



KON<sup>e</sup>

THE PERFECT CONDENSATION

Unical

# Next Generation



MODEL KON <sup>e</sup>			24 R	24 C
Nominal Output min./max.	<i>in condensation</i>	<i>kW</i>	3,2÷23,6	3,2÷23,6
	<i>tradizional</i>	<i>kW</i>	2,9÷22,6	2,9÷22,6
Nominal Input		<i>kW</i>	23,4	23,4
$\eta$ <i>in condensation</i> at minimum capacity		%	107,2	107,2
Efficiency class (Dir. EEC 92/42)			★★★★	★★★★

KON<sup>e</sup> the last generation of domestic condensing boilers of Unical, available in version:

- *combi instantaneous*
- *heating only for combination with DHW stainless steel storage tank DSP 110<sup>inox</sup>*

KON<sup>e</sup> introduces all the “Quality Stars” to satisfy every type of demand:

- Exceptional actual modulation ratio **1:8**
- Efficiency **> 107%**
- **Ultrathin primary heat exchanger in Al/Si/Mg**
- Electronic PCB with HWS function “**Hot Water Speed**” (C version)
- **Low NO<sub>x</sub>** (class 5 according to EN 297 and EN 483) thanks to the premix modulating burner
- “**Pit stop**” service
- “**Soft touch**” panel board with protecting door
- “**Upgradable**” electronics through USB type interface
- **Domestic Hot Water production** up to 13,3 l/min with  $\Delta t$  25 K, with special **12 plates stainless steel heat exchanger (mod. 24 C)**

KON<sup>e</sup> is so performing to be a reference point in its field.

And still



**Management of 2 zones with 2 thermostats**

KON<sup>®</sup> is also synonymous of flexibility of installation. Ideal for all the installations, thanks to the electronics that allows to manage 2 zones at different heating temperature (high for radiators and fan-coils, low for floor heating) checking them with on-off or modulating thermostats



**Over-run circulation** of 15 seconds to avoid overheating: it checks in every condition the thermal equilibrium between flow and return, also after intense D.H.W. drawings, while, in heating mode, with a duration of 5 minutes, allows to dissipate the whole residual thermal inertia



**Operation in sliding temperature** for the maximum economy of management



**Multigas Operation (Natural Gas or LPG)** with automatic commutation



**Antifreeze protection** that intervenes at 5°C and is activated both in DHW production and heating mode, increasing the boiler temperature at 15°C. This avoids the risk that KON can freeze if low temperatures persist where it is installed. If there is a lack of gas a lockout signalling will be shown on the display.



**Pump anti-jamming function** also after long inactivity periods. The electronics of KON put the pump in operation for 5 seconds every 24 hours of standstill, so avoiding that the oxidation could stop it



**Chimney sweeper function** facilitates the operations of combustion adjustment. By depressing the reset button for more than 5 seconds, the operation of the boiler at minimum or at maximum capacity for 15 minutes can be obtained so that the combustion can be analyzed.



**Hydraulic connections hiding case (optional)** code 00362674



# The Details of KON<sup>e</sup>.

## Modulating premix burner

Mixer and fan are part of the “U-MIXPRO System”. The particular streamline of the Mixer assures an optimal air-gas mixing, by reducing the suction noise and integrating itself with the high efficiency modulating fan.

In synthesis the elements of the system are:

- **the electronic control** (that manages the air-gas combustion ratio)
- **the gas control** (that doses the combustible gas)
- **the innovative feed-back of combustion** (what monitors constantly the combustion quality) makes the system immune from:
  - possible oxidation of the electrode
  - partial loss of isolation capacity of the electrode due to the normal aging
  - great precision in the combustion control thanks to the elevated dynamism of the flame ionization signal
- **“Quick Release”** of the complete plate. The release allows the complete removal of the combustion system.



The “Flat” type burner assures:

- long duration thanks to the low thermal and mechanical stresses and to the physical inalterability of the fibre in FeCr alloy .
- ideal propagation of the radiation heat thanks to its chemical-physical structure able to develop a particularly soft and bright flame
- low NOx emissions (class 5 according to EN 297 and EN 483)



## Condensates Collecting Tray with “Quick Release”



## Exclusive Heat Exchanger in Al/Si/Mg Alloy

It is realized in a special Aluminium/Silicon/Magnesium alloy that assures efficiency and resistance. Thanks to the configuration of the internal heat exchanger, in regime of condensation **high efficiencies are obtained, higher than 107%**, that means, for the consumer, great economic saving and very low environmental impact.



