airocide® SYSTEMS

# airocide HD-25000

## Photocatalytic Air Purifying Technology

# Owner's / Maintenance Manual




Model

HD-25000

# Congratulations

By purchasing an HD-25000 photocatalytic air purifying system, the most advanced and effective airborne pathogen reduction system available, you've positioned yourself as a leader in your industry. The HD-25000 products were developed from NASA technology and use a patented process to kill airborne Mold, Bacteria, Viruses, and Allergens in a wide variety of applications from schools, homes, offices, kitchens, break rooms, common areas, as well as the same technology can be used for cold storage preservation. The same process breaks down most VOC's, like ethylene gas, formaldehyde and many odors, into micro amounts of harmless carbon dioxide and water vapor. HD-25000 systems do not produce and/or use any type of Ozone or other harmful chemical/gases.

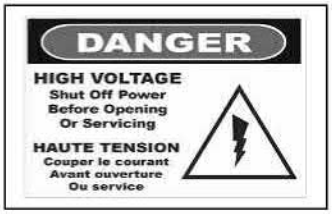
# Important Safety Instructions

For your safety and protection, read this entire Owner's Manual before you attempt to install or use your HD-25000 system. Keep this safety information where you can refer to it if necessary.

**DO NOT** run cord under carpeting. **DO NOT** cover cord with throw rugs, runners, or similar coverings. **DO NOT** route cord under furniture or appliances. Arrange cord away from traffic area and where it will not be tripped over.

# Cautions & Symbols on Unit




For a French translation of this manual, please contact us at 800-627-4913

# Warning

**WARNING:** To Reduce The Risk Of Fire, Electric Shock Or Injury To Persons, Do Not Use Replacement Parts That Have Not Been Recommended By The Manufacturer (e.g. Parts Made At Home Using A 3D Printer)

**WARNING:** If you spray any types of chemicals or cleaning agents in the room that contains that HD-25000 unit(s), please turn off the HD-25000 unit(s) during this spray period as well as (1) hour after spraying is complete (to allow for all residues to dissipate).

The various sprays and cleaning agents could possibly harm the catalyst located inside the HD-25000 reactor bed.

DO NOT operate any fan with a damaged cord or plug. Discard fan or return to an authorized service facility for examination and/or repair.

DO NOT run cord under carpeting. DO NOT cover cord with throw rugs, runners, or similar coverings. DO NOT route cord under furniture or appliances. Arrange cord away from traffic area and where it will not be tripped over.

# Technology

As contaminated pathogenic air is processed through the photocatalytic reactor, the patented green technology, integrated with Photocatalytic Oxidation (PCO), works in unison to destroy harmful airborne microbes and dismantle volatile organic compounds (VOC) while not producing any by-products. Clinical studies show a 99.99% plus kill rate for microbials and removal of VOC's. HD-25000 is energy efficient, consuming less Energy then (2) 100 watt light bulbs.

Titanium dioxide ($TiO^2$) is a component photocatalyst material used in the device. A unique process is used to create the patented $TiO^2$ formula that coats the catalyst material. When this material is irradiated with the ultraviolet photons from the HD-25000 proprietary PCO lamps inside, hydroxyl radicals and super-oxide ions are formed. They will kill and decompose airborne pathogens like Bacteria, Mold/Fungus, Viruses, and Allergens. These species will also oxidize (reduce to trace elements of carbon dioxide and water) volatile organic compounds (VOC's) adsorbed on the catalyst surface. Because the organic material is completely oxidized by this process, the photocatalytic reactor is self-cleaning relative to organic material on the catalyst surface. HD-25000 does not generate nor use ozone and/or any other type of gas or chemical.

Our Air Sanitation technology has been in commercial use since 1999. The technology has been deployed in a broad base of global food, commercial, agriculture, and residential applications. As mentioned above, all the kill happens inside our reactor bed without using and/or producing any gas or chemical - thus, we do not claim to clean surfaces.

