

**lakeair**<sup>™</sup>  
Clean Air ~ Everywhere

Warning this product utilizes  
Germicidal UV which maybe  
Dangerous

OPERATING AND SERVICE  
INSTRUCTIONS

*Proudly Made  
in the U.S.A.*



**LA2-RC2-HUV**

**lakeair**<sup>™</sup>

RK Ventures Inc

[www.lakeair.com](http://www.lakeair.com)

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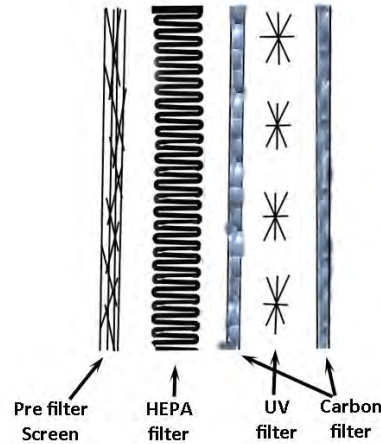
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# I. INTRODUCTION

## A. How the LakeAir LA2-RC2-HUV works

In business establishments, millions of airborne particles are continually being circulated through the interior environment. A LakeAir unit removes these smoke, dust dirt, and pollen particles with an air purification process that works this way:

1. The powerful reverse curve blower draws dirt laden air through the PREFILTER SCREEN which collects large lint particles.
2. Then the Commercial HEPA filter traps dirt, smoke, mold, bacteria and viruses. These particles can be as small .1 Micron.
3. An Activated Carbon filter then removes odors, gases and harmful VOCs.
4. The virtually clean air then passes through an intense UV Field for Microbial Sanitation. The UV Rays will kill living organisms that may have made it through The previous filters
5. A second carbon filter absorbs any remaining gases.
6. The cleaned and purified air is now discharged to recirculate through your establishment.



## B. SPECIFICATIONS

Input Voltages	Model LA2-RC2-HUV
	120 VAC 60 Hz
	5.1 Amps

Capacity 300-800 CFM

Cabinet Dimensions (H X W X D) 21" X 22" X 19"

Approximate Shipping Weights 105lbs.

## II. INSTALLATION

### CAUTION:

All external wiring must comply with applicable codes and local ordinances.  
DO NOT connect power supply until air cleaner has been installed and/or checked.

### A. HOW TO DETERMINE THE NUMBER OF ELECTRONIC AIR CLEANERS REQUIRED

To determine the number of HEPA / UV units required for your business establishments, use the method below as a guideline. If you have any questions, call the LakeAir HOTLINE at 1-800-558-9436 and we will help you.

### METHOD: UNITS PER ROOM VOLUME AND AIR CHANGES PER HOUR

1. Calculate the volume of the room. Volume (cubic feet) = Length x Width x Height
2. Determine the circulation of the air needed, based upon 6 air changes per hour for average conditions, and 10 ACH for more heavily infected areas to reduce airborne microorganisms .
3. The LA2-RC1-HUV uses a variable speed controller to provide between 300 and 800 cubic feet/minute. You should calculate the cubic feet of air in the area to be cleaned, and then use a figure of 6 air changes/hour in that area for average cleaning, and 10 air changes per hour for more heavily infected conditions. You should remember that the slower the air passes over the surface of the air cleaner, the more efficiently the unit will operate. Therefore, when calculating the number of units needed, take into account air flow and cleaning capacity.

### EXAMPLE #1

ROOM DIMENSIONS: 50' X 25' X 10' CEILING  
TYPE OF AREA: Health Facility Waiting Area

AIR CHANGES DESIRED: 10 HOUR

STEP 1 - VOLUME = 50' X 25' X 10' = 12,500 CU. FT.

STEP 2 - VOLUME TO BE CLEANED = 12,500 CU. FT. X 10 AIR CHANGES/HOUR

STEP 3 - VOLUME/MINUTE TO BE CLEANED =  $\frac{125,000 \text{ CU.FT./HOUR}}{60,000 \text{ MINUTES/HOUR}}$  = 2083 CU.FT. MIN.(CFM)

STEP 4 - NUMBER OF UNITS NEEDED = 2083 CFM ÷ THE CFM OF THE CHOSEN UNIT

(MODEL LA-2000) =  $\frac{2083 \text{ CFM}}{800 \text{ CFM}}$  = 2.6 OR 3 UNITS

## B. PROPER LOCATION OF MODEL LA2-RC2-HUV HEPA / UV Air Purifier:

Locate Electronic Air Cleaners consistent with existing air circulation in the room so that the heating and air conditioning systems are complemented by the air cleaners.

