



## RAPAX

Heat pump water heaters  
Wall-hung and floor standing



# RAPAX

## Heat pump water heaters

**The RAPAX heat pump water heaters** can completely eliminate the use of gas for domestic hot water production, because they apply the same principle as heat pumps. This is one of the new, effective solutions designed by Immergas to make the best use of renewable energy sources.

Floor standing versions are available with 270 litres storage tank (RAPAX 300 V3), or 200 litres (RAPAX 200 V3). There is one wall hung version with a 100 litres storage (RAPAX 100 V2). All tanks are in vitrified steel.



**RAPAX V3** are mostly suitable when renovating and creating heating systems in detached houses to produce domestic hot water with renewable energy sources.

**The RAPAX 100 V2** is born to complete the supply of systems for new buildings, in particular apartment block, and also for the replacement of existing gas or electric water heaters.

The whole range is an excellent alternative to solar energy; it can be used in systems built to run without gas for the production of domestic hot water or coupled with an heat pump for heating/cooling

All RAPAX water heaters are designed to take full advantage of a photovoltaic system. In versions RAPAX 200/300 SOL V3 is possible moreover to connect a solar thermal system.



### **REDUCED CONSUMPTION AND RESPECT FOR THE ENVIRONMENT**

RAPAX range water heaters significantly reduce polluting emissions compared to traditional gas water heaters. Thanks to a heat pump, they use the heat in the air as a source of free, renewable energy for heating water with meliorative COP. Through an electrical contact, they can also store the heat produced with the photovoltaic system in the boiler. The RAPAX 200 and 300 SOL V3 versions can be combined with a forced-circulation solar heating system to further reduce power consumption.

### **SILENT OPERATION**

RAPAX have the lowest sound impact in the field so they are suitable for installation in living areas.

### **EASE OF INSTALLATION**

These water heaters can also be installed in non-heated spaces such as a garage, laundry or storeroom; they do not require extensive work apart from holes for air discharge in solutions that call for suction and external exhaustion of air.

### **EASY TO ADJUST**

The wall-hung RAPAX 100 V2 version is featured with a display in the central part of the casing allowing the installer to place the water heater at the desired floor height and at the user's convenience for setting and displaying the main operating parameters.





### USER INTERFACE AND FUNCTIONS

The integrated interface allows an easier use. The control lets you view measured temperature, operation times of heat pump or electrical supplement, energy consumption in kWh, activation of the solar heating circuit (only in the SOL V3 versions) as well as setting of anti-legionella function.

| Operation modes | Description  |
|-----------------|--|
| AUTO            | Heat pump operation has priority; the electrical resistance can be switched on automatically to ensure a sufficient water volume (manual adjustment range 50 - 62 °C).   |
| MANUAL          | Heat pump operation has priority; the electrical resistance can be switched on automatically to ensure a sufficient water volume (manual adjustment range 50 - 62 °C, according to the consumption profile of the previous days).  |
| ECO             | The fixed set point temperature is adjusted between 50 and 55 °C by the user. The water heater operates exclusively with the heat pump to optimize the savings. The electrical integration is authorized for operation only when the air temperature exceeds the operating time slots (-5 + 43 °C) or in case of anomaly/error signal. |
| BOOST           | Allows you to force the simultaneous start of the heat pump and electrical integration in the presence of significant domestic hot water needs. In BOOST mode, temperature is set at 62 °C.  |
| ABSENCE         | It allows you to indicate a permanent absence or a scheduled absence (for example holidays). In this period, the water temperature is kept above 15 °C.  |



### SOLAR HEATING COMBINATION

RAPAX 200/300 SOL V3 versions have been designed to supplement DHW production with a forced-circulation solar heating system\* connected to the special fittings of the bottom coil\*\*. The solar heating system is completed by addition of:

- Flat Plate Collector CP4 M or CP4 XL
- Connection kit for Flat Plate Collector (including vent kit and fittings)
- Frame and brackets for Flat Plate Collector
- Glycol and connections pipes storage tank and Flat Plate Collector
- Central solar unit and Solar pump station
- Solar expansion vessel

\* It is available a specific documentation for solar thermal solutions.

