

Fully Self Evaporating Portable Air Conditioner



This document looks at what fully self evaporating air conditioners are, how they work and the major benefits they bring when used in the home to cool the temperature and help to create a comfortable indoor climate.

When you're looking for additional supplemental cooling solutions, portable air conditioners are good products to turn to. Portable air conditioners are sometimes the only option to get the cool air you need, but they can prove to be expensive.

They are relatively easy to use. You simply wheel them into place, set up the included window kits, connect them up and plug them in.

As well as blowing cool air into a room, air conditioners also draw moisture out of the room's air and into the air conditioning unit. This moisture has to go somewhere. Self-evaporating air conditioners, which are steadily growing in popularity, provide the added feature of removing of this moisture for you.

Installation

Portable units are easy to move and install. In some cases, portable air conditions are the only option in homes or apartments that have no central cooling system and window units are either not allowed, or simply won't fit.

As an added benefit, of all the types of air conditioners that can be bought, portable units generally save the most on electrical bills.

Whether you have to endure hot weather all year long or you only get it for a few months, when it is hot, humid, and very sticky, air conditioning (AC) can be necessary to keep your home comfortable. To get the right amount of AC, people often choose portable air conditioners, which, just like central, zone and window units, can also cool your house down.



Types of Portable AC

Most portable air conditioners can be broken into two main categories based on their setup and configuration. These are either single hose and dual hose.

Single-hose AC units use the same vent hose as both intake and exhaust for air. They tend to be cheaper to buy and are a perfectly adequate solution for smaller rooms, for example a small bedroom or studio apartment.

While these units will cool the space being used in, they need to work harder to do so. This means they are not as efficient as dual-hose air conditioners.

Dual-hose AC units, as their name suggests, have one intake hose and one exhaust hose. As there are two separate hoses, these types of portable air conditioner tend to be more energy efficient.

They can generally cool a room approximately 40% faster than single-hose units. They are also the preferred choice for cooling a larger room.

Window Fixing Vent Kits

All portable ACs included window venting kits to ensure that the cold air stays inside and the exhaust goes outside with all that heat. It's also a good idea to look for ACs with self-evaporating technology. This gets rid of the condensation produced by the unit and negates the need to have to empty a tank regularly.

With portable units, there is some noise from the pumps, fans and motors that comprise the unit's moving mechanical components. As all portable AC units make some noise, it's simply a matter of deciding how much is comfortable to you.

Manufacturers are continually upgrading their technology to decrease the noise level of their units. If it's an especially quiet unit, this information becomes a highlighted selling point in the product description.

Moisture

However, when it comes to operating them in the home, some people seem confused about why they also collect moisture as they cool.

Keep reading and you'll find out more about these portable air conditioners, how and why they do collect moisture and you'll learn about some of the top fully evaporative portable AC models.

Why Do Portable Air Conditioners Collect Moisture?

Portable ACs remove warm, moisturized air from the space they're cooling. As the air is cooled, excess moisture is naturally condensed and removed from the air and collects inside the unit. This is generally into an internal collection pan that needs to be drained.

The problem is that the maintenance of emptying the collected moisture, particularly in humid areas around the country, is a chore for some customers. Luckily, select brands use the latest technology to automatically remove the moisture and no manual draining is needed or the setting up of a hose for continuous drainage is done away with.

These types of appliance are known as *"fully self-evaporating portable air conditioners."*



Do I Need a Fully-Evaporative Portable Air Conditioner?

Users generally prefer fully self-evaporating AC units over the traditional partially self-evaporating models. That's because they're less maintenance and provide hassle-free operation.



Consider, when there's no need to empty a pan, you can cool with confidence. You'll know that the air conditioner will continue to work without any constant attention from you.

While you probably don't "need" one of these, they are a greater convenience and less hassle than the alternative.

To learn more about some of the differences between partially and fully self-evaporating air conditioners (and their moisture draining options), visit this web page:

<https://ventlessportableairconditioner.intervalinc.com/air-conditioning/self-evaporating-portable-air-conditioner/> or read the chapter below.

