

VENTILATION FAN WITH LED LIGHT AND HEATER

MODEL RAD80-DGL / RAD80ELED

Installation and Operating Instructions

IMPORTANT INSTRUCTIONS

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

1. Read all instructions before installing or using this heater.
2. Extreme caution is necessary when heater fan is used by or near unattended children, and / or persons with disabilities or limitations.
3. Do not operate heater if it malfunctions. Disconnect power at service panel and have heater inspected by reputable electrician before reusing.
4. Do not use outdoors.
5. To disconnect heater, turn controls to OFF switch. Then, turn off the power to the heater circuit at the main disconnect panel.
6. Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock of fire, or damage the heater.
7. To prevent a possible fire, do not block air intakes or exhaust in any manner.
8. A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored.
9. Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock or injury to persons.

SAVE THESE INSTRUCTIONS

Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage.

SAFETY INFORMATION

Please read and understand this entire manual before attempting to assemble, operate or install the product.

1. Follow all local safety and electrical codes as well as NEC (National Electrical Code) and OSHA (Occupational Safety and Health Act).
2. This unit must be properly grounded.
3. Always disconnect the power supply prior to servicing the fan, motor or junction box.
4. Do not bend or kink the power wires. Protect from sharp edges, oil, grease, hot surfaces, chemicals or other objects.
5. Do not install where the room air temperature will exceed 40°C (104°F).
6. Do not install over a tub or mount in a shower stall enclosure.
7. Do not use to exhaust hazardous or explosive vapors.
8. Do not install in a cooking area.
9. Do not install this fan vertically in a wall.
10. Use this unit in the manner intended by the manufacturer.
11. If you have any questions, please call the manufacturer.
12. Installation work must be carried out by a qualified person(s) in accordance with all local and safety codes including the rules for fire-rated construction. For use in non-fire rated installations only.

13. Sufficient air supply is required for proper combustion and the exhaustion of gases through the chimney (flue) of fuel burning equipment to prevent back-drafting. See the standards of NFPA (National Fire Protection Association) and ASHRAE (American Society for Heating Refrigeration and Air Conditioning Engineers) and the local building code authorities.
14. Exercise care to not damage existing wiring when cutting or drilling into walls or ceilings.
15. Fans should always be vented to the exterior and in compliance with local codes.
16. Do not use this fan with any solid state control device such as a dimmer switch. Solid-state controls may cause harmonic distortion, which can cause a motor humming noise.
17. Prior to service or cleaning this unit, shut off power supply at the panel and lock to prevent the power from being turned on. If the panel cannot be locked, clearly mark the panel with a warning tag to prevent the power from being turned on.
18. Do not install in a ceiling with insulation greater than R40. (This is required for installations in Canada only.)
19. Duct work should be installed in a straight line with minimal bends.
20. Duct work size must be a minimum of the discharge and should not be reduced. Reducing the duct size can increase fan noise.
21. This ventilating bath fan is intended for residential use only in 1-2 family dwellings.
22. Never place a switch where it can be reached from a tub or shower.
23. Make sure that the electric service supply voltage is AC 120 V, 60 Hz.
24. Always disconnect the power source before working on or near the unit.
25. This unit is designed and tested to be a supplemental heater for use with a timer or a switch. It is not intended to be used as a primary source of heat, or controlled by a thermostat.
26. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc., off power unit.
27. Provide a separate 15 AMP circuit.
28. This product is designed for ceiling installation only. Do not mount this product in a wall.
29. Install in ceiling only, at least 6 in. from any wall.
30. For greatest efficiency, adjust heater grille directly toward tub or shower area. Avoid directing toward walls or windows.
31. Do not install less than 8 ft. (2.4 m) from the floor.
32. Do not install the unit where ducts are configured as shown in Fig. A.
33. Do not open/disassemble LED light engine.