### ***Modulating pump with automatic air vent***

It represents the state of the art in the standard of the high efficiency. In line with the ErP directive 2015, with less than 1W of consumption in stand-by and only 45 W in operation at maximum speed, thanks to the wide modulation capacity, according to the room thermostat and to the temperatures detected by the temperature sensors placed in flow / return connections, automatically doses the power of the boiler to the demands of the heating system. Particularly silent and compact, it integrates with the safety valve, the bypass and the discharge valve.

### ***Electronic gas valve***

Being a last generation valve, it further improves the performances of the product in comparison to the traditional pneumatic valve.

Advantages:

- compactness and noiseless operation
- wide modulation range: 1:8
- low consumption = less than 4 W
- massima sicurezza doppio operatore (classe A e B)
- nessuna taratura manuale
- gestione totalmente elettronica mediante scheda intelligente
- low thermal and mechanical stresses, therefore long duration, thanks to its inalterability.



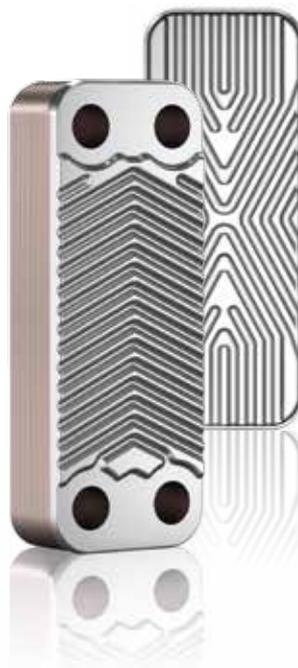
■ For the version **KON<sup>e</sup> 24 C** (combi, with instantaneous DHW production)

### ***HWS “Hot Water Speed”***

The change-over from the heating to the DHW production mode normally takes around 6 and more seconds, depending on the commutation speed of the priority device that stops pump and burner.

It happens, in fact, that the consumer has to wait, under the shower, with discomfort, the reactivation of the system.

The **new electronics**, adopted in this boiler, performs, on the contrary, the change “in run”, with burner and pump always in operation, decidedly improving the comfort of the consumer.



### ***Secondary heat exchanger***

With 12 plates in stainless steel AISI 316L. The one fitted on the KON is different from the others for the low pressure losses, so optimizing the warm water circulation in the boiler. His “thermal length”, a particular physical expression that characterizes it, makes it particularly proper for the condensing boilers.

Its “ecological” design is characterized by a new shape of the plates that allows to transfer a greater quantity of heat, exploiting better the characteristics of the stainless steel.

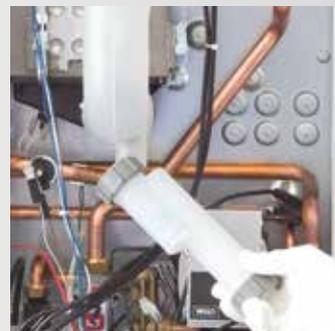
# *KON<sup>e</sup>: Cleaning the Heat Center...*



1



Opening of the panel board

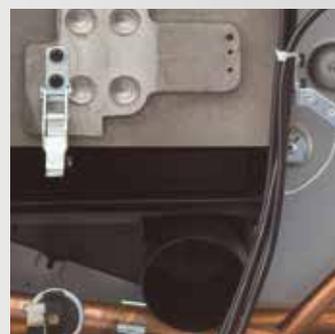


Removal of condensates siphon

2



"Quick Release" opening system



Releasing of the condensates tray

3



Removal of the fan harness



Releasing of the gas pipe from fan

The big job developed by the Unical planners to aggregate the propulsion system (modulating fan, gas valve, smoke evacuation system, developed with CAD and CNC technology) has considered priority the suggestions reached by the market and by the international service, bringing to an essential synthesis complex, where every element can be quickly assembled and disassembled, reducing the installation time, but, mainly, the one for the ordinary and extraordinary maintenance.