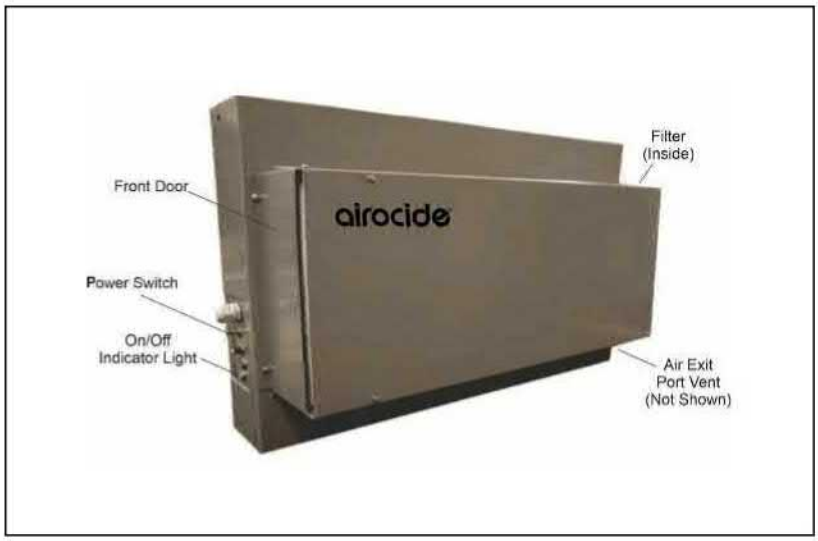



**Figure 1**

HD-25000 uses truly breakthrough technology to remove airborne pathogens. It works by drawing in air through its Air Entry Port and then forcing it through its Reactor Bed where a photo-catalytic reaction kills living organic matter like mold/fungi, bacteria and viruses and breaks down organic gases (VOC's) like ethylene.

Note: Your HD-25000 comes with (1) extra Protective 4" Filter. These filters should last for approximately 6 months. See Filter Replacement Instructions on page 8.

* At approximately 11 months this RED LED light will illuminate. Indicating it's time to re-order new Airocide Proprietary PCO Lamps. Refer to the maintenance section for more information.

# Installation

**NOTE:** The HD-25000 unit will perform the best when it is located within the active air current that occurs within your facility. This allows for a greater distribution of the units processed (clean) air.

**Note**: Due to the size of the HD-25000 unit (36 lbs.) and the nature of its installation, it will require heavy-duty bolts to mount.

**Important**: The manufacturer has enclosed mounting hardware. However, some surfaces may require more mounting hardware, which is not included.

**CAUTION: DO NOT** plug unit in until final step is completed.

1) Take the unit carefully out of its shipping box.

**NOTE:** The unit will also come in three basic parts: mounting bracket, base unit, and the unit lid. Upon receiving the HD-25000 unit, all three sections will be securely fastened together. See below for installation instructions. **See Figure 3d and 3d-1.**

2) HD-25000 systems are designed to mount to a wall or ceiling. If there is any doubt about the security of the mounting surface, contact an engineer or other individual with knowledge of the wall or ceiling's construction.

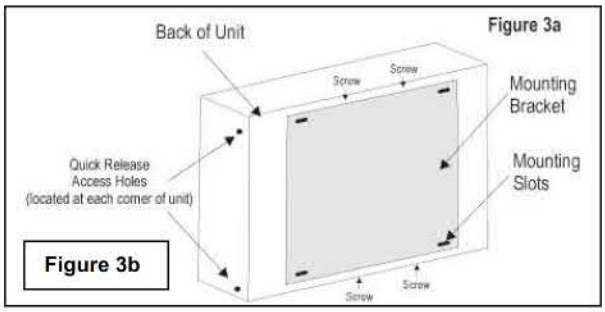
**NOTE**: The unit can either be mounted horizontally or vertically. We recommend that the HD-25000 unit be located centrally within the room and in an area with good airflow. If multiple units are being installed space equal distance apart. Please call our technical service department if you need any help deciding where to place HD-25000 unit(s).

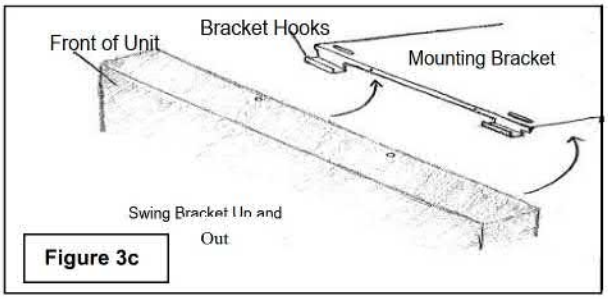
3) Determine where the unit will be mounted. It should be located centrally in the room so that walls, light fixtures or any other objects do not block the air vents. The air exit port must be at least 36" away from any obstructions. Do not obstruct the air entry port.

**NOTE**: The Exit Air Port (See figure 1 on pg. 3) should not be positioned where it is directly facing an incoming air current (i.e. from an air duct) Position the HD-25000 Unit(s) exit air flow into the open section of your area.

4) The air exiting the unit will be warm, do not let any objects touch the air exit port or get trapped inside the air intake hood vent (see Figure 1 on page 3).

5) Remove mounting bracket from the HD-25000 unit by first releasing the unit's lid. Press in the (4) quick release buttons located at each corner of the lid by simply inserting a screw driver or some other object that will fit into the access holes. **See Figure 2 on page 6 and Figure 3b on this page.** To detach the mounting bracket from the base, unscrew the two ¼" Phillips head screws on top and the two screws on the bottom of the bracket and lifting up while pulling the hooks out of the HD-25000 (see Figure 3b). Keep the screws.

