Unical

GENERAL
CATALOGUE

GENERAL CATALOGUE

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AMI

ABSOLUTELY MADE IN ITALY

Experience, successes and continuous updating: this way are born, day after day, the Unical products: the passion of the technology, Made in Italy.

Unical AG S.p.A. Italian company, leader in the heating sector.
Born in 1972 to plan and to produce civil and industrial thermal groups, has subsequently widened its operational field, including conditioning systems, solar panels, radiant panels, etc, arriving to have one of the most complete catalogues of the whole sector.

The firm has always had and continues having, among its priorities, a true attention to the **"quality of the life"**, i.e. more comfort, greater safety, smaller energetic consumptions, elevated respect of the environment.

TECHNOLOGY, QUALITY, SEARCH, SAFETY, SERVICE, STYLE, ECOLOGICAL CONSCIENCE, RESPECT FOR THE ENVIRONMENT, INNOVATION, CURIOSITY, ATTENTION, CARE, CORRECTNESS, ETHICS, FUTURE. Here are the key words that represent us.

The **Made in Italy** is the focus of Unical.

4 the plants displaced on the national territory, between production and logistics, strategically connected and to the state-of-the-art for automation and robotizing of the constructive phases.

In the factory of Caorso **wall hung** and **floor standing boilers** are manufactured, both, in traditional and **condensing version** (up to 900 kW); in the one of Carbonara Po **biomass** and **steel boilers** for pressure jet burners (up to 7.000 kW).
The industrial line, that includes **steam generators** up to 14,000 kW (21,600 kg/h), is mostly dedicated on the special high-performance boilers in virtue of particular heat exchange patented pipes.

Since always conspicuous investments are annually destined to the research and development sector..

The **Research and Development** department of Unical counts over 30 employees that constantly work to ambitious programs: co-generation, integrated energetic systems, revolutionary condensing heat exchangers for extremely compact and modular applications, to maintain the most elevated qualitative standards.

A constant experimentation that confirms, on a day to day basis, the high degree of technological innovation recognized to the Unical brand.

Unical boasts, in fact, over than **50 deposited patents** and endless attempts of imitation or “adoptions of inspiration” from competing designers.

Capillarity, reliability and timeliness are guaranteed by a well organized sale network and more than **550 Authorized Technical Service Centres** (C.A.T.), present on the national territory.

The Unical C.A.T. are formed and continually updated at the Caorso Study Centre, with specific theoretical-practical courses and with a particular attention to the updating of new rules.

Unical®

BIOENERGY DIVISION

Unical® STEAMER

Unical air®

DOMESTIC RANGE

BIOMASS RANGE

PROFESSIONAL RANGE

METERING SYSTEMS

INDUSTRIAL RANGE

AIR CONDITIONING

SOLAR SYSTEMS

INTEGRATED SYSTEMS

HEAT PUMPS

FLOOR HEATING
AND COOLING SYSTEMS

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DOMESTIC RANGE

HEAT ONLY BOILERS	COMBINATIONS BOILERS	
RECAL 38-45-60		up to 70 kW
KON^{m} R 35 KON^{m} EXT R 35 KON^{e} R 35 KON^{e} EXT R 35	OSA^{S} 35 OSA^{K} 35 KON^{x} SLIM 35 KON^{m} C 35 KON^{m} EXT C 35 KON^{e} C 35 KON^{e} EXT C 35	up to 35 kW
KON^{m} R 28 KON^{m} EXT R 28 KON^{e} R 28 KON^{e} EXT R 28 KUTter R 28 inox RECAL 26-30 !DEA RS 28	OSA^{S} 28 OSA^{K} 28 KON^{m} C 28 KON^{m} EXT C 28 KON^{e} C 28 KON^{e} EXT C 28 KON B 28 KUTter B 28 inox !DEA CS 28 - INC !DEA CS 28 PLUS !DEA CS 32 PLUS	up to 32 kW
KON^{m} R 24 KON^{m} EXT R 24 KON^{m} INC R 24 KON^{e} R 24 KON^{e} EXT R 24 KON^{e} INC R 24 RECAL 18-22 !DEA AR 23 !DEA RS 24 - EXT - INC	OSA^{S} 24 OSA^{K} 24 KON^{x} SLIM 24 KON^{m} C 24 KON^{m} EXT C 24 KON^{m} INC C 24 KON^{e} C 24 KON^{e} EXT C 24 KON^{e} INC C 24 !DEA AC 23 !DEA AC 23 PLUS !DEA CS 24 - EXT - INC !DEA CS 24 PLUS - EXT - INC !DEA AB 24	up to 24 kW

PROFESSIONAL RANGE

HEAT ONLY BOILERS	
MODULEX EXT 550÷900 SPK 600 XC-K 570÷2160 INOXIA GJ 600÷1000 MULTIINOX 625÷1000 ELLPREX 510÷7000 TRISTAR 2S 560÷6100 TRISTAR 3G 2S 630÷1900 TRISTAR 3G 2300÷3000	up to 7000 kW
MODULEX EXT 350÷440 SPK 400-500 XC-K 400÷480 INOXIA GJ 350÷450 MULTIINOX 375÷500 ELLPREX 340÷420 TRISTAR 2S 370÷450 TRISTAR 3G 2S 380÷500	up to 500 kW
ALKON 50C - 70C ALKON 90 KON 100 MODULEX EXT 100÷300 SPK 116 SPK 115÷300 XC-K 124÷290 INOXIA GJ 150÷270 MULTIINOX 250 MODAL 64÷291 TRISTAR 2S 80÷300 TRISTAR 3G 2S 65÷300 PELLEXIA 116-160-250 AIREX 150-200	up to 300 kW

BIOMASS RANGE

WOOD	PELLET	MULTIFUEL	
AIREX 150-200	PELLEXIA 116÷250		up to 250 kW
FIREX 55 NOVAIREX 55 LENIADENS 60	PELLEXIA 80		up to 93 kW
FOKOLUS 20-30-40 FIREX 34-45 NOVAIREX 34-45 LENIADENS 28-32-45	PUNTO IT 7÷16,5 PUNTO IT 16,5 C PUNTO IT x 7÷10,5 PUNTO IT AQ 15÷33 PUNTO IT AQ p 15÷24 PUNTO IT CT 15÷33 PELLEXIA 34-45	Wood+pellet+fuel in granules ALLBIOMIX 34-45	up to 47 kW

INDUSTRIAL RANGE

STEAM BOILERS	SUPERHEATED WATER	DIATHERMIC OIL	HOT WATER
BAHR'UNO OR BAHR'UNO BAHR'12 OR BAHR'12 TRYPASS' Steam accessories: SRC DEAR DETE SERBHA	SÜHR' TRYSÜHR'	DÏATHER	TERNOX 2S

Technical data

OSA^S		24	28	35
Nominal Heat Output	kW	23	27	32
Seasonal space heating energy efficiency	ηs %	98	98	98
Seasonal EFFICIENCY CLASS in heating mode		A+	A+	A+
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	13	16	18,4
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	88.7	88.9	88.7
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	4.3	5.3	6.1
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	99.2	98.1	98.2
Emissions of nitrogen oxides (NO_x)	mg/kWh	41	36	39
Declared load profile		M	L	L
Energy efficiency in D.H.W. production mode	ηWH %	65	80	80
Seasonal efficiency class in D.H.W. production mode		A	A	A
Heigh	mm	930	930	930
Width	mm	520	520	520
Depth	mm	180	180	180
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	13.2	18.6	18.6
Net weight	kg	36	36	36

OSA^S

Extra thin, stylish, wall hung, low NOx, condensing, room sealed, gas boiler with electronic ignition and continuous modulation, with DHW production

- Exchanger / Condenser in alluminium /silicon / magnesium
- Ignition and electronic flame control through single electrode
- Modulation ratio1:8
- Total premix burner, with constant combustion ratio, completely electronic (both, gas valve and modulating fan)
- Automatic Feed-back of the combustion through the electrode (that monitors constantly the quality of the combustion)
- Adjustment of output according to heating request
- HWS “Hot Water Speed”: commutation from heating to DHW mode without stopping the pump
- DHW heat exchanger in antiscaling stainless steel, with 12 plates (x 24 kW) and 14 plates (x 35 kW), with “thermal length” optimized for the condensation
- Management of 2 zones: high / low temperature, with differentiated priority
- Clever hydraulic filling of the C.H. system (able to indicate possible leakages)
- Electronic antifreeze function from 5°C
- Pump over-run function
- Safety limit thermostat
- Temperature sensors in flow and return
- DHW temperature sensor
- High efficiency pump, complying with the Erp Directive 2015, modulating according to the output request, managed by the on board electronics
- Two expansion vessels (10 liters total)
- Automatic airvent
- Minimum pressure switch against the lack of water
- Pressure safety valve set at 3 bar
- Disappearing U/FLY Touch panel board, with outer and room temperature sensors
- Gateway for Modem connection and remote programming through smartphone, with a dedicated App
- Connection for diagnostics and programming through computer or portable Programmer
- Inspection system of the burner and heat exchanger cleaning through quick release clampings
- Paper template for the predisposition of hydraulic connections
- Screw anchors for fixing
- Front panel in colored polymetilmetacrylate
- Siphon drain for condensates

Technical data

OSA[K]		24	28	35
Nominal Heat Output	kW	24	27	32
Seasonal space heating energy efficiency	ηs %	92	93	93
Seasonal EFFICIENCY CLASS in heating mode		A	A	A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	23.8	15.8	18.2
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	87.5	88.0	87.5
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	7.9	5.2	6.1
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	96.9	97.4	97.5
Emissions of nitrogen oxides (NO_x)	mg/kWh	34	33	32
Declared load profile		M	M	L
Energy efficiency in D.H.W. production mode	ηWH %	67.9	67.9	79.5
Seasonal efficiency class in D.H.W. production mode		A	A	A
Heigh	mm	816	816	816
Width	mm	450	450	450
Depth	mm	346	346	346
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	14.44	16.29	18.63
Net weight	kg	38.5	38.5	38.5

OSA[K]

Stylish, wall hung, low NOx, condensing, room sealed, gas boiler with electronic ignition and continuous modulation, with DHW production.

- Exchanger/Condenser in Alluminium/Silicon/Magnesium
- Ignition and electronic flame control through single electrode
- Modulation ratio1:8
- Total premix burner, with constant combustion ratio, completely electronic (both, gas valve and modulating fan)
- Automatic Feed-back of the combustion through the electrode (that monitors constantly the quality of the combustion)
- Adjustment of output according to heating request
- HWS “Hot Water Speed”: commutation from heating to DHW mode without stopping the pump
- DHW heat exchanger in antiscaling stainless steel, with 12 plates (x 24 kW) and 14 plates (x 35 kW), with “thermal length” optimized for the condensation
- Management of 2 zones: high / low temperature, with differentiated priority
- Electronic antifreeze function from 5°C
- Pump over-run function
- Safety limit thermostat
- Temperature sensors in flow and return
- DHW temperature sensor
- High efficiency pump, complying with the Erp Directive 2015, modulating according to the output request, managed by the on board electronics
- Expansion vessel (10 liters)
- Automatic airvent
- Minimum pressure switch against the lack of water
- Pressure safety valve set at 3 bar
- Disappearing U/FLY Touch panel board, with outer and room temperature sensors
- Gateway for Modem connection and remote programming through smartphone, with a dedicated App
- Connection for diagnostics and programming through computer or portable programmer.
- Inspection system of the burner and heat exchanger cleaning through quick release clampings
- Front panel in colored polymetilmetacrylate
- Siphon drain for condensates

OSA[K]

Technical data

OSA^{S}		24	35
Nominal Heat Output	kW	23	32
Seasonal space heating energy efficiency	ηs %	98	98
Seasonal EFFICIENCY CLASS in heating mode		A+	A+
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	13	18,4
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	88.7	88.7
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	4.3	6.1
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	99.2	98.2
Emissions of nitrogen oxides (NO_x)	mg/kWh	41	39
Declared load profile		M	L
Energy efficiency in D.H.W. production mode	ηWH %	65	80
Seasonal efficiency class in D.H.W. production mode		A	A
Heigh	mm	930	930
Width	mm	520	520
Depth	mm	180	180
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	13.2	18.6
Net weight	kg	36	36

KONˣ SLIM

Extra-thin wall hung, room sealed, Low NOx, condensing gas boiler, with DHW production, for indoor / outdoor installation (IPX5D), with total premix burner and continuous modulation with electronic ignition

- Outer casing completely in stainless steel AISI 304
- Exchanger / Condenser in aluminum / silicon / magnesium
- Ignition and flame electronic control through single electrode
- Modulation ratio1:8
- Total premix burner with constant combustion ratio, completely electronic (both gas valve and modulating fan)
- Automatic Feed-back of the combustion through the electrode (that monitors constantly the quality of the combustion)
- Adjustment of output according to heating request
- HWS “Hot Water Speed”: commutation from heating to DHW mode without stopping the pump
- DHW heat exchanger in antiscaling stainless steel, with 12 plates (x 24 kW) and 14 plates (x 35 kW), with “thermal length” optimized for the condensation
- Management of 2 zones: high / low temperature, with differentiated priority
- Clever hydraulic filling of the C.H. system (able to indicate possible leakages)
- Electronic antifreeze function from 5°C
- Pump over-run function
- Safety limit thermostat
- Flow temperature sensor
- Return temperature sensor
- DHW temperature sensor
- High efficiency pump, complying with the Erp Directive 2015, modulating according to the output request, managed by the on board electronics
- Two expansion vessels (10 liters total)
- Automatic airvent
- Minimum pressure switch against the lack of water
- Pressure safety valve set at 3 bar
- Remote OT+ panel board with external and room temperature sensors
- Connection for diagnostics and programming through computer or portable programmer
- Inspection system of the burner and heat exchanger cleaning through quick release clampings
- Paper template for the predisposition of hydraulic connections
- Screw anchors for fixing

KONˣ SLIM

Technical data

KONm		24 R / C	28 R / C	35 R / C
Nominal Heat Output	kW	23	27	32
Seasonal space heating energy efficiency	ηs %	92	93	93
Seasonal EFFICIENCY CLASS in heating mode		A	A	A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	12.7	15.8	18.2
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	87.0	88.4	87.5
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	4.2	5.3	6.1
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	96.7	97.5	97.5
Emissions of nitrogen oxides (NO_x)	mg/kWh	50	55	43
Declared load profile		- / M	- / M	- / L
Energy efficiency in D.H.W. production mode	ηWH %	- / 65	- / 69	- / 78
Seasonal efficiency class in D.H.W. production mode		- / A	- / A	- / A
Heigh	mm	700	700	700
Width	mm	550	550	550
Depth	mm	260	260	260
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	- / 13.2	- / 15.5	- / 18.3
Net weight	kg	32.5 / 34	35.5 / 36.5	35.5 / 36.5

KONm - KONm EXT

Condensing, totally premix, Low NOx, room sealed, wall hung gas boiler, with electronic ignition, for heating only or heating and D.H.W. production – Isolation protection degree IPX5D

- Boiler body in aluminium-silicon-magnesium alloy
- Ignition and flame detection with just one electrode
- Modulation ratio 1:8
- Totally premixed burner with constant combustion ratio and modulating pneumatic gas valve and fan.
- Adjustment of output according to heating request
- HWS “Hot Water Speed”: to eliminate the delay in D.H.W. production
- Three way diverting valve
- D.H.W. stainless steel plate heat exchanger, with 12 plates (for mod. 24), 14 plates (for mod. 28-35)
- Management of two heating zones, H/L temperature with different priority
- Electronic anti-frost protection
- Operation guaranteed up to -15°C
- Pump anti-jamming function
- Pump over-run function
- Safety limit thermostat
- Flow temperature sensor
- Return temperature sensor
- D.H.W. temperature sensor (only for KON ”C”)
- High efficiency modulating pump, managed by the electronic PCB, according to the EUP directive
- C.H. 8 litres expansion vessel
- Automatic air vent
- Minimum water pressure switch
- Pressure safety valve - 3 bar
- Panel board with display with functions selector, potentiometer for temperature adjustment and reset button
- Manometer
- Burner and heat exchanger inspection openings with quick release
- Paper mounting jig for prearrangement of hydraulic connections
- Screw anchors for boiler fixing
- Siphon for condensate evacuation

Options:

- Covering for hydraulic connections
- On/Off or Modulating thermostats
- External temperature sensor

- **KONm EXT**
  for outdoor installations (optional):
  place the order for the model KONm (24, 28, 35)
  + KIT FOR OUTDOOR INSTALLATION (the rubber top)
  + MOUNTING JIG.

Technical data

KONm INC		24 R / C
Nominal Heat Output	kW	23
Seasonal space heating energy efficiency	ηs %	92
Seasonal EFFICIENCY CLASS in heating mode		A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	12.7
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	87,0
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	4.2
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	96.7
Emissions of nitrogen oxides (NO_x)	mg/kWh	50
Declared load profile		- / M
Energy efficiency in D.H.W. production mode	ηWH %	- / 65
Seasonal efficiency class in D.H.W. production mode		- / A
Heigh	mm	700
Width	mm	550
Depth	mm	260
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	- / 13.2
Net weight	kg	32.5 / 34

KONm INC

Condensing, totally premix, Low NOx, room sealed, wall hung gas boiler, with electronic ignition, for heating only or heating and D.H.W. production – Isolation protection degree IPX5D

- Boiler body in aluminium-silicon-magnesium alloy
- Ignition and flame detection with just one electrode
- Modulation ratio 1:8
- Totally premixed burner with constant combustion ratio and modulating pneumatic gas valve and fan.
- Adjustment of output according to heating request
- HWS “Hot Water Speed”: to eliminate the delay in D.H.W. production
- Three way diverting valve
- D.H.W. stainless steel plate heat exchanger, with 12 plates (for mod. 24), 14 plates (for mod. 28-35)
- Management of two heating zones, H/L temperature with different priority
- Electronic anti-frost protection
- Operation guaranteed up to -15°C
- Pump anti-jamming function
- Pump over-run function
- Safety limit thermostat
- Flow temperature sensor
- Return temperature sensor
- D.H.W. temperature sensor (only for KON ”C”)
- High efficiency modulating pump, managed by the electronic PCB, according to the EUP directive
- C.H. 8 litres expansion vessel
- Automatic air vent
- Minimum water pressure switch
- Pressure safety valve - 3 bar
- Panel board with display with functions selector, potentiometer for temperature adjustment and reset button
- Manometer
- Burner and heat exchanger inspection openings with quick release
- Paper mounting jig for prearrangement of hydraulic connections
- Screw anchors for boiler fixing
- Siphon for condensate evacuation

Warning! **The KON Inc boiler to be mounted in the built-in frame differs from the standard model.** In the frame for KON Inc 24 the KON of standard dimensions cannot enter!

Options:

- Covering for hydraulic connections
- On/Off or Modulating thermostats
- External temperature sensor

KONm INC

Technical data

KONe		24 R / C	28 R / C	35 R / C
Nominal Heat Output	kW	23	27	32
Seasonal space heating energy efficiency	ηs %	92	93	93
Seasonal EFFICIENCY CLASS in heating mode		A	A	A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	12.7	15.8	18.2
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	87.0	88.4	87.5
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	4.2	5.3	6.1
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	96.7	97.5	97.5
Emissions of nitrogen oxides (NO_x)	mg/kWh	50	55	43
Declared load profile		- / M	- / M	- / L
Energy efficiency in D.H.W. production mode	ηWH %	- / 65	- / 69	- / 78
Seasonal efficiency class in D.H.W. production mode		- / A	- / A	- / A
Heigh	mm	700	700	700
Width	mm	550	550	550
Depth	mm	260	260	260
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	- / 13.2	- / 15.5	- / 18.3
Net weight	kg	32.5/34	35.5/36.5	35.5/36.5

KONe - KONe EXT

Condensing, totally premix, Low NOx, room sealed, wall hung gas boiler, with electronic ignition and modulating pump, for heating only or heating and D.H.W. production - IPX5D

- Patented boiler body in aluminium-silicon-magnesium alloy
- Ignition and flame detection with just one electrode
- Modulation ratio 1:8
- Totally premixed burner with constant, fully electronic combustion ratio and modulating (both, the gas valve and the fan).
- Automatic combustion feed-back through the electrode that controls, constantly, the combustion quality
- Adjustment of output according to heating request
- HWS “Hot Water Speed”: to eliminate the delay in D.H.W. production
- Three way diverting valve
- D.H.W. stainless steel plate heat exchanger, with 12 plates (for mod. 24), 14 plates (for mod. 28-35)
- Management of two heating zones, H/L temperature with different priority
- Electronic anti-frost protection
- Operation guaranteed up to -15°C
- Pump anti-jamming function
- Pump over-run function
- Safety limit thermostat
- Flow temperature sensor
- Return temperature sensor
- D.H.W. temperature sensor (only for KONe ”C”)
- High efficiency modulating pump according to the heat request, managed by the electronic PCB, according to the EUP directive
- C.H. 8 litres expansion vessel
- Automatic air vent
- Minimum water pressure switch
- Pressure safety valve - 3 bar
- Touch screen panel board with connection for diagnostics and programming through PC or portable programmer
- Panel board magnetic door
- Manometer
- Multifunction keyboard with silicon membrane
- Burner and heat exchanger inspection openings with quick release
- Paper mounting jig for prearrangement of hydraulic connections
- Screw anchors for boiler fixing
- Siphon for condensate evacuation

Options:

- Covering for hydraulic connections
- On/Off or Modulating thermostats
- External temperature sensor

- **KONe EXT**
  for outdoor installations (optional):
  place the order for the model KONe (24, 28, 35)
  + KIT FOR OUTDOOR INSTALLATION (the rubber top)
  + MOUNTING JIG.

Technical data

KONe INC		24 R / C
Nominal Heat Output	kW	23
Seasonal space heating energy efficiency	ηs %	92
Seasonal EFFICIENCY CLASS in heating mode		A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	12.7
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	87.0
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	4.2
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	96.7
Emissions of nitrogen oxides (NO_x)	mg/kWh	50
Declared load profile		- / M
Energy efficiency in D.H.W. production mode	ηWH %	- / 65
Seasonal efficiency class in D.H.W. production mode		- / A
Heigh	mm	700
Width	mm	550
Depth	mm	260
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	- / 13.2
Net weight	kg	32.5 / 34

KONe INC

KONe INC

Condensing, totally premix, Low NOx, room sealed, wall hung gas boiler, with electronic ignition and modulating pump, for heating only or heating and D.H.W. production - IPX5D

- Patented boiler body in aluminium/silicon/magnesium alloy
- Ignition and flame detection with just one electrode
- Modulation ratio 1:8
- Totally premixed burner with constant, fully electronic combustion ratio and modulating (both, the gas valve and the fan).
- Automatic combustion feed-back through the electrode that controls, constantly, the combustion quality
- Adjustment of output according to heating request
- HWS “Hot Water Speed”: to eliminate the delay in D.H.W. production
- Three way diverting valve
- D.H.W. stainless steel plate heat exchanger, with 12 plates (for mod. 24), 14 plates (for mod. 28-35)
- Management of two heating zones, H/L temperature with different priority
- Electronic anti-frost protection
- Operation guaranteed up to -15°C
- Pump anti-jamming function
- Pump over-run function
- Safety limit thermostat
- Flow temperature sensor
- Return temperature sensor
- D.H.W. temperature sensor (only for KONe ”C”)
- High efficiency modulating pump according to the heat request, managed by the electronic PCB, according to the EUP directive
- C.H. 8 litres expansion vessel
- Automatic air vent
- Minimum water pressure switch
- Pressure safety valve - 3 bar
- Touch screen panel board with connection for diagnostics and programming through PC or portable programmer
- Panel board magnetic door
- Manometer
- Multifunction keyboard with silicon membrane
- Burner and heat exchanger inspection openings with quick release
- Paper mounting jig for prearrangement of hydraulic connections
- Screw anchors for boiler fixing
- Siphon for condensate evacuation

Warning! **The KON Inc boiler to be mounted in the built-in frame differs from the standard model.** In the frame for KON Inc 24 the KON of standard dimensions cannot enter!

Options:

- Covering for hydraulic connections
- On/Off or Modulating thermostats
- External temperature sensor

Technical data

KON B		28
Nominal Heat Output	kW	27
Seasonal space heating energy efficiency	ηs %	93
Seasonal EFFICIENCY CLASS in heating mode		A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	15.6
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	86.8
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	5.26
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	97.5
Emissions of nitrogen oxides (NO_x)	mg/kWh	58
Declared load profile		XL
Energy efficiency in D.H.W. production mode	ηWH %	68.1
Seasonal efficiency class in D.H.W. production mode		B
Heigh	mm	900
Width	mm	680
Depth	mm	486
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	16
Net weight	kg	70.5

KON B

KON B

Wall hung, Low NOx, modulating and condensing gas boiler with totally premixed burner - room sealed type - electronic ignition - with D.H.W. production. through a 60 litres, stainless steel, “superfast” storage tank – Isolation degree IPX4D

- Heat exchanger - Condenser in aluminium / silicon / magnesium
- Totally premixed burner with constant combustion ratio, with electro-pneumatic gas valve and modulating fan
- “Superfast” 60 litre storage tank in stainless steel, with diffuser system for the maximum efficiency, inspectable, with magnesium anode
- Integral hydraulic group composed from:
  - Modulating pump: for heating and DHW priority (storage tank loading) with system anti-jamming, endowed with integral automatic vent
  - Three way electric diverting valve for priority to the storage tank
  - Automatic differential bypass
- Modulation ratio 1:6,3
- Electronic panel board that can be translated in vertical to facilitate the electrical connections and the maintenance, endowed with 2 selecting handles and a manometer
- Inlet of on-off / modulating thermostat and external temperature sensor.
- Ignition and ionization though just one electrode
- High efficiency pump, modulating according to the requested output, managed by the electronic PCB and conforming to the Erp Directive of 2015.
- Safety valve 3 bar
- Safety thermostat
- Flow temperature sensor
- Return temperature sensor
- D.H.W. temperature sensor (in the storage tank)
- C.H. expansion vessel of 10 litres
- D.H.W. expansion vessel of 3 litres.
- Management of 2 zones: High / Low temperature with different priority
- Pump anti-jamming
- Post-circulation of the pump
- Anti-legionnaire disease
- Anti-fast function
- Special services for adjustment and calibration according to the rules in force
- Adjustment of maximum output in heating mode operation
- Visualization of the lockout for lack of flame and diagnostics with alphanumeric signalling of the anomalies through wide, multifunction, back-lighted LCD display (power save)
- Heating temperature adjustment: 30 - 85°C
- D.H.W. temperature adjustment: 25 - 65°C
- Antifreeze protection electronic device

KUTter B inox

KUTter R inox

KUTter B inox

Technical data

KUTter inox		R 28	B 28
Nominal Heat Output	kW	26.9	26.9
Seasonal space heating energy efficiency	ηs %	93	93
Seasonal EFFICIENCY CLASS in heating mode		A	A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	15.76	15.76
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	97.0	97.0
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	5.23	5.23
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	108.6	108.6
Emissions of nitrogen oxides (NO_x)	mg/kWh	43.0	43.0
Declared load profile		-	L
Energy efficiency in D.H.W. production mode	ηWH %	53.2	53.2
Seasonal efficiency class in D.H.W. production mode		-	B
Heigh	mm	900	900
Width	mm	450	700
Depth	mm	590	590
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	-	15.4
Net weight	kg	57	86

KUTter inox

Floor standing, room sealed, low NOx, condensing gas boiler with total premix modulating burner, electronic ignition and DHW production through a 50 litres ultrafast, stainless steel (model B) - IPX5D

- Heat exchanger / Condenser in Al/Si/Mg
- Ignition and electronic flame control through just one electrode
- Modulation ratio 1:6,3
- Total premix modulating burner with constant combustion ratio, with electro-pneumatic gas valve and modulating fan
- Output adjustment in heating mode
- Panel board sliding in vertical to facilitate the electric connections and the maintenance
- Temperature adjustment: heating 30 - 85°C / DHW 25 - 65°C
- Signalling, on wide back lighted (power safe) multifunction LCD display, of burner lockout for lack of flame and of the anomalies through alphanumeric error codes
- Connection for on/off or modulating thermostat and external temperature sensor
- Management of 2 heating zones: High / Low temperatures with differentiated priority
- Ultrafast 50 litres DHW tank in stainless steel (model B) with water spraying system for the maximum efficiency, inspectable, with magnesium anode
- Insulation in very thick PU foam
- High efficiency modulating pump, with automatic air vent, managed by the electronic PCB
- Hydraulic separator (mixing header) and 3 way diverting valve for the DHW tank priority
- Smoke evacuation ready for coaxial or two duct system
- Casing completely in stainless steel AISI 304
- Main functions:
  - Pump anti-jamming system
  - Pump over-run

Standard equipment:

- Safety thermostat, flow and return temperature sensors, DHW tank sensor, smoke safety thermostat, minimum water pressure switch, boiler pressure safety valve 3 bar, DHW storage tank safety valve 8 bar, boiler expansion vessel 12 litres, DHW expansion vessel 3 litres, filling and drain cocks, storage tank drain cock, adjustable feet
- Easy maintenance through front and upper access.
- Special function for technical services (regulation - adjustment, etc.)
- Wide transparent window in the cover of the watertight room for components control
- Burner inspection and heat exchanger cleaning through quick release closing system

Optional:

- Condensates evacuation pump

Technical data

!DEA		AC 23	AC 23 PLUS
Nominal Heat Output	kW	23	23
Seasonal space heating energy efficiency	ηs %	78	79
Seasonal EFFICIENCY CLASS in heating mode		C	C
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	22.9	23.1
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	81	81.6
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	6.84	7.0
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	80.6	82.5
Emissions of nitrogen oxides (NO_x)	mg/kWh	184	184
Declared load profile		M	M
Energy efficiency in D.H.W. production mode	ηWH %	64	60
Seasonal efficiency class in D.H.W. production mode		B	B
Heigh	mm	700	700
Width	mm	420	420
Depth	mm	255	255
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	14.1	14.1
Net weight	kg	27.1	28.6

!DEA

!DEA

Wall hung gas boiler for heating only or for heating and D.H.W. production, natural draught or room sealed version, with electronic ignition

- Bi-thermal heat exchanger (mod. AC 23)
- Mono thermal exchanger (mod. AC 23 PLUS), with plate heat exchanger and three way diverting valve
- Just one electrode for ignition and flame detection
- Continuous and proportional gas modulation through microprocessor, both in heating and D.H.W. production mode
- Anti-frost protection on the heating primary circuit on two levels: activation of internal heating and safety lockout with signalling in case of gas lack
- Pump anti-jamming timer in case of long inactivity period
- Heating adjustment range 45 – 78 °C
- D.H.W. adjustment range 35 – 57 °C
- Two NTC sensors for temperature control and D.H.W. priority
- Limit thermostat
- High efficiency modulating pump with built-in automatic air vent
- Visualization of burner lockout for lack of gas and faulty diagnostics with alphanumeric indication on wide multifunction, back-lighted
- LCD display
- Completely metallic casing, epoxy-polyester powder painted and insulated with 8 mm thick thermo-reflecting thermo-acoustic material
- Easy maintenance via frontward rotating panel and frontal access.
- Isolating protection degree IPX4D
- Manometer
- Automatic differential bypass
- C.H. 6 litres expansion vessel
- Safety valve adjusted at 3 bar
- Minimum water pressure switch
- D.H.W. priority flow switch with filter
- Electrical connections for on/off or modulating room thermostat and outer temperature sensor.

