

# Ecombi

Maximum saving in running cost.  
With Ecombi you make the numbers.



**Gabarrón**  
Manufacturing Excellence



## ELNUR HISTORY

**ELNUR** was founded in 1973 and since then, we have established ourselves as one of the leading European providers of the most efficient heating system in the world: electric heating.

With facilities spanning over 20,000 m<sup>2</sup>, an extensive general and technical team and a complete range of products developed to meet the highest expectations of our customers, at Elnur we provide you with the most efficient solutions in an ever-changing world.

**GABARRÓN** products are uniquely designed and manufactured using the highest quality materials and components, which constitutes a significant advantage when it comes to providing an excellent level of performance and efficiency.

At **ELNUR** we provide you with the most efficient solutions in an ever-changing world.

40 years on, we maintain the same enthusiasm and commitment to offering a wide range of unique products which can cater to the varying needs of our customers, wherever in the world they may be.

With a commercial presence in more than 35 countries, and a strong exclusive distribution network in 15 of these, we have gained a presence in thousands of homes, always offering the best solution in electric heating.

## QUALITY AND SUSTAINABILITY

**ELNUR** is totally committed to working and manufacturing in accordance with the appropriate certification under the Quality and Environmental Management System. Some of our international certifications are:



ISO 9001

**ISO 9001: 2008 Quality Control Management System**, which certifies the implementation and maintenance of the system through a cycle of continuous improvement in the performance of its procedures in all areas of the company, with the aim of achieving greater customer satisfaction..



ISO 14001

**ISO 14001: 2004 Environmental Management System**, which guarantees that our procedures are developed in accordance with environmental care and respect throughout the production process, from the initial design to the final stages of manufacturing.

“Let us invite you to meet **ELNUR** and experience the values and benefits that our **GABARRÓN** products will bring to your life.”



COLDBROOK ELECTRIC SUPPLY COMPANY LTD. is the **ELNUR S.A.** partner in North-America.

We have more than 20 years experience, offering high quality electric heating products and a specialized service focused on giving the best heating solutions.

## CUSTOMER SERVICE

A product manufactured in accordance with the highest level of quality performance deserves to be complemented by excellent service. At **COLDBROOK**, all departments are customer-focused, offering quick and efficient solutions to any problems that may arise.

Our Customer Service Team will answer each and every query you may have. Any member of the team will be able to help you and deal with your request as quickly as possible.

Please email us at [info@ecombi-northamerica.com](mailto:info@ecombi-northamerica.com) or call us to the following telephone number **1-902-679-0535**.

## AFTER-SALES TECHNICAL SUPPORT

**COLDBROOK'S** job does not finish when the goods are dispatched. We are fully committed to customer service and this customer service includes a professional after-sales service. We have an Authorised Technical Services Network providing effective technical assistance all over the territory, irrespective of the location or the product.

Do contact us at [technical@ecombi-northamerica.com](mailto:technical@ecombi-northamerica.com)

## PROJECT MANAGEMENT

We know that many concerns may arise when it comes to evaluating your project requirements. Our Projects Department will advise you on each of the areas of your project and will offer you the best solution, taking into account potential options so that you can suggest a number of different alternatives to the end customer.

Please contact us at [projects@ecombi-northamerica.com](mailto:projects@ecombi-northamerica.com)

## PROFESSIONAL ADVICE

In this department you can get the assistance you need in order to solve any technical concerns you may have. We will provide direct and personalised assistance, offering the support necessary to resolve any issues with installing or setting up any of our products.

Email us at [support@ecombi-northamerica.com](mailto:support@ecombi-northamerica.com)

## CONTINUOUS TRAINING

In line with our commitment to customers and end users, we cannot ignore the fact that professionals need support in order to gain a complete knowledge base with regard to **GABARRÓN** product ranges.

We have developed technical training for **GABARRÓN** products. These courses are taught by our best experts. Their ultimate aim is to help professionals in their daily work and for them to become more familiar with the significant advantages of installing these products.

