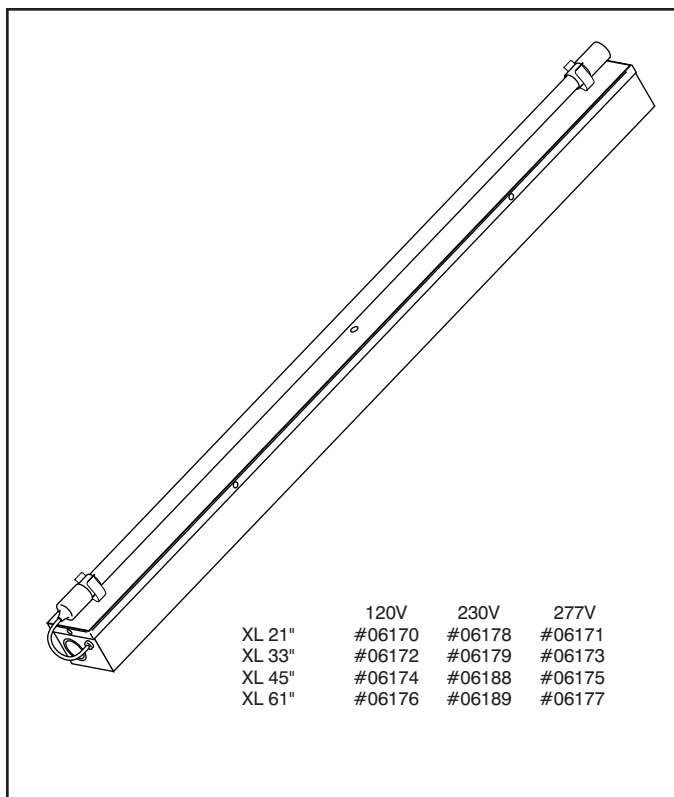


# BIO-FIGHTER® XL

Germicidal Ultraviolet Light

## 21", 33", 45", & 61" Installation & Operation Manual



### GENERAL

This product is designed to help disinfect the internal surfaces of heating, ventilation, and air conditioning systems. Bacteria and viruses that are in the air stream that passes through the system will also be reduced. The result is an improved level of indoor air quality for occupants and improved system hygiene.

The Bio-Fighter® emits ultraviolet(UV-C) radiation at a frequency of 254 nanometers, which has been proven effective in damaging the DNA of microorganisms such as viruses, bacteria, yeast and molds. This process either destroys the micro-organism or neutralizes its ability to reproduce.



PO Box 519  
Royse City, TX 75189  
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[Http://www.dustfree.com](http://www.dustfree.com)

### FEATURES

- Reduces or prevents mold growth on large commercial HVAC coils, allowing them to operate at peak efficiency. Also destroys bacteria, viruses, fungi, and yeasts.
- High output, long life UV-C lamps.
- Low maintenance and reduced costs.
- Available in 120V, 230V, or 277V models.
- Electronic ballast design.

### INCLUDED INSIDE BOX

- Bio-Fighter® XL ultraviolet light system
- UV lamp
- Installation & operation manual
- Registration card
- UV-C warning label for duct

### BEFORE INSTALLING

- Read all instructions carefully. Failure to do so could damage the equipment or cause harm to yourself or others.
- Acknowledge all warnings.
- Only qualified technicians should perform the installation.

### CAUTION

#### Professional Installation Only.

Only a qualified technician should install and maintain UV-C lighting or service equipment in which it is installed. Improper installation could cause human injury or equipment damage. Always disconnect electrical power prior to any HVAC maintenance. THIS INCLUDES FILTER MAINTENANCE.

**Base Dimensions**

MODEL	DIM. A	DIM. B	DIM. C
XL 21	24"	3.375"	2.5"
XL 33	36"	3.375"	2.5"
XL 45	48"	3.375"	2.5"
XL 61	64"	3.375"	2.5"

**Weight:**

- XL 21" - 3.9 lbs.
- XL 33" - 4.6 lbs.
- XL 45" - 6.4 lbs.
- XL 61" - 8.3 lbs.