Options:

- Connections hiding cover

!DEA

Wall hung gas boiler for heating only or for heating and D.H.W. production, natural draught or room sealed version, with electronic ignition

- Mono thermal or bi-thermal heat exchanger
- Just one electrode for ignition and flame detection
- Continuous and proportional gas modulation through microprocessor, both in heating and D.H.W. production mode
- Anti-frost protection on the heating primary circuit on two levels: activation of internal heating and safety lockout with signalling in case of gas lack
- Pump anti-jamming timer in case of long inactivity period
- Heating adjustment range 45 – 78 °C
- D.H.W. adjustment range 35 – 57 °C
- Two NTC sensors for temperature control and D.H.W. priority
- Limit thermostat
- Circulating pump with built-in automatic air vent
- Visualization of burner lockout for lack of gas and faulty diagnostics with alphanumeric indication on wide multifunction, back-lighted LCD display
- Completely metallic casing, epoxy-polyester powder painted and insulated with 8 mm thick thermo-reflecting thermo-acoustic material
- Easy maintenance via frontward rotating panel and frontal access.
- Isolating protection degree IPX5D (IPX4D for AC - natural draught version)
- Manometer
- Automatic differential bypass
- C.H. 6 litres expansion vessel
- Safety valve adjusted at 3 bar
- Minimum water pressure switch
- D.H.W. priority flow switch with filter
- Electrical connections for on/off or modulating room thermostat and outer temperature sensor.

Technical data

!DEA		AC 23	AR23	CS 24 CS 24 EXT CS 24 INC	RS 24 RS 24 EXT RS 24 INC	CS 28 CS 28 INC
Nominal output	kW	22.9	22.9	24.6	24.6	28
Efficiency class according to ex dir. 92/42/EC		★★	★★	★★★	★★★	★★★
Water efficiency at nominal load	%	89.9	89.9	92.92	92.92	93.18
Water efficiency at part load	%	89.43	89.43	90.23	90.23	90.42
D.H.W. production (*)	l/min	14.1	-	13.7	-	16.1
Height	mm	700	700	700/1140**	700/1140**	700/1140**
Width	mm	420	420	420/550**	420/550**	420/550**
Depth	mm	255	255	255/260**	255/260**	345/260**
Dry weight	kg	35	35	36/50**	36/50**	37/51**
Protection degree	IP	X4D	X4D	X5D	X5D	X5D

(*) in continuous with Δt 25K (**) for Inc (in cabinet) models

!DEA		RS 28	AC 23 PLUS	CS 24 PLUS CS 24 PLUS EXT CS 24 PLUS INC	CS 28 PLUS	CS 32 PLUS
Nominal output	kW	28	22.9	24.7	28.1	32.3
Efficiency class according to ex dir. 92/42/EC		★★★	★★	★★★	★★★	★★★
Water efficiency at nominal load	%	93.18	89.8	93.05	93.21	93.5
Water efficiency at part load	%	90.42	89.43	90.43	90.42	90.42
D.H.W. production (*)	l/min	-	14.1	13.24	15.6	18.47
Height	mm	700	700	700/1140**	700	700
Width	mm	420	420	420/550**	420	420
Depth	mm	345	255	255/260**	345	345
Dry weight	kg	37	35	37/51**	37	37
Protection degree	IP	X5D	X4D	X5D	X5D	X5D

(*) in continuous with Δt 25K (**) for Inc (in cabinet) models

Technical data

!DEA		AB 24
Nominal Heat Output	kW	24
Seasonal space heating energy efficiency	ηs %	79
Seasonal EFFICIENCY CLASS in heating mode		C
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	23.9
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	81.3
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	7.2
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	81.7
Emissions of nitrogen oxides (NO_x)	mg/kWh	153
Declared load profile		L
Energy efficiency in D.H.W. production mode	ηWH %	59
Seasonal efficiency class in D.H.W. production mode		B
Heigh	mm	900
Width	mm	600
Depth	mm	475
Production of D.H.W. in continuous operation with Δt 25 K (mixed)	l/min	14
Net weight	kg	60

!DEA B

Wall hung gas boiler for C.H. and D.H.W. production by 60 litres ultrafast stainless steel storage tank

- Mono-thermal high efficiency copper heat exchanger
- Just one electrode for ignition and flame detection
- Stainless steel ultrafast 60 litre, coil type, D.H.W. storage tank, with inspection flange and magnesium anode, insulated with high density polyurethane
- Continuous and proportional gas modulation through microprocessor, both in heating and D.H.W. production mode
- Anti-frost protection on the heating primary circuit on two levels: activation of internal heating and safety lockout with signalling in case of gas lack
- Pump and 3 way diverting valve anti-jamming timer in case of long inactivity period
- High efficiency modulating pump
- One pump for C.H. circuit and D.H.W. storage tank loading, via a 3 way diverting valve
- C.H. set point adjustment range 45 – 78 °C
- D.H.W. adjustment range 35 - 75 °C
- Two NTC sensors for temperature control and D.H.W. priority
- Limit thermostat
- Circulating pump with built-in automatic air vent
- Visualization of burner lockout for lack of gas and faulty diagnostics with alphanumeric indication on wide multifunction, back-lighted LCD display
- Completely metallic casing, epoxy-polyester powder painted
- Easy maintenance via frontward rotating panel and frontal access.
- International Protection degree is X4D
- Manometer
- Manual differential bypass
- C.H. 10 litre expansion vessel
- D.H.W. 2 L expansion vessel
- Safety valves, adjusted at 3 bar for C.H. system and at 6 bar for D.H.W.tank
- Minimum water pressure switch
- Electrical connections for On / Off or modulating room thermostat (REGOLAFACILE) and outer temperature sensor

Options:

- Remote control with modulating room chronothermostat REGOLAFACILE
- Outdoor temperature sensor for control of room temperature according to the external temperature

RECAL

Steel boiler for gas or oil pressure jet burner

- Self cleaning dry wall combustion chamber with reversed flame
- Patented anti-condensing system and stainless steel adjustable turbolators
- Cast iron door with double opening (left and right) with ceramic fibre insulation
- Full insulation of body with a layer of 60 mm thick mineral wool with protecting film
- Separate panel board

Optional:
- support

Technical data

RECAL		18	22	26
Nominal output	kW	21	26	30
Nominal input	kW	23	28.3	33
Efficiency at Part Load (30%)	%	91.2	91.5	90.5
Efficiency at nominal Load (100%)	%	91.3	91.9	90.9
Efficiency class (ex dir. 92/42)		★★	★★	★★
Boiler content	l	48	48	50
Water side pressure losses (*)	m c.a.	0.06	0.09	0.09
Smoke side pressure losses	mm c.a.	1.8	2.5	2.8
Max. working pressure	bar	4	4	4
Electrical supply	V/Hz	230/50	230/50	230/50
Heigh	mm	830	830	830
Width	mm	570	570	570
Depth	mm	675	675	775
Weight	kg	120	120	140

(*) Pressure losses for a flow rate corresponding to a Δt of 15 K

RECAL		30	38	45	60
Nominal output	kW	35	44	52	70
Nominal input	kW	38	48	57	77
Efficiency at Part Load (30%)	%	92.0	91.5	90.2	90.5
Efficiency at nominal Load (100%)	%	92.1	91.7	91.2	90.9
Efficiency class (ex dir. 92/42)		★★	★★	★★	★★
Boiler content	l	50	67	67	92
Water side pressure losses (*)	m c.a.	0.12	0.12	0.15	0.18
Smoke side pressure losses	mm c.a.	3.5	4	3.7	5
Max. working pressure	bar	4	4	4	4
Electrical supply	V/Hz	230/50	230/50	230/50	230/50
Heigh	mm	830	920	920	1020
Width	mm	570	660	660	760
Depth	mm	775	815	815	905
Weight	kg	140	210	210	280

(*) Pressure losses for a flow rate corresponding to a Δt of 15 K

DSP 110 inox

D.H.W. storage tank which can be connected directly to KON^{m} R, KON^{e} R, !DEA

- Vertical 110 litre storage tank with an helicoidal shaped heat exchanger
- Motorized 3-way diverting valve
- Temperature control thermometer
- Expansion vessel (4 litres)
- Pipe connections
- Drainage cock
- Magnesium anode
- Inspection flange

Optional accessories:

- Pump kit for storage tank recirculation

Technical data

DSP 110 inox		
Water capacity	l	110
Heat input	kW	17.0
Minimum heat output	kW	3.2
D.H.W. circuit pressure min/max	bar	0.5/10
Continuous D.H.W. production (Δt 25k)	l/min	9-20
Specific D.H.W. flow rate (Δt 30k)	l/min	20.8
Electrical supply	V/Hz	230/50
Maximum absorbed power with optional recirculation pump	W	3 - (46)
Heigh	mm	990
Width	mm	465
Depth	mm	489
Weight	kg	53

DSP 110 inox

PUNTO IT

High-performance warm air pellet stove

- Output up to 92,7%
- Available in 3 colours: bordeaux, white and black, ideal for both, modern and traditional houses
- Double crystal for the door:
  - special self-cleaning ceramic glass with forced ventilation
  - Very high efficiency heat exchanger (13 pipes) with countercurrent flow
- lame side protection in stainless steel with mirror finish
- Feeding screw with strengthened ratiomotor, cooled and sound deadened
- Crucible of combustion in strong cast iron
- Crucible cleaning time controlled
- Precise modulating electronics for pellet stove .it
- Disappearing multifunctional display and remote control with LCD display with daily programming; Possibility to plan up to 5 power levels
- ECO function for maintenance of the power required by the user with low consumptions
- Pellet reservoir up to 30 kgs of pellet with autonomy up to 32 hours
- Totally diappearing practical handle

Technical data

PUNTO IT		7	8,5	10,5
Nominal input (max-min)	kW	6.97-2.84	8.87-2.84	10.10-2.84
Nominal output (max-min)	kW	6.42-2,64	7.48-2.64	9.05-2.64
Efficiency (max)	%	92.70	92.70	92.70
Pellet consumption (min-max)	kg/h	0.6-1.41	0.6-1.7	0.6-2.0
Pellet reservoir capacity	l/kg	20/13	20/13	20 / 13
Autonomy at nominal/minimum	h	9/22	8/22	6,5 / 22
Smoke temperature max	°C	149.3	149.3	149.3
Massic smoke flow rate	kg/h	1.42	1.81	2.06
CO	% (13 O_2)	<0.049	<0.049	<0.049
Warmable volume (*)	m^3	170	220	250
Electrical supply	V	230	230	230
Absorbed electrical power (in steady state/at start)	W	100-300	100-300	100 - 300
Flue duct diameter	mm Ø	80	80	80
Height	mm	863	962	962
Width	mm	454	454	454
Depth	mm	468	468	468
Weight	kg	82	86	91

(*) data referred to well insulated rooms

PUNTO IT		16,5	16,5 C (**)
Nominal input (max-min)	kW	16.40 - 4.34	16.40 - 4.34
Nominal output (max-min)	kW	14.80 - 4.07	14.80 - 4.07
Efficiency (max)	%	92.30	92.30
Pellet consumption (min-max)	kg/h	0.95 - 3.3	0.95 - 3.3
Pellet reservoir capacity	l/kg	46 / 30	46 / 30
Autonomy at nominal/minimum	h	9 / 31	9 / 31
Smoke temperature max	°C	139	139
Massic smoke flow rate	kg/h	3.34	3.34
CO	% (13 O_2)	<0.049	<0.049
Warmable volume (*)	m^3	390	390
Electrical supply	V	230	230
Absorbed electrical power (in steady state/at start)	W	150 - 340	150 - 340
Flue duct diameter	mm Ø	80	80
Height	mm	1070	1070
Width	mm	545	545
Depth	mm	545	545
Weight	kg	175	175

(*) data referred to well insulated rooms (**) ducted version

PUNTO IT x

High-performance warm air pellet stove, with exclusive casing in stainless steel

- Output up to 92,7%
- Exclusive special preparation, with casing in stainless steel
- Front door with semitransparent mirrored crystal, that allows the sight of the flame that burns inside
- Double crystal for the door:
  - special self-cleaning ceramic glass with forced ventilation
  - Very high efficiency heat exchanger (13 pipes) with countercurrent flow
- Lame side protection in stainless steel with mirror finish
- Feeding screw with strengthened ratiomotor, cooled and sound deadened
- Crucible of combustion in strong cast iron
- Crucible cleaning time controlled
- Precise modulating electronics for pellet stove .it
- Disappearing multifunctional display and remote control with LCD display with daily programming; Possibility to plan up to 5 power levels
- ECO function for maintenance of the power required by the user with low consumptions
- Pellet reservoir up to 20 kgs of pellet with autonomy up to 22 hours
- Totally diappearing practical handle

Technical data

PUNTO IT x		7	8,5	10,5
Nominal input (max-min)	kW	6.97-2.84	8.87-2.84	10.10-2.84
Nominal output (max-min)	kW	6.42-2.64	7.48-2.64	9.05-2.64
Efficiency (max)	%	92.70	92.70	92.70
Pellet consumption (min-max)	kg/h	0.6-1.41	0.6-1.7	0.6-2.0
Pellet reservoir capacity	l/kg	20/13	20/13	20 / 13
Autonomy at nominal/minimum	h	9/22	8/22	6,5 / 22
Smoke temperature max	°C	149.3	149.3	149.3
Massic smoke flow rate	kg/h	1.42	1.81	2.06
CO	% (13 O_2)	<0.049	<0.049	<0.049
Warmable volume (*)	m^3	170	220	250
Electrical supply	V	230	230	230
Absorbed electrical power (in steady state/at start)	W	100-300	100-300	100 - 300
Flue duct diameter	mm Ø	80	80	80
Height	mm	863	962	962
Width	mm	454	454	454
Depth	mm	468	468	468
Weight	kg	82	86	91

(*) data referred to well insulated rooms

PUNTO IT x

PUNTO IT AQ

High-performance pellet fired hydro-stove, for interior decoration, with double function: warm air and warm water forced circulation

- Efficiency up to 94%
- Available in 3 colours: burgundy, white and black, ideal for both, modern and classical environments
- High efficiency heat exchanger
- Insulating of the wall touching the flame realized in carbon steel for model 15, with further covering in vermiculite for models 20 to 33.
- Feeding screw with strengthened, cooled and silenced motion-reduction gear
- Brazier with stainless steel crucible for model 15 and in cast iron for models 20 to 33, removable for cleaning purposes
- Refined modulating electronics
- Disappearing multifunctional display and remote control
- ECO function for keeping of the power required by the user with low consumptions
- High efficiency pump for distribution of the water in the hydraulic heating system
- Possibility of realization of multi-zone installations
- The warm air is distributed in the room through a tangential fan for models 20 to 33,and by natural convection for model 15
- Smoke temperature sensor
- Safety valve

Options:

- D.H.W. plate heat exchanger, D.H.W. storage tank (110 l capacity), type DSP 110, Anti-condensation Kit

Technical data

PUNTO IT AQ		15	20	24
Nominal input (max - min)	kW	14.8-5.2	19.0-5.2	23.1-5.2
Global nominal output (max - min)	kW	13.9-5.0	18.2-5.0	21.9-5.0
Nominal output to the water	kW	10.5-3.8	13.9-4.2	17.8-4.2
Efficiency (max)	%	93.5	95,7	95
Pellet consumption (min-max)	kg/h	1.6 - 3	1 - 4	1 - 4.9
Pellet reservoir capacity	l/kg	26/17	63/42	63/42
Autonomy at min./nom. output	h	5.5/16	10.4/37	8.5/37
Smoke temperature (min-max)	°C	62.3-124,8	62.1-99.2	62.1-109.2
Smoke massic flow rate	g/s	8.6	10.1	12.9
CO (max)	% (13 O_2)	0.024	0.029	0.029
Warmable volume*	m^3	270	350	400
Smoke evacuation duct	mm Ø	80	80	80
Air intake duct	mm Ø	50	50	50
Height	mm	965	1222	1222
Width	mm	460	567	567
Depth	mm	544	698	698
Weight	kg	145	230	230

(*) data referred to well insulated rooms

PUNTO IT AQ		28	33
Nominal input (max - min)	kW	27.4-8.9	32.4-8.9
Global nominal output (max - min)	kW	25.9-8.6	30.5-8.6
Nominal output to the water	kW	20.3-6.5	24.4-6.5
Efficiency (max)	%	94.5	94
Pellet consumption (min-max)	kg/h	1.8 - 5.5	1.8 - 6.6
Pellet reservoir capacity	l/kg	87/57	87/57
Autonomy at min./nom. output	h	10/31	8.6/31
Smoke temperature (min-max)	°C	72.3-113.9	72.3-125.2
Smoke massic flow rate	kg/h	15.1	18.6
CO (max)	% (13 O_2)	0.026	0.026
Warmable volume*	m^3	510	600
Smoke evacuation duct	mm Ø	100	100
Air intake duct	mm Ø	60	60
Height	mm	1339	1339
Width	mm	624	624
Depth	mm	764	764
Weight	kg	280	280

(*) data referred to well insulated rooms

PUNTO IT AQ p

High-performance pellet fired hydro-stove, for interior decoration, with double function: warm air and warm water forced circulation, exclusive pearl edition

- Efficiency up to 94%
- High efficiency heat exchanger
- Handmade stone finishing
- Casing in the special pearl colour
- Door in mirrored glass
- Insulating of the wall touching the flame realized in carbon steel for model 15, with further covering in vermiculite for models 20-24.
- Feeding screw with strengthened, cooled and silenced motion-reduction gear
- Brazier with stainless steel crucible for model 15 and in cast iron for models 20-24, removable for cleaning purposes
- Refined modulating electronics
- Disappearing multifunctional display and remote control
- ECO function for keeping of the power required by the user with low consumptions
- High efficiency pump for distribution of the water in the hydraulic heating system
- Possibility of realization of multi-zone installations
- The warm air is distributed in the room through a tangential fan for models 20 to 33,and by natural convection for model 15
- Smoke temperature sensor
- Safety valve

Options:

- D.H.W. plate heat exchanger
- D.H.W. storage tank (110 l capacity), type DSP 110
- Anti-condensation Kit
- Chronothermostat REGOLAFACILE
- D.H.W. production kit

Technical data

PUNTO IT AQ p		15	20	24
Nominal input (max - min)	kW	14.8-5.2	19.0-5.2	23.1-5.2
Global nominal output (max - min)	kW	13.9-5.0	18.2-5.0	21.9-5.0
Nominal output to the water	kW	10.5-3.8	13.9-4.2	17.8-4.2
Efficiency (max)	%	93.5	95.7	95
Pellet consumption (min-max)	kg/h	1.6 - 3	1 - 4	1 - 4.9
Pellet reservoir capacity	l/kg	26/17	63/42	63/42
Autonomy at min./nom. output	h	5.5/16	10.4/37	8.5/37
Smoke temperature (min-max)	°C	62.3-124.8	62.1-99.2	62.1-109.2
Smoke massic flow rate	g/s	8.6	10.1	12.9
CO (max)	% (13 O_2)	0.024	0.029	0.029
Warmable volume*	m^3	270	350	400
Smoke evacuation duct	mm Ø	80	80	80
Air intake duct	mm Ø	50	50	50
Height	mm	965	1222	1222
Width	mm	460	567	567
Depth	mm	544	698	698
Weight	kg	145	230	230

(*) data referred to well insulated rooms

PUNTO IT AQ p

PUNTO IT CT

High-performance pellet fired hydro-stove, for boiler house or technical place: warm water forced circulation

- Efficiency up to 92.1%
- Door: insulated with material vermiculite-based with double covering, with flame sight glass and magnetic closing
- Very high efficiency heat exchanger
- Insulating of the wall touching the flame realized in carbon steel for model 15, with further covering in vermiculite for models 20 to 33.
- Feeding screw with strengthened, cooled and silenced motion-reduction gear
- Brazier with stainless steel crucible for model 15 and in cast iron for models 20 to 33, removable for cleaning purposes
- Practical drawer for ash extraction under the crucible
- ECO function for keeping of the power required by the user with low consumptions
- High efficiency pump for distribution of the water in the hydraulic heating system
- Possibility of realization of multi-zone installations
- Smoke temperature sensor
- Safety valve

Optional:

- D.H.W. plate heat exchanger
- D.H.W. storage tank (110 l capacity), type DSP 110
- Other storage tanks and integrations from renewable sources (solar)
- Anti-condensation Kit

Technical data

PUNTO IT CT		15	20	24
Nominal input (max - min)	kW	15.2-5.2	19.0-5.8	23.8-5.8
Nominal output to the water	kW	13.8-4.6	17.5-5.2	21.5-5.2
Efficiency (max)	%	90.2	92.1	90.4
Pellet consumption (min-max)	kg/h	1-3.1	1.1-3.8	1.1-4.8
Pellet reservoir capacity	l/kg	64/42	100/65	100/65
Autonomy at min./nom. output	h	13.5/39.2	16.5/54	13.5/54
Smoke temperature	°C	123	90.5	108.1
Smoke massic flow rate	g/s	8.6	10.4	12.9
CO (max)	% (13 O_2)	0.019	0.020	0.020
Warmable volume (*)	m^3	300	380	430
Smoke evacuation duct	mm Ø	80	80	80
Air intake duct	mm Ø	50	50	50
Height	mm	1039	1238	1238
Width	mm	563	627	627
Depth	mm	660	786	786
Weight	kg	160	250	250

(*) data referred to well insulated rooms

PUNTO IT CT		28	33
Nominal input (max - min)	kW	27.2-7.0	31.8-7.0
Nominal output to the water	kW	24.4-6.3	29.1-6.3
Efficiency (max)	%	90.1	91.6
Pellet consumption (min-max)	kg/h	1.4-5.5	1.4-6.4
Pellet reservoir capacity	l/kg	130/85	130/85
Autonomy at min./nom. output	h	15,3/59	13/59
Smoke temperature	°C	133.4	137.3
Smoke massic flow rate	kg/h	15.8	16.9
CO (max)	% (13 O_2)	0.018	0.018
Warmable volume (*)	m^3	540	620
Smoke evacuation duct	mm Ø	100	100
Air intake duct	mm Ø	60	60
Height	mm	1356	1356
Width	mm	690	690
Depth	mm	860	860
Weight	kg	305	305

(*) data referred to well insulated rooms

Technical data

PELLEXIA		34	45	80
Nominal input min. / max.	kW	9.6/31.4	11.9/39.8	21.5/72.4
Nominal output min. / max.	kW	10.7/34.9	13.2/44.1	23.9/80.1
Global efficiency max	%	90.1	90.1	90.2
Maximum pellet reservoir capacity (*)	kg	230	230	650
Autonomy (burner at min./max. c.)	h	109/32	82/25	133/40
Smoke temperature min. / max.	°C	97/158	102/166	93/170
Co value at 10% of o_2 at min. power	mg/Nm³	116	182	102,6
Co value at 10% of o_2 at max. power	mg/Nm³	459	476	217.1
Pellet consumption min. / max.	kg/h	2.1/7.1	2.8/9	4.78/16
Dust at 10% of o_2	mg/Nm³	18	19	14
Dust at 13% of o_2	mg/Nm³	13	14	10,1
Water content	l	67	82	110
Max. working pressure	bar	3	3	3
Height	mm	1400	1400	1640
Width		1180	1180	1711
Depth		1605	1745	2030
Dry weight	kg	477	600	720

(*) The quantity of the stored pellet can vary according to the density of the fuel.
Results obrained with pellet EN PLUS certified according ISO 17225-2:2014 standard.

PELLEXIA 34-45-80

Hot water, carbon steel boiler range quipped with a special pellet burner, with fan placed on the air suction side and with a pellet tank that automatically feeds it

- Pellet tank capacity: 230 kg (mod. 34 - 45), 630 kg (mod. 80)
- Efficiency higher than 90,1%
- Low pollutant emissions
- Carbon steel body, with three real smoke passes and turbulators in the third pass
- Wide and deep combustion chamber, partially covered with refractory material, in order to assure:
  - complete combustion of the air / pellet mixture
  - cleaning of the wet walls
  - elevated safety of operation, also with pellet according to the standard, but rich of ashes
- Separation between 2nd and 3rd pass through a diverter in refractory material
- Wide steel crown, entirely wet, for the completion of the 3rd smoke pass, that acts as real heat exchanger
- Casing insulation in anti tearing mineral wool, 60 mm thick
- Pellexia is equipped with a special burner:
  - Ignition and combustion assembly in very thick thermal steel AISI 310S
  - Ultra-fast ignition (ca.3 minutes)
  - Power modulation on four levels
- Optimization of the combustion through:
  - modulation on boiler water temperature
  - modulation on smokes temperature
  - modulation through optical reading of the flame brightness

Safety devices:

- Pelle “Anti-stoppage sensor”
- Burner anti-overheating thermostat
- Signaling of the correct operation of the probes
- Protection against momentary lack of the tension
- Protection against boiler water overheating
- Visualization of the alarms on the display
- C.H. expansion vssel18 liters
- C.H. safety valve 3 bar
- Automatic air vent

Optional:

- Anticondensate recirculation pump
- Accumulators: Puffer, Multipower, Multipower Plus
- Solar collectors
- Predisposition for combination with automated system of pellet transport and loading.

PELLEXIA 34 - 45 - 80

Technical data

ALLBIOMIX		34 wood/pellet	45 wood/pellet
Nominal input	kW	34.7/34.7	45.5/41
Nominal output	kW	31.4/31.5	41/37.1
Combustion efficiency	%	90.07/90.6	90.2/90.4
CO_2	%	15/12.1	15.1/12.4
Water content	l	85	110
Efficiency class according to en 303-5:2012		5	5
Max. working pressure	bar	3	3
Max. c.h. flow temperature	°C	82	82
Smoke temperature at nominal load	°C	184/123	180/127
Min. draught allowed at the chimney base	Pa	15	18
Volume of woog logs store	l	110/380	161/380
Pellet consumption	kg/h	6.97	8.25
Combustion lasting in continuous operation	h	5/33	5/27
Smoke vertical pipes	n°	8	10
Height	mm	1322	1528
Width		670	770
Depth		1290	1300
Boiler dry weight	kg	470	620

ALLBIOMIX

Wood, pellet and fuels in granules fired unit in carbon steel, with downward reversed flame and the parts exposed to the fire in thermal steel AISI 304.

- Polyvalent boiler for solid biomasses, such as wood logs and compressed briquettes, equipped with a special burner for pellet and other granular biomasses, such as: crushed olive stones, hazelshells, almondsshells, shoots of grapevine, etc.
- Combustion with downward reversed flame with triple modulation:
  - modulation through inverter on boiler temperature: to maintain the correct stoichiometric ratio
  - modulation on smokes temperature: to prolong the autonomy, guaranteeing the safety of the combustion
  - modulation on optic reading: to regulate the speed of the fuel feeding screw, so optimizing the combustion
- Low polluting emissions and very high efficiency, > 90%, that guarantees a rapid amortization
- Incandescent combustion chamber in special thermal stainless steel AISI 430, highly heat-stable and resistant to the high temperatures and to potential chemical aggressions
- Grate in thermal steel INOX AISI 310, 15 mm thick
- Lateral primary air chanels, with a thickness of 6 mm
- Vertical smoke pipes with mobile turbolators, automatically shaked by levers with timed activation, in order to increase the efficiency of the boiler (practical ashes removal from the front)
- Self cleaning pellet burner, in stainless steel AISI 304, placed behind the boiler
- Modulating fan with control by inverter, positioned in the suction side for optimization of the combustion
- Two independent loading feeding screw of safety reason
- Safety heat exchanger in finned copper pipe
- Pellet reservoir of 230 kg, that can be placed on one of 3 sides and automatically feeds the burner
- Wide wood storage, with front by-pass, for wood logs, to guarantee long intervals of operation
- Panel board BIOTRONIC for the management of:
  - automatic fuel commutation
  - operational states
  - safeties (acoustic and visual alarms)
  - values detected by elements of the installation
- Reinforced photocell for the control of flame presence and intensity
- Ultra fast lighting (less than 3 minutes)
- Management of the power when in combination with a DHW storage tank
- Sensor for detection of minimum pellet level in the reservoir

Optional:

- Predisposition for combination with automated system of pellet transport and loading

ALLBIOMIX

FOKOLUS

Traditional combustion wood fired steel boiler

- Available in 3 models: 20, 33 and 42 kW outputs
- High radiating internal structure
- Brazier shaped basement
- Thermostatic adjustment of the air draught
- Arch shaped, steel heat exchanger, to prevent overheating
- Operation autonomy: from 5 to 7 hours
- Wood storage: 70, 125 and 165 litres
- 2 wide inspection doors, for wood storage and combustion chamber
- Possibility of natural circulation operation without system pump
- Rock wool, anti-tear, casing insulation
- Special refractory catalyst tile
- Manual by-pass

Optional:

- Boiler recirculation kit

Technical data

FOKOLUS		20	30	40
Nominal output (*)	kW	20	33	42
Nominal input	kW	31	50	61
Pressure losses water side (**)	m c.a.	0.3	0.3	0.4
Chimney draught required	mm c.a.	1.5	1.6	2
Boiler water content	l	35	53	67
Max. working pressure	bar	3	3	3
Wood storage capacity	l	70	125	165
Wood logs length	cm	33	50	70
Height	mm	1260	1260	1260
Width	mm	572	652	652
Depth	mm	776	946	1146
Weight	kg	250	340	402

(*) Output obtained with good quality wood with a maximum of 15% moisture content.
(**) Pressure losses with a water flow rate corresponding to a Δt of 15K

FOKOLUS

FIREX

Total gasification, pyrolytic combustion, wood fired steel boiler with reversed flame

- Reversed flame combustion
- High efficiency (for solid fuels), higher than 82%
- Combustion optimization and control through the primary and secondary air adjustment via a butterfly adjuster with built-in non-return valve
- Wood gasification placed on the suction side
- Grate and fire bars in stainless steel AISI 310 s
- Tray in high resistance refractory steel
- Internal rear wall in refractory material to avoid the condensate formation
- Loading and wood store maintenance through a wide, front insulated door and the combustion chamber door, both with 180° rotation.
- Anti-smoke internal door with complete rotation, placed between the external loading door and the wood store.
- Frontal bypass above the upper door
- Insulated handle and knobs for door openings
- Wood store 8 mm thick
- Casing insulation with anti-tear, rock wool mattress (50 mm thick) with external aluminium foil
- Thermostatic panel board for the automatic control of the boiler fan and the different installation types, such as:
  - Heating only
  - Heating and D.H.W. production, via a storage tank with single or double coil, or tank-tank
- Anti-overheating safety heat exchanger, made of a steel coil, immersed directly in the highest part of the boiler water.