Air cleaners must be mounted to strong structural parts of the ceiling with adequate head clearance, and should be a minimum of 10 feet from air intake or exit ductwork

The primary objective HEPA / UV air purifiers is to interrupt the transmission of air borne infectious pathogens within the indoor environment. These models should be installed above the heads of room occupants if possible. This is meant to minimize UVC to occupants of the room.

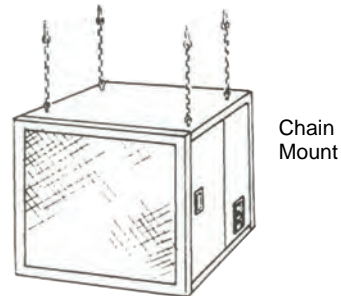
UVC placement include congregate spaces, where unknown and potentially infected persons may share the same space with uninfected persons (e.g., a medical waiting room or homeless shelter). Common corridors potentially used by unknown infected persons in a medical facility would also benefit from HEPA /UVC protection.

## C. MOUNTING YOUR LakeAir MODEL LA2-RC2-HUV

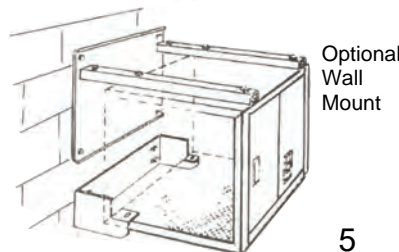
LakeAir provides a 8' cord with every air cleaner, but it is the responsibility of the purchaser to provide adequate outlet which meets local codes. An approved extension cord may be used if it meets local and national codes.

The LA2-RC2 was designed with 4 mounting holes on the top and the bottom of the unit. LakeAir provides eye bolts with the units so they may be hung by chains from supporting beams on the ceiling. If you choose the optional wall mount for the LA2-RC1, see the instruction sheet included with the Model 10009 Wall Mount. To mount using the included eye bolts, follow the instructions below. The unit may be hung so the air flow is from the left to the right, or from the right to the left depending on the needs of the customer.

1. Choose an area which compliments the rest of the air flow in the room before you mount the air cleaner.
2. Make sure you have correct lengths of chain, and that it is capable of sustaining the weight of the unit. Standard hardware item, link chain with a working load of at least 100 lbs. Also make sure you have mounting lag screws or equivalent fasteners to attach the chain to the ceiling beams or studs. In some instances, it may be necessary to construct a mounting frame to properly suspend the unit.
3. Locate the ceiling studs or beams and attach the correctly sized chain. Chain length should be such that it will not allow the LA2-RC2 to have a floor to bottom height which would pose a hazard to room occupants. LakeAir recommends a minimum height of eight feet from floor to bottom when chain hung.



Chain Mount



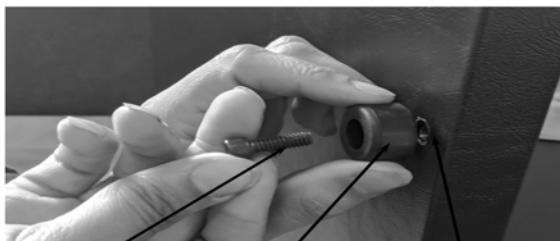
Optional Wall Mount

4. After securing the chain to the ceiling studs or beams, use 4 “S” hooks on the chain to mount the air cleaner cabinet to the chain. (For easier installation, remove the filters to make the cabinet lighter when mounting)

5. After making sure all parts are securely replaced into the unit, you may now test the operation of the unit by plugging it into an outlet and turning the air cleaner on.

### Cart Mounting of LA2-RC2-HUV

This unit is designed to be mounted above the heads of occupants in the room. In some cases it may be necessary to mount this unit to a cart. The LA2-RC2-HUV has 4 1/4-20 nut inserts on the bottom of the unit. Using a 3/4" 1/4-20 screw, attach the air purifier to a sturdy cart through the cart top using rubber feet as a spacer. position unit so intake and exhaust do not point at room occupants.