\*\* Alternative at the solar heating system, it is possible to connect a boiler. For more information contact the presales-dept.

| Technical characteristics   | Unit of measurement     | RAPAX 100 V2     | RAPAX 200 V3     | RAPAX 300 V3     |
|---|-------------------------|------------------|------------------|------------------|
| <b>Code</b>   |                         | <b>3.028366</b>  | <b>3.030632</b>  | <b>3.030072</b>  |
| <b>Water heating energy efficiency class /load profile</b>                  |                         | <b>A+/M</b>      | <b>A+/L</b>      | <b>A+/XL</b>     |
| Enamelled steel storage tank capacity                                       | l                       | 100              | 200              | 270              |
| Polyurethan insulation tickness   | mm                      | 31               | 40               | 40               |
| COP (air temperature 7 °C)*   |                         | 2,47             | 2,81             | 3,16             |
| COP (air temperature 15 °C)*  |                         | 2,75             | 3,05             | 3,61             |
| COP (air temperature 20 °C)*  |                         | 3,10             | 3,24             | 3,77             |
| COP (air temperature 35 °C)*  |                         | 3,76             | 3,72             | 4,52             |
| Maximum quantity of water mixed at 40 °C (air temperature 15 °C)            | l                       | 127              | 265              | 361              |
| Anticorrosion protection  |                         | Magnesium anode  | Magnesium anode  | Magnesium anode  |
| Water maximum operating pressure  | bar                     | 8                | 8                | 8                |
| Electrical connection (voltage/frequency)                                   | V/Hz                    | 230/50           | 230/50           | 230/50           |
| Maximum total power absorbed by the device                                  | W                       | 1550             | 2300             | 2300             |
| Maximum power absorbed by heat pump   | W                       | 350              | 700              | 700              |
| Power absorbed by auxiliary electrical unit                                 | W                       | 1200             | 1600             | 1600             |
| Heating pump nominal power output (nominal condition 15 °C)                 | W                       | 963              | 2135             | 2527             |
| Domestic hot water range by heating pump (52 °C default value)              | °C                      | from 50 to 62    | from 50 to 62    | from 50 to 62    |
| Heating pump air temperature working range                                  | °C                      | from - 5 to + 43 | from - 5 to + 43 | from - 5 to + 43 |
| Air flow (no air ducting)   |                         |                  |                  |                  |
| Speed 1   | m <sup>3</sup> /h       | 160              | 310              | 310              |
| Speed 2   | m <sup>3</sup> /h       | 180              | 390              | 390              |
| Load losses acceptable on ventilation circuit, without decrease performance | Pa                      | 25               | 25               | 25               |
| Refrigerant gas   |                         | R134A            | R513A            | R513A            |
| Mass of coolant fluid   | kg                      | 0,52             | 0,80             | 0,86             |
| Coolant volume  | ton CO <sub>2</sub> Eq. | 0,74             | 0,50             | 0,54             |
| Heating time with heat pump (from 15 °C to 51 °C - air temperature 15 °C)   |                         | 6h25'            | 6h24'            | 8h34'            |
| Electric protection index   | IP                      | X4B              | X1B              | X1B              |
| Empty appliance weight  | kg                      | 57               | 80               | 92               |

This product is keeping with 2014/30/UE electromagnetic compatibility directive , 2014/35/UE low tension directive and 2011/65/UE ROHS directive.