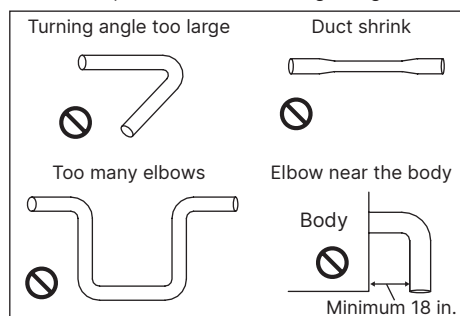


Fig. A

PREPARATION

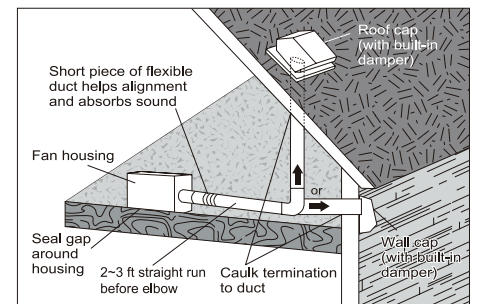
Tools Required for Assembly (not included): Hammer, Flathead Screwdriver, Wire Nuts, Nails, Duct Tape, Phillips Head Screwdriver, Utility Knife
Helpful Tools (not included): Electric Drill, Drill Bits

WARNING: Turn off electricity at breaker box before beginning installation.

- Carefully remove unit from carton.
- Before installation, provide inspection and future maintenance access at a location that will not interfere with installation work.
- Check area above installation location to be sure that wiring can run to the planned location and that duct work can be run. Make sure the area is sufficient for proper ventilation.
- You may need the help of a second person to install this fan: one person on the attic side and one on the room side.

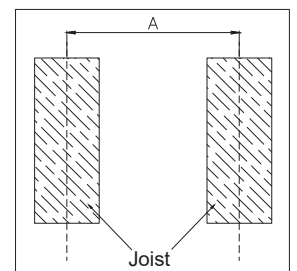
Note: Installations may vary depending on how the previous bath fan was installed. Supplies necessary for the installation of your bath fan are not all included.

However, most are available at your local home improvement or hardware store.



- Proper insulation around the fan to minimize building heat loss and gain.
- The fan will operate most efficiently when located where the shortest possible duct run and minimum number of elbows will be needed.
- Use a roof cap or wall cap that has a built-in damper to reduce backdrafts.
- External timer/dimmer switch can be used. Please contact Delta Breez customer service and consult with a licensed electrician for compatibility.
- Determine the distance between your joist.

Spacing A on center joists
16.0 inches
19.2 inches
24.0 inches



WARNING: Remove ceiling section using dimensions provided below. Be careful to cut hole exactly. If hole is too big, the fan grille will not hide it.

PACKAGE CONTENTS

PART	DESCRIPTION	APPEARANCE	QTY
1	Fan Body		1
2	Grille Assembly For model RAD80-DGL		1
2	Grille Assembly For model RAD80ELED		1
3	Suspension Bracket I		2
4	Suspension Bracket II		2

HARDWARE CONTENTS

(Images are to scale)

- A** x 4
Short Machine Screw (M4 x 12)
- B** x 8
Wood Screw (ø4 x 14)

DIMENSION REQUIREMENTS

Ceiling Opening (L)	Ceiling Opening (W)	Ceiling Opening (H)
14 3/4 in.	8 1/2 in.	5 1/2 in.
Housing Dimension (L)	Housing Dimension (W)	Housing Dimension (H)
14 3/8 in.	8 1/4 in.	5 1/2 in.

ASSEMBLY INSTRUCTIONS

Unpacking

Carefully remove unit from carton. Remove the foam in the housing. Refer to the Package Contents list on page 1 to verify that all parts are present.

Installing the unit

Installing the fan body in an existing building requires an accessible area (attic or crawl space) above the planned installation location and existing duct and wiring.

CAUTION: Check area above installation location to ensure that:

- Duct work can be run and the area is sufficient for proper ventilation.
- Wiring can be run to the planned location.
- No wiring or other obstructions can interfere with installation.

WARNING:

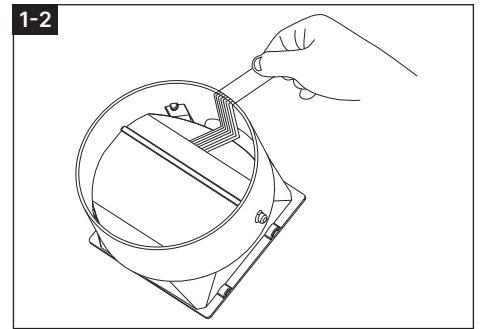
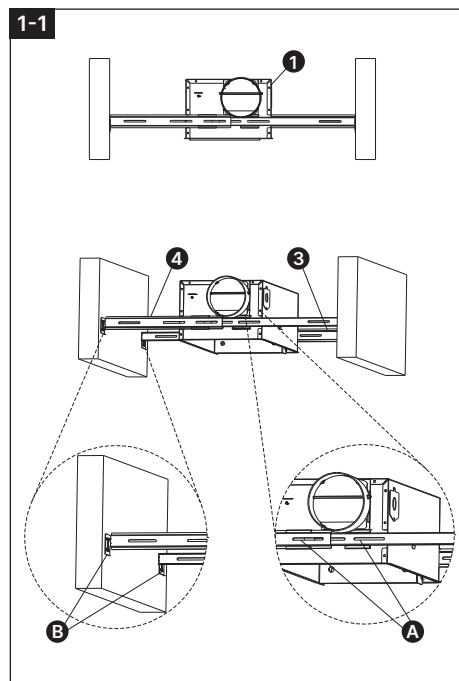
- To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater.

INSTALLATION

1. Mounting the fan body between the joists
 - a. Insert either the 12 in. suspension brackets **4** or 14 in. suspension brackets **3** to the duct side and back of the fan body **1**, depending on the distance between the joists.
 - b. Insert the fan body **1** between joists. Make sure the fan body is level and perpendicular with the joist, and flush with ceiling surface.
 - c. Allow for thickness of the ceiling board used in your application. Fan body **1** should be flush with ceiling board.
 - d. Secure the suspension brackets to joists with the wood screws **B**.
 - e. Secure the suspension brackets to fan body **1** with the wood screws **A**.
 - f. Remove tap before connecting the duct as shown in Figure 1-2.

Hardware

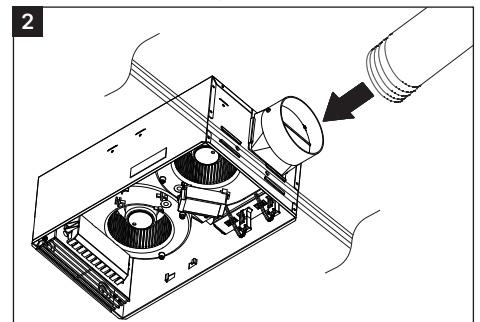
- A** Short Machine Screw
- B** Wood Screw



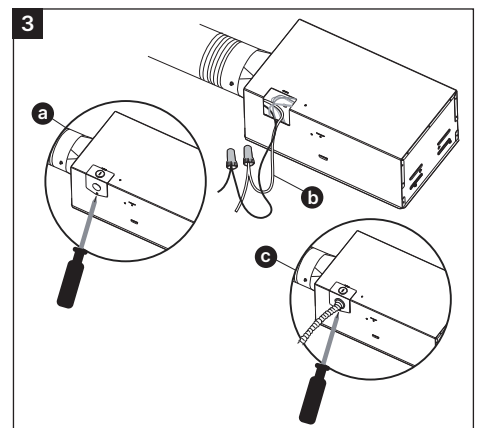
2. Connecting the duct

CAUTION: All ducting must comply with local and national building codes.

- a. Insert the duct into the duct connector and tape all duct work connections to make them secure and air tight.

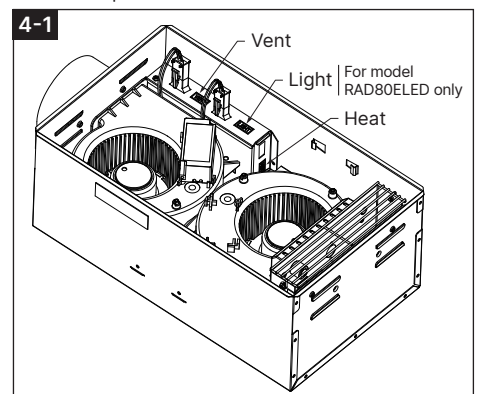


3. Remove the fan junction box cover **a**. Using wire nuts (not supplied), connect house wires to fan wires **b** as shown in the wiring diagram on page 3. Wire connections are as follows: black to live switch wire, white to neutral, green to ground. Reattach fan junction box cover **c**.