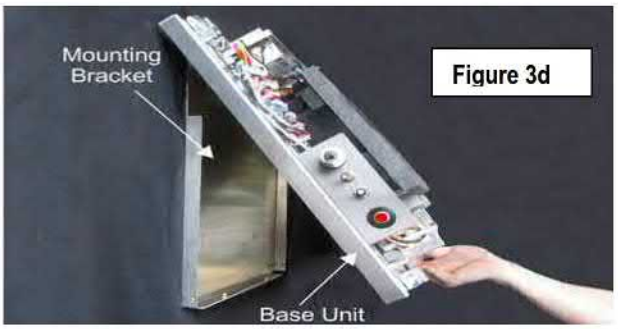



*6) Using a level, place the mounting* bracket on the mounting surface with bracket hooks on top and facing outward. (See Figure 3c) The bracket hooks are the main support of the unit and will prevent the unit from falling.




7) Attach four screws through the four large slots on the mounting bracket, Part D in the Hardware Parts Pack (if installing to a dry wall surface, use the enclosed four metal anchors along with the four screws, Part E in Hardware Parts Pack) Attach on 16" centers to the studs.






**NOTE:** Mounting slots are on 16" centers to allow mounting to a stud. If mounting to a sheet metal surface, use the provided six self-tapping screws instead of the dry wall anchors and screw. All screws are labeled appropriately on the components hardware parts pack. If mounting horizontally on wall, hook should be at the top of the mounting bracket.

8) Attach unit to mounting bracket by aligning slots on the back of the base unit with the two hooks on the mounting bracket (see Figures 3c and 3d on page 4) Push the unit until the hooks on the mounting bracket slide through the slots on the back of the unit and pull it down where it is flush with the mounting bracket and wall. **Reinsert screws from step 5 to secure the HD-25000 unit to the mounting bracket ensuring that the HD-25000 unit is securely fastened to the mounting bracket.**

**Important:** When attaching the cover back onto the unit, simply align each corner of the cover with the unit, then, press down **Important:** When attaching the cover back onto the unit, simply align each corner of the cover with the unit, then, press down on each corner, when done correctly, you should hear a "CLICK" noise when each of the fasteners are locked back in place. Pull up on each corner. If one corner is loose, push down again until you hear the fastener "CLICK" into position.

9) Plug unit in and turn on power switch.

**NOTE:** The word "Unit" in step 8 above refers to the unit's base and the unit's lid that are fastened together.

**NOTE:** The HD-25000 unit can also be mounted vertically or on the ceiling. Follow the same steps in #'s 6 and 7 above. (The only exception will be that the stabilizing screws, from step #5, will be on the left and right sides of the unit, versus, the top and bottom.)

**WARNING: If the HD-25000 lid is not properly secure, prior to installation, seriously bodily harm can occur if the lid falls off.**

**NOTE: The unit weighs 36lbs. Make sure that your installation materials can properly support the unit. If you have any doubt about the security of the mounting surface, contact an engineer or other individual with knowledge of the ceilings construction.**

# System Start Up

DO NOT supply power to the HD-25000 unit until it is completely installed, and its cover is securely fastened.

As the unit turns on, the green power indicator light should come on and a very light hum can be heard from the fan in the unit.

(Do not remove the cover when the unit is plugged in.)

NOTE: If proper power is supplied to the unit and the green LED light goes out, call for service.

# Maintenance

## Annual PCO Lamp Replacement Alarm / Reset

At approximately 11 months, from either the first time you turn your airocide HD unit on or the last time your re-set your reminder alarm (after last lamp change), the Red Indicator Light (See figure 1 on page 3) will illuminate and the Annual Maintenance Alarm will begin to beep 3 times a minute every 4 hours. This is a reminder that it's time to re-order your lamps.

To re-order your annual replacement airocide PCO Lamps, contact your local Airocide Systems Distributor.

As mentioned above, the illuminating of the Red Light and the beeping is just a 30 day reminder to order your Replacement PCO Lamps. Once you have ordered your lamps, and while you are awaiting the arrival of these lamps, you can turn off the alarm (beeping) and indicator light by getting a small Phillips head screw driver or ball point pen, insert into the alarm reset access hole (see figure #1 on pg. 3), you will feel the button depress and then hold the reset button until a rapid beeping should begin (approximately after 5 seconds). Hold the button for another 7-10 seconds and release. At this point the alarm has been reset. While performing this process, if for some reason you do not hear the rapid beeping, after depressing the button for approximately 5 seconds, try again and make sure you are making solid contact on the button and that it is depressed for at least 5 seconds to hear the rapid beeping.