If you are an installer, don't think twice. You can request information about these courses in the following email:

[trainings@ecombi-northamerica.com](mailto:trainings@ecombi-northamerica.com)

## INNOVATION AT ITS FINEST

ECOMBI is a new efficient heating system that both controls electricity consumption and optimises heat management. Our system is the most economical of the **electric storage heating solutions** available on the market.

The ECOMBI smart system assesses energy consumption and heat loss in the room every day in order to establish the heat needs precisely and effectively adjusting the energy required.

The arrival of ECOMBI is a real revolution in traditional heating systems. ECOMBI optimises control of the energy running costs, while providing maximum comfort. This electric heating system adapts to your daily needs whatever the weather conditions.

### Could you ask for more? Well you can with the ECOMBI smart system

Once autumn arrives, the temperatures and weather can be very unpredictable well into spring. The days can be cold, very cold or there may even be days when the temperatures are mild and pleasant. ECOMBI constantly monitors room temperature using its high-sensitivity thermostat to ensure that the room is always at the desired temperature. ECOMBI will guarantee you feel warm and comfortable all day long on the coldest days or it will adjust the amount of heat required on those warmer days by means of the **ESICC (ECOMBI Smart Input Charge Control)** module to adjust the amount of heat required on those warmer days. This will avoid any unnecessary extra energy consumption.

The best quality components available on the market and this exclusive ESICC electronic module, patented and designed by ELNUR, provide an outstanding level of performance and offer the user cheaper and customised heating. This is what the ECOMBI System, the most innovative and outstanding heating system and the only one of its kind on the market, is all about.

*"The future is already present with ECOMBI System"*



## EFFICIENCY IS ALL DOWN TO CONTROL

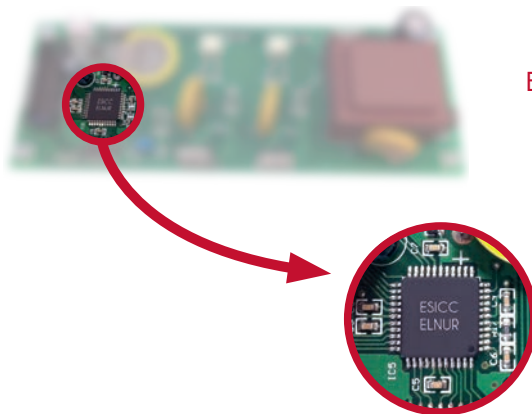
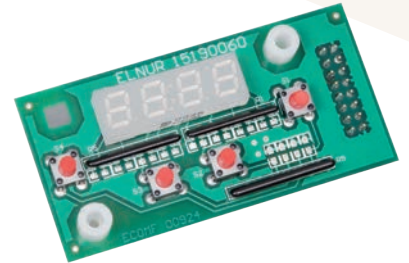
The cornerstone of **ECOMBI** technological innovation patented by ELNUR is the dynamic management of the energy charging.

The use of highly accurate thermostats in electric heating is essential to ensure greater control of electricity consumption and to manage the temperature. ECOMBI incorporates this control system within its **ESICC electronic management module**.

The ESICC module includes a **high sensitivity and precision thermostat** with an accuracy of  $\pm 0,1^{\circ}\text{C}$ , which continuously measures the temperature of the room and keeps the warmth at the comfort level desired by the customer.

Taking into account the temperature readings of the thermostat and the real heat needs in the room, the ESICC electronic management module **assesses the energy consumption** of the unit during the day and automatically adjusts energy charging to your comfort needs.

The **automatic charge adjustment** determines the amount of energy that the system forecasts that you will need and dynamically adjusts it each day, which will effectively reduce energy consumption.



**ESICC** (ECOMBI Smart Input Charge Control) electronic management module

## OFF PEAK TARIFF

In the same way as any traditional storage heater, the ECOMBI system is designed to use the Time-Of-Use (TOU) or Time-Of-Day (TOD) low cost off-peak electricity.