Technical data

FIREX		34	45	55
Nominal output (*)	kW	28.23	35.1	45.2
Nominal input	kW	34.65	43.04	55.45
Efficiency	%	81.5	81.6	81.5
Maximum working pressure	bar	3	3	3
Wood store volume	l	108	160	218
Wood logs length	cm	50	50	70
Smoke temp. at nominal output	°C	284	279	283
Boiler water content	l	59	71	93
Height	mm	1420	1570	1570
Width	mm	510	610	610
Depth	mm	995	995	1195
Dry weight	kg	363	475	623

(*) Output obtained with good quality wood with a maximum of 15% moisture content.

FIREX

NOVAIREX

Total gasification wood fired boiler, with downward reversed flame and thermocontrolled pyrolytic combustion, with fan positioned in the suction side

- Reversed flame combustion
- High efficiency (for the solid fuels): higher than 89,5%
- Regulation of primary and secondary air for the optimization and control of the combustion through butterfly adjusters with incorporated check valves
- Modulating fan on suction side
- Tray, grate and fire bars in stainless steel AISI 310S
- Rear internal wall in refractory material to avoid the possibility of the formation of condensates
- Catalyzator in refractory stone
- Loading and maintenance of the wood storage room through front insulated upper door. The lower door, with a rotating angle of 180° gives access to the combustion chamber.
- An internal door, placed between the loading door and the wood storage room acts as anti-smoke protection
- Door opening handle with anti-scorch protection
- Wood storage room with walls 8 mm thick.
- Boiler body and smoke chamber insulated with anti-tearing rock wool mattress (50 mm thick) and sheet of overlapped aluminum
- Panel board Biotronic for the automatic control of the boiler fan and of the different types of installations:
  - only heating
  - heating and DHW production, through single or double coil accumulator or Tank in Tank
  - thermal solar
- Anti-overheating safety heat exchanger, constituted by a steel coil, immersed directly in the water in the upper part of the boiler

Technical data

NOVAIREX		34	45	55
Nominal output	kW	30.61	40.1	49.1
Nominal input	kW	34.2	45	55.2
Efficiency	%	89.5	89	89
Maximum working pressure	bar	3	3	3
Wood store volume	l	108	160	218
Wood logs length	cm	50	50	70
Smoke temp. at nominal output	°C	171	177	178
Boiler water content	l	59	71	93
Height	mm	1420	1570	1570
Width	mm	510	610	610
Depth	mm	995	995	1195
Dry weight	kg	363	475	623

NOVAIREX

Technical data

LENIADENS		28	32	45	60
Nominal output	kW	28.4	32	45.1	60.2
Nominal input	kW	30.9	34.8	49.1	65.4
Efficiency	%	92	91.9	91.8	92
Water content	l	175	175	193	242
water side pressure drop (*)	m c.a.	0.4/0.2	0.4/0.2	0.4/0.2	0.5/0.2
max.working pressure	bar	3	3	3	3
firewood store volume	l	172	172	172	234
wood logs length	cm	50	50	50	70
smokes temperature	°C	135	146	148	141
Height	mm	1775	1775	1775	1775
Width	mm	610	610	610	610
Depth	mm	1288	1288	1355	1622
Weight	kg	710	710	749	898

(*) Pressure losses for the flow rates corresponding to a DT of 10K and 20K.
Efficiency and emissions according to the class 5 of the EN 303-5:2012
Power gotten with firewood of good quality containing 15% of humidity.

LENIADENS

LENIADENS

Wood logs fired steel boiler, with total gasification and pyrolytic combustion checked through lambda sensor, with very high efficiency

- Inverted flame combustion
- Efficiency higher than 91% (class 5) according to EN 303-5: 2012
- Very low CO emissions (class 5) according to EN 303-5: 2012
- Built-in anti-condensation system, with modulating thermostatic valves (UNICAL Patent)
- Boiler body in thick steel plates with combustion chamber bottom protected by refractory catalyst for the improvement of the combustion
- Refractory stone burner, with grate in thermal steel
- Vertical smoke chanels endowed with mechanic cleaning system manually operated
- Combustion optimization and control, through continuous adjustment of the primary and secondary air regulation via servomotors
- Fan, for the wood gasification, set in the suction side
- Vertical smoke channels endowed with mechanic cleaning system manually operated
- Front wood loading door, insulated with self cooling refractory concrete through pre-heating system of the primary and secondary air
- Lower door complete with combustion air adjustments, insulated with refractory concrete and provided with flame sight glass
- Casing insulation with anti-tear mineral wool mattress (60 mm thick)
- Anti overheating safety heat exchanger, constituted by a steel coil, directly plunged in to the boiler water
- Automatic smoke by-pass, activated, together with the fan, at the opening of the wood loading door
- Rear smoke chamber with side openings for inspection and ashes removal
- Lambda Modul System panel board, with friendly use display
- Recirculation pump kit for combination with heat accumulator (puffer), as an option
  Auxiliary boiler management with automatic ignition of the auxiliary boiler in case of exhaustion of the firewood (for BICOMB version)

Optional:

- Recirculation pump kit

Automatic curtain for shadowing (optiona)

TITANIUM

Flat solar collector for forced circulation systems, in roof built-in and garden installations

- Copper plate collector
- Total surface absorber, with highly selective TITAN treatment “SUN SELECT”
- Extra-clear, tempered, highly transparent, coated, 4 mm thick collector glass
- High density, lateral and rear rock-wool insulation, 45 mm thick
- Box in painted aluminium profiles
- Collector tested and certified according to EN 12975
- Gauged anti-condensation holes

Optional accessories:

- Circulation groups
- Solar regulators
- Assembly frames and fittings
- Automatic shading tent for two collectors
- Professional briefcase for thermal solar plants
- Solar circuit filling pump
- AISI 316 L stainless steel piping, dia. 16-20-25 mm

Technical data

		TITANIUM	TITANIUM O	TITANIUM XL
Height	mm	2005	1000	2005
Width	mm	1000	2005	1290
Depth	mm	102	102	102
Weight	kg	38	38	50
Collector piping dia	mm	22	22	22
Box material		aluminium	aluminium	aluminium
Glass type		extra clear, tempered, prismatic		
Net absorbing surface	m^2	1.8	1.8	2.31
Collector total surface	m^2	2	2	2.59
Absorbing plate material		copper	copper	copper
Surface treatment		TITAN “SUN SELECT”		
Absorption	%	95	95	95
Emission	%	5	5	5
Optical efficiency η 0		0.775	0.775	0.73
Losses coefficient α 1	W/m^2K	3.91	3.91	3.94
Losses coefficient α 2	W/m^2K^2	0.0081	0.0081	0.0070
Suggested collector flow rate	l/h	80	80	100
Pressure losses (hydr. resist.)	mbar	1.26	1.26	1.74
Collector water content	l	1.6	1.6	2

TITANIUM

SUNS

Flat solar collector for forced circulation systems, for roof and garden installation

- Aluminium total plate absorber, ultrasonic welded on 12 copper pipes dia. 8x0.5 mm, for transferring the thermal carrier fluid, with high selective treatment “TINOX” (absorption 95% - emission 4%)
- Collector glass 4 mm thick, extra clear, tempered and highly transparent
- High density, rear mineral-wool insulation, 50 mm thick
- External box in aluminium profiles, with total dimensions 1988 x 1218 x 90 mm
- Collector total surface 2.42 m^2, absorbing surface 2.23 m^2
- Collector tested and certified according to EN 12975
- 3/4” connecting unions included

Options:

- Assembly frames and fittings for roof or garden installation
- Solar controller
- Circulation group
- Professional briefcase for thermal solar plants
- Solar circuit filling pump
- AISI 316 L stainless steel piping, dia. 16-20-25 mm

Technical data

SUNS		
Height	mm	1988
Width	mm	1218
Depth	mm	90
Weight	kg	44
Collector piping dia	mm	18-22
Box material		aluminium
Glass type		extra clear, tempered
Net absorbing surface	m^2	2.23
Collector total surface	m^2	2.42
Absorbing plate material		aluminium
Surface treatment		“TINOX”
Absorption	%	> 95
Emission	%	< 4
Optical efficiency η 0		0.785
Losses coefficient α 1	W/m^2K	3.722
LOSSES coefficient α 2	W/m^2K^2	0.012
Suggested collector flow rate	l/h	100
Pressure losses (hydr. resist.)	mbar	1.6
Collector water content	l	1.27

SUNS

BISER

BIKOMPACT

Technical data

BISER		200	300	500	800	1000	1500	2000
Capacity	l	212	291	502	765	900	1450	2054
Height	mm	1215	1615	1640	1845	2105	2185	2470
Width	mm	600	600	750	990	990	1200	1300
Insulation	mm	50	50	50	100	100	100	100
Upper heat exchanger (integration)	m²	0.5	0.8	0.9	1.2	1.2	1.8	2.8
Output of upper heat exch.	kW	12	20	23	30	30	47	73
Lower heat exchanger (solar system)	m²	0.7	1.2	1.8	2.0	2.4	3.4	4.6
Output of lower heat exch.	kW	19	30	47	50	60	88	120
Dry weight	kg	95	130	170	220	265	365	480

BIKOMPACT		300
Capacity	l	300
Height	mm	1615
Width	mm	640
Insulation	mm	70
Upper heat exchanger (integration)	m²	0.9
Output of upper heat exch.	kW	22
Lower heat exchanger (solar system)	m²	1,5
Output of lower heat exch.	kW	36
Dry weight	kg	130

BISER - BIKOMPACT

Solar storage tanks for forced circulation systems for D.H.W. production, with capacity from 212 to 2000 litres

Tanks BISER

- Double coil: for solar system and boiler integration
- Glass lined storage tank
- 7 different capacities: 200, 300, 500, 800, 1000, 1500 and 2000 litres
- Double anticorrosion enamelling (for 1500 and 2000 litres with thermosetting resins)
- 180 mm flange for inspection and easy maintenance (290 mm for 1500 and 2000 litres)
- Total insulation with PU foam
- 3 bulb holders for thermostats/thermometer
- Connection for electric heater
- Magnesium anode for stray currents (2 anodes for 800 up to 2000 litres)

Tanks BIKOMPACT 300

- Easy installation with reduced installation costs and times
- Double coil: solar and auxiliary boiler
- Tank of 300 litres, phosphatised in order to grant the deposit of the enamelling.
- Double anticorrosion enamelling, at 860°C
- Total insulation with PU foam, 70 mm thick
- 3 bulb holders, for thermostats and thermometer
- Magnesium anode against the corrosion
- Flange of 180 mm dia. for inspection and easy maintenance
- Expansion vessel kit
- Circulation assembly
- Digital control unit
- Flow and return thermometers
- Electric heater connection
- Ball valve and no-return valve
- Outer covering in PVC

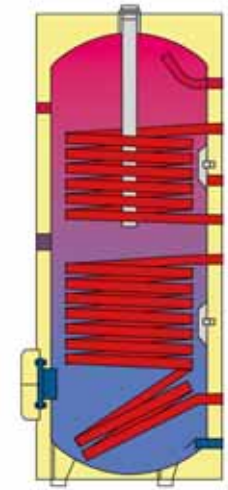
BK

Bollitori solari preassemblati per sistemi a circolazione forzata per la produzione di A.C.S. con capacità da 200 - 300 - 500 litri

- Doppio serpentino - solare e caldaia di integrazione
- Serbatoio in acciaio trattato per favorire il deposito della smaltatura
- 3 Bollitori della capacità di 200, 300, 500 litri preassemblato di:
  - Centralina solare digitale
  - Gruppo di circolazione monocolonna
  - Attacco vaso d'espansione
  - Vaso d'espansione 18 litri completo di staffa e tubo flessibile
- Vetrificazione a 860°C anticorrosione
- Flangia 180 mm per ispezione e facilità di manutenzione
- Coibentazione totale in poliuretano espanso
- 3 pozzetti termostato/termometro
- Attacco resistenza elettrica
- Anodo sacrificale di magnesio contro le correnti galvaniche

Technical data

BK		200	300	500
Capacity	l	212	291	502
Height	mm	1215	1615	1690
Width	mm	600	600	750
Insulation	mm	50	50	50
Upper heat exchanger	m^2	0.5	0.8	0.9
Output of upper heat exch.	kW	12	19	23
Lower heat exchanger (solar system)	m^2	0.7	1.2	1.8
Output of lower heat exch.	kW	19	30	47
Dry weight	kg	95	130	170



BX

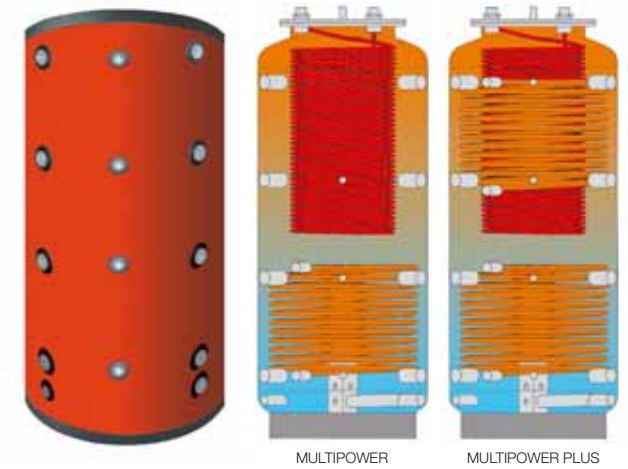
D.H.W. production solar tanks for forced circulation systems, with 200 - 300 - 500 liters water content

- Two coils: solar and boiler integration
- Stainless steel cylinder
- 3 different water contents: 200 - 300 and 500 liters
- T.I.G. welding for the maximum dependability and hygiene in the time
- Flange for inspection and easy maintenance
- Total insulation with PU foam
- 3 bulb holders for thermostat / thermometer
- Connection for electrical heater
- Prearrangement for electronic anode

Technical data

BX		200	300	500
Capacity	l	205	281	482
Height	mm	1287	1684	1780
Width	mm	600	600	752
Insulation	mm	50	50	50
Upper heat exchanger	m^2	0.72	0.8	1.23
Output of upper heat exch.	kW	16	20	29
Lower heat exchanger (solar system)	m^2	1.3	1.3	1.84
Output of lower heat exch.	kW	33	33	50
Max. working temp.	°C	95	95	95
Max. working press	bar	8	8	8
Dry weight	kg	60.7	75	101

BX



MULTIPOWER MULTIPOWER PLUS

MULTIPOWER

MULTIP. PLUS

MULTIPOWER - MULTIPOWER PLUS

Solar storage tank for forced circulation suitable for D.H.W. and heating integration with extractable stainless steel heat exchanger, for different energy sources, from 500 to 2500 litres

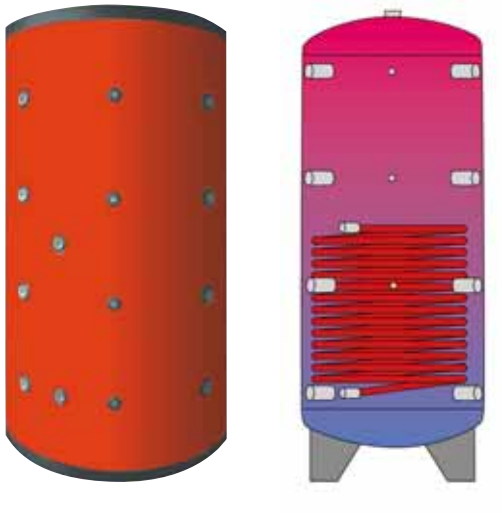
- Exchange coil in Stainless steel AISI 316 Lfor D.H.W. production
- Coil for thermal solar circuit
- Coil for additional integration source (version Plus)
- Stratifyer for exploitation optimization of the solar energy
- Total insulation with soft polyurethane
- Outer lining in PVC
- Electrical resistance connection

Technical data

MULTIPOWER MULTIPOWER PLUS		300	500	800	1000
Total capacity	l	283	489	732	1000
Heght	mm	1625	1690	1725	2175
Width	mm	700	850	990	990
Insulation thickness	mm	100	100	100	100
Upper exchanger only for MULTIPOWER PLUS	m²	-	2.0	2.0	2.0
Lower exchanger	m²	1.8	2.0	2.5	3.0
Power absobed by upper exch. only for MULTIPOWER PLUS	kW	-	34	42	42
Power absobed by lower exch.	kW	47	48	63	75
D.H.W. heat exchanger	m²	3	3	3.38	4.27
Power absobed by D.H.W. exch.	kW	60	60	59	74
Max. C.H. working pressure	bar	3	3	3	3
Max. D.H.W. working pressure	bar	6	6	6	6
Max. working temperature	°C	95	95	95	95
Dry weight for MULTIPOWER	kg	110	160	220	235
Dry weight for MULTIPOWER PLUS	kg	-	200	250	295

MULTIPOWER MULTIPOWER PLUS		1500	2000	2500
Total capacity	l	1449	2054	2346
Heght	mm	2110	2445	2215
Width	mm	1200	1300	1450
Insulation thickness	mm	100	100	100
Upper exchanger only for MULTIPOWER PLUS	m²	3.0	3.0	4.0
Lower exchanger	m²	3.5	4.0	4.0
Power absobed by upper exch. only for MULTIPOWER PLUS	kW	66	66	104
Power absobed by lower exch.	kW	91	104	104
D.H.W. heat exchanger	m²	4.87	4.87	4.87
Power absobed by D.H.W. exch.	kW	85	85	85
Max. C.H. working pressure	bar	3	3	3
Max. D.H.W. working pressure	bar	6	6	6
Max. working temperature	°C	95	95	95
Dry weight for MULTIPOWER	kg	305	395	380
Dry weight for MULTIPOWER PLUS	kg	365	440	425

MULTIPOWER - MULTIPOWER PLUS



PUFFER PSR

Solar storage tanks for heating water, with internal coil, and capacity from 500 to 3000 litres

- Carbon steel reservoir
- Internal coil heat exchanger
- Total insulation with soft PU foam
- Four bulb holders for thermostats/thermometer
- Outer covering in PVC

Technical data

PUFFER PSR		500	1000	1500	2000	3000
Total capacity	l	489	855	1449	2054	2959
Heght	mm	1695	1975	2090	2405	2645
Width	mm	850	990	1200	1300	1450
Insulation	mm	100	100	100	100	100
Solar heat exchanger surface	m^2	1.8	2.6	3.8	3.8	5.0
Heat exchanger output	kW	45	68	99	103	130
Haet exchanger flow rate	m^3/h	1.9	2.9	4.2	4.4	5.6
Max working pressure Of heat exchanger	bar	6	6	6	6	6
Max working pressure of c.H. Storage tank	bar	3	3	3	3	3
Max working temperature of c.H. Storage tank	°C	95	95	95	95	95
Dry weight	kg	135	205	270	355	435

PUFFER PSR

SOLECO

Natural circulation kit with one or two solar collectors and storage tank of 160 - 220 - 300 litres, for roof or garden installations

- Copper, flat type solar collector
- Total surface absorber with highly selective Titanium treatment (absorption 95%, emissions 5%)
- Extra clear, highly transparent tempered glass, 4 mm thick
- Lateral and rear insulation with HD rock and glass wool, 40 mm thick
- External frame in aluminium profiles
- Collector tested according to EN 12975
- Storage tank of tank in tank type
- Anticorrosion treatment with enamelling at 860°C
- Insulation by PU foam 40 mm thick
- Two magnesium anodes and possibility of an electric heater installation
- Bulb holder for temperature sensor fitted on the inspection flange
- Frame for flat or inclined surface ((garden or roof), fittings and anti-freezing liquid are supplied as standard for a complete installation

Technical data

SOLECO		160	220 2.5	220	300
Features of the collector					
Number of collectors		1	1	2	2
Height collector	mm	2030	2030	2030	2030
Width collector		1030	1230	1030	1030
Depth collector		87	90	87	87
Glass thickness	mm	4	4	4	4
Total surface of collectors	m^2	2.09	2.49	4.18	4.18
Maximum working pressure	bar	6	6	6	6
Test pressure	bar	10	10	10	10
Maximum allowed temp.	°C	210	210	210	210
Dry weght	kg	40,8	50	40,8	40,8
Features of the storage tank					
Water content	l	150	200	200	282
Type of treatment		Glass lining at 860°C			
Dimensions (dia. X length)	mm	ø500x1300	ø580x1300	ø580x1300	ø580x1800
Insulation in pu foam		polyurethane 40 mm			
Dry weight	kg	67	85	85	107

SUNBUSTER

Solar panel with built-in direct storage tank

- Double and strong dome in highly transparent metacrylate
- Glass lined storage tank of 135 litres, externally treated with matt selective paint
- Containing tray in ABS, insulated with closed cells PU foam
- Inclinable and easily assemblable supporting frame, in hot-galvanized steel
- Aerodynamic study of the shape in order to offer a very reduced resistance to the wind, thus avoiding difficult clamping, which is, on the contrary, necessary for the flat panels
- Possible installation of an auxiliary electric heater

Technical data

SUNBUSTER		
Panel/tank collecting area	m^2	0.966
Luminous transmittancy of metacrylate	%	92
Storage capacity	l	135
Water connections		3/4”
Tank test pressure	bar	9
Setting of pressure safety valve	bar	6
Auxiliary thermostatic electric heater	W	1200
Dry weight	kg	64

SUNBUSTER

HP_OWER 60÷150

Air-water, full inverter, high efficiency heat pump, for outdoor installation

- Rotative inverter compressor for the versions 60
  inverter twin rotary for the version 90-120
  scroll inverter compressor for the version 150
- Fans Rotor inverter
- Flow temperatures up to 58°C
- Operation up to -15°C
- Integral HYDRONIC KIT “All in one”, composed of:
  - Circulator inverter
  - Expansion vessel
  - Four way valve to optimize the seasonal efficiency
  - Flow switch
  - Safety valve and automatic air vent
- Cooler R410A
- Water/gas plate heat exchanger in stainless steel AISI 316 L
- Air/gas finned heat exchanger with corrosion resistant treatment
- Digital control on board
- Management of two flow temperatures
- Electronic expansion valve
- Peak current limiter and phase control
- Automatic defrosting
- Self-diagnosis
- Auto-restart

Options:

- Storage tanks Enerboil for preparation of D.H.W.
- Kit for preparation of D.H.W. storage tank
- Kit Antifreezing
- Antivibration
- External remote control for management of the installation

Technical data

HP_OWER		60	90	120	150
Delivered / absorbed Power in heating mode (*)	kW	6.20/1.39	9.90/2.21	13.19/2.95	15.82/3.45
Delivered / absorbed Power in cooling mode (*)	kW	5.84/1.32	9.42/2.22	13.15/2.94	15.60/3.46
Seasonal EFFICIENCY CLASS in heating mode (T_{out} = 35°C)		A++	A++	A++	A++
COP		4.15	4.11	4.21	4.11
EER		4.06	3.96	4.16	4.03
ESEER		6.29	6.05	6.37	6.28
Supply	V/Ph/Hz	230/1/50	230/1/50	230/1/50	400/3/50
Height	mm	717	861	1400	1400
Width	mm	1134	1229	1258	1258
Depth	mm	376	371	448	448
Gross/net weight	kg	71/79	89/98	142/155	147/160

(*) Heating: external air temperature 7°C b.s. 6°C b.u.; water temperature in/out 30/35°C
(**) Cooling: external air temperature 35°C; water temperature in/out 23/18°C

HP_OWER 250÷500

Heat pump air - water, full inverter, high efficiency, for outdoor installation

- High efficiency: COP up to 4.40, EER up to 4.46, ESEER up to 5.47 (ref. EN 14511)
- Compressors DC INVERTER, SCROLL TYPE
- Fan motor DC INVERTER
- Asymmetrical water-gas plate heat exchanger, high efficiency, in stainless steel AISI 316L patented for R410A
- Air-gas heat exchanger constituted by copper pipes with aluminium fins and anti-mould treatment
- Integral digital panel board representing the heating and DHW production installations.
- Management of a DHW tank or of a combi tank for both, the DHW production and Technical Water
- Thermo-regulation standard supplied with management of modulating flow temperature
- Management through a possible external controller 0-10 Volts
- Management through a possible ON/OFF chrono-thermostat
- Automatic defrosting function
- Preheating of compressor case for low temperatures
- Auto-restart and Self-diagnosis
- Refrigerant R410A

Possible options:

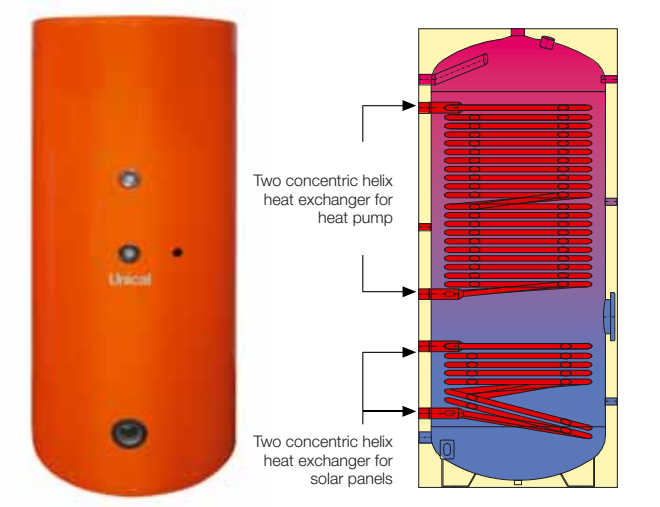
- Remote control with coloured touch screen
- Expansion module of the installation management through control of the integration source, such as a boiler or electric resistance, according to the outdoor working temperature so that to optimize the consumptions of the system (choice of the most convenient source of energy)
- High manometric head modulating pump
- Antifreeze kit for heat exchangers
- LN “Low Noise” kit to increase the silence of operation
- SLN “Super Low Noise” kit, in addition to the LN kit, a particular diffuser of the fan, that facilitates the expulsion of air, by reducing the fan speed

Technical data

HP_OWER		250	350	500
Delivered / absorbed Power in heating mode (*)	kW	24.80/5.62	37.90/7.98	48.70/11.87
Delivered / absorbed Power in cooling mode (*)	kW	30.45/6.82	36.37/8.91	48.86/12.52
Seasonal EFFICIENCY CLASS in heating mode (T_{out} = 35°C)		A++	A++	A++
COP		4.40	4.12	4.10
EER		4.46	4.08	3.90
ESEER		5.34	5.47	5.04
Supply	V/Ph/Hz	400V/3P+N+T/50Hz		
Height	mm	1741	1741	1741
Width	mm	1198	1198	1198
Depth	mm	1198	1198	1198
Weight	kg	382	439	455

(*) Heating: external air temperature 7°C b.s. 6°C b.u.; water temperature in/out 30/35°C
(**) Cooling: external air temperature 35°C; water temperature in/out 23/18°C

HP_OWER 250÷500



ENERBOIL

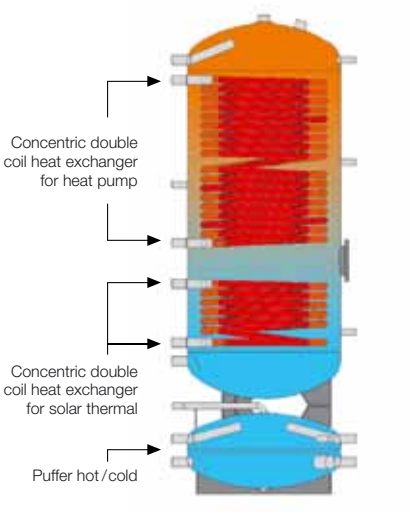
Storage tanks for D.H.W. production
Combined connection for heat pump and solar panels

- Increased coil with double helix structure for the combined connection of heat pump and solar panels.
- Storage tank in carbon steel with surface treatment in order to favour the deposit of the enamelling
- Double anticorrosion enamelling at 860°C
- Flange 180 mm with connection for electrical resistance, for inspection and easy maintenance
- Total insulation with PU foam
- Bulb holder for thermometer / thermostat bulbs
- Anti-corrosion magnesium anode

Technical data

ENERBOIL		300	500
Water content	l	291	500
Dimensions	mm	ø 590x1615	ø 740x1710
Upper heat exchanger	m²	3.7	5.2
Power exchanged by the upper heat exchanger	kW	18.5	27.5
Lower heat exchanger	m²	1.2	1.8
Power exchanged by the lower heat exchanger	kW	29	44
Max. Working temperature	°C	95	95
Max. Working pressure	bar	10	10

ENERBOIL



ENERBOIL PLUS

Tanks for the DHW production with increased coil surface and integral puffer - combined connection for heat pumps and solar thermal

- Increased surface concentric double coil heat exchangers for the connection to the heat pump and to the solar thermal
- Reservoir in steel with special treatment to favour the enamelling
- Double anticorrosive enamelling at 860°C
- Integral 80 liter puffer for hot / refrigerated water
- Flange 180 mm for inspection and easy maintenanc, with connection for electric heater Total insulation with rigid PU (70 mm)
- Bulb holders for thermometer / thermostat bulbs
- Sacrificial magnesium anode

Technical data

ENERBOIL PLUS		300	500
Actual water content	l	270	450
Dimensions	mm	ø 690x1925	ø 790x2040
Maximum temperature (coil / tank)	°C	110/95	110/95
Maximum working pressure (coil / tank)	bar	6/10	6/10
Dry weight	kg	150	200
Upper coil			
Exchange surface	m^2	2.8	4.4
Water flow rate with DT 10 K (60°/50°C)	m^3/h	1.2	2
Exchanged output with ΔT 10 K	kW	14	23
Lower coil			
Exchange surface	m^2	0.9	1.5
Water flow rate with ΔT 20 K (80°/60°C)	m^3/h	0.9	1.6
Exchanged output with ΔT 20 K	kW	22	37
Puffer for heat pump			
Actual water content	l	80	74
Maximum working Pressure	bar	6	6
Maximum working temperatures	°C	95	95

ENERBOIL PLUS

Technical data

UNISUN SLIM		
Height	mm	2200
Width	mm	700
Depth	mm	350
Total content of solar expansion vessel	l	18 / 6
Max. Absorbed electrical power	W	60
Protection degree	IP	20
Dry weght (without boiler)	kg	80
Storage tank		
Water content	l	147.6
Insulation in hard pu foam: thickness	mm	20
Lower heat exchanger	m^2	1.2
Absorbed electrical power	kW	36
D.H.W. Production 10°C/45°C (heat. Circ. 80°C/60°C)	l/h	900
Max. working temperature	°C	95

UNISUN SLIM

Preassembled solar system to be combined with an existing or new C.H. installation, installation box white painted, with double front opening

UNISUN SLIM is composed by
Vertical storage tank with a capacity of 150 litres, at very high temperature stratification, with two concentric coils of 1.2 m^2 of exchange surface for the D.H.W. production.

