



# ELNUR GABARRON<sup>®</sup>

INSTALLATION INSTRUCTIONS



HIGH HEAT RETENTION STORAGE HEATER  
VALID FOR PV INSTALLATIONS WITH  
PHOTOVOLTAIC SURPLUS PRODUCTION

## SOLAR HHR

MODELS

SOLARHHR10

SOLARHHR20

SOLARHHR30

SOLARHHR40

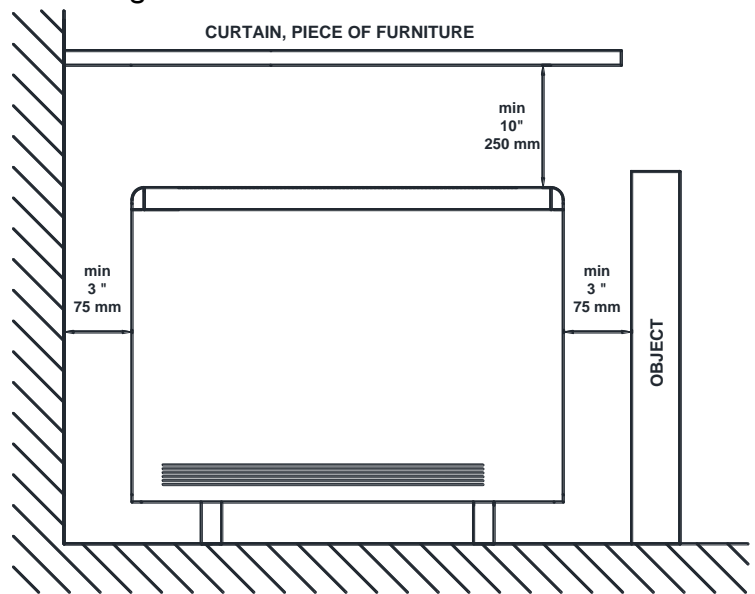


*Please read these instructions carefully before installing or using this appliance for the first time.*

## I. -IMPORTANT INFORMATION

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

- Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, etc. and curtains at least a foot (30cm) from the front, sides and rear of the heater. It is essential that the indicated minimum clearances are maintained.
- **CAUTION** — Some parts of this product can become very hot and cause burns. Particular attention must be given where children and vulnerable people are present.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the appliance in a safe way and understand the hazards involved. Children must not play with the appliance. Cleaning and user maintenance must not be made by children without supervision.
- Children aged from 3 years and less than 8 years shall only switch on/off the appliance provided that it has been placed or installed in its intended normal operating position and they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children aged from 3 years and less than 8 years shall not plug in, regulate and clean the appliance or perform user maintenance.
- Children of less than 3 years should be kept away unless continuously supervised.
- Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing. To disconnect heater, turn controls to off, and turn off power to heater circuit at main disconnect panel.
- Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire or damage the heater.
- Do not use this heater to dry clothes. To prevent a possible fire, do not block air intakes or exhaust in any manner. Air inlets and outlets provide proper operation of the appliance and prevent its overheating. **DO NOT** cover air inlet and outlet grills.
- A heater has hot and arcing or sparking parts inside. Do not use in areas where gasoline, paint, or flammable vapors or liquids are used or stored. The use of these heaters is forbidden in any area where there is a presence of gases, explosives or inflammable objects. Never open a charged heater.
- **SAVE THESE INSTRUCTIONS.** This guide must be kept and given to any new user. Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons. The warranty of the heater will not cover any damage caused by non observance of any of these instructions.
- Do not use this heater outdoors.



**WARNING:** In order to avoid overheating do not cover the heater.

## **2. - INSTALLATION INSTRUCTIONS**

The symbols used in the text are explained below:



WARNING

This indication shows the possibility of causing death from electric shock.



WARNING

This indication shows the possibility of causing death or serious injury.



CAUTION

This indication shows the possibility of causing injury or damage to properties only.



Symbol for useful information.

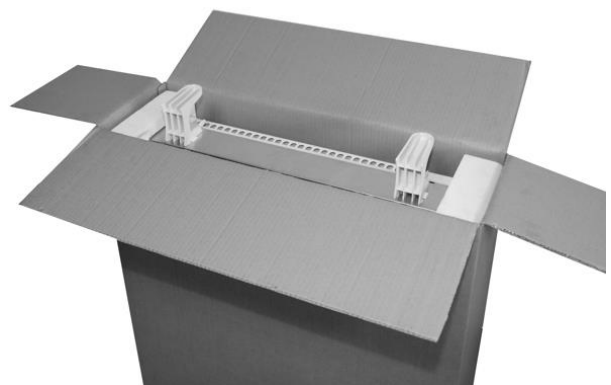
**IMPORTANT:** Wiring procedures and connections shall be in accordance with the national and local codes having jurisdiction.

- The installation must be carried out in accordance with the current local electrical regulations. Any installation or reinstallation has to be carried out by an experienced technician.
- Neither the connecting cable nor any other object must come into contact with the hot unit.
- Please check that the voltage in the rating label fits the power supply. The nominal charging period of this heater is indicated in the rating label. This appliance must be grounded.
- The appliance should not be installed just below an electrical socket.
- The appliance must be installed in such a way that it is impossible for anyone using a bath or shower, to touch the controls.
- If during any installation the thermal insulation shows any sign of damage, it must be replaced.
- This heater should be switched off at the circuit breaker before any repair work is carried out. This should also be done during times of the year when heat is not required.
- This appliance is only for permanent connection to a fix installation. The supply circuit to the heater must incorporate a double pole isolating switch having a contact separation of at least 3 mm.
- After installation a survey of the first charging cycle should be carried out to ensure that the main input thermostat switches off. Ventilate the room during this first cycle.
- To maintain stability, it is essential that the heater is placed on a level surface and care should be taken to avoid irregular surfaces, such as may result from carpets or tiled surrounds partially protruding under the heater.
- The presence of air particles of smoke, dust and other pollutants could, in time, discolor the walls and surfaces around the heater.
- Incorrect time settings, erroneous programming of the reduced rate time and too high temperature settings may result in a high cost of your electricity bill.