1/4 -20 Cap Screw   Rubber foot   Nut insert in bottom of unit

### Operating Instructions

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## Caution Ultraviolet Energy! Protect Eyes and Skin

Before operating this unit read all instructions. Be sure you follow all safety precautions listed in this manual and on safety warnings on the unit. Never run this unit without carbon filters in place. Do Not attempt to bypass safety switches! The unit door must be closed and door safety shield must be in place to operate.

1. Turn the unit on by turning the variable speed control clockwise. Note that the unit speeds goes from off to Turbo and then lower as the knob is turned clockwise.

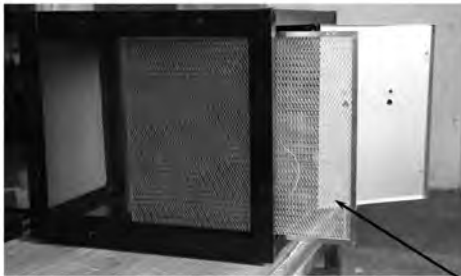
2. Indicator light will illuminate during any of the “on” modes. This indicates there is electrical power to the unit.

## IV. Filter and UV Bulb Replacement

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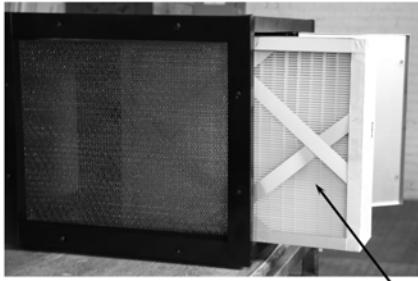
**NOTE:** FAILURE TO Change Filters and Bulbs May Create a Hazard

Pre Filter	Wash every 4 month replace annually
HEPA Filter	-Every 6 months
Carbon Filter	-Every 3 months
UV Bulbs	-Annually



Pre filter sits in the first channel. It should be cleaned  
Every 4 months and replaced annually

## Filter and Bulb Replacement



The HEPA Filter sits next to the prefilter in the first main filter slot. It should be replaced every 6 months

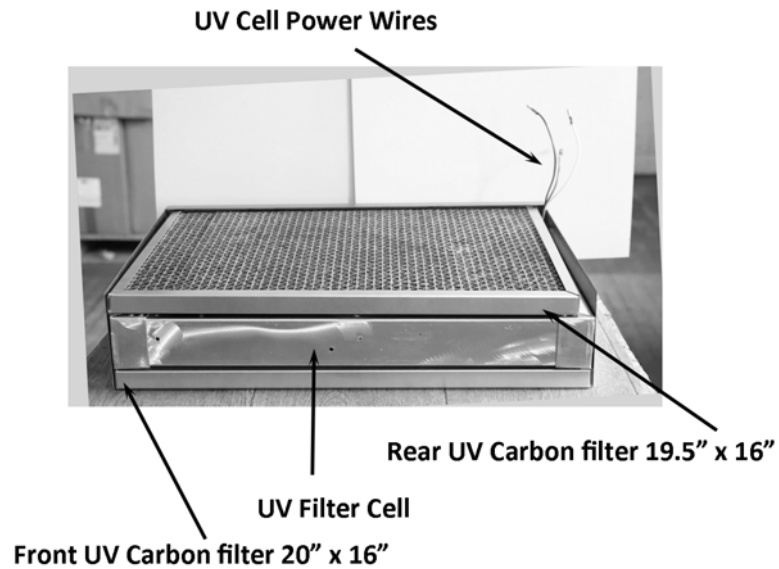
## Carbon Filter Replacement

The Activated Carbon filters play 2 vital rolls in the LakeAir LA2-RC1-HUV model. First they absorb harmful VOCs and they act as an UV Ray Shield. NEVER run the UV unit without Carbon filters installed. Serious damage can happen if people are exposed to unshielded UVC rays.



The carbon filters surround the UV Cell inside the UV Chamber. The UV chamber mounts in the air purifier in filter slot 2 after the HEPA filter and before the UV fan baffle.



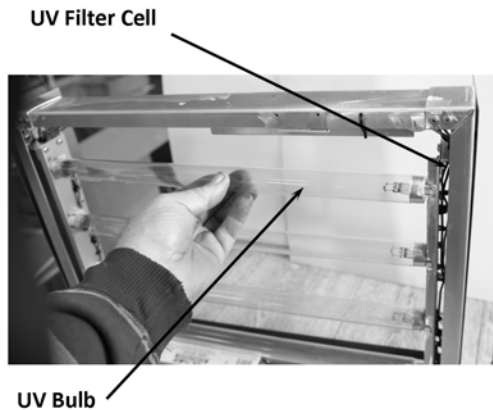


Place the Rear UV Carbon Filter on the rear side of the UV Cell. This is the side where the power wires exit the UV Cell. Place the front UV Carbon on the intake side of the UV Cell. These filters must sandwich the UV Cell to provide extra protection from UV Rays. Never operate the UV Cell without the Carbon filters. Harmful UV rays will be allowed to escape the unit.