Draining Condensate

When a portable AC cools the indoor air, it also acts as a dehumidifier and removes moisture from the air. Different portable ACs have differing ways of handling the moisture that builds-up inside the unit:

- **Fully Self-Evaporative AC:** These models are completely evaporative. That means the AC exhausts all condensate to the outside and you never have to remove any collected water. These are most desirable when you want the freedom to simply leave them running unattended.
- **Partially Self-Evaporative AC:** These units can evaporate a most of the moisture and expel it via their hot air exhaust, meaning there is little or no water to empty. The frequency of draining any water will depend on usage and environmental conditions in your area.
- **Gravity Drain/Drain Hose:** All portable air conditioners have the option of attaching a permanent water drain hose connection. This means collected water can be continuously drained out to a convenient floor drain using just the force of gravity. This also means the water does not need to be drained manually.
- **Condensate Pump:** Condensate pumps are sometimes available as separate accessories with some AC models to pump out collected water via a drain hose. These pumps can push water upwards to drain it up and out of, for example a window or convenient drain outlet.
- **Bucket:** The simplest portable air conditioner models have an internal container that holds the collected water. This needs to be manually drained regularly.

Efficiency

Portable ACs tend to be fairly energy efficient and can save money on the monthly electric bill. Efficiency is measured by the unit's Energy Efficiency Ratio (EER). Generally, the higher the EER, the more efficient the appliance.

Example: A rating of 10 is typically considered to be a very good rating for a portable AC.

Helping the Unit's Efficiency

You can take action to help lower the indoor humidity yourself. This will stop the self-evaporating unit from being overloaded with compressed water that must be emptied by the user. Variations in the air's humidity determine how fast the unit's water tray fills up.

It is a good idea to invest in a hygrometer, to measure humidity and let you know when the level is too high. You should also use vent fans in bathrooms and kitchens as well as using a dehumidifier in rooms in very high humidity.

Electrical Outlet Requirements

Most portable AC units use a typical household 120-volt power outlet. They require no special wiring, although some powerful models, such as commercial-grade units, may require a special outlet.

Be sure to read the product description and manufacturer's specifications to determine the power requirements when selecting a free standing room air conditioner.

Noise Level

Portable air conditioners make noise, because they use motorized fans and compressor systems that cool and circulate the air. Many people consider it “background noise,” others are concerned with appliance noise.

If you're concerned about noise in your room, we suggest buying a portable AC with special features that minimize the sound. Features to look for include a programmable timer, multiple speeds, and a Sleep mode.

Some portable air conditioners list the decibel rating of the system at each fan speed. You can compare these ratings to other indoor appliances, but remember sound is different to each individual.

Many conditions can affect the sound level, such as the position of the unit, if you have carpeting, what type of furniture you have, and the fan speed.

Installation and Maintenance

Maintaining a portable air conditioner is relatively simple and requires very little effort. Most appliances work as "*set it and forget it.*"

To get the most out of your investment, keep up on general maintenance to ensure it keeps working efficiently and has a long lifespan. Suggested maintenance includes:

- Clean air filters regularly (usually once every summer)
- Ensure the unit is installed correctly for maximum efficiency
- Drain the portable air conditioner before storing it for winter
- Check the warranty for specific information on parts and services covered

Cooling Server and Computer Rooms

Additional cooling is often needed in many server rooms. Portable ACs are often employed as supplemental or even primary cooling systems in these areas.

When considering an AC for this type of application, overestimate the amount of BTUs needed to cool the space. That's because these areas can get very hot with electric equipment running. Correctly exhausting the AC is another consideration, because many server rooms do not have access to windows.

Where there are no windows, many users usually connect the hot air exhaust hose into custom ducting installed in a drop ceiling or through a vent hole installed in the wall in these cases.

Air Conditioners and Humidity

Normal human functions such as sweating and actions such as cooking and bathing cause the interior relative humidity level to go up. Humidity is the level of moisture in the air, which is in the invisible form of water vapor.

Air conditioners remove this moisture as they work. This is why traditional window air conditioners need to be slightly sloped down towards the outside. This way, the moisture, which is converted into liquid inside the unit, can drain to the outside to be collected inside a container, usually a bucket, that needs to be emptied daily when the air conditioner is being used.

Self-evaporating Difference

While it is necessary to either manually empty an outside container of collected water or empty the unit's water collection tray with ordinary units, an air conditioner with self-evaporating technology reduces or eliminates this need.

These types of unit are also called no-drip units. That's because the water does not drip from the rear of the unit's casing. Instead, the self-evaporating unit recycles approximately half of the condensed water. It uses it to cool off the inner cooling coils.

This which allows the unit to run more efficiently. It will then disperse, or evaporate, the remaining water to the outside air, along with the hot air that you normally feel exiting the back of all portable air conditioners.

So what a self-evaporating AC unit does is simply cut out any unnecessary water collection inside the unit or dripped through a hose to an outside container.