- Total insulation in Fibre P, 20 mm thick
- Flange Ø 180/120 mm for inspection and easy maintenance
- Bulb holders for thermostat / thermometer
- Max. working pressure: D.H.W. circuit 10 bar, solar and boiler circuits 6 bar
- Max working temperature: 95°C
- Electrical resistance connection

System controller for the complete management of storage solar plants, including:

- Probes and power supplies, for the management of circulation groups, of the collector and of the heat source integration
- On/Off switch
- Manual / automatic pump operation
- Differential regulator for solar pump intervention
- Integration regulator
- Antifreeze function regulator
- Differential hysteresis regulator

One column circulation group for the management of solar plants, including:

- Circulation pump
- Ball type full passage gate valve
- Safety valve adjusted at 6 bar
- Manometer
- Dial thermometer installed on the gate valve
- Installation gate valve
- Filling and drain cock
- Flow rate meter and adjuster
- Expansion vessel connection
- Insulation in black EPP and connection fittings

Group of deviating/mixing thermostatic valve
D.H.W. 6 l expansion vessel
Solar system 18 l expansion vessel.

In order to complete the solar plant, Unical proposes the combination with SUN^s, TITANIUM e TITANIUM XL collectors, very easily connectable to the UNISUN SLIM via two pipes only.

Optional kits:

- Additional DHW expansion vessel 10 litres
- Kit relay for boiler integration
- Electric heater

UNISUN SLIM

Technical data

KONs SYSTEM 28 - 35		
Working pressure min.- max.	bar	0.5 - 3
Min. working temperature	°C	30
Total content of solar expansion vessel	l	25
Max. absorbed electrical power	W	120
Protection degree	IP	X4D
Dry weght (without boiler)	kg	150
Storage tank		
Water content	l	212
Insulation in hard pu foam: thickness	mm	50
Lower heat exchanger	m^2	1.5
Absorbed electrical power	kW	36
D.H.W. Production 10°C/45°C (heat. Circ. 80°C/60°C)	l/h	900
Dry weight	kg	90
Max. Working temperature	°C	95
Height	mm	2155
Width	mm	655
Depth	mm	648

KONs SYSTEM

Integral system for heating and DHW production, directly connectable to solar panels, complete with combi wall hung condensing boiler combined with condensing boiler

MODEL	combinated with condensing boiler
KONs SYSTEM 28	KON CTFS 28
KONs SYSTEM 35	KON CTFS 35

KONs SYSTEM is composed by:
- Vertical, high stratification, DHW storage tank, with a capacity of 212 liters
- Elliptic cross section coil with 1.5 m^2 of exchange surface
- Total insulation in PU hard foam, 50 mm thick
- Flange Ø 180 / 120 mm for inspection and easy maintenance
- Bulb holders for thermostat / thermometer bulbs
- Sacrificial magnesium anode
- Max. working pressure of storage tank: 10 bar - coil: 6 bar
- Max. working temperature: 95°C

Controller for the complete management of solar installations with storage tank, comprehensive of:
- Temperature sensors and electrical supplies for the management of the circulation groups, the collector and the source of heat integration. On / Off switch
- Manual / automatic pump operation
- Differential regulator for the operation of solar pump
- Integration manager
- Antifreeze function
- Regulation of differential hysteresis

Two column circulation group for the management of solar installations, comprehensive of:
- Circulation pump
- Ball gate valves
- Air vent
- Pressure safety valve 6 bar
- Manometer
- Dial thermometers on the gate valves
- Flow and return gate valves
- Filling / Drain cock
- Water flow meter and adjuster

DHW expansion vessel 6 L
Solar expansion vessel 25 L

To complete the solar installation Unical proposes the combination with the solar collectors TITANIUM, TITANIUM O, TITANIUM XL and SUNs that can be connected to KONs SYSTEM with just two pipes.

Technical data

KONs 24 - 35		
Working pressure min.- max.	bar	0.5 - 3
Water content of solar / D.H.W. Expansion vessel	l	18 / 6
Max. absorbed electrical power	W	60
Protection degree	IP	X5D
Dry weght (without boiler)	kg	90
Storage tank		
Water content	l	147.6
Fiber P insulation	mm	20
Heat exchanger	m^2	1.2
Absorbed electrical power (80°/60°)	kW	30
D.H.W. Production 10°C/45°C (heat. Circ. 80°C/60°C)	l/h	900
Max. Working temperature	°C	95
Box		
Height	mm	2200
Width	mm	950
Depth	mm	350

KONs

KONs

Integral system for heating and DHW production, directly connectable to solar panels, complete with combi wall hung condensing boiler, with box white painted for built-in or on wall installations

MODEL	Combined with boiler	Characteristics
KONs 24	KON^e CTFS 24 INC	instantaneous condensing boiler 24 kW output, heat exchanger in Al/Si/Mg, and premix modulating burner
KONs 35	KON^e CTFS 35	instantaneous condensing boiler 35 kW output, heat exchanger in Al/Si/Mg, and premix modulating burner

KONs 24-35 are composed by:

Vertical, high stratification, DHW **storage tank**, with a capacity of 150 liters with one elliptic cross section coil heat exchanger with two concentric coils for 1,2 m^2 of exchange surface

- Total insulation in PU hard foam, 20 mm thick
- Flange Ø 180 / 120 mm for inspection and easy maintenance
- Bulb holders for thermostat / thermometer
- Max. working pressure of storage tank: 10 bar - coil: 6 bar
- Max. working temperature: 95°C

Digital controller for the complete management of solar installations with storage tank, comprehensive of:

- Temperature sensors and electrical supplies for the management of the circulation groups, the collector and the source of heat integration.
- Display
- Manual / automatic pump operation
- Differential regulator for the operation of solar pump
- Integration manager
- Antifreeze function
- Regulation of differential hysteresis
- Function anti-overheating during vacations

One column circulation group for the management of solar installations, comprehensive of:

- Circulation pump
- Ball gate valve
- Air vent
- Pressure safety valve 6 bar
- Manometer
- Dial thermometer on the gate valve
- Return gate valve
- Filling / Drain cock
- Water flow meter and adjuster

DHW expansion vessel 6 L
Solar expansion vessel 25 L

To complete the solar installation Unical proposes the combination with the solar collectors TITANIUM, TITANIUM O, TITANIUM XL and SUNs that can be connected to KONs SYSTEM with just two pipes.

KONs HP

Integral system complete with combi wall hung condensing boiler, air-water heat pump and solar thermal. For room heating and air conditioning and DHW production, directly connectable to solar panels, with box white painted for built-in or on wall installations

MODEL	Combined with boiler type	Combined with heat pump type
KONs 24 HP 60	KON^e CTFS 24 INC	HP_OWER 60
KONs 24 HP 120	KON^e CTFS 24 INC	HP_OWER 120
KONs 35 HP 60	KON^e CTFS 35	HP_OWER 60
KONs 35 HP 120	KON^e CTFS 35	HP_OWER 120

KONs HP is composed by:

Boiler model KON^e CTFS 24 or CTFS 35, both, for nat. gas or L.P.G.

System configuration and automatic management of the priority heat source

Vertical, high stratification, DHW storage tank in stainless steel AISI 316L with a capacity of 150 litres with one elliptic cross section coil heat exchanger with two concentric coils for DHW production

- Total insulation in PU hard foam, 20 mm thick
- Flange Ø 180 / 120 mm for inspection and easy maintenance
- Bulb holders for thermostat / thermometer
- Max. working pressure of storage tank: 10 bar - coil: 6 bar
- Max. working temperature: 95°C.

Hydraulic and electric Kit for the connection to the heat pump, comprehensive of:

- Thermostatic mixing diverting valve;
- DHW expansion expansion vessel 6 L
- Kit of gate valves
- Kit of relay and global flow temperature sensor for management of the installation and auxiliary boiler in relation to the external temperature.

One column circulation group, comprehensive of digital controller for the management of solar installations

Heat pump HP_OWER 60 / 120, FULL DC INVERTER, for outdoor installation, air heating and cooling

Technical data

KONs HP		
Degree of protection (in buil-in version/on the wall)	IP	X5D / X4D
Minimum pressure of the solar circuit	bar	1.5
Maximum pressure of the solar circuit	bar	6
Pressure of the DHW circuit (min. / max.)	bar	0.5 / 6
Total capacity of solar expansion vessel	l	18
Total capacity of DHW expansion vessel	l	6
Max. absorbed electrical power	W	60
Power supply	V/Hz	230/50
Storage tank		
Water content	l	147.6
Max. working pressure of DHW circuit	bar	10
Max. working pressure of the heat exchanger	bar	6
Max. Working temperature	°C	95
Box dimensions		
Height	mm	2200
Width	mm	950
Depth	mm	350

Technical data for heat pumps

HP_OWER		60	120
Delivered / absorbed Power in heating mode (*)	kW	6.20/1.39	13.19/2.95
Delivered / absorbed Power in cooling mode (*)	kW	5.84/1.32	13.15/2.94
Seasonal EFFICIENCY CLASS in heating mode (T_{out} = 35°C)		A++	A++
COP		4.15	4.21
EER		4.06	4.16
ESEER		6.29	6.37
Dimensions (HxWxD)	mm	717x1134x376	1400x1258x448
Gross/net weight	kg	71/79	142/155

(*) Heating: external air temperature 7°C b.s. 6°C b.u.; water temperature in/out 30/35°C
(**) Cooling: external air temperature 35°C; water temperature in/out 23/18°C

KON HP

Integral System complete of: combi wall hung condensing gas boiler and air-water heat pump.
For room heating / cooling and DHW production. Box white painted for built-in or wall installations.

MODEL	Combined with boiler type	Combined with heat pump type
KON 24 HP 60	KON^e CTFS 24 INC	HP_OWER 60
KON 24 HP 120	KON^e CTFS 24 INC	HP_OWER 120
KON 35 HP 60	KON^e CTFS 35	HP_OWER 60
KON 35 HP 120	KON^e CTFS 35	HP_OWER 120

KON HP is composed by:
Boiler model KON^e CTFS 24 or CTFS 35, both, for nat. gas or L.P.G.
System configuration and automatic management of the priority heat source
Vertical, high stratification, DHW storage tank in stainless steel AISI 316L with a capacity of 150 litres with one elliptic cross section coil heat exchanger with two concentric coils for DHW production

- Total insulation in PU hard foam, 20 mm thick
- Flange Ø 180 / 120 mm for inspection and easy maintenance
- Bulb holders for thermostat / thermometer
- Max. working pressure of storage tank: 10 bar - coil: 6 bar
- Max. working temperature: 95°C. 95°C

Hydraulic and electric Kit for the connection to the heat pump, comprehensive of:

- Three way valve for DHW priority
- Micro-accumulation of 20 litres
- Thermostatic mixing diverting valve
- DHW expansion vessel 6 L
- Gate valves kit
- Kit of relay and global flow temperature sensor for management of the installation and auxiliary boiler in relation to the external temperature.

Heat pump HP_OWER 60 / 120, FULL DC INVERTER, for outdoor installation, air heating and cooling and DHW preparation

Technical data

KON HP		
Degree of protection (for built-in version/on wall mounted)	IP	X5D / X4D
Pressure in DHW circuit (min./max.)	bar	0.5 / 6
Total capacity of DHW expansion vessel	l	6
Absorbed maximum power	W	60
Electrical supply	V/Hz	230/50
DHW storage tank		
Total water content	l	147.6
Max. working pressure in the DHW tank	bar	10
Max. working pressure in the heat exchanger	bar	6
Max. working temperature in the DHW tank	°C	95
Lower heat exchanger surface	m^2	0.63
Box		
Height	mm	2200
Width	mm	950
Depth	mm	350

Technical data for heat pumps

HP_OWER		60	120
Delivered / absorbed Power in heating mode (*)	kW	6.20/1.39	13.19/2.95
Delivered / absorbed Power in cooling mode (*)	kW	5.84/1.32	13.15/2.94
Seasonal EFFICIENCY CLASS in heating mode (T_{out} = 35°C)		A++	A++
COP		4.15	4.21
EER		4.06	4.16
ESEER		6.29	6.37
Dimensions (HxWxD)	mm	717x1134x376	1400x1258x448
Gross/net weight	kg	71/79	142/155

(*) Heating: external air temperature 7°C b.s. 6°C b.u.; water temperature in/out 30/35°C
(**) Cooling: external air temperature 35°C; water temperature in/out 23/18°C

airCRISTAL

Compact air conditioner, wall mounted, heat pump “Inverter” type, suitable for installation in all domestic spaces and offices

- Energy saving class A++
- Stylish profile in PMMA
- “Soft” display
- Remote management through wi-fi (optional)
- DC Inverter system with continuous progressive modulation for a better seasonal energetic saving and a better environmental comfort
- Rotary compressors
- Six speed fan with automatic selection
- High silentness Twisted Torsion fan
- Function “1 W” to eliminate wastes of energy in stand-by
- Electronic System of preventive protection of various components that is activated at each ignition
- Friendly use, infrared ray remote control with LCD display
- “Check” function to facilitate the service operations
- Emergency start button
- Auto-restart
- Auto-diagnostics
- Anti-mildew “self cleaning” function, with automatic drying of the indoor battery
- Refrigerant gas R410A

Functions managed by the remote control:

- Cooling, Dehumidification, Heating, Ventilation only, Sleep, Air swing, Timer, Automatic operation, turboeco, self cleaning, check

Technical data

airCRISTAL		CMUN 10H	CMUN 13H
Indoor unit		CMUN 10HI	CMUN 13HI
Outdoor unit		CMUN 10HE	CMUN 13HE
Energetic class cooling / heating		A++ / A+	A++ / A+
SEER / SCOP		7.4 / 4.2	6.8 / 4.2
Theoretical power cooling / heating	kW	2.7 / 2.6	3.5 / 2.8
Annual consumption cooling / heating	kW/h	128 / 867	180 / 933
Refrigerant / GWP		R410A / 2088	R410A / 2088
Nom. output in cooling (max.-min.)	kW	2,64 (3.31-1.23)	3,52 (4.51-1.38)
Nom. output in heating (max.-min.)	kW	2,93 (3.75-0.91)	3,81 (4.92-1.08)
Indoor unit dimensions (HxWxD)	mm	290x722x187	297x802x189
Outdoor unit dimensions (HxWxD)	mm	555x770x300	554x800x333
Outdoor / indoor unit weight	kg	7.4 / 26.6	8.2 / 29.1
Sonorous pressure in./out. Unit	dB(A)	37 / 55	39 / 53

airCRISTAL		CMUN 18H	CMUN 24H
Indoor unit		CMUN 18HI	CMUN 24HI
Outdoor unit		CMUN 18HE	CMUN 24HE
Energetic class cooling / heating		A++ / A+	A++ / A+
SEER / SCOP		6.8 / 4.0	6.6 / 4.0
Theoretical power cooling / heating	kW	5.3 / 4.2	7.0 / 5.6
Annual consumption cooling / heating	kW/h	273 / 1470	371 / 1960
Refrigerant / GWP		R410A / 2088	R410A / 2088
Nom. output in cooling (max.-min.)	kW	5.28 (6.18-1.85)	7.04 (8.09-2.67)
Nom. output in heating (max.-min.)	kW	5.57 (6,80-1,38)	7.92 (9.29-2.20)
Indoor unit dimensions (HxWxD)	mm	319x965x215	335x10820x226
Outdoor unit dimensions (HxWxD)	mm	554x800x333	702x845x363
Outdoor / indoor unit weight	kg	10.7 / 37.8	13 / 48.5
Sonorous pressure in./out. Unit	dB(A)	42 / 55	48 / 60

DESair

Compact air conditioner, wall mounted, heat pump "Inverter" type, suitable for installation in all domestic spaces and offices

- Energy saving class A++
- Exclusive Design
- Remote management through wi-fi (standard supplied)
- Revolutionary internal structure predisposed for facilitating installation and maintenance
- Simplified filters cleaning without opening the front panel
- DC Inverter system with continuous progressive modulation for a better seasonal energetic saving and a better environmental comfort
- Rotary compressors
- Six speed fan with automatic selection
- High silentness Twisted Torsion fan
- Electronic system of preventive protection of various components that is activated at each ignition
- Friendly use, infrared ray remote control with LCD display
- "Check" function to facilitate the service operations
- Emergency start button
- Auto-restart
- Auto-diagnostics
- Anti-mildew "self cleaning" function, with automatic drying of the indoor battery
- Refrigerant gas R410A

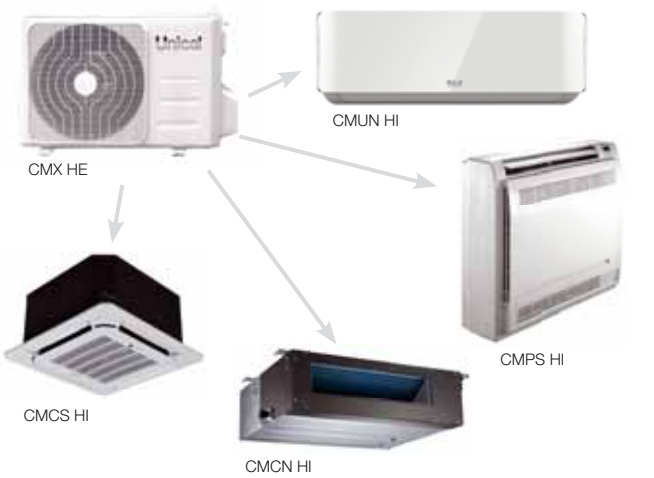
Functions managed by the remote control:

- Cooling, Dehumidification, Heating, Ventilation only, Sleep, Air swing, Timer, Automatic operation, turboeco, self cleaning, check

Technical data

DESair		CCUN 10H	CCUN 13H
Indoor unit		CCUN 10HI	CCUN 13HI
Outdoor unit		CCUN 10HE	CCUN 13HE
Energetic class cooling / heating		A++ / A+	A++ / A+
SEER / SCOP		6.8 / 4.1	6.7 / 4.2
Theoretical power cooling / heating	kW	2.6 / 2.4	3.5 / 2.6
Annual consumption cooling / heating	kW/h	134 / 820	183 / 867
Refrigerant / GWP		R410A / 2088	R410A / 2088
Nom. output in cooling (max.-min.)	kW	2.64 (3.31-1.17)	3.52 (4.45-1.26)
Nom. output in heating (max.-min.)	kW	2.93 (3.72-0.82)	3.81 (4.87-1.06)
Indoor unit dimensions (HxWxD)	mm	302x717x193	555x770x300
Outdoor unit dimensions (HxWxD)	mm	302x805x193	554x800x333
Outdoor / indoor unit weight	kg	7 / 26.6	7.7 / 29.1
Sonorous pressure in./out. Unit	dB(A)	40 / 55	41 / 56

DESair



MULTI

Multi-combination “Inverter” air-conditioning system with high performances and comfont in all the installation types

The MULTI system allows to reduce the external installation spaces without having to abdicate to the optimal comfort of the internal rooms to be air-conditioned. A wide range of outdoor units can manage from 2 up to 5 indoor units of different models and and powers. If the addition of the powers of the indoor units exceeds the one of the outdoor unit, the system will automatically share the total power among the various indoor Units.
Many are, therefore, the possible combinations with the MULTI range. The outdoor units are available in 5 models with different capacities that can be combined with the indoor units: wall type, floor / wall type, cassette type or ductable.

This allows a great installation flexibility, able to satisfy every residential and commercial demand.

- DC Inverter Technology: the continuous progressive modulation allows the rotary compressor to adjust the absorbed power depending on the number of indoor units in request and according to the pre-set temperature, obtaining an electric energy saving equal to 20% in comparison to the traditional systems.
- Heat pump operation also with low external temperatures
- Constant room temperature, thanks to the modulation of the compressor power.
- Modulating and thermoassisted expansion valves: they regulate the refrigerant pressure to always have the maximum efficiency from the cooling circuit according to the working conditions of the whole system.

Technical data of Outdoor Units

MULTI INVERTER (Outdoor Units)		**CMX2 18HE**	**CMX3 21HE**	**CMX4 28HE**
Enenergetic class cool./heat.		A++ / A+	A++ / A+	A++ / A+
SEER / SCOP		6.3 / 4.0	6.4 / 4.0	6.8 / 4.0
Theoretical power cool./heat.	kW	5.2 / 4.7	6.1 / 5.7	8.2 / 7.0
Annual consumption cool./heat.	kW/h	289 / 1645	334 / 1995	422 / 2450
Refrigerant		R410A	R410A	R410A
GWP refrigerant		1975	1975	1975
Nom. Output in cooling (Max.-Min.)	kW	5,20 (6.34-1.40)	6,10 (7.32-1.43)	8,21 (9.93-1.52)
Nom. Output in heating (Max.-Min.)	kW	5,50 (6.71-1.54)	6,60 (7.92-1.43)	8,80 (10.65-1.63)
Height	mm	554	702	810
Width	mm	800	845	946
Depth	mm	333	363	410
Weight	kg	36	47	68
Sonorous pressure	dB(A)	56	58	59

Technical data of Outdoor Units

MULTI INVERTER (Outdoor Units)		**CMX4 36HE**	**CMX5 42HE**
Enenergetic class cool./heat.		A++ / A	A++ / A
SEER / SCOP		7.6 / 3.8	7.7 / 3.8
Theoretical power cool./heat.	kW	10.6 / 9.3	12.3 / 9.6
Annual consumption cool./heat.	kWh/y	488 / 3426	559 / 3537
Refrigerant		R410A	R410A
GWP refrigerant		1975	1975
Nom. Output in cooling (Max.-Min.)	kW	10.60 (13.78-1.59)	12.30 (14.00-1.66)
Nom. Output in heating (Max.-Min.)	kW	11.10 (13.32-1.67)	12.30 (14.94-1.66)
Height	mm	810	810
Width	mm	946	946
Depth	mm	410	410
Weight	kg	70	76
Sonorous pressure	dB(A)	57	54

EXAMPLE: INSTALLATION WITH 1 EXTERNAL UNIT AND 4 INTERNAL UNITS

Technical data of Indoor Units

WALL TYPE airCRISTAL		CMUN 10HI	CMUN 13HI	CMUN 18HI
Nom. Output in cooling	kW	2.64	3.52	5.28
Nom. Output in heating	kW	2.93	3.81	5.57
Air flow rate	m³/h	420	520	750
Dimensions (HxWxD)	mm	290x722x187	297x802x189	319x965x215
Weight	kg	7.4	8.2	10.7
Sonorous pressure	dB(A)	37	39	42

CASSETTE TYPE		CMCS 12HI	CMCS 18HI
Nom. Output in cooling	kW	3.52	5.28
Nom. Output in heating	kW	3.81	5.57
Air flow rate	m³/h	650	800
Dimensions (HxWxD)	mm	570x570x260	570x570x260
Weight	kg	16	18
Sonorous pressure	dB(A)	41	48

Technical data of Indoor Units

FLOOR/ WALL TYPE		CMPS 12HI	CMPS 18HI
Nom. Output in cooling	kW	3.52	5.28
Nom. Output in heating	kW	3.81	5.57
Air flow rate	m³/h	710	820
Dimensions (HxWxD)	mm	600x700x210	600x700x210
Weight	kg	15	15
Sonorous pressure	dB(A)	46	48

DUCTABLE TYPES		CMCN 12HI	CMCN 18HI
Nom. Output in cooling	kW	3.52	5.28
Nom. Output in heating	kW	3.81	5.57
Air flow rate	m³/h	680	816
Dimensions (HxWxD)	mm	635x700x210	635x920x210
Weight	kg	18	23
Sonorous pressure	dB(A)	42	46
Manometric head	Pa	45	60

FLOOR/CEILING (PS)

Inverter air conditioner for floor or ceiling (double mounting possibility), heat pump type, suitable for all domestic and utility rooms, because of its high installation flexibility

- Exchange batteries with wide ventilation surface
- Rotary compressor (Scroll type for models 36H, 48H and 60H)
- Automatic defrosting system
- Auto-diagnostics
- Auto-restart
- Emergency start button
- Refrigerant gas R410 A
- Automatic condensation control

Functions exploited by the remote control:

- Cooling
- Dehumidification
- Heating
- Ventilation only
- Sleep
- Air swing
- ON-OFF programmable Timer
- Automatic operation

Technical data

FLOOR / CEILING		PS09 18H	PS09 24H	PS09 36H
Indoor unit		PS09 18HI	PS09 24HI	PS09 36HI
Outdoor unit		PS09 18HE	PS09 24HE	PS09 36HE
Energetic class cool. / heat.		A++ / A+	A++ / A+	A++ / A+
SEER / SCOP		6.5 / 4.0	6.1 / 4.0	6.3 / 4.0
Refrigerant		R410A	R410A	R410A
GWP Refrigerant		1975	1975	1975
Nom. output in cooling (max.-min.)	kW	5.20 (6.09-1.50)	7.00 (7.80-1.90)	10.50 (12.00-3.00)
Nom. output in heating (max.-min.)	kW	5.80 (6.60-1.60)	7.60 (8.50-1.90)	11.40 (12.50-3.10)
Ind. unit dimensions (HxWxD)	mm	675x1068x235	675x1068x235	675x1650x235
Out. unit dimensions (HxWxD)	mm	554x800x333	702x845x362	810x946x410
Outdoor / indoor unit weight	kg	25 / 35.5	25 / 49	40 / 79
Sonorous pressure in./out. unit	dB(A)	44 / 56.5	52 / 60	53 / 62

FLOOR / CEILING		PS09 48H	PS09 60H
Indoor unit		PS09 48HI	PS09 60HI
Outdoor unit		PS09 48HE	PS09 60HE
Energetic class cool. / heat.		A++ / A+	A++ / A+
SEER / SCOP		6.1 / 4.0	6.1 / 4.0
Refrigerant		R410A	R410A
GWP Refrigerant		1975	1975
Nom. output in cooling (max.-min.)	kW	14.00 (16.40-4.10)	15.80 (18.10-4.90)
Nom. output in heating (max.-min.)	kW	16.40 (18.40-4.40)	18.10 (20.05-5.20)
Ind. unit dimensions (HxWxD)	mm	675x1650x235	675x1650x235
Out. unit dimensions (HxWxD)	mm	1333x952x410	1333x952x410
Outdoor / indoor unit weight	kg	40 / 108	40 / 112
Sonorous pressure in./out. unit	dB(A)	54 / 65	54 / 62.5

FLOOR/CEILING

CASSETTE (CS)

Inverter cassette air conditioner, heat pump type for middle large size rooms, requiring false ceiling works

- Mechanical and electrostatic filters for the air purification, of washable and/or replaceable type
- Rotary compressor for models 18H and 24H and Scroll type for models 36H and 48H.
- Automatic defrosting system
- High silentness
- Auto-diagnostics
- Auto-restart
- Emergency start button
- Pump for condensate evacuation, supplied as standard
- Cooling gas R410 A
- Automatic condensation control

Functions managed by the remote control:

- Cooling
- Dehumidification
- Heating
- Ventilation only
- Sleep
- Air swing
- ON-OFF programmable Timer
- Automatic operation

Technical data

CASSETTE		CS09 18H	CS09 24H
Indoor unit		CS09 18HI	CS09 24HI
Outdoor unit		CS09 18HE	CS09 24HE
Energetic class cool. / heat.		A++ / A+	A++ / A+
SEER / SCOP		6.3 / 4.0	6.1 / 4.0
Refrigerant		R410A	R410A
GWP Refrigerant		1975	1975
Nom. output in cooling (max.-min.)	kW	5.20 (6.09-1.50)	7.00 (7.80-1.90)
Nom. output in heating (max.-min.)	kW	5.80 (6.60-1.60)	7.60 (8.50-1.90)
Ind. unit dimensions (HxWxD)	mm	570x570x260	840x840x245
Out. unit dimensions (HxWxD)	mm	554x800x333	702x845x362
Outdoor / indoor unit weight	kg	16.5 / 35.5	24.0 / 49.0
Sonorous pressure in./out. Unit	dB(A)	44.0 / 56.5	52.0 / 60.0

CASSETTE		CS09 36H	CS09 48H
Indoor unit		CS09 36HI	CS09 48HI
Outdoor unit		CS09 36HE	CS09 48HE
Energetic class cool. / heat.		A++ / A+	A++ / A+
SEER / SCOP		6.3 / 4.0	6.1 / 4.0
Refrigerant		R410A	R410A
GWP Refrigerant		1975	1975
Nom. output in cooling (max.-min.)	kW	10.50 (12.00-3.00)	13.70 (16.10-3.90)
Nom. output in heating (max.-min.)	kW	11.10 (13.50-2.60)	15.50 (17.50-4.10)
Ind. unit dimensions (HxWxD)	mm	840x840x245	840x840x287
Out. unit dimensions (HxWxD)	mm	810x946x410	1333x952x410
Outdoor / indoor unit weight	kg	25.6 / 79.0	28.0 / 108.0
Sonorous pressure in./out. Unit	dB(A)	53.0 / 62.0	54.0 / 65.0

DUCT TYPE (CN)

Inverter air conditioner, heat pump type, to be built-in the false ceiling, suitable where it is requested to hide completely the internal ventilating group

