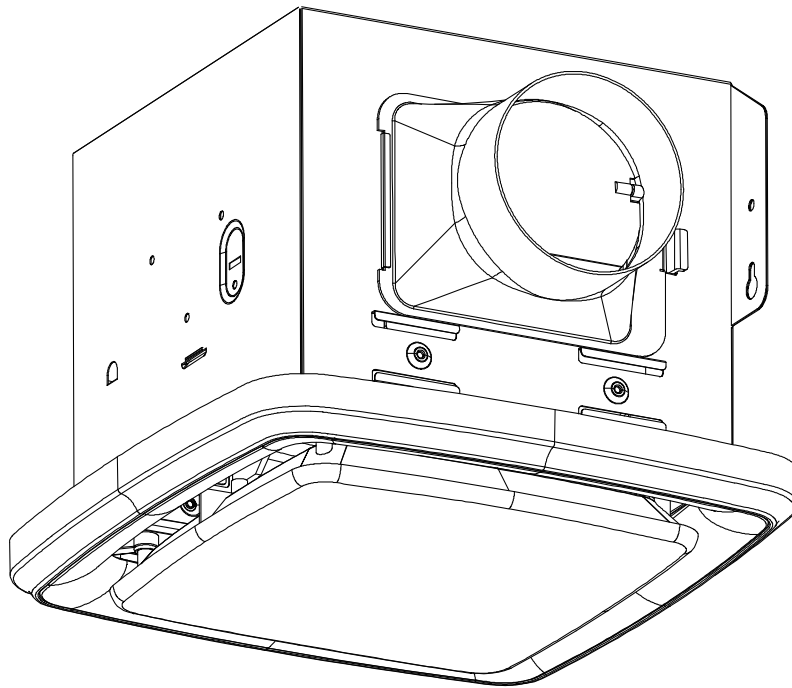




USE AND CARE GUIDE

Model: AKHR110-RGB1-W/B/S



Bathroom Exhaust Fan with Humidity Sensor

akiconhvac.com

NOTICE:

Installer: Leave this guide with the homeowner

Homeowner: Keep this guide for future reference

Read and save these instructions



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Limited 3-Year Warranty

If this product fails due to a defect in materials or workmanship at any time during the first ONE years of ownership the manufacturer will replace it free of charge, postage-paid at their option. This warranty does not cover products that have been abused, altered, damaged, misused, cut or worn. This warranty does not cover use in commercial applications. Use only manufacturer-supplied genuine warranty repair replacement parts to repair this fan. Use of non-genuine repair parts will void your warranty. The manufacturer DISCLAIMS all other implied or express warranties including all warranties of merchantability and/or fitness for a particular purpose. As some states do not allow exclusions or limitations on an implied warranty, the above exclusions and limitations may not apply. This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

This warranty is limited to the replacement of defective parts only. Labor charges and/or damage incurred during installation, repair, replacement as well as incidental and consequential damages connected with the above are excluded. Any damage to this product as a result of neglect, misuse, accident, improper installation or use other than the purpose SHALL VOID THIS WARRANTY.

Shipping costs for return product as part of a claim on the warranty must be paid for by the customer.

Inquiries regarding warranty claims can be directed to +1(888) 828 2025, 8 a.m. - 6 p.m., EST , Monday - Thursday, 8 a.m. - 5 p.m., EST, Friday

Safety Information

PLEASE READ AND UNDERSTAND THIS ENTIRE MANUAL BEFORE ATTEMPTING TO ASSEMBLE, OPERATE OR INSTALL THE PRODUCT.

1. Always disconnect the power supply prior to servicing the fan, motor or junction box.
2. Follow all local building, safety and electrical codes as well as NEC (National Electrical Code) and OSHA (Occupational Safety and Health Act).
3. Electric Service supply must be 120 volts, 60 hertz
4. This product must properly connect to the grounding conductor of the supply circuit.
5. Do not bend or kink the power wires.
6. Do not use this fan with any solid state control device, such as a remote control, dimmer switch, or certain timers. Mechanical timers are not solid state devices.
7. Do not install in a ceiling with insulation greater than R40.
8. Duct work should be installed in a straight line with minimal bends.
9. Duct work size must be the same size as the discharge and should not be reduced. Reducing the duct size may increase fan noise.
10. This product is not intended for connection to rigid metal conduit. For use with flexible conduit only.



WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING: Use this unit in the manner intended by the manufacturer. If you have any questions. Please call customer service.



WARNING: To reduce risk of fire and to properly exhaust air, be sure to vent air to the outdoors. Do not vent exhaust air into spaces within walls or ceilings, or into attics, crawl spaces, or garages.



WARNING: Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.



WARNING: If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Circuit Interrupter) protected branch circuit.



WARNING: Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.



WARNING: This ventilation fan is intended to be installed at least 3.28 ft. (1 m) from the showerhead when installing over a bath tub or shower. Installation within a shower stall is not recommended for this unit, unless the 3.28 ft. (1 m) distance can be met.



WARNING: Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) and local code authorities.



CAUTION: For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.



CAUTION: Not for use in kitchens.



WARNING: When cutting the ceiling, do not damage electrical wiring and other hidden utilities.

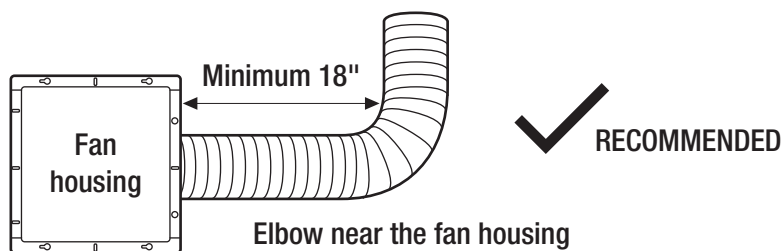
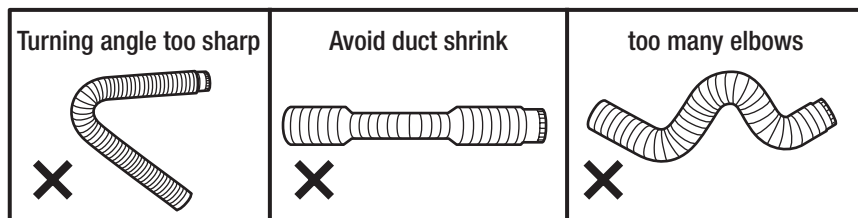


CAUTION: To reduce the risk of injury to persons, install the fan at least 7 feet (2.1 m) above the floor.