Thanks to the excellent performances, KON<sup>e</sup> represents the maximum expression of the technology in the domestic condensing boiler sector.

4



"Quick Release" removal of the combustion system



Opening of the complete combustion system

# ...in less than 2 Minutes



Removal of the stop screw of the smoke manifold



Removal of the smoke manifold

40''



Rotation on the hinge



Inspection of condensates tray

20''



Releasing of pipe from the gas valve



Removal of the gas pipe

32''



Removal of the complete combustion system



Inspection burner and components

14''



**RECORD TIMING:  
1 minute and 46 seconds!**

The time to turn the next pages of this brochure and KON<sup>e</sup> is ready to be serviced!

Compare your boiler with KON<sup>e</sup> and you will notice the difference....

Choose the best

Choose KON<sup>e</sup>

# Intuitive Controls

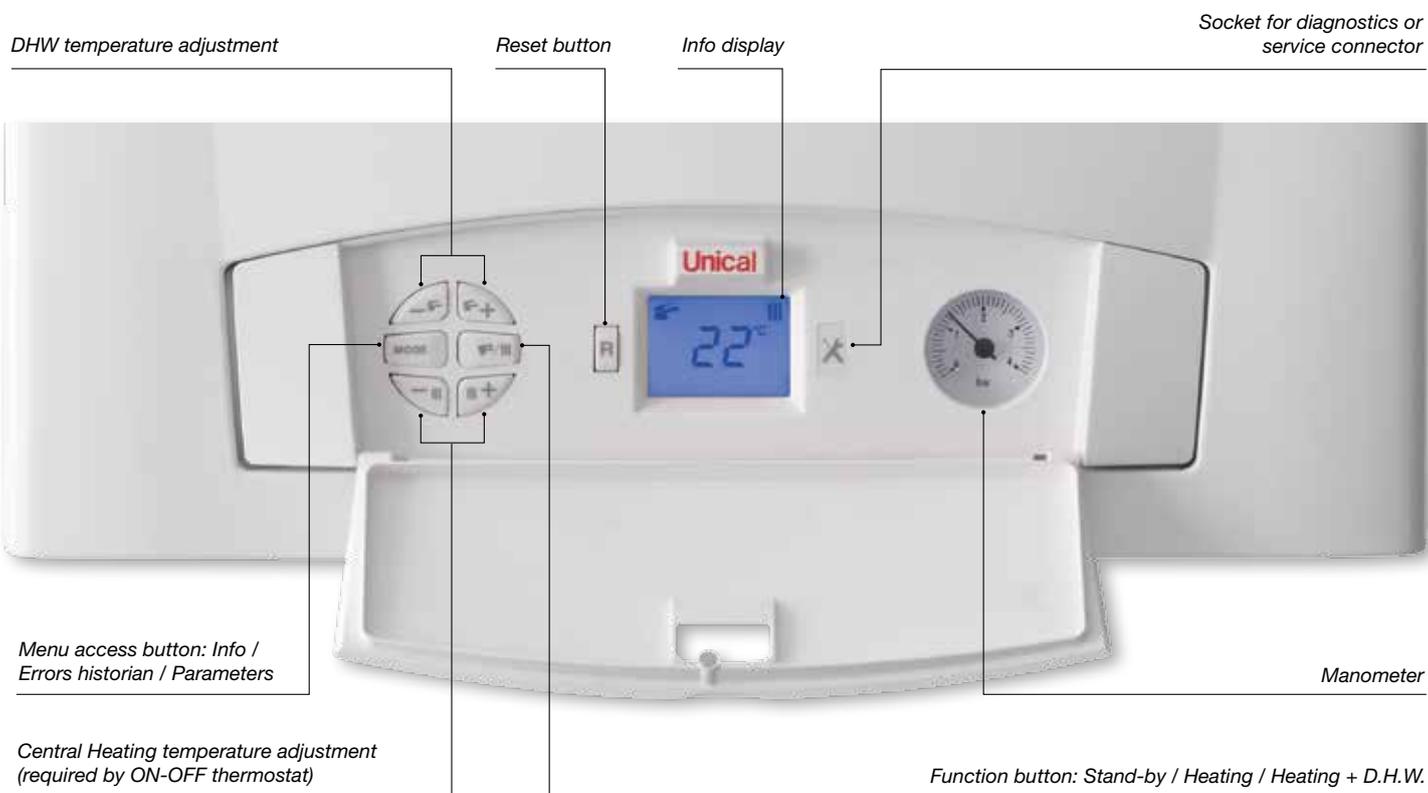
Protected by the stylish front door, the panel board is equipped with:

■ **Soft Touch silicon rubber keyboard**

■ **Multifunction**, back-lighted, very legible **display**

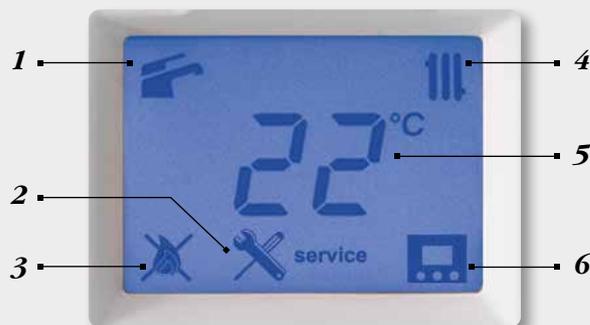
■ **Connection for diagnostics and programming** through computer or portable computer

A special *rotating system* of the panel board, besides, makes easy all the operations by the Service.



On the wide display there are:

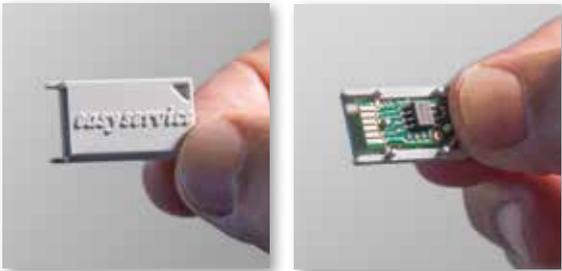
- 1** - the indication of operation in DHW mode
- 2** - the signalling of fault or operation anomaly
- 3** - the operation state or burner lockout
- 4** - the indication of operation in Heating mode
- 5** - the temperature indication or error code
- 6** - the remote connection:



# Everything as in a "Sim Card"



Inside this Sim all the characteristics of operation of the boiler are memorized. "HERE INSIDE THERE IS EVERYTHING about your boiler."



KON<sup>e</sup> is set to the technological vertex not only for the performances, but, as we have seen, also for the service operations, made more and more simple and fast.

