Nu-Calgon Instruction Bulletin

4-415

Specifications:

Approvals	OEM, UL 867
Universal Voltage Input:	24VAC to 240VAC
Power (VA):	Less than 10 VA
Frequency:	50/60 HZ
Air Flow Capacity:	2400 CFM (up to 6 tons)
Dimensions:	6" L x 4.8" W x 2" D
Weight:	1 lb.
Service Temp. Range:	-40ºF to 160ºF
Electrical Approvals:	UL and cUL
Plasma Output:	160 million ions/cc per polarity (320 million total ions/cc)
Indication:	Green LED "Power On" LED "Off" = No Power or Fault
Alarm:	Includes Optional Alarm Contact
Self-Cleaning:	Factory set to clean every third day. Can be reprogrammed in the field to clean every day
Mounting:	Duct, Internal AHU Wall or Fan Inlet
Orientation:	Mount unit so air flows across brushes like a football through a field goal post

Packaging:

1 each **4900-20**

Mounting Options

Fan Inlet Mount

- Internal magnets holding unit to fan inlet (shaft side).
- Use self-tapping screws to secure device, especially for high velocity applications or excessive vibration when using magnets.

Inside Wall/Cabinet Mount

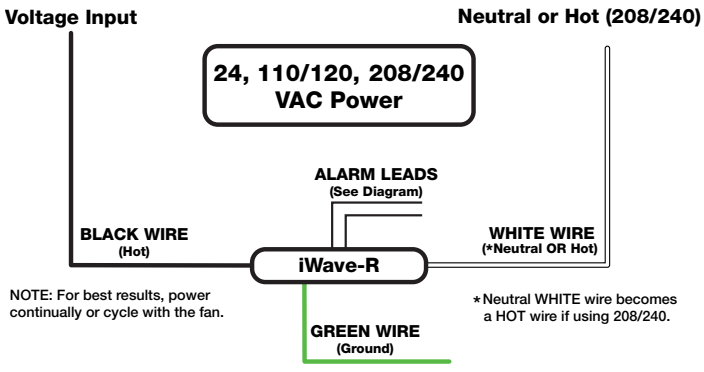
- Internal magnets holding unit to wall duct or air handler metal panel.

External Duct Mount

- Cut/drill a 3 inch hole in duct to install and use two self-tapping screws to hold unit to duct.

IMPORTANT!

Install in return air between air filter and cooling coil. For external duct mount, make sure sheet metal sits against gasket surface; the high voltage emitter ends (fiber brushes) must be 2 inches away from other metal and other wiring to prevent grounding/premature failure.



Indoor Air Quality

iWave®-R

Residential Air Ionization System

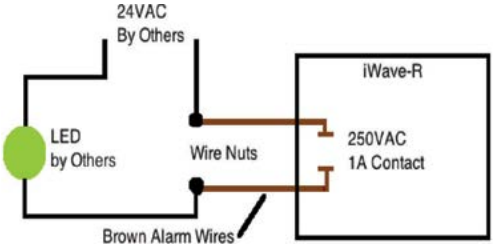
Installation Instructions

1. Disconnect air handler power before installing.
2. Mount the iWave-R after the particle filter and before the indoor coil. This ensures pathogens (i.e., mold) and odors are controlled throughout the entire depth of the coil in addition to the breathing space.
3. The iWave-R is designed with universal mounting-either attach with screws or affix to the system with integral magnets. Mount near the fan inlet (shaft side) on a metal surface in the air handler, internal wall duct or external wall duct depending on what is best for the installation. For external duct mount, a three inch diameter hole will need to be cut/drilled out of the duct. **IMPORTANT:** If mounting on the fan housing, ensure the iWave-R is secured from fan vibration - use short length self-tapping screws so as not to impair operation of fan. **CRITICAL:** The iWave-R is designed for flush, external duct mount installations as an optional install. Ensure in all installations that other metal surfaces/ wires are kept a minimum of two inches away from the tip ends of the high voltage emitters to prevent grounding, leading to premature failure.

CRITICAL: Make sure air flows across both brushes at the same time, like a football through a field goal post.

ALARM RELAY WIRING EXAMPLE

Remote mounted LED will illuminate when the iWave-R is powered and there are no faults. All remote mount wiring, LED, wire nuts and voltage source are provided, mounted and wired by others.