In order to achieve a correct installation of this device, follow these steps:

1.- Choose the right location to install the SOLAR HHR. The minimum clearances must be respected from the appliance to any combustible material such as furniture or curtains. To reduce the risk of fire, do not store or use petrols or other flammable liquids and vapours in the vicinity of the heater.

2.- Open the heater box at the indicated side and install the supporting feet without removing the heater.



3.- Flip the box upside down to allow the heater to stand on its feet and remove the carton. Please check that it is the correct model and is in good conditions.

Check that all parts have been delivered and are intact.

- 1 SOLAR HHR heater casing.
- 1 Bag containing 2 screws, 2 rawl plugs, 4 white screws.
- 2 supporting feet (SOLARHHR10, 20 & 30)
- 3 supporting feet (SOLARHHR40)
- 1 top fixing plate.
- 2 side fixing plates.
- This guide.



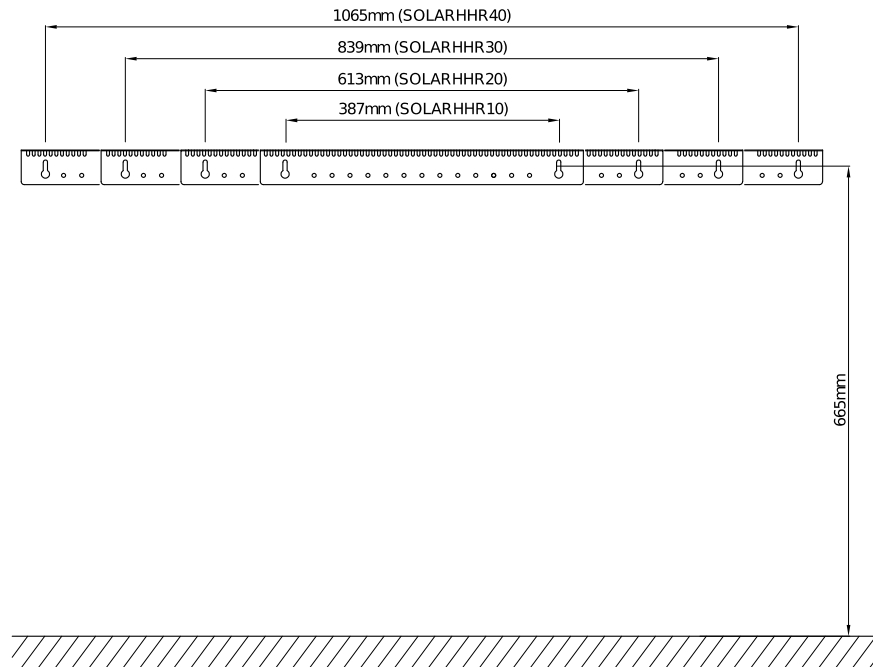
*The casing and storage bricks are supplied separately. Check the supplied bricks packages correspond to the ones indicated on the heater carton.*



*The heater operation is not affected if bricks with minor damage are used.*



4.- Screw on the wall the top fixing plate, making the two required drills at the recommended distance depending on the model. Use the rawl plugs and screws contained in the plastic bag to fix the fitting to the wall.



5.- Fix the side fixing plates to the metal casing by using the appropriate screws. The supply cables must be fitted but not wired to the storage heater before placing the heater to the wall. Remove the white screws located in the top of SOLAR HHR, and place the SOLAR HHR in the selected installation area. Use the removed screws to attach SOLAR HHR to the top fixing plate installed in the wall.



**SOLAR HHR MUST NOT BE HUNG ON THE SCREWS;** these are used only to prevent the device from overturning and not to support it. If there is any doubt concerning the wall strength, consult the corresponding construction specialist. The appliances are heavy; it is the installer responsibility the correct installation and wall support of these devices to prevent them from overturning.

6.- Take off the front outlet grill by removing the four screws. Take off the front panel by removing the two screws located at the bottom.



7.- Wire correctly the heater connecting Line, Neutral and Earth in the corresponding screw of the connection block. Tighten properly the connection block screws. Do not leave any remaining wire inside the heater.



**WARNING** *Touching live connections can cause serious personal injury.*

8.- Unscrew the inner panel and remove it.



**WARNING** *Steel edges can cut.*



**WARNING** *In the interior part of this inner panel there is a very delicate MICROTHERM insulation panel. It has to be handled with extreme care. AVOID TOUCHING OR BENDING IT.*



9.- Do not disconnect the electrical heating elements. Remove the packing cardboard and the metallic plate. Lift and tilt the elements outwards being careful not to damage the insulation on the bottom of the heater and carefully place the storage bricks. Arrange two levels of bricks with the flat side facing to the back of the heater.

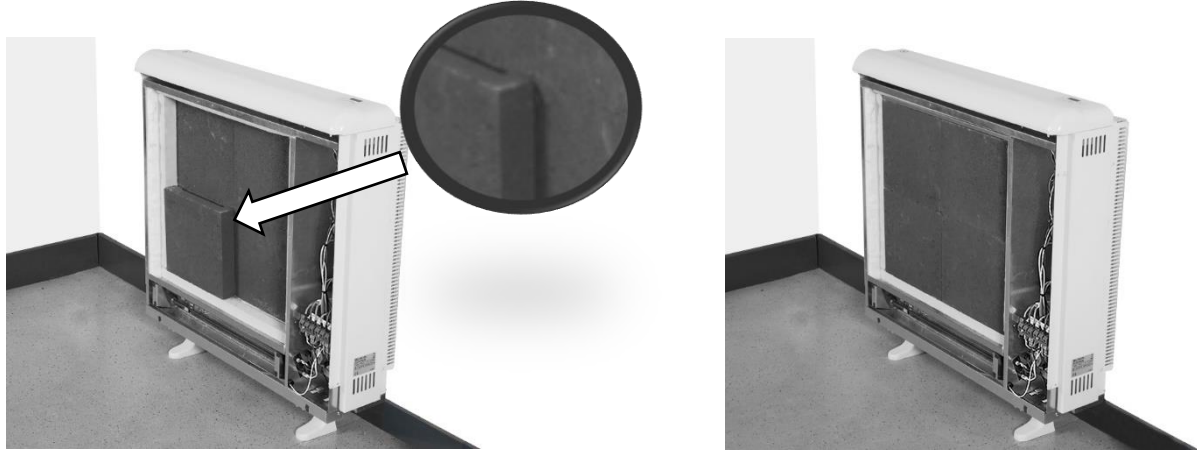


10.- Place the heating elements back into their original position. Place the other two rows of storage bricks with the flat side facing out and always on the heating elements supporting tabs.