**Electrical:**

120V, 50/60Hz, 1PH. Optional 230V. Optional 277V, 50/60Hz, 1PH.

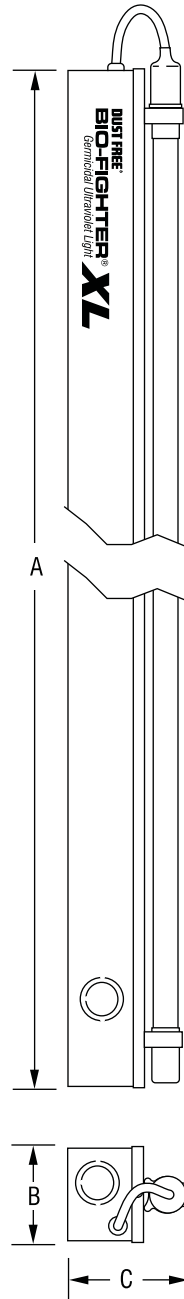
**Listings:**

FIFRA - File # 73316

(Federal Insecticide Fungicide Rodenticide Act)

U.S. Patent Nos. 5,334,347, 5,817,276, 6,245,293, 6,267,924, 6,280,686, 6,313,470, 6,627,000, 6,539,727, 6,932,494, 6,550,257.

Specifications subject to change without notice.



ETL LISTED  
 CONFORMS TO  
 UL STD 1598  
 CERTIFIED TO  
 CSA STD C22.2 NO. 250.0

**IMPORTANT:**

The device must be installed in compliance with all national and local electrical and mechanical codes. Failure to do so will void ETL safety listing and Dust Free® warranty.

**⚠ WARNING**

**UV Light Hazard.**

UV-C light can cause temporary or permanent loss of vision, and sunburn. To prevent exposure, do not install device in any applications that allows UV-C light to be visible after installation.

**⚠ CAUTION**

**UVC Light May Degrade Plastic and Rubber.** Shield exposed plastic drain pans, wire insulation, flex duct, or other plastic/rubber components from UVC light.

## UNPACKING THE BIO-FIGHTER® XL

The XL is packaged with a clear protective film covering the polished aluminum reflector. This film must be removed prior to operation. First remove the lamp from the lampholders and lay to the side. Then peel the film from the reflector.

## PLACEMENT OF THE BIO-FIGHTER® XL

Each foot of fixture length will irradiate a three square foot area. For example, one five foot Bio-Fighter® XL can irradiate 15 square feet of surface area. To maximize efficiency of the UV-C light, each fixture should be placed 18-22 inches from the surface to be irradiated.

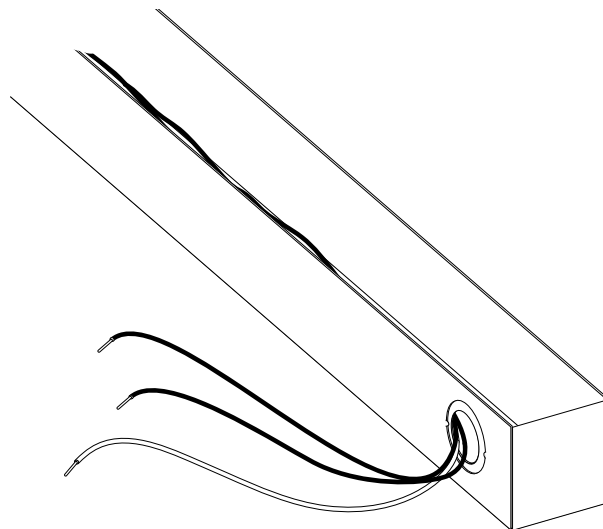
Ensure no plastic parts or wire insulation is exposed, and that wherever the unit is placed, no light can be seen after installation.

## INSTALLING THE BIO-FIGHTER® XL

Remove the lamp from the fixture and remove the cover. Mounting holes are pre-cut in each fixture making installation a bolt-on procedure using sheet metal screws or proper mounting hardware depending on installation. Uni-strut is commonly used to mount the unit.