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Installation Instructions Continued

4. The iWave-R has universal voltage capability, connect 24VAC to 240VAC voltage input, whatever is most convenient for quick installation. Although the device only pulls 10 watts, sometimes a dedicated 24VAC power supply may be necessary depending on the current load on the transformer for other system accessories.
5. Unit may be powered 24/7 or may be interlocked with indoor fan – unit only purifies when air is flowing. If unit is wired with the fan, the quickest air purification to address an air concern is to let the fan/iWave-R run continually for 72 hours. Leaving the fan continually in the 'on' position will provide the best ongoing air purification in the house.
6. **Wiring:** The iWave-R has a patent-pending universal voltage 24VAC to 240VAC input capability. The black wire (marked 'AC' on label) is for 24VAC to 240VAC voltage input. The white wire (marked 'N' on the label) is the neutral leg for 24VAC or 120VAC; or the other hot leg for 208/240VAC. The green striped wire is ground, marked 'G' on the label. The brown wires (marked 'A' on the label) are leads to a normally closed alarm contact – see step 7.
7. The iWave-R is equipped with an alarm contact option to provide a visual indicator outside of the air conditioning system to let the homeowner know that it is in normal operation or if there is a fault. The alarm contact, a normally closed contact, rated at 240 VAC/1A, will require a power source and visual indicator, such as a LED. In normal mode, the LED will stay illuminated. If the device goes into default mode, the LED will not light. If a homeowner wants a remote indication of iWave-R status, it is recommend that the 24VAC light (bought separately) be powered through the alarm contacts and sent to a remote wall.
8. When powered up, a green LED on the iWave-R will illuminate; the ionizer is working and the stepper motor for the cleaning feature is in the home position. If the light is not illuminated, check voltage to the iWave-R.
9. **Self-Cleaning/Program Feature:** The patent-pending iWave-R has a self-cleaning feature to ensure it is always operating at peak performance over its design life. The functions for the button include:
   a. While in normal operation mode, press the button once, the LED light will flash and the stepper motor starts an on-demand cleaning cycle.
   b. While in cleaning cycle (after step 'a' above), press the button and hold for 3 seconds, it goes into the mode of setting the cleaning cycle intervals. The iWave-R is designed to be programmed for 1, 3, 5, or 10 day cleaning cycle intervals. **The iWave-R is factory preset for cleaning the emitters every third day; this is adequate for most applications and will not need to be reprogrammed in the field.**

   While in the cleaning mode (with LED flashing and cleaning feature working):

   a. Press the button and hold for 3 seconds, the LED will flash once every second and the motor works once every day.
   b. Press the button twice (the first press hold for three seconds), the LED will flash twice every second and the motor works once every 3 days. This is the factory preset program.
   c. Press the button three times (the first press hold for three seconds), the LED will flash five times every second and the motor works once every 5 days.
   d. Press the button four times (the first press hold for three seconds), the LED will flash ten times every second and the motor works once every 10 days.

   The iWave-R remembers the programmed cleaning cycle days. After the power source is removed and applied again, the iWave-R will automatically operate and go back to the previous days.

   Note: The iWave-R is designed to be a long term IAQ investment, not requiring ongoing maintenance of replacing expensive parts every year or two like other market approaches. The ion emitters (fiber brushes) used in the iWave-R are designed to where they could easily be replaced after many years in service; in the unlikely event they ever needed to be replaced. Replacement requires a Phillips screwdriver and a few minutes; contact Nu-Calgon for further questions.

WARNING

10. The health aspects associated with the use of this product and its ability to aid in disinfection of environmental air have not been investigated by UL LLC.
11. This product shall not be installed behind a suspended floor/ceiling or a structural wall, ceiling, or floor.
12. This product is suitable for mounting to duct of metallic Construction only. Installation must be such that the structural integrity of the ducting is not compromised.
13. RISK OF ELECTRIC SHOCK. CAN CAUSE INJURY OR DEATH: DISCONNECT All ELECTRIC POWER SUPPLIES BEFORE SERVICING

Limited Warranty:

The iWave-R offers a limited warranty for three years that covers any defects in material or workmanship under normal use. If you make a claim during the warranty period, you must provide proof of purchase and proof of proper installation by a licensed contractor for the warranty to be valid. The iWave warranty does not cover labor, return shipping charges, damage from improper installation or improper voltage usage. The iWave warranty begins on the date that the unit was purchased. Installation of your iWave by any person other than a licensed contractor will void the warranty. Contact your local Nu-Calgon account manager or info@nucalgon.com with further questions.