### How does Off Peak Electricity works

Most Utilities offer heavily discounted rates for electricity consumed during off peak electricity times, giving you the chance to save money on your energy bill. Off peak electricity is provided during set times of the day when homes and businesses use a lot less electricity. Off peak times are typically between 11pm and 7am, but they can vary depending on the area.

### What are Off Peak Electricity times?

Electricity providers would prefer to provide a steady supply of electricity throughout the day and night, because the turbines that generate electricity cannot be easily turned on and off as we need power in our homes. People generally use most of their electricity during the morning and evening. To encourage people to use electricity during other times of the day, many providers offer cheaper electricity during periods known as off peak electricity times. In homes, off peak electricity is commonly used to heat water and can also be used to power other heating appliances that are able to store heat when not in use.

### How do you access Off Peak Electricity rates?

You have to contact to your local Electricity Utility to get more details about Time-Of-Use (TOU) or Time-Of-Day (TOD) low cost Off Peak electricity rates availability in your area.

## ECOMBI AND THE TRADITIONAL ELECTRIC STORAGE SYSTEMS

During the autumn, the cold winter and into spring, your heating system will have to deal with different temperatures. The operation of a traditional Electric Storage System is simple: storing all the heat possible while it is being charged, coinciding with the Time-Of-Use (TOU) or Time-Of-Day (TOD) low cost off-peak electricity tariff, and releasing it into the room during the rest of the day.

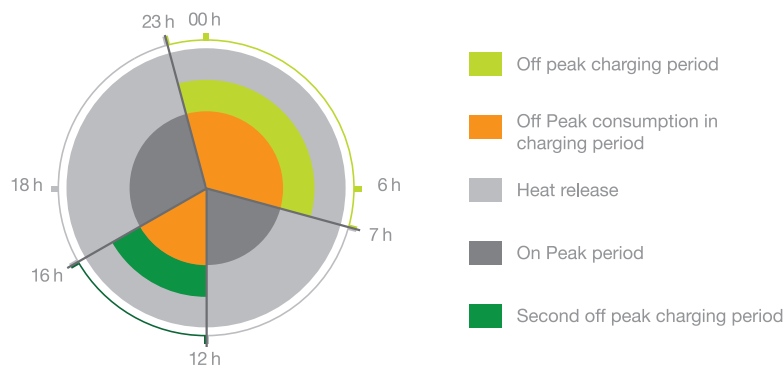
The greatest advantage of these traditional systems is their ability to provide a comfortable temperature at a really affordable price all day long.

### STATIC ROOM STORAGE HEATER

In the case of **Static Storage Heaters**, the charge control is regulated by different sensors according to the temperature readings taken inside the equipment, inside the room and also outside the home.

By incorporating these different sensors, Static Storage Heaters can help to cut electricity consumption by 15% compared to other static storage heaters in the market which do not include these sensors.

A Static Storage Heater normally uses the complete off peak charging period to load its core of energy at 100%. It will release this stored heat during the release period.

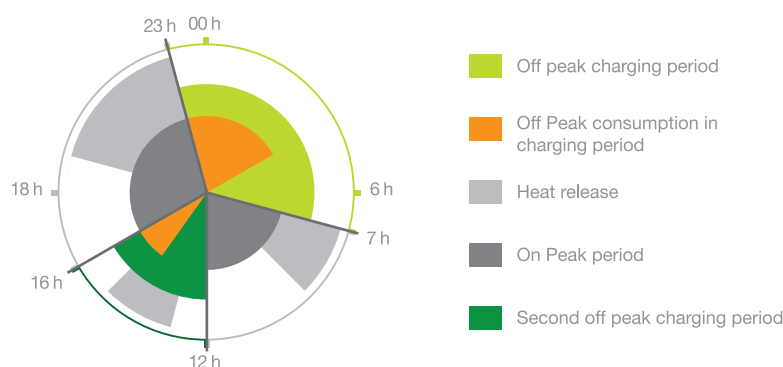


### FAN-FORCED STORAGE HEATER (ETS)

In the case of **Dynamic Storage Heaters (Fan Forced)**, the charging is performed in a similar way, but the main advantage of this system is how the release of the stored heat is controlled and the option of the stored heat being released when the customer really requires it. These storage heaters are ideal for large and open areas.