Re-assemble the UV chamber and place the completed chamber with both UV Carbon filters and UV cell next to the HEPA filter as shown . Note: the rear UV carbon filter is 1/2 inch shorter to allow clearance for the power wires from the UV Cell.

**Note: Replacement Carbon Filters are ordered as a kit. It is vital that these filters be replaced every 3 months. UVC radiation may cause old filters to fail thereby exposing personnel to harmful UVC Rays.**

## UV Bulb Replacement



The UV Bulbs have a useful life of about 9000 hours. They should be replaced every year, While the bulbs may continue to function, they will do so at a less efficient rate. To remove the bulb rotate them 90 degrees and remove from the UV Cell Fixture. Reconnect power wires and slide UV Cell Fixture back into the air purifier.

### Lamp and Ballast Disposal

UVC lamps should be treated in the same manner as other mercury-containing devices, such as fluorescent lamps. Some lamps may need to be treated as hazardous waste and not discarded with regular waste, although low mercury lamps may be an exception; however, check state and local codes for proper determination. The U.S. EPA's universal waste regulations allow users to treat mercury lamps as regular waste for transport to a recycling facility (EPA 2018). This simplified process was developed to promote recycling. The National Electrical Manufacturers Association maintains an online list of companies claiming to recycle or handle used mercury lamps (NEMA 2009). The most stringent of local, state, or federal regulations for disposal should be followed.

## **V. REPAIR AND MAINTENANCE**

### **A. OWNER'S CHECKLIST & RETURN PROCEDURE.**

Before attempting any repairs on your Electronic Air Cleaner, check the following items first.

1. Check fuse.
2. Check for electrical power to unit.
- 3.

Repair work should only be performed by a trained, experienced serviceman. Check with your dealer for the repair station in your area. If unable to locate a qualified serviceman, contact the factory at the address or telephone number listed below for authorization to return the unit to the factory. **DO NOT RETURN UNIT TO FACTORY WITHOUT AUTHORIZATION.**

RK Ventures Inc.  
1509 RAPIDS DRIVE  
Racine WI 53404  
1-800-558-9436

FAX            262-632-3144

Web site: [www.lakeair.com](http://www.lakeair.com)

## **B. TROUBLE SHOOTING ELECTRONIC AIR CLEANERS**

**CAUTION:** During repair procedures dangerous line voltage circuits are exposed; use care to avoid the hazard of electrical shock or possible damage to the unit.

The following examples are used to aid the serviceman in trouble shooting any malfunction in the Electronic Air Cleaner quickly and properly.

Refer to electrical schematics for LA2-RC1-HUV.

Measure appropriate voltage at the indicated number of test points.

### **INDICATOR LIGHT DOES NOT WORK**

1. Check fuse.
2. Plug power supply into the proper receptacle.
3. Measure line voltage at power source (120V depending on unit).
4. Replace light.

### **UV Cell Malfunction**

1. Check all bulbs are inserted properly.
2. Change bulbs around to determine if the issue is with a bulb or particular socket
3. Check for wires that may have come loose.
4. Inspect ballast for signs of burn or failure
5. Always wear protective clothing when testing UV Cell

### **Blower DOES NOT RUN**

1. Check power source and fuse.
2. Measure line voltage at switch in and out.
3. Measure line voltage at fan motor.
4. Replace blower.