## CONNECTING TO POWER

With cover removed, use a screwdriver to remove one of the unit knockouts. Locate the ends of the wires and push through this hole. Connect the black wires to proper power and the green wire to ground.



**Fig. 1** Remove a knockout and connect black wires to proper power and connect green wire to ground.

## SPECIAL INSTALLATION NOTES

- Do not install in closet return grille applications.
- Do not expose wiring or plastic parts to UV-C light.
- Do not install where UV-C light can be seen after installation.
- Do not install beneath a humidifier.
- If the UV device is installed on the inlet side (return air side) of a coil, make sure that the HVAC system is configured such that the blower is located between the return air filter and the inlet side (return air side) of the coil, such as would be found in a traditional up-flow, or horizontal furnace with the coil placed after the heat exchanger.
- If the UV device is installed near an air filter, check with filter manufacturer for UV-C resistance properties.
- If the desired UV installation location is intended to irradiate an air filter, to neutralize the microbiological matter on the air filter surface, such as would be found in the return air drop of a basement application or in the return plenum of a horizontal system in an attic; take precautions as described in note above, and make sure the UV fixture is placed on the return side of the filter. **DO NOT INSTALL THE UV FIXTURE ON EITHER SIDE OF THE FILTER IN HALL / CLOSET RETURN AIR APPLICATIONS.** (See ATTENTION! Warning sheet #212945-00).

### **⚠ WARNING**

#### **Electrical disconnect required.**

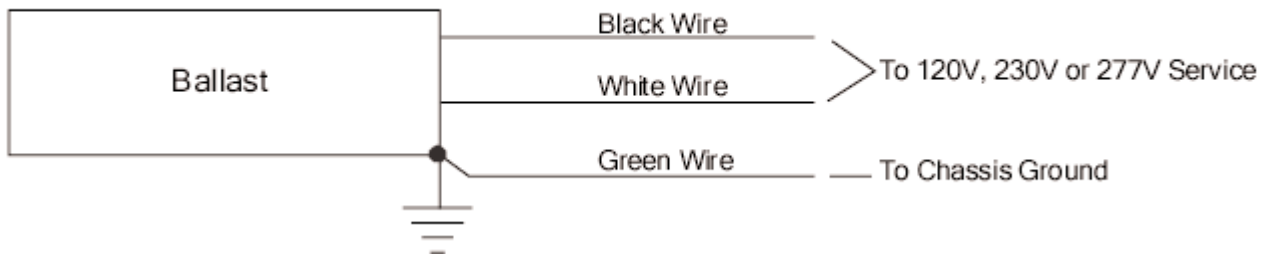
Areas where UV fixtures are installed must have access panel/door disconnect switches installed. Never view UV-C light without protective eyewear. See UV-C warning on page 2.

### **⚠ WARNING**

#### **Mercury Hazard. Do Not Break.**

Each UV-C lamp contains a small amount of Mercury. May cause redness or irritation. Use proper clean up techniques in case of breakage.

### Power Input Wiring Diagram



### TROUBLESHOOTING

Maintenance and troubleshooting should be performed by a qualified technician.

Device fails to operate.

1. Check proper power is being supplied to the device, and that the switch lights when unit is turned on.
2. Check that the lamp connector is securely attached to the lamp.
3. Check that ballast is receiving correct power. Replace ballast if necessary.
4. Check continuity of lamp filaments. (Replace lamp if necessary.)
5. Check that wires are properly connected to lamp and ballast.

### LAMP REPLACEMENT(Annually)

The lamp should be replaced annually even if it appears to be operating normally. UV-C energy production diminishes over time.

1. Obtain the correct replacement lamp for your model.
2. Disconnect power to the equipment. *Allow lamp to cool 10 minutes before touching.*
4. Disconnect the electrical connector to the lamp and remove the lamp from the lampholders.
5. Connect replacement lamp to electrical connector and place lamp in lampholders.
6. Reconnect power.
7. Verify operation.