- Exchange batteries with wide ventilation surface
- Rotary compressor for models 18H and 24H and Scroll type for models 36H, 48H and 60H.
- Automatic defrosting system
- High silentness
- Auto-diagnostics
- Auto-restart
- Emergency start button
- Possible installation with PLENUM system
- Cooling gas R410 A
- Automatic condensation control

Functions managed by the remote control:

- Cooling
- Dehumidification
- Heating
- Ventilation only
- Sleep
- ON-OFF programmable Timer
- Automatic operation

Technical data

DUCT TYPE		CN09 18H	CN09 24H	CN09 36H
Indoor unit		CN09 18HI	CN09 24HI	CN09 36HI
Outdoor unit		CN09 18HE	CN09 24HE	CN09 36HE
Energetic class cool. / heat.		A++ / A+	A++ / A+	A++ / A+
SEER / SCOP		6.5 / 4.0	6.1 / 4.0	6.3 / 4.0
Refrigerant		R410A	R410A	R410A
GWP Refrigerant		1975	1975	1975
Nom. output in cooling (max.-min.)	kW	5.20 (6.09-1.50)	7.00 (7.80-1.90)	10,50 (12.00-3.00)
Nom. output in heating (max.-min.)	kW	5.80 (6.60-1.60)	7,60 (8.50-1.90)	11.40 (12.50-3.10)
Ind. unit dimensions (HxWxD)	mm	635x920x270	635x920x270	865x1200x300
Out. unit dimensions (HxWxD)	mm	554x800x333	702x845x362	810x946x410
Outdoor / indoor unit weight	kg	27.0 / 35.5	28.0 / 49.0	45.0 / 79.0
Sonorous pressure in./out. unit	dB(A)	44.0 / 56.5	52.0 / 60.0	53.0 / 62.0

DUCT TYPE		CN09 48H	CN09 60H
Indoor unit		CN09 48HI	CN09 60HI
Outdoor unit		CN09 48HE	CN09 60HE
Energetic class cool. / heat.		A++ / A+	A++ / A+
SEER / SCOP		6.1 / 4.0	6.1 / 4.0
Refrigerant		R410A	R410A
GWP Refrigerant		1975	1975
Nom. output in cooling (max.-min.)	kW	14.00 (16.40-4.10)	15.80 (18.10-4.90)
Nom. output in heating (max.-min.)	kW	16.40 (18.40-4.40)	18.10 (20.05-5.20)
Ind. unit dimensions (HxWxD)	mm	865x1200x300	865x1200x300
Out. unit dimensions (HxWxD)	mm	1333x952x410	1333x952x410
Outdoor / indoor unit weight	kg	45.0 / 108.0	45 / 112.0
Sonorous pressure in./out. unit	dB(A)	54.0 / 65.0	54.0 / 62.5

DUCT TYPE

AIR CURTAIN (BA TC)

Barrier system to the warm or cool air, that, with an air stream, avoids the change of the room micro-climate, without the use of doors

- Ease of installation
- Possibility of connection in cascade
- Fan with a high head, able to create a barrier to the air up to a height of about 3 m
- Two selectable speeds
- Infrared anti-shock remote control, with LCD (Liquid Cristal Display)

Technical data

AIR CURTAIN		BA TC 60	BA TC 90	BA TC 120
Fan diameter	mm	125	125	125
Motor power	W	70	75	100
Air speed	m/s	9	9	9,5
Noise level (max)	mm	210	210	210
Width.	mm	600	900	1200
Height	mm	200	200	200
Depth	kg	11	15	20
Weight	dB(A)	48	49	50

AIR CURTAIN

ALKON 50C

ALKON 70C

ALKON 50C - 70C

Wall hung, condensing gas boiler, for heating and instantaneous DHW production, Low NOx class 5, also for installation in battery

- Maximum working pressure: 6 bar
- Modulation ratio 1:5 for model 50 kW and 1:7 for model 70 kW
- Total premix burner with constant CO_2
- Primary heat exchanger in Al / Si / Mg alloy, entirely irrigated, ultrathin (< 12 cm)
- Electronic ignition
- Safety limit thermostat
- Flow and return temperature sensors
- Automatic airvent
- Siphon on the condensates drain
- Panel board with electric protection IP X4D
- eBUS connection
- Heating temperature adjustment between 30 and 85°C
- Water content 3,9 liters
- Flame modulation according to the absorbed power
- Over-run function
- Additional functions: diagnosis of operational parameters and errors, antifreeze, technical services and digital errors indication
- Minimum water pressure switch with setting at 0,5 bar
- Constant combustion ratio
- Self adapting output according to the flue length
- High efficiency modulating pump (standard supplied only for ALKON 70 C)
- Suitable for installation in battery (max. 2 series of 4 units)

Options:

- Kit manifold for additional safety devices
- Kit of additional safety devices
- Kromschröder controller E8 / expansion modules and modulating thermostats (wall mounted boxes)
- Kit of high efficiency modulating pump (optional for ALKON 50 C)
- Kit hydraulic separator (mixing header)
- Single flue ducts or for battery installations
- Supporting frames
- Kit of DHW priority
- Kit of hydraulic manifolds and blind flanges
- Kit of harness for an external DHW tank
- Kit for instantaneous DHW production
- Acidic condensate neutralizers

Example of installation in cascade

Technical data

ALKON		50 C	70 C
Nominal Heat Output	kW	47	66
Seasonal space heating energy efficiency	ηs %	93	93
Seasonal EFFICIENCY CLASS in heating mode		A	A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	47.2	65.7
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C/Tm 80°C)	η4 %	87.7	87.7
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	15.7	21.9
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1%	97.1	97.3
Emissions of nitrogen oxides (NO_x)	mg/kWh	45	46
CO at 0% of O_2	mg/kWh	71.3	82
Condensate production max	kg/h	7.8	10.87
Production of D.H.W. in continuous operation with Δt 25 K (mixed) (*)	l/min	28.5	37.4
Heigh	mm	930	930
Width	mm	615	615
Depth	mm	266	266
Net weight	kg	50	50

(*) with addition of an optional DHW production kit

ALKON 50C - 70C

Technical data

ALKON		90
Nominal Heat Output	kW	88
Seasonal space heating energy efficiency	ηs %	94
Seasonal EFFICIENCY CLASS in heating mode		A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	87.53
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C/Tm 80°C)	η4 %	87.6
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	29.7
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	99.1
Emissions of nitrogen oxides (NO_x)	mg/kWh	50
CO at 0% of O_2	mg/kWh	107
Condensate production max	kg/h	14.5
Water content	l	10
Heigh	mm	1300
Width	mm	513
Depth	mm	607
Net weight	kg	135

ALKON 90

ALKON 90

Floor standing, condensing gas boiler, Low NOx class 5, for indoor /outdoor installation, IP X5D, also for installation in battery

- Maximum working pressure switch: 6 bar
- Special cabinet in steel plate with anticorrosive epoxypolyester painting (Protection degree IP X5D)
- Modulation ratio 1:4.5
- Total premix burner with constant CO2 combustion and continuous air / gas modulation Primary heat exchanger in Al/Si/Mg alloy, entirely irrigated, ultracompact
- Also for installations in battery (max. 2 series of 4 units each, for a total of 720 kW)
- Front door of inspection with airing slots and locking key
- High efficiency modulating pump standard supplied
- Microprocessor of control and management, controlled by digital electronic regulator E8 (optional)
- Gas connection flange between more units, DN 50
- Hydraulic connection flanges between more units, DN 80
- Three way valve for hydraulic interception on the flow and outlet in atmosphere
- Two way valve for hydraulic interception on the return with Flow-stop
- Condensates evacuation pipe
- Gas gate valve
- E-Bus connection port
- Smokes evacuation duct 100 mm dia. with analysis sampling nipple
- Minimum gas pressure switch and minimum water pressure switch
- Safety level switch on condensate drain
- Safety pressure valve set at 7 bar
- Boiler drain valve
- Automatic and manual air venters
- Additional functions: diagnosis of operational parameters and errors, antifreeze, technical services and digital errors indication
- Pump anti-jamming function

Options:

- Empty cabinet for containing the additional safety devices Kit
- Electronic regulator E8 (also for managing the installation in battery)
- Electronic module of zones expansion (from 2 up to 8 units)
- Data transmission card BCM - Additional safety devices kit
- Hydraulic separator (mixing header) - Acidic condensate neutralizers

I.TOTHEM. In the figure: 4 x ALKON 90 in battery

KON 100

Wall hung condensing gas boiler for Nat. gas or LPG, LOW NOx class 5, premix modulating burner, type B / C for heating, for indoor and out door installations, also in battery (up to 4 units) for a total of 400 kW. Protection degree IPX5D

- Maximum working pressure: 6 bar
- Special cabinet in steel plate electrogalvanized for outdoor installation, with anticorrosive epoxypolyester painting, RAL 9016
- Casing front panel with hang-up closing and fixing through screws.
- Total premix burner with constant CO2 combustion and continuous air / gas modulation
- Modulation ratio 1:5
- Certified in ranged output
- Primary heat exchanger in Al / Si / Mg alloy,
- E-Bus connection port
- Very high seasonal efficiency
- Self adapting output according to the flue length
- Low NOx emissions, class 5, EN 297 / EN 483.
- NTC sensors for control of flow and return temperature
- Safety thermostat
- Safety thermostat on heat exchanger
- Minimum gas pressure switch set at 15 mbar
- Minimum water pressure switch set at 0.5 bar
- Smokes safety pressure switch
- Boiler drain valve
- Automatic air vent
- Manual air vent
- Pump anti-jamming function
- Basic panel board inside the casing, complete of display, menu setting keys, programming and heating and DHW functions.

Options:

- Kit of supporting frame KON 100
- Kit of additional safety devices
- Electronic regulator HSCP or E8 (also battery controller)
- Additional functions: diagnosis of operational parameters and errors, antifreeze, technical services and digital errors indication
- Electronic zones expansion modules (2 to 8)
- Data transmission Card BCM
- Kit of additional safety devices
- Hydraulic separator (mixing header, with predispositions: air vent, expansion vessel, drain and cleaning.
- Gaskets and fixing bolts
- Acidic condensate neutralizers
- Smokes evacuation kit for cascade

Technical data

KON		100
Nominal Heat Output	kW	99
Seasonal space heating energy efficiency	ηs %	94
Seasonal EFFICIENCY CLASS in heating mode		A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	88.81
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C/Tm 80°C)	η4 %	89.0
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	32.2
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	98.9
Emissions of nitrogen oxides (NO_x)	mg/kWh	43
CO at 0% of O_2	mg/kWh	140
Condensate production max	kg/h	8.46
Water content	l	9
Heigh / (with supporting frame)	mm	950 / (1944)
Width / (with supporting frame)	mm	500 / (526)
Depth / (with supporting frame)	mm	500 / (556)
Net weight	kg	100

KON 100

ALKON 140 EXT

Condensing modular unit, both for indoor and outdoor installation IP X5D, with double premix Low NOx burner and double heat exchanger in Al/Si/Mg alloy, also for installation in battery

- Maximum water pressure: 6 bar
- Logic of operation based on the power repartition on 2 units up to the minimum possible load (10,5+10,5 kW) for the obtainment of the maximum efficiency and turning off of an unit with operation in modulation of the second from around 20,5 kW up to 10,5 kW
- Output 10,5 to 136 kW (model 140), and modulation ratio of 1:13
- Two safety gas valve with constant air-gas ratio
- Two high delivery head fans with electronic speed control
- Radiating flame surface in “metallic sponge”.
- Siphon on the condensates drain
- Electrical predisposition for connection of additional safety devices
- Predisposition for control with 0-10 Volt signal through BCM
- Complete diagnostics of the functions with signaling of the possible blocks
- Electric protection degree IP 20
- Sliding temperature operation
- NTC sensors for the control of flow and return temperature
- Electronic ignition
- Multilevel programming, visualization of parameters on LCD and e-Bus communication (HSCP)
- Two high efficiency modulating pumps (one for each unit) with antifreeze, antijamming and over-run functions.
- Minimum installation water pressure switch
- Differential pressure switch for water circulation control
- Optional hydraulic groups including:
  - Connection pipe for predisposition of additional safety devices and accessories
  - Differential pressure switch for water circulation control
  - Hydraulic separator (mixing header)
- Panel of Regulation on board (standard supplied)
- Thermoregulation HSCP (Master), water pressure gauge and system “On/Off” switch
- It is possible the control of up to a maximum of 12 completely independent heating circuits and of a DHW storage tank
- Antilegionella function
- n°1 Module SHC standard supplied:
  - Programmable card of management up to 3 installation circuits and therefore up to 12 heating circuits
  - it has 2 entries, for external and room temperature

Optional accessories:

- Acidic condensate neutralizers
- Additional safety devices kit
- Hydraulic separator (mixing header)
- Smokes evacuation kit

Technical data

ALKON		115 EXT	140 EXT
Nominal Heat Output	kW	112	132
Seasonal space heating energy efficiency	ηs %	93	93
Seasonal EFFICIENCY CLASS in heating mode		A	A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	61.4	71.2
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C/Tm 80°C)	η4 %	87.8	87.8
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	20.5	23.7
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	97.6	97.6
Emissions of nitrogen oxides (NO_x)	mg/kWh	68	68
CO at 0% of O_2	mg/kWh	131	139
Condensate production max	kg/h	18.5	21.8
Water content	l	10	10
Heigh / (with supporting frame)	mm	1386 / (2264)	1386 / (2264)
Width / (with supporting frame)	mm	762 / (762)	762 / (762)
Depth / (with supporting frame)	mm	478 / (528)	478 / (528)
Net weight	kg	140	140

ALKON 140 EXT

MODULEX EXT

System composed by a modulating, Low N0x, multi-burners, condensing boiler, for indoor / outdoor installation, IP X5D

- Maximum working pressure : 6 bar
- For operation in deep sliding temperature, with natural gas or LPG.
- Primary ring with hydraulic separator (model GT)
- Plate heat exchanger (model GTS), modulating pump, “Y” shaped filter (excepted the filtering cartridge), additional safety devices kit
- Each aluminium/silicon/magnesium module has its own combustion chamberwith a total radiation burner, modulating fan, gas valve, flame and ignition BMM control device, NTC sensor for local temperature control and safety thermostat
- Total pre-mix modulating burners, with flame surface in metallic radiating mesh. The air– gas premixing occurs within the fan, with built-in check valve
- Constituted from preassembled thermal modules without hydraulic interception in between.
- Air suction system from the boiler room or directly from outside of the boiler room through ducts (optional)
- For indoor / outdoor installation, made with totally water proof casing, IP X5D, in electro-galvanized steel plate and epoxypolyester powder painted in grey color
- Possibility of cascade installation of 2 or more boilers (up to 8), by using an additional E8 controller as MASTER.
- Logic of operation: repartition of the requested power on the larger number of modules, firing at the lowest possible rate (up to 12 kW for the models 100 to 350 or up to 22 kW for the models 440 to 900) in order to obtain the maximum efficiency
- D.H.W. production through a priority sensor, that controls a dedicated loading pump or a 3-way diverting valve via the E8
- Supervision of boiler operation and temperatures status
- Alarms management and parameters setting
- Relay for the activation of a constant speed pump
- E8 controller inserted in the foldaway facia panel

BCM FUNCTIONS

- 0÷10 V signal to the modulating pomp according to the parameters of the CH installation (inclusive in the supply)
- Analogical outlet 0÷10 V for the control of a modulating pump
- Emergency operation: anti-blackout through BCM:
- Restoration of the normal operation 60 seconds after the black-out, at “Constant Setpoint”: 70°C (or otherwise adjustable), max. output 50%
- Alarm signaling relay
- Hydraulic and gas connections are reversible up to the model 350
- Flue outlet possible on three different positions (R.H. / L.H. or rear side of the boiler)

Optional accessories:

- Acidic condensate neutralizers
- Accessories for expansion and remote control: E8
- Dedicated smokes evacuation kit

MODULATING PUMP

PRIMARY CIRCUITS WITH ADDITIONAL SAFETY DEVICES KIT

PRIMARY RINGS WITH PLATE HEAT EXCHANGERS

MODULEX EXT

Technical data

MODULEX EXT		100	116	150
Nominal Heat Output	kW	97	113	146
Seasonal space heating energy efficiency	ηs %	92	92	92
Seasonal EFFICIENCY CLASS in heating mode		A	A	A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	97.2	112.9	146.1
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	88	87.7	87.7
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	32.2	37.4	49.3
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	96.7	96.7	96.7
Emissions of nitrogen oxides (NO_x)	mg/kWh	54	54	54
CO at 0% of O_2	mg/kWh	83	83	83
Condensate production max	kg/h	15.3	17.7	23
Water content	l	10.1	14.2	14.2
Heigh	mm	1150	1150	1150
Width	mm	764	764	764
Depth	mm	770	770	770
Weight	kg	203	236	236

MODULEX EXT		200	250	300
Nominal Heat Output	kW	195	244	294
Seasonal space heating energy efficiency	ηs %	92	92	92
Seasonal EFFICIENCY CLASS in heating mode		A	A	A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	195.2	244.5	294.0
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	87.7	88.1	88.3
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	64.4	80.5	96.6
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	96.7	96.7	96.7
Emissions of nitrogen oxides (NO_x)	mg/kWh	54	54	54
CO at 0% of O_2	mg/kWh	83	83	83
Condensate production max	kg/h	30.6	38.3	45.9
Water content	l	18.3	22.4	26.5
Heigh	mm	1150	1150	1150
Width	mm	1032	1032	1300
Depth	mm	770	770	770
Weight	kg	295	325	386

Technical data

MODULEX EXT		350	440	550
Nominal Heat Output	kW	342	424	530
Seasonal space heating energy efficiency	ηs %	92	-	-
Seasonal EFFICIENCY CLASS in heating mode		A	(*)	(*)
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	341.7	424.3	530.4
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	88.5	-	-
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	112	-	-
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	96.7	-	-
Emissions of nitrogen oxides (NO_x)	mg/kWh	54	49	49
CO at 0% of O_2	mg/kWh	83	76.7	76.7
Condensate production max	kg/h	53.6	73.4	91.7
Water content	l	30.6	67	80
Heigh	mm	1150	1448	1448
Width	mm	1300	1087	1355
Depth	mm	770	946	946
Weight	kg	419	512	608

MODULEX EXT		660	770	900
Nominal Heat Output	kW	636	743	849
Seasonal space heating energy efficiency	%	-	-	-
Seasonal EFFICIENCY CLASS in heating mode		(*)	(*)	(*)
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	kW	-	-	-
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	%	-	-	-
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	kW	-	-	-
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	%	-	-	-
Emissions of nitrogen oxides (NO_x)	mg/kWh	49	49	49
CO at 0% of O_2	mg/kWh	76.7	76.7	76.7
Condensate production max	kg/h	110	128.4	146.7
Water content	l	94	108	122
Heigh	mm	1448	1448	1448
Width	mm	1355	1623	1623
Depth	mm	946	946	946
Weight	kg	692	770	925

* Appliances not covered by Directive 2009/15 / EC

SPK 116

Large water content condensing unit, entirely in stainless steel AISI 316 L, complete of pre-mix modulating gas burner

- Maximum working pressure: 5 bar
- High-efficiency thanks to the special patented progressive pipes in stainless steel AISI 316 L, with special multi-fin inserts in Al/Si/Mg.
- For natural gas and LPG operation
- Large water content boiler body with vertical shape, to get the temperature stratification in small water pressure drop
- Combustion chamber above the tube bundle,
- Vertical, premix modulating burner, above the combustion chamber, with constant CO_2, and flame surface in radiating “metallic mesh”
- Premixing within the fan with built-in check valve and minimum gas pressure switch.
- Ignition and fl ame control device BMM, NTC sensor for temperature control and safety thermostat.
- Smoke pipes with external diameter of 42 mm, with multi-fin inserts in Al/Si/Mg, placed in a vertical a tube bundle, tilted of 3° for: natural outflow of the condensates, absence of wet acidic deposits, cleaning for gravity of the exchange surfaces.
  Integral insulation in mineral fibre wool, 50 mm thick, protected by aluminium paper
- Panel board:
  - HSCP controller, water pressure gauge and system On/Off switch
  - Management until to a maximum of completely independent 12 heating circuits and one DHW tank
- Timer programming:
  - 3 timeframes within the day, each of which associated to a different temperature
  - Recording up to 5 daily programs for the heating, and up to 3 daily programs for the D.H.W.
  - Weekly programming
- Management possibility of a D.H.W. recirculation pump.
- Antilegionella function
- Heating zone management: MULTIFUNCTION PCB: SHC (“Slave Heating Controller”), standard supplied: CH, DHW and auxiliary resources: temporized relays, solar storage tanks.
- 2 different communication standards : Local e-BUS interface
- emote interface for: Data acquisition, parameters setting, 2 inlets for outer and room temperature sensors
- Additional safety devices kit (optional)

Additional functions BCM = Boiler Cascade Manager

- Analogical outlet 0÷10V for the control of a modulating pump
- Inlet 0-10 V for external modulation control of the flow temperature
- Emergency operation: anti black-out
- Emergency operation: maximum output 50%
- Alarm signalling

Optional:

- Acidic condensate neutralizers

Technical data

SPK		116
Nominal Heat Output	kW	114
Seasonal space heating energy efficiency	ηs %	94
Seasonal EFFICIENCY CLASS in heating mode		A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	113.5
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	89
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	37.9
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	99
Emissions of nitrogen oxides (NO_x)	mg/kWh	80.6
Condensate production max	kg/h	18.5
Water content	l	67
Heigh	mm	1710
Width	mm	550
Depth	mm	610
Weight	kg	270

SPK 116

SPK 115÷600

Large water content condensing unit, entirely in stainless steel AISI 316 L, complete of pre-mix modulating gas burner, for natural gas orLPG, with NOx emissions in class 5

- Maximum working pressure: 6 bar
- High efficiency thanks to the special patented progressive pipes of its vertical tube bundle, tilted of 3°, in stainless steel AISI 316 L, completely rolled, with special multi-fin inserts in Al/Si/Mg.
- Thermal element in vertical shape with low water side pressure losses. It doesn't need any recirculation pump (circulation equal to boiler zero extinguished
- Vertical burner with integrated check valve, placed above the combustion chamber, (modulation ratio > 1:4), with flame surface in non resonant radiating "metallic mesh", with thermal protection shield
- Ignition and flame control through two opposit electrodes for high safety, BMM, NTC sensor for temp. control and safety thermostat
- Combustion chamber inspectability guaranteed by a pneumatic opening device.
- Retractable platform standard supplied (SPK 400 to 600) and optional for other models
- HSCP controller is integreted in the panel board
- Possibility to electronically manage up to 8 boilers (in cascade)
- MULTIFUNCTION CARD for zones management SHC ("Slavic Heating Controller"), for the exploiting circuits (1 std supplied) complete of external temperature sernsor + 3 control sensors: it is possible to control up to a maximum of 4 SHC cards.
- BCM (inclusive in the supply) with many additional functions.
- Two different standards of communication, available in alternative
- Local eBUS interface / remote Interface

Optional accessories:

- High efficiency modulating pumps - Additional safety devices Kit
- Acidic condensate neutralizers

Technical data

SPK		115	150	230	300
Nominal Output	kW	115	136	209	274
Seasonal space heating energy efficiency	ηs %	93	93	92	94
Seasonal EFFICIENCY CLASS in heating mode		A	A	A	A
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	118.8	136.3	209.3	273.8
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	87.6	87.8	88.1	88.1
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	37.0	45.2	68.8	91.6
Useful efficiency at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	η1 %	96.6	96.9	96.6	98.2
Emissions of nitrogen oxides (NO_x)	mg/kWh	67	67	61	59
Condensate production max	kg/h	11.2	11.3	13.7	15.8
Water content	l	153	153	210	270
Heigh	mm	1809	1809	1917	1946
Width	mm	666	666	846	910
Depth	mm	944	944	1092	1181
Weight	kg	407	407	479	549

SPK		400	500	600
Nominal Output	kW	371	440	534
Seasonal space heating energy efficiency	ηs %	94	94	92
Seasonal EFFICIENCY CLASS in heating mode		A	*	*
Useful Heat Output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	371.6	440.1	534.5
Useful efficiency at nom. heat output in high-temp. regime (Tr 60°C / Tm 80°C)	η4 %	88.1	88.1	87.6
Useful heat output at 30% of nom. heat output in low-temp. regime (Tr 30 °C)	P1 kW	124.2	147.1	175.8
Rendim. al 30% pot. termica nomin. in regime di bassa temp. (Tr 30°C)	η1 %	98.1	98.2	96.0
Emissions of nitrogen oxides (NO_x)	mg/kWh	53	56	62
Condensate production max	kg/h	28.5	28.8	31.0
Water content	l	340	340	425
Heigh	mm	2130	2130	2206
Width	mm	996	996	1096
Depth	mm	1276	1276	1398
Weight	kg	716	716	875

(*) Appliances not covered by Directive 2009/15 / EC

SPK 115÷600

XC-K

Large water content condensing boiler, with outer pressure vessel in high resistance carbon steel. Pressurized, of flame reversion type

- Tube bundle made of special patented progressive pipes in stainless steel AISI 316 L, with special multi-fin inserts in Al/Si/Mg AISI 316 L
- Suitable for pressure jet gas burners in two stage, progressive two stage or modulating burners. Complete of rear smoke chamber in stainless steel AISI 304, with drain connection of the condensate.
- Combustion chamber in stainless steel AISI 316 L, completely water cooled, placed above the tube bundles, such that the assembly forms a structure suitable to favour the heat exchange
- Inner water way driven and braked
- Special “progressive” patented smoke pipes
  - The smoke pipes are composed by an external pipe of 57 mm diameter, containing a multi-fin insert in Al/Si/Mg that assures a very high thermal exchange, withstanding the condensates.
  - Tube bundle slightly tilted toward the smoke chamber for: natural outflow of the condensates, absence of wet acidic deposits, cleaning for gravity of the exchange surfaces
- Carbon steel door with recyclable insulation in special extra light refractory concrete, (30 % reduction of radiation heat losses)
- Panel board of electronic type with E8 controller, that allows the management of modulating burners,
- Prearrangement for cascade of more boilers with an additional E8 controller (optional)
- Double boiler body insulation
- The insulation is in anti-tearing rock wool (thickness 100 mm)
- Construction according to EN 303-1

Optional:
- Acidic condensate neutralizers

Technical data

XC-K		124	200	290	400	480	570
Nominal output (80-60°C)	kW	112.8	182.7	265.6	367.1	440.7	523.3
Nominal output (50-30°C)	kW	124	200	290	400	480	570
Nominal input on N.C.V.	kW	115.9	186.9	271	373.8	448.6	532.7
Efficiency at nominal load in std. condition (80-60°C)	%	97.3	97.72	98.2	98.2	98.23	98.23
Efficiency at nominal load in condensation (50-30°C)	%	107	107	107	107	107	107
Efficiency at part load in cond.	%	109	109	109	109	109	109
Heat losses through the casing	%	0.76	0.38	0.23	0.17	0.14	0.14
Smoke temp. tf-ta (80-60°C)	°C	44	43	40	37	37	37
Smoke temp. tf-ta (50-30°C)	°C	22	22	22	22	22	22
Massive smoke flow rate	kg/h	166.9	269.1	390.2	538.3	645.9	767
Heigh	mm	1222	1322	1472	1472	1662	1662
Width	mm	650	720	790	790	854	854
Depth	mm	1342	1703	1755	2055	2107	2277
Weight	kg	365	525	660	800	1007	1137

XC-K		700	900	1140	1420	1820	2160
Nominal output (80-60°C)	kW	642.6	826.2	1046.6	1303.6	1670.8	1983
Nominal output (50-30°C)	kW	700	900	1140	1420	1820	2160
Nominal input on N.C.V.	kW	654.2	841.1	1065.4	1327.1	1700.9	2018.7
Efficiency at nominal load in std. condition (80-60°C)	%	98.23	98.23	98.23	98.23	98.23	98.23
Efficiency at nominal load in condensation (50-30°C)	%	107	107	107	107	107	107
Efficiency at part load in cond.	%	109	109	109	109	109	109
Heat losses through the casing	%	0.14	0.14	0.14	0.14	0.14	0.14
Smoke temp. tf-ta (80-60°C)	°C	37	37	37	37	37	37
Smoke temp. tf-ta (50-30°C)	°C	22	22	22	22	22	22
Massive smoke flow rate	kg/h	941.9	1211.1	1534	1910.8	2449	2906.6
Heigh	mm	1802	1802	1992	1992	2242	2242
Width	mm	894	894	1064	1064	1204	1204
Depth	mm	2327	2697	2734	3114	3420	3645
Weight	kg	1376	1613	2158	2443	3458	3765

INOXIA GJ

Pressurized large water content, very low temperature, condensing boiler, with body in stainless steel: AISI 316 L type for flame exposed surfaces and AISI 304 type for the outer shell and the smoke chamber

- Patented, stainless steel, progressive pipes, rolled on special three sector aluminium baffles vertically positioned in order to:
  - evacuate the condensate
  - avoid acid stagnation
  - clean by gravity the exchange surfaces
- Construction according to EN 303 -1
- Combustion chamber completely water cooled
- Excellent noiseless operation due to the low counter-pressure in the smoke pipes
- Underlying smoke chamber with condensate evacuation connection.
- Adjustable and reversible combustion chamber door, insulated with bio-soluble fibre, which reduces by 30% the radiation losses.
- Upwards flow connection, placed in the front part of the outer shell and two return connections, placed on the rear, for high and low temperature.
- Approved for ranged output
- Easy mounting of the burner
- Two bulb holders
- Ease of cleaning and servicing, due to the vertical position of the tube bundles
- Cascade operation with panel boards MASTERMODUL and CASCATAMODUL, equipped with E8 controller (up to a max of 8 boilers)

Optional:

- Acidic condensate neutralisers

Technical data

INOXIA GJ		150	200	270	350
Nominal output (80-60°C)	kW	136.5	181.5	247.5	320.5
Nominal output (50-30°C)	kW	150	200	271	350
Nominal input on N.C.V.	kW	140	186	253	327
Efficiency at nominal load in std. condition (80-60°C)	%	97.5	97.5	97.8	98
Efficiency at nominal load in condensation (50-30°C)	%	107.1	107.5	107.1	107
Efficiency at part load in cond.	%	109	109	109	109
Heat losses through the casing	%	0.23	0.25	0.14	0.14
Smoke temp. tf-ta (80-60°C)	°C	48	46	44	40
Smoke temp. tf-ta (50-30°C)	°C	20	20	20	20
Massive smoke flow rate	kg/h	203.3	270.1	353.8	463.1
Heigh	mm	1645	1645	1745	1745
Width	mm	956	956	1056	1056
Depth	mm	1482	1482	1733	1733
Weight	kg	480	480	675	675

INOXIA GJ		450	600	800	1000
Nominal output (80-60°C)	kW	412.5	550	732.8	917.5
Nominal output (50-30°C)	kW	450	600	800	1000
Nominal input on N.C.V.	kW	420	560	746	934
Efficiency at nominal load in std. condition (80-60°C)	%	98.2	98.2	98.2	98.2
Efficiency at nominal load in condensation (50-30°C)	%	107.1	107.1	107.2	107
Efficiency at part load in cond.	%	109	109	109	109
Heat losses through the casing	%	0.12	0.12	0.11	0.10
Smoke temp. tf-ta (80-60°C)	°C	36	36	36	36
Smoke temp. tf-ta (50-30°C)	°C	20	20	20	20
Massive smoke flow rate	kg/h	594.8	793.1	1056.5	1322.7
Heigh	mm	1893	1893	2178	2178
Width	mm	1086	1086	1266	1266
Depth	mm	2143	2143	2468	2468
Weight	kg	1090	1090	1650	1650

INOXIA GJ

Technical data

MULTIINOX		250	375	500	625	750	875	1000
Nominal input on N.C.V.	kW	230	345	460	575	690	805	920
Nominal output in cond. 30/50°C	kW	257.6	353.3	471	588.2	706.6	822.7	934.7
Minimum output in cond. 30/50°C	kW	31.85	31.86	31.85	31.85	31.85	31.85	31.85
Nom. output in std. cond. 60/80°C	kW	226.6	340.1	453.2	568.9	681.8	796.3	913.5
Water efficiency at full load in cond.	%	103.3	102.4	102.4	102.3	102.4	102.2	102.6
Water efficiency at part load in cond.	%	106.2	106.2	106.2	106.2	106.2	106.2	106.2
NOx emissions	mg/kWh	78.00	76.00	110.75	110.75	110.75	110.75	110.75
Water pressure in heating circuit min.-max.	bar	0.5-6	0.5-6	0.5-6	0.5-6	0.5-6	0.5-6	0.5-6
Water content	l	208	301	401	509	570	702	802.3
Maximum condensate production	kg/h	37	56	74	93	111	130	148
Max. ab. elec. power	W	313	470	626	782	939	1095	1252
Height	mm	1740	1740	1740	1740	1740	1740	1740
Width	mm	1675	1675	1675	1675	1675	1675	1675
Depth	mm	670	1200	1200	2500	2500	2830	2830
Dry weight	kg	625	977	1250	1602	1875	2227	2500

MULTIINOX

MULTIINOX

Condensing and modulating, multi-burner heat generator in stainless steel AISI 316 L, for indoor and outdoor installation, with protection degree IPX5D; constituted by several large water content preassembled moduls, without any hydraulic interception in between. For natural gas or LPG operation.