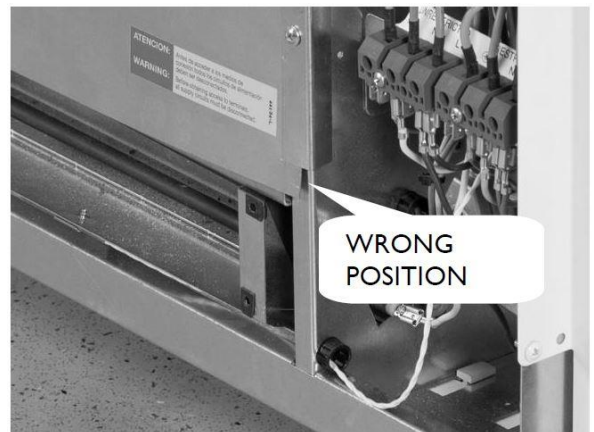
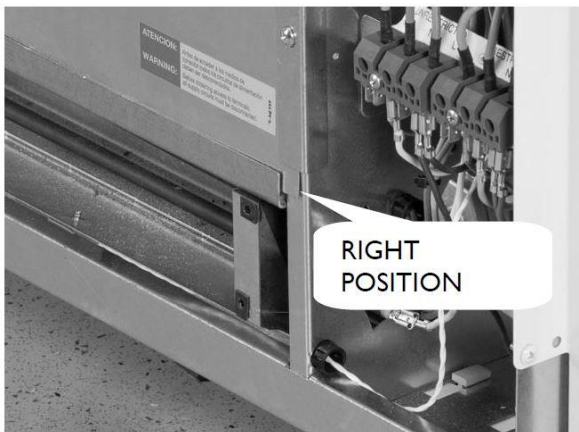
11.- Next replace the metallic plate in the top of the storage core, between the bricks and the Microtherm insulation panel with the flat side facing up. It must be placed in the right position for the fan to work correctly.



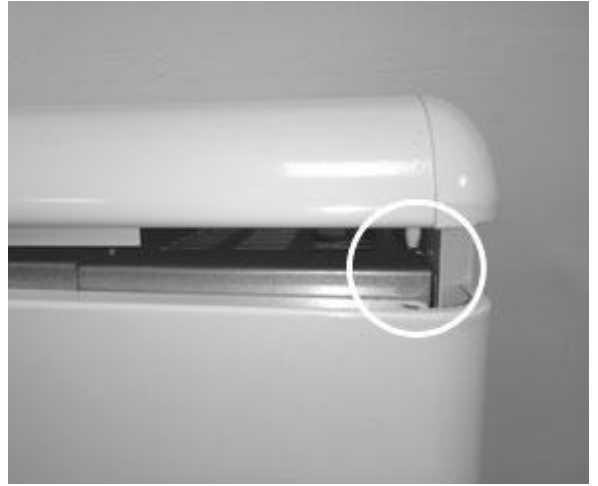
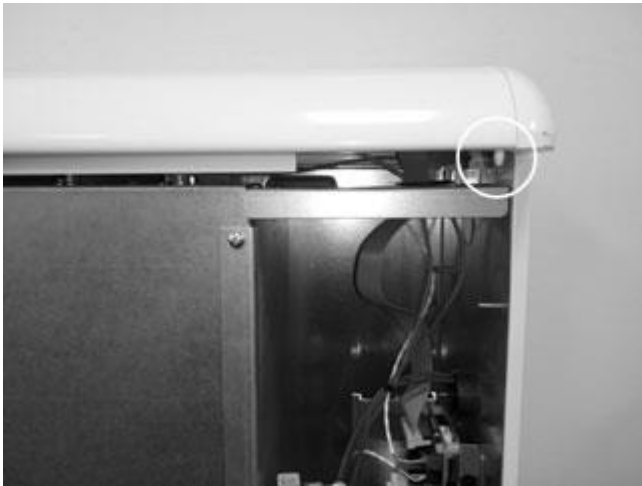
12.- Place the third row of storage bricks with the flat side facing out.



13.- Refit the inner front panel. If the bricks have been fitted correctly you will have no difficulty in refitting the panel. **Make sure the bottom edge of the inner panel is inside the front lip of the heater. Please see below**



14. Replace the front panel. When refitting the exterior front panel, align the 2 metal upper pegs on the heater with holes in the exterior panel. Push the top up into place and push the bottom in, then refit the screws.



15. Refit the front outlet grill along with the screws.

### RELOCATION



**WARNING:** *Relocation to another location must be carried out by an experienced technician.*

If during reinstallation the thermal insulation shows any sign of damage, it must be removed and replaced by an identical part.

### MANUALLY RESET TEMPERATURE LIMITER

This heater employs a manually reset temperature limiter (see LR in the connection diagram).

This safety device operates when high temperatures are reached at the top of the heater. It requires re-setting manually: Let the heater cool. The cause of overheating should be investigated.



**WARNING:** *Re-setting manually must be carried out only by an experienced technician.*

Turn off the heater at the circuit breaker.

Take off the front panel by removing the two screws located at the bottom. Find the limiter LR in the connection diagram and push the small pin until a click is heard.

## 3. - OPERATING INSTRUCTIONS

### 3.1. General information

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**CAUTION:** DO NOT USE THIS HEATER TO DRY CLOTHES. Do not cover this heater at any time.

#### CONNECTION / DISCONNECTION

Power switch. All models are equipped with a switch on the back side panel. It is used to connect and disconnect SOLAR HHR.



#### KEYBOARD:



Keep pressed the button to access the advanced configuration. Press this button to go back in the different menus.



Press the button to confirm values in the different menus.



Press the key to increase the displayed value or to advance through the different options available.



Press the key to decrease the displayed value or to move through the different options available.

#### ON/OFF



Once the heater is connected to a main supply you can turn the heater ON by switching the main ON/OFF switch positioned at the rear right side of the heater as shown above.