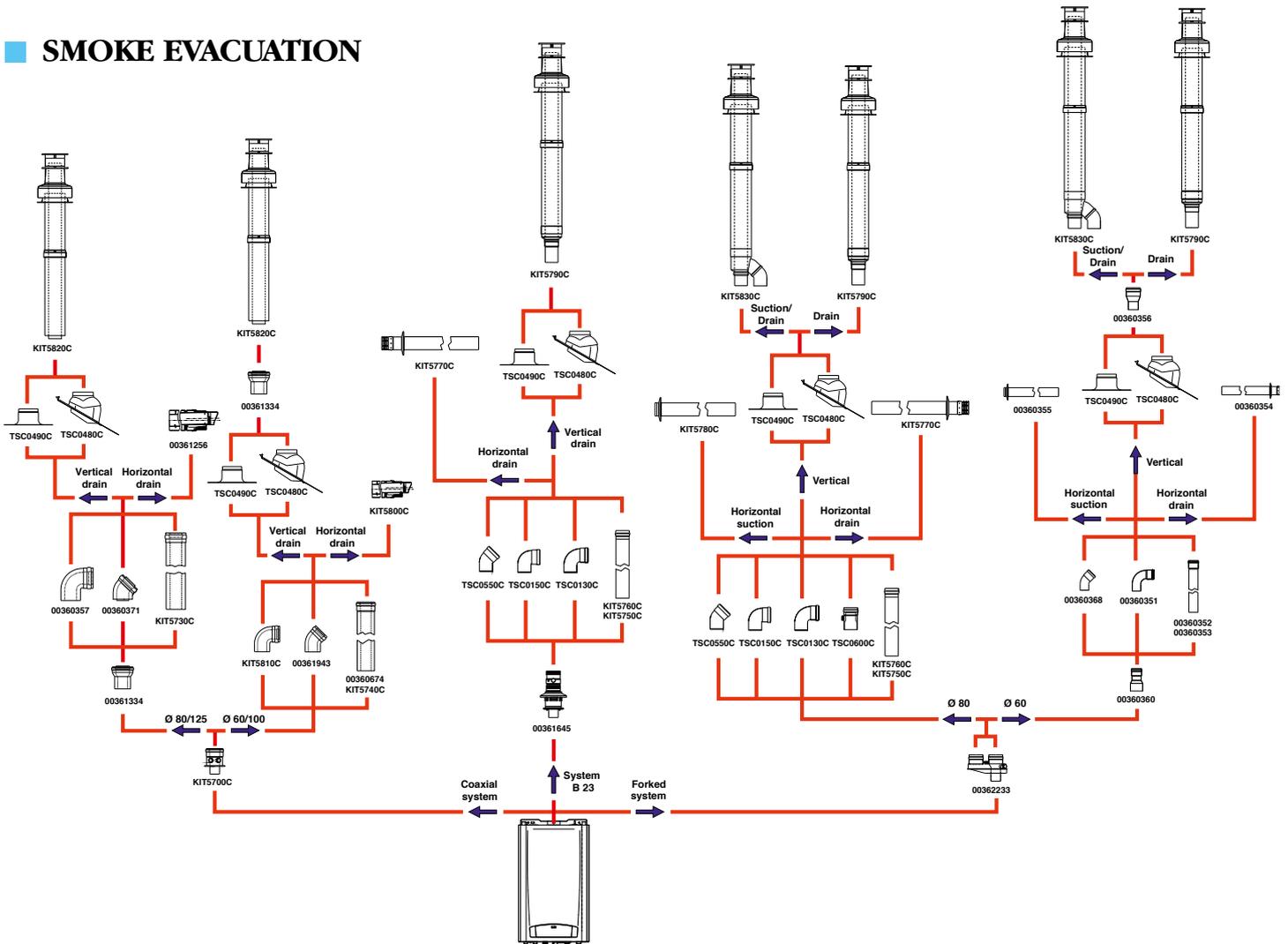
The Unical After Sale Service, besides, is equipped with an **handy computer**, with 3" touch-screen, directly connectable to the boiler, to develop the activity of KON<sup>e</sup> monitoring. The rich menu of functions allows the Service:

- to the acquire the KON<sup>e</sup> data for a computer analysis
- to monitor in real-time the operation parameters of the boiler, also from remote (from the office or from the handy computer)
- to manage the "faults-history" and the database of the firmware versions. All this makes it a flexible and essential tool in the daily Service activities. This is a choice of Unical to facilitate both, the Service and the consumer, speeding the intervention time for the resolution of possible problems.



# Accessories (Optional)

## SMOKE EVACUATION



## CONTROL ACCESSORIES



REMOTE CONTROL  
**REGOLAFACILE**  
weekly modulating  
Code 00361971



CHRONOTHERMOSTAT  
**REGOLAFACILE**  
**ON-OFF**  
Code 00262605



CHRONOTHERMOSTAT  
**GA 240**  
Code 00260737



REMOTE CONTROL  
**SIM-PLEX**  
controls without  
chronothermostat  
Code 00262077