### **⚠ WARNING**

#### **Burn Hazard.**

During replacement, allow bulbs to cool 10 minutes before removing them. Personal injury may result.

### LAMP DISPOSAL

Dispose of your spent UV-C lamps at your local recycling center. You may also send your spent lamps in the same container you received your replacement lamps to:

**Dust Free® Lamp Reclamation**  
**1112 Industrial Drive**  
**Royse City, TX 75189**

### PROPER CLEAN-UP TECHNIQUE IN CASE OF LAMP BREAKAGE

- Wear protective gloves, eyewear and mask.
- Sweep the broken glass and debris into a plastic bag, seal the bag, and dispose of properly. Contact your local waste management office for proper disposal.
- **Do not use a vacuum cleaner. Do not incinerate.**

### REPLACEMENT PARTS

Description	P/N
21" Replacement UV-C Lamp	06180
33" Replacement UV-C Lamp	06182
45" Replacement UV-C Lamp	06184
61" Replacement UV-C Lamp	06186
120V Replacement Ballast	06192
230V Replacement Ballast	06195
277V Replacement Ballast	06193

### **⚠ WARNING**

#### **Mercury Hazard. Do Not Break.**

Each UVC bulb contains a small amount of Mercury. May cause redness or irritation. Use proper disposal techniques in case of breakage.

## LIMITED LIFETIME WARRANTY

Dust Free, LP warrants this Bio-Fighter UV Light to be free from defects in materials and workmanship under normal use and service, for as long as it is owned by the original purchaser. This warranty does not cover UVC bulb(s), which carry a one (1) year warranty from the date of installation, or the ballast(s) which carry(s) a five (5) year warranty.

This warranty does not cover cosmetic damage, damage due to acts of God, damage as a result of handling or shipment, negligence, misuse, connection to improper voltage, improper maintenance, or abuse. This warranty is void if defect(s) result from failure to have this unit installed by a qualified, properly licensed, heating and air conditioning contractor in compliance with all local building and construction codes.

Dust Free, LP exclusive obligation under this warranty shall be to supply, without charge, a replacement for any covered component of the Bio-Fighter UV Light which is found to be defective within the parameters defined herein. Dust Free, LP reserves the right to replace or repair the defective part or component.

DUST FREE, LP SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation may not apply to you.) THE WARRANTIES SET FORTH HEREIN ARE EXCLUSIVE AND DUST FREE, LP EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, WHETHER WRITTEN OR ORAL, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, WORKMANSHIP, OR FITNESS FOR A PARTICULAR USE. If the limited warranty is void due to failure to use a qualified contractor all disclaimers of implied warranties shall be effective upon installation.

How to make a warranty claim or have questions answered:

Should you have a warranty claim or questions about the warranty policy, contact the distributor or dealer from which you purchased the product. Proof of original purchase and proof of identity that the original purchasing party is filing the claim is required in order to initiate a warranty claim. Defective parts must be returned no later than thirty (30) days after the failure to the installing contractor together with the model number, serial number, and date of installation. All service and removal must be performed by a licensed HVAC contractor. You must pay shipping charges and all other costs of warranty service. Warranty is only valid the United States and Canada.

THIS WARRANTY SHALL NOT OBLIGATE THE MANUFACTURER FOR ANY LABOR COSTS AND SHALL NOT APPLY TO DEFECTS IN WORKMANSHIP OR MATERIALS FURNISHED BY THE INSTALLING CONTRACTOR AS CONTRASTED TO DEFECTS IN THE GERMICIDAL LIGHT ITSELF.

NOTE: Do not return any products or parts to the factory without a factory issued Return Authorization number issued by the Dust Free, LP customer service department.

In the event you have any questions concerning the use and care of this product or this warranty which have not been answered to your satisfaction by the distributor or dealer, please call or write the factory.

**Dust Free®**  
**PO Box 519**  
**1112 Industrial Drive**  
**Royse City, TX 75189**  
**1-972-635-9565**