If the user manages the temperature optimally, storage heaters can result in an energy saving of 25%.

A Fan Forced Storage Heater will not use the complete off peak charging period because it will not discharge completely the heat during the release period. It will only release the heat when it is strictly needed and programmed by the user.



## HOW DOES ECOMBI SYSTEM WORK?

Ecombi is focused on the energy loading.

The CHARGING MANAGEMENT is, in fact, the CONSUMPTION CONTROL.

The target is to transfer all the loaded energy to the room.

Once autumn arrives, the temperatures and weather can be very unpredictable well into spring. The days can be cold, very cold or there may even be days when the temperatures are mild and pleasant. ECOMBI constantly monitors room temperature using its high-sensitivity thermostat to ensure that the room is always at the desired temperature.

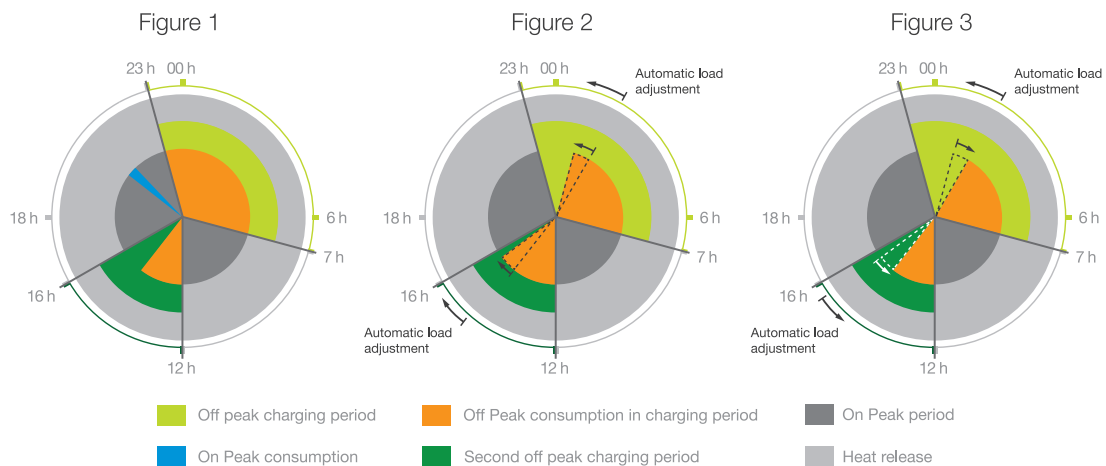
Another of the major benefits of the ECOMBI system is that, in the case of a sharp change in temperature or unexpected heat loss in the room, it can provide additional heat using a back-up heater.

ECOMBI optimises control of the energy running costs, while providing maximum comfort.

### Why spend more if I am going to need less?

The essence of ECOMBI System is the dynamic management of the energy charging and it is defined by our ESSIC technology.

ESICC (ECOMBI Smart Input Charge Control) electronic management module assesses the energy consumption and adjusts energy charging to cover the user's comfort needs.



ECOMBI is programmed to store only the required energy to maintain a set up temperature in a room. It may be necessary to have extra heat in the release period, for a short time, to maintain the room set up temperature. (Figure 1). In this case during the next Off Peak charging period the energy load would increase. (Figure 2). But if extra heat is not necessary then ECOMBI will reduce the load in the next Off Peak charging period (Figure 3). By using ECOMBI System, savings can be increased by 35%.

ECOMBI will only charge the real required energy to heat up the room. No more and no less. It will only be charged during the off-peak tariff.

This assessment and management will happen every single day and every single night!

This will lead to significant energy savings. The innovative ECOMBI System can reduce energy consumption by 35%.

Besides this, with ECOMBI, room heat requirements can be programmed. Different periods of COMFORT TEMPERATURE AND ECO TEMPERATURE can be set up in a daily and weekly basis. Guarantying you a comfort time only when you need it.

*This is efficiency, effectiveness at minimum cost!*



## GREAT BENEFITS, GREAT VIRTUES

### EXTREMELY USER FRIENDLY WITH JUST THREE SIMPLE STEPS

The ECOMBI control panel is highly intuitive. Thanks to its user-friendly system, it will take you just three simple steps to set the mode and desired temperature.



To set it in the Automatic ECOMBI Mode, push the "mod." button until an "A" appears on the screen.



Use the "+" and "-" keys to select the desired temperature of the room.



And that is all it takes to enjoy the all day long comfort of the ECOMBI System.

## INDIVIDUALIZED CONTROL

The ECOMBI units have an individual thermostat for constant and separate control of the room heat requirements where it is installed.

An ECOMBI installation does not require external charging control units or additional timers. It is all included in each ECOMBI heater.

## POSSIBILITY OF MANAGING DIFFERENT CHARGING PERIODS

**ECOMBI allows different charging periods to be programmed** during a single 24-hour interval. Each unit has its own digital timer to set the available Time Of Use (TOU) or Time Of Day (TOD) off-peak tariff periods.

The system is also pre-set up to be directly connected with digital meters in the future, which means that the electricity company itself could manage the energy charging of the system directly.



## DELAYED CHARGING

A very useful feature of the ECOMBI System that helps to optimize managing the energy is the delayed charging. If the off-peak tariff charging period is from 11.00 p.m. to 7.00 a.m. and ECOMBI has established that it needs to charge 50%, the charging will take place in the second part of the charging period. This means that the ECOMBI will be 100% ready at the start of the peak tariff period, thus making the most of cost-cutting potential.

This feature may be turned on or off using the unit parameters.

## WEEKLY PROGRAMMING

The ECOMBI system has a weekly programme feature to meet your needs.

You can programme your ECOMBI unit to run on the days of the week that you choose. This option is very useful when used in weekend homes or in offices, where there are days of the week when the system does not need to be run.

## COMFORT TEMPERATURE vs. ECO TEMPERATURE

Set up temperature can be programmed in a daily or weekly basis. The user can decide which periods of the day should be in COMFORT MODE and in ECO MODE ( $\downarrow 3^{\circ}\text{C}$ ). On weekends this program can be override.

*“With the ECOMBI System, everything is under control”*



## ECOMBI FITS PERFECTLY WITH OTHER HEAT SOURCES

ECOMBI is probably the best price sensitive heating solution on the market. ECOMBI is itself a complete heating system providing heat 24 hours but using energy at low rate prices. ECOMBI can also be installed in conjunction with other heating solutions or as an add-on to an existing heat source in the house.

## ECOMBI AND AIR SOURCED HEAT PUMPS

ECOMBI and Heat Pumps are new concepts in the North American market. If you're looking for ways to decrease your electricity or oil bill, it is very much worth considering the benefits of ECOMBI units together with heat pumps for your comfort, as well as your pocketbook.

Most Utilities in North America, when you install ECOMBI, qualify homeowners for the special meter which allows them to use off-peak electrical rates for their entire home.

These programs encourage users to concentrate the energy usage load at a time when stress on the power system is light — in the evenings and overnight — and in so doing, users can save a lot of money over typical rates.

Heat pumps are a great complement to ECOMBI because they are not actually producing heat — rather, they are extracting existing heat from the outdoors and redistributing it into the home. They can reduce heat expenses in peak hours.

They are a very good complement for big and open areas when space for installing several ECOMBI heaters is limited.

Furthermore, Heat Pump functionality can be reversed in the summer months, cooling your house when it's warm.

Air Sourced Heat Pumps alone will not heat your house enough in winter time. They are a very good complement for existing heating systems.