**NOTE**: The access hole/alarm is located on the upper left side of the RED LED. Once your new lamps have been installed, reset the timer to ensure the proper 11 month time period starts again from the time you replaced your PCO Lamps.

**NOTE**: Because the expected life span of the HD-25000 proprietary lamps used in systems is approximately one year, all the proprietary airocide PCO lamps must be changed every 12 months. In addition, the protective 4" filter needs to be changed approximately every 6 months*. This filter keeps dirt out of the HD-25000 reactor chamber. Failure to change this filter on a timely basis will reduce the unit's photocatalytic reaction and will cause the unit to not operate at its maximum capacity and efficiency. Contact Airocide Systems or your HD-25000 distributor to purchase your annual replacement lamp kit and replacement filter.

*Note: Depending on the particular dust load in a given facility, the filter may need to be changed more frequently.

## Changing the HD-25000 Proprietary Lamps

**Lamp Warning -**Use of any lamps other than those supplied by Airocide Systems may result in the malfunctioning of the HD-25000 unit, as well as compromise its pathogen killing effectiveness. Use of any other lamps will void warranty.

**Caution**: Be sure unit is unplugged before beginning service.

1) Disconnect the power source. Make certain all power is turned off to the unit.
2) Remove the cover to the unit by releasing the Quick Connect Fasteners.

**Note:** Release the fasteners by locating the four access holes along the four corners of the cover and simply inserting a screwdriver (or some other object that will fit into the access holes) and push in the release mechanism (see picture) for the fastener. Repeat this process for the remaining three fasteners (i.e. one on each end of cover).

**NOTE:** A "POP" will sound when the fastener has been released




Once all four fasteners have been released, remove the cover from the unit and set aside.

**Important:** When attaching the cover back onto the unit, simply align each corner of the cover with the unit, then, press down on each corner, when done correctly, you should hear a "CLICK" noise when each of the fasteners is locked back in place Pull up on each corner. If one corner is loose, push down again until you hear the fastener "CLICK" into position.

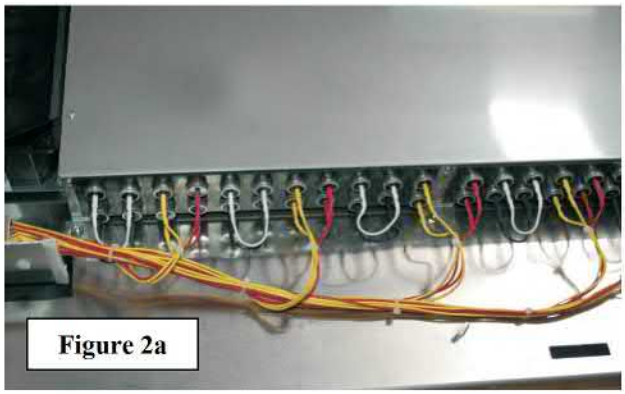
**NOTE: Prior to disconnecting any of the wiring harness, observe how the unit is currently wired. See Fig. 2a on this page. Here are a few helpful tips.**

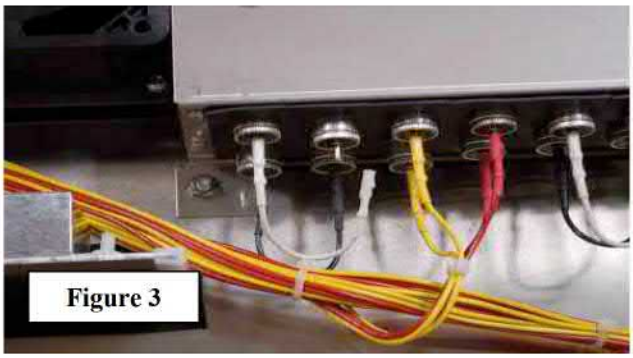
- Each ballast will run a group of 4 lamps (this group of 4 consists of 2 sets of 2 lamps which will be explained below).
- Each set of ballast will have a total of 4 wires coming off its outlet side – 2 red wires and 2 yellow wires. **See figures 3, 4, & 5 on page 7 and wiring diagram on page 10.**
- Each set of 2 lamps will have (1) yellow wire going to one lamp and (1) red wire going to the second lamp. These 2 lamps are then connected via a small jumper wire (either white or black – these jumpers are interchangeable). **See wiring diagram on page 10.** Repeat the above for the second set of 2 lamps. Once completed, you have a group of 4 lamps wired into (1) ballast.

**NOTE**: Airocide Systems recommends that you replace 4 lamps at a time. This will help to ensure that the replacement lamps are wired correctly.