\* According to EN 16147, water from 10 to 52,5 °C



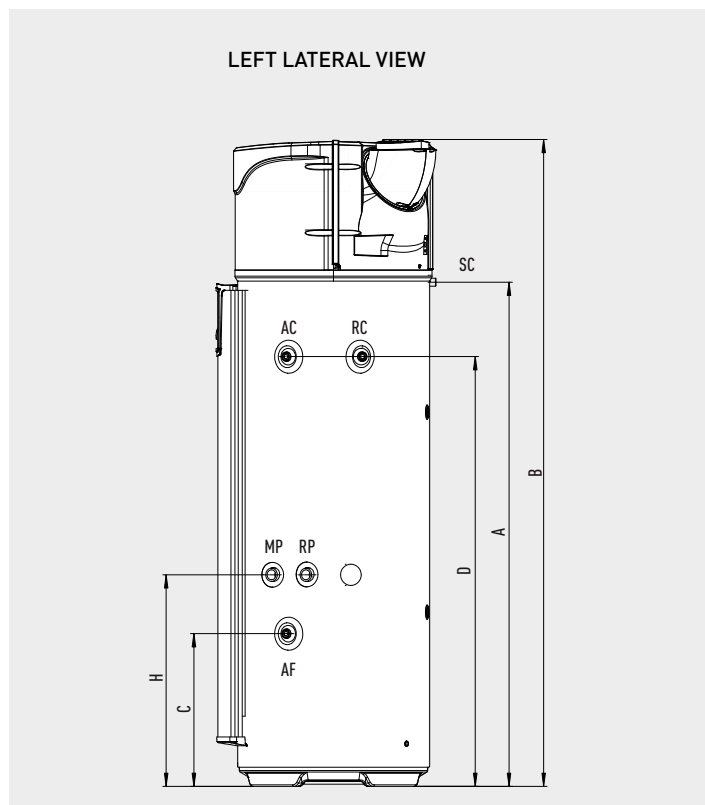
| Technical characteristics   | Unit of measurement    | RAPAX 200 SOL V3 | RAPAX 300 SOL V3 |
|---|------------------------|------------------|------------------|
| <b>Code</b>   |                        | <b>3.030633</b>  | <b>3.030073</b>  |
| <b>Water heating energy efficiency class /load profile</b>                  |                        | <b>A+/L</b>      | <b>A+/XL</b>     |
| Enamelled steel storage tank capacity                                       | l                      | 197              | 263              |
| Polyurethan insulation tickness   | mm                     | 40               | 40               |
| Coil's heating surface  | m <sup>2</sup>         | 1,2              | 1,2              |
| COP [air temperature 7 °C]*   |                        | 2,78             | 3,05             |
| COP [air temperature 15 °C]*  |                        | 3,07             | 3,44             |
| COP [air temperature 20 °C]*  |                        | 3,34             | 3,79             |
| COP [air temperature 35 °C]*  |                        | 3,5              | 4,6              |
| Maximum quantity of water mixed at 40 °C [air temperature 15 °C]            | l                      | 265              | 357              |
| Anticorrosion protection  |                        | Magnesium anode  | Magnesium anode  |
| Water maximum operating pressure  | bar                    | 8                | 8                |
| Electrical connection (voltage/frequency)                                   | V/Hz                   | 230/50           | 230/50           |
| Maximum total power absorbed by the device                                  | W                      | 2300             | 2300             |
| Maximum power absorbed by heat pump   | W                      | 700              | 700              |
| Power absorbed by auxiliary electrical unit                                 | W                      | 1600             | 1600             |
| Heating pump nominal power output [nominal condition 15 °C]                 | W                      | 2149             | 2408             |
| Domestic hot water range by heating pump (52 °C default value)              | °C                     | from 50 to 62    | from 50 to 62    |
| Heating pump air temperature working range                                  | °C                     | from - 5 to + 43 | from - 5 to + 43 |
| Air flow (no air ducting)   |                        |                  |                  |
| Speed 1   | m <sup>3</sup> /h      | 310              | 310              |
| Speed 2   | m <sup>3</sup> /h      | 390              | 390              |
| Load losses acceptable on ventilation circuit, without decrease performance | Pa                     | 25               | 25               |
| Refrigerant gas   |                        | R513A            | R513A            |
| Mass of coolant fluid   | kg                     | 0,80             | 0,86             |
| Coolant volume  | ton CO <sub>2</sub> Eq | 0.50             | 0.54             |
| Heating time with heat pump [from 15 °C to 51 °C - air temperature 15 °C]   |                        | 6h13'            | 8h40'            |
| Electric protection inde  | IP                     | X1B              | X1B              |
| Empty appliance weight  | kg                     | 97               | 111              |

This product is keeping with 2014/30/UE electromagnetic compatibility directive , 2014/35/UE low tension directive and 2011/65/UE ROHS directive.