## ECOMBI AND STANDARD ETS (FAN FORCED STORAGE HEATERS)

ETS units are not always ideal for heating your entire home. Larger units, which tend to be a bit bulky, serve best in recreation rooms and basements. You can think of these as a super-charged space heater; great for those big and open rooms that just don't ever feel warm enough.

ECOMBI is a smaller, slimmer and a sleeker unit that provides comfort in smaller areas in the house that have cold spots such as corridors, bathrooms or bedrooms. They can easily replace existing electric baseboard heaters, maintaining a constant or programmed set up temperature at a reduced energy cost.

The whole idea of using this combination of products is to provide heat around the clock in the whole house moving all the heat energy expenses to the off peak hours in order to reduce expenses.



## ECOMBI AND GAS OR WOOD STOVES AND FIREPLACES

Stoves and Fireplaces are heating solutions used mainly in big open rooms as living, dining or recreation rooms. They are solutions that are limited to certain hours per day and only to the room where they are installed.

ECOMBI can help to provide heat to the rest of the house and also to that room when the fireplace is off, by compensating the temperature decrease and balance the heat in the entire house by programming and setting the desired temperature in each room.

## ECOMBI BEHAVIOR IN COMBINATION WITH OTHER HEAT SOURCES

ECOMBI is not a standard STORAGE SYSTEM. These ETS devices are designed to discharge the heat that has been accumulated during the charge period (off peak).

ECOMBI is designed to store only what it is needed to maintain the set up temperature desired in one room or area. Consequently, ECOMBI will try to maintain the set up temperature in the room or area. If storage energy is not enough it will compensate the temperature drop with an internal emitter.

Therefore is very important to consider this when working with other heat sources. If for whatever reason, the other heat source is not working, ECOMBI will compensate that heat lost with it's internal emitter. Additional charges in electricity may arise.

This has to be considered when sizing the heating requirements in a house.



## DETERMINE THE CORRECT SIZE OF ECOMBI

In order to keep energy bills in check while homeowners stay in the warm comfort of their home, installers have to make sure that they are installing ECOMBI properly and efficiently. To do this, they must calculate the appropriate sizing of ECOMBI, as well as the best location of the installation.

## CALCULATE THE SQUARE FOOTAGE OF THE AREA

Calculate the square footage of the desired room where ECOMBI will be placed. Use a tape measure. Note the width and the length of the entire room. Multiply the width and the length to get the square footage of the room. For example, a room that is 10 feet in width and 10 feet in length is equivalent to 100 square feet.

## NOTE THE CEILING HEIGHT

Houses that have higher than average ceilings must also be considered. The installer must adjust the wattage accordingly. When the ceilings of the houses are above the typical 8 feet ceiling, then the installer needs to adjust the wattage requirement, if the ceiling is 25 percent higher, then it would be necessary to multiply the square footage by 1.25.

## CHECK THE INSULATION LEVEL OF THE ROOM

Sizing ECOMBI correctly also requires that installer determines the insulation levels of the house. The level of insulation can be rated as poor, average, or full. Poor levels of insulation denotes that the house needs about 12.5 watts per square foot. Average levels of insulation in homes necessitate 10 watts per square foot, while full insulation levels that have R-19 in the walls and R-38 in the ceilings only need 7.5 watts per square foot. Additionally, an energy audit will reveal the insulation levels of different areas in the house. The auditor has specialized equipment such as infrared cameras to determine if walls are insulated. Installers can also use an infrared thermometer to get an estimate of the insulation levels in the home. You have to compare the interior and the exterior walls' temperatures to estimate the amount of insulation.

## LOOK FOR A GOOD LOCATION

For the best result, ECOMBI must be placed on interior walls if house insulation is poor or low. A location in the centre of the wall will provide the best convection flow. Choose the walls with shorter length to provide the most accurate convection flow to that room size.

## MINIMIZE OBSTRUCTION

Sofas and other fixtures in the room can reduce ECOMBI efficiency. Additionally, hanging objects must be at least 12 inches away from the target area of ECOMBI heaters.