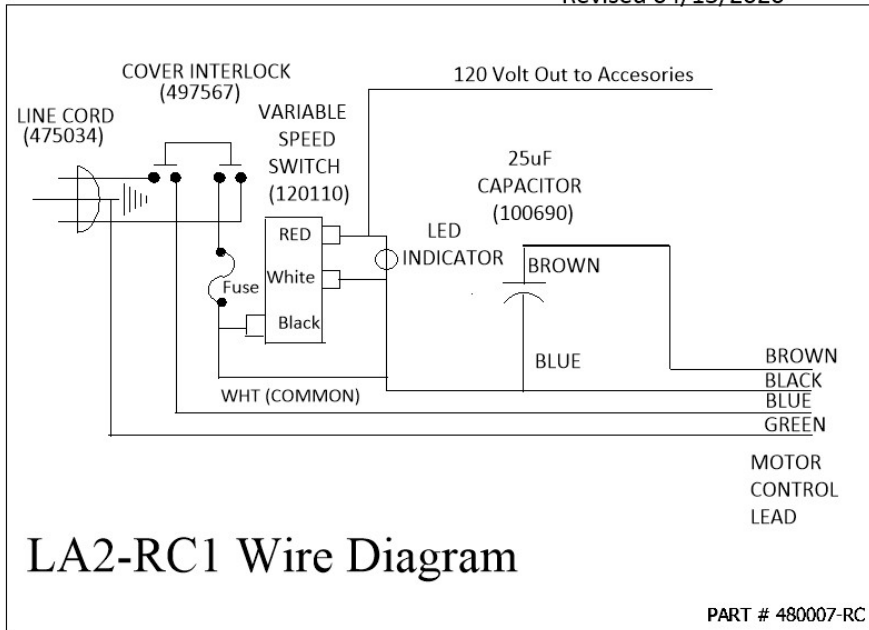
C. REPLACEMENT PARTS LIST - MODELS LA2-RC1-HUV

<b>Part #</b>	<b>Description</b>
<b>300013</b>	<b>Reverse Curve Blower</b>
<b>100450</b>	<b>Variable Speed Controller</b>
<b>497592</b>	<b>LED Indicator</b>
<b>497546</b>	<b>Fuse Box</b>
<b>497657</b>	<b>Safety Interlock Switch</b>
<b>100690</b>	<b>Blower Capacitor</b>
<b>499300</b>	<b>UV Filter Cell</b>
<b>120121</b>	<b>UV Ballast</b>
<b>400270</b>	<b>UV Tube (G15T8)</b>
<b>810301</b>	<b>Activated Carbon Filter Kit</b>
<b>285300</b>	<b>UV Cell Chamber shell</b>
<b>499081</b>	<b>HEPA 4 Filter</b>
<b>286420</b>	<b>UV Chamber Complete</b>
<b>475003</b>	<b>Cord Assembly</b>
<b>490051</b>	<b>Pre-Filter</b>
<b>100320</b>	<b>Eyebolt Kit</b>

# ELECTRICAL SCHEMATIC MODEL

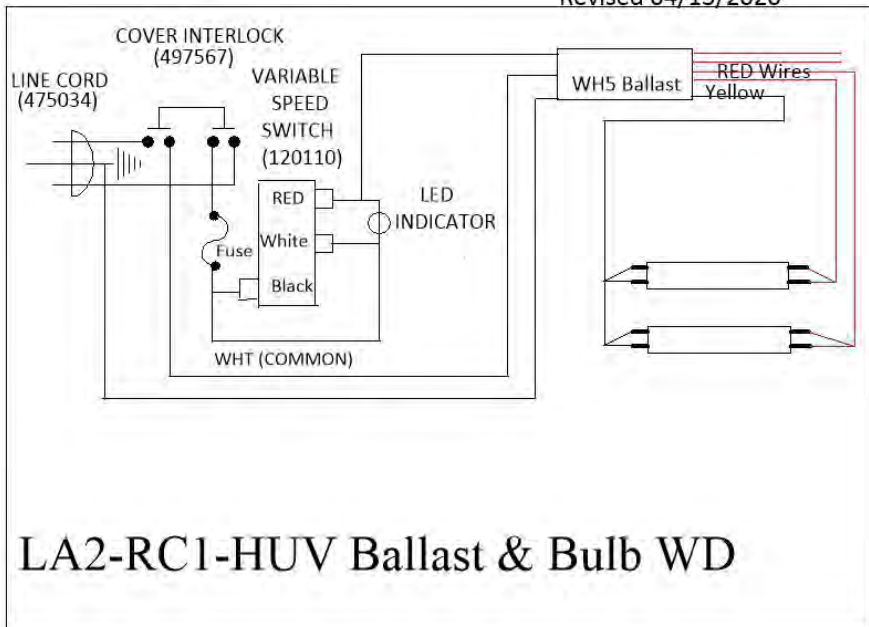
## LA2-RC1-HUV & LA2-RC2-HUV

Revised 04/13/2020



LA2-RC1 Wire Diagram

Revised 04/13/2020



LA2-RC1-HUV Ballast & Bulb WD

## Special Warnings

# Caution: Ultraviolet energy. Protect eyes and skin.

This product utilizes UVC Bulbs to provide microbial sanitation. The light waves are invisible to the human eye but are extremely dangerous. This unit must be run with all safety devices and switches in working order. Do NOT By-Pass any safety measures.