- Max. working pressure: 5 bar
- High efficiency thanks to the special patented progressive pipes in stainless steel AISI 316 L, with special multi-fin inserts in Al/Si/Mg
- Large water content moduls in vertical shape in order to get the stratification of the temperatures, with two return connections
- Combustion chamber positioned above the tube bundle
- Premix and modulating vertical burner above the combustion chamber, with flame surface in radiating metallic mesh
- Air-gas premixing within the fan, with integral non-return valve and minimum gas pressure switch.
- Ignition and flame control device BMM, NTC sensor for working temperature control and safety thermostat
- Smoke pipes with external diameter 42 mm, endowed with multi-fin inserts in Al/Si/Mg, placed in a vertical tube bundle and tilted of 3° for: a natural outflow of the condensate, absence of wet acidic deposits, exchange surface cleaning, inside water ways driven and braked
- Thermal moduls integrally insulated with fiber wool, 50 mm thick, protected with aluminium foil
- Reversible global flow and return connections (for the models 250, 375, 500)
- Reversible global gas connection and smoke outlet for all the models
- Two return connections: for high and low temperature to optimize the heat exchange
- Galvanized casing for outdoor installation and painted with epoxy-polyester powders of grey colour
- The construction fully complies with the requirements stated by the EN 303-1
- The surfaces exposed to the fire and smokes are built in stainless steel AISI 316L, according to EURONORM 25 and EURONORM 28

Panel board:

- Electronic regulator HSCP, water pressure gauge and On/Off switch
- Managing up to a maximum of 12 fully independent heating circuits and of a domestic hot water storage tank
- Possibility of management of D.H.W. recirculation pump
- Heating zone management: MULTIFUNCTION CARD: SHC ("Slave Heating Controller"): CH, DHW and auxiliary resources: temporized relays, solar storage tanks.
- Local e-BUS interface
- Remote interface for: data acquisition, parameters setting, 2 inlets for outer and room temperature sensors

ADDITIONAL FUNCTIONS: BCM = BOILER CASCADE MANAGER

(included in the supply)

- Analogical outlet 0-10V for the control of a modulating pump
- Emergency operation: anti black-out
- Emergency operation: maximum output = 50%
- Alarm signalling

Optional:

- Additional safety devices kit (to be assembled on site)
- Acidic condensate neutralizers

MODAL

Pressurised steel boiler for gas or oil pressure jet burners

- Reversed flame combustion chamber
- Highly resistant to condensate thanks to:
  - Furnace misalignment against the outer shell
  - Patented fin effect on the welding seams of pipes onto the rear tube plate
- Anti-condensing helicoidal turbolators
- Heat losses reduction, due to the strong insulation (60 mm) with rock wool of the boiler body and to the ceramic fibre insulation on the door
- Adjustable door with double opening (left and right)
- Separate panel board
- Maximum working pressure: 6 bar; it is possible, under specific request, to provide a MWP of 7 - 8 - 9 - 10 bar

Technical data

MODAL		64	76	93	105	116
Nominal output	kW	64	76	93	105	116
Nominal input	kW	71	84	102	115	128
Water efficiency at full load (100%)	%	90.1	90.4	91.1	91.3	90.6
Combustion efficiency at nominal load	%	90.6	91	91.6	91.8	91.1
Casing heat losses (80-60°C)	%	0.5	0.5	0.5	0.5	0.4
Net flue gas temperature tf-ta	°C	187.0	180.4	169.2	167.3	182.3
Flue gas mass flow rate	kg/h	109.0	128.5	154.7	172.9	192.4
Height	mm	912	912	912	1002	1002
Width	mm	690	690	690	760	760
Depth	mm	990	990	990	1205	1205
Dry weight	mm	212	212	212	309	309

MODAL		140	163	186	233	291
Nominal output	kW	140	163	186	233	291
Nominal input	kW	155	180	206	258	322
Water efficiency at full load (100%)	%	90.3	90.5	90.2	90.3	90.3
Combustion efficiency at nominal load	%	90.8	91.2	91	91	90.8
Casing heat losses (80-60°C)	%	0.5	0.6	0.7	0.7	0.5
Net flue gas temperature tf-ta	°C	187.9	179.5	184.2	183.2	187.0
Flue gas mass flow rate	kg/h	233.0	270.6	309.6	387.8	484.0
Height	mm	1002	1002	1002	1127	1127
Width	mm	760	760	760	860	860
Depth	mm	1205	1385	1385	1437	1687
Dry weight	mm	309	349	349	485	555

MODAL

ELLPREX

Pressurised steel boiler for gas, oil or heavy - oil pressure jet burners, with floating furnace from the model 730 up to the model 7000

- Reversed flame combustion chamber
- Elliptic boiler body up to the model 970 kW
- Highly condensate resistant thanks to:
  - Misalignment of the furnace against the outer shell
  - Patented fin effect on the welding seams of pipes onto the rear tube plate
- Silent operation thanks to low counter pressure on smoke side
- High mechanical resistance thanks to floating furnace (for the models 730 to 7000 the furnace, welded only to the front tube plate, is free to dilatate)
- Anti-condensing helicoidal turbolators
- Heat losses reduction, due to the strong insulation (80 mm) with rock wool of the boiler body and (up to the mod. 970), to the ceramic fibre insulation on the door (- 30% of radiation losses)
- Adjustable door with double opening (left and right)
- Approval as boiler with ranged output
- External panel board with mechanical control and safety thermostats (as an optional extra an outer compensator can be supplied)
- Easy installation
- Constrtuction according to the EN 303, part 1.
- Maximum Working Pressure: 6 bar; (for models 1100÷4000 it is possible, under specific request, to provide a MWP up to 10 bar)
- Two bulb holders, capable to accommodate 3 bulbs each

Technical data

ELLPREX		340	420	510	630	760	870
Nominal output	kW	340	420	510	630	760	870
Nominal input	kW	371	459	557	688	830	950
Water efficiency at nominal load	%	91.6	91.5	91.5	91.5	91.5	91.5
Height	mm	1372	1542	1542	1542	1622	1622
Width	mm	860	890	890	890	1122	1122
Depth	mm	1541	1606	1801	2113	1989	2184
Weight	mm	629	796	919	1049	1341	1447

ELLPREX		970	1100	1320	1570	1850	2200
Nominal output	kW	970	1100	1320	1570	1850	2200
Nominal input	kW	1060	1200	1442	1715	2020	2400
Water efficiency at nominal load	%	91.5	91.6	91.5	91.5	91.5	91.6
Height	mm	1622	1622	1622	1732	1732	1892
Width	mm	1122	1352	1352	1462	1462	1622
Depth	mm	2379	2346	2686	2781	3151	3225
Weight	mm	1553	1821	2030	2780	3280	4145

ELLPREX		2650	3000	3500	4000	4500
Nominal output	kW	2650	3000	3500	4000	4500
Nominal input	kW	2890	3280	3825	4371	4838.7
Water efficiency at nominal load	%	91.7	91.4	91.4	91.5	93.0
Height	mm	1892	1990	2271	2271	2533
Width	mm	1622	1910	2160	2160	2314
Depth	mm	3545	3835	3879	4279	4682
Weight	mm	4465	5110	6700	7500	8310

ELLPREX		5000	5500	6000	6500	7000
Nominal output	kW	5000	5500	6000	6500	7000
Nominal input	kW	5421.8	5914	6506.2	6989.2	7590.5
Water efficiency at nominal load	%	92.2	93.0	92.2	93.0	92.2
Height	mm	2533	2653	2653	2860	2860
Width	mm	2314	2454	2454	2620	2620
Depth	mm	4682	4872	4872	5484	5484
Weight	mm	8310	9300	9300	12600	12600

ELLPREX

TRISTAR 2S

Pressurized, reversed flame, three pass, hot water boiler, in carbon steel, for gas burners only, also LOW NOx.

- Maximum working pressure: 6 bar
- Certified in ranged output
- Boiler body of elliptic shape, up to 870 kW, and cylindrical shape for the remaining models.
- High mechanical resistance thanks to the floating furnace from 680 to 6100 kW.
- Third actual smoke pass in special multi-fin bimetallic pipes
  - first section of the pipes with turbolators and the last section with aluminum profiles that assures high thermal exchange withstanding the condensates (Unical Patent)
  - tab effect on the welding seams of the pipes to the rear tube plate (Unical Patent)
- Water ways guided and braked by special baffles inside the boiler body
- High thickness insulation in mineral wool
- Adjustable front door in vertical / trasversal / axial direction, with double opening (to the right and to the left), with insulation in recyclable super light concrete
- Construction according to EN 303-1 - pipes in carbon steel according to DIN 1626,
- 2 bulb holders of ½" with inside diameter from 15 mm (suitable for 3 bulbs each)

Technical data

TRISTAR 2S		80	120	160	200	250	300	370
Nominal output	kW	80	120	160	200	250	300	370
Nominal input	kW	85.2	127.4	169.4	211.3	263.6	315.8	388.7
Water efficiency at nom. load	%	93.8	94.2	94.5	94.6	94.8	95	95.2
Height	mm	912	1002	1002	1127	1127	1372	1542
Width	mm	740	740	820	820	860	860	860
Depth	mm	995	1210	1390	1442	1692	1541	1606
Weight	mm	221	325	366	505	583	665	845

TRISTAR 2S		450	560	680	780	870	1000	1180
Nominal output	kW	450	560	680	780	870	1000	1180
Nominal input	kW	472.4	587.9	713.9	818.9	913.4	1049.8	1238.8
Water efficiency at nom. load	%	95.2	95.2	95.2	95.2	95.2	95.2	95.2
Height	mm	1542	1542	1622	1622	1622	1622	1622
Width	mm	740	740	820	820	860	860	860
Depth	mm	1801	2113	1989	2184	2379	2346	2686
Weight	mm	986	1119	1435	1557	1656	1970	2175

TRISTAR 2S		1400	1650	2000	2350	2700	3100	3500
Nominal output	kW	1400	1650	2000	2350	2700	3100	3500
Nominal heat input	kW	1469.8	1732.3	2099.7	2467.1	2834.6	3254.5	3674.5
Water efficiency at nom. load	%	95.2	95.2	95.2	95.2	95.2	95.2	95.2
Height	mm	1732	1732	1892	1892	1990	2271	2271
Width	mm	740	740	820	820	860	860	860
Depth	mm	2781	3151	3225	3545	3835	3879	4279
Weight	mm	2975	3465	4390	4700	5370	6990	7790

TRISTAR 2S		3900	4400	4800	5200	5700	6100
Nominal output	kW	3900	4400	4800	5200	5700	6100
Nominal input	kW	4094.4	4619.3	5039.3	5459.2	5984.1	6404.1
Water efficiency at nom. load	%	95.2	95.2	95.2	95.2	95.2	95.2
Height	mm	2533	2533	2653	2653	2860	2860
Width	mm	2533	2533	2653	2653	2860	2860
Depth	mm	4738	4738	4928	4928	5484	5484
Weight	mm	8630	8630	9675	9675	13060	13060

TRISTAR 2S

TRISTAR 3G

3 pass pressurized boiler with passing furnace, Body in steel with special progressive smoke pipes in carbon steel with patented aluminium inserts “EASYSTREAM Pipe”, suitable for gas burners.

- Max. Working Pressure: 6 bar
- Low polluting emissions, thanks to the reduction of the specific thermal load, due to the wide exchange surface.
- Three pass smoke way without inversion in the combustion chamber in an oval shaped body (passing furnace)
- Anti-condensate fin effect on the pipe welding seams on the rear tube plate
- Combustion chamber with absolute thermo-mechanical resistance to the condensate, thanks to the misalignment between the furnace and the smoke pipes
- Reversing pipes of large diameter
- Third smoke pass with special pipes “EASYSTREAM PIPE”, ø1 1⁄2”
- First section of invitation with turbulator
- Second multi-radial aluminium section that assures high heat exchange, withstanding the acidic condensate (Unical Patent)
- Smoke chamber in carbon steel predisposed for inspection and condensate evacuation
- Casing heat losses reduction, thanks to the insulation with 100 mm thick, tear resistant, mineral wool
- Door with ceramic fibre insulation, up to 125 kW, and in extra light refractary concrete for the other models.
- Fully adjustable door with double opening possibility
- Door supporting hinges fixed to an anti-vibration counter-plate (up to 1900 kW)
- Certified as boiler with ranged output
- Manufacture according to EN 303-1
- Oil version upon request: with special, completely rolled pipes, with inside 6 x 60° sectors carbon steel pipes

Technical data

TRISTAR 3G 2S		65	85	110	150	185	225
Nominal output	kW	65	85	109	150	185	225
Nominal input	kW	69.2	90.3	115.6	158.6	195.3	237.1
Water efficiency at nom. load	%	93.9	94.1	94.3	94.5	94.7	94.9
Height	mm	1140	1140	1272	1272	1372	1372
Width	mm	740	740	820	820	860	860
Depth	mm	975	1235	1170	1430	1365	1495
Weight	kg	315	355	435	515	580	640

TRISTAR 3G 2S		300	380	500	630	730	840
Nominal output	kW	300	380	500	630	730	840
Nominal input	kW	314.4	398.3	524.1	660.3	765.2	880.5
Water efficiency at nom. load	%	95.4	95.4	95.4	95.4	95.4	95.4
Height	mm	1542	1542	1835	1835	1835	1622
Width	mm	890	890	920	920	920	1122
Depth	mm	1560	1755	1915	2110	2305	2505
Weight	kg	840	935	1260	1375	1510	1650

TRISTAR 3G 2S		1100	1320	1600	1900
Nominal output	kW	1100	1320	1600	1900
Nominal input	kW	1153	1383.6	1677.1	1991.5
Water efficiency at nom. load	%	95.4	95.4	95.4	95.4
Height	mm	1732	1732	1892	1892
Width	mm	1462	1462	1622	1622
Depth	mm	2802	3172	3242	3564
Weight	kg	2530	3065	4005	4230

TRISTAR 3G		2300	2650	3000
Nominal output	kW	2300	2650	3000
Nominal input	kW	2410.8	2777.7	3144.5
Water efficiency at nom. load	%	95.4	95.4	95.4
Height	mm	1990	2271	2271
Width	mm	1910	2160	2160
Depth	mm	3835	3879	4279
Weight	kg	5350	7070	7600

TRISTAR 3G

SANICAL SC

D.H.W. coil type storage tank

- Carbon Steel tank
- Internal treatment: 2 layer enamelling
- Ellipse shaped coil cross-section with wide exchange surface
- Hard PU insulation 50 mm thick for models up to 600 litres and 100 mm soft for 800 and 1000 liters
- Inspection flange equipped with magnesium anode, thermostat, thermometer and recirculation connection
- It can be integrated in all type of intallations, included the solar ones

Optional:

Panel board with:
- On / Off switch
- working thermostat for the control of the loading pump
- thermometer

Technical data

SANICAL SC		150	200	300	400
Total water content	l	168	212	291	423
DHW product with prim. 80°/60° and sec. 10°/45° (DIN 4708)	l/h	600	900	1100	1109
Pressure losses	mbar	12	40	70	80
Flange	Ø mm	180/120	180/120	180/120	180/120
Max Working Pressure on DHW side	bar	10	10	10	10
Max Working Pressure on Heating side	bar	6	6	6	6
Max Working Temperat. on DHW side	°C	95	95	95	95
Height	mm	990	1215	1615	1460
Width	mm	600	600	600	750
Dry weight	kg	70	90	115	140

SANICAL SC		500	600	800	1000
Total water content	l	500	589	765	888
DHW product with prim. 80°/60° and sec. 10°/45° (DIN 4708)	l/h	1400	1500	1700	2100
Pressure losses	mbar	131	192	240	518
Flange	Ø mm	180/120	180/120	180/120	290/220
Max Working Pressure on DHW side	bar	10	10	10	10
Max Working Pressure on Heating side	bar	6	6	6	6
Max Working Temperat. on DHW side	°C	95	95	95	95
Height	mm	1690	1960	1780	2030
Width	mm	750	750	990	990
Dry weight	kg	155	190	215	245

PELLEXIA 116-160-250

Pellet fired boiler, complete with modulating burner, safety rotary valve and pneumatic cleaning system

- Burner with fan in suction side, automatic ignition system with horizontal flame
- Burner nozzle in stainless steel, heat and thermo-chemical stresses resistant
- Grate of gasification in stainless steel
- Flame modulation combustion with fan in suction side controlled by electronic system through inverter
- Boiler body with vertical smoke pipes and semiautomatic cleaning through spring shaped steel turbolators
- Body boiler insulation in mineral wool, 80 mm thick
- Rear flue spigot, dia. 300 mm
- Combustion chamber door lined with refractory material, 100 mm thick
- Chamber smoke with inspection opening
- Front and rear doors giving quick access to the vertical tube bundle for ashes removal
- Shutter of regulation primary and secondary air
- Pressure switch for continuous check of the draught in combustion chamber
- Thermostat I check temperature conducted pipe of combustible load
- Safety thermostat with manual reset
- Photo-reader of the flame luminosity
- Kit of burner automatic cleaning operated through high pressure compressed air
- Compressed air tank with 50 litre capacity endowed with bottom drain valve, flexible hose for connection to the burner and safety valve
- Stellar safety valve against back lighting, with closed sectors disk wheel, placed between burner and pellet loading duct.
- Safety heat exchanger predisposed for connection of safety thermal discharge valve.
- Panel board as reading-desk that can be positioned on the sides of the boiler
- Programmable integrated microprocessor for the control of the combustion and standard functions, such as: control of the installation pumps, DHW production, chrono-thermostat, remotable alarm contacts, control of the pellet loading from auxiliary and service reservoir
- Pellet storing capacity 120 kg; pellet feeding screw tilted with spiral in steel stainless
- Predisposition of flange for lodging an automatic batcher for pellet loading from remote pellet reservoir

Optional:

- Service reservoir
- Predisposition for combining to automated system of pellet transport and loading

Technical data

PELLEXIA		116	160	250
Nominal output	kW	106	143.81	225.3
Nominal input min. / max.	kW	34.8/115.5	48.05/159	72.6/250
Efficiency	%	93.27	93.35	93.30
Volume of the pellet reservoir	l	200	200	200
Pellet storing capacity of the reservoir (*)	Kg	120	120	120
Maximum flow temperature	°C	85	85	85
Pellet consumption min. / max.	Kg/h	7.0/23.2	9.6/31.8	14.5/50.0
Boiler water content	l	430	430	580
Maximum working pressure	bar	3	3	3
Class boiler according to EN 303-5:2012		5	5	5
Height	mm	1808	1808	1808
Width		800	800	800
Depth		2430	2780	3140
Dry weight	Kg	1475	1475	1626

(*) The quantity of the stocked pellet can vary according to the fuel density.
Values obtained with pellet certified according to EN PLUS and ISO 17225-2:2014.

PELLEXIA 116-160-250

AIREX 150-200

Natural wood logs fired boiler, with pyrolytic combustion and total gasification, complete with all the control and safety devices foreseen by the standards

- Boiler body in carbon steel with combustion under negative pressure
- Inverted flame combustion through refractory stone burner, with grate in thermal steel
- Efficiency: certified to be higher than 90%
- Four stage modulating fan, for the wood gasification, set in the suction side
- Built-in anti-condensation system with modulating thermostatic valves (UNICAL Patent)
- Access, for loading and inspection, through:
  - Front wood loading door, insulated with refractory concrete
  - Intermediate door with combustion air adjustments
  - Combustion chamber lower door, insulated with refractory concrete and provided with flame sight glass
- Combustion optimization and control, thanks to the primary and secondary air regulation through three series of air adjustment valves set on the intermediate door
- Combustion chamber bottom protected by refractory catalyst for the improvement of the combustion
- Vertical smoke channels endowed with mechanic cleaning system manually operated
- Anti overheating safety heat exchanger, constituted by a steel coil, directly plunged in to the boiler water
- Outer casing in steel plates epoxy-polyester powder painted
- Cleaning facilitated by the presence of:
  - Lower rear door for extraordinary cleaning
  - Upper smoke chamber with inspection opening and ashes cleaning door
- Casing insulation with mineral wool mattress (80 mm thick)
- Electronic control panel board
- Microprocessor electronic PCB with LCD alphanumeric display, keyboard and indication lights for the activation of servomechanisms.
  - Sensors standard delivered:
  - n° 3 PTC sensors
  - n° 1 PT1000 sensor for the smoke temperature measurement
- Self-diagnosis of wrong installation, or breakdown, of the PTC temperature sensors.
  - N° 1 manual reset safety thermostat.
  - Stop switch
- Loads management on more operational modes:
  - heating only
  - heating + D.H.W. production through single or double coil storage tank
  - system with solar panel integration
  - heating + D.H.W. production through storage tank of tank in tank type
  - heating + management of heat accumulator tank (puffer)

Optional:

- Recirculation pump kit

Technical data

AIREX		150	200
Nominal Output (*)	kW	149.3	199.7
Nominal input	kW	166.8	223.4
Boiler water content	l	430	493
Water side pressure losses (**)	m w.c.	0.39	0.39
Maximum working pressure	bar	3	3
Volume of wood store	l	495	580
Loading opening dimensions	mm	514x594	514x594
Length of wood logs	cm	100	120
Height	mm	1860	1860
Width	mm	800	800
Depth	mm	2201	2461
Weight	kg	1475	1626

(*) Output obtained with wood of good quality, containing a 15% of humidity.
(**) Pressure losses corresponding to a flow rate relative to a delta T of 15K.

AIREX 150-200

Satal Plus C 3Zones

S. Plus C

S. Plus C 3Zones

Technical data

SATAL PLUS C		
Nominal maximum output	kW	35
Water flow rate	l/h	1500
Maximum heating temperature	°C	90
Minimum heating temperature	°C	30
Max. D.H.W. pressure	bar	10
Max. C.H. pressure	bar	6
Minimum pressure	bar	0.5
D.H.W. production with Δt 25k	l/min	17
Height	mm	650
Width	mm	600
Depth	mm	150
Weight	kg	18

SATAL PLUS C

Satellite module for autonomous management of centralized heating and cooling systems, with room temperature adjustment and modulating control of a step-by-step mixing valve

Model SATAL PLUS C

Control of two heating zones (high and low temperature)

- Joinable with energy and sanitary water measuring devices for sharing the costs among all the apartments
- Instantaneous D.H.W. production, via a 22 plate stainless steel heat exchanger

Composition:

- Wall mounted/built-in box
- Electric step-by-step mixing valve
- Two Y shaped filters
- High efficiency circulating pump
- Automatic air vent
- Plate heat exchanger (22 plates)
- Temperature sensors
- Two flow connections: high and low temperature
- Hydraulic connections preset for:
  - Central heating flow
  - Central heating return
  - (D.C.W.) Domestic Cold Water inlet
  - Autonomous heating flow high temperature
  - Autonomous heating flow low temperature
  - Autonomous heating return high temperature
  - Autonomous heating return low temperature
  - D.H.W. outlet
  - D.C.W. outlet

Optional accessories:

- REGOLAFACILE, modulating type
- SIM-CHRONO
- Energy counter EN 1434
- Kit DCW litre counter EN 1434
- Data collector (3 models: 20 – 60 – 240 inlets) and relevant software
- Safety contact thermostat kit
- Outer temperature sensor

Model SATAL PLUS C 3Zones

Control of three heating zones (2 x high and 1x low temperature)

For composition see model SATAL PLUS C, with these differences:

- 2 x Autonomous heating flow high temperature
- 2 x Autonomous heating return high temperature

SATAL PLUS C

Satal Plus R 3Zones-Ice

S. Plus R hotcold

S. Plus R 3Zones-Ice

SATAL PLUS R

Satellite module for autonomous management of centralized heating and cooling systems, with room temperature adjustment and modulating control of a step-by-step mixing valve -

Mod. SATAL PLUS R hotcold

Control of two heating zones (high and low temperature)

- Joinable with energy and sanitary water measuring devices for sharing the costs among all the apartments

Composition:

- Wall mounted/built-in box
- Electric step-by-step mixing valve
- Two Y shaped filters
- High efficiency circulating pump
- Automatic air vent
- Temperature sensors
- Two flow connections: high and low temperature
- Hydraulic connections preset for:
  - Central heating flow
  - Central heating return
  - Autonomous heating flow high temperature
  - Autonomous heating flow low temperature
  - Autonomous heating return high temperature
  - Autonomous heating return low temperature

Optional accessories:

- REGOLAFACILE, modulating type
- SIM-CHRONO
- Energy counter EN 1434
- D.H.W. litre counter EN 1434
- DCW litre counter EN 1434
- Data collector (3 models: 20 – 60 – 240 inlets) and relevant software
- Safety contact thermostat kit
- Differential bypass kit
- Outer temperature sensor

Mod. SATAL PLUS R 3Zones-Ice

Control of three heating zones (2 x high and 1x low temperature)

For composition see model SATAL PLUS R hotcold, with this difference:

- 2 x Autonomous heating flow high temperature
- 2 x Autonomous heating return high temperature

Technical data

SATAL PLUS R		
Nominal maximum output	kW	35
Water flow rate	l/h	1500
Maximum temperature	°C	85
Minimum temperature	°C	30
Max pressure	bar	6
Minimum pressure	bar	0.5
Height	mm	650
Width	mm	600
Depth	mm	150
Weight	kg	17

SATAL PLUS R

SATAL ONE hotcold

Satellite module for autonomous management of centralized heating and cooling systems

- Joinable with energy and sanitary water measuring devices for sharing the costs among all the apartments

Composition:

- Wall mounted/built-in box
- Y shaped filter
- Balancing valve
- Electric zone valve
- Gate valve for heating side
- Hydraulic connections preset for:
  - Central heating flow
  - Central heating return
  - Autonomous heating flow
  - Autonomous heating return

Optional accessories:

- REGOLAFACILE On/Off
- Energy counter EN 1434
- D.H.W. litre counter EN 1434
- DCW litre counter EN 1434
- Data collector (3 models: 20-60-240 inlets) and relevant software
- Safety contact thermostat kit
- Air vent kit

Technical data

SATAL ONE hotcold		
Nominal maximum output	kW	35
Water flow rate	l/h	1500
Maximum temperature	°C	85
Minimum temperature	°C	30
Max pressure	bar	6
Minimum pressure	bar	0.5
Height	mm	650
Width	mm	600
Depth	mm	150
Weight	kg	15

SATAL ONE caldofreddo

Economizer (optional)
for the recovery of the residual heat from the smokes at the outlet of the boiler.

Average efficiency recovery: 3 to 4%
Material: carbon steel
(on request stainless steel).

Condenser “COND” (optional)
for range 2500÷7000 kW
for the heat recovery of flue gases.

Medium efficiency recovery:
6÷8% at 100% load,
return temp. 60°C
Material: stainless steel, alluminium.

TERNOX 2S (STD - Low NOx - Low NOx E)

High pressure packaged hot water boiler, three-pass fire tube, horizontal design.

- Models range with nominal output from 1800 to 15000 kW, that are differentiated, according to the NOx emission level, in: STD - Low NOx - Low NOx E
- Standard safety pressure up to 6 bar (higher pressure available on request)
- **Boiler body:** is made of a cylindrical shell and a wet back furnace, welded to tube plates, made of high quality steel. All the materials have certificates attesting their chemical and mechanical characteristics, the controls are carried out during each production stage, and, theirs suitability for use as well. The welding seams are carried out by qualified personnel in compliance to certified procedures. Once the boilers have been manufactured they are subjected to hydraulic testing.
- **Smoke tubes:** made of high quality steel, are welded to tube plates, and are without helical turbulators.
- **Reversing chamber:** is built in welded steel plate, completely water-cooled, and connected to the rear smoke-box.
- **Front smoke-box:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. One or two doors are present according the boiler’s capacity, for cleaning and inspection. Close to the burner hole is present a self-cleaning sight glass for combustion control during boiler operation.
- **Rear smoke-box:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. Door for cleaning and inspection is present as well. Complete with an horizontal chimney connection with a diameter sized to the boiler’s output. The rear smoke-box can be accessorized with and external economizer or condenser.
- **The base:** is built with a steel frame, welded to the tube plates.
- **Walkway:** positioned on the top part of the boiler, is made of steel, covered with chequered plate and completed; on request with handrail and access ladder.
- **Insulation:** the shell is thermally insulated with a rock wool cladding binded with high density, thick thermosetting resins, suitably supported and covered externally in aluminum.