#### BACKLIGHT

Pressing any button, the display will illuminate with a soft white colour. After certain time if no buttons are pressed the display backlight will turn off.

Buttons only will respond when the backlight is on.

#### KEYBOARD LOCK

During any operation mode, it is possible to lock the keyboard by holding  and  simultaneously for 5 seconds. A pop-up window will confirm the keyboard lock.

To unlock the keyboard, press  and  simultaneously for 5 seconds. A pop-up window will confirm the keyboard unlock.



## 3.2. Commissioning

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An easy installation wizard is programmed in SOLAR HHR electronic control. Follow the start wizard instructions when turning your SOLAR HHR on for the first time or after resetting it to the factory settings.

### START WIZARD - INITIAL SETTINGS.

The SOLAR HHR electronic control will guide you through the commissioning of the unit. The steps to follow are:

a. Select language. Confirm the language in the storage heater electronic control.

b. Date & Time. Check and confirm that the default date & time in the unit is correct. If not, please change it.

c. Charging periods. 2 different charging periods can be set in SOLAR HHR. Set Charging Periods 1 & 2 according to your electricity low tariff hours.

By default, SOLAR HHR is set to charge from 00:00 to 07:00 hours. If this charging time matches your electricity low tariff hours, you do not need to make any changes in the unit configuration. Otherwise, you can change charging Periods 1 and 2 to match your electricity tariff.

d. Temperature programme. This is the last step of the start wizard. Select and confirm the weekly temperature programme that the heater will follow. By default, 3 different programmes and a 24-hours temperature setting are available.

- **Programme 1. At Home.**
  - o From Monday to Sunday. Comfort temperature from 07:00 to 22:00. ECO temperature the rest of time slots.
- **Programme 2. Work M-F.**
  - o From Monday to Friday. Comfort from 07:00 to 08:00 + 17:00 to 22:00. ECO the rest of time slots.
  - o Saturdays and Sundays. Comfort from 07:00 to 22:00. ECO the rest of time slots.
- **Programme 3. Office Schedule.**
  - o From Monday to Sunday. Comfort from 07:00 to 18:00. ECO the resto of time slots.
- **Temperature 24h.**
  - o The same temperature 24 hours a day, 7 days a week.

In case you select one of the 3 predefined programmed, you can check or modify the programme in the next step as well as modify the set-point temperature for every temperature level (Comfort, ECO and Frost Protection).

In case you select Temperature 24 hours, the installation wizard will ask to set the temperature you want to maintain 24 hours a day, 7 days a week.



*With the help of the start wizard, you will set you SOLAR HHR storage heater for an autonomous operation. It will charge and store the heat during the charging hours set in c.Charging Periods and it will adjust the charge level and consumption according to the temperature programme of your choice.*



*An incorrect time, charging periods or set temperatures configuration, might result in a high cost of the electricity bill.*

## 3.3. Utilization of photovoltaic surplus

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### PREPARATORY STEPS

Before using the PV surplus utilization function of your SOLAR HHR storage heaters, please perform the following steps:

1. Installation and setting of the G Control Hub and power meters included in the Solar Box. Please follow the instructions included within.
2. Download from your market app the Elnur Gabarron Wifi Control app, available for IOS & Android.
3. Create your user account in the app if you still do not have one.
4. Register the G Control Hub included in the Solar Box using your user account. Then link also the power meters included in the Solar Box if you still have not.
5. Link the SOLAR HHR storage heaters to the control hub using the app. (See point 4. Remote Operation using the G-Control Hub for more detail).



*To set and activate the PV surplus utilization function it is necessary to install the Solar Box device (1 Solar box per installation).*



*The PV surplus utilization function is only valid for installations for self-consumption connected to the grid and discharging energy to the network.*



*The PV surplus function is only valid for single power supply installations. The unit must be power supplied with a single supply and the unit must be reworked following the steps indicated in section 9.5. SINGLE POWER SUPPLY CONNECTION.*

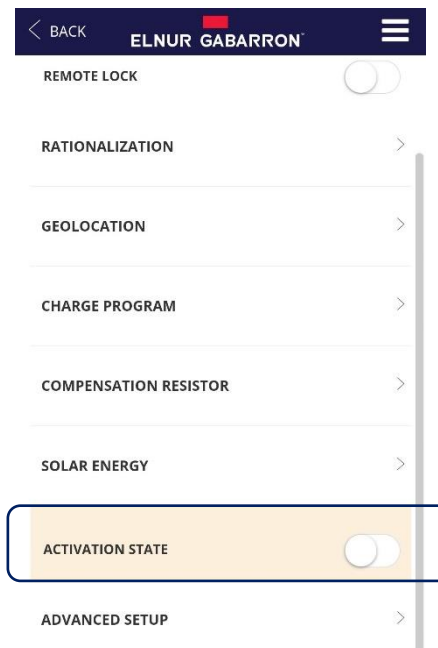
## ACTIVATION AND SETTING

The activation and setting of the PV surplus utilization function is done exclusively through the app.

### Solar Energy activation. Surplus utilization

Once you have completed the aforementioned steps, access the app with your user name and keyword, and complete the following steps:

- Access section “Heating” from the bottom menu.
- Select and access the appliance you want to set.
- Select the option “Setup” from the bottom menu
- Turn on or off the PV surplus utilisation function through the activation or deactivation of the “Activation State” parameter in the “Solar Energy” menu.



### Solar Energy settings. Surplus Utilization

When switching on the Solar Energy function, the setting options will be automatically displayed. Set them according to your needs. These are the setting options available:

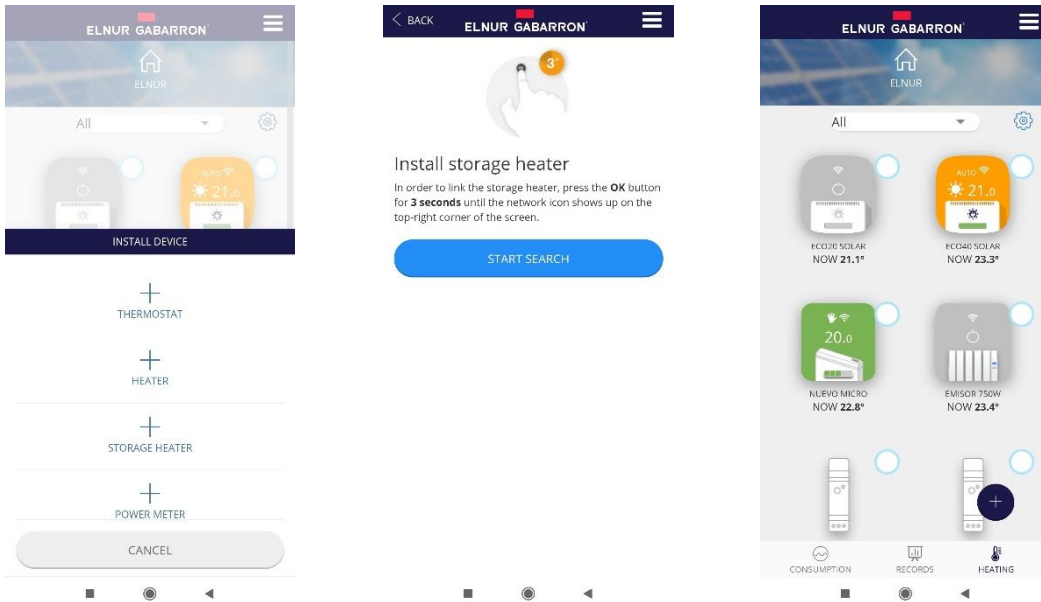
- **Charge settings:**
  - o Solar Alone. SOLAR HHR will only consume and store energy when there are photovoltaic surpluses.
  - o Solar and Off-peak. SOLAR HHR will charge and store energy whenever there is surplus. In addition, it will also charge during the Off-peak period. You can set the off-peak maximum charge (%) using the corresponding option.
  - o Solar and Grid Adjustment. SOLAR HHR will charge and store energy whenever there is surplus. It will also charge during the Off-peak period. You can also set the off-peak maximum charge (%) using the corresponding option. In addition, this setting mode offers some other functions
    - The storage heater can connect the balance heating element to provide immediate heat when the ambient temperature is lower than the setting temperature.
    - The appliance will self-regulate the charge level during the off-peak period according to the temperature records in precedent days.
- **Solar Power Activation:**
  - o Indicates the percentage of solar Energy required to active the next power level (%). 100% by default
- **Off-peak maximum charge**
  - o Maximum charge level during the off-peak period (%). 80% by default
- **Ambient temperature over heating protection.**
  - o This protection will stop the solar PV charging when the ambient temperature reaches set-point temperature plus ambient temperature over heating protection. Default 3°C.
- **Solar priority:**
  - o Solar PV charging priority. Devices with high priority will charge first in relation to low priority storage heaters when there is PV Solar extra energy.



## 4.- REMOTE OPERATION USING THE G-CONTROL HUB

It is possible to control the full operation of the unit remotely with the Elnur Gabarron Wifi Control app or the app-web (<https://remotecontrol.elnur.es>). The unit must be connected to a G-Control Hub connected to the internet to use this feature.

To associate the SOLAR HHR unit to the G-Control Hub, follow the instructions of the installation wizard of the app.



- Open the application and login with your user and password.
- Access the heating menu in the top menu in the app.
- Press the button (+) and select the type of heater that you are going to connect (Storage heater).
- Press Start Search and follow the instructions of the installation wizard.



When required, keep pressed  button during 3 seconds until the symbol  is displayed in the storage heater display.

You can control now and adjust the settings of your storage heater using the Elnur Gabarron Wifi Control app or the app-web <https://remotecontrol.elnur.es>.

## 5.- TROUBLESHOOTING

<b>SOLAR HHR does not heat.</b>	Please check it is connected, switched on and with the desire operation mode. Make sure the device is not covered or the lower air inlets are not obstructed. The LR safety limit may be activated; in this case it is necessary to reset it manually. Please contact technician.
<b>SOLAR HHR does not reach set up temperature</b>	Make sure that adequate temperature is selected. Make sure the storage heater is sized correctly for heat loss.
<b>Error messages in display</b>	Please contact technician.
<b>SOLAR HHR does not communicate with the G Control Hub.</b>	Check the unit is associated, the symbol  must be shown on the display. For distances greater than 30 metros and 2-3 walls, associate first the closest units. Each unit can work as signal extender. If  symbol is flashing, check the G Control Hub connexion to the network, and if any other device in the RF Net that could be working as signal extender has been removed.

## 6.- CLEANING MAINTENANCE INSTRUCTIONS

Before cleaning, make sure the power has been turned off at the circuit breaker panel and that the heating element of the heater is cool. Occasionally, clean dust with a dry, soft cloth.

Do not use any solvent or abrasive product for cleaning.

When the Heating season is finished, please disconnect the device by turning off the power switch located at the right back of the unit or at the circuit breaker.

Any other servicing should be performed by an authorized technician.



SOLAR HHR has been manufactured under a fully assured quality system and using environmentally friendly processes. Once its useful life is finished please take the device to a recycling depot so that its components can be recycled in an appropriate way.

## 7.- MAIN COMPONENTS LIST

Storage Heating Element	Ref. 10190410	Power PCB & Fixing Bracket	Ref. 15192670
270W Balancing Heating Element (SOLARHHR10)	Ref. 15192006	Keyboard PCB SOLARHHR	Ref. 15192672
275W Balancing Heating Element (SOLARHHR20)	Ref. 15192000	Room Sensor	Ref. 46102195
410W Balancing Heating Element (SOLARHHR30)	Ref. 15192002	Core Sensor	Ref. 15192140
550W Balancing Heating Element (SOLARHHR40)	Ref. 15192004	Air Outlet Sensor	Ref. 15192145
110°C Limiter	Ref. 15190725	Fan (SOLARHHR20 & 10)	Ref. 15192636
140°C Limiter	Ref. 15190720	Fan (SOLARHHR30 & 40)	Ref. 15192638
160°C Cut Out Manually Limiter	Ref. 15190730	Fan Resistor	Ref. 15192160

## 8.- TECNICAL FEATURES

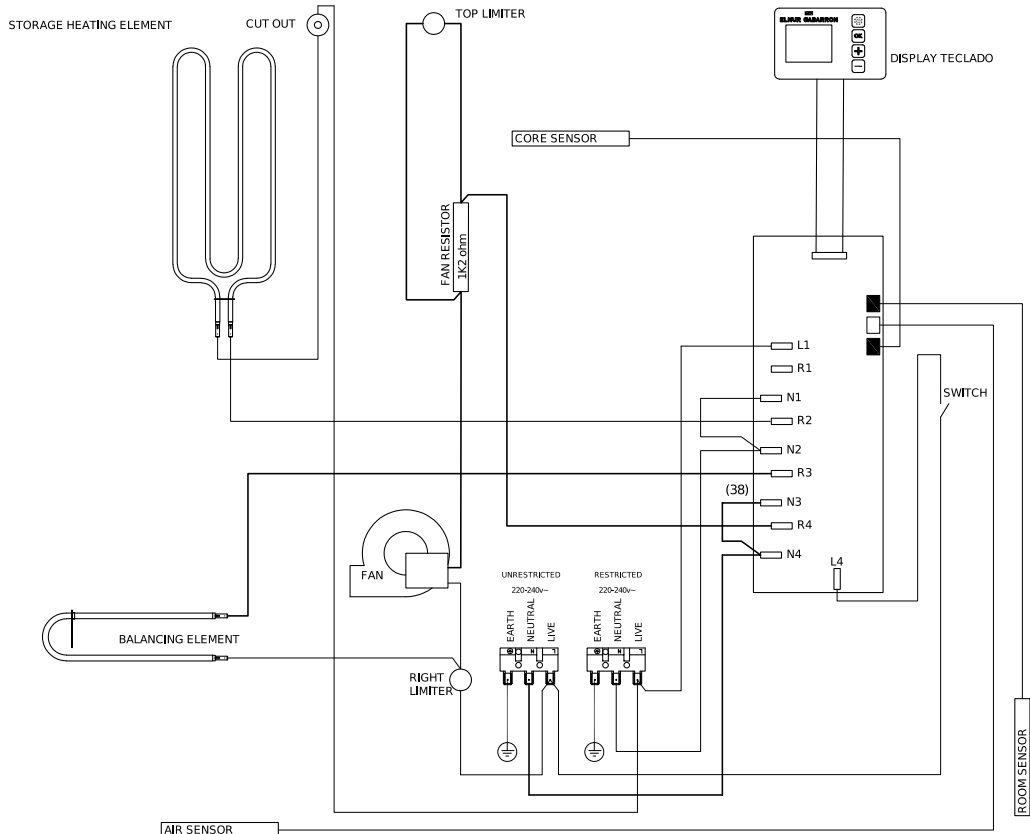
	SOLARHHR10	SOLARHHR20	SOLARHHR30	SOLARHHR40
<b>Connection</b>	240V ~	240V ~	240V ~	240V ~
<b>Storage output</b>	871W	1742W	2613W	3484W
<b>Balancing element output</b>	270W	550W	820W	1100W
<b>Charge period</b>	7h	7h	7h	7h
<b>Charging</b>	6,1 kWh	12,2 kWh	18,3 kWh	24,4 kWh
<b>Insulation</b>	Class I	Class I	Class I	Class I
<b>Width</b>	49cm	72cm	95cm	117cm
<b>Height</b>	73cm	73cm	73cm	73cm
<b>Depth</b>	19,5cm	19,5cm	19,5cm	19,5cm
<b>Weight</b>	54kg	97kg	140kg	183kg
<b>Num. of bricks 6kg</b>	6	12	18	24



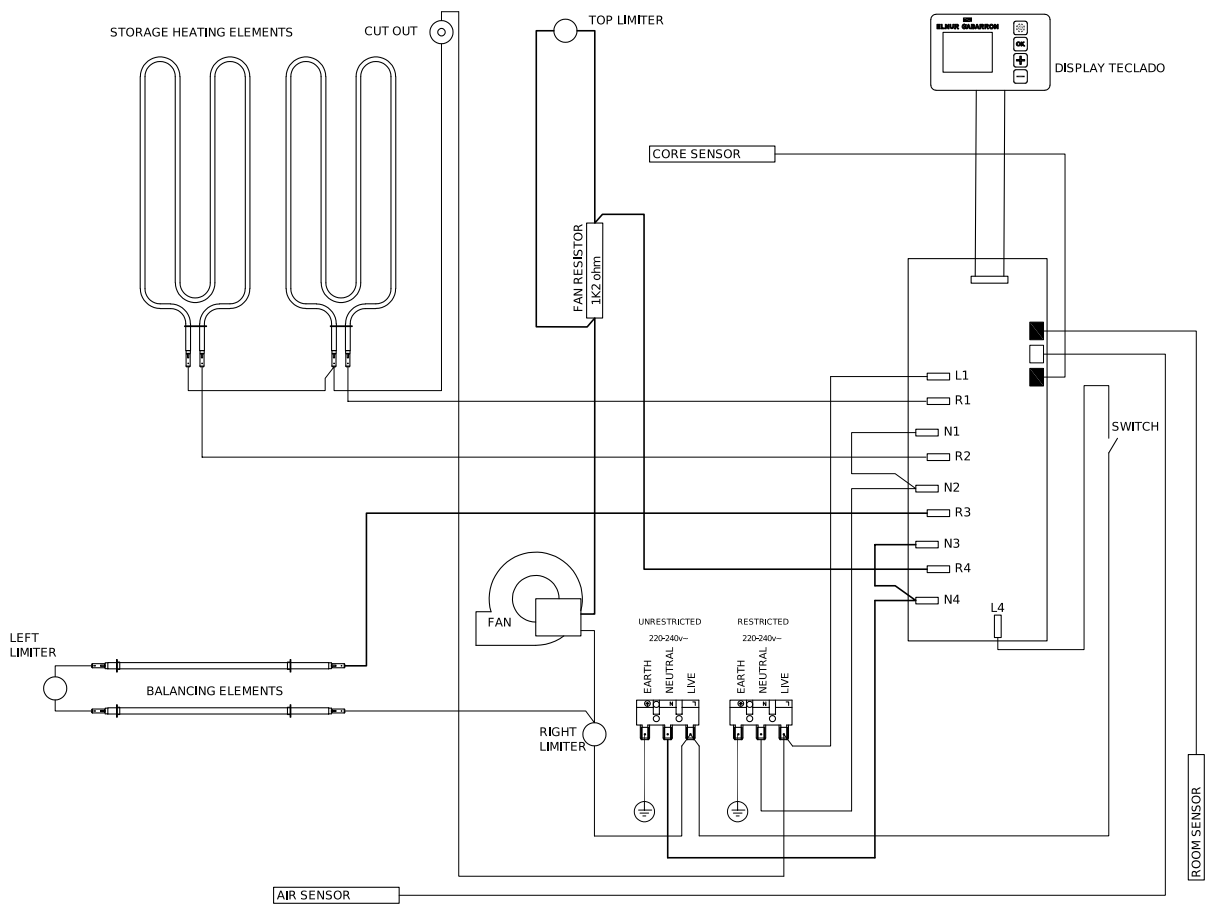
Storage heater elements and balancing heating element will never operate at the same time.