## CALCULATE THE WATTAGE NEEDED TO HEAT THE ROOM

Calculate the recommended wattage. Rooms that are 10 by 13 feet wide, have ceilings that are 8 feet in height, and need 10 watts per square foot require 1300 watts to warm the area. Alternately, newer homes with greater insulation value will take approximately 600 watts to heat a 100 square foot room. However, when the rooms have higher ceilings, whether it is new or old, installers must adjust the wattage requirement by a certain percent.

## CHECK ECOMBI HEATER'S SPECIFICATION.

You can find under ECOMBI technical features in this brochure or in the USER AND INSTALLATION MANUAL, the "Storage power" of each heater. Use the most convenient, if the recommended wattage falls between two sizes choose the larger heater.

## SPECIAL WARNING WHEN SIZING ECOMBI IN COMBINATION WITH OTHER HEAT SOURCES.

ECOMBI is a heat system that will provide 24h. heat. Unless these combined heat sources are going to be used also on a 24h basis, we recommend to size ECOMBI without taking into account those other heat sources.



## TECHNICAL FEATURES

- ▶ Silent performance.
- ▶ Temperature sensor with calibration option.
- ▶ Overheating protection at storage heating.
- ▶ Safety thermostat with manual reset.
- ▶ Predictive heating element made of Aluminium.
- ▶ Storage heating elements made of stainless steel.
- ▶ Microtherm G 12mm insulation, vermiculite and ecological fibre.
- ▶ Front, side and rear air isolating chambers.
- ▶ Storage core made of a specially designed material for ECOMBI.
- ▶ Steel structure powder coated in epoxy RAL 9010.
- ▶ Robust plastic fittings.
- ▶ Easy to install on any kind of wall.
- ▶ Very intuitive keyboard with lock option.
- ▶ Compatible with two-period off peak electric tariff in a single 24-hour interval.
- ▶ Daily and weekly programming.
- ▶ Deferred storage energy option.
- ▶ Storage, Combined storage, Convection, Frost protection and Automatic ECOMBI operation modes can be set up.
- ▶ Weekly programming.
- ▶ Visual alarm.



MODEL	ECO158	ECO208	ECO308	ECO408
Predictive emitter power*	450W	600W	900W	1200W
Storage power	985W	1310W	1960W	2620W
Charging (8h)	7.9 kWh	10.5 kWh	15.7 kWh	21.0 kWh
Connection	240 V ~ 60Hz	240 V ~ 60Hz	240 V ~ 60Hz	240 V ~ 60Hz
Length	55cm (21.5")	66cm (26")	89cm (35")	111cm (43.5")
Height	73cm (28.5")	73cm (28.5")	73cm (28.5")	73cm (28.5")
Depth	18cm (7")	18cm (7")	18cm (7")	18cm (7")
Weight	57kg(126 lbs)	76kg (168 lbs)	111kg (245 lbs)	147kg (324 lbs)
Insulation	Class I	Class I	Class I	Class I
Num. of bricks 7,5kg (16.5lbs)	-	8	12	16
Num. of bricks 11,3kg (25lbs)	4	-	-	-
Brick package ref.	11072	11016	11016	11016

\*Storage heater elements and predictive emitter element will never operate at the same time.

## ECOMBI, SAFETY AND SUSTAINABILITY

The ECOMBI System does not require servicing. It has no moving parts that can break or be worn down.

Quick and easy installation, in new and old buildings alike, and there is no need for any type of alterations.

Safety is always a key factor when choosing electric heating. The ECOMBI system is 100% safe. It does not need fuel tanks or hydraulic circuits to operate, and therefore there is no risk of leaks.

The ECOMBI System is environmental friendly.

It can be used with renewable energy sources coming from natural resources such as the sun or wind.

The ECOMBI System fosters a healthy and safe environment:

- Does not consume oxygen or emit CO<sub>2</sub>.
- Does not produce gas or fumes.
- Does not directly pollute the environment while it is operating.

*"It is our responsibility to care of the planet"*





Manufacturer



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