Standard equipment: (*)

- Blind burner plate.
- Lifting lugs.

(*) The quantity and the model may vary according to the configuration.

Optional accessories:

- Economizer to increase boiler efficiency, available either for gas or light oil fuel.
- Condensing heat recovery unit, available for gaseous fuel only.

TERNOX 2S

TERNOX 2S with economizer

Technical data Low NOx version

TERNOX 2S Low NOx		2200	3050	3800	5000	6300
Nominal output	kW	2200	3050	3800	5000	6300
Nominal input	kW	2406	3329	4144	5457	6892
Efficiency (100% load)	%	91.45	91.62	91.70	91.62	91.41
ΔP smoke side	mbar	5.7	6.0	6.0	6.9	7.6
Height	mm	2010	2120	2360	2580	2700
Width	mm	1960	2080	2230	2430	2570
Depth	mm	4225	4711	5134	5639	5875
Weight	kg	5500	7000	8200	10000	11500

TERNOX 2S Low NOx		7500	9500	11300	14000
Nominal output	kW	7500	9500	11300	14000
Nominal input	kW	8215	10377	12390	15294
Efficiency (100% load)	%	91.30	91.55	91.20	91.54
ΔP smoke side	mbar	8.4	10.7	11.3	12.9
Height	mm	2870	3080	3715	3910
Width	mm	2650	2900	3460	3570
Depth	mm	6424	6772	7211	7761
Weight	kg	13500	17300	25500	30000

Technical data STD version

TERNOX 2S STD		2500	3500	4500	5800	7000
Nominal output	kW	2500	3500	4500	5800	7000
Nominal input	kW	2753	3848	4950	6381	7705
Efficiency (100% load)	%	90.80	90.95	90.90	90.90	90.85
ΔP smoke side	mbar	7.5	8.0	8.5	9.5	9.5
Height	mm	2010	2120	2360	2580	2700
Width	mm	1960	2080	2230	2430	2570
Depth	mm	4225	4711	5134	5639	5875
Weight	kg	5500	7000	8200	10000	11500

TERNOX 2S STD		8500	10200	12500	15000
Nominal output	kW	8500	10200	12500	15000
Nominal input	kW	9377	11192	13789	16458
Efficiency (100% load)	%	90.65	91.14	90.65	91.14
ΔP smoke side	mbar	11.0	12.5	14.0	15.0
Height	mm	2870	3080	3715	3910
Width	mm	2650	2900	3460	3570
Depth	mm	6424	6772	7211	7761
Weight	kg	13500	17300	25500	30000

Technical data Low NOx E version

TERNOX 2S Low NOx E		1800	2350	3000	4000	5100
Nominal output	kW	1800	2350	3000	4000	5100
Nominal input	kW	1951	2537	3239	4324	5528
Efficiency (100% load)	%	94.25	92.64	92.62	92.5	92.25
ΔP smoke side	mbar	3.8	3.5	3.6	4.4	4.9
Height	mm	2010	2120	2360	2580	2700
Width	mm	1960	2080	2230	2430	2570
Depth	mm	4225	4711	5134	5639	5875
Weight	kg	5500	7000	8200	10000	11500

TERNOX 2S Low NOx E		5700	8400	10100	12200
Nominal output	kW	5700	8400	10100	12200
Nominal input	kW	6169	9128	11012	13251
Efficiency (100% load)	%	92.4	92.02	91.71	92.07
ΔP smoke side	mbar	4.8	8.3	8.9	9.7
Height	mm	2870	3080	3715	3910
Width	mm	2650	2900	3460	3570
Depth	mm	6424	6772	7211	7761
Weight	kg	13500	17300	25500	30000

TERNOX 2S

Technical data

SÜHR 5 SÜHR 10		140	210	270	370	465	580	700
Nominal output	kW	140	210	268	372	465	581.5	700
Nominal input	kW	157	235	300	418	523	653	784
ΔP smoke side	mbar	2.0	2.5	3.0	4.2	4.5	5.0	6.0
Water content	l	335	410	410	780	780	875	964
Height	mm	1235	1225	1225	1430	1430	1510	1510
Width	mm	950	950	950	1140	1140	1210	1210
Depth	mm	1550	1970	1970	2280	2280	2350	2550
Weight (4.9 bar)	kg	760	1080	1080	1540	1540	1675	2060

SÜHR 5 SÜHR 10		930	1160	1400	1750	2050	2300	2900
Nominal output	kW	930	1163	1396	1745	2035	2325	2907
Nominal input	kW	1046	1307	1568	1960	2287	2613	3267
ΔP smoke side	mbar	6.5	7.0	7.0	8.0	8.2	9.0	9.5
Water content	l	1189	1485	1696	2455	2750	3100	4200
Height	mm	1670	1670	1770	1940	2050	2080	2190
Width	mm	1350	1350	1460	1640	1740	1780	1890
Depth	mm	2635	3135	3060	3400	3400	3600	4200
Weight (4.9 bar)	kg	2350	2930	3500	4240	4790	5870	7000

SÜHR'5 - SÜHR'10

Superheated water boiler, horizontal, for middle and high pressure, reversed flame, smoke pipe type, with wet bottom, smooth pipes with turbulators

- **Boiler body:** is made up of a cylindrical shell and a wet back furnace, made of high quality steel. All the materials have certificates attesting their chemical and mechanical characteristics, the controls are carried out during each production stage, and, theirs suitability for use as well. The welding seams are carried out by qualified personnel in compliance to certified procedures and are subjected to Non Destructive Tests, in accordance to an internal "Manufacturing and Control" program. Once the boilers have been manufactured they are subjected to hydraulic testing in accordance to the requirement 7.4 – Annex I, laid down in the Directive 97/23/CE (PED).
- **Smoke tubes:** made of high quality steel, are welded to tube plates. Pipes are equipped with helical turbulators.
- **Front door:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. The door is fitted with hinges which enable it to be easily adjusted and quickly opened. Moreover, the door is fitted with a self-cleaning sight glass for combustion control during boiler operation.
- **Rear smoke-box:** is built in welded steel plate and fixed on to the tube plate by nuts for an easy access to it. It is fitted with a small door for cleaning purposes and the flue connection, with a diameter sized to the boiler's output. The rear smoke-box can be accessorized with and external economizer.
- **The base:** is built with a steel frame, welded to the tube plates and closed with steel plates.
- **Insulation:** the shell is thermally insulated with rock wool cladding, suitably supported and covered externally in 10/10 thick enamelled aluminum.

Standard equipment: (*)

- n. 1 or 2 spring loaded safety valves (according boiler's capacity).
- n. 1 manual draining group
- n. 1 large dial thermometer
- n. 1 large manometer with 3 way cock for calibration
- n. 2 working thermostats
- n. 1 safety pressure switch with manual reset onto the board panel, CE PED certified
- n. 1 safety thermostat with manual reset onto the board panel, CE PED certified
- Blind burner plate
- Carbon steel turbulators
- Lifting lugs
- Control board panel IP55 400V - 3+N - 50Hz

(*) The quantity and the model may vary according to the configuration.

SÜHR'5 - SÜHR'10

Technical data

TRYSÜHR		870	1160	1400	1800	2300	2900
Nominal output	kW	870	1160	1395	1750	2300	2900
Nominal input	kW	960	1280	1550	1940	2550	3220
ΔP smoke side	mbar	3.0	5.6	6.7	5.4	3.5	6.0
Water content	l	2800	2870	3600	3980	8250	9200
Height	mm	1800	2150	2150	2340	2650	2650
Width	mm	1480	1660	1660	1850	2160	2160
Depth	mm	3500	3600	3900	3900	4970	5370
Weight	kg	4150	6100	6800	7400	9200	10600

TRYSÜHR		3500	4650	5800	7000	8300	10000
Nominal output	kW	3500	4650	5800	7000	8300	10000
Nominal input	kW	3880	5160	6440	7740	9220	11100
ΔP smoke side	mbar	7.5	7.0	5.8	10.0	10.0	11.0
Water content	l	10840	11400	12520	14700	16800	19000
Height	mm	2900	2990	3000	3000	3210	3590
Width	mm	2410	2470	2500	2500	2710	2900
Depth	mm	5300	5770	6370	6870	7320	7500
Weight	kg	14300	15000	17600	19200	24350	28400

TRYSÜHR’

Superheated water boiler, horizontal, for high pressure, three pass, smoke pipe type, with wet bottom, piastre completamente risbordate

- Standard safety pressure up to 10 bar (higher pressure available on request) and output from 870 to 10000 kW
- Every model is complete with regulations and safety accessories for automatic operation and easy commissioning
- **Boiler body:** is made of a cylindrical shell and a wet back furnace, dished and butt welded tube plates, made of high quality steel. All the materials have certificates attesting their chemical and mechanical characteristics, the controls are carried out during each production stage, and, theirs suitability for use as well. The welding seams are carried out by qualified personnel in compliance to certified procedures and are subjected to Non Destructive Tests, in accordance to an internal “Manufacturing and Control” program. Once the boilers have been manufactured they are subjected to hydraulic testing in accordance to the requirement 7.4 – Annex I, laid down in the Directive 97/23/CE (PED).
- **Smoke tubes:** made of high quality steel, are welded to tube plates, and are without helical turbulators.
- **Reversing chamber:** is built in welded steel plate, completely water-cooled, and connected to the rear smoke-box with supports and manhole.
- **Front smoke-box:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. Two doors for cleaning and inspection are fitted with hinges to be quickly opened. Close to the burner hole is present a self-cleaning sight glass for combustion control during boiler operation.
- **Rear smoke-box:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. Two doors for cleaning and inspection are fitted with hinges to be quickly opened. Complete with an horizontal chimney connection with a diameter sized to the boiler’s output, and a self-cleaning sight glass for combustion control. The rear smoke-box can be accessorized with and external economizer.
- **The base:** is built with a steel frame, welded to the tube plates and closed with steel plates.
- **Walkway:** positioned on the top part of the boiler, is made of steel, covered with chequered plate and completed; on request with handrail and access ladder.
- **Insulation:** the shell is thermally insulated with a 100 mm rock wool cladding binded with high density, thick thermosetting resins, suitably supported and covered externally in 10/10 thick enamelled aluminum.

Standard equipment: (*)

- n. 2 spring loaded safety valves, n. 1 manual draining group, n. 1 large dial thermometer, n. 1 large manometer with 3 way cock for calibration, n. 2 working thermostats, n. 1 safety pressure switch with manual reset onto the board panel, CE PED certified, n. 1 safety thermostat with manual reset onto the board panel, CE PED certified, Blind burner plate, Lifting lugs, Control board panel IP55 400V - 3+N - 50Hz

(*) The quantity and the model may vary according to the configuration.

BAHR'UNO OR

Low pressure steam generator, reversed flame, wet bottom, smoke pipe type, horizontal

- Standard safety pressure up to 0.98 bar and output from 140 to 3000 kg/h
- The appliance is designed to ensure low heating loads in the combustion chamber and low superficial loads.
- **Boiler body:** is made up of a cylindrical shell and a wet back furnace, made of high quality steel. All the materials have certificates attesting their chemical and mechanical characteristics, the controls are carried out during each production stage, and, theirs suitability for use as well. The welding seams are carried out by qualified personnel in compliance to certified procedures and are subjected to Non Destructive Tests, in accordance to an internal "Manufacturing and Control" program. Once the boilers have been manufactured they are subjected to hydraulic testing in accordance to the requirement 7.4 – Annex I, laid down in the Directive 97/23/CE (PED).
- **Smoke tubes:** made of high quality steel, are welded to tube plates. Pipes are equipped with helical turbulators.
- **Front door:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. The door is fitted with hinges which enable it to be easily adjusted and quickly opened. Moreover, the door is fitted with a self-cleaning sight glass for combustion control during boiler operation.
- **Rear smoke-box:** is built in welded steel plate and fixed on to the tube plate by nuts for an easy access to it. It is fitted with a small door for cleaning purposes and the flue connection, with a diameter sized to the boiler's output. The rear smoke-box can be accessorized with and external economizer.
- **The base:** is built with a steel frame, welded to the tube plates and closed with steel plates.
- **Walkway:** positioned on the top part of the boiler, is made of steel, covered with chequered plate and completed; on request with handrail and access ladder.
- **Insulation:** the shell is thermally insulated with a 100 mm rock wool cladding binded with high density, thick thermosetting resins, suitably supported and covered externally in 10/10 thick enamelled aluminum.

SMOOTH PIPES

They are formed by pipes with, inside, helical turbulators.

Efficiency up to 91%.
In function of working pressure of the boiler.

ESA PIPES (Unical patent)

They are formed by pipes with, inside, six 60° sectorial pipes.

Efficiency up to 93%.
In function of working pressure of the boiler.

ESALU PIPES (Unical patent)

They are formed by pipes with, inside, special inserts of different types and shapes.

Efficiency up to 96%.
In function of working pressure of the boiler.

BAHR'UNO OR

Standard equipment: (*)

- Steam main globe valve.
- n. 2 spring loaded safety valves.
- n. 2 reflecting level indicators, with flanged connections, purging and cut-off cocks.
- n. 1 large manometer with 3 way cock for manometer calibration.
- n. 1 safety pressure switch with manual reset onto the board panel, CE PED certified.
- n. 1 limit working pressure switch.
- n. 1 regulation pressure switch for two stages burners or probe for modulating burners.
- n. 2 safety minimum level switches, with auto-diagnosis and manual reset on the board panel, CE certified.
- n. 2 water level probes for ON-OFF pump regulation.
- Feeding group complete with 2 centrifugal pumps.
- Valve assembly for feeding circuit, with relevant pipes already fitted.
- Automatic group for level control.
- n. 1 manual bottom blowdown valve.
- Man-hole on top and hand-hole on water side.
- Integral steam drier for high steam quality.
- Blind burner plate.
- Carbon steel turbulators.
- Lifting lugs.
- Control board panel IP55 400V - 3+N - 50Hz

Options:

- Spring actuated safety valve
- Kit of "Second boiler water feeding pump"
- Kit of "maximum safety level"
- Kit TDS (Total Dissolved Salts)
- Kit of "Automatic de-sludging" (Blow down)
- Kit of "72 hr exemption" for standard steam boiler. Supplied with electronic board panel Unical, model IML (Industrial Multi Logic)
- Pre-drilled burner plate
- Oil or gas fired burner

(*) The quantity and the model may vary according to the configuration.

Technical data

BAHR'UNO OR		140	160	200	300	400
Steam production	kg/h	140	160	200	300	400
Nominal output (*)	kW	94	107	134	201	268
Nominal input	kW	106	121	151	226	301
Total volume	l	410	410	410	730	730
ΔP smoke side	mbar	2.0	2.3	2.6	2.2	2.6
Burner head min. length	mm	340	340	340	340	340
Height	mm	1485	1485	1485	1630	1630
Width	mm	1560	1560	1560	1680	1680
Depth	mm	1865	1865	1865	2315	2315
Dry weight	kg	1030	1030	1030	1330	1330

BAHR'UNO OR		500	600	800	1000	1250
Steam production	kg/h	500	600	800	1000	1250
Nominal output (*)	kW	335	402	537	671	838
Nominal input	kW	376	452	603	754	942
Total volume	l	1040	1040	1545	1545	2250
ΔP smoke side	mbar	2.8	3.5	3.8	4.2	4.5
Burner head min. length	mm	340	340	340	340	370
Height	mm	1800	1800	1980	1980	2220
Width	mm	1800	1800	1940	1940	2085
Depth	mm	2515	2515	2885	2885	3322
Dry weight	kg	1630	1630	2130	2130	2740

BAHR'UNO OR		1500	1750	2000	2500	3000
Steam production	kg/h	1500	1750	2000	2500	3000
Nominal output (*)	kW	1006	1174	1341	1677	2012
Nominal input	kW	1130	1319	1507	1884	2261
Total volume	l	2250	2890	2890	4060	4060
ΔP smoke side	mbar	5.1	5.5	6.0	6.8	7.0
Burner head min. length	mm	370	370	370	370	370
Height	mm	2220	2350	2350	2725	2725
Width	mm	2085	2210	2210	2480	2480
Depth	mm	3322	3545	3545	3625	3625
Dry weight	kg	2740	3360	3360	4650	4650

(*) with feeding water temperature = 70°C and pressure = 1 bar

SMOOTH PIPES

They are formed by pipes with, inside, helical turbulators.

Efficiency up to 91%.
In function of working pressure of the boiler.

ESA PIPES (Unical patent)

They are formed by pipes with, inside, six 60° sectorial pipes.

Efficiency up to 93%.
In function of working pressure of the boiler.

ESALU PIPES (Unical patent)

They are formed by pipes with, inside, special inserts of different types and shapes.

Efficiency up to 96%.
In function of working pressure of the boiler.

BAHR'UNO

Low pressure steam generator, reversed flame, wet bottom, smoke pipe type, horizontal

- **Boiler body:** is made up of a cylindrical shell and a wet back furnace, made of high quality steel. All the materials have certificates attesting their chemical and mechanical characteristics, the controls are carried out during each production stage, and, theirs suitability for use as well. The welding seams are carried out by qualified personnel in compliance to certified procedures and are subjected to Non Destructive Tests, in accordance to an internal "Manufacturing and Control" program. Once the boilers have been manufactured they are subjected to hydraulic testing in accordance to the requirement 7.4 – Annex I, laid down in the Directive 97/23/CE (PED).
- **Smoke tubes:** made of high quality steel, are welded to tube plates. Pipes are equipped with steel turbulators or fitted with aluminum and/or steel inserts according the installed smoke tube.
- **Front door:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. The door is fitted with hinges which enable it to be easily adjusted and quickly opened. Moreover, the door is fitted with a self-cleaning sight glass for combustion control during boiler operation.
- **Rear smoke-box:** is built in welded steel plate and fixed on to the tube plate by nuts for an easy access to it. It is fitted with a small door for cleaning purposes and an horizontal flue connection, with a diameter sized to the boiler's output. The rear smoke-box is pre-arranged for the installation of an integral economizer.
- **The base:** is built with a steel frame, welded to the tube plates and closed with steel plates.
- **Walkway:** positioned on the top part of the boiler, is made of steel, covered with chequered plate and completed; on request with handrail and access ladder.
- **Insulation:** the shell is thermally insulated with a 100 mm rock wool cladding binded with high density, thick thermosetting resins, suitably supported and covered externally in 10/10 thick enamelled aluminum. The frontal parts of the boiler are also insulated with rock wool and covered externally with a metallic box.

Special versions

BAHR'UNO 24 hr / 72 hr

- Equipped with "IML board panel" to obtain the certification for operation "without continuous surveillance" up to a maximum of 24 hr.
- Equipped with "IML board panel" and "Kit 72 hr" to obtain:
  - the certification for operation "without continuous surveillance" for model until 2000 kg/h
  - the certification for operation "without continuous surveillance" up to a maximum of 72 hr for model over 2000 kg/h.

EC / HPOEC / HPEC versions

- To increase more the already high steam boiler efficiency, without influencing the dimensions the boilers are already preset to fit, on request (in the factory or later, on the field), the economizer Kit EC, which is specific for each model and is available for both, gas and oil versions.

Standard equipment: (*)

- Steam main globe valve.
- 2 spring loaded safety valves.
- 2 reflecting level indicators, with flanged connections, purging and cut-off cocks.
- 1 large manometer with 3 way cock for manometer calibration.
- 1 safety pressure switch with manual reset onto the board panel, CE PED certified.
- 1 limit working pressure switch.
- 1 regulation pressure switch for two stages burners or probe for modulating burners.
- 2 safety minimum level switches, with auto-diagnosis and manual reset on the board panel, CE certified.
- 2 water level probes for ON-OFF pump regulation.
- Feeding group complete with 2 centrifugal pumps.
- Valve assembly for feeding circuit, with relevant pipes already fitted.
- Automatic group for level control.
- 1 manual bottom blowdown valve.
- Man-hole on top and hand-hole on water side.
- Integral steam drier for high steam quality.
- Blind burner plate.
- Turbulators (STD version) or special high efficiency pipes fitted with inserts (HPO, HP versions).
- Lifting lugs.
- Control board panel IP55 400V - 3+N - 50Hz

Options:

- Spring actuated safety valve
- Kit of "Second boiler water feeding pump"
- Kit of "maximum safety level"
- Kit TDS (Total Dissolved Salts)
- Kit of "Automatic de-sludging" (Blow down)
- Kit of "72 hr exemption" for standard steam boiler. Supplied with electronic board panel Unical, model IML (Industrial Multi Logic)
- Pre-drilled burner plate
- Oil or gas fired burner

(*) The quantity and the model may vary according to the configuration.

Technical data

BAHR'UNO		140	160	200	300	400
Steam production	kg/h	140	160	200	300	400
Nominal output (*)	kW	94	107	134	201	268
Nominal input STD	kW	106	121	151	226	301
Nominal input HPO	kW	102	117	146	218	291
Nominal input HP	kW	99	112	141	212	282
Total volume	l	410	410	410	730	730
ΔP smoke side	mbar	2.6	2.8	3.0	3.7	4.2
Burner head min. length	mm	340	340	340	340	340
Height	mm	1485	1485	1485	1630	1630
Width	mm	1560	1560	1560	1680	1680
Depth	mm	1800	1800	1800	2350	2350
Dry weight	kg	1100	1100	1100	1460	1460

BAHR'UNO		500	600	800	1000	1250
Steam production	kg/h	500	600	800	1000	1250
Nominal output (*)	kW	335	402	537	671	838
Nominal input STD	kW	376	452	603	754	942
Nominal input HPO	kW	364	487	584	729	911
Nominal input HP	kW	353	423	565	706	882
Total volume	l	1040	1040	1545	1545	2250
ΔP smoke side	mbar	4.5	5.1	5.1	5.8	5.9
Burner head min. length	mm	340	340	340	340	370
Height	mm	1800	1800	1980	1980	2220
Width	mm	1800	1800	1940	1940	2085
Depth	mm	2555	2555	2950	2950	3410
Dry weight	kg	1840	1840	2240	2240	3190

BAHR'UNO		1500	1750	2000	2500	3000
Steam production	kg/h	1500	1750	2000	2500	3000
Nominal output (*)	kW	1006	1174	1341	1677	2012
Nominal input STD	kW	1130	1319	1507	1884	2261
Nominal input HPO	kW	1093	1276	1458	1823	2187
Nominal input HP	kW	1059	1236	1412	1765	2118
Total volume	l	2250	2890	2890	4060	4060
ΔP smoke side	mbar	6.7	6.7	7.6	7.6	8.6
Burner head min. length	mm	370	370	370	370	370
Height	mm	2220	2350	2350	2725	2725
Width	mm	2085	2210	2210	2480	2480
Depth	mm	3410	3765	3765	3858	3858
Dry weight	kg	3190	3970	3970	5640	5640

(*) with feeding water temperature = 70°C and pressure = 1 bar

BAHR'12 OR

High pressure steam generator, reversed flame, wet bottom, smoke pipe type, horizontal

- Standard safety pressure up to 12 bar (higher pressure available on request) and output from 300 to 6000 kg/h
- The appliance is designed to ensure low heating loads in the combustion chamber and low superficial loads
- **Boiler body:** is made up of a cylindrical shell and a wet back furnace, made of high quality steel. All the materials have certificates attesting their chemical and mechanical characteristics, the controls are carried out during each production stage, and, theirs suitability for use as well. The welding seams are carried out by qualified personnel in compliance to certified procedures and are subjected to Non Destructive Tests, in accordance to an internal "Manufacturing and Control" program. Once the boilers have been manufactured they are subjected to hydraulic testing in accordance to the requirement 7.4 – Annex I, laid down in the Directive 97/23/CE (PED)
- **Smoke tubes:** made of high quality steel, are welded to tube plates. Pipes are equipped with helical turbulators
- **Front door:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. The door is fitted with hinges which enable it to be easily adjusted and quickly opened. Moreover, the door is fitted with a self-cleaning sight glass for combustion control during boiler operation
- **Rear smoke-box:** is built in welded steel plate and fixed on to the tube plate by nuts for an easy access to it. It is fitted with a small door for cleaning purposes and the flue connection, with a diameter sized to the boiler's output. The rear smoke-box can be accessorized with and external economizer.
- **The base:** is built with a steel frame, welded to the tube plates and closed with steel plates
- **Walkway:** positioned on the top part of the boiler, is made of steel, covered with chequered plate and completed; on request with handrail and access ladder
- **Insulation:** the shell is thermally insulated with a 100 mm rock wool cladding binded with high density, thick thermosetting resins, suitably supported and covered externally in 10/10 thick enamelled aluminum.

SMOOTH PIPES

They are formed by pipes with, inside, helical turbulators.

Efficiency up to 90%.
In function of working pressure of the boiler.

ESA PIPES (Unical patent)

They are formed by pipes with, inside, six 60° sectorial pipes.

Efficiency up to 92%.
In function of working pressure of the boiler.

ESALU PIPES (Unical patent)

They are formed by pipes with, inside, special inserts of different types and shapes.

Efficiency up to 95%.
In function of working pressure of the boiler.

BAHR'12 OR

Standard equipment: (*)

- Steam main globe valve.
- 2 spring loaded safety valves.
- n. 2 reflecting level indicators, with flanged connections, purging and cut-off cocks.
- n. 1 large manometer with 3 way cock for manometer calibration.
- n. 1 safety pressure switch with manual reset onto the board panel, CE PED certified.
- n. 1 limit working pressure switch.
- n. 1 regulation pressure switch for two stages burners or probe for modulating burners.
- n. 2 safety minimum level switches, with auto-diagnosis and manual reset on the board panel, CE certified.
- n. 2 water level probes for ON-OFF pump regulation.
- Feeding group complete with 2 vertical multistage centrifugal pumps.
- Valve assembly for feeding circuit, with relevant pipes already fitted.
- Automatic group for level control.
- n. 1 manual bottom blowdown valve.
- Man-hole on top and hand-hole on water side.
- Integral steam drier for high steam quality.
- Blind burner plate.
- Carbon steel turbulators.
- Lifting lugs.
- Control board panel IP55 400V - 3+N - 50Hz

Options:

- Kit of "Second boiler water feeding pump"
- Kit of "maximum safety level"
- Kit TDS (Total Dissolved Salts)
- Kit of "Automatic de-sludging" (Blow down)
- Kit "72 hr" Supplied with electronic board panel Unical, model IML (Industrial Multi Logic)
- Kit EC (gas) / Kit EC (oil)
- Version with design pressure of 14.7 bar
- Pre-drilled burner plate according to request
- Oil or gas fired burner
- Emergency boiler water feeding group (steam injector)

(*) The quantity and the model may vary according to the configuration.

Technical data

BAHR'12 OR		300	400	500	600	800
Steam production	kg/h	300	400	500	600	800
Nominal output (*)	kW	204	273	341	409	560
Nominal input	kW	234	314	392	470	644
Total volume	l	730	730	1030	1030	1500
ΔP smoke side	mbar	2.2	2.6	2.8	3.5	3.8
Burner head min. length	mm	340	340	340	340	340
Height	mm	1820	1820	1940	1940	2077
Width	mm	1474	1474	1861	1861	1996
Depth	mm	2320	2320	2530	2530	2900
Dry weight	kg	1620	1620	2010	2010	2830

BAHR'12 OR		1000	1250	1500	1750	2000
Steam production	kg/h	1000	1250	1500	1750	2000
Nominal output (*)	kW	700	852	1022	1193	1363
Nominal input	kW	805	979	1175	1371	1597
Total volume	l	1500	2195	2195	2810	2810
ΔP smoke side	mbar	4.2	4.5	5.1	5.5	6.0
Burner head min. length	mm	340	370	370	370	370
Height	mm	2077	2294	2294	2422	2422
Width	mm	1996	2126	2126	2246	2246
Depth	mm	2900	3259	3259	3559	3559
Dry weight	kg	2830	3710	3710	4610	4610

BAHR'12 OR		2500	3000	4000	5000	6000
Steam production	kg/h	2500	3000	4000	5000	6000
Nominal output (*)	kW	1704	2045	2726	3408	4089
Nominal input	kW	1926	2310	3133	3917	4700
Total volume	l	3950	3950	5780	7730	8600
ΔP smoke side	mbar	6.8	7.0	8.0	8.8	8.8
Burner head min. length	mm	370	370	370	370	370
Height	mm	2774	2774	3031	3173	3315
Width	mm	2296	2296	2756	2856	3026
Depth	mm	3640	3640	4107	4590	4810
Dry weight	kg	6560	6560	8980	10540	11750

(*) with feeding water temperature = 80°C and pressure = 12 bar

BAHR'12 OR

SMOOTH PIPES

They are formed by pipes with, inside, helical turbulators.

Efficiency up to 90%.
In function of working pressure of the boiler.

ESA PIPES (Unical patent)

They are formed by pipes with, inside, six 60° sectorial pipes.

Efficiency up to 92%.
In function of working pressure of the boiler.

ESALU PIPES (Unical patent)

They are formed by pipes with, inside, special inserts of different types and shapes.

Efficiency up to 95%.
In function of working pressure of the boiler.