\* According to EN 16147, water from 10 to 52,5 °C



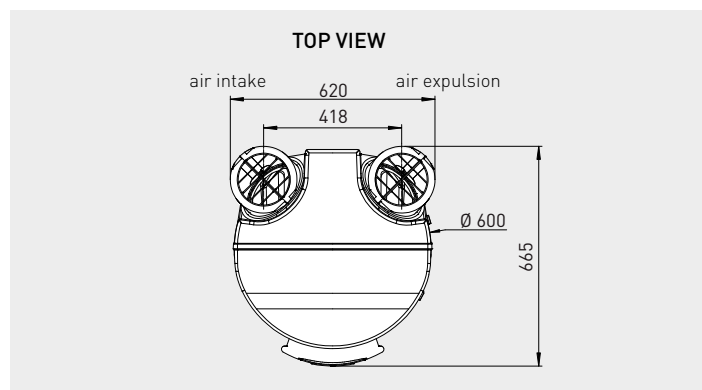
## RAPAX 200/300 V3 AND 200/300 SOL V3



### Key

|           |   |
|-----------|---|
| <b>AC</b> | Domestic hot water outlet ¾" M              |
| <b>AF</b> | Domestic cold water inlet ¾" M              |
| <b>MP</b> | Delivery solar collector (only SOL V3) 1" F |
| <b>RP</b> | Return solar collector (only SOL V3) 1" F   |
| <b>SC</b> | Condensate drain Ø 20                       |
| <b>RC</b> | Recirculation ¾" M (only SOL V3)            |

The use of 200/300 V3 and 200/300 SOL V3 involves the installation of an appropriately sized DHW expansion vessel and safety valve, not included in the supply (Immergas supplies a specific option kit, see page 11).



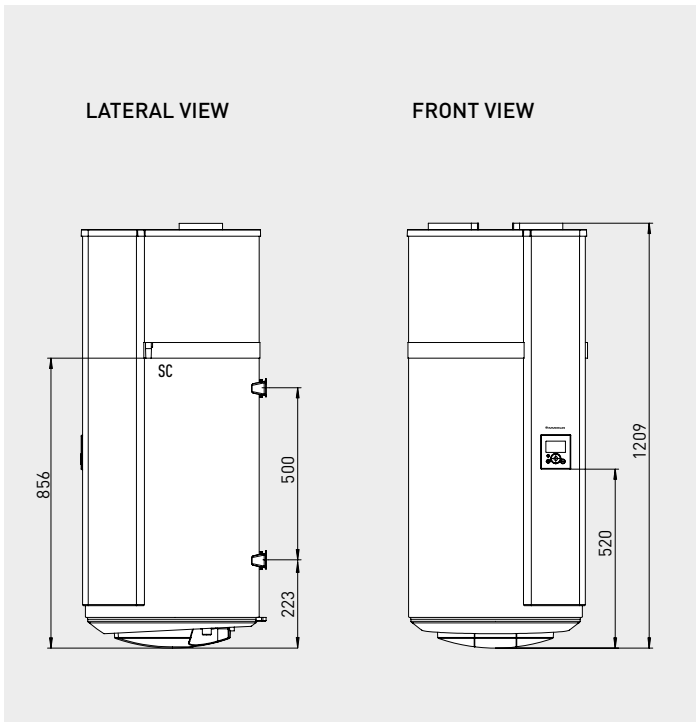
| Symbol   | Key                             | RAPAX 200 V3 | RAPAX 300 V3 | RAPAX 200 SOL V3 | RAPAX 300 SOL V3 |
|----------|---------------------------------|--------------|--------------|------------------|------------------|
| <b>A</b> | Condensate drain                | 1166 mm      | 1525 mm      | 1166 mm          | 1525 mm          |
| <b>B</b> | Height                          | 1617 mm      | 1957 mm      | 1617 mm          | 1957 mm          |
| <b>C</b> | Domestic cold water inlet       | 304 mm       | 304 mm       | 462 mm           | 462 mm           |
| <b>D</b> | Domestic hot water outlet       | 961 mm       | 1300 mm      | 961 mm           | 1300 mm          |
| <b>H</b> | Delivery/Return solar collector | -            | -            | 640 mm           | 640 mm           |



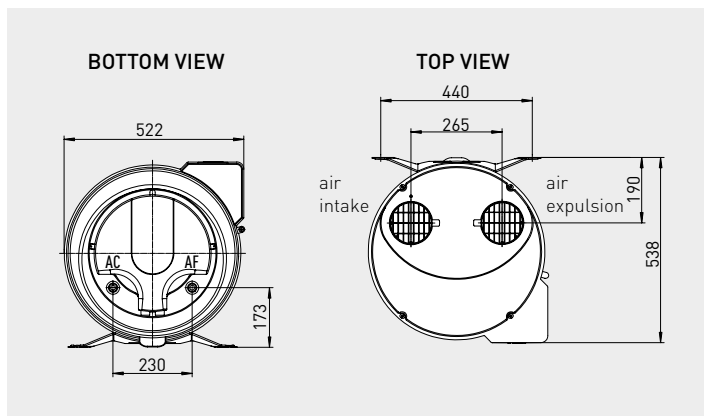
RAPAX 100 V2

Key

|    |                                  |
|----|----------------------------------|
| AC | Domestic hot water outlet 3/4" M |
| AF | Domestic cold water inlet 3/4" M |
| SC | Condensate drain Ø 20            |



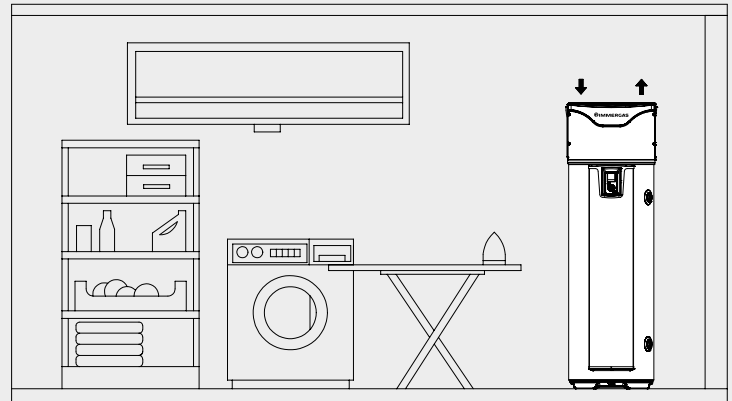
The use of RAPAX 100 V2 involves the installation of an appropriately sized DHW expansion vessel and safety valve, not included in the supply (Immergas supplies a specific option kit, see page 11).



**.01 INSTALLATION WITHOUT DUCTS IN UNHEATED SPACES (VOLUME > 20 M<sup>3</sup>)**

Very useful in a laundry, garage or utility room. In the laundry the advantage is the room dehumidification and the recovery of the wasted heat from washing machines and dryers.

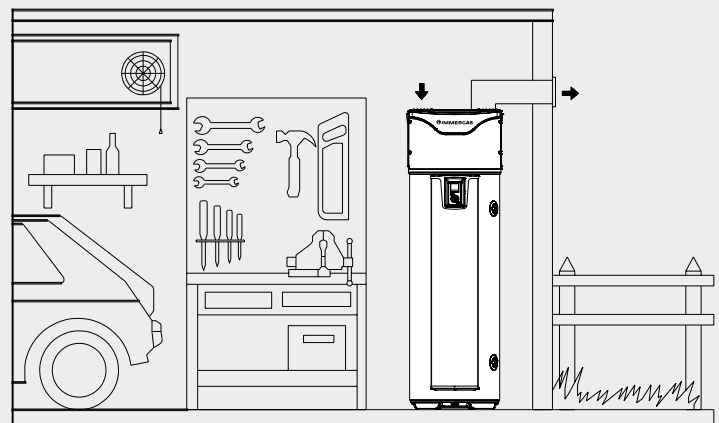
**.01**



**.02 INSTALLATION IN UNHEATED SPACES (VOLUME > 20 M<sup>3</sup>), WITH 1 EXPULSION DUCT**

In this case, a ventilation opening must be done.

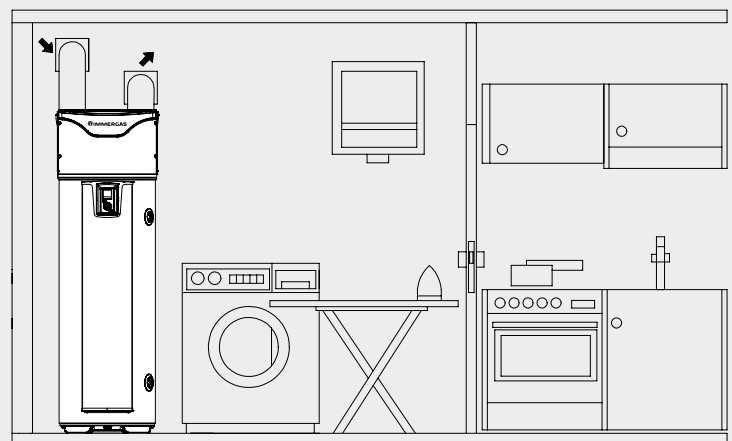
**.02**



**.03 INSTALLATION IN HEATED OR UNHEATED ROOMS, WITH 2 DUCTS FOR THE AIR (INTAKE AND EXPULSION)**

Comply the maximum ducts lengths (rif. Instruction manual). It's important to use insulated ducts, Ø 160 mm or Ø 125 mm (depending on the version) to avoid condense in a wet room and use grilles on air-intake and expulsion in order to avoid the entry of foreign bodies.

**.03**




The installation of the heat pump water heater requires an omni-polar circuitbreaker of 16 A and an earth leakage trip of 30 mA not given as standard with RAPAX.

## OPTIONAL

The wide range of accessories allows to complete the installation of each Immergas heat pump water heater. By using original kits the quality and reliability of products are granted.

### Safety valve

| Tipologia   |  | Codice   |
|---|--|----------|
| Safety valve 7 bar and 12 litres expansion vessel kit for RAPAX 200/300 V3 and 200/300 SOL V3 |  | 3.025231 |
| Safety valve 7 bar and 5 litres expansion vessel kit for RAPAX 100 V2                         |  | 3.028368 |

### Duct adapter

|   |   |          |
|---|---|----------|
| Duct adapter Ø 160* for RAPAX 200/300 V3 and 200/300 SOL V3 |  | 3.025232 |
|---|---|----------|

### Extension pipe kit

|   |  |          |
|---|--|----------|
| Ø 160 0,5 m long * for RAPAX 200/300 V3 e 200/300 SOL   |  | 3.024659 |
| Ø 125 0,5 m long * for RAPAX 100 V2                     |  | 3.016370 |
| Ø 160 1 m long* for RAPAX 200/300 V3 and 200/300 SOL V3 |  | 3.024516 |
| Ø 125 1 m long * for RAPAX 100 V2                       |  | 3.016371 |
| Ø 125 2 m long * for RAPAX 100 V2                       |  | 3.015250 |

### Bend kit

|   |          |
|---|----------|
| 87° bend kit Ø 160* for RAPAX 200/300 V3 and 200/300 SOL V3     | 3.024517 |
| 2 x 45° bend kit Ø 160* for RAPAX 200/300 V3 and 200/300 SOL V3 | 3.024518 |
| 87° bend kit Ø 125* for RAPAX 100 V2                            | 3.016179 |
| 2 x 45° bend kit Ø 125* for RAPAX 100 V2                        | 3.016180 |

### Inlet / exhaust pipes insulation kit, which includes:

|  |          |
|--|----------|
| <ul style="list-style-type: none"> <li>n.2 White polyethylene insulation layer, thickness 5 mm for pipe Ø 160 mm L. 1000 mm</li> <li>n.4 White polyethylene insulation layer, thickness 5 mm for bend Ø160 mm</li> <li>n.1 White polyethylene tape 2x70x4000 mm for RAPAX 200/300 V3 and 200/300 SOL V3</li> </ul> | 3.027545 |
| <ul style="list-style-type: none"> <li>n.2 White polyethylene insulation layer, thickness 5 mm for pipe Ø 125 mm L. 1000 mm</li> <li>n.4 White polyethylene insulation layer, thickness 5 mm for bend Ø 125 mm</li> <li>n.1 White polyethylene tape 2x70x4000 mm for RAPAX 100 V2</li> </ul>                       | 3.028371 |

\* The ducts are required to intake and espulsion air on external. Its are not insulated.





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**IMMERGAS**  
IMMERGAS SPA - ITALY  
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Design, manufacture and post-sale assistance of gas  
boilers, gas water heaters and related accessories