Typical Installation

The ducting from this fan to the outside of the building has a strong effect on the air flow, noise and energy use of the fan. Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ducts than recommended. Insulation around the ducts can reduce energy loss and inhibit mold growth. Fans installed with existing ducts may not achieve their rated air flow.

Do not install ventilation fan in areas where the duct work will require configuration as shown.

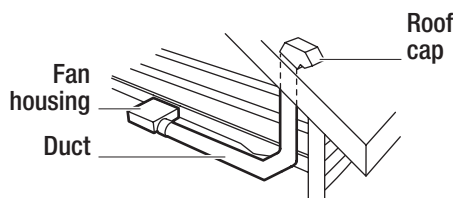


IMPORTANT The ducting from this fan to the outside of the building has a strong effect on the airflow, noise and energy use of the fan. Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ducts than recommended. Insulation around the ducts can reduce energy loss and inhibit mold growth. Fans installed with existing ducts may not achieve their rated airflow.

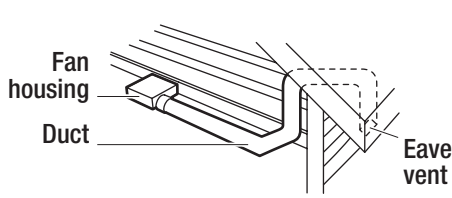
INSTALLATION OPTIONS

We recommend installing the ventilation fan by securing the main body of the fan against one ceiling joist and using the hanger bars as necessary for support of the adjoining joist.

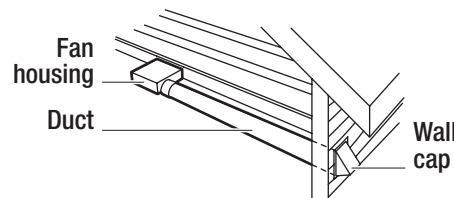
There are multiple installation configurations possible for this ventilation fan. Not all configurations are shown. If your installation requires a variation other than those shown, consult with a licensed contractor to determine the best installation for your project. If you are replacing an existing fan, ensure that the new grille will adequately cover the existing opening.



Roof



Eave



Wall

Specifications

SPECIFICATIONS
Airflow - 110 CFM
Voltage - 120 V, 60 Hz
Fan Power - 29 W
Duct Diameter - 4 in.
Weight - 8.82 lbs.

SPECIFICATIONS
Sound Output - 1.5 Sones
LED Light - 15 W
CCT - 3000 K / 4000 K / 5000 K
Lumen - 1200 lm
Night Light - 3 W - 3000 K

Pre-installation

WIRING DIAGRAMS



WARNING: RISK OF ELECTRIC SHOCK.

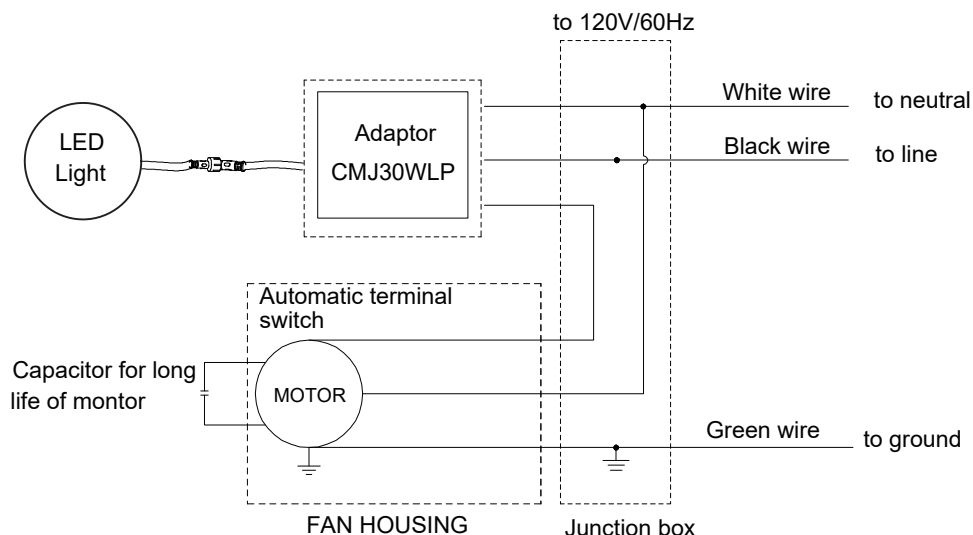
Ensure the electricity to the wires you are working on is shut off. Either remove the fuse or turn off the circuit breaker before removing the existing bath fan or installing the new one.



WARNING: Before removing your current ventilation fan,

verify the wall switch box has the required wires necessary for this installation. These supply wires are power (black) and neutral (white), as shown in the wiring diagram below. If you do not see both of these wires, consult a licensed electrician.

- Check area above installation location to be sure that wiring can run to the planned location and that duct work can be run and the area is sufficient for proper ventilation.
- Inspect duct work and wiring before proceeding with installation.
- Before installation, provide inspection and future maintenance access at a location that will not interfere with installation work.
- 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.
- Installation 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.



Pre-installation (continued)

QUICK CONNECTOR INSTRUCTIONS

To be sold only with installation instructions.



WARNING: Wiring must comply with all applicable electrical codes. Turn OFF power before removing or installing connectors.



WARNING: COPPER TO COPPER ONLY.
Do not use Aluminium wire.



CAUTION: Accessory part (quick connector) should meet installation instructions below.

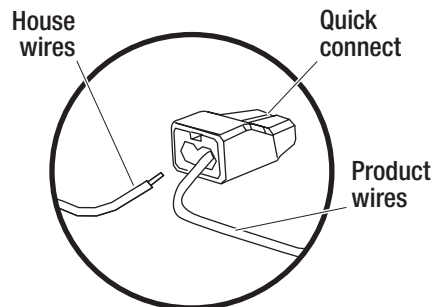


CAUTION: The connector is reusable on solid wires of the same wire gage or smaller. Do not reuse the connector on stranded wires.



CAUTION: Important wire information. Maximum temperature rating 105°C (221°F). 600 volts maximum for building wire and 1000 volts maximum in signs and lighting fixtures. The acceptable wire range includes:
Solid: 12-18 AWG.