This unit must be run with both carbon filters in place. The carbon filters act as an additional shield from wayward UVC rays.

### **Hazards of Ultraviolet Radiation to Humans**

UVC is a low-penetrating form of UV compared to UVA or UVB. Measurements of human tissue show that 4 to 7% of UVC (along with a wide range of wavelengths, 250 to 400 nm) is reflected ( and absorbed in the first 2  $\mu\text{m}$  of the stratum corneum (outer dead layer of human skin), thus minimizing the amount of UVC transmitted through the epidermis

Although UV is far more energetic than the visible portion of the electromagnetic spectrum, it is invisible to humans. Therefore, exposure to ultraviolet energy may result in transient corneal inflammation, which can go unnoticed.

Ocular damage generally begins with photokeratitis (inflammation of the cornea) but can also result in photokeratoconjunctivitis (inflammation of the conjunctiva [ocular lining]). Symptoms, which may not be evident until several hours after exposure, may include an abrupt sensation of sand in the eyes, tearing, and eye pain, possibly severe. These symptoms usually appear within 6 to 12 h after UV exposure, and resolve fully within 24 to 48 h. Acute overexposure to UVC radiation may cause some incapacity due to eye discomfort, but this generally abates after several days, leaving no permanent damage.

## **LA2-RC2-HUV Unit Disposal**

**When the useful life of your LA2-RC2-HUV unit has come to an end great care should be taken in disposing of the unit. Before disposing of the unit be sure all UV bulbs and ballasts have been removed and disposed in accordance with local regulations.**

**To be sure no one can accidentally hurt themselves by turning the unit on, please cut the power cord.**

**LakeAir products are made from high quality materials which can be recycled easily. Remember to recycle parts to help lower the carbon foot print on the planet**



## LakeAir ELECTRONIC AIR CLEANERS 7 YEAR LIMITED WARRANTY

The complete LakeAir Electron Air Cleaner is warranted by RK Ventures, Inc. to the original purchaser to be free from defects in material and workmanship under normal use and service for a period of one year from the date of purchase. In addition, RK Ventures, Inc. warrants the frame, skins, wiring in the LakeAir Electronic Air Cleaner for an additional six (6) years or a total of seven (7) years from the date of purchase to the original purchaser. LakeAir's liability is to be limited to re-pairing or replacing such products during the warranty period at its option, provid-ing the product is sent prepaid to LakeAir International, Inc. or an Authorized Ser-vice Center and is deemed to the satisfac-tion of RK Ventures, Inc. to be defective in any part or portion.

This warranty is in lieu of any other warranty expressed or implied and of all other obligations or liabilities in connection with the sale of the described LakeAir Electronic Air Cleaner. In no case will any claim for consequential damages or labor expenses be allowed. This warranty does not apply to a LakeAir Electronic Air Cleaner or any part thereof which has not been operated in accordance with the operating instructions herein contained; where components or other accessories not compatible with the LakeAir Electronic Air Cleaner have been used or at-tached to it; which has been subject to accident, unauthorized alteration, abuse, damage by flood, fire or acts of nature.

### User's Responsibility

Please Note: Your warranty is subject to user responsibility. Some items and some conditions resulting from causese other than manufacturing defects are the responsibility of the user of the LakeAir Electronic Air Cleaner and are not covered by the Warranty. These are:

1. To operate and maintain according to instructions.
2. Periodic checking and cleaning of unit. Failure to clean will void warranty.
3. Proper use of controls must be maintained or warranty will be voided.
4. Damage to unit from unsatisfactory operation because of blowing fuses, inadequate electrical service or operation on power supply other than that indicated on the rating plate, or incorrect electrical protection devices used.
5. Damage occurring during transportation or resulting from improper handling.
6. Damage due to accident or resulting from alteration or tampering.
7. Misapplication of product.



RK Ventures inc.  
1509 Rapids Drive  
Racine, WI 53404