3) Starting at the end closest to the fan – take the first group of 4 lamps and disconnect the white and black jumpers. Then, on the other side of the lamp, disconnect the red and yellow wires. **See Figures 2a, 3, & 4 below.**

**NOTE:** To aid in removing the lamp, wet the grommets with a small amount of tap water or a cotton ball or swab



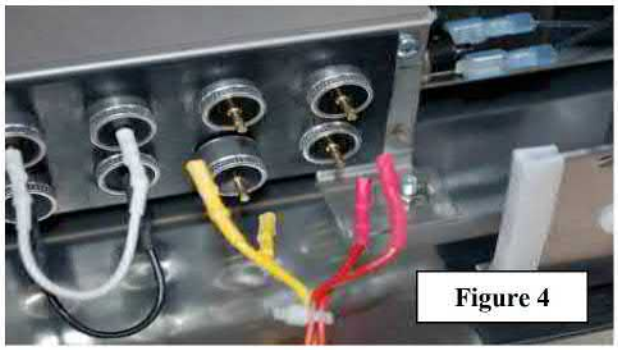


Figure 4

4) Gently remove each of the group of 4 lamps (total of 20 lamps for this model) by grasping the metal end on each lamp, and firmly sliding it out of the rubber grommet. **See figure 5 below.**

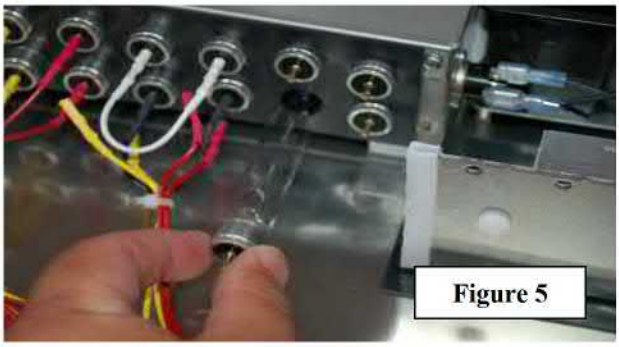


Figure 5

5) Place the old lamps to the side out of the way.

**NOTE:** Using the wet cotton swab (from above), slightly moisten the ends of the new lamps prior to inserting into the rubber grommets.

6) Insert (4) new HD-25000 proprietary lamps (provided by manufacturer) into the rubber grommet in the reactor bed.

7) Re-connect all wires that were disconnected in step #3 above.

8) Repeat the above steps for the remaining groups of lamps.

9) Reinstall cover.

10) Once all lamps have been replaced (totaling 20 lamps for this model), take all the old lamps and discard according to your local regulations, which pertain to disposal of UV and related lamps.

11) Turn the power back on.

12) Now that the new PCO Lamps have been installed – we want to have the PCO Lamp Replacement timer re-set in order to properly alert again in exactly 11 months. To reset the timer by follow the steps listed under "Maintenance" on page 5.

13) Unit is now ready to operate.

# Filter Replacement Instructions

Please note that the 4" protective filter should be replaced approximately every 6 months*. The purpose of this protective filter is to keep dust/dirt out of the HD-25000 reaction chamber. Failure to change this protective filter will cause the HD-25000 unit to not work at maximum capacity and efficiency. Additionally, failure to change out this protective filter per the recommended manufacturer schedule, could lead to a "clogged" filter which can then cause the unit's fan to pre-maturely burn out.

*Note: Depending on the particular dust load in a given facility, the filter may need to be changed more frequently.

1. Turn the unit(s) off.

2. Remove, but do not discard the (2) screws that hold the Filter Door closed. **See image below.**




3. Swing the door open and remove the filter by pulling it straight out and discard. **See image top of this page**




4. With the new filter in hand, take note that the air-flow arrow points down.




**NOTE: Air-Flow Arrow points down. See image above.**

5. Insert filter completely making sure it is flush with the edge of the intake cover.

6. Swing the door closed and reapply the (2) screws being careful not to over tighten.

7. Turn unit(s) back on.

# Limited Warranty

Airocide Systems offers five years from date of invoice limited warranty on the material and workmanship of all metal, plastic and electrical components of this system, not to include lamps, labor, or returned freight charges. This warranty does not cover loss of or damage to any parts of this system not installed in accordance with the furnished installation and maintenance instructions. At its option, Airocide Systems will repair or replace any components, which upon inspection Airocide Systems finds to be defective. Airocide Systems will only repair or replace components if the components have been installed in accordance with the furnished instructions and that there have been no misuse or negligence. Use of any lamps other than those provided by Airocide Systems may result in the malfunctioning of the HD-25000 unit, as well as compromise its pathogen killing effectiveness. Use of any other lamps will void warranty. If the protective filter, referenced in this manual, is not changed out on a timely basis and/or the customer uses a replacement filter that was not purchased thru the manufacturer of HD-25000 and either of these events causes the unit's fan (or any other component) to prematurely fail – these failed components will not be covered under the