- Strip wires 3/8 in. - 1/2 in.
- Grip the wire firmly and push the stripped end of the wire into the open port of the connector. Use only one conductor per port.
- Verify the stripped end of the wires is fully inserted to the back of the connector.



PLANNING INSTALLATION

Before beginning installation of the product, make sure all parts are present. Compare parts with the package contents list and hardware contents. If any part is missing or damaged, do not attempt to install the product.



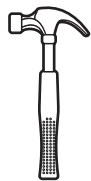
WARNING: Turn off electricity at breaker box before beginning installation.



NOTE: Installation 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.

1. Carefully remove the unit from the carton.
2. Check the area above the installation location to be sure that wiring can run to the planned location, that duct work can be run and the area is sufficient for proper ventilation.
3. Inspect duct work and wiring before proceeding with installation.
4. Before installation, provide inspection and future maintenance access at a location that will not interfere with installation work.
5. 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.

TOOLS REQUIRED



Claw hammer



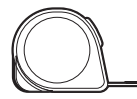
Phillips screwdriver



Drill bits



Utility knife



Tape measure



Safety goggles



Flat screwdriver



Power drill



Duct tape



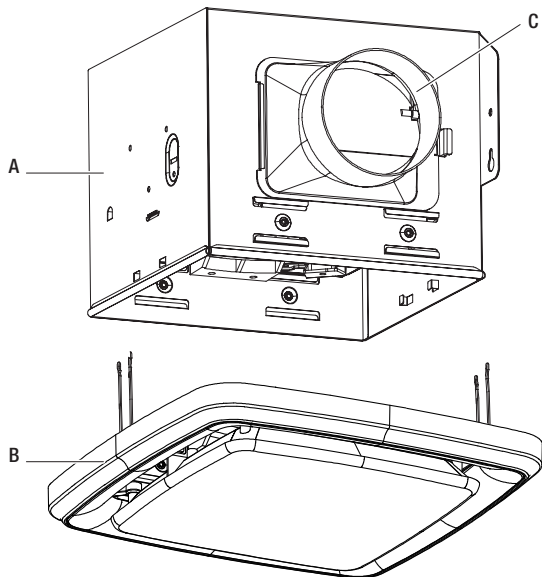
Pencil

Pre-installation (continued)

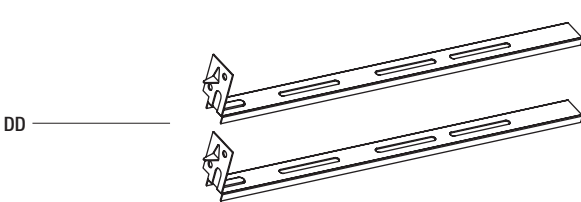
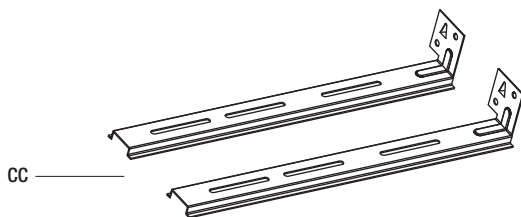
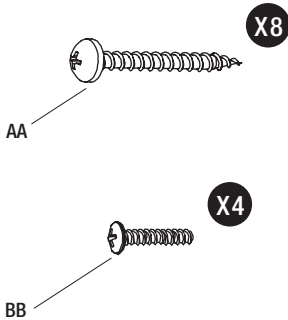
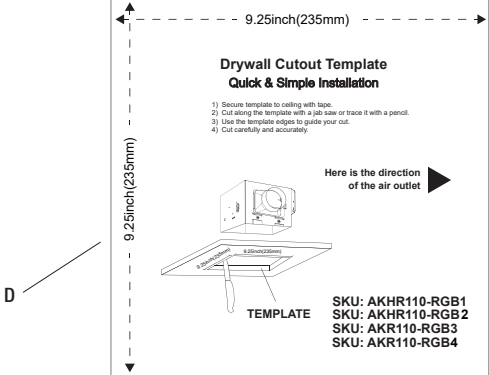
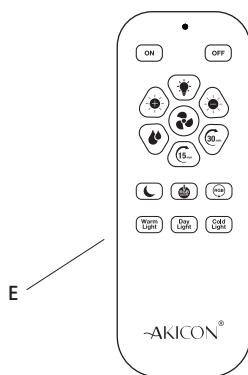
PACKAGE CONTENTS



NOTE: Hardware not shown to actual size.



Part	Description	Quantity
A	Fan housing	1
B	Grille	1
C	Duct connector	1
D	Drywall cutout template	1
E	Remote control	1
AA	Long wood screws (M4 x 30 mm)	8
BB	Machine screws (M4x12mm)	4
CC	Suspension bracket I	2
DD	Suspension bracket II	2



Installation-New Construction

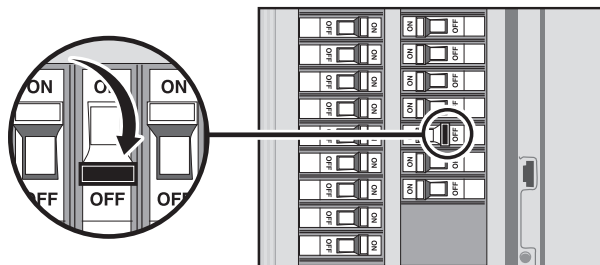
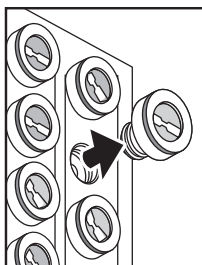
NEW CONSTRUCTION



CAUTION: Make sure power is switched off at service panel before starting installation.

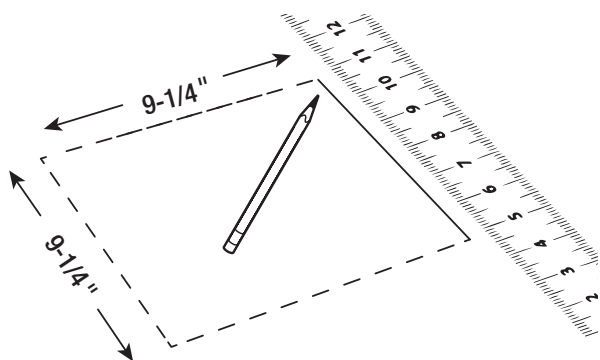


NOTE: Ceiling mount only.