REMOTE CONTROL  
**SIM-CRONO**  
weekly modulating  
Code 00262079



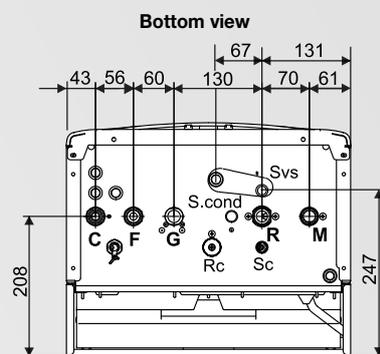
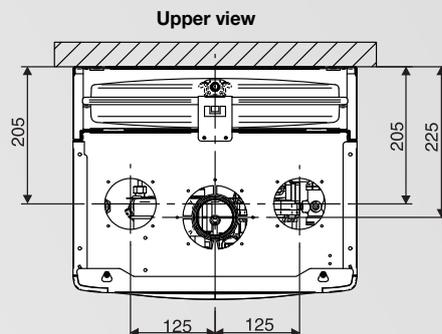
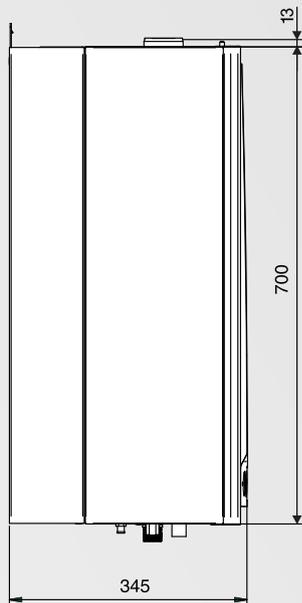
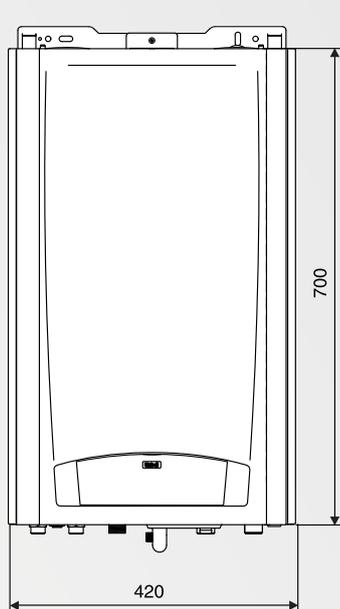
**OUTER TEMPERATURE**  
**SENSOR**  
Code 00362077

## DHW PRODUCTION ACCESSORIES

KON® R 24 can be combined with the Unical DHW production tank, mod. **DSP 110**, with capacity of 110 liters in stainless steel AISI 316L.

• **KIT FOR DHW PREPARATION THROUGH A GENERIC TANK**  
constituted by: NTC temperature sensor, Wiring harness, Three way diverting valve  
Code 00361849

# Dimensions - Technical Data



**C** DHW outlet G 1/2  
**G** Gas inlet G 3/4  
**F** Cold water inlet G 1/2  
**M** C.H. flow G 3/4

**R** C.H. return G 3/4  
**Rc** Filling cock  
**Sc** Drain cock  
**Svs** Safety valve discharge

Model	KON° R 24	KON° C 24
<b>Power</b>		
NOMINAL OUTPUT Min. / Max. in condensation	kW 3,2 ÷ 23,6	3,2 ÷ 23,6
NOMINAL OUTPUT Min. / Max. in std. mode		
NOMINAL INPUT Min. / Max.	kW 3,0 ÷ 23,4	3,0 ÷ 23,4
<b>Efficiency</b>		
EFFICIENCY CLASS (EEC directive 92/42)	★★★★	★★★★
Water efficiency at nominal output in condensation	% 100,9	100,9
Water efficiency at minimum output in condensation	% 107,2	107,2
Water efficiency at part load	% 100,1	100,1
Water efficiency at nominal output in std. mode	% 96,5	96,5
<b>Combustion and Hydraulic Performances</b>		
CO2 (at min. / max. output)		
CO at 10% O2 (at min. / max. output)		
NOx (weighted value according to EN 297/A3 and EN 483)		
PRODUCTION OF CONDENSATE max.	kg/h 3,8	3,8
NOx Class	5	5
<b>Heating</b>		
HEATING TEMPERATURE adjustable range min. / max	°C 30 - 85	30 - 85
D.H.W. TEMPERATURE adjustable range min. / max.		
D.H.W PRODUCTION with DT 25K (mixed)		
EXPANSION TANK CAPACITY		
<b>Electrical supply</b>		
TENSION / FREQUENCY	V-Hz 230/50	230/50
MAXIMUM ABSORBED POWER		
<b>Weight and Technical Features</b>		
DRY WEIGHT		
INSULATION PROTECTION DEGREE	IP X5D	X5D
APPLIANCE CATEGORY	II 2H3P	II 2H3P

# Unical



# AMI

ABSOLUTELY MADE IN ITALY

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