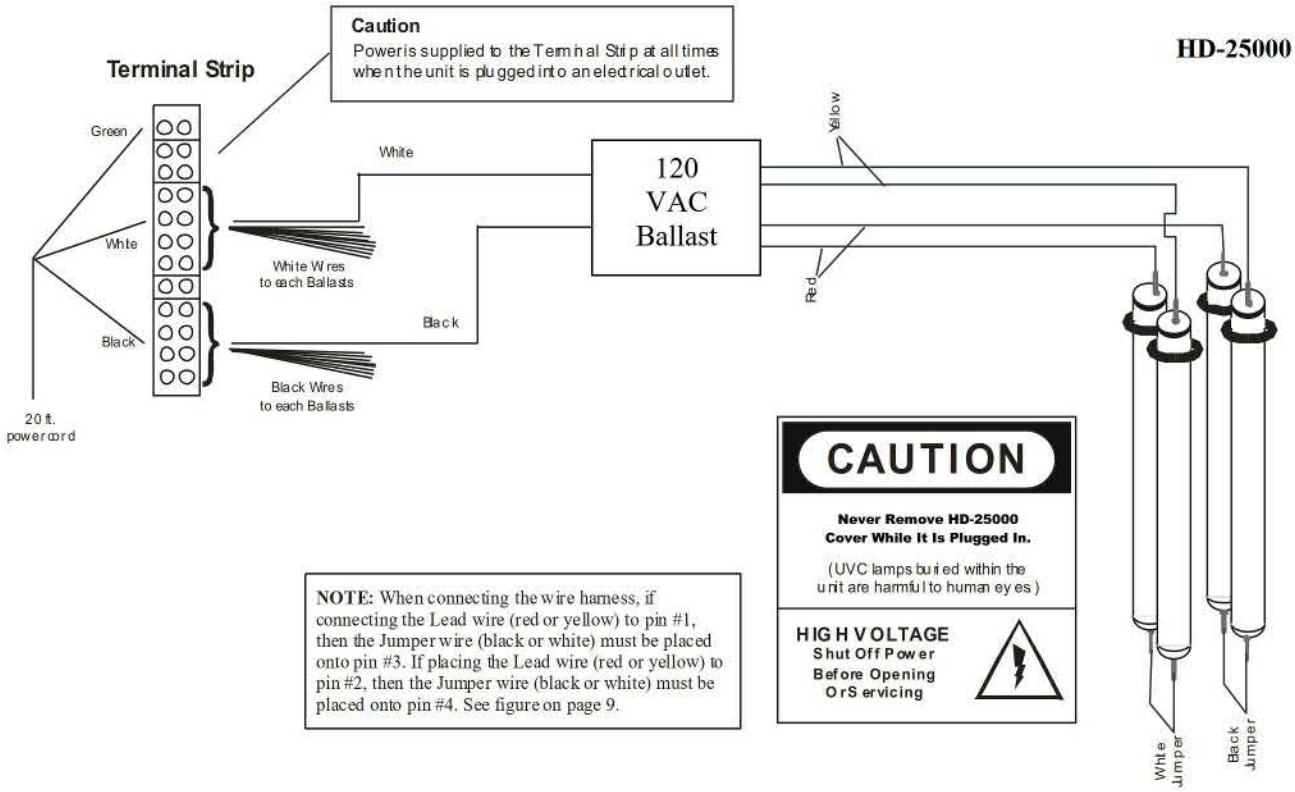
# Specifications

### SPECIFICATIONS HD-25000

| | |
|---|---|
| **Power Cord Length** (Custom Lengths Available) | 9 Ft. |
| **Power** (Pre-Set / Non-Switchable) | 120 Volt / 220 Volt |
| Recommended Available Amps | 2 Amp / 1 Amp |
| **Warranty** | 5 Years |

| | |
|---|---|
| **Unit Dimensions** | 27.5" x 18.5" x 9" (.699 M x .476 M x 0.139 M) |
| **Unit Dimensions With** Shipping Box | 33" x 24" x 13" (.838 M x .609 M x 0.330 M) |
| **Unit Weight** | 36 lbs (16.329 KG) |
| **Shipping Weight** (Excluding Pallet Weight If Used) | 44 lbs (19.958 KG) |