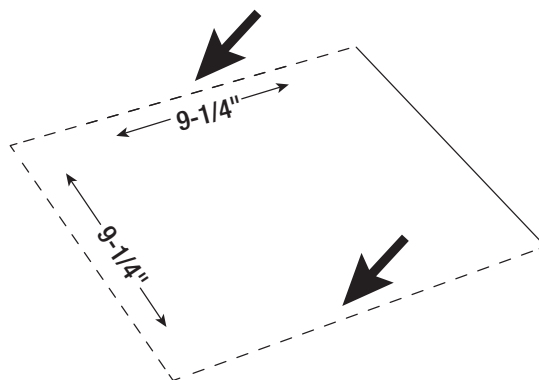
1 Measuring the ceiling opening

- Measure the opening to assure it is large enough to accommodate the new fan housing (A) (9 in. x 9 in.).



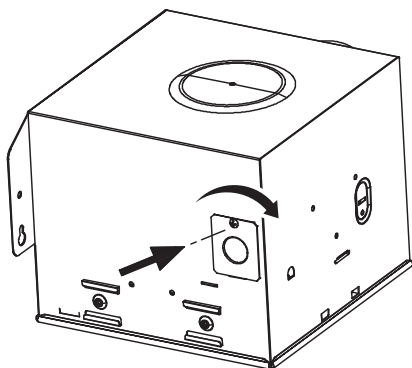
2 Enlarging the opening (optional)

- If this fan is not replacing an old fan, be sure to cut a 9-1/4 in. x 9-1/4 in. opening for the fan housing (A).



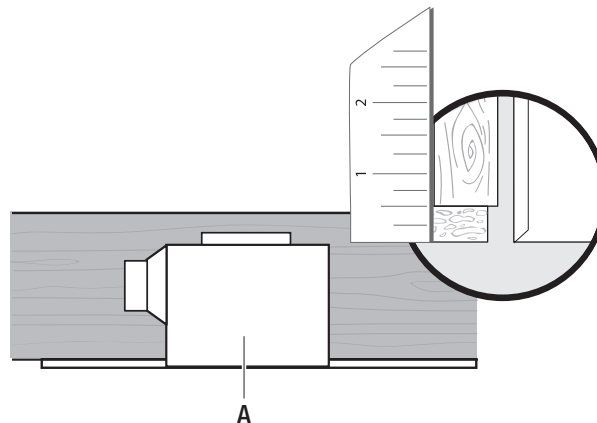
3 Removing the wiring box housing

- Remove the wiring box cover from the fan housing with a Phillips head screwdriver (not included).
- Remove the wiring knockout from the wiring box cover with a flathead screwdriver (not included).



4 Installing in spacing less than 21-1/4" between ceiling joists

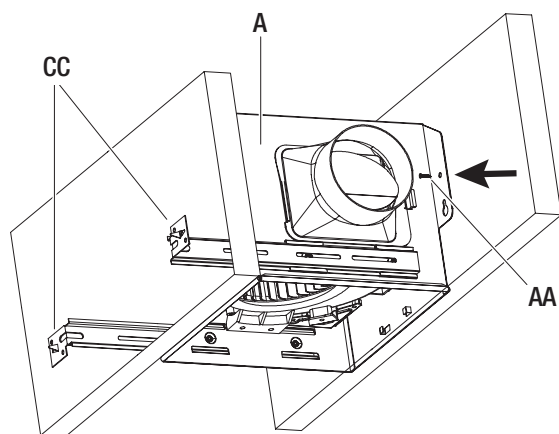
- Place the fan housing (A) next to a ceiling joist. The fan housing (A) should be level and perpendicular to the joist. Allow for thickness of ceiling board used in your application.
- Position the fan housing (A) so the bottom edge of the fan housing (A) is flush with the ceiling board. Do not flush mount the fan housing (A) to the bottom of the joist.



Installation-New Construction (continued)

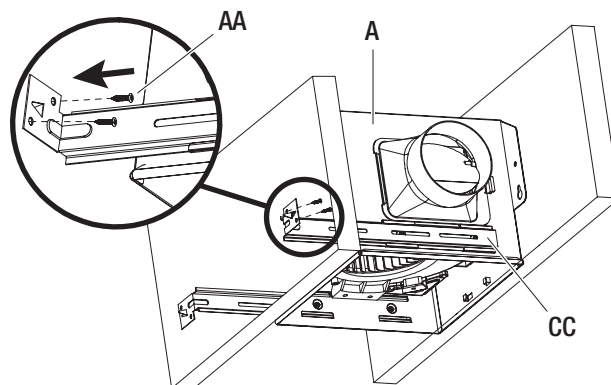
5 Attaching the brackets

- Insert suspension bracket (CC) into the tabs on each side of the fan housing (A) and then mount the fan housing (A) to the joist by inserting the wood screws (AA) into the holes indicated on the metal tabs of the fan housing (A). Tighten the wood screws (AA) until the fan housing (A) is firmly secured to the joist.



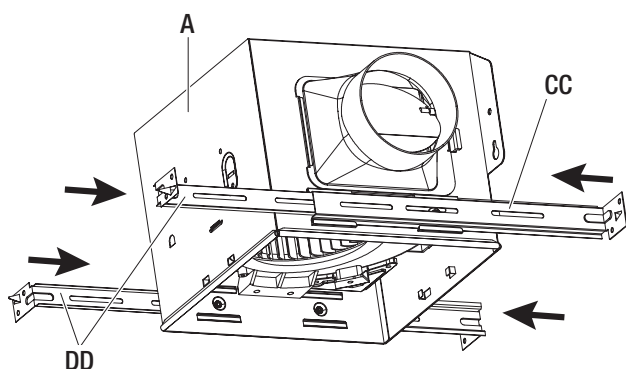
6 Attaching to the ceiling joist

- Attach the end of each of the suspension brackets (CC) to the ceiling joist using wood screws (AA). Skip to step 10.



