Unical®

GENERAL
CATALOGUE

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AMI
Absolutely Made in Italy

Unical produces boilers, both for domestic and commercial use, as well as air conditioning systems, with the greatest observance for the "Quality of life";
- *greatest comfort,*
- *higher safety,*
- *lower energy consumption,*
- *high environmental respect.*

Unical products, technologically innovative, anticipate the continuous evolution of the market. Since 1972, year of Unical's foundation, important investments have been repeatedly destinated to the planning and construction of job centres, which assure high quality standards during all different phases of industrial production, as well as to the research and experimentation that allow the development of a constant technological innovation.

The largest volumes of production are concentrated in the factories of Caorso (PC) and Carbonara PO (MN), as they are in the forefront for automation and robotization.
In the first factory wall hung and floor standing gas fired boilers, both with atmospheric or premixed burners, (from 3 to 900 kW) are assembled; in the second one, floor standing atmospheric gas boilers, wood fired boilers and steel boilers equipped with oil or gas pressure jet burners (from 11 to 4000 kW).
From the strong employment of qualified human resources and from the significant investments in research, development and training, are born the

Unical's projects for the future, the challenges and the ideas that turn to be successful products.
The electronics and laboratory experimentation are one of the keys that allow to obtain results updated to the best international technology.
Capillarity, reliability and swiftness are granted from a net of technicians, trained and continuously updated at the Study Centre of Caorso, by specific courses, both theoretical and practical, with particular attention to the sector rules update.

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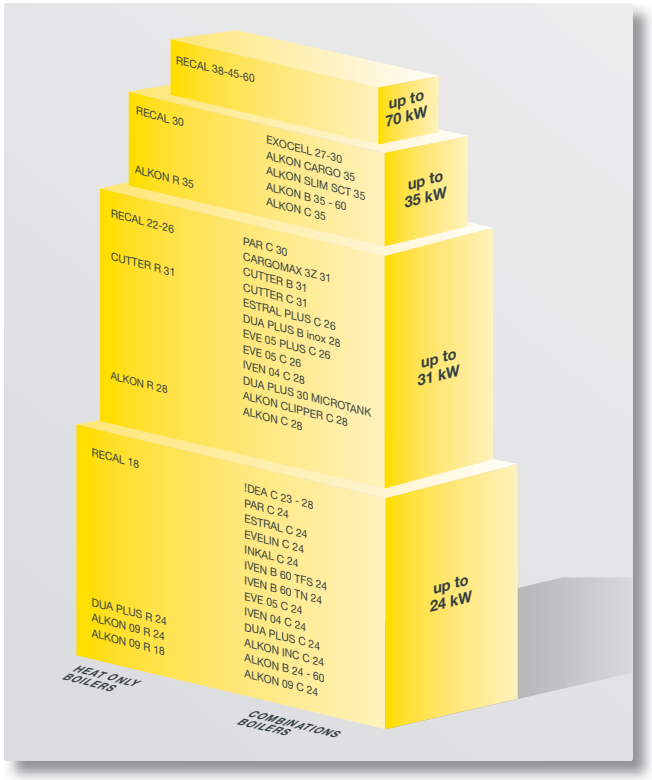
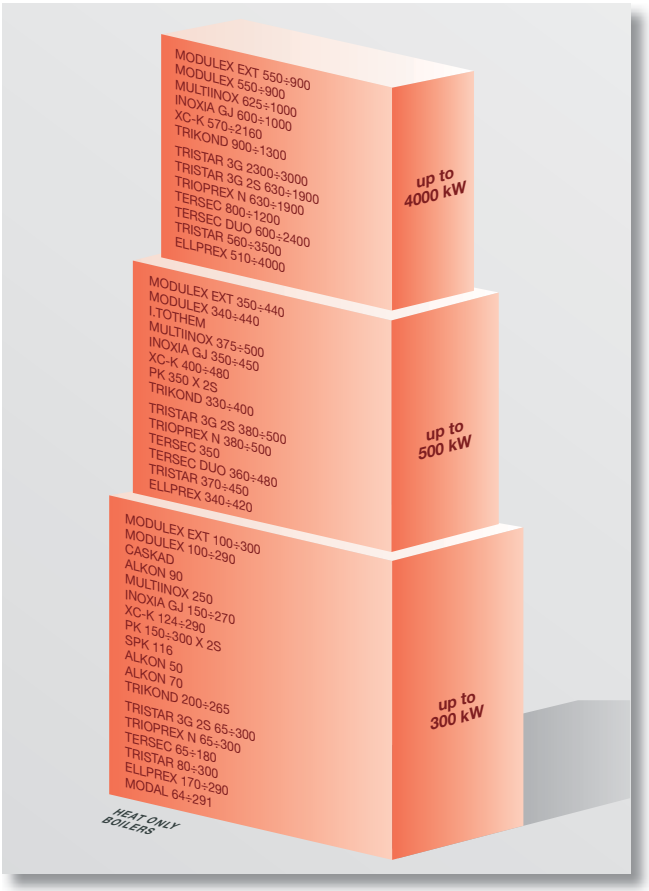
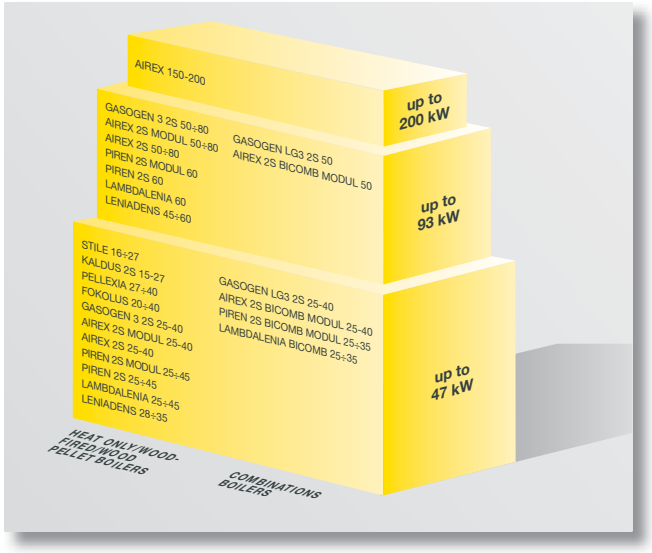
DOMESTIC RANGE



PROFESSIONAL RANGE



BIOMASS FUELLED BOILERS



ALKON 50 - 70

Wall hung, room sealed, forced draught, pre-mixed, gas fired condensing boiler - electronic ignition - for central heating - multiple boiler installation (CASKAD -max 2 banks of 4 boilers for a total of 400 kW), high seasonal efficiency - Low N0x, Class 5 EN 297/EN 483

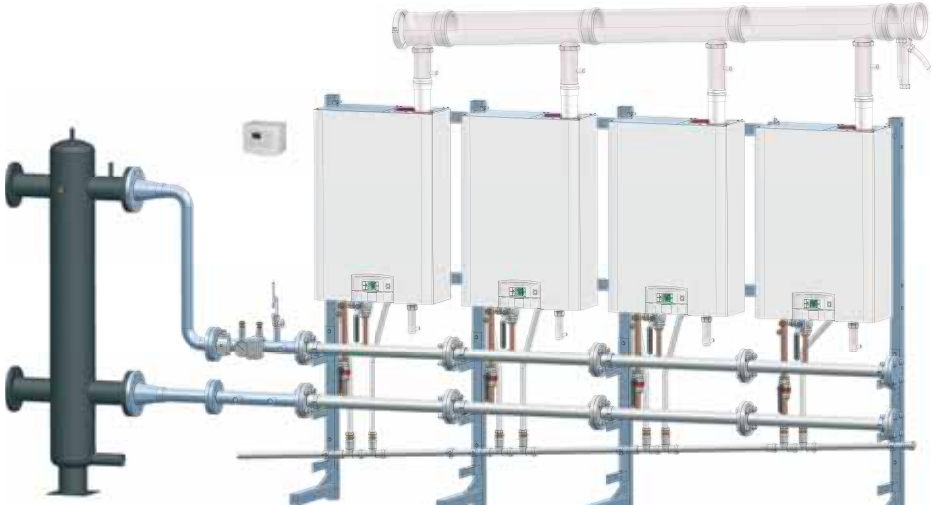
- Modulation ratio 1:5
- Constant CO_2 combustion ratio
- Fully pre-mixed burner
- Continuous air/gas modulation controlled by the microprocessor.
- Ultra flat aluminium silicon/magnesium primary heat exchanger
- Control and management microprocessor controlled by the digital electronic E8 heating controller (optional)
- E-Bus connection port
- Self-adjusting output depending of the flue outlet lengths
- Anti-jam pump timer
- Accessory features: diagnostic readout of operation status and fault codes, boiler frost protection, chimney-sweep function, pump overrun and digital fault display

Optionals:
- Electronic E8 heating controller (also controls multiple boiler installations)
- BM8 programmable digital zone thermostat
- Outdoor sensor for BM8
- Additional safety devices kit
- Constant flow rate pump
- Modulating pump (standard supply for mod. ALKON 70)
- Mixing header
- Hydraulic set-up for multiple boiler installations
- Flue outlet kit for multiple boiler installations

Technical Data

ALKON		50	70
NOMINAL HEAT INPUT max/min	*kW*	48,5	67,5
NOMINAL HEAT OUTPUT in condensing mode max/min	*kW*	49,3	68,5
NOMINAL HEAT OUTPUT max/min	*kW*	47,2	65,5
EFFICIENCY CLASS		★★★★ CE	★★★★ CE
EFFICIENCY in condensing mode at FULL LOAD 100%	*%*	101,6	101,5
EFFICIENCY in condensing mode at PART LOAD 30%	*%*	107,3	107,3
Max CONDENSATE PRODUCTION	*l/h*	7,8	10,87
C0 at 0% of 0_2 min	*mg/kWh*	19,7	19,7

ALKON		50	70
N0x (value calculated according to EN 297/A3 and EN 483)	*mg/kWh*	33,9	34,68
WATER CONTENT	*l*	3,9	3,9
DEPTH	*mm*	266	266
HEIGHT	*mm*	930	930
WIDTH	*mm*	615	615
WEIGHT	*kg*	50	50
PROTECTION DEGREE	*IP*	X4D	X4D



CASKAD: 4 Alkon boilers in a multiple boiler installation

ALKON 50-70

ALKON 90

★★★★CE

Floor standing, gas fired condensing boiler for outside/inside installation, protection grade IPX5D - electronic ignition, suitable for multiple boiler applications (2 series of 4 boilers) for a total of 720 kW

- Modulating ratio 1:4,5
- Fully pre-mixed burner with constant air/gas ratio
- A single cast heat exchanger (an exclusive Unical design) of aluminium-silicon-magnesium alloy
- Casing in epoxypolyester painted steel panels (Protection degree IP X5D)
- Casing front door with ventilation openings and safety lock
- Modulating pump supplied as standard
- Control and management microprocessor control led by an electronic digital heating controller E8 (optional)
- 3-way valve on the flow pipe with bleed
- 2-way valve integrated with flow-stop on the return pipe
- Condensate evacuation pipe
- Gas cock
- E-Bus connection for communication with heating controller E8 (optional)
- Smoke evacuation pipe Ø100 mm with sampling point
- Minimum gas pressure switchand low water pressure switch
- Safety condensate level sensor
- Safety valve: set at 7 bar
- Boiler drain cock
- Manual and automatic air vents
- Extra features: diagnostic readout of operation status and fault codes, boiler frost protection, chimney-sweep function, pump overrun and digital faults display
- No-jam pump timer

Optionals:
- electronic heating controller E8 (also controls multiple boiler applications)
- BM8 zone remote control (to use in combination with E8)
- Outersensor for BM8
- Hydraulic separator (mixing bottle)
- Electronic zone expansion module (from 2 up to 8)

– Additional safety devices kit

I.TOTHEM
in the draw, 4 Alkon 90 in cascade

Technical Data

ALKON 90		
NOMINAL HEAT INPUT MIN/MAX based on inf. calorific value	*kW*	22÷90
NOMINAL HEAT OUTPUT in condensing mode 50°/30°C	*kW*	24÷93,6
NOMINAL HEAT OUTPUT 80°/60°C	*kW*	21÷87,5
EFFICIENCY CLASS		★★★★CE
EFFICIENCY IN CONDENSING MODE at FULL LOAD	*%*	104
EFFICIENCY IN CONDENSING MODE at PART LOAD	*%*	109,1
Max CONDENSATE PRODUCTION	*kg/h*	14,54
C0 at 0% of 0_2 (min-max)	*mg/kWh*	21,5÷104,6

ALKON 90		
N0x (value calculated according to EN 297/A3 and EN 483)	*mg/kWh*	35,62
WATER CONTENT	*l*	10
DEPTH	*mm*	607
HEIGHT	*mm*	1300
WIDTH	*mm*	513
GROSS WEIGHT	*kg*	135
PROTECTION DEGREE	*IP*	X5D

MODULEX 100-340

★★★★CE

Compact floor standing, forced draught, pre-mixed, gas fired, Low N0x, condensing boiler, modulating burners, containing pre-assembled thermal modules housed within a common enclosure. Deep sliding temperature operation. Suitable for natural gas or LPG

Prepared for:
- Modulating pump for primary circuits
- Load matching controlled by the E8 heating controller
- Remote control
- Multiple boiler installation

- 4 star efficiency category according to the CEE Directive 92/42
- Each aluminium silicon/magnesium module has its own combustion chamber with a burner, modulating fan, gas valve, flame and ignition control device, NTC sensor for local temperature control and safety thermostat
- Complete non-allergic synthetic wool insulation
- Radiating metallic mesh(NIT) pre-mix modulating burners Pre-mixing occurs in the pre-combustion chamber
- Air suction system from the boiler room or directly from outside of the boiler room (sealed burner)

Boiler operation logic
- Maintains the major number of modules firing at the lowest possible rate (up to 12 kW) in order to obtain the maximum efficiency
- A system which ensures that each module fires automatically for an equal daily amount of hours, so as to ensure optimum boiler operation (automatic operation-time calculating system).
- D.H.W. production via a priority sensor, with control capability of a dedicated loading pump or a 3-way diverting valve via the E8
- Possibility of controlling the output of each single module
- Heating demand control: set-point temperature and modulation level
- Supervision of boiler operation and temperature status
- Alarm control
- Parameter settings
- Command relay for activation of a pump at fixed rate
- 0÷10 V input for modulating pump control.
- Emergency operation: avoids total system shut-down caused by communication interruption with the centralized boiler plant (eventual remote control/ management)
- Constant set-point input: 70°C, maximum output 50%
- Alarm reset input
- Alarm signal relay
- Outdoor sensor kit
- Hydraulic connections, reversible gas connections
- Easy access to flue outlet connections (R.H / L.H. or rear side of the boiler)

Optional accessories:
- Storage cylinder sensor kit
- Condensate acid neutralizers
- Primary circuits: hydraulic system interface with ISPELS kit and modulating pump
- Mixing header
- OGNITEMPO: stainless steel coverings for outdoor installations

Technical Data

MODULEX		100	145	190	240	290	340
NOMINAL HEAT INPUT based on inf. calorific value	*kW*	96	144	192	240	288	336
NOMINAL HEAT OUTPUT in condensing mode 30°/50°C	*kW*	95,9	144,1	192,4	241	289,9	339,4
NOMINAL HEAT OUTPUT 60°/80°C	*kW*	93,2	140,1	187,4	234,7	282,2	329,6
EFFICIENCY CATEGORY				★★★★ CE			
EFFICIENCY in condensing mode at full load	*%*	97,1	97,3	97,6	97,8	98	98,1
EFFICIENCY in condensing mode at part load	*%*	106,8	106,8	106,8	106,8	106,8	106,8
CONDENSATE PRODUCTION	*kg/h*	16	24	33	41	48	55
CO emission with O_2 = 0% in the flue outlet (n=1)	*ppm*	< 35	< 36	< 30	< 34	< 38	< 30
NOx EMISSION	*ppm*	< 30	< 34	< 34	< 29	< 30	< 24
WATER CONTENT	*l*	10,1	14,2	18,3	22,4	26,5	30,6
DEPTH	*mm*	695	695	695	695	695	695
HEIGHT	*mm*	1053	1053	1053	1053	1053	1053
WIDTH	*mm*	695	695	834	968	1102	1236
GROSS WEIGHT	*kg*	181	215	256	300	341	387