BAHR'12

High pressure steam generator, reversed flame, wet bottom, smoke pipe type, horizontal

- Standard safety pressure up to 12 bar (higher pressure available on request) and output from 300 to 6000 kg/h.
- The appliance is designed to ensure low heating loads in the combustion chamber and low superficial loads
- **Boiler body:** is made up of a cylindrical shell and a wet back furnace, made of high quality steel. All the materials have certificates attesting their chemical and mechanical characteristics, the controls are carried out during each production stage, and, theirs suitability for use as well. The welding seams are carried out by qualified personnel in compliance to certified procedures and are subjected to Non Destructive Tests, in accordance to an internal "Manufacturing and Control" program. Once the boilers have been manufactured they are subjected to hydraulic testing in accordance to the requirement 7.4 – Annex I, laid down in the Directive 97/23/CE (PED).
- **Smoke tubes:** made of high quality steel, are welded to tube plates. Pipes are equipped with steel turbulators or fitted with aluminum and/or steel inserts according the installed smoke tube.
- **Front door:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. The door is fitted with hinges which enable it to be easily adjusted and quickly opened. Moreover, the door is fitted with a self-cleaning sight glass for combustion control during boiler operation.
- **Rear smoke-box:** is built in welded steel plate and fixed on to the tube plate by nuts for an easy access to it. It is fitted with a small door for cleaning purposes and an horizontal flue connection, with a diameter sized to the boiler's output. The rear smoke-box is pre-arranged for the installation of an integral economizer.
- **The base:** is built with a steel frame, welded to the tube plates and closed with steel plates.
- **Walkway:** positioned on the top part of the boiler, is made of steel, covered with chequered plate and completed; on request with handrail and access ladder.
- **Insulation:** the shell is thermally insulated with a 100 mm rock wool cladding binded with high density, thick thermosetting resins, suitably supported and covered externally in 10/10 thick enamelled aluminum. The frontal parts of the boiler are also insulated with rock wool and covered externally with a metallic box.

Special versions

BAHR'12 24 hr / 72 hr

- equipped with "IML board panel" to obtain the certification for operation "without continuous surveillance" up to a maximum of 24 hr.
- equipped with "IML board panel" and "Kit 72 hr" to obtain the certification for operation "without continuous surveillance" up to a maximum of 72 hr.

EC / HPOEC / HPEC versions

- To increase more the already high steam boiler efficiency, without influencing the dimensions the boilers are already preset to fit, on request (in the factory or later, on the field), the economizer Kit EC, which is specific for each model and is available for both, gas and oil versions.

Standard equipment: (*)

- Steam main globe valve.
- n. 2 spring loaded safety valves.
- n. 2 reflecting level indicators, with flanged connections, purging and cut-off cocks.
- n. 1 large manometer with 3 way cock for manometer calibration.
- n. 1 safety pressure switch with manual reset onto the board panel, CE PED certified.
- n. 1 limit working pressure switch.
- n. 1 regulation pressure switch for two stages burners or probe for modulating burners.
- n. 2 safety minimum level switches, with auto-diagnosis and manual reset on the board panel, CE certified.
- n. 2 water level probes for ON-OFF pump regulation.
- Feeding group complete with 2 vertical multistage centrifugal pumps.
- Valve assembly for feeding circuit, with relevant pipes already fitted.
- Automatic group for level control.
- n. 1 manual bottom blowdown valve.
- Man-hole on top and hand-hole on water side.
- Integral steam drier for high steam quality.
- Blind burner plate.
- Turbulators (STD version) or special high efficiency pipes fitted with inserts (HPO, HP versions).
- Lifting lugs.
- Control board panel IP55 400V - 3+N - 50Hz

Options:

- Kit of "Second boiler water feeding pump"
- Kit of "maximum safety level"
- Kit TDS (Total Dissolved Salts)
- Kit of "Automatic de-sludging" (Blow down)
- Kit "72 hr" Supplied with electronic board panel Unical, model IML (Industrial Multi Logic)
- Kit EC (gas) / Kit EC (oil)
- Version with design pressure of 14.7 bar
- Pre-drilled burner plate according to request
- Oil or gas fired burner
- Emergency boiler water feeding group (steam injector)

Technical data

BAHR'12		300	400	500	600	800
Steam production	kg/h	300	400	500	600	800
Nominal output (*)	kW	204	273	341	409	560
Nominal input STD	kW	234	314	392	470	644
Nominal input HPO	kW	227	303	379	454	606
Nominal input HP	kW	222	297	371	445	592
Total volume	l	730	730	1030	1030	1500
ΔP smoke side	mbar	2.2	2.6	2.8	3.5	3.8
Burner head min. length	mm	340	340	340	340	340
Height	mm	1820	1820	1940	1940	2077
Width	mm	1474	1474	1861	1861	1996
Depth	mm	2340	2340	2565	2565	2950
Dry weight	kg	1650	1650	2040	2040	2860

BAHR'12		1000	1250	1500	1750	2000
Steam production	kg/h	1000	1250	1500	1750	2000
Nominal output (*)	kW	700	852	1022	1193	1363
Nominal input STD	kW	805	979	1175	1371	1597
Nominal input HPO	kW	758	947	1136	1326	1514
Nominal input HP	kW	741	926	1111	1297	1482
Total volume	l	1500	2195	2195	2810	2810
ΔP smoke side	mbar	4.2	4.5	5.1	5.5	6.0
Burner head min. length	mm	340	370	370	370	370
Height	mm	2077	2294	2294	2422	2422
Width	mm	1996	2126	2126	2246	2246
Depth	mm	2950	3414	3414	3543	3543
Dry weight	kg	2860	3750	3750	4650	4650

BAHR'12		2500	3000	4000	5000	6000
Steam production	kg/h	2500	3000	4000	5000	6000
Nominal output (*)	kW	1704	2045	2726	3408	4089
Nominal input STD	kW	1926	2310	3133	3917	4700
Nominal input HPO	kW	1893	2272	3029	3787	4543
Nominal input HP	kW	1852	2223	2963	3704	4445
Total volume	l	3950	3950	5780	7730	8600
ΔP smoke side	mbar	6.8	7.0	8.0	8.8	8.8
Burner head min. length	mm	370	370	370	370	370
Height	mm	2774	2774	3031	3173	3315
Width	mm	2296	2296	2756	2856	3026
Depth	mm	3860	3860	4360	4943	5236
Dry weight	kg	6600	6600	9030	10590	11800

(*) with feeding water temperature = 80°C and pressure = 12 bar

BAHR'12

TRYPASS' (STD - Low NOx - Low NOx E)

High pressure steam generator, three pass, smoke pipe type, horizontal

- Models range with steam production from 1300 to 22000 kg/h, that are differentiated, according to the NOx emission level, in: STD - Low NOx - Low NOx E
- **Boiler body:** is made of a cylindrical shell and a wet back furnace, dished and butt welded tube plates, made of high quality steel. All the materials have certificates attesting their chemical and mechanical characteristics, the controls are carried out during each production stage, and, theirs suitability for use as well. The welding seams are carried out by qualified personnel in compliance to certified procedures and are subjected to Non Destructive Tests, in accordance to an internal "Manufacturing and Control" program. Once the boilers have been manufactured they are subjected to hydraulic testing in accordance to the requirement 7.4 – Annex I, laid down in the Directive 97/23/CE (PED).
- **Smoke tubes:** made of high quality steel, are welded to tube plates, and are without helical turbulators.
- **Reversing chamber:** is built in welded steel plate, completely water-cooled, and connected to the rear smoke-box with supports and manhole.
- **Front smoke-box:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. Two doors for cleaning and inspection are fitted with hinges to be quickly opened. Close to the burner hole is present a self-cleaning sight glass for combustion control during boiler operation.
- **Rear smoke-box:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. Two doors for cleaning and inspection are fitted with hinges to be quickly opened. Complete with an horizontal chimney connection with a diameter sized to the boiler's output, and a self-cleaning sight glass for combustion control. The rear smoke-box can be accessorized with and external economizer.
- **The base:** is built with a steel frame, welded to the tube plates and closed with steel plates.
- **Walkway:** positioned on the top part of the boiler, is made of steel, covered with chequered plate and completed; on request with handrail and access ladder.
- **Insulation:** the shell is thermally insulated with a 100 mm rock wool cladding binded with high density, thick thermosetting resins, suitably supported and covered externally in 10/10 thick enamelled aluminum.

Special versions for all models

TRYPASS' 24 hr / 72 hr

- equipped with "IML board panel" to obtain the certification for operation "without continuous surveillance" up to a maximum of 24 hr.
- equipped with "IML board panel" and "Kit 72 hr" to obtain the certification for operation "without continuous surveillance" up to a maximum of 72 hr.

IML Board panel (optional)

Efficient thermal insulation

TRYPASS'

Standard equipment: (*)

- Steam main globe valve.
- n. 2 spring loaded safety valves.
- n. 2 reflecting level indicators, with flanged connections, purging and cut-off cocks.
- n. 1 large manometer with 3 way cock for manometer calibration.
- n. 1 safety pressure switch with manual reset onto the board panel, CE PED certified.
- n. 1 limit working pressure switch.
- n. 1 regulation pressure switch for two stages burners or probe for modulating burners.
- n. 2 safety minimum level switches, with auto-diagnosis and manual reset on the board panel, CE certified.
- n. 2 water level probes for ON-OFF pump regulation.
- Feeding group complete with 2 vertical multistage centrifugal pumps.
- Valve assembly for feeding circuit, with relevant pipes already fitted.
- Automatic group for level control.
- n. 1 manual bottom blowdown valve.
- Man-hole on top and hand-hole on water side.
- Integral steam drier for high steam quality.
- Blind burner plate.
- Lifting lugs.
- Control board panel IP55 400V - 3+N - 50Hz

(*) The quantity and the model may vary according to the configuration.

Options:

- Kit of a "Second boiler water feeding pump", Kit of "maximum safety level", Kit TDS (Total Dissolved Salts), Kit of "Automatic de-sludging" (Blow down), Kit "72 hr" Supplied with electronic board panel Unical, model IML (Industrial Multi Logic), External Kit economizer and modulating boiler water, feeding group, Pre-drilled burner plate according to request, Oil or Gas fired burner, Ladder and walkway

Technical data STD version

TRYPASS' STD		2000	3200	4700	6300	7900
Steam production	kg/h	2000	3200	4700	6300	7900
Nominal output (*)	kW	1363	2181	3176	4393	5384
Nominal input	kW	1558	2493	3589	4934	6118
ΔP smoke side	mbar	13	13	15	15	18
Burner head min. length	mm	450	450	500	500	500
Height	mm	2785	2935	3130	3375	3610
Width	mm	2310	2460	2610	2810	2960
Depth	mm	4360	4910	5410	5760	6010
Weight	kg	9000	10500	12000	13500	16500

TRYPASS' STD		9400	12500	15700	18000	21600
Steam production	kg/h	9400	12500	15700	18000	21600
Nominal output (*)	kW	6406	8519	10700	12267	14721
Nominal input	kW	7238	9572	11955	13706	16448
ΔP smoke side	mbar	22	24	32	35	28
Burner head min. length	mm	550	550	600	600	700
Height	mm	3685	3810	3855	4070	4300
Width	mm	3040	3210	3360	3560	3810
Depth	mm	6210	7010	7410	7610	7810
Weight	kg	19500	22500	25500	28500	32000

(*) with feeding water temperature = 80°C and pressure = 12 bar

Technical data Low NOx version

TRYPASS' Low NOx		1700	2500	3750	5000	6250
Steam production	kg/h	1700	2500	3750	5000	6250
Nominal output (*)	kW	1159	1704	2534	3408	4259
Nominal input	kW	1317	1936	2847	3873	4785
ΔP smoke side	mbar	7	8	10	9	11.5
Burner head min. length	mm	450	450	500	500	500
Height	mm	2785	2935	3130	3375	3610
Width	mm	2310	2460	2610	2810	2960
Depth	mm	4360	4910	5410	5760	6010
Weight	kg	9000	10500	12000	13500	16500

TRYPASS' Low NOx		7500	10000	12500	14400	17250
Steam production	kg/h	7500	10000	12500	14400	17250
Nominal output (*)	kW	5111	6815	8519	9814	11756
Nominal input	kW	5743	7572	9466	10904	13435
ΔP smoke side	mbar	15	16	20	23	27
Burner head min. length	mm	550	550	600	600	700
Height	mm	3685	3810	3855	4070	4300
Width	mm	3040	3210	3360	3560	3810
Depth	mm	6210	7010	7410	7610	7810
Weight	kg	19500	22500	25500	28500	32000

Technical data Low NOx E version

TRYPASS' Low NOx E		1300	2000	3000	4000	5000
Steam production	kg/h	1300	2000	3000	4000	5000
Nominal output (*)	kW	886	1363	2045	2726	3408
Nominal input	kW	996	1531	2285	3080	3808
ΔP smoke side	mbar	4.5	5.5	6	6	7.5
Burner head min. length	mm	450	450	500	500	500
Height	mm	2785	2935	3130	3375	3610
Width	mm	2310	2460	2610	2810	2960
Depth	mm	4360	4910	5410	5760	6010
Weight	kg	9000	10500	12000	13500	16500

TRYPASS' Low NOx E		6000	8000	10000	12000	15000
Steam production	kg/h	6000	8000	10000	12000	15000
Nominal output (*)	kW	4089	5452	6815	8178	10223
Nominal input	kW	4569	6058	7572	9087	11359
ΔP smoke side	mbar	9	11	13	16	21
Burner head min. length	mm	550	550	600	600	700
Height	mm	3685	3810	3855	4070	4300
Width	mm	3040	3210	3360	3560	3810
Depth	mm	6210	7010	7410	7610	7810
Weight	kg	19500	22500	25500	28500	32000

(*) with feeding water temperature = 80°C and pressure = 12 bar

BASIC

- One and two stage burner regulation
- ON / OFF level regulation
- N. 2 safety level switches on low level
- N. 1 PED safety level switch on low level
- Terminal strip on fast coupling connectors
- Expandability through optional kits
- Electrical protection degree IP 55

Regualtion simplicity

The boiler regulation is committed to a board panel with electromechanical components that allows to obtain numerous advantages, among which:

- Simple use
- Kit fitting:
  - high level
  - management of a second water feeding pump

Installation

The board panel is supplied with fast multi-pole connections that simplify the installation on to the boiler.

Safety

- The board panel allows the automatic regulation of the steam boiler;
- On the board panel are fitted the components that allow, if necessary, the manual operation of the steam boiler.

IMC (Industrial Multi Cabling)

- One and two stage burner regulation
- ON / OFF level regulation
- N. 2 PED safety level switches on low level
- Terminal strip on fast coupling connectors
- Expandability through optional kits
- Electrical protection degree IP 55

Simplicity and functionality

The boiler regulation is committed to a board panel with electromechanical components that allows to obtain numerous advantages, among which:

- simple use;
- complete control of all the requested functionalities;
- mounting of numerous optional kits.

The “IMC” system is made with components that allow a modular management. The harness is so designed that the system can operate in many configurations.

Installation

The board panel is supplied with fast multi-pole connections that simplify the installation on to the boiler.

Safety

- The board panel allows the automatic regulation of the steam boiler.
- It is configurated for the alarms signalling; the management of the boiler safety devices is designed according to the rules in force.
- On the board panel are fitted the components that allow, if necessary, the manual operation of the steam boiler.

BOARD PANELS

IML (Industrial Multi Logic)

- Regulation PLC
- Touch screen 7” display with graphic interface
- One, two, three stage or modulating burner
- ON / OFF or modulating level regulation with valve or with inverter
- N. 2 PED safety level switches on low level
- Terminal strip on fast coupling connectors
- Expandability through optional kits
- Electrical protection degree IP 55

Simplicity and functionality

Numerous advantages, among which:

- operation with multiple logic;
- simple use;
- efficient regulation;
- complete control of all the requested functionalities;
- approval for 24/72 hr operation w/o continuous surveillance.
- modular management.
- display and the synoptic representation of the boiler
- The board panel manages completely all the operational and safety parameters during the operation periods, without continuous surveillance up to a maximum of 72 hrs.
- The central unit is prearranged for the connection to additional expansion units. The expansion allows:
  - to perform boiler cascade systems (with master-slave logic);
  - to connect the steam boiler to a supervision system (SCADA);
  - to connect the control via GSM for the remotation of alarm signals;
  - to control other devices present in the system

The IML board panel allows the function of the “guided service” (SAFE SERVICE) for performing the routine controls by the person authorised to the operation, at the expiring of the without surveillance operation period. The controls results are stored in an internal database, transferable on an archives through USB port on the L.H. side panel.

The board panel is supplied with fast multi-pole connections, that make easy the installation on to the steam boiler.

- The electronic regulator replaces only the regulation components;
- The board panel is set for the alarm signalling on the display; the management of the boiler safety devices remains of electromechanical type.
- On to the board panel are also fitted the components that allow, if necessary, the manual operation of the steam boiler.

BOARD PANEL COMPARISON TABLE

DESCRIPTION OF FUNCTIONS			BASIC	IMC	IML
Elettromechanical components for regulation and safeties			●	●	●
Regulation with PLC			–	–	●
Graphical user interface with 7" touch screen display			–	–	●
Fast connection terminal			●	●	●
Electrical prearrangement for kits mounting			–	●	●
Forced and thermostat controlled cooling system			–	●	●
Differentiated management of the boiler with economiser installed			–	–	●
First controlled water filling mode			–	–	●
Boiler starting mode from cold			–	–	●
Burner	Pressure transducer		–	–	●
	Pressure continuous visualization		–	–	●
	One stage		●	●	●
	Two stage		●	●	●
	Three stage		○	○	●
	Modulating (3 points)		– (1)	– (1)	●
	Modulating (analogic+feed back signal)		– (1)	– (1)	●
Level	Capacity sensor level transducer		–	○	●
	Continuous visualization of water level		–	–	●
	Pump manual operation function		●	●	●
	Water feeding pump ON/OFF regulation		●	●	●
	Modulating regulation with solenoid valve (3 points)	KIT MODUL V	–	○	●
	Modulating regulation with pneumatic valve (analogic+feed back signal)	KIT MODUL V	–	○	●
	Two stage regulation with inverter	KIT INVERTER	–	–	○
	Modulating regulation with inverter	KIT INVERTER	–	–	○
	Second water feeding pump control		○	○	○
	Automatic changeover between 1st & 2nd pump for load & consumption sharing	Kit 2ª POMPA	–	–	○
	Pump 2 manual operation function		○	○	○
	1st safety low water level control, PED approved		●	●	●
	2nd safety low water level control, PED approved		●	●	●
	Software safety limit for high water level		–	–	●
	Safety basic level switch for high water level	KIT HWL std	○	○	○
	Safety PED approved level switch for high water level	KIT HWL	○	○	○
TDS	Adjusting and safety system for the salt quantity dissolved in the boiler water	KIT TDS1	–	○	○
	Adjusting and safety system for the salt quantity dissolved in the boiler water equipped with self cleaning sensor	KIT TDS2	–	○	○
Drain	Time controlled drains with desludging function	KIT BLOW DOWN	○	○	○
Remote control	Alarm signal remotation	KIT REMOTE ALARM	–	○	○
	Via cable remote control system	KIT REMOTE CONTROL	–	–	○
	Via WEB remote control system	KIT WEB CONTROL	–	–	○
Service	Supervision for ordinary service works		–	–	●
	Supervision for extra-ordinary service works		–	–	●
Management	Exemption from continuous suveillance up to 24 hrs		–	–	○
	Exemption from continuous suveillance up to 72 hrs		–	–	○
	Total exemption (only for BAHR'UNO boilers)		–	○	○

LEGENDA	
–	NOT AVAILABLE
○	OPTIONAL
●	STD. SUPPLIED

(1) Possible with external burner regulator

SRC

Condensate collector tank for steam boilers in carbon steel (in stainless steel on request)

- Reservoir of feeding water for steam boiler, predisposed for the collection and the storage of the condensate, and for the eventual refill of treated water.
- Execution in horizontal cylindrical shape, with convex end-plates.
- It is mounted on a stable steel support device and designed for installing either at ground level or at higher level to avoid the cavitation phenomenon.
- Complete with an electronic water level management system and related alarms (low and high levels).
- The mix of the condensate return and the chemically treated water is automatic.
- Insulated with high-density rock wool and covered with embossed aluminum foil.

The tank is composed by the following groups:

- Feed water tank made of steel
- Magnetic level indicator
- Probes for water level control
- Inlet water line with pneumatic valve
- Degassed hot water supply to boiler
- Air vent
- Overflow
- Drain
- Temperature gauge
- Pressure gauge
- Board panel IP55.

Technical data

SRC		500	1000	1500	2000	2500	3000
Water content at level	l	325	650	975	1300	1625	1950
Total volume	l	500	1000	1500	2000	2500	3000
Height	mm	1330	1440	1690	1845	1845	1915
Width	mm	1030	1230	1480	1570	1570	1650
Depth	mm	1970	2400	2315	1935	2990	3080
Dry weight	mm	330	460	515	560	665	765

SRC		4000	5000	8000	10000	16000
Water content at level	l	2800	3500	5600	7000	11200
Total volume	l	4000	5000	8000	10000	16000
Height	mm	2090	2300	2420	2500	2810
Width	mm	1780	1980	2070	2070	2370
Depth	mm	3060	3130	4750	5215	5960
Dry weight	mm	950	1060	1630	1740	2430

SRC

DEAR

Atmospheric deaerator for steam boilers in carbon steel (in stainless steel on request)

- The atmospheric deaerator is a steam heated feed water tank necessary for a (partial) deaeration process.
- The steam, necessary to reduce the quantity of dissolved gases in the water, is injected through a sparging tube positioned in the lower part of the tank
- The steam injection is controlled, by an electromechanical thermostat set to the temperature of 95°C
- Execution in horizontal cylindrical shape, with convex end-plates, and mounted on a stable steel support device designed for installing at proper height to avoid the cavitation phenomenon
- Complete with an electronic water level management system and related alarms (low and high levels)
- Insulated with high-density rockwool and covered with embossed aluminum foil

Standard-production equipment:

- Deaerator tank made of steel
- Steam injection system
- Magnetic level indicator
- Probes for water level control
- Inlet water line with pneumatic valve and filter
- Condensate return inlet
- Degassed hot water supply to boiler
- Air vent
- Overflow
- Drain valve
- Temperature gauge
- Pressure gauge
- Board panel IP55.

Technical data

DEAR		500	1000	1500	2000	2500	3000
Water content at level	l	325	650	975	1300	1625	1950
Total volume	l	500	1000	1500	2000	2500	3000
Degassing capacity	l/h	500	1000	1500	2000	2500	3000
Height	mm	1330	1440	1690	1845	1845	1915
Width	mm	1045	1245	1495	1585	1585	1665
Depth	mm	1970	2400	2315	1935	2990	3080
Dry weight	mm	350	480	535	580	685	785

DEAR		4000	5000	8000	10000	16000
Water content at level	l	2800	3500	5600	7000	11200
Total volume	l	4000	5000	8000	10000	16000
Degassing capacity	l/h	4000	5000	8000	10000	16000
Height	mm	2090	2300	2420	2500	2810
Width	mm	1795	1995	2085	2085	2385
Depth	mm	3060	3130	4750	5215	5960
Dry weight	mm	970	1080	1650	1760	2450

DEAR

DETE

Pressurized deaerator for steam boilers in carbon steel

- Pressurized deaerator tank, necessary for a thermal full deaeration of the feed water.
- Best working conditions (temperature 105°C and internal pressure about 0.4 bar) are electronically controlled and managed.
- The steam, necessary to remove the dissolved gases in the water, is introduced through injectors positioned in the lower part of the reservoir and, through a modulating valve, in the degassing tower as well.
- Execution in horizontal cylindrical shape, with convex end-plates, and mounted on a stable steel support device designed for installing at proper height to avoid the cavitation phenomenon.
- Complete with an electronic water level management system and related alarms (low and high levels).
- Insulated with high-density rockwool and covered with embossed aluminum foil.
- This devide undergoes the limits of application of the art. 3 par. 3 of the PED Directive 97/23/CE.

NOTE: The pressurized deaeration must always be coupled with a chemical deaeration.

Standard-production equipment:

- Deaerator tank
- Steam injection system
- Magnetic level indicator
- Probes for water level control
- Inlet water line with pneumatic valve and filter
- Condensate return inlet
- Air vent
- Overflow
- Drain valve
- Temperature gauge
- Pressure gauge
- Safety valve
- Recyrculation pump
- Steam inlet valve
- Degassed hot water supply to boiler
- Board panel IP55.

Technical data

DETE		1000	2000	4000	6000	8000	10000	16000
Min. degassed water flow	kg/h	300	1750	4000	6000	10000	-	-
Max. degassed water flow	kg/h	1500	3000	5000	8000	12000	15000	22000
Nominal volume	m³	700	1400	2800	4200	5600	7000	11200
Total volume	m³	1000	2000	4000	6000	8000	10000	16000
Pressione alimentaz. acqua	bar	1045	1245	1495	1585	1585	1665	1665
Design pressure	bar	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Degassed water temperature	°C	105	105	105	105	105	105	105
Height	mm	2280	2730	2980	3330	3480	3530	3630
Width	mm	1550	1900	2100	1300	2400	2400	2400
Depth	mm	2420	2300	3030	3270	4545	5045	5980
Dry weight	kg	890	990	1460	1720	1980	2290	3100

DETE

SERBHA

Blow down collection cooling tank for steam boilers in carbon steel

- Atmospheric blowdown vessel complete with cooling water system to reduce the boiler waste fluids temperature before the drain into the waste water plant
- Made of steel, vertical tank complete with supporting, externally painted.
- It has available many flanged connections for blowdown input and waste water disposal.
- Designed in conformity with PED 97/23 CE Directive

Standard-production equipment:

- Automatic temperature regulation system
- Cold water inlet connection
- Overflow
- Manual drain valve
- Air vent
- Temperature gauge
- Pressure gauge.

Technical data

SERBHA		100	300	500	800	1200
Water content at level	l	100	300	500	800	1200
Total volume	l	200	600	1000	1600	2400
Height	mm	1390	1900	2290	2680	2910
Width	mm	750	970	1050	1250	1420
Depth	mm	990	1190	1290	1430	1650
Dry weight	mm	140	210	270	370	520

SERBHA

Technical data

DÏATHER		120	230	350	465	700	930	1160
Potenza nominale	kW	116	232	348	465	697	930	1163
Portata termica	kW	1500	3000	5000	8000	12000	15000	22000
Contropressione	mbar	1.5	2.0	2.5	3.0	3.4	3.5	3.8
Lughezza testa bruciatore min/max	mm	150 200	190 250	220 300	220 300	220 300	220 300	220 300
Altezza	mm	2280	2730	2980	3330	3480	3530	3630
Larghezza	mm	1550	1900	2100	1300	2400	2400	2400
Profondità	mm	2420	2300	3030	3270	4545	5045	5980
Peso a vuoto	kg	890	990	1460	1720	1980	2290	3100

DÏATHER		1500	1900	2300	2900	3500	4650	5800
Potenza nominale	kW	1512	1861	2326	2907	3489	4652	5815
Portata termica	kW	1738	2139	2673	3342	4010	5347	6684
Contropressione	mbar	4.0	4.2	4.5	4.5	5.0	6.0	7.0
Lughezza testa bruciatore min/max	mm	220 300	220 300	220 300	250 300	250 300	250 300	250 300
Altezza	mm	2280	2730	2980	3330	3480	3530	3630
Larghezza	mm	1550	1900	2100	1300	2400	2400	2400
Profondità	mm	2420	2300	3030	3270	4545	5045	5980
Peso a vuoto	kg	890	990	1460	1720	1980	2290	3100

DÏATHER

Three pass thermal oil heater. Horizontal design, vertical on request.

- Coil: two concentric coils with bottom screen, inserted in the outer shell, hermetically sealed to the smokes, formed by drawn up pipes of seamless steel tubes type, wound in spiral, in quality steel of suitable thickness.
- Bottom: of the boiler body boiler, bolted, insulated and endowed with cleaning door and smoke chamber connection to the chimney
- Front door: is built in welded steel plate, of wide dimensions to facilitate the operations of maintenance, hinged, insulated with refractory material and endowed with flame sight glass and burner plate
- Furnace: with passing flame, accessible from the front door
- The base: is built with a steel frame.
- Insulation: the shell is thermally insulated with a double layer of rock wool cladding, suitably supported and covered externally of aluminum.

Standard equipment: (*)

- 2 flanged connections (flow and return)
- Group of gaskets, bolts and counter flanges for flanged connections.
- 1 differential pressure switch.
- 2 manometers on flow and return manifolds.
- Drain valve.
- Lifting lugs.
- Control board panel IP55 400V - 3+N - 50Hz
- Document folder enclosing:

- Manufacturer's Declaration of Conformity.
- Installation, operation and service manuals.
- Certificates of safety components.
- Control board's electric schemes and related Declaration of Conformity.

Optional equipment:

- Casing in stainless steel
- Single circulation oil pump unit
- Double circulation oil pump unit
- Board panel
- Expansion tank for thermal oil in the atmoshperic and pressurised version
- Thermal oil collection vessel
- Plant oil circulation pump f
- Dearator
- Combustion air preheater

(*) The quantity and the model may vary according to the configuration.

DÏATHER'

STRATINOX

A complete and reliable floor heating system STRATINOX is a floor heating and cooling system

Pipes

Available with diameter 17 and 20 mm, 2 mm thick, the pipes are delivered in rolls of 200, 500 or 600 meters.

PE-X pipes (Cross-linked Polyethylene)

PE-Xc, with E.V.OH barrier:

- The row material is a high density polyethylene (HD PE) with an ultrahigh-molecular-weight and a special stability, whose electro-physical treatment grants an high standard of homogeneity of Cross-linking (reticulation) on the whole mass of pipes. The presence of E.V.OH. barrier guarantee the conformity to the norm DIN 4726.

PE-Xa, with E.V.OH. barrier:

- The row material is a high density polyethylene (HD PE) with an ultrahigh-molecular-weight; its reticulation, obtained by chemical treatment with peroxide at very high pressure, gives the pipes a particular malleability and an utilization ease. The presence of E.V.OH. barrier grants the conformity to the norm DIN 4726.

Insulating board

The Unical insulating boards allow to realize a complete floor heating system, all from one supplier. Clean installation with the help of two possible systems that fulfil the requirements of European standards.

- Board in EPS (Expanded Polystyrene) of bossed type, modular system: EPS 300, 10 mm thick - EPS 200, 20 or 30 mm thick. Base for PE-X pipes (17/20 mm dia.).
- Board in EPS of plane type, with a PS film: EPS 150, 30 mm thick.

Manifolds

Manifolds, completely made in stainless steel, for 3 to 12 circuits. Corrosion -resistant, long service life, low weight, low depth, simple connection possibilities, appealing design

Floor Heating Accessories

- Automatic regulations
- Circuit balancing devices
- Pipes fixing systems
- Tools for heating systems

Floor Cooling Accessories

- Cooling and de-humidification controller
- Pre-assembled and pre-insulated mixing groups
- De-humidifiers and de-humidifiers/conditioners for built-in and false-ceiling mounting

STRATINOX

NOTES

NOTES

cod. 27501 - ed. 1 - 03/2016

Unical®

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