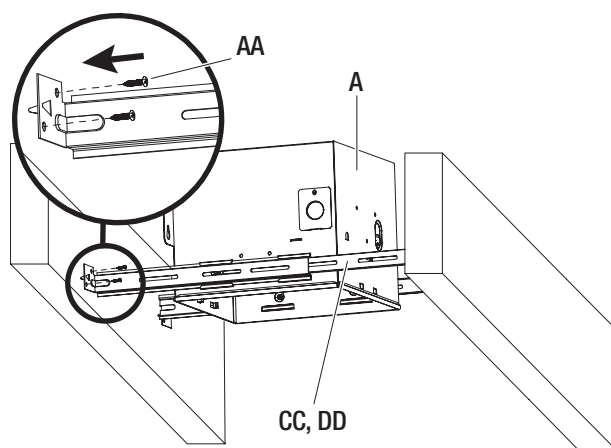
7 Installing in spacing of 21-1/4" to 21-1/2" between ceiling joists

- Insert suspension brackets (CC) into the tabs on the fan housing (A) and then slide suspension brackets (DD) into suspension brackets (CC). Repeat on the opposite side of the fan housing (A).



8 Positioning the fan housing

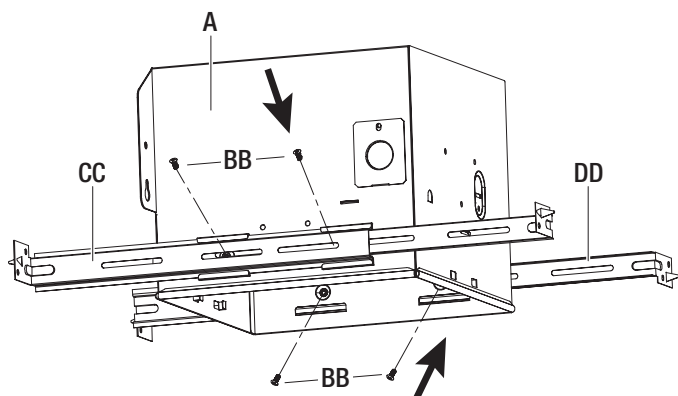
- Position the fan housing (A) so the bottom edge of the fan housing (A) is flush with the ceiling board. Do not flush mount the fan housing (A) to the joist.
- Attach the end of each of the suspension brackets (CC & DD) to the ceiling joists using wood screws (AA).



Installation-New Construction (continued)

9 Securing the suspension brackets

- Secure the suspension brackets (CC & DD) to the fan housing (A) using machine screws (BB).

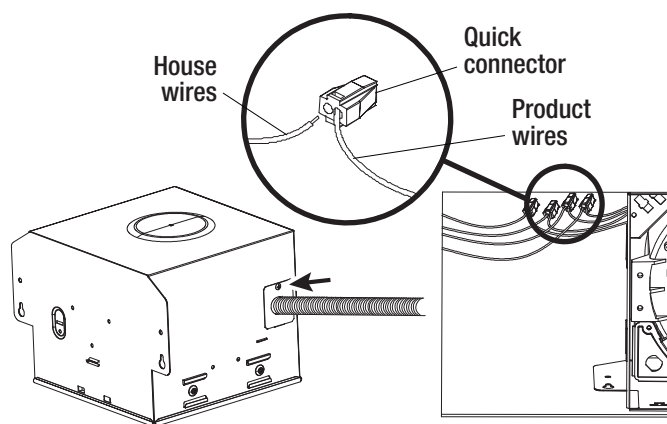


10 Connecting the house and fan wires

- Pull the wire through the hole and into the junction box (not included). Using a quick connector, secure 120 VAC house wiring from the wall switch to the fan as shown in the wiring diagram. 14 AWG is the smallest conductor that shall be used for branch-circuit wiring.
- Push the wires back through the hole. Reattach the wiring box cover.

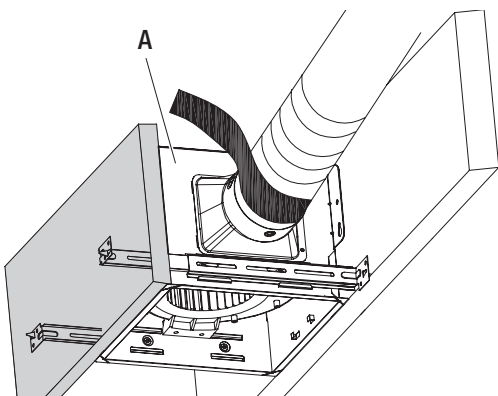


CAUTION: Make sure power is switched off at service panel before starting installation.



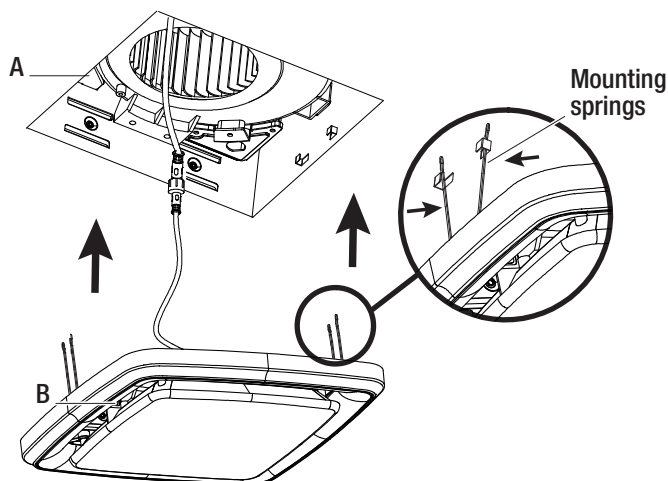
11 Connecting the duct to the fan housing

- Connect a 4 in. circular duct to the fan housing (A), securing it with duct tape or a clamp. Vent the duct to the outside.
- Finish ceiling work. The ceiling hole should be aligned with the edge of the fan housing.



12 Attaching the grille

- Attach grille (B) by pinching the mounting springs and inserting them into the narrow rectangular slots in the fan housing (A).
- Turn on power source. Test the unit.



Installation-Existing Construction

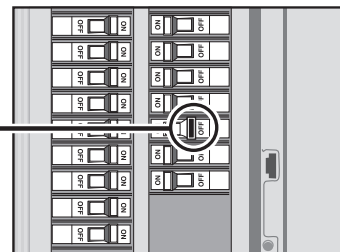
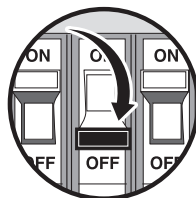
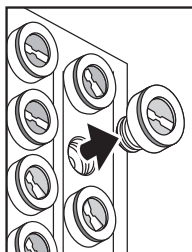
EXISTING CONSTRUCTION



CAUTION: Make sure power is switched off at service panel before starting installation.