MODULEX 100-340

MODULEX 440-900

★★★★CE

Compact, gas fired, Low N0x, condensing boiler, modulating burners, containing pre-assembled thermal modules housed within a common enclosure. Deep sliding temperature operation. Operation with natural gas and LPG. 4 star efficiency category according to the CEE Directive 92/42

- Control of modulating pump for primary circuits
- Load matching controlled by the E8 heating controller
- Remote control
- Multiple boiler installation
- Each aluminium silicon/magnesium module has its own combustion chamber with a burner, modulating fan, gas valve (two for the SuperModulex), flame and ignition control device, NTC sensor for local temperature control and safety thermostat.
- Complete non-allergic synthetic wool insulation
- Radiating metallic mesh (NIT) pre-mix modulating burners. Pre-mixing occurs in the pre-combustion chamber.
- Air suction system from the boiler room or directly from outside of the boiler room (sealed burner)

Boiler operation logic

- Maintains the major number of modules firing at the lowest possible rate (up to 12 kW) in order to obtain the maximum efficiency.
- A system which ensures that each module fires automatically for an equal daily amount of hours, so as to ensure optimum boiler operation (automatic operation-time calculating system).
- D.H.W. production via a priority sensor, with control capability of a dedicated loading pump or a 3-way diverting valve via the E8.
- Possibility of controlling the output of each single module
- Heating demand control: set-point temperature and modulation level
- Supervision of boiler operation and temperature status
- Alarm control; Parameter settings
- Command relay for activation of a pump at fixed rate
- 0÷10 V input for modulating pump control.
- Emergency operation: avoids total system shut-down caused by communication interruption with the centralized boiler plant (eventual remote control/management)
- Constant set-point input: 70°C, maximum output 50%
- Alarm reset input; Alarm signal relay
- Outdoor sensor kit included on the delivery
- Hydraulic connections, reversible gas connections (only Modulex)
- Storage cylinder sensor kit included on the delivery

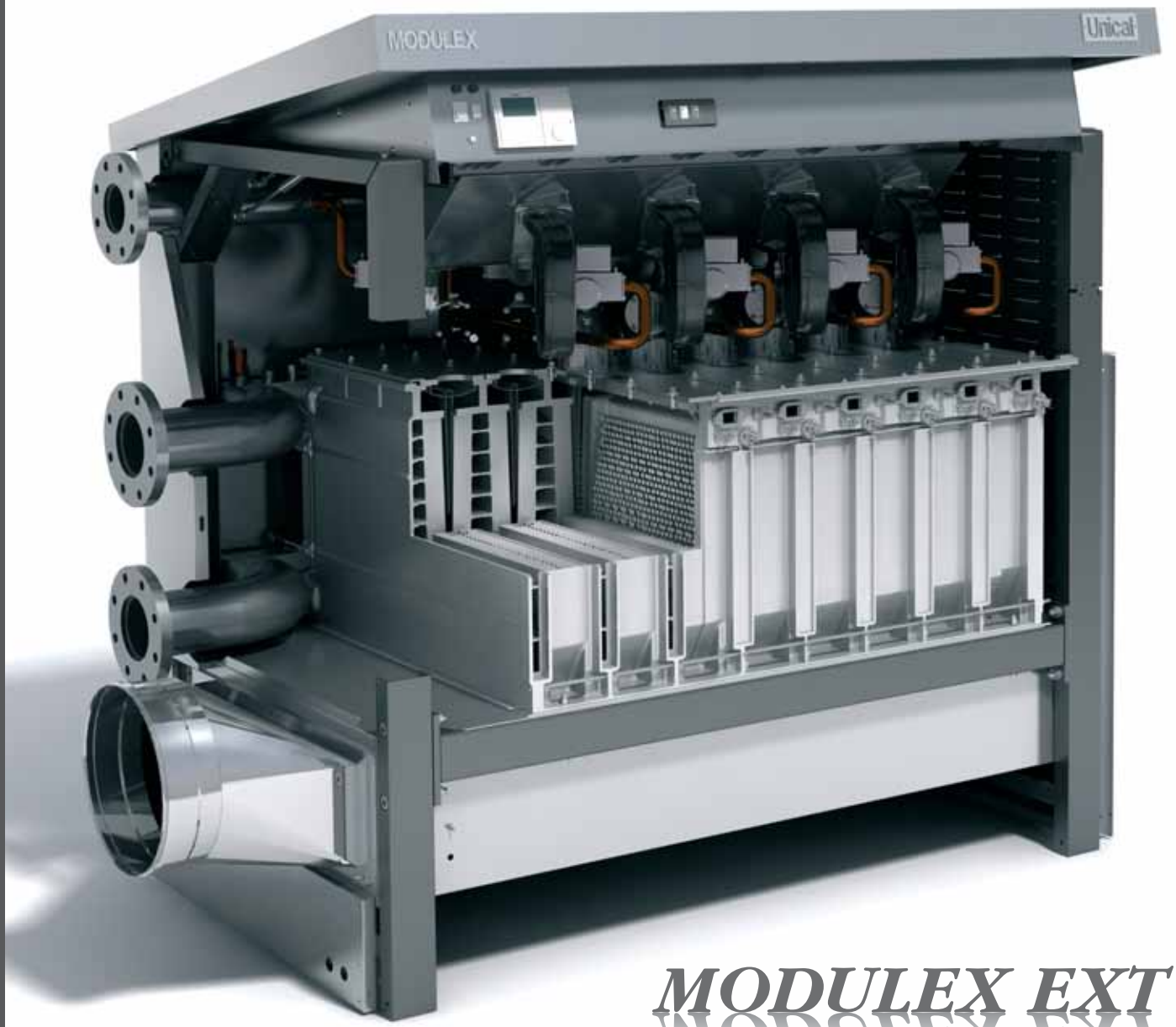
Optional accessories:

- Condensate acid neutralizers
- Primary circuits: hydraulic system interface with security device kit and modulating pump
- Mixing header
- OGNITEMPO: stainless steel coverings for outdoor installations

Technical Data

MODULEX		440	550	660	770	900
NOMINAL HEAT INPUT based on inf. calorific value	*kW*	432	540	648	756	864
NOMINAL HEAT OUTPUT in condensing mode 30°/50°C	*kW*	442,4	554,1	667,5	781	894,3
NOMINAL HEAT OUTPUT 60°/80°C	*kW*	422,2	527,6	633,1	738,7	844,2
EFFICIENCY CATEGORY		★★★★ CE				
EFFICIENCY in condensing mode at full load	*%*	97,8	97,7	97,7	97,7	97,7
EFFICIENCY in condensing mode at part load	*%*	107,3	107,5	108,3	107,8	107,6
CONDENSATE PRODUCTION	*l/h*	74	92	110	129	147
CO emission with O_2 = 0% in the flue outlet (n=1)	*ppm*	< 95	< 95	< 95	< 95	< 95
NOx EMISSION	*ppm*	<30	<30	<30	<30	<30
WATER CONTENT	*l*	73	88	103	118	133
DEPTH	*mm*	920	1520	1520	1520	1546
HEIGHT	*mm*	1372	1372	1372	1372	1434
WIDTH	*mm*	1122	1122	1256	1390	1574
GROSS WEIGHT	*kg*	512	608	692	770	925

MODULEX 440-900



MODULEX EXT

Technical Data

MODULEX EXT		100	116	150	200	250	300	350
NOMINAL INPUT on N.C.V.	*kW*	100	116	150	200	250	300	348
NOMINAL OUTPUT in condensation 30°C / 50°C	*kW*	100,1	116	150	200,4	251,3	302,7	354,6
NOMINAL OUTPUT in std. conditions 60° / 80°C	*kW*	97,2	112,9	146,1	195,2	244,5	294	342,2
EFFICIENCY CLASS		★★★★ CE						
EFFICIENCY at nominal output in condensation	*%*	100,1	100,1	100,8	100,2	100,5	100,9	101,9
EFFICIENCY a minimum output in condensation	*%*	106,5	106,5	106,5	106,5	106,5	106,5	106,5
MAX. CONDENSATE PRODUCTION	*kg/h*	15,3	17,7	23	30,6	38,3	45,9	53,6
CO EMISSIONS at O_2 = 0% in the flue outlet (n=1)	*ppm*	< 77	< 77	< 77	< 77	< 77	< 77	< 77
NOx EMISSIONS	*ppm*	< 44	< 44	< 44	< 44	< 44	< 44	< 44
WATER CONTENT	*l*	10,1	14,2	14,2	18,3	22,4	26,5	30,6
DEPTH	*mm*	770	770	770	770	770	770	770
HEIGHT	*mm*	1150	1150	1150	1150	1150	1150	1150
WIDTH	*mm*	764	764	764	1032	1032	1300	1300
GROSS WEIGHT	*kg*	203	236	236	295	325	386	419

MODULEX EXT		440	550	660	770	900
NOMINAL INPUT on N.C.V.	*kW*	432	540	648	756	864
NOMINAL OUTPUT in condensation 30°C / 50°C	*kW*	445	557,8	670,1	783	900,3
NOMINAL OUTPUT in std. conditions 60° / 80°C	*kW*	424,3	530,4	636,5	742,6	849
EFFICIENCY CLASS		★★★★ CE				
EFFICIENCY at nominal output in condensation	*%*	104	104	104	104	104
EFFICIENCY a minimum output in condensation	*%*	109	109	109	109	109
MAX. CONDENSATE PRODUCTION	*l/h*	73,4	91,7	110	128,4	146,7
CO EMISSIONS at O_2 = 0% in the flue outlet (n=1)	*ppm*	< 95	< 95	< 95	< 95	< 95
NOx EMISSIONS	*ppm*	<30	<30	<30	<30	<30
WATER CONTENT	*l*	67	80	94	108	122
DEPTH	*mm*	946	946	946	946	946
HEIGHT	*mm*	1448	1448	1448	1448	1448
WIDTH	*mm*	1087	1355	1355	1623	1623
GROSS WEIGHT	*kg*	512	608	692	770	925

MODULEX EXT

★★★★ CE

Modulating, Low N0x, multi-burners, condensing boiler, for indoor/outdoor installation, IP X5D, containing preassembled thermal modules without hydraulic interception in between. For deep sliding temperature operation, suitable for natural gas or LPG

Prepared for:
- Management of modulating pump for primary circuit
- Loads management through E8 heating controller
- Remote control
- To be integrated with additional safety devices kit

- 4 star efficiency class according to the European Directive 92/42
- 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
- Adjacent thermal elements for an optimum reduction of heat losses
- Hydraulic connection between adjacent elements without interceptions through hydraulically balanced manifolds
- Complete non-allergic synthetic wool insulation, 50 mm thick
- 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
- Pre-mixing occurs in the pre-combustion chamber
- Air suction system from the boiler room or directly from outside of the boiler

room through ducts (optional)
- E8 heating controller placed on the special disappearing panel board
- System loads management of up to 2 mixed circuits (up to 15 with optional expansion modules) and a DHW storage tank load
- Standard delivered: Outer temp. sensor, flow temp. sensor and DHW storage tank sensor
  Optional: room temp. sensor, solar temp. sensor, zones expansion kit, control for an additional zone BM8
- Made with water proof casing; IP X5D
- Possibility of cascade installation of 2 or more boilers (up to 8), by using an additional E8 controller as MASTER.

Logic of operation:
- Maintains the major number of modules firing at the lowest possible rate (up to 12 kW for mod. 100-350 and up to 22 kW for models 440-900) in order to obtain the maximum efficiency
- Automatic working hours sharing among the different modules, so as to ensure the same operation time for all the modules
- D.H.W. production through a priority sensor, that controls a dedicated loading pump or a 3-way diverting valve via the E8
- Possibility of controlling the output of each single module
- Automatic management of the supplied output, of the temperature set-point and the 0 – 10 V signal to the modulating pump, depending on the installation parameters (BCM)
- Supervision of boiler operation and temperatures status
- Alarms management
- Parameters setting
- Command relay for activation of a constant flow rate pump

ADDITIONAL FUNCTIONS of the BCM (supplied with the boiler)
- 0÷10 V outlet for modulating pump control
- Emergency operation: anti-blackout through BCM: Constant set-point temperature operation at 70°C (adjustable) and maximum output of 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
- Primary circuits: (also in pre-assembled and tested version: plug & play), hydraulic system interface with additional safety devices kit and modulating pump (possible combination with mixing header or plate heat exchanger)
- Expansion accessories and remote controller E8

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 condensing mode 30/50°C	*kW*	257,6	353,3	471	588,2	706,6	822,7	934,7
MINIMUM OUTPUT in condensing mode 30/50°C	*kW*	31,85	31,85	31,85	31,85	31,85	31,85	31,85
NOMINAL OUTPUT in std. conditions 60/80°C	*kW*	226,6	340,1	453,2	568,9	681,8	796,3	913,5
EFFICIENCY CLASS (accord. Directive 92/42 CE)		★★★★ CE						
WATER EFFICIENCY at full load in condens. mode.	*%*	103,3	102,4	102,4	102,3	102,4	102,2	102,6
WATER EFFICIENCY at part load in condens. mode	*%*	106,2	106,2	106,2	106,2	106,2	106,2	106,2
MAXIMUM CONDENSATE PRODUCTION	*kg/h*	37	56	74	93	111	130	148
NOx emissions (according to EN 297/A3)	*mg/kWh*	78	76	110,75	110,75	110,75	110,75	110,75
WATER CONTENT	*l*	208	301	401	509	570	702	802,3
WATER PRESSURE in heating circuit min.-max.	*bar*	0,5-5	0,5-5	0,5-5	0,5-5	0,5-5	0,5-5	0,5-5
MAX. ABSORBED ELECTRICAL POWER	*W*	313	470	626	782	939	1095	1252
STAND-BY CONSUMPTION	*W*	10	10	10	10	10	10	10
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

★★★★ CE

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

- Efficiency class 4 stars (according Directive 92/42): higher than 107% at full load and higher than 109% at part load, 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 thermal element in vertical shape in order to get the stratification of the temperatures and the possibility of two return connections, to have absolutely the lowest temperature with reduced water pressure losses.
- To be integrated with an additional safety devices kit (optional)
- Combustion chamber positioned above the tube bundle
- Premix and modulating vertical burner above the combustion chamber, with flame surface in radiating metallic sponge. Air-gas premixing within the fan, with non-return valve and minimum gas pressure switch.
- Combustion air suction/feeding directly in the fan cochlea
- Ignition and flame control BMM and NTC sensor for working temperature control and safety thermostat.
- Output supplied in condensing mode, by each element: 125÷30 kW
- 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 for gravity, inside water ways driven and braked

- Thermal elements integrally insulated with mineral wool, 50 mm thick, protected with aluminium foil
- Reversible flow and return connections (for the models 250, 375, 500)
- Gas connection and smoke outlet reversible for all the models
- The heat generators are provided with connections for bulb holders with inside diameter 15 mm (suitable to lodge 3 bulbs each)
- 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.

