components incorporated in Terra Universal products are covered by additional warranties from component manufacturers; obtain specific information from Terra sales representatives. This warranty is void if the equipment is abused or modified by the customer, is operated outside Terra's operating instructions or specifications, or is used in any application other than that for which it is specified. This warranty does not include routine maintenance or service procedures, breakage of quartz baths after 60 days, shipping damage, nor damage from misuse, intentional or unintentional abuse, neglect, natural disasters, or acts of God.

Products Manufactured by Others: Terra Universal, Inc., warrants that, to the best of its ability, Terra's representations of products that are manufactured by others reflect the manufacturer's representations, subject to change without notice. Sole warranty for these products is the original manufacturer's warranty that is passed forward to the purchaser and constitutes the customer's sole remedy for these products. Detailed warranties for distributed products are available through Terra sales representatives.

Freight Shortage or Damage: Upon receipt of any equipment from Terra Universal, Inc., customer shall immediately unpack and inspect for damage or shortage. The customer shall not accept a damaged package or a short shipment until the carrier makes a "damage or shortage" notation on both the carrier's and customer's copy of the freight bill or delivery receipt. Service title passes when the shipment is loaded, so customer is responsible for filing and collecting a freight claim. Any replacement products must be ordered and paid for separately. For Terra's "Policy and Procedures for Returning Goods," see Terra's Internet site: www.TerraUniversal.com.

Generally, customers can improve the chance of collecting on a freight claim by following these procedures: 1) formally requesting that the carrier inspect the shipment immediately upon suspecting damage or shortage to verify condition; 2) notifying the carrier upon discovery of concealed damage and requesting an inspection within 15 days of receipt, both in person or phone and following up via mail; 3) keeping the shipment as intact as possible, including retaining original packaging materials and keeping the product as close to the original receiving location as possible; 4) holding salvage for disposition by the carrier.

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Warranty Returns: All warranty returns must be authorized in advance by Terra Universal and approved under an RMA. Unless approved in advance for good reason, all returns must be in original condition, including all manuals, and must be packaged in original packaging materials. All returned goods are to be shipped to Terra Universal, freight prepaid at customer's expense. See Terra's "Policy and Procedure for Returned Goods."

**Thank you for ordering from
Terra Universal!**