# Wiring Diagrams

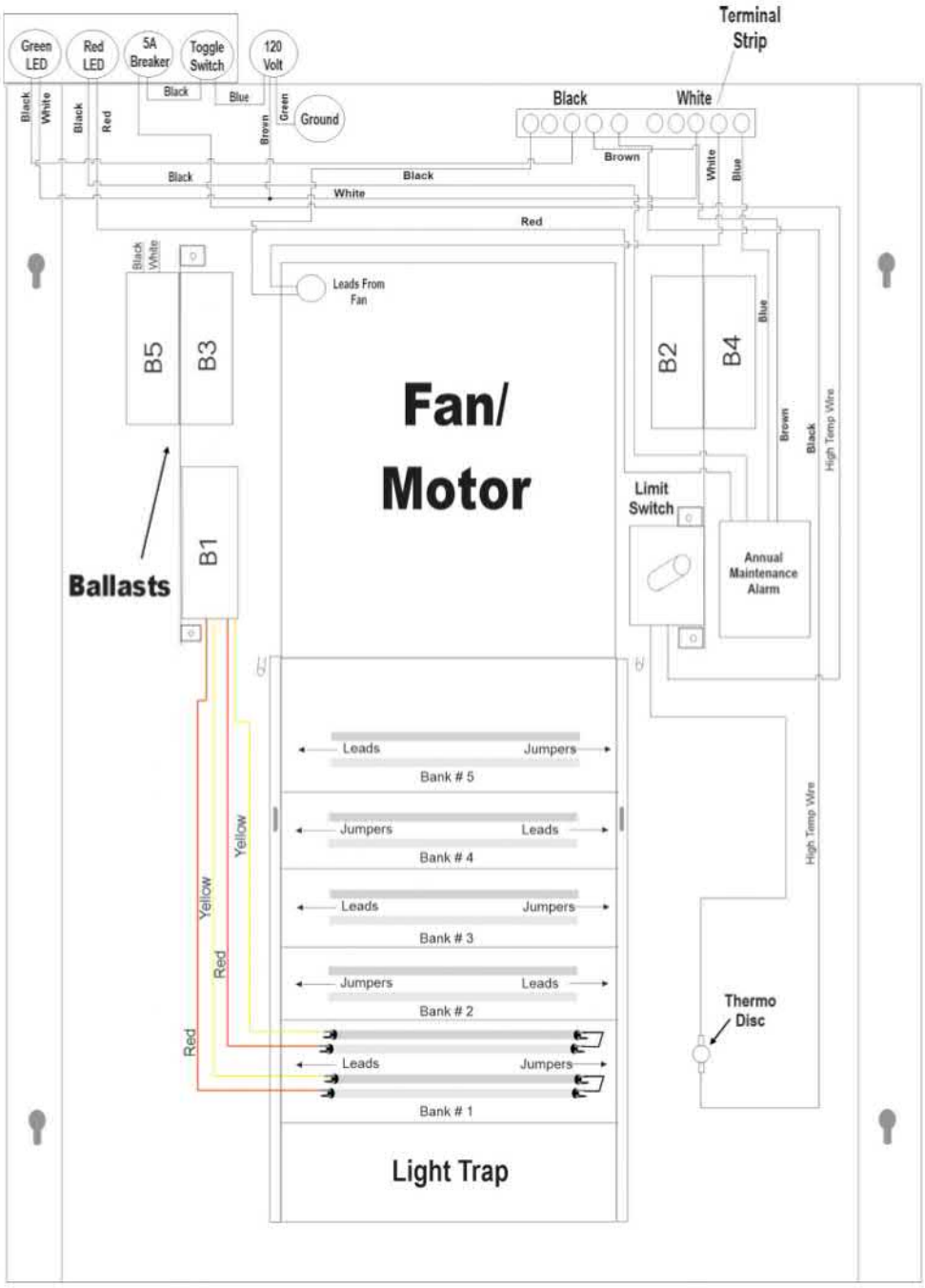



**Example of 1 ballast supplying 4 HD-25000 proprietary lamps.**

* This is also available in 220 VAC version.