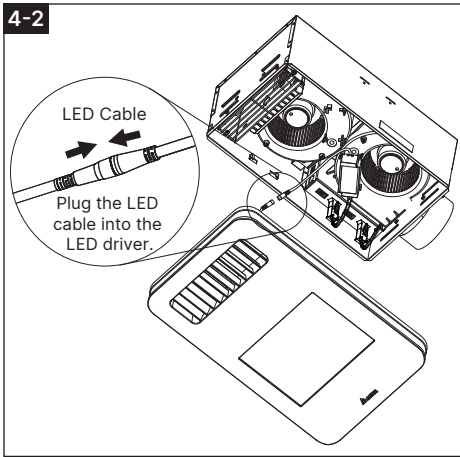


4. Completing the Installation

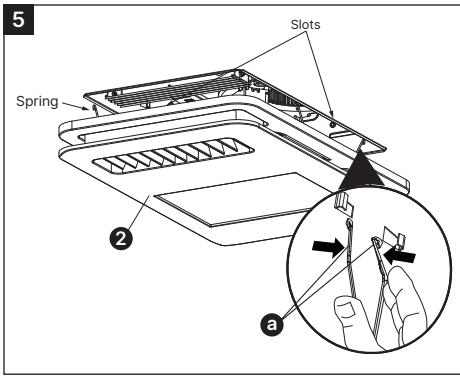
- a. Check the plug from the fan into the receptacle marked "Vent". Check the plug from the heating unit into the receptacle marked "Heat".



b. Plug the Light Connector into the receptacle marked "Light". (For Model RAD80ELED)



5. Attach grille 2 by pinching mounting springs a and insert into narrow rectangular slots in fan body.



WIRING INSTRUCTIONS

CAUTION:

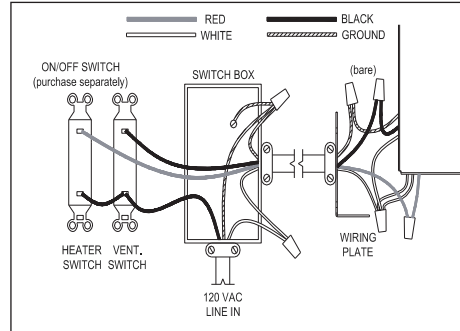
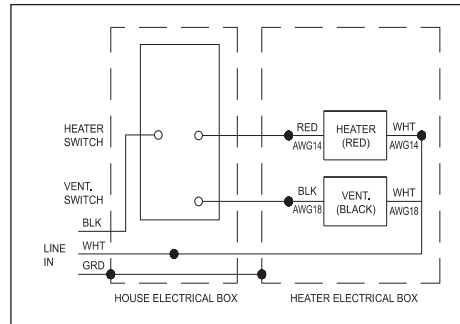
- Make sure power is switched off at service panel before starting installation.
- All electrical connections must be made in accordance with local codes, ordinances, or national electrical code. If you are unfamiliar with methods of installing electrical wiring, secure the services of a qualified electrician.

WARNING:

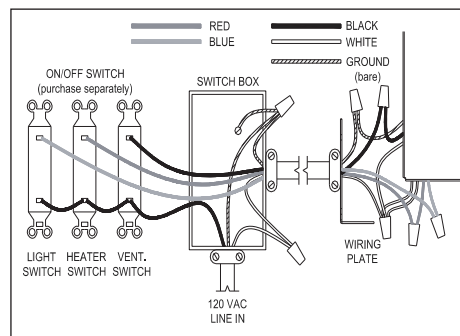
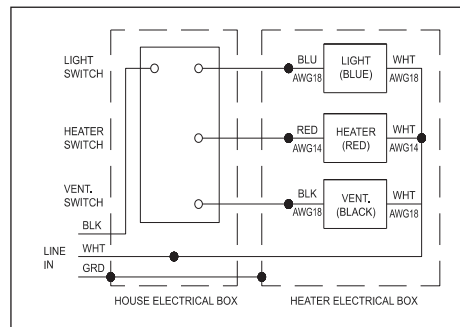
This unit must be wired on a separate 15 amp circuit.

- If your house wires do not match these colors, you must determine what each house wire represents before connecting and you may need to consult an electrical contractor to determine this safely.
1. Follow all local electrical and safety codes.
 2. Never place a switch where it can be reached from a tub shower.
 3. Using wire nuts (not included), connect house power wires to fan wires.
 4. 14 AWG(2.1mm²) is the smallest conductor that may be used for branch-circuit wiring. Each power wire (light, fan, heater) must have its own switch to operate independently.
 5. For supply connections, use wire rated for at least 90°C. See wiring diagram for wire size.