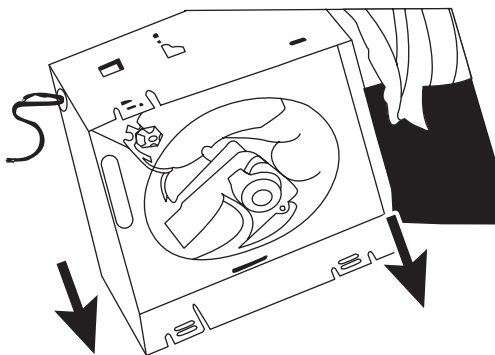


NOTE: Ceiling mount only.



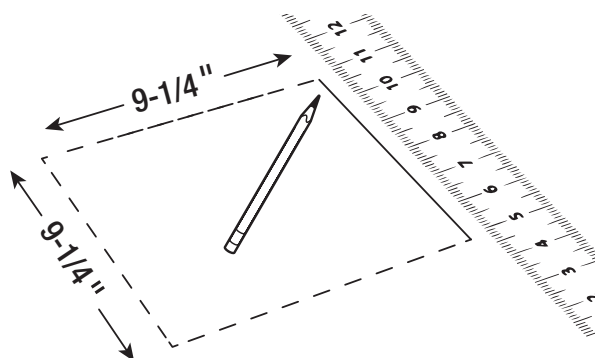
1 Removing the existing fan

- Remove the old fan from the ceiling.



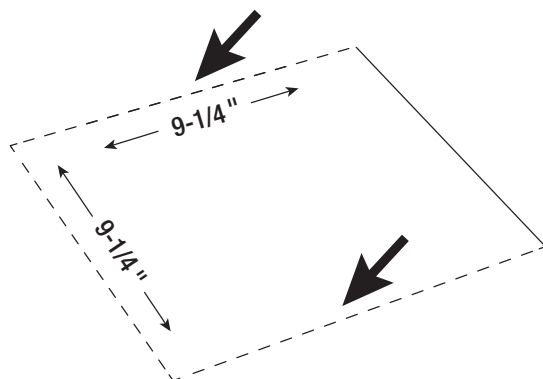
2 Measuring the ceiling opening

- Measure the opening to assure it is large enough to accommodate the new fan housing (A) (9 in. x 9 in.).



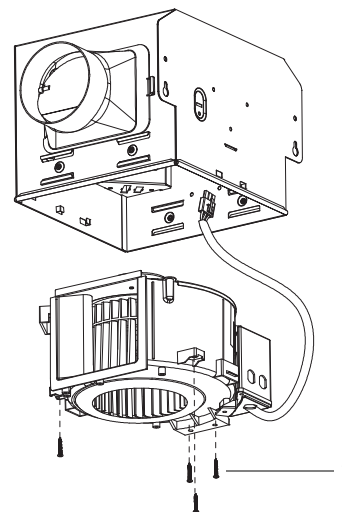
3 Enlarging the opening (optional)

- If this fan is not replacing an old fan, be sure to cut a 9-1/4 in. x 9-1/4 in. opening for the fan housing (A).



4 Removing the fan motor assembly

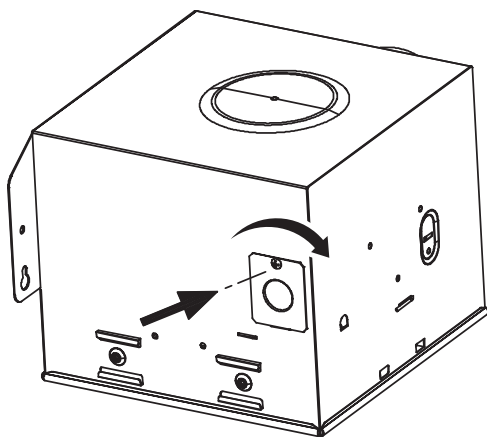
- Remove the four screws (1) that hold the fan motor assembly in place. Remove the fan motor assembly from the fan housing. Unplug the fan power unit.



Installation-Existing Construction (continued)

5 Removing the wiring box housing

- Remove the wiring box cover from the fan housing with a Phillips head screwdriver (not included).
- Remove the wiring knockout from the wiring box cover with a flathead screwdriver (not included).

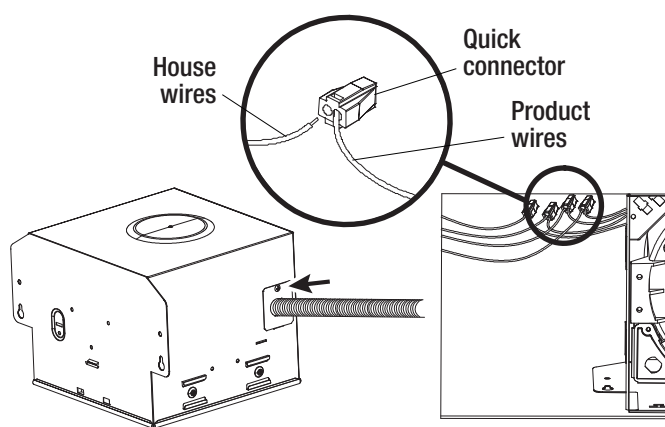


6 Connecting the house and fan wires

- Pull the wire through the hole and into the junction box (not included). Using a quick connector, secure 120 VAC house wiring from the wall switch to the fan as shown in the wiring diagram. 14 AWG is the smallest conductor that shall be used for branch-circuit wiring.
- Push the wires back through the hole. Reattach the wiring box cover.

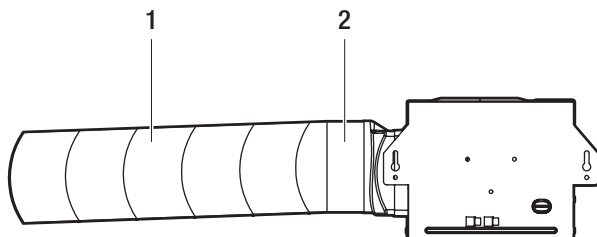


CAUTION: Make sure power is switched off at service panel before starting installation.