## 9.- CONNECTION DIAGRAMS

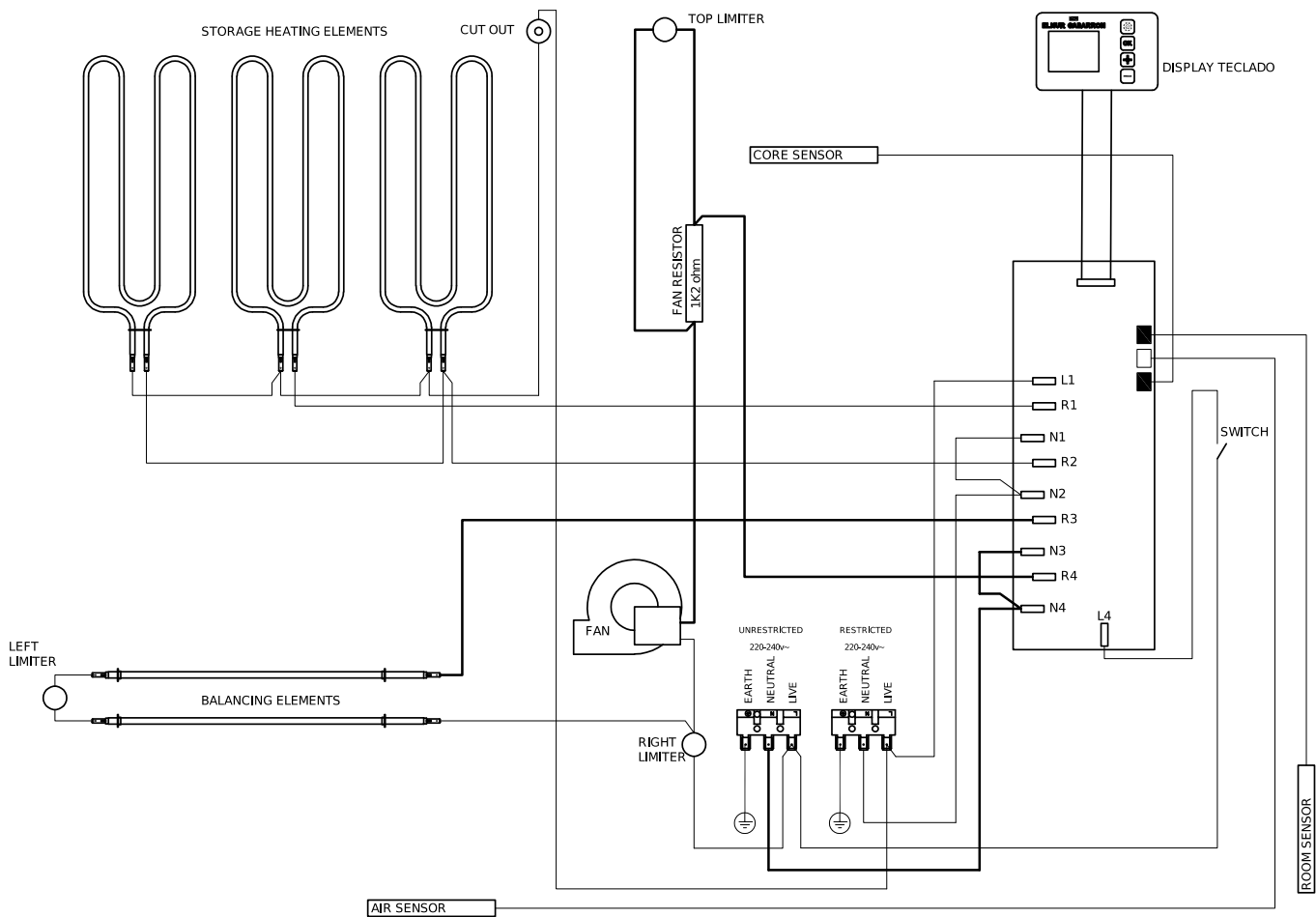
### 9.1. CONNECTION DIAGRAM SOLARHHR10



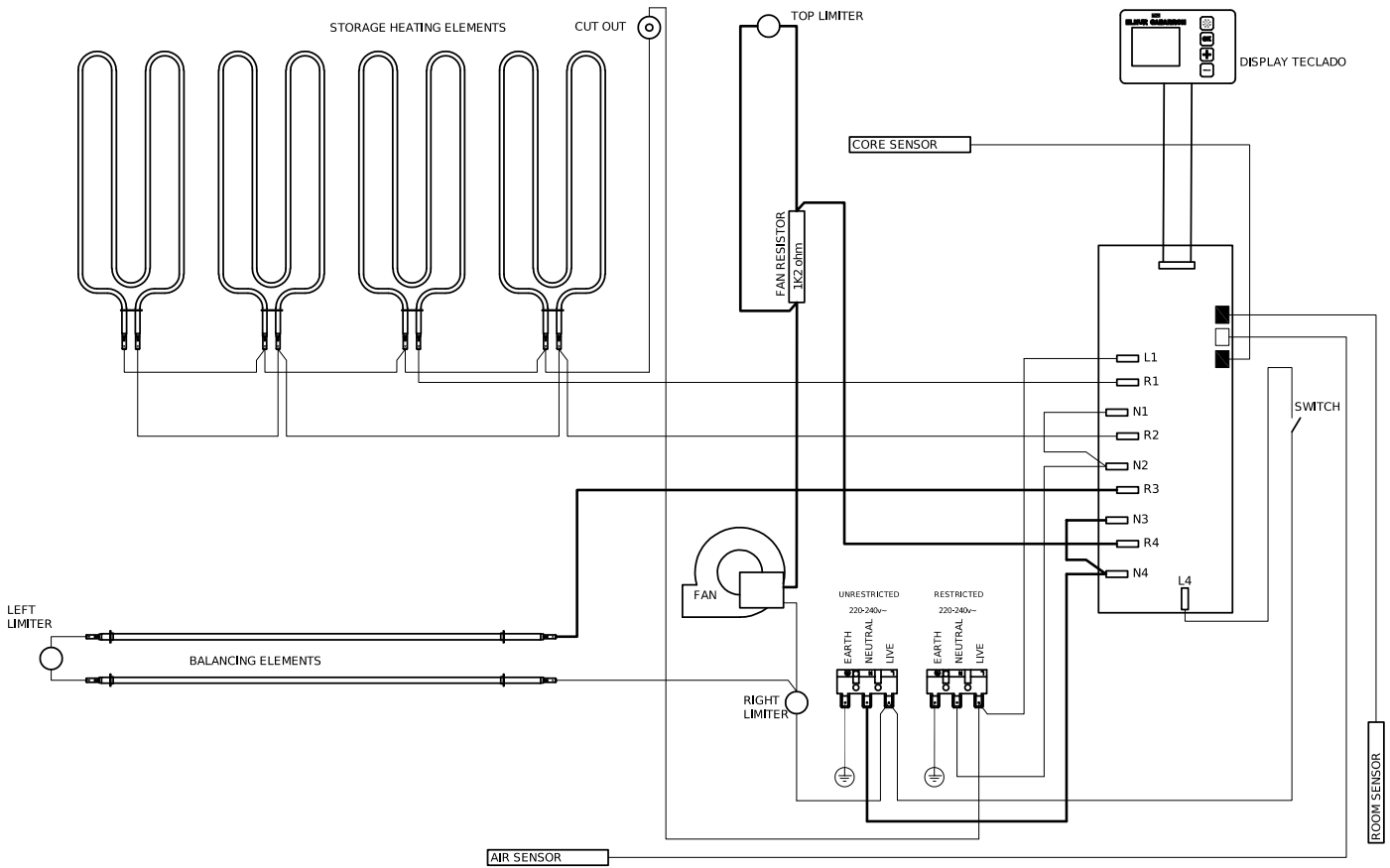
### 9.2. CONNECTION DIAGRAM SOLARHHR20



### 9.3. CONNECTION DIAGRAM SOLARHHR30



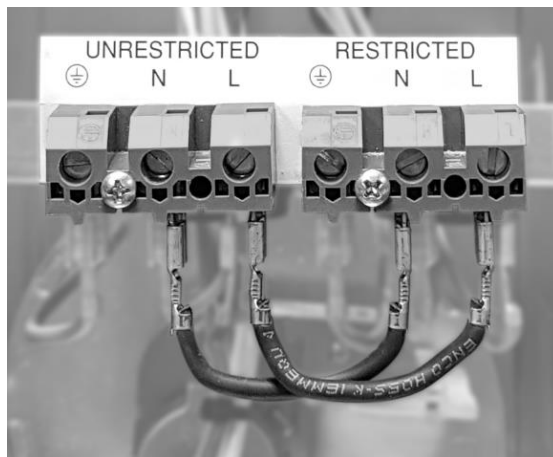
### 9.4. CONNECTION DIAGRAM SOLARHHR40



### 9.5. SINGLE POWER SUPPLY CONNECTION

The Elnur SOLARHHR is capable of utilising a single economy/24hr supply by using the supplied link cables:

- 1. Use the 2 black link cables provided in the plastic bag to jumper the Lines and Neutrals of the Restricted and Unrestricted side of the connection block in the storage heater.



- 2. Connect the 24 hours/economy supply feed to the restricted or unrestricted side in the connection block of the heater.

**Note:** Modification to the distribution board may be required if supplied via radial circuits. Connection from the economy/24hr supply to the heater should be via a 20Amp double pole isolator switch. (Radial circuits).

# PRODUCT FICHE

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MODEL(S): ELNUR GABARRON SOLARHHR10, SOLARHHR20, SOLARHHR30, SOLARHHR40

Item	Symbol	Value				Unit
		SOLAR HHR10	SOLAR HHR20	SOLAR HHR30	SOLAR HHR40	
<b>Heat Output</b>						
Nominal heat output	$P_{nom}$	0,4	0,8	1,2	1,6	kW
Minimum heat output	$P_{min}$	N.A.	N.A.	N.A.	N.A.	kW
Maximum continuous heat output	$P_{max,c}$	0,4	0,8	1,2	1,6	kW
<b>Auxiliary electricity consumption</b>						
At nominal heat output	$e_{l,max}$	0,000	0,000	0,000	0,000	kW
At minimum heat output	$e_{l,min}$	0,000	0,000	0,000	0,000	kW
In standby mode	$e_{l,SB}$	<0,0005	<0,0005	<0,0005	<0,0005	kW

Item	Value. All models
<b>Type of heat input</b>	
Electronic heat charge control with room and/or outdoor temperature feedback	Yes
<b>Type of heat output / room temperature control</b>	
Electronic room temperature control plus week timer	Yes
<b>Other control options</b>	
Room temperature control, with open window detection	Yes
With distance control option	Yes
With adaptive start control	Yes

<b>Contact details</b>	ELNUR, S.A. Travesía de Villa Esther, 11 28110 – Algete (Madrid), Spain
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**Commission Regulation (UE) 2015/1188 of 28 April 2015. Ecodesign requirements for electric storage local space heaters.**

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The symbol on the product or in its packaging indicates that this product may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product. These instructions are only valid in the EU member states.



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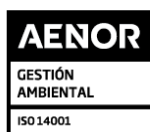
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