Model: RAD80-DGL



Model: RAD80ELED



OPERATING INSTRUCTIONS

WARNING:

This unit must be properly installed before it is used. Follow instructions for cleaning, user-maintenance and operations recommended by the manufacturer, such as lubrication or non lubrication. Any other servicing should be performed by an authorized service representative.

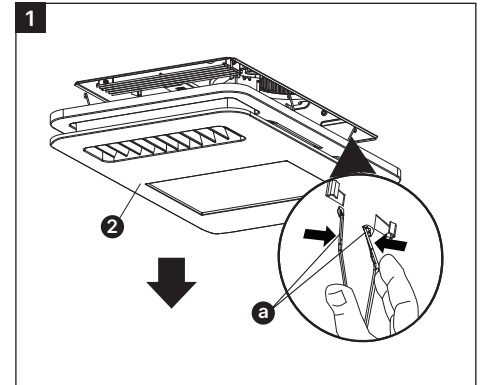
1. Turn on the light switch to turn on the LED light. (For model RAD80ELED only)
2. Turn on the vent switch to operate the fan mode.
3. Turn on the heat switch to operate the heater mode.

CARE AND MAINTENANCE

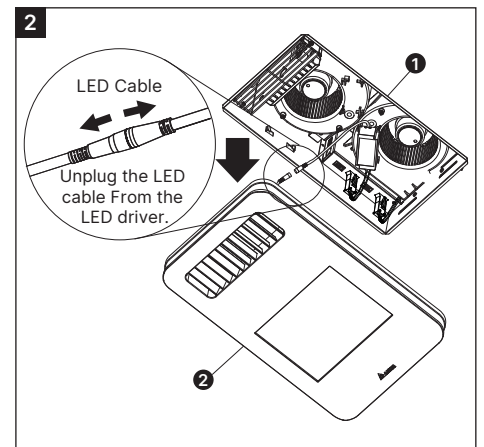
See safety information before proceeding. Routine maintenance should be done at least once a year.

- Never use solvents, thinner or harsh chemicals when cleaning the fan.
- Do not allow water to enter the motor, heater and LED module.
- Do not immerse metal parts in water.
- Do not immerse resin parts in water over 140° Fahrenheit.
- Turn off power source. Review all safety precautions.

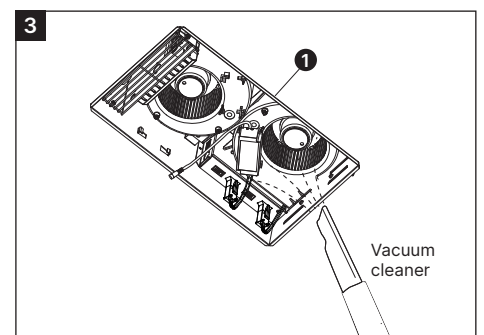
1. Squeeze springs and pull down.