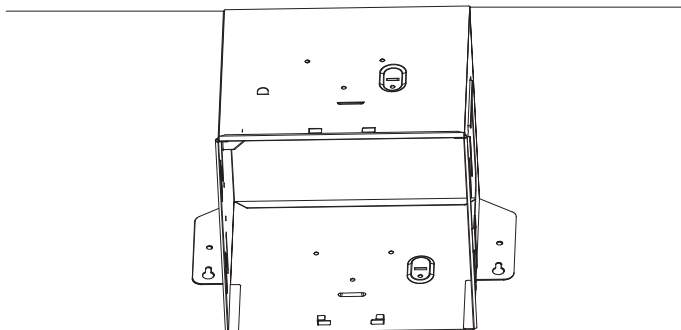
7 Installing the duct

- Install a circular 4 in. duct (not included) (1) and secure it with duct tape or clamps (neither included) (2).
- Finish ceiling work. The ceiling hole should be aligned with the edge of the fan housing.



8 Inserting the fan housing

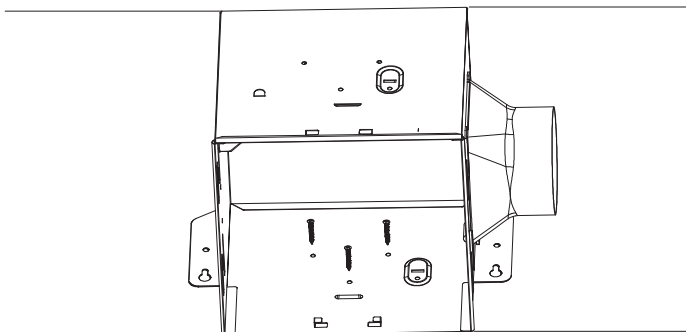
- Insert the fan housing through the existing hole in the ceiling. The fan housing should be level and perpendicular to the joist or stud.



Installation-Existing Construction (continued)

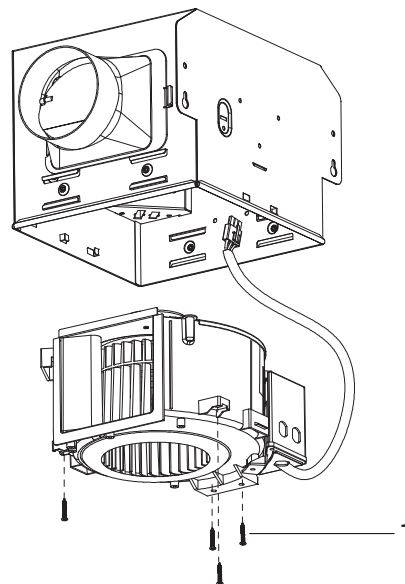
9 Mounting the fan housing to the joist

- Mount the fan housing to the joist using three long wood screws (AA) where indicated by arrows inside the fan housing.



10 Reattaching the motor assembly

- Plug the motor assembly back into the power unit.
- Reattach the motor assembly using the four screws (1) removed in step 4.

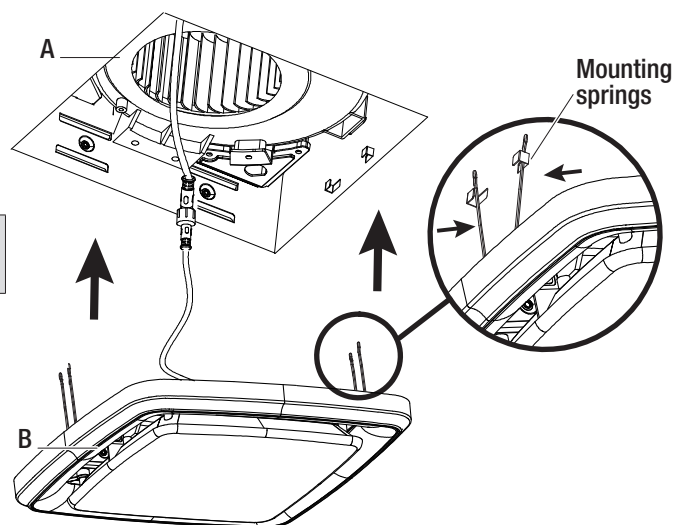


11 Attaching the grille

- Attach grille (B) by pinching the mounting springs and inserting them into the narrow rectangular slots in the fan housing (A).
- Turn on power source. Test the unit.



NOTE: Make sure the mounting spring is properly loaded into the fan slots.



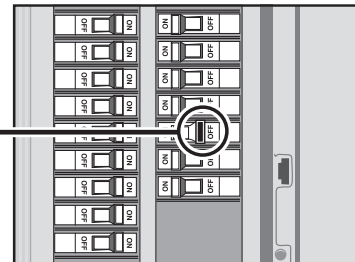
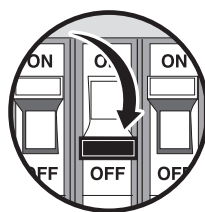
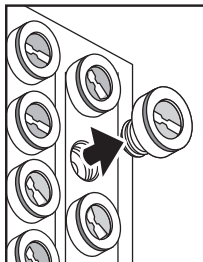
Care and Maintenance



WARNING: RISK OF ELECTRIC SHOCK
Ensure the electricity is shut off. Either remove the fuse or turn off the circuit breaker before cleaning.



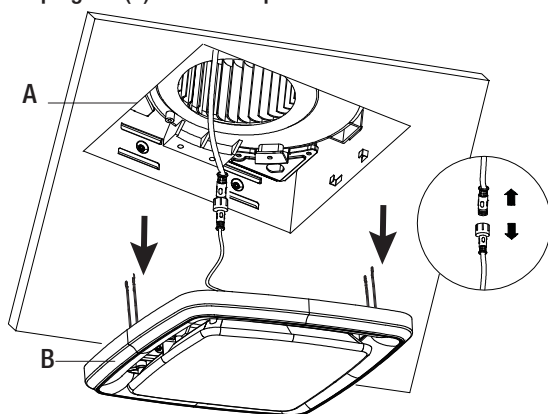
NOTE: Ceiling mount only.



- See SAFETY INFORMATION before proceeding.
- Routine maintenance should be done at least once a year.
- Never use solvents, thinner or harsh chemicals for cleaning the fan.
- Do not allow water to enter the motor.
- Do not immerse metal parts in water over 60°C (140°F).

