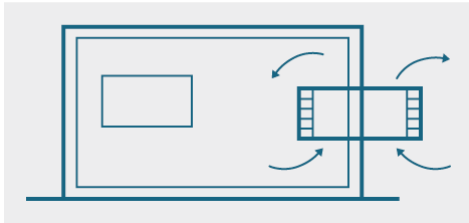


### Local/room DX air conditioners

Local DX air conditioners (room air conditioners) are used to cool individual rooms. Typically, one unit serves per one room. They are generally obtained in two configurations i.e., non-ducted unitary/window units and non-ducted split units. Ventilation generally occurs through infiltration or forced air changes through opening of doors and windows. They sometimes also have a separate mechanical ventilation system in place.

#### Non-ducted unitary (window/wall AC) (NOT recommended: low efficiency)



These are often called single packaged units, or in the US packaged terminal air conditioners (PTAC) and include 'window units' and 'through the wall' units. These are often cheap, factory assembled single housing units that are designed to be mounted with one part of the housing outside the room for heat rejection (compressor and condenser) and the other part close-coupled inside the room (evaporator).

#### Efficiency

EER (W/W) typical: 2.5-2.8

**EER (W/W) BAT: 3.4**

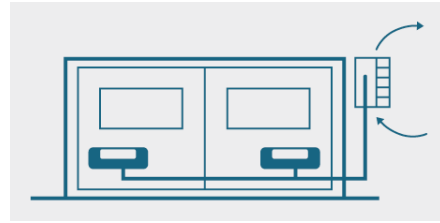
#### Advantages:

- Lower in purchase and installation cost compared to many other commercially available room air conditioners
- Easy availability in many countries

#### Disadvantages:

- Low efficiency compared to most other commercially available room air conditioners
- Uncontrolled ventilation or infiltration can overload the system
- Poor location of the unit such as installing the condenser facing the equator can lead to poor efficiency
- Requires a separate mechanical ventilation system to meet tight ventilation code requirements

#### Non-ducted splits/multi split



These units are factory assembled in matched pairs. One or more units are mounted in the room to be cooled called the indoor evaporator unit. It is linked by refrigerant pipe-work to an exterior condenser unit that rejects the heat. The pipe-work allows the two units to be few meters apart. An inverter-equipped system (**Variable Refrigerant Volume/Flow**) can also be integrated to meet part load conditions if a number of rooms are being served.

#### Efficiency

EER (W/W) typical: 2.8-3.3

**EER (W/W) BAT: 6**

#### Advantages:

- VRF technology available in modern units save up to 50% of energy compared to window AC units
- Easy installation especially in spaces without direct exterior contact
- More sophisticated filters, equipment and controls available compared to window AC unit
- Most models can be used in reverse mode as heating units during winter months

#### Disadvantages:

- If the distance between indoor and outdoor units exceeds a critical limit it can cause significant cooling losses from the pipes
- Requires a separate mechanical ventilation system to meet tight ventilation code requirements

# bigee.net

**bigEE** is an international initiative of research institutes for technical and policy advice and public agencies in the field of energy and climate, co-ordinated by the Wuppertal Institute (Germany). Its aim is to develop the international web-based knowledge platform [bigee.net](http://bigee.net) for energy efficiency in buildings, building-related technologies, and appliances in the world's main climatic zones.

The [bigee.net](http://bigee.net) platform informs users about energy efficiency options and savings potentials, net benefits and how policy can support achieving those savings. Targeted information is paired with recommendations and examples of good practice.

## Co-ordinated by



## Partners to date



## Financial support



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