2. Remove grille assembly 2. (For model RAD80ELED only)

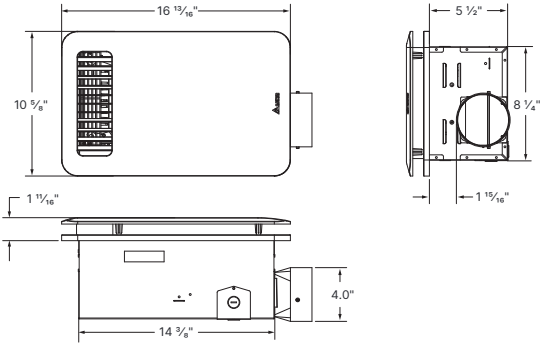


3. Remove dust and dirt from fan body 1 with a vacuum cleaner.

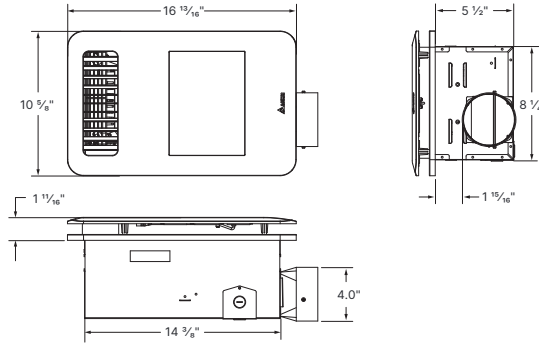


DIMENSIONS Unit: Inches

Model: RAD80-DGL



Model: RAD80ELED



PRODUCT SPECIFICATIONS

Model No.	Air flow @ 0.1 in. WG (CFM)	Noise (Sones)	Voltage (V)	Frequency (Hz)	Power Consumption (W)	Duct Diameter (in.)	Weight (lb.)	Main Light Output
RAD80-DGL	80	1.5	120	60	1314	4	10.1	-
RAD80ELED	80	1.5	120	60	1327	4	11.6	900 Lumens

TYPE IC INHERENTLY PROTECTED.
THERMALLY PROTECTED L.

Note: Design and specifications subject to change without notice.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
The fan is not turning ON	<ol style="list-style-type: none"> Power off Faulty switch Faulty wire connection 	<ol style="list-style-type: none"> Make sure power supply is on. Test or replace switch. Check wire in switch box.
The fan seems louder than it should	<ol style="list-style-type: none"> CFM too great Damper not working properly or damaged Bend in duct too close to fan discharge Fan discharge reduced to fit smaller duct Fan body not securely attached 	<ol style="list-style-type: none"> Be sure the CFM rating on the fan matches the size of your room. Check damper to ensure it is opening and closing properly. If the damper has become damaged, please call Customer Service. Be sure you do not have any sharp bends in duct closer than 18 in. to the fan discharge. Use recommended size ducting to reduce fan noise. Be sure the fan is securely attached to your ceiling joists.
The fan is not clearing the room	<ol style="list-style-type: none"> Insufficient intake airflow within room Insufficient CFM 	<ol style="list-style-type: none"> Be sure a door or window is slightly ajar or opened to allow airflow. The fan is not able to draw air out of the room without enough airflow to draw in from. Be sure the CFM rating on the fan matches the requirements for your room size.
The light is not turning ON (For model RAD80ELED only)	<ol style="list-style-type: none"> Power off Faulty switch Faulty wire connection 	<ol style="list-style-type: none"> Make sure power supply is on. Test or replace switch. Check wire in switch box.
The heater is not heating than it should	<ol style="list-style-type: none"> Faulty switch Faulty wire connection Filter is not clean 	<ol style="list-style-type: none"> Test or replace switch. Check wire in switch box. Remove dust from filter.

WARRANTY

DELTA ELECTRONICS THREE YEAR LIMITED WARRANTY

Delta Electronics Inc. ("Delta Electronics") warrants to the original consumer purchaser in the USA that the Breez ventilation fan products will be free from defects in material or workmanship. This warranty is limited to three (3) years from the original date of purchase.

Limitations and Exclusions

- During the warranty period, a replacement for any defective product will be supplied free of charge for installation by the consumer. The warranty provided herein does not cover charges for labor or other costs incurred in the troubleshooting, repair, removal, and installation service.
- All returns of defective parts or products must include the product model number, and must be made through an authorized Delta Electronics distributor. Authorized returns must be shipped prepaid. Repaired or replacement products will be shipped by Delta Electronics F.O.B. shipping point.
- Delta Electronics shall not be liable for any indirect, incidental, consequential, punitive, or special damages arising out of or in connection with products use or performance, regardless of the form of action whether in contract, tort (including negligence), strict product liability or otherwise.
- This warranty does not extend to fluorescent lamp starters and tubes.
- The warranty does not cover if user does not comply with manufacturer's installation manual.
- To qualify for warranty service, you must notify Delta Electronics at the address or telephone number below.
- Delta Electronics shall have no liability to the original owner-user with respect to any defect caused by abuse, misuse, neglect, improper transportation or storage, improper testing, improper installation, improper operation, improper use, improper maintenance, improper repair, improper alteration, improper modification, tampering or accident of products or parts thereof, or unusual deterioration or degradation of products or parts thereof due to a physical environment beyond the requirement of products' specifications.

Address: 46101 Fremont Boulevard, Fremont, CA 94538

US Toll Free Number:

1-888-979-9889 – Technical Support

1-877-685-4384 – Customer Sales Support

www.deltabreez.com