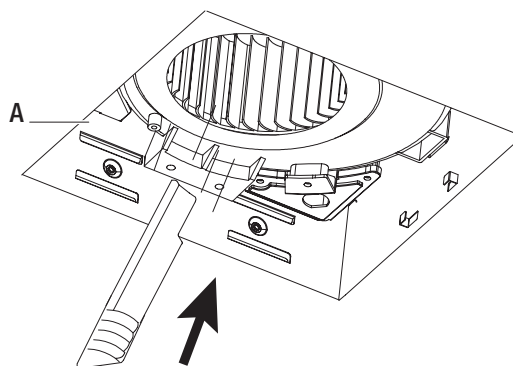
1 Removing the grille

- Remove the grille (B) by squeezing the mounting springs and pulling the grille (B) down from the fan housing (A). Disconnect the connectors to remove the grille (B) from the fan housing (A). Wipe grille (B) with a damp cloth.



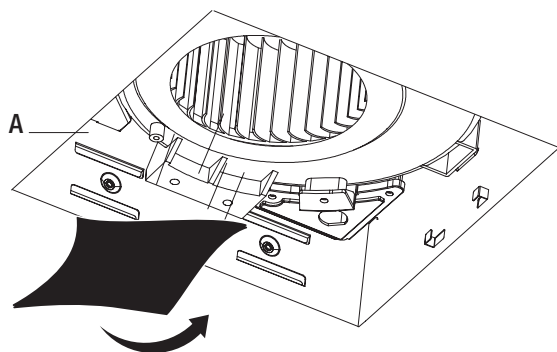
2 Removing dust

- Remove dust and dirt from the fan housing (A) with a vacuum cleaner.



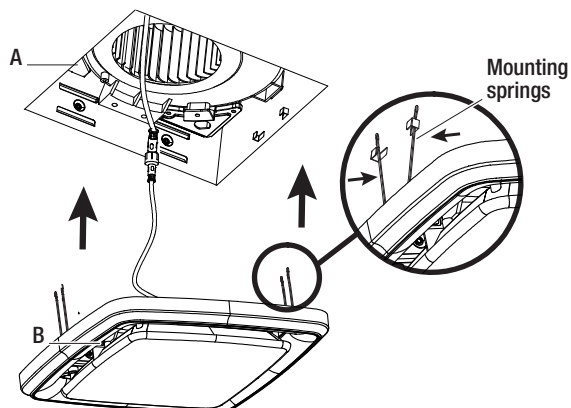
3 Cleaning the fan housing

- Wipe the fan housing (A) with a damp cloth and wipe dry.



4 Attaching the grille

- Attach grille (B) by pinching the mounting springs and inserting them into the narrow rectangular slots in the fan housing (A).
- Turn on power source. Test the unit.



Troubleshooting

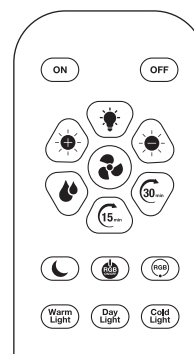
PROBLEM	POSSIBLE CAUSE	SOLUTION
The fan seems louder than it should.	The CFM is too great.	Be sure the CFM rating on the fan matches the square footage of your room.
	The damper is damaged or not working properly.	Check the damper to ensure it is opening and closing properly. If the damper has become damaged, please call Customer Service.
	The bend in the duct is too close to the fan discharge.	Be sure you do not have any sharp bends in the duct closer than 18 in. to the fan discharge.
	The fan discharge is reduced to fit a smaller duct.	Use the recommended size ducting to reduce fan noise.
	The fan body is not attached securely.	Be sure the fan is securely attached to the ceiling joists.
The fan keeps running even though the house humidity level is lower than 60% RH.	The sensor tolerance is +/- 10% RH.	Continue to let the fan run since it is good to keep venting the house and the electric bill is minimal. When the humidity is below the set point, the fan stops running.
	Outdoor humidity is back drafting into the fan.	
The fan is not clearing the room.	There is insufficient airflow intake in the room.	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 from.
	There is insufficient CFM.	Be sure the CFM rating on the fan matches the requirements for your room size.  NOTE: Using a tissue is not the correct method for determining if the fan is operating properly. If the fan clears steam from the room within approximately 15 minutes of completing your shower, then the fan is operating properly.

Operation (continued)

OPERATING THE VENTILATION FAN

NOTE:

1. Uses 433 MHz RF wireless connection with a range of 16–26 feet.
2. The remote must automatically pair within 10 seconds after powering on.
3. Once paired, all functions can only be controlled using the remote.
4. Please wait at least 1 second between button presses. Pressing buttons faster than 0.5 seconds may cause missed signals.



Icon	Button Name	Action	Notes
ON	Power ON	Short press to turn on the fan, main light, and RGB lighting.	Restores the last working state (night light not included). Night light operates independently.
OFF	Power OFF	Short press to turn off all functions (night light not included).	Night light is controlled separately.
	Light ON/OFF	Short press to turn the main light on/off.	
	Brightness Up	Short press to increase main light brightness.	
	Brightness Down	Short press to decrease main light brightness.	
	Fan ON/OFF	Short press to turn the fan on/off.	Green indicator lights up when the fan is running.
	Humidity Mode Switch	Short press to turn the humidity mode on/off.	The humidity sensor operates under two distinct conditions: • Humidity < 60% RH, The blue indicator flashes (Exhaust fan remains off). • Humidity > 60% RH, The blue indicator stays steadily lit (Exhaust fan activates, operating until humidity drops below 60% RH).
	Fan Timer 30 Minutes	Short press to run the fan for 30 minutes.	Fan turns off automatically after 30 minutes. One-time operation.
	Fan Timer 15 Minutes	Short press to run the fan for 15 minutes.	Fan turns off automatically after 15 minutes. One-time operation.
	Night Light	Short press to turn the night light on/off.	Works independently of the power ON/OFF button.
	RGB ON/OFF	Short press to turn the RGB light on/off.	Default mode is Color Cycle.
	RGB Mode Switch	Short press the RGB Mode button to switch between these modes.	There are 3 RGB lighting modes to choose from. • Static – Displays a fixed color: Red, Orange, Green, or Blue. • Cycle – Smoothly transitions through colors one after another. • Flow– A multi-color flowing chase lighting effect.
Warm Light	3000K Color Temperature	Short press to set the main light to 3000K.	
Day Light	4000K Color Temperature	Short press to set the main light to 4000K.	
Cold Light	5000K Color Temperature	Short press to set the main light to 5000K.	

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Questions, problems, or missing parts?
Contact AKICON Customer Service before returning the product.
Service Hours: Monday-Friday, 8:00 a.m.-6:00 p.m. EST

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