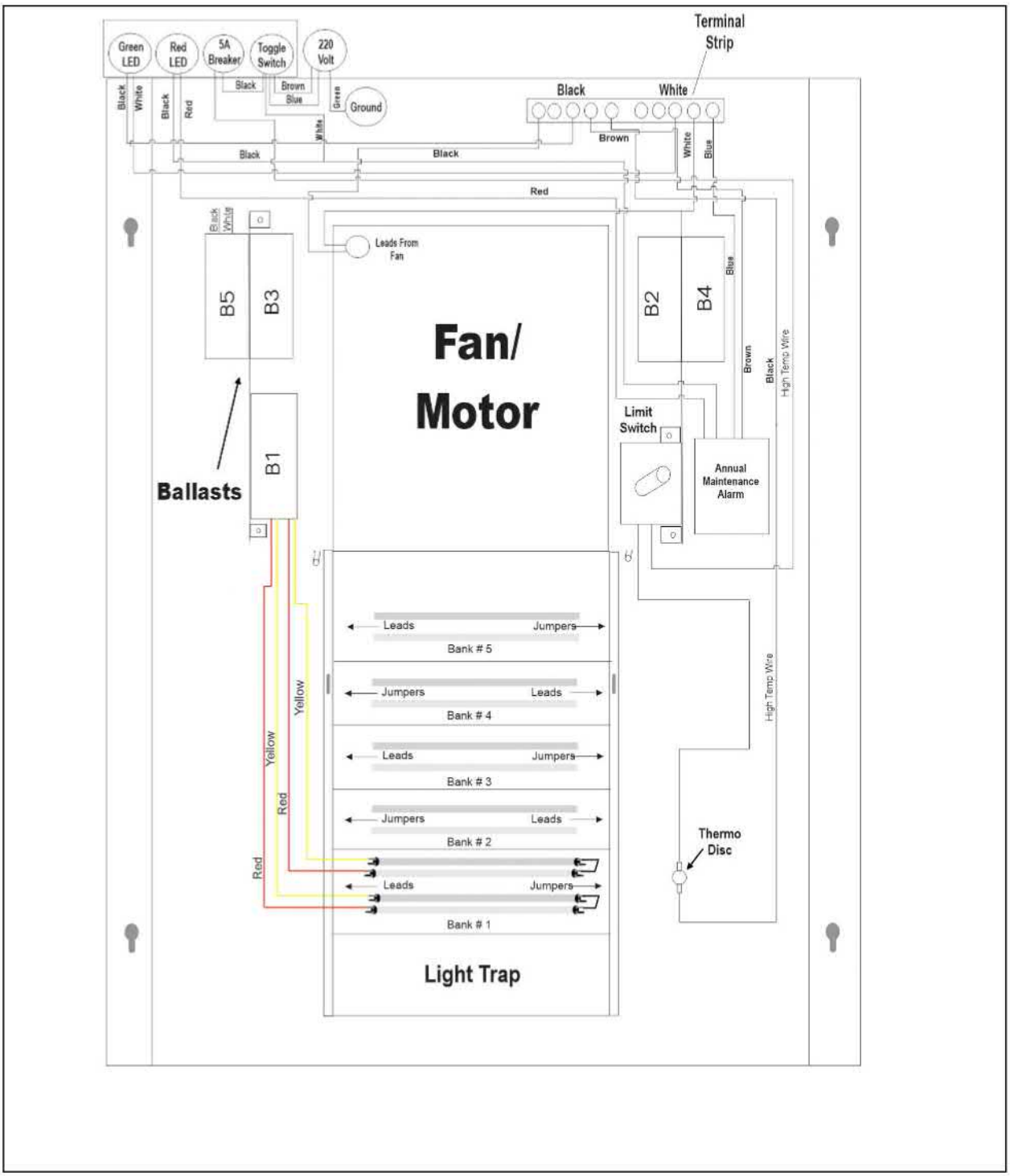
# HD-25000 Wiring Diagrams – 120 Volt

## HD-25000 Wiring Diagram – 120 Volt



# HD-25000 Wiring Diagrams – 220 Volt

## HD-25000 Wiring Diagram – 220 Volt



# Filter Replacement Reminder

On behalf of Airocide Systems, we would like to thank you for the purchase of your new HD-25000 unit(s).

The protective 4" filter needs to be changed approximately every 6 months*. This filter keeps dirt out of the HD-25000 reactor chamber. Failure to change this filter on a timely basis will reduce the unit's photocatalytic reaction and will cause the unit to not operate at its maximum capacity and efficiency.

Attached below is a schedule for you to fill in at your convenience that will help keep track of your filter change. If you have any questions regarding the unit(s) or the filter, do not hesitate to contact the number at the bottom of the page.

*Note: Depending on the particular dust load in a given facility, the filter may need to be changed more frequently.

| Event | Replacement Date |
|---|---|
| Purchase of the HD-25000 Unit | |
| Filter Replacement | |
| Filter Replacement | |
| Filter Replacement | |
| Filter Replacement | |
| Filter Replacement | |

# Maintenance Replacement Reminder

On behalf of Airocide Systems, we would like to thank you for the purchase of your new HD-25000 unit(s).

Please note that every 12 months, the lamps inside your HD-25000 unit(s), need to be replaced to ensure the unit continues to function properly and eliminates airborne organics like Molds/Fungus, Bacteria, Viruses, allergens, and VOC's.

Attached below is a schedule for you to fill in at your convenience that will help keep track of your annual lamp replacements. If you have any questions regarding the unit or the lamp replacement kits, do not hesitate to contact the number at the bottom of the page.

| Event | Replacement Date |
|---|---|
| Purchase of the HD-25000 Unit | |
| Kit Replacement 1 (12 months from purchase) | |
| Kit Replacement 2 (24 months from purchase) | |
| Kit Replacement 3 (36 months from purchase) | |
| Kit Replacement 4 (48 months from purchase) | |
| Kit Replacement 5 (60 months from purchase) | |