Time 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 domestic hot water.
- Weekly programming: up to 3 programs for the heating and as many for the domestic hot water; with association to a daily program (vacation, absence, working hours prolongation, automatic, summer, continuous or reduced heating – antifreeze mode); heating working curve; information on the installation state; chimney cleaner mode.
- Possibility of management of D.H.W. recirculation pump.
- Anti-legionella function.
- Heating zone management: MULTIFUNCTION PCB: SHC ("Slave Heating Controller"): CH, DHW and auxiliary resources: temporized relays, solar storage tanks.
- 2 different communication standards:
- 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

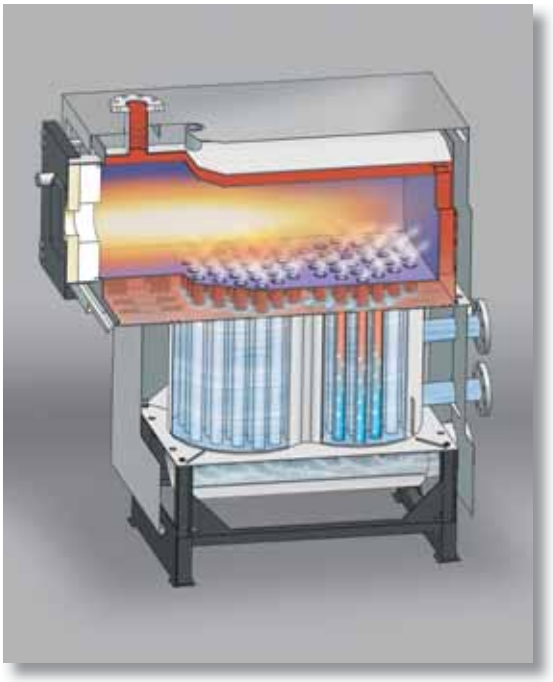
INOXIA GJ

★★★★CE

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, with special patented pipes in stainless steel, with aluminium internal baffles

- Efficiency higher than 107% at full load and 109% at part load in condensing mode
- Patented, stainless steeel, 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
- Construction according to EN 303 -1
- 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	450	600	800	1000
HEAT OUTPUT 50/30°C	*kW*	150	200	271	350	450	600	800	1000
HEAT OUTPUT 80/60°C	*kW*	136,5	181,5	247,5	320,5	412,5	550	732,8	917,5
EFFICIENCY CLASS					★★★★ CE				
HEAT INPUT furnace	*kW*	140	186	253	327	420	560	746	934
*EFFICIENCY**	*%*	107,1	107,5	107,1	107	107,1	107,1	107,2	107,1
WATER CAPACITY	*l*	248	248	380	380	533	533	907	907
WIDTH	*mm*	766	766	866	866	896	896	1076	1076
HEIGHT	*mm*	1558	1558	1649	1649	1790	1790	2075	2075
DEPTH	*mm*	1482	1482	1733	1733	2143	2143	2468	2468
WEIGHT	*kg*	465	480	650	675	1040	1090	1570	1650

**at nominal load in condensing mode*

INOXIA GJ

Technical data

XC-K		124	200	290	400	480	570
NOMINAL INPUT on N.C.V.	*kW*	115,9	186,9	271	373,8	448,6	532,7
NOMINAL OUTPUT in condensing mode 30/50°C	*kW*	124	200	290	400	480	570
NOMINAL OUTPUT in std. conditions 60/80°C	*kW*	112,8	182,7	265,6	367,1	440,7	523,3
EFFICIENCY CLASS				★★★★ CE			
*WATER EFFICIENCY at full load**	*%*	107	107	107	107	107	107
*WATER EFFICIENCY at part load **	*%*	109	109	109	109	109	109
WATER EFFICIENCY at full load in std. mode	*%*	97,3	97,8	98,2	98,2	98,3	98,3
CASING HEAT LOSSES with (80/60°C)	*%*	0,76	0,38	0,23	0,17	0,14	0,14
MAX CONDENSATE PRODUCTION	*l/h*	19,7	31,7	45,9	63,3	75,9	90,3
SMOKE MASSIVE FLOW RATE	*kg/h*	166,9	269,1	390,2	538,9	645,9	767
MAX. NET SMOKE TEMP. at 80/60°C (Tf – Ta)	*°C*	44	43	40	37	37	37
MAX. NET SMOKE TEMP. at 50/30°C (Tf – Ta)	*°C*	22	22	22	22	22	22
XC-K		**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
NOMINAL OUTPUT in condensing mode 30/50°C	*kW*	700	900	1140	1420	1820	2160
NOMINAL OUTPUT in std. conditions 60/80°C	*kW*	642,6	826,2	1046,6	1303,6	1670,8	1983
EFFICIENCY CLASS				★★★★ CE			
*WATER EFFICIENCY at full load**	*%*	107	107	107	107	107	107
*WATER EFFICIENCY at part load **	*%*	109	109	109	109	109	109
WATER EFFICIENCY at full load in std. mode	*%*	98,3	98,3	98,3	98,3	98,3	98,3
CASING HEAT LOSSES with (80/60°C)	*%*	0,14	0,14	0,14	0,14	0,14	0,14
MAX CONDENSATE PRODUCTION	*l/h*	110,7	142,3	180,3	224,6	287,7	341,6
SMOKE MASSIVE FLOW RATE	*kg/h*	941,9	1211,1	1534	1910,8	2449	2906,6
MAX. NET SMOKE TEMP. at 80/60°C (Tf – Ta)	*°C*	37	37	37	37	37	37
MAX. NET SMOKE TEMP. at 50/30°C (Tf – Ta)	*°C*	22	22	22	22	22	22

** in cond. mode*

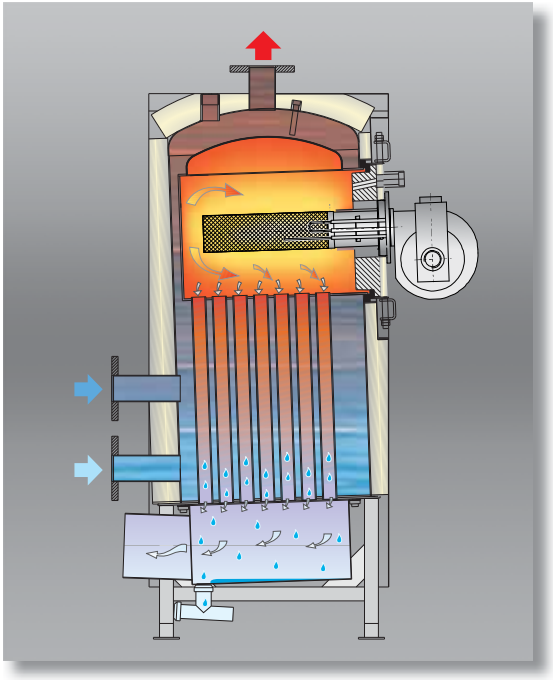
XC-K

★★★★CE

Large water content condensing boiler, with outer pressure vessel in high resistance carbon steel, according to Euronorm 25 and 28. Pressurized, of flame reversion type

- Efficiency class 4 stars, according Directive 92/42/CE
- 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.
- Range from 124 to 2160 kW
- Efficiency equal to 107% at full load and to 109% at part load, in condensing mode
- 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
- Optimum silent operation thanks to the low counter-pressure in the smoke side
- Carbon steel door with recyclable insulation in special extra light refractory concrete, (30 % reduction of radiation heat losses)
- One flow and two return connections (for Hi and Lo temperature) placed on the upper side, except for the model 124, where the connections are all on the rear side.
- Adjustable door with double opening (to R.H. side or to the L.H. side)
- Panel board of electronic type with E8 controller, that allows the management of modulating burners, placed on top of the boiler casing.
- Prearrangement for cascade of more boilers with an additional E8 controller (optional)
- Ease of burner installation through a plate that needs to be drilled according to the burner flange
- Two 1/2” bulb holders with ø15 mm inner diameter for probes and thermostat bulbs (3 for each). Rear smoke chamber in stainless steel AISI 304 with connection for condensate drain.
- Double boiler body insulation:
  1 - insulating mattress of the front outer shell
  2 - insulating mattress of the rear part
  3 - insulating mattress of the upper part
- The insulation is in anti-tearing rock wool (thickness 100 mm)
- Construction according to EN 303-1
- Cleaning and maintenance facilitated by the auto-drain of the smoke pipes and from the light inclination toward the smokes chamber of the body as well as of all other parts
- Lifting hooks for transportation and handling

Optional:
- Acidic condensate neutralizers



PK_X 2S

★★★★CE

Large water content, condensing unit, entirely in stainless steel, complete of premix modulating gas burner

- Efficiency class 4 stars (according Directive 92/42): higher than 107% at full load and higher than 109% at part load, thanks to the special patented progressive pipes in stainless steel AISI 316 L, with special multi-fin inserts in Al/Si/Mg.
- Tube bundle in stainless steel AISI 316, perpendicular to the combustion chamber:
  - Natural outflow of the condensates
  - Absence of wet acidic deposits
  - Cleaning for gravity of the exchange surfaces
- Boiler body in stainless steel AISI 304 on the smoke side
- Inner water way driven and braked.
- Smoke chamber in stainless steel AISI 304 below the tube bundle, with connection for condensate drain.
- Boiler body insulation with 80 mm thick mineral fibre
- Adjustable door with double opening (to R.H. side or to the L.H. side), insulated with recyclable special extra light refractory concrete, (30 % reduction of radiation heat losses)
- Front upward flow connection
- Two return rear connections for high and low temperature
- Premix modulating burner with constant CO_2, already installed and pre-adjusted
- Two ½" bulb holders for probes and thermostats bulbs (3 each)
- Cleaning and maintenance facilitated by the auto- drain of the smoke pipes and from the light inclination of the body toward the smokes chamber
- Construction according to EN 303: part 1.
- Panel board
- HSCP controller, water pressure gauge and "On/Off" system switch
- Management up to a maximum of 12 completely independent heating circuits and of a D.H.W. 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: up to 3 programs for the heating and as many for the domestic hot water; with association to a daily program (vacation, absence, working hours prolongation, automatic, summer, continuous or reduced heating - antifreeze mode); heating working curve; information on the installation state; chimney cleaner mode.
- Possibility of management of D.H.W. recirculation pump.
- Anti-legionella function.
- Heating zone management: MULTIFUNCTION PCB: SHC ("Slave Heating Controller"): CH, DHW and auxiliary resources: temporized relays, solar storage tanks.
- 2 different communication standards:
- Local e-BUS interface
- Remote interface for:

- Data acquisition, parameter 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

Technical data

PK_X 2S		150	230	300	348
NOMINAL OUTPUT in condensing mode 30/50°C	*kW*	150	230	300	348
NOMINAL OUTPUT in std. conditions 60/80°C	*kW*	136,5	209,2	273,6	317,7
EFFICIENCY CLASS			★★★★ CE		
NOMINAL INPUT on N.C.V.	*kW*	140	214	280	324
*WATER EFFICIENCY**	*%*	107,1	107,4	107,4	107,4
HEIGHT	*mm*	1650	1765	1920	1950
WIDTH	*mm*	890	1020	1070	1150
DEPTH	*mm*	1147	1277	1329	1429
DRY WEIGHT	*kg*	310	447	540	661

* *At full load in condensing mode*

PK_X 2S

SPK

★★★★CE

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

- Efficiency class 4 stars (according Directive 92/42): higher than 107% at full load and higher than 109% at part load, 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 or LPG operation
- Prearranged for: management of modulating pumps and remote control (optional)
- To be integrated with additional safety devices kit (optional)
- Large water content boiler body with vertical shape, to get the temperature stratification in order to have on the two return connections the absolute lowest temperature with small water pressure drop
- Combustion chamber above the tube bundle, with constant CO_2
- Premix modulating burner above the combustion chamber, with flame surface in radiating "metallic sponge" Premixing within the fan with built-in non-return valve and minimum gas pressure switch.
- Suction / feeding combustion air system directly in the cochlea of the fan
- Ignition and flame control device BMM, NTC sensor for temperature control and safety thermostat.
- Output in condensation mode: 119÷30 kW
- Smoke pipes with external diameter of 42 mm, with multi-fin inserts in Al/Si/Mg, placed in a vertical a tube bundle vertical, tilted of 3° for: natural outflow of the condensates, absence of wet acidic deposits, cleaning for gravity of the exchange surfaces, inner water way driven and braked
- Inspectability of the combustion chamber guaranteed by the pneumatic opening device
- Integral insulation in mineral fibre wool, 50 mm thick, protected by aluminium paper

Panel boards:
- HSCP controller, water pressure gauge and On/Off system switch
- Management up to a maximum of 12 completely independent heating circuits and of a D.H.W. 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: up to 3 programs for the heating and as many for the domestic hot water; with association to a daily program (vacation, absence, working hours prolongation, automatic, summer, continuous or reduced heating – antifreeze mode); heating working curve; information on the installation state; chimney cleaner mode.
- Possibility of management of D.H.W. recirculation pump.
- Anti-legionella function.
- Heating zone management: MULTIFUNCTION PCB: SHC ("Slave Heating Controller"): CH, DHW and auxiliary resources: temporized relays, solar storage tanks.
- 2 different communication standards:
- Local e-BUS interface
- Remote interface for:
  - Data acquisition, parameter 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

Technical data

SPK		116
NOMINAL OUTPUT in condensing mode 30/50°C	*kW*	119
NOMINAL OUTPUT in std. conditions 60/80°C	*kW*	113
EFFICIENCY CLASS		★★★★ CE
NOMINAL INPUT on N.C.V.	*kW*	115
*WATER EFFICIENCY**	*%*	103,8
WATER EFFICIENCY AT MINIMUM INPUT		107,3
HEIGHT	*mm*	1710
WIDTH	*mm*	550
DEPTH	*mm*	610
DRY WEIGHT	*kg*	270

**at full load in condensing mode*

TRIKOND

★★★★CE

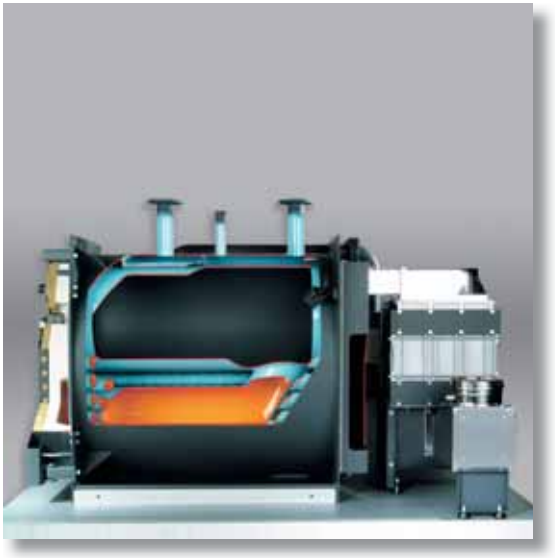
Pressurized steel boiler equipped with a condenser for forced draught burners, operation with natural gas or LPG, on/off modulating. Three pass boiler with floating furnace, Low N0x emissions

- Effective three pass generator
- Forced draught gas burner
- Special aluminium alloy condenser
- High seasonal efficiency
- Furnace and triple flue passage, resistant to condensate, thanks to:

- guided water passage
- use of triple section anti-condensate flue pipes for differentiated heat transfer (patented)

- Low emissions thanks to reduced heat losses
- 100 mm thick anti-tear glass wool insulation
- Adjustable door: vertically/horizontally with double opening right/left with ceramic fibre insulation (-30% radiation heat losses)
- Helicoidal turbolators
- External control panel
- Heating control with outdoor sensor for total automatic management
- Double low/high temperature return connection
- Boiler recirculation pump
- Condenser service pump
- Stainless steel condensate trap
- Condensate control level
- Construction satisfies the requirements of the Standard DIN EN 303 - Part 1

internal view



Technical Data

TRIKOND		200	265	330	400	900	1100	1300
HEAT OUTPUT (50°/30°C)	*kW*	200	265	330	400	900	1100	1300
HEAT OUTPUT (80°/60°C)	*kW*	182	242,6	302	367,3	826	1010	1193
EFFICIENCY CATEGORY					★★★★ CE			
HEAT INPUT furnace	*kW*	187	248	308	374	841	1028	1215
MAX WORKING PRESSURE	*bar*	5	5	5	5	5	6	6
WATER CAPACITY	*l*	311	312	439	440	961	1621	1878
WIDTH	*mm*	1410	1410	1410	1410	1803	2156	2186
HEIGHT	*mm*	1488	1488	1643	1643	1733	1873	1903
DEPTH	*mm*	1914	2044	2264	2459	3440	3898	4268
WEIGHT	*kg*	921	1034	1294	1463	2485	3568	3952

Flue for boiler operating at 80-60 °C

TRIKOND

TRISTAR 3G

★★★CE

3 pass pressurized boiler with passing furnace – Efficiency Class: 3 stars according to European Directive 92/42/CE. Body in steel with special progressive smoke pipes in carbon steel with patented aluminium inserts "EASYSTREAM Pipe", suitable for gas burners.

Max. Working Pressure:

5 bar up to 840 kW - 6 bar over 1000 kW

- High efficiency, higher than 95.2% (Pn = 400 kW) and higher than the minimum required for lower capacities, both, at nominal and minimum load
- 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", Ø 1 1⁄2"
- First section of invitation with turbulator
- Second multi-radial aluminium section that assures high heat exchange, withstanding the acidic condensate (UNICAL Patent)
- Round shaped outer shells, for capacities higher than 1000 kW (Max. Working Pressure 6 bar)
- Guided and braked water run inside the body, through an internal baffle
- 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 (right or left hand side)
- Door supporting hinges fixed to an anti-vibration counter-plate (up to 1900 kW)
- Certified as boiler with ranged output
- Panel board of thermostatic type, external to the casing (electronic panel with E8 controller for the management of 3 different heating circuits, upon request)
- Two bulb holders (up to 4 bulbs each)
- Upward flow and return connections (onto rear tube plate for 65 and 85 kW)
- Manufacture according to EN 303-1
- Pressure vessel parts and pipes in carbon steel according to Euronorm 25 and 28

Oil version upon request:

- With special, completely rolled pipes, with inside 6 x 60° sectors carbon steel pipes

Technical Data

TRISTAR 3G		65^{2S}	85^{2S}	110^{2S}	150^{2S}	185^{2S}	225^{2S}	300^{2S}	380^{2S}	500^{2S}	630^{2S}
NOMINAL OUTPUT	*kW*	65	85	109	150	185	225	300	380	500	630
*EFFICIENCY **	*%*	93.9	94	94.2	94.5	94.7	94.9	95.4	95.4	95.4	95.4
HEIGHT	*mm*	950	950	1115	1115	1215	1215	1385	1385	1645	1645
WIDTH	*mm*	740	740	830	830	870	870	910	910	920	920
DEPTH	*mm*	975	1235	1170	1430	1365	1495	1560	1755	1915	2110
WEIGHT	*kg*	315	355	435	515	580	640	840	935	1260	1375

TRISTAR 3G		730^{2S}	840^{2S}	1100^{2S}	1320^{2S}	1600^{2S}	1900^{2S}	2300	2650	3000
NOMINAL OUTPUT	*kW*	730	840	1100	1320	1600	1900	2300	2650	3000
*EFFICIENCY **	*%*	95.4	95.4	95.4	95.4	95.4	95.4	95.4	95.4	95.4
HEIGHT	*mm*	1645	1432	1542	1542	1892	1892	1990	2271	2271
WIDTH	*mm*	920	1122	1462	1462	1622	1622	1720	1970	1970
DEPTH	*mm*	2305	2505	2802	3172	3242	3564	3835	3879	4279
WEIGHT	*kg*	1510	1650	2530	3065	4005	4230	4900	6400	7150

**utile a carico nominale*

TRISTAR 3G

TRIOPREX N

Pressurised steel boiler for gas or oil pressure jet burners, complete with casing. For sliding temperature operation, down to 36°C with oil burners and 46°C with gas burners

- Very low polluting emissions, thanks to:
  - Three pass boiler, without reversion in combustion chamber
  - New furnace with flame passage
  - Reduction of thermal load per cubic metre (increase of combustion chamber volume if compared with traditional boilers)
- Highly condensate resistant, thanks to driven water inside the boiler body
- Complete insulation with 80 mm thick glass wool mattress, to guarantee high seasonal efficiency thanks to reduced heat losses
- Fully adjustable door with double opening (left and right) with ceramic fibre insulation (-30% radiation heat losses)
- Approval as output ranged boiler
- Easy to transport and install thanks to vertical structure (max width, without casing, 79 cm up to 600 kW model)
- Construction according to EN 303, part 1 in carbon steel according EN 10025
- External panel board with electromechanical controls
- Recommended for Low Nox pressure jet burners
- Anti-condensing smoke chamber with double wall insulation

Optional:
- Panel board with outer compensator and outdoor temperature sensor

Technical Data

TRIOPREX N		65	85	110	150	185	225	300	380	500
NOMINAL OUTPUT	*kW*	65	85	110	150	185	225	300	380	500
NOx EMISSIONS	*ppm*	45	45	45	45	45	45	45	45	45
CO EMISSIONS	*ppm*	15	15	15	15	15	15	15	15	15
HEIGHT	*mm*	950	950	1115	1115	1215	1215	1385	1385	1645
WIDTH	*mm*	740	740	830	830	870	870	910	910	920
DEPTH	*mm*	975	1235	1170	1430	1365	1495	1560	1755	1915
WEIGHT	*kg*	307	348	426	503	564	621	812	906	1295

TRIOPREX N		630	730	840	1100	1320	1600	1900
NOMINAL OUTPUT	*kW*	630	730	840	1100	1320	1600	1900
NOx EMISSIONS	*ppm*	45	45	45	45	45	45	45
CO EMISSIONS	*ppm*	15	15	15	15	15	15	15
HEIGHT	*mm*	1645	1645	1432	1542	1542	1892	1892
WIDTH	*mm*	920	920	1122	1462	1462	1622	1622
DEPTH	*mm*	2110	2305	2505	2802	3172	3242	3564
WEIGHT	*kg*	1430	1560	1581	2444	2965	3885	4089

Max Working Pressure: 5 bar up to model TX N 840, 6 bar from model TX N 1100 up to TX N 1900

TRIOPREX N

TERSEC

Pressurised steel boiler for gas or oil pressure jet burners, complete with casing. Deep sliding temperature operation (low NOx emissions with low NOx burners)

- Three pass boiler body
- High efficiency, very close to 93%, thanks to low heat losses due to the very low sliding temperature operation (20°- 25°C)
- Highly condensate resistant, thanks to:
- Driven water inside the boiler body
- Patented triple section anti-condensing smoke pipes, for differentiated heat exchange
- Patented fin effect on the welding seams of pipes onto the rear tube plate
- Full 100 mm thick glass wool insulation
- Fully adjustable door with double opening (left and right) with ceramic fibre insulation (-30% radiation heat losses)
- Approval as output ranged boiler
- Easy to move and to install, thanks to the boiler body vertical structure (max. width 790 mm, without casing, for the model of 600 kW)
- Construction according to EN 303, part 1
- External panel board with electromechanical controls
- Anti-condensing smoke chamber with double wall insulation

Option:
- Outer compensator with outdoor temperature sensor

DUO version

Coupling of two units under one casing

Options:
- Outer compensator able to control the operation of two boilers in cascade
- Electromechanical control panel

Technical Data

TERSEC		65	90	120	150	180
NOMINAL OUTPUT	*kW*	65	90	120	150	180
EFFICIENCY	*%*	91,4	91,5	91,6	91,7	91,8
WIDTH	*mm*	740	740	820	820	860
HEIGHT	*mm*	950	950	1082	1082	1182
DEPTH	*mm*	975	1235	1178	1438	1373
WEIGHT	*Kg*	326	398	486	575	626

TERSEC		350	800	1000	1200
NOMINAL OUTPUT	*kW*	350	800	1000	1200
EFFICIENCY	*%*	92,1	92,3	92,4	92,4
WIDTH	*mm*	890	1122	1462	1462
HEIGHT	*mm*	1352	1432	1462	1462
DEPTH	*mm*	1763	2505	2912	2912
WEIGHT	*Kg*	1118	1885	2873	3257

Max. Working Pressure: 5 bar – For models 1000 and 1200 Max Working Pressure: 6 bar

TERSEC DUO		360	480	600	700	1600	2000	2400
NOMINAL OUTPUT	*kW*	360	480	600	700	1600	2000	2400
EFFICIENCY	*%*	91,8	91,9	92	92,1	92,9	92,4	92,4
WIDTH	*mm*	1730	1730	1790	1790	2254	2934	2934
HEIGHT	*mm*	1182	1182	1352	1352	1622	1732	1732
DEPTH	*mm*	1373	1503	1568	1764	2505	2912	3282
WEIGHT	*Kg*	1252	1478	1898	2236	3770	5746	6514

Max. Working Pressure: 5 bar – For models 2000 and 2400 Max Working Pressure: 6 bar

TERSEC

TRISTAR

★★★CE

Pressurized reversed flame boiler, with 3 Star efficiency class, according to European Directive 92/42, with floating furnace from the model of 680 kW; for the other models the furnace is linked to the rear tube plate. Carbon steel boiler body and special patented smoke pipes with inside 6x60° sector pipes, suitable for two stage gas and oil pressure jet burners

- Special completely rolled pipes, constructed with an external 2" diameter pipe with, inside, 6 x 60° carbon steel sector pipes.
- Reversed flame combustion chamber with high mechanical resistance and resistant to condensate formation thanks to:

- the decentralization of the furnace with respect to the outer shell
- floating furnace, welded only on the front tube plate and therefore free to expand (uo to the model of 680 kW)
- guided water passage inside the boiler body via an internal deflector

- Elliptic shaped furnace (up to the model of 870 kW)
- Use of special helicoidal turbolators for silent boiler operation
- Reduction of the casing heat losses due to the strong anti-tear rock wool insulating material (60 to 100 mm thick)
- Combustion chamber door insulated with ceramic fibre (models 80 & 125) and recyclable, extra light concrete for the higher models
- Adjustable door with double opening (on LHS and RHS)
- Approved as boiler with ranged output
- External control panel of thermostatic type (electronic panel with E9 heating controller for controlling up to 3 different heating circuits, on request)
- C.H. flow connection placed on the top front part and C.H. return connection placed on the top rear part of the boiler

"S" model

Same features as the standard model, but provided in bulk for assembly in boiler house (up to the model 1400 kW)

Technical Data

TRISTAR		80	125	150	215	260	300	370	450	560	680
HEAT OUTPUT	*kW*	80	125	150	215	260	300	370	450	560	680
*EFFICIENCY**	*%*	94,7	95,1	95,3	95,66	95,83	95,95	96,14	96,21	96,21	96,21
HEIGHT	*mm*	912	1002	1272	1272	1372	1372	1542	1542	1542	1622
WIDTH	*mm*	690	750	820	820	860	860	890	890	890	1122
DEPTH	*mm*	995	1210	1214	1474	1411	1541	1608	1803	2113	1990
WEIGHT	*kg*	214	308	478	561	647	692	875	1011	1154	1475

TRISTAR		780	870	1000	1180	1400	1650	2000	2350	2700	3100	3500
HEAT OUTPUT	*kW*	780	870	1000	1180	1400	1650	2000	2350	2700	3100	3500
*EFFICIENCY**	*%*	96,21	96,21	96,21	96,21	96,21	96,21	96,21	96,21	96,21	96,21	96,21
HEIGHT	*mm*	1622	1622	1622	1622	1732	1732	1892	1892	1990	2271	2271
WIDTH	*mm*	1122	1122	1352	1352	1462	1462	1622	1622	1810	2060	2060
DEPTH	*mm*	2185	2380	2346	2686	2781	3151	3225	3545	3835	3879	4279
WEIGHT	*kg*	1591	1708	2003	2355	3225	3805	4808	5179	5927	7772	8700

**at nominal load*

TRISTAR

ELLPREX

Pressurised steel boiler for gas, oil or heavy - oil pressure jet burners, with floating furnace from the model ELL 730 up to the model ELL 4000

- Reversed flame combustion chamber
- Elliptic furnace 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 ELL 730 to 4000 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 ELL 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 ELL 1100 up to 4000 it is possible, under specific request, to provide a MWP up to 10 bar)
- Two bulb holders, capable to accommodate 3 bulbs each

"S" version

Same features as the standard model, but provided in bulk for assembly in boiler house (up to the model 1570 kW)

Technical Data

ELLPREX		170	240	290	340	420	510	630	760	870
HEAT OUTPUT	*kW*	170	240	290	340	420	510	630	760	870
*EFFICIENCY**	*%*	91,4	91,6	91,4	91,6	91,5	91,5	91,5	91,5	91,5
HEIGHT	*mm*	1082	1082	1182	1182	1352	1352	1352	1432	1432
WIDTH	*mm*	820	820	860	860	890	890	890	1122	1122
DEPTH	*mm*	1214	1474	1411	1541	1606	1801	2113	1989	2184
WEIGHT	*kg*	435	510	588	629	796	919	1049	1341	1447

ELLPREX		970	1100	1320	1570	1850	2200	2650	3000	3500	4000
HEAT OUTPUT	*kW*	970	1100	1320	1570	1850	2200	2650	3000	3500	4000
*EFFICIENCY**	*%*	91,5	91,6	91,5	91,5	91,5	91,6	91,7	91,4	91,4	91,5
HEIGHT	*mm*	1432	1432	1432	1542	1542	1702	1702	1830	2090	2090
WIDTH	*mm*	1122	1352	1352	1462	1462	1622	1622	1720	1970	1970
DEPTH	*mm*	2379	2346	2686	2781	3151	3225	3545	3835	3879	4272
WEIGHT	*kg*	1553	1821	2030	2780	3280	4145	4465	5110	6700	7500

**at nominal load*

ELLPREX

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: 5 bar; it is possible, under specific request, to provide a MWP of 6 - 7 - 8 - 9 - 10 bar

Technical Data

MODAL		64	76	93	105	116
NOMINAL OUTPUT	*kW*	64	76	93	105	116
*EFFICIENCY**	*%*	90,1	90,4	91,1	91,3	90,6
WATER CAPACITY	*l*	86	86	86	126	126
HEIGHT	*mm*	912	912	912	1002	1002
WIDTH	*mm*	690	690	690	760	760
DEPTH	*mm*	990	990	990	1205	1205
WEIGHT	*kg*	195	195	195	280	280
MODAL		140	163	186	233	291
NOMINAL OUTPUT	*kW*	140	163	186	233	291
*EFFICIENCY**	*%*	90,3	90,5	90,3	90,3	90,4
WATER CAPACITY	*l*	126	151	151	203	247
HEIGHT	*mm*	1002	1002	1002	1127	1127
WIDTH	*mm*	760	760	760	860	860
DEPTH	*mm*	1205	1385	1385	1437	1687
WEIGHT	*kg*	280	318	318	420	480

**at nominal load*

MODAL

mod. Satal Plus C *3Zones*

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 - 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

Model SATAL PLUS C

Control of two heating zones (high and low temperature)

Composition:
- Wall mounted/built-in box
- Electric step-by-step mixing valve
- Two Y shaped filters
- 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

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 Dt 25K	*l/min*	17
HEIGHT	*mm*	650
WIDTH	*mm*	600
DEPTH	*mm*	150
WEIGHT	*kg*	18

SATAL PLUS C

mod. Satal 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 - joinable with energy and sanitary water measuring devices for sharing the costs among all the apartments

Model SATAL PLUS R *hotcold*

Control of two heating zones (high and low temperature)

Composition:
- Wall mounted/built-in box
- Electric step-by-step mixing valve
- Two Y shaped filters
- 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

Model SATAL PLUS R *3Zones-Ice*

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

For composition see model SATAL PLUS R caldofreddo, 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 *hotcold*

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

Detail of the heat exchanger

Technical Data

SANICAL SC		150	200	300	400	500	600	800	1000
WATER CAPACITY	*l*	168	212	291	423	500	589	765	888
*D.H.W. PRODUCTION**	*l/h*	780	1170	1430	1430	1820	1950	2210	2730
HEIGHT	*mm*	990	1215	1615	1460	1690	1960	1780	2030
DIAMETER	*mm*	600	600	600	750	750	750	990	990
GROSS WEIGHT	*kg*	70	90	115	140	155	190	215	245

* *average flow rate for Dt=25K*

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
DIMENSIONS (WxHxD)	*mm*	1485x1360x2350			1630x1480x2550	
WEIGHT	*kg*	1060	1060	1060	1380	1380

BAHR'UNO		500	600	800	1000
STEAM PRODUCTION	*kg/h*	500	600	800	1000
*NOMINAL OUTPUT **	*kW*	335	402	537	671
NOMINAL INPUT STD	*kW*	376	452	603	754
NOMINAL INPUT HPO	*kW*	364	487	584	729
NOMINAL INPUT HP	*kW*	353	423	565	706
DIMENSIONS (WxHxD)		1800x1600x2960		1980x1740x3437	
WEIGHT	*kg*	1730	1730	2290	2290

BAHR'UNO		1250	1500	1750	2000	2500	3000
STEAM PRODUCTION	*kg/h*	1250	1500	1750	2000	2500	3000
*NOMINAL OUTPUT **	*kW*	838	1006	1174	1341	1677	2012
NOMINAL INPUT STD	*kW*	942	1130	1319	1507	1884	2261
NOMINAL INPUT HPO	*kW*	911	1093	1276	1458	1823	2187
NOMINAL INPUT HP	*kW*	882	1059	1236	1412	1765	2118
DIMENSIONS (WxHxD)	*mm*	2220x1885x3740		2350x2010x3860		2725x2280x4370	
WEIGHT	*kg*	2990	2990	3710	3710	5250	5250

*Nominal output and steam production based on a boiler feeding water temperature of 70°C and a steam pressure of 1 bar

BAHR'UNO (STD - HPO - HP)

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

- Wide range, composed of 13 models, with steam production from 140 to 3000 kg/h (from 94 to 2012 kW of nominal output)
- Insulation of the outer shell and steam chambers obtained by the use of rock wool mattress, bound with thermosetting resins, of high density and thickness, conveniently supported
- Casing in pre-painted aluminium sheet, high thick
- Reversed flame, completely wet, pressurized combustion chamber.
- Design and construction in conformity with the Essential Safety Requirements of PED 97/23/CE
- Structural design in order to assure low thermal loads in the combustion chamber and low surface load
- Front door in strong welded steel plate, clad with thick insulating and refractory material, complete with flame sight glass and burner plate
- Rear smoke chamber in strong welded steel plate, with cleaning doors and horizontal smoke outlet
- Basement made of a frame in steel profiles, welded to the tube plates and closed with removable steel plate
- Walkway placed in the upper part of the generator, made by checker plate
- Smooth pipe with steel turbolators (STD versions)
- ESA pipes with six-sector steel inserts (HPO versions)
- ESALU pipes with mixed steel and alluminium inserts (HP versions)
- Connectable to BASIC, IMC, IML control panel, according to IEC standards, with a protection degree IP55, fixed to the steam generator, electrically connected to all the accessories. Supply tension: 3 ~ - 400 V - 50 Hz, adaptable on request
- Design pressure: 1 bar
- Max Working Pressure: 0,98 bar
- Max Working Temperature: 119,6 °C

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 generator *
- Pre-drilled burner plate
- Oil or gas fired burner

* Supplied with electronic panel board Unical, model IML (Industrial Multi Logic)

Special versions

BAHR'UNO 24 hr / 72 hr

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

Technical Data

BAHR'12		300	400	500	600
STEAM PRODUCTION	*kg/h*	300	400	500	600
*NOMINAL OUTPUT **	*kW*	204	273	341	409
NOMINAL INPUT STD	*kW*	234	314	392	470
NOMINAL INPUT HPO	*kW*	227	303	379	454
NOMINAL INPUT HP	*kW*	222	297	371	445
DIMENSIONS (WxHxD)		1555x1480x2350		1725x1600x2550	
WEIGHT	*kg*	1650	1650	2040	2040

BAHR'12		800	1000	1250	1500
STEAM PRODUCTION	*kg/h*	800	1000	1250	1500
*NOMINAL OUTPUT **	*kW*	545	682	852	1022
NOMINAL INPUT STD	*kW*	626	784	979	1175
NOMINAL INPUT HPO	*kW*	606	758	947	1136
NOMINAL INPUT HP	*kW*	592	741	926	1111
DIMENSIONS (WxHxD)		1870x1740x2960		2095x1885x3437	
WEIGHT	*kg*	2860	2860	3750	3750

BAHR'12		1750	2000	2500	3000	4000	5000
STEAM PRODUCTION	*kg/h*	1750	2000	2500	3000	4000	5000
*NOMINAL OUTPUT **	*kW*	1193	1363	1704	2045	2726	3408
NOMINAL INPUT STD	*kW*	1371	1597	1959	2351	3133	3917
NOMINAL INPUT HPO	*kW*	1326	1514	1893	2272	3029	3787
NOMINAL INPUT HP	*kW*	1297	1482	1852	2223	2963	3704
DIMENSIONS (WxH)	*mm*	2225x2010		2595x2280		2865x2510	2990x2610
DEPTH	*mm*	3740		3860		4370	4940
WEIGHT	*kg*	4650	4650	6600	6600	9030	10590

*Nominal output and steam production based on a boiler water feeding water temperature of 80°C and a steam pressure of 12 bar

BAHR'12 (STD - HPO - HP)

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

- Wide range, composed of 14 models, with steam production from 300 to 5000 kg/h (from 204 to 3408 kW of nominal output).
- Reversed flame, completely wet, pressurized combustion chamber.
- Design and construction in conformity with the Essential Safety Requirements of PED 97/23/CE
- Structural design in order to assure low thermal loads in the combustion chamber and low surface load.
- Front door in strong welded steel plate, clad with thick insulating and refractory material, complete with flame sight glass and burner plate
- Rear smoke chamber in strong welded steel plate, with cleaning doors and horizontal smoke outlet
- Basement made of a frame in steel profiles, welded to the tube plates and closed with a removable steel plate
- Walkway placed in the upper part of the generator and covered with checker plate
- Insulation of the outer shell and steam chambers obtained by the use of rock wool mattress, bound with thermosetting resins, of high density and thickness, conveniently supported
- Casing in pre-painted aluminium, high thick
- Smooth pipe with steel turbolators (STD versions)
- ESA pipes with six-sector steel inserts (HPO versions)
- ESALU pipes with mixed steel and alluminium inserts (HP versions)
- Connectable to BASIC, IMC, IML control panel, according to IEC standards, with a protection degree IP55, fixed to the steam generator, electrically connected to all the accessories. Supply tension: 3 ~ - 400 V - 50 Hz, adaptable on request
- Max. Working Pressure: 12 bar
- Max. Working Temperature: 191.7 °C

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" *
- 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)

* Supplied with electronic panel board Unical, model IML (Industrial Multi Logic)

Special versions

BAHR'12 24 hr / 72 hr

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

Technical Data

TRYPASS'		2000 Low NOx E	3000 Low NOx E	4000 Low NOx E	5000 Low NOx E	6000 Low NOx E	8000 Low NOx E	10000 Low NOx E	12000 Low NOx E	15000 Low NOx E
STEAM PRODUCTION	*kg/h*	2000	3000	4000	5000	6000	8000	10000	12000	15000
*NOMINAL OUTPUT**	*kW*	1531	2045	2726	3408	4089	5452	6815	8178	10223
NOMINAL INPUT	*kW*	1363	2285	3080	3808	4569	6058	7572	9087	11359
HEIGHT	*mm*	2380	2530	2730	2880	2960	3080	3200	3350	3580
WIDTH	*mm*	2460	2610	2810	2960	3040	3210	3360	3560	3810
DEPTH	*mm*	4910	5410	5760	6010	6210	7010	7410	7610	7810

TRYPASS'		2500 Low NOx	3750 Low NOx	5000 Low NOx	6250 Low NOx	7500 Low NOx	10000 Low NOx	12500 Low NOx	14400 Low NOx	17250 Low NOx
STEAM PRODUCTION	*kg/h*	2500	3750	5000	6250	7500	10000	12500	14400	17250
*NOMINAL OUTPUT**	*kW*	1704	2534	3408	4259	5111	6815	8519	9814	11756
NOMINAL INPUT	*kW*	1936	2847	3873	4785	5743	7572	9466	10904	13435
HEIGHT	*mm*	2380	2530	2730	2880	2960	3080	3200	3350	3580
WIDTH	*mm*	2460	2610	2810	2960	3040	3210	3360	3560	3810
DEPTH	*mm*	4910	5410	5760	6010	6210	7010	7410	7610	7810

TRYPASS'		3200 STD	4700 STD	6300 STD	7900 STD	9400 STD	12500 STD	15700 STD	18000 STD	21600 STD
STEAM PRODUCTION	*kg/h*	3200	4700	6300	7900	9400	12500	15700	18000	21600
*NOMINAL OUTPUT**	*kW*	2181	3176	3408	5384	6406	8519	10700	12267	14721
NOMINAL INPUT	*kW*	2493	3589	3917	6118	7238	9572	11955	13706	16448
HEIGHT	*mm*	2380	2530	2730	2880	2960	3080	3200	3350	3580
WIDTH	*mm*	2460	2610	2810	2960	3040	3210	3360	3560	3810
DEPTH	*mm*	4910	5410	5760	6010	6210	7010	7410	7610	7810

**with feeding water temperature t = 80°C*

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

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

- Wide range, composed of 18 models, with steam production from 2000 to 21600 kg/h (from 1363 to 16448 kW of nominal output)
- Design and construction in conformity with the Essential Safety Requirements of PED 97/23/CE
- Structural design in order to assure low thermal loads in the combustion chamber and low surface load
- Optimum efficiency without using turbolators
- Low polluting emissions by using "Low NOx" burners
- Large water contents and wide evaporating surfaces in order to guarantee a high reliability, a constant steam production rate to withstand of drawing peaks
- Two self-cleaning flame sight glasses, positioned in the front and rear part of the generator
- Front doors in strong welded steel plate, fitted onto hinges for the quick opening, clad with thick insulating and refractory material.
- Rear smoke chamber in strong welded steel plate, conveniently fitted and equipped with suitable clearing doors and horizontal smoke outlet
- Insulation of the outer shell obtained by the use of rock wool mattress bound with thermosetting resins, of high density and thickness, conveniently supported.
- Insulation of the steam chambers by casting of refractory cement
- Casing in pre-painted aluminium, high thick
- Feeding pump in vertical version
- Connectable to BASIC, IMC, IML control panel, according to IEC standards, with a protection degree IP55, fixed to the steam generator, electrically connected to all the accessories. Supply tension: 3 ~ - 400 V - 50 Hz, adaptable on request
- Working pressure: 12 bar or 15 bar, according to the order
- Working temperature: 191,7 °C or 201,4 °C
- Versions with combustion air pre-heater or economizer for the pre-heating of boiler feeding water are available

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"*
- External Kit economizer and modulating boiler water feeding group
- Pre-drilled burner plate according to request
- Oil or Gas fired burner
- Ladder and walkway

* Supplied with electronic panel board Unical, model IML (Industrial Multi Logic)

Special versions for all models

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

TRYPASS'12 PRE
With combustion air pre-heater

DEAR

Atmospheric deaerator for carbon steel steam generators

- Wide range composed by 10 models, with capacity from 500 to 10000 litres.
- Design and manufacture in conformity to the European Directive 97/23/CE Art.3 clause 3
- Delivery complete of insulation, casing, regulation accessories and panel board

De-aerated water temperature:
90÷95°C

Technical data

DEAR		500	1000	1500	2000	2500
DE-AERATED WATER TEMPERATURE	*°C*	90÷95	90÷95	90÷95	90÷95	90÷95
DE-AERATED WATER FLOW RATE	*l/h*	500	1000	1500	2000	2500
VOLUME	*l*	500	1000	1500	2000	2500
HEIGHT	*mm*	1330	1440	1690	1845	1845
WIDTH	*mm*	1045	1245	1495	1585	1585
DEPTH	*mm*	1970	2400	2315	1935	2990
WEIGHT	*kg*	350	480	535	580	685

DEAR		3000	4000	5000	8000	10000
DE-AERATED WATER TEMPERATURE	*°C*	90÷95	90÷95	90÷95	90÷95	90÷95
DE-AERATED WATER FLOW RATE	*l/h*	3000	4000	5000	8000	10000
VOLUME	*l*	3000	4000	5000	8000	10000
HEIGHT	*mm*	1915	2090	2300	2420	2500
WIDTH	*mm*	1665	1795	1995	2085	2085
DEPTH	*mm*	3080	3060	3130	2300	1080
WEIGHT	*kg*	785	970	1080	1650	1760

DETE

Thermo-physical de-aerator for carbon steel steam generators

- Wide range composed by 7 models, with capacity from 1000 to 16000 litres.
- Design and manufacture in conformity to the European Directive 97/23/CE Art.3 clause 3
- Delivery complete of insulation, casing, regulation accessories and panel board
- Exchange dome in carbon steel and internal parts in stainless steel

De-aerated water temperature:
105°C

Design pressure:
0,5 bar

Technical data

DETE		1000	2000	4000	6000
DE-AERATED WATER FLOW RATE MIN.	*kg/h*	300	1750	4000	6000
DE-AERATED WATER FLOW RATE MAX.	*kg/h*	1500	3000	5000	8000
USEFUL VOLUME	*m³*	700	1400	2800	4200
TOTAL VOLUME	*m³*	1000	2000	4000	6000
FEEDING WATER PRESSURE	*bar*	10÷12	10÷12	10÷12	10÷12
DESIGN PRESSURE	*bar*	0,5	0,5	0,5	0,5
DE-AERATED WATER TEMPERATURE	*°C*	105	105	105	105

DETE		8000	10000	16000
DE-AERATED WATER FLOW RATE MIN.	*kg/h*	10000	-	-
DE-AERATED WATER FLOW RATE MAX.	*kg/h*	12000	15000	22000
USEFUL VOLUME	*m³*	5600	7000	11200
TOTAL VOLUME	*m³*	8000	10000	16000
FEEDING WATER PRESSURE	*bar*	10÷12	10÷12	10÷12
DESIGN PRESSURE	*bar*	0,5	0,5	0,5
DE-AERATED WATER TEMPERATURE	*°C*	105	105	105

Feeding pressure = 10-12 bar - Condensate return 50% at T = 90°C - Feeding water pressure = 3 bar at 15°C

SÜHR'5 - SÜHR'10

Superheated water boiler, enbloc, horizontal, for middle and high pressure, reversed flame, smoke pipe type, with wet bottom. Sized to grant low thermal loads in combustion chamber and low surface load.

- Wide range composed of 14 models, with nominal output from 140 to 2900 kW
- Design, construction and certification in conformity with the Essential Safety Requirements of PED 97/23/CE.
- Supplied, as standard, complete with insulation, casing, panel board, regulations and safety devices

Max. Working Pressure:
4.9 bar for SUHR'5 and 9.8 bar for SUHR'10, as standard
11.76 bar for SUHR'10, on request

Max. Working temperature:
158.1 °C for SUHR'5 and 183.2°C for SUHR'10

Technical Data

SÜHR'		140	210	270	370	470	580	700
NOMINAL OUTPUT	*kW*	140	210	268	370	465	580	700
NOMINAL INPUT	*kW*	157	235	300	418	523	653	784
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	2350
WEIGHT (SUHR'5)	*kg*	760	1080	1080	1540	1540	1675	1675
WEIGHT (SUHR'10)	*kg*	1160	1560	1560	1850	1850	1970	1970
SÜHR'		**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
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 (SUHR'5)	*kg*	2350	2930	3500	4240	4790	5870	7000
WEIGHT (SUHR'10)	*kg*	2800	3500	4200	5140	5800	6300	8400

TRYSÜHR

Superheated water boiler, enbloc, horizontal, for middle and high pressure, three pass, smoke pipe type, with wet bottom. Sized to grant low thermal loads in combustion chamber and low surface load

- Wide range composed of 12 models, with nominal output from 870 to 10000 kW
- Design, construction and certification in conformity with the Essential Safety Requirements of PED 97/23/CE.
- Supplied, as standard, complete with insulation, casing, panel board, regulations and safety devices

Max. Working Pressure:
9.8 bar, as standard
Higher pressure on request

Max. Working temperature:
183,2 °C

Technical Data

TRYSÜHR'		870	1160	1400	1750	2300	2900
NOMINAL OUTPUT	*kW*	870	1160	1395	1750	2300	2900
NOMINAL INPUT	*kW*	> 90	> 90	> 90	> 90	> 90	> 90
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*	> 90	> 90	> 90	> 90	> 90	> 90
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 (SUHR'5)	*kg*	14300	15000	17600	19200	24350	28400

TERNOx

Hot water boiler, enbloc, horizontal, smoke pipe type, three pass, wet bottom

- Sized to grant low thermal loads in combustion chamber and low surface loads
- Low polluting emissions by using low NOx burners.
- Wide range composed of 10 models, with nominal outputs from 2500 to 10500 kW
- Supplied, as standard, complete with insulation, casing and panel board
- CE certified according to European Directive 90/396/CE (GAD)
- Design and construction according to EN 303 - Pt. 1

Maximum Working Pressure:
5 bar as standard; 6 or 8 bar on request

Technical Data

TERNOx		2500	3000	3500	4000	4500
NOMINAL OUTPUT	*kW*	2500	3000	3500	4000	4500
NOMINAL INPUT	*%*	> 92	> 92	> 92	> 92	> 92
HEGHT	*mm*	2330	2450	2460	2660	2660
WIDTH	*mm*	1930	2050	2050	2260	2260
DEPTH	*mm*	4510	4510	4960	5100	5550
WEIGHT (5 bar)	*kg*	5700	7110	7650	9250	10050
TERNOx		**5000**	**5800**	**7000**	**8500**	**10500**
NOMINAL OUTPUT	*kW*	5000	5800	7000	8500	10500
NOMINAL INPUT	*%*	> 92	> 92	> 92	> 92	> 92
HEGHT	*mm*	2660	2950	2950	3200	3360
WIDTH	*mm*	2660	2500	2500	2750	2910
DEPTH	*mm*	5550	6070	6570	7020	7320
WEIGHT (5 bar)	*kg*	10200	13300	14200	19200	23000

DÎATHER'

Diathermic oil fired, three pass heat generator, with mono or multi-tube pressurized horizontal combustion chamber

- Heat generator suitable for operation with gas, oil, heavy oil and also Low NOx pressure jet burners
- Combustion chamber made by with two concentric coils, with bottom shield integrated in the outer shell, made by seamless high quality steel tubes, close each other, rolled in cylinder shape
- The bottom of the boiler body is screwed and insulated and is equipped with cleaning door and smoke outlet connection.
- Three pass furnace, accessible from the front door
- Wide dimensions hinged front door, to make easy the service operations, clad with insulating and refractory material, complete with sight glass and burner plate
- External insulation made of a double layer of high density rock wool
- Outer casing in thick aluminium
- Wide range made of 14 models with nominal output from 116 kW up to 5815 kW

Technical Data

DÎATHER'		120	230	350	465	700	930	1160
NOMINAL OUTPUT	*kW*	116	232	348	465	697	930	1163
NOMINAL INPUT	*kW*	134	267	401	534	802	1069	1337
HEGHT	*mm*	1200	1330	1330	1570	1570	1680	1910
WIDTH	*mm*	1045	1150	1150	1335	1295	1375	1590
DEPTH	*mm*	1260	1650	2100	2320	2570	2970	3170
WEIGHT	*kg*	530	780	1000	1520	1700	2200	2950
DÎATHER'		**1500**	**1900**	**2300**	**2900**	**3500**	**4650**	**5800**
NOMINAL OUTPUT	*kW*	1512	1861	2326	2907	3489	4652	5815
NOMINAL INPUT	*kW*	1738	2139	2673	3342	4010	5347	6684
HEGHT	*mm*	2040	2040	2210	2560	2560	2910	3160
WIDTH	*mm*	1685	1685	1800	2150	2150	2600	2800
DEPTH	*mm*	3570	3920	4270	4500	5100	6050	6450
WEIGHT	*kg*	3700	4080	5300	7200	8000	12250	14560

ALKON 09

★★★★CE

Wall hung, room sealed, forced draught, pre-mixed, gas fired condensing boiler - electronic ignition - for D.H.W. production Low N0x, Class 5 EN 297/EN 483

- Fully pre-mixed burner
- Modulation ratio 1:4 for 18 kW model and 1:5 for 24 kW model
- Ultra flat aluminium/silicon/magnesium primary heat exchanger < 12 cm
- D.H.W. stainless steel plate heat exchanger
- Control and management microprocessor with automatic adjustment according to the outdoor temperature
- Temperature control of two separate heating zones with differentiated priorities
- Additional features: diagnostic readout of operation status and fault codes, boiler frost protection, chimney-sweep function, pump overrun and fault indication
- Continuous air/gas modulation controlled by the microprocessor
- Constant air/gas ratio
- Very high seasonal efficiency
- Self-adjusting output according to the flue outlet lengths
- Anti-jam timer pump and electrical diverting valve
- Protection degree: IP X4D
- Back lighted display

Optional accessories:
- outdoor sensor
- on/off or modulating room chrono thermostat
- D.H.W. stainless steel plate heat exchanger
- remote dedicated storage tank type DSP 110

Technical Data

ALKON 09		18 R	24 R	24 C
NOMINAL HEAT OUTPUT MIN/MAX	*kW*	4,2÷17,4	4,2÷23	4,2÷23
EFFICIENCY CLASS		★★★★ CE	★★★★ CE	★★★★ CE
*EFFICIENCY at FULL LOAD**	*%*	102	101	101
*EFFICIENCY at PART LOAD**	*%*	107,1	107,1	107,1
*N0x (Class 5)***	*mg/kWh*	35,5	38,8	38,8
D.H.W. PRODUCTION with Δt 25K	*l/min*	-	-	13,2
HEIGHT	*mm*	700	700	700
WIDTH	*mm*	420	420	420
DEPTH	*mm*	310	310	310
WEIGHT	*kg*	33	33	36
PROTECTION DEGREE	*IP*	X4D	X4D	X4D

* *in condensing mode* ** *value calculated according to EN 297/A3 and EN 483*

ALKON 09

ALKON 28 - 35 R

★★★★CE

Wall hung, room sealed, forced draught, pre-mixed, gas fired condensing boiler - electronic ignition - for central heating only - High seasonal efficiency - Low N0x, Class 5 EN 297/EN 483

- Fully pre-mixed burner
- Continuous air/gas modulation controlled by the microprocessor, with costant combustion ratio
- Modulation ratio 1:5 for 18 kW model and 1:6,5 for 35 kW model
- Aluminium silicon/magnesium primary heat exchanger
- Control and management microprocessor with automatic adjustment according the outdoor temperature
- Additional features: diagnostic readout of operation status and fault codes, boiler frost protection, chimney-sweep function, pump overrun
- Self-adjusting output according to of the flue outlet lengths
- Noise level < 52 dB
- Anti-jam pump timer
- Protection degree IP X4D
- Mounting template for the hydraulic connections

Optional accessories:
- Kit for D.H.W. production made of: 3 way diverting valve and priority temperature sensor for D.H.W. storage tank
- outdoor sensor
- on/off or modulating programmable room thermostat
- remote dedicated storage tank type DSP 110

Technical Data

ALKON		28 R*	35 R
NOMINAL HEAT OUTPUT MIN/MAX	*kW*	5,4÷28,65	6,7÷35,1
EFFICIENCY CLASS		★★★★ CE	★★★★ CE
*EFFICIENCY at FULL LOAD***	*%*	102,3	101,7
*EFFICIENCY at PART LOAD***	*%*	108,6	107,2
CO_2 min./max.	*%*	9,3-9,2	9,3-9,2
N0x (Class 5)****	*mg/kWh*	38,2	38,2
HEIGHT	*mm*	750	750
WIDTH	*mm*	398	398
DEPTH	*mm*	325,5	325,5
WEIGHT	*kg*	39	39
PROTECTION DEGREE	*IP*	X4D	X4D

**this model is the certified version of the 35 kW boiler, adjusted for 28 kW*
*** in condensing mode **** value calculated according to EN 297/A3 and EN 483*

ALKON 28 - 35 R

ALKON 28 - 35 C

★★★★CE

Wall hung, room sealed, forced draught, pre-mixed, gas fired condensing boiler - electronic ignition - for central heating and D.H.W. production - Low N0x, Class 5 EN 297/EN 483

- Fully pre-mixed burner
- Modulation ratio 1:5
- Ultra flat aluminium silicon/magnesium primary heat exchanger <12 cm
- D.H.W. stainless steel plate heat exchanger
- Control and management microprocessor with automatic adjustment according to the outdoor temperature
- Temperature control of two separate heating zones with differentiated priorities
- Special pre-heating function (rapid heating) which accelerates D.H.W. production (can be excluded)
- Additional features: diagnostic readout of operation status and fault codes, boiler frost protection, chimney-sweep function, pump overrun and fault indication
- Continuous air/gas modulation controlled by the microprocessor.
- Constant air/gas ratio
- Very high seasonal efficiency
- Self-adjusting output according to of the flue outlet lengths.
- Anti-jam pump timer and electrical diverting valve
- Protection degree IP X4D

Optional accessories:
- outdoor sensor
- on/off or modulating programmable room thermostat

Technical Data

ALKON		28 C	35 C
NOMINAL HEAT OUTPUT MIN/MAX	*kW*	5,4÷28,65	6,7÷35,1
EFFICIENCY CLASS		★★★★CE	★★★★CE
*EFFICIENCY at FULL LOAD**	*%*	102,3	101,7
*EFFICIENCY at PART LOAD**	*%*	108,6	107,2
CO_2 Min/max	*%*	9-9,2	9-9,2
*N0x (Class 5)***	*mg/kWh*	38,2	38,2
D.H.W. PRODUCTION with Δt 25K	*l/min*	15,6	19,4
HEIGHT	*mm*	750	750
WIDTH	*mm*	398	398
DEPTH	*mm*	325,5	325,5
WEIGHT	*kg*	37	39
PROTECTION DEGREE	*IP*	X4D	X4D

* *in condensing mode* ** *value calculated according to EN 297/A3 and EN 483*

ALKON 28 - 35 C

ALKON 24 - 35 B60

★★★★CE

Wall hung room sealed, forced draught, premixed, gas fired condensing boiler for central heating and D.H.W. production - Electronic ignition - Low NOx, Class 5 EN 297/EN 483

- Fully pre-mixed burner
- Modulation ratio 1:5 for 24 kW model and 1,6 for 35 kW
- Ultra flat aluminium/silicon/magnesium primary heat exchanger
- 60 litre stainless steel storage tank
- Control and management microprocessor with automatic adjustment according to the outdoor temperature
- Temperature control of two separate heating zones with differentiated priorities
- Additional features: diagnostic readout of operation status and fault codes, boiler frost protection, chimney-sweep function, pump overrun and faults indication
- Continuous air/gas modulation, controlled by the microprocessor
- Constant air/gas ratio
- Very high seasonal efficiency
- Self-adjusting output the flue outlet lengths
- Anti-jam pump and electric valve timer
- Protection degree IP X4D
- Certified also with air/flue ducts of 60 mm dia

Optional accessories:
- Outdoor sensor
- On/off or modulating programmable room thermostat

Technical Data

ALKON		24 B 60	35 B 60
NOMINAL HEAT OUTPUT MIN/MAX	*kW*	4,0÷24,1	5,0÷34,6
EFFICIENCY CLASS		★★★★ CE	★★★★ CE
*EFFICIENCY at FULL LOAD 100%**	*%*	101,1	100,5
*EFFICIENCY at PART LOAD 30%**	*%*	106,1	105,3
CO_2 Min/max	*%*	8-9	9-9,3
*N0x (Class 5)***	*mg/kWh*	57,6	34,8
D.H.W. PRODUCTION with Δt 25K	*l/min*	15	17,7
HEIGHT	*mm*	855	855
WIDTH	*mm*	600	600
DEPTH	*mm*	481	481
WEIGHT	*kg*	64	67
PROTECTION DEGREE	*IP*	X4D	X4D

** in condensing mode ** value calculated according to EN 297/A3 and EN 483*

ALKON 24 - 35 B60

ALKON SLIM SCT

★★★★CE

Wall hung, room sealed, condensing gas boiler, with premix burner, for indoor and outdoor installations, for Central Heating and instantaneous Domestic Hot Water production, with electronic ignition - Only 18 cm thick - Low NOx Class 5 of the EN 483

- Fully premix modulating burner
- Modulation ratio 1:6.5
- Ultra-compct primary heat exchanger in Al/Si/Mg
- SCOT: ignition system with electronic auto-calibration, modulating gas vave with electronic control
- D.H.W. production of 19.2 lt/min
- Dimensions 48 x 88 x 18 cm (W x H x D)
- Clever automatic filling system (after 3 automatic fillings in 24 hr the boiler gives an acoustic signal)
- Control of two heating zones, working at different (high/low) temperatures
- Three speed circulating pump, with automatic built-in air vent
- For INDOOR / OUTDOOR installation (IP X5D)
- Smoke evacuation ducts length more than 30 meters (twin pipes ø 80 / ø 80)
- Operation in sliding temperature
- Other functions: anti-frost protection and chimney sweeper, post-circulation (5 min) and faults indication
- Rubber protection top
- Modulating chrono-thermostat REGOLAFACILE supplied as standard

FUNCTIONS:
- Boiler and C.H. circuit frost protection
- Heating programs 1 & 2
- Requested temperature
- Switching On and switching Off time
- Continuous regulation
- Saving mode

Options:
- Outer temperature sensor

Technical Data

ALKON SLIM SCT		35
NOMINAL OUTPUT min./max.	*kW*	5,2÷34,3
EFFICIENCY CLASS		★★★★ CE
*WATER EFFICIENCY at full load **	*%*	100,8
*WATER EFFICIENCY at part load **	*%*	107,9
CO2 min./max.	*%*	9,5-9,5
*NOx (CLASS 5) ***	*mg/kWh*	41,2
D.H.W. PRODUCTION with Δt 25 K	*l/min*	19,2
HEIGHT	*mm*	880
WIDTH	*mm*	480
DEPTH	*mm*	180
WEIGHT	*kg*	46
PROTECTION DEGREE	*IP*	X5D

**In condensing mode* ***Value calculated according to EN 483*

ALKON SLIM SCT

ALKON INC

★★★★CE

Wall Hung Condensing Gas Boiler, with premix burner - supplied in a metallic box for built-in purposes - for Central Heating (CH) and Domestic Hot Water (D.H.W.) production, with electronic ignition - Low NOx emissions, Class 5 of the EN 483

- Fully premix modulating burner
- Modulation ratio 1:5
- Primary heat exchanger in Al/Si/Mg ultra-flat (<12 cm of depth)
- Metal Box, with insulation degree IP X5D, equipped with back hooks for hanging the boiler and holes allowing the passage of evacuation flue ducts (dia. 60 and 80 mm)
- D.H.W. stainless steel, gas brazed, plate heat exchanger
- Control and setup microprocessor with automatic adjustment, according to the external temperature
- Control of two heating zones, working at different (high/low) temperatures
- Minimum water pressure switch
- Automatic air vent built-in the pump
- Boiler drain tap
- 7 lt. expansion vessel
- Constant air/gas ratio in the burner modulation range, for a constant CO_2 , driven by the microprocessor
- Auto-adapting power, according to the smoke pipes' length
- Anti-jamming timer for pump and electric diverting valve
- Other functions: error codes display with SIM-CHRONO and REGOLAFACILE, anti-frost protection, chimney sweeper function (with Regolafacile only), post-circulation (5 min)

Options:
- Outer temperature sensor
- Remote controls:
  - SIM-PLEX
  - SIM-CHRONO
  - REGOLAFACILE
- Smoke evacuation kit
- Connection pipes kit, even with gate valves
- Electric resistors kit for connection pipes

Technical Data

ALKON INC		24 C
NOMINAL OUTPUT min./max.	*kW*	4,2÷24
EFFICIENCY CLASS		★★★★ CE
*WATER EFFICIENCY at full load **	*%*	100,67
*WATER EFFICIENCY at part load **	*%*	104,1
D.H.W. PRODUCTION with Δt 25 K	*l/min*	13,2
HEIGHT	*mm*	774
WIDTH	*mm*	487
DEPTH	*mm*	240
BOX DIMENSIONS (WxHxD)	*mm*	550x1140x255
WEIGHT	*kg*	32
PROTECTION DEGREE	*IP*	X5D

**In condensing mode*

ALKON INC

ALKON CARGO

★★★★CE

Floor standing, room sealed, forced draught, pre-mixed, gas fired condensing boiler for central heating and D.H.W. production, equipped with a 150 litre storage cylinder; electronic ignition Low N0x, Class 5 EN 297/EN 483

- Continuous air/gas modulation controlled by the microprocessor
- Fully pre-mixed burner
- Modulation ratio 1:5
- Constant air/gas ratio
- Aluminium silicon/magnesium primary heat exchanger
- Control and management microprocessor with automatic adjustment according to the outdoor temperature
- E8 Heating controller with outdoor sensor and second mixed circuit supplied as standard
- 150 litre storage cylinder with rapid storage function, enamelled according to DIN 4753, complete with inspection flange, magnesium anode, and insulated in high density polyurethane
- Electronic de-stratification system for optimized storage cylinder heating
- Silent boiler operation (noise inferior to 52 dBA)
- Self-adjusting output according to the flue outlet lengths
- Hydraulic compensator integrated into the hydraulic circuit, ideal for guaranteeing high flow rates on the three secondary pumps
- Primary circuit modulating pump
- Anti-jam primary pump timer
- Electric diverting valve
- 12 litre expansion vessel (CH)
- 8 litre expansion vessel (D.H.W.)
- Additional features: diagnostic readout of operation status and fault codes, boiler frost protection, chimney-sweep function, adjustable pump overrun and digital fault indication
- D.H.W. production with the maximum score (4 taps) according to EN 13203 (maximum comfort, maximum flow rate)

Optional accessories for controlled heating systems:
- 3rd mixed zone kit
- room sensors
- BM8 modulating programmable room thermostat (mixed zone)

Technical Data

ALKON CARGO		35
NOMINAL HEAT OUTPUT MIN/MAX	*kW*	6,7 ÷ 33,5
EFFICIENCY CLASS		★★★★CE
*EFFICIENCY at FULL LOAD 100%**	*%*	101
*EFFICIENCY at PART LOAD 30%**	*%*	108
*D.H.W. PRODUCTION with Δt 25K***	*l/min*	20
CO_2 min/max	*%*	9-9
*NOx (Class 5)****	*mg/kWh*	43,4
HEIGHT	*mm*	1781
WIDTH	*mm*	600
DEPTH	*mm*	664,5
WEIGHT	*kg*	182
PROTECTION DEGREE	*IP*	X4D

** in condensing mode*

*** with the maximum score equivalent to 4 taps according to EN 13203*

**** value calculated according to EN 297/A3 and EN 483*

ALKON CARGO

ALKON CLIPPER

★★★★CE

Floor standing, room sealed, forced draught, premixed, gas fired condensing boiler for central heating and D.H.W. production equipped with a stainless steel 110 litres storage cylinder - Electronic ignition - Very low polluting emissions, Low NOx, Class 5 EN 297/EN 483.

- Fully pre-mixed burner
- Modulation ratio 1:5
- Continuous air/gas modulation controlled by the microprocessor at constant air/gas ratio
- Aluminium silicon / magnesium primary heat exchanger
- Control and management microprocessor with automatic adjustment according to the outdoor temperature
- Additional features: diagnostic readout of operation status and fault codes, boiler frost protection, chimney-sweep function, pump overrun, pump and diverting valve anti-jam
- Self-adjusting output according to the flue outlet lengths
- 110 litre stainless AISI 316L steel storage cylinder with inspection flange, magnesium anode and polyesther insulation
- Protection degree IP X4D
- Anti-jam pump timer to avoid jamming of pump during inactivity periods

Optional accessories:
- Mixing circuit kit for a 2nd zone, complete with electonic regulation
- On/off or modulating programmable room thermostat

Technical Data

ALKON CLIPPER		28
NOMINAL HEAT OUTPUT MIN/MAX	*kW*	5,4÷28,5
EFFICIENCY CLASS		★★★★ CE
*EFFICIENCY at FULL LOAD**	*%*	101,9
*EFFICIENCY at PART LOAD**	*%*	107
D.H.W. PRODUCTION with Δt 25K	*l/min*	20
$C0_2$ Min/max	*%*	8,8-9
*N0x (Class 5)***	*mg/kWh*	49,65
HEIGHT	*mm*	1683
WIDTH	*mm*	476
DEPTH	*mm*	488
WEIGHT	*kg*	98
PROTECTION DEGREE	*IP*	X4D

** in condensing mode ** value calculated according to EN 297/A3 and EN 483*

ALKON CLIPPER

DSP 110 *inox*

D.H.W. storage tank which can be connected directly to the ALKON R models

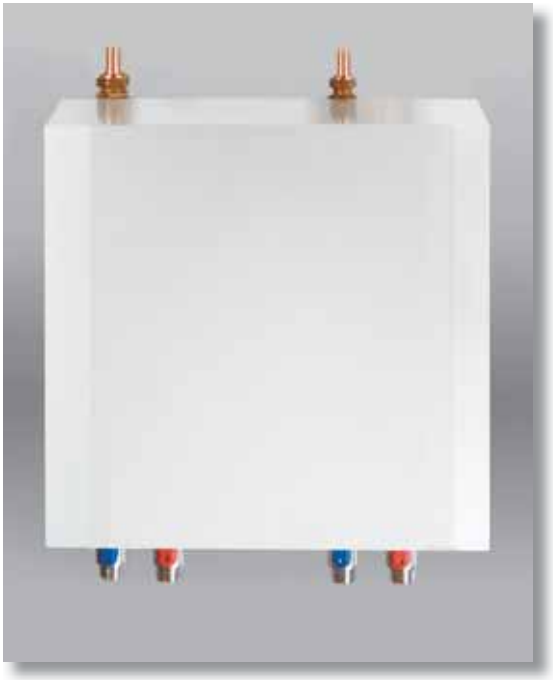
- Vertical 110 litre storage tank with an helicoidal shaped heat exchanger
- Motorized 3-way diverting valve
- Temperature control thermometer
- Expansion vessel (4 litres)
- Pipe connections
- Drainage cock
- Magnesium anode
- Inspection flange

Optional accessories:
- Pump kit for storage tank recirculation

Technical Data

DSP		110
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)
DIMENSIONS (HxWxD)	*mm*	990x465x489
WEIGHT	*kg*	53

DSP 110 *inox*



M 3000S

A thermal module which permits the connection of any type of boiler to a heating system composed of two circuits: one working at high temperature (fan coil, radiators, etc) and one at low temperature (underfloor heating)

Available in the following models:
M 3000S EST – wall mounted
M 3000S INC built-in version, supplied with a galvanized steel box

- Supplied with remote control for electronic management with communication software for Unical boilers
- High precision in hydraulic circuits temperature adjustment (tolerance < to 2°C) and removal of undesired condensate formation
- Intelligent electronics, programmed for optimization of the saving in the systems with solar integration thus reducing to the minimum the ignitions of the boiler
- Look and dimensions in line with the main range of wall mounted boilers
- Expansion possibility up to a maximum of 14 zones, all electronically operated
- An output of more than 12 kW available on each mixed circuit
- Compatibility with all types of boiler models
- Autonomous control of the climatic compensation with the possibility of managing each single ambient (by means of thermoelectrical heads)
- Available in the built-in version (M 3000S INC)

Option:
- Electronic remote control with communication protocol for Unical boilers

Technical Data

M 3000S		wall mounted	built-in
ELECTRICAL SUPPLY	*V-Hz*	230-50	230-50
MAXIMUM ABSORBED POWER	*W*	93	93
PROTECTION DEGREE	*IP*	X4D	X4D
box			
WIDTH	*mm*	372	430
HEIGHT	*mm*	402	677
DEPTH	*mm*	140	140
WEIGHT	*kg*	10	15

M 3000S

!DEA

Wall hung gas boiler for heating and D.H.W. production of A.C.S., in natural draught or room sealed version, with electronic ignition and an output between 22.9 and 28 kW

- Bithermal heat exchanger (versions CS, TN and CS)
- Monothermal heat exchanger (PLUS CS) + D.H.W.plate heat exchanger and 3 way valve
- Only one electrode for both, ignition and ionization purposes
- Continuous proportional gas modulation through microprocessor both in heating and D.H.W. production, with control temperature sensor
- Two level antifreeze protection on heating primary circuit: activation of internal heating and lockout, with signalling, in case of lack of gas
- Pump anti-jamming timer that avoids the jamming in case of long stop periods
- Heating temperature range adjustment: 45 - 78°C
- D.H.W. temperature range adjustment: 35 - 57°C
- N. 2 NTC sensors for temperature control and D.H.W. priority
- Circulating pump with built-in automatic air vent
- Visualization of lockout due to lack of flame and diagnostics with alphanumeric errors indication on the wide back lighted, multifunction LCD display (power safe)
- Outer casing completely in steel plate, painted with epoxy-polyester powder and thermo/acoustically insulated with 8 mm thick PU foam reflecting layer
- Easy maintenance due to the frontwards rotating panel board and frontal access to all the components
- Protection degree IP X5D / (X4D for the natural draught version)
- Water gauge
- Automatic differential by-pass
- 6 liter total content expansion vessel
- Safety pressure valve and safety thermostat
- Minimum water pressure switch
- D.H.W. priority flow switch with filter
- Vertically sliding electronic panel board, to facilitate the electrical connections and the maintenance
- Dedicated connection terminals for On/Off or modulating thermostat and outer temperature sensor

Technical Data

!DEA		AC23	CS24	CS28	CS24 PLUS	CS28 PLUS
NOMINAL OUTPUT	*kW*	22,9	24,6	28	24,6	28
EFFICIENCY CLASS		★★ CE	★★★ CE	★★★ CE	★★★ CE	★★★ CE
WATER EFFICIENCY at nom. load	*%*	89,8	92,8	92,9	92,8	92,9
WATER EFFICIENCY at part load	*%*	89,5	90,3	90,5	90,3	90,5
*D.H.W. PRODUCTION **	*l/min*	14,1	13,7	16,1	13,7	16,1
Dimensions (H x W x D)	*mm*	700 x 420 x 255				
DRY WEIGHT	*kg*	35	36	37	36	37
PROTECTION DEGREE	*IP*	X4D	X5D	X5D	X5D	X5D

** In continuous, with Δt 25K*

!DEA

DUA PLUS

Wall hung gas fired boiler for CH and D.H.W.; natural draught or room sealed forced draught version, with electronic ignition. Available in two versions: with thermostatic 3-way diverting valve (T) or electric (E).

- High efficiency and anti-scaling formation copper heat exchanger
- Casing painted with epoxy-polyester powders
- Double electronic ignition
- Circuit temperatures and diagnostic functions shown by led scale
- Motorised diverting valve (Thermostatic or Electric)
- Gradual and continuous flame modulation, controlled by temperature sensors and microprocessor, according to the absorbed output, both in CH and D.H.W. mode
- Circulating pump, equipped with a built-in air relief device
- 10 litre expansion vessel
- Minimum boiler water pressure switch
- Automatic differential bypass
- Antifrost protection on the whole CH circuit
- Special services function for capacity adjusting and gas valve regulation (service use)
- Anti-jamming function for pump and diverting valve
- Electrical supply and data transmission between boiler and remote control via a two lead cable
- Easy maintenance with direct access at the boiler components
- T.E.S. (Thermostatic Energy Saver) device for economising water and gas during D.H.W. production (mod. DUA PLUS C)

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

Technical Data

DUA PLUS		CTN 24	CTFS 24	RTFS 24
NOMINAL OUTPUT	*kW*	24,00/11,1	24,79/11,03	24,79/11,03
EFFICIENCY CLASS (DIR. 92/42 EEC)		★★ CE	★★★ CE	★★★ CE
EFFICIENCY at FULL LOAD 100%	*%*	90,1	92,9	92,9
EFFICIENCY at PART LOAD 30%	*%*	88,6	90,5	90,5
*D.H.W. PRODUCTION**	*l/min*	13,7	13,7	13,7
WIDTH	*mm*	450	450	450
HEIGHT	*mm*	863	863	863
DEPTH	*mm*	361	361	361
WEIGHT	*kg*	42	45	45
PROTECTION DEGREE	*IP*	X4D	X4D	X4D

**in continuous with Δt = 25K*

DUA PLUS

DUA PLUS MICROTANK

★★★CE

Wall hung gas fired boiler for CH and D.H.W.; room sealed forced draught version and electronic ignition, with micro-accumulation

- Output 30 kW in compact dimensions
- Casing painted with epoxy-polyester powders
- Monothermic heat exchanger at high efficiency, anti-scaling formation
- Micro accumulation, copper and steel, on the primary circuit (4 litres), for D.H.W. rapid preparation
- Double electronic ignition
- Circuit temperatures and diagnostic functions shown by led scale
- Motorised 3-way diverting valve
- Gradual and continuous flame modulation, sensors and microprocessor controlled, according to the absorbed capacity, both in CH and D.H.W. mode
- Circulating pump, equipped with an integral air relief device
- 10 litre expansion vessel
- Minimum boiler water pressure switch
- Automatic differential bypass
- Antifrost protection on the whole CH circuit
- Special services function for capacity adjusting and gas valve regulation (service use)
- Timer for anti-jam function for pump and diverting valve
- Easy maintenance with direct access at the boiler components

Options
- Outdoor sensor
- Remote control:
  - SIM-PLEX
  - SIM-CRONO
  - REGOLAFACILE

Technical Data

DUA PLUS MICROTANK		CTFS 30
NOMINAL OUTPUT	*kW*	29,95
EFFICIENCY CLASS		★★★ CE
EFFICIENCY at FULL LOAD	*%*	93,03
EFFICIENCY at PART LOAD	*%*	92,5
D.H.W. PRODUCTION in continuous with Δt 25 K	*l/min*	16,3
WIDTH	*mm*	450
HEIGHT	*mm*	863
DEPTH	*mm*	373
WEIGHT	*kg*	51
PROTECTION DEGREE	*IP*	X4D

DUA PLUS MICROTANK

IVEN 04

Wall hung gas fired boiler for CH and D.H.W.; natural draught or room sealed forced draught version, with electronic ignition 24 and 28 kW

- Casing painted with epoxypolyester powders
- High efficiency bithermal copper heat exchanger, anti-scaling formation
- Double electronic ignition
- 8 litre expansion vessel
- Gradual and continuous flame modulation, controlled by temperature sensors and microprocessor, according to the absorbed output, both in CH and D.H.W. mode
- Antifrost protection on the CH circuit
- Anti-jamming timer for pump
- CH set point range: 35-85°C
- D.H.W. set point range: 35-60°C
- 2 NTC sensors for temperature control and D.H.W. priority
- Circulating pump, with an integrated air vent
- Visualization of the burner lockout and simplified fault diagnostics
- Easy maintenance with direct access to the boiler components
- Thermomanometer
- Vertical translation of the panel board to easy the service operations

Technical Data

IVEN 04		CTN 24	CTFS 24	CTFS 28
NOMINAL OUTPUT	*kW*	23,88	24,6	28,4
EFFICIENCY CLASS.		★★ CE	★★★ CE	★★★ CE
EFFICIENCY at FULL LOAD	*%*	90,11	92,83	93
EFFICIENCY at PART LOAD	*%*	88,5	91,6	90,8
D.H.W. PRODUCTION in continuous with Δt 25 K	*l/min*	13,69	13,73	15,74
WIDTH	*mm*	420	420	420
HEIGHT	*mm*	800	800	800
DEPTH	*mm*	345	345	345
WEIGHT	*kg*	37	37	37
PROTECTION DEGREE	*IP*	X4D	X4D	X4D

IVEN 04

EVE 05

Wall hung gas fired boiler for CH and D.H.W.; natural draught or room sealed forced draught version, with electronic ignition

- Casing painted with epoxypolyester powders
- High efficiency bithermal copper heat exchanger, anti-scaling formation (only for CTN and CTFS 24)
- D.H.W. stainless steel plate heat exchanger (only for PLUS CS 26)
- One single ignition and ionization electrode
- 6 litre expansion vessel
- Gradual and continuous flame modulation, controlled by temperature sensors and microprocessor, according to the absorbed output, both in CH and D.H.W. mode
- Antifrost protection on the CH circuit
- Anti-jamming timer for pump
- CH set point range: 35-85°C
- D.H.W. set point range: 35-60°C
- 2 NTC sensors for temperature control and D.H.W. priority
- 3 speed circulating pump, with an integral air vent
- Visualization of the burner lockout and retention of the last 10 internal faults via the multifunction LC Display
- Easy maintenance with direct access from the front
- Protection degree IP X4D
- Thermomanometer
- Vertically sliding panel board in order to ease the service operations
- Automatic differential by-pass

Technical Data

EVE 05		CTN 24	CTFS 24	CS 26	CS 26 PLUS
NOMINAL OUTPUT	*kW*	24	24,6	26,1	26,1
EFFICIENCY CLASS		★★ CE	★★★ CE	★★★ CE	★★★ CE
EFFICIENCY at FULL LOAD	*%*	90,6	92,9	93,1	93,1
EFFICIENCY at PART LOAD	*%*	92,6	91,8	91,6	91,5
*D.H.W. PRODUCTION**	*l/min*	13,7	13,7	15	15
WIDTH	*mm*	420	420	420	420
HEIGHT	*mm*	700	700	700	700
DEPTH	*mm*	310	310	310	310
WEIGHT	*kg*	30	36,5	39,5	41,5
PROTECTION DEGREE	*IP*	X4D	X4D	X4D	X4D

**in continuous with Δt = 25K*

EVE 05

DUA PLUS B *inox*

Wall hung gas fired boiler for CH and D.H.W. production by 60 liters ultrafast stainless steel torage tank - electronic ignition

- Monothermal high efficiency copper heat exchanger
- Double electronic ignition
- Circuit temperatures and diagnostic functions shown by led scale
- Stainless steel ultrafast 60 litre, coil type, D.H.W. storage tank, with inspection flange and magnesium anode, insulated in high density polyurethane
- Electronically proportioned continuous gas modulation
- Two circulators: for heating system and D.H.W. tank loading, both equipped with an integral air vent and anti-jamming function
- Automatic differential bypass
- Antifrost protection on the whole CH circuit
- Special services function for capacity adjusting and gas valve regulation (service use)
- CH set point range: 35-85°C
- D.H.W. set point range: 35-65°C
- 7,5 litres expansion vessel
- NTC sensors for temperature control and D.H.W. priority
- Check valves reset by push button
- Easy maintenance with direct access froms the front

Optional:
- D.H.W. expansion vessel
- Remote control with modulating room chronothermostat REGOLAFACILE
- Outdoor sensor for control of room temperature according to external temperature

Technical Data

DUA PLUS B *inox*		28 BTN	28 BTFS
NOMINAL OUTPUT	*kW*	27,9	28,8
EFFICIENCY CLASS		★★ CE	★★★ CE
EFFICIENCY at FULL LOAD	*%*	90	93
EFFICIENCY at PART LOAD	*%*	89,7	92
D.H.W. PRODUCTION in continuous Δt 25 K	*l/min*	16	16,5
D.H.W. PRODUCTION in 10' mixed at 45° C with Δt 25 K	*l*	210	210
WIDTH	*mm*	600	600
HEIGHT	*mm*	870	870
DEPTH	*mm*	475	475
WEIGHT	*kg*	82	89
PROTECTION DEGREE	*IP*	X4D	X4D

DUA PLUS B *inox*

IVEN B 60

Wall hung gas fired boiler for CH and D.H.W. production by 60 liters ultrafast storage tank - electronic ignition

IVEN BTN 24: *natural draught*
IVEN BTFS 24: *room sealed forced draught*

- High efficiency monothermal copper heat exchanger, anti-scaling formation
- Proportional and continuous flame modulation, controlled by temperature sensors both in C.H. and D.H.W. mode
- Antifrost protection
- Anti-jamming timer for pump and diverting valve
- Pump overrunning function
- Special services function for capacity adjusting and gas valve regulation (service use)
- CH set point range: 35-85°C
- D.H.W. set point range: 35-60°C
- Glass lined ultrafast 60 litre D.H.W. tank, with inspection flange and magnesium anode
- Up to 137 litres of hot water at 45°C in 10 minutes
- NTC sensors for temperature control and D.H.W. priority
- Warning led for ignition failure
- Panel board with protection degree IP X4D

Technical Data

IVEN B		BTN 24	BTFS 24
NOMINAL OUTPUT	*kW*	23,8	24,6
EFFICIENCY CLASS (DIR. 92/42 EEC)		★★ CE	★★★ CE
EFFICIENCY at FULL LOAD	*%*	89,8	92,8
EFFICIENCY at PART LOAD	*%*	88,8	91,1
D.H.W. TANK CAPACITY	*l*	60	60
D.H.W. PRODUCTION in continuous with Δt 25 K	*l/min*	12,9	13,6
WIDTH	*mm*	600	600
HEIGHT	*mm*	855	855
DEPTH	*mm*	493	493
WEIGHT	*kg*	78	78
PROTECTION DEGREE	*IP*	X4D	X4D

IVEN B

INKAL

★★★CE

Built-in boiler with inox box completely occupating the wall depth, for outdoor installations with reduced dimensions very thin, for CH and D.H.W. production, sealed room with double electronic ignition Available for natural gas or LPG

- External protection in galvanized inox steel, with air intakes and front cover
- Built-in depth only 21 cm
- Mono-thermic copper heat exchanger
- Very low depth burner with 12 ramps
- D.H.W. secondary heat exchanger with 16 plates
- 8 litre expansion vessel
- Professional and continuous flame modulation, controlled by temperature sensors and microprocessor, according to the absorbed output, both in CH and D.H.W. mode
- Electonic control of two heating zones
- Chimney-sweeper function
- Anti-jamming timer for pump and diverting valve
- CH set point range: 40-85°C
- D.H.W. set point range: 40-65°C
- 2 NTC sensors for temperature control and D.H.W. priority
- External ON/OFF main switch
- Two versions:
  C.M.: Manual water filling
  C.A.: Automatic water filling by remote control
- Easy maintenance with direct access at the boiler components
- Automatic by-pass
- Circulating pump, with an integrated air vent
- Gas valve for outdoor installations -20 °C
- Automatic antifrost protection

Options:
- Kit electric resistors for connection pipes
- Kit isolating valves for CH and D.H.W.
- Dedicated system of smoke evacuation
- Remote control:
  - SIM-PLEX
  - SIM-CRONO
  - REGOLAFACILE

Technical Data

INKAL		C.M. CTFS 24	C.A. CTFS 24
NOMINAL OUTPUT	*kW*	24,6	24,6
EFFICIENCY CLASS		★★★CE	★★★CE
EFFICIENCY at FULL LOAD	*%*	93	93
EFFICIENCY at PART LOAD	*%*	90,9	90,9
*D.H.W. PRODUCTION**	*l/min*	13,4	13,4
WIDTH	*mm*	505	505
HEIGHT	*mm*	839	839
DEPTH	*mm*	210	210
BOX (W x H x D)	*mm*	590x1190x215	590x1190x215
WEIGHT	*kg*	33,5	33,5
PROTECTION GRADE	*IP*	X5D	X5D

**in continuous with Δt = 25K*

INKAL

EVELIN

★★★CE

Built-in boiler supplied in a metallic box, structure suitable for outdoor installations, protection against even the worse weather conditions -15°C. Compact dimensions, for CH and D.H.W. production, room-sealed, electronic ignition. Available for natural gas or LPG, supplied with remote control

- Galvanized steel box, with air vents and front cover with lock
- High efficiency, copper, bi-thermal heat exchanger with anti lime scale protection
- Double ignition electrode
- Ionisation electrode
- 12 ramp burner
- 7,5 litre expansion vessel
- Continuous proportional gas modulation controlled by the microprocessor in CH and D.H.W. mode
- Frost protection on the primary heating circuit
- Timer anti-jam pump which avoids seizure in case of long periods of boiler inactivity
- CH adjustment 40-85°C
- D.H.W. adjustment 35-60°C
- Automatic frost protection
- Chimney-sweeper function
- Plastic for electrical connections box
- Pressure gauge
- 2 NTC temperature control sensors
- Boiler drainage cock
- Burner lockout and error code indication on the display of the remote control Regolafacile
- Easy maintenance with direct access from the front
- Direct front access to burner, heat exchanger, fan
- Manual filling of CH system
- Circulating pump with an integrated air vent
- Gas valve for outdoor use -20°C + 60°C

Optional accessories:
- Kit electric resistors for connection pipes
- Heating system and D.H.W. isolating valves
- Dedicated flue outlet systems
- Hydraulic vertical/horizontal connection pipes
- Remote control:
  - SIM-PLEX
  - SIM-CRONO
  - REGOLAFACILE

Technical Data

EVELIN		CTFS 24	
NOMINAL OUTPUT	*kW*	*24,6*	
EFFICIENCY CLASS		★★★ CE	
EFFICIENCY at FULL LOAD	*%*	92,92	
EFFICIENCY at PART LOAD	*%*	93,4	
*D.H.W. PRODUCTION**	*l/min*	13,7	
		boiler	box
WIDTH	*mm*	470	550
HEIGHT	*mm*	790	1140
DEPTH	*mm*	240	255
WEIGHT	*kg*	36,5	17,5
PROTECTION GRADE	*IP*	X5D	

**in continuous with Δt = 25K*

EVELIN

ESTRAL - ESTRAL PLUS

★★★CE

Wall hung boiler, for outdoor installations with reduced dimensions, very thin (21 cm), for CH and D.H.W. production, with on board controls, sealed room with double electronic ignition. Available for natural gas or LPG.

- Structure for outdoor installations protected against weather conditions until -15 °C
- Mono-thermic copper heat exchanger
- D.H.W. secondary heat exchanger with 16 plates
- 8 litre expansion vessel
- Burner, heat exchanger and fan with front direct access
- Sliding control panel box for easy maintenance
- Proportional and continuous flame modulation, controlled by temperature sensors and microprocessor, according to the absorbed output, both in CH and D.H.W. mode
- Chimney-sweeper function
- Anti-jamming timer for pump and diverting valve
- CH set point range: 35-85°C
- D.H.W. set point range: 40-60°C
- 3-way motorised diverting valve
- NTC sensors for temperature control and D.H.W. priority
- Boiler drain tap
- External ON/OFF main switch
- Two versions:
  C.M.: Manual water filling
  C.A.: Automatic water filling by remote control
- Easy maintenance with direct access at the boiler compone nts
- Automatic by-pass
- Circulating pump, with an integrated air vent
- Gas valve for outdoor installations -20 °C
- Automatic antifrost protection

Optional accessories:
- Kit electric resistors for connection pipes
- Kit isolating valves for CH and D.H.W.
- Dedicated smoke evacuation system
- Remote control:
  - SIM-PLEX
  - SIM-CRONO
  - REGOLAFACILE

Technical Data

ESTRAL		C.M. CTFS 24	C.A. CTFS 24	C.A. CSX 26 PLUS
NOMINAL OUTPUT	*kW*	24,6	24,6	26
EFFICIENCY CLASS		★★★ CE	★★★ CE	★★★ CE
EFFICIENCY at FULL LOAD	*%*	93	93	93,1
EFFICIENCY at PART LOAD	*%*	90,9	90,9	92
D.H.W. PRODUCTION*	*l/min*	13,4	13,4	15
WIDTH	*mm*	510	510	510
HEIGHT	*mm*	852	852	852
DEPTH	*mm*	210	210	210
WEIGHT	*kg*	33,5	33,5	34
PROTECTION GRADE	*IP*	X5D	X5D	X5D

**in continuous with Δt = 25K*

ESTRAL - ESTRAL PLUS

CUTTER

★★★CE

Floor standing, room sealed, forced draught gas boiler, with electronic ignition. Available in the following models:

***R**: heating only*
***C**: heating and instantaneous D.H.W. production*
***B**: heating and D.H.W. production by coil type storage tank*

"R" model

- Monothermal copper primary heat exchanger
- Electronically proportioned continuous gas modulation with control probe
- Automatic differential bypass
- Modular dimensions for embedding

"C" model

- Heating section as R model
- Hard-soldered stainless steel secondary heat exchanger with anti-scaling plates
- T.E.S. (Thermostatic Energy Saver) device for economising water and gas (patented)
- Separate heating and D.H.W. regulations
- Electronically proportioned continuous gas modulation in heating and D.H.W. mode with control probes
- Modular dimensions for embedding

"B" model

- Heating section as R model
- Separate heating and storage tank loading pumps, equipped with automatic air relief device
- Glass lined 60 litre D.H.W. coil type storage tank, with inspection flange and magnesium anode
- Electronically proportioned continuous gas modulation in heating and D.H.W. mode with control probes
- Separate heating and D.H.W. regulations
- Modular dimensions for embedding

Options:
- 8 litres D.H.W. expansion tank
- smoke evacuation kit

Technical Data

CUTTER 31		R SE	C SE	B SE
NOMINAL OUTPUT	*kW*	32,1	32,1	32,1
EFFICIENCY CLASS		★★★ CE	★★★ CE	★★★ CE
EFFICIENCY at FULL LOAD	*%*	93,2	93,2	93,2
EFFICIENCY at PART LOAD	*%*	91,4	91,4	91,4
D.H.W. TANK CAPACITY	*l*	-	-	60
D.H.W. PRODUCTION*	*l/min*	-	17,8	17,8
WIDTH	*mm*	855	855	855
HEIGHT	*mm*	450	450	600
DEPTH	*mm*	600	600	600
WEIGHT	*kg*	62,5	67,5	95
PROTECTION GRADE	*IP*	X4D	X4D	X4D

**in continuous with Δt = 25K*

CUTTER

CARGOMAX 3Z

★★★CE

Floor standing, room sealed, forced draught gas boiler, with electronic ignition and D.H.W. production by coil type storage tank

- Monothermal copper primary heat exchanger
- Electronically proportioned continuous gas modulation via a microprocessor
- Pictogram type panel board for an easy adjusting by the user
- Pre-arranged for multi-zone CH systems
- Hydraulic compensator integrated into the hydraulic circuit, suitable to guarantee high flow rates on the 3 zone pumps
- Outer compensator kit suitable for controlling up to 2 mixed zones and 1 direct zone
- Possibility of operation with modulating room thermostat or outdoor temperature sensor (direct zones)
- Additional functions: antifrost, sweeper mode, breakdown diagnostic indicator
- Two circulators: for heating system and for D.H.W. storage tank loading
- Glass lined, high efficiency, 150 litre, D.H.W. coil type storage tank, with inspection flange and magnesium anode, insulated in high density polyurethane
- Ready for D.H.W. re-circulation connection
- D.H.W. expansion vessel, supplied as standard
- IP X4D insulation

Options for thermocontrolled systems:
- Kit of thermoregolator for control up to 2 mixed zones and one direct zone

Options:
- additional pump for a 3rd CH zone
- outdoor temperature sensor
- modulating room thermostat

Technical Data

CARGOMAX 3Z		31
NOMINAL OUTPUT	*kW*	32,1
EFFICIENCY CLASS		★★★ CE
EFFICIENCY at FULL LOAD	*%*	93,17
EFFICIENCY at PART LOAD	*%*	91,4
D.H.W. TANK CAPACITY	*l*	150
D.H.W. PRODUCTION in continuous Δt 25 K	*l/min*	18,06
D.H.W. PRODUCTION in 10' mixed at 45° C with Δt 25 K	*l*	210
WIDTH	*mm*	600
HEIGHT	*mm*	1730
DEPTH	*mm*	720
WEIGHT	*kg*	190
PROTECTION DEGREE	*IP*	X4D

CARGOMAX 3Z

IDRONIK TN 14

IDRONIK TS 13

IDRONIK

Fast, instantaneous, wall hung, natural draught or room sealed water heaters

TN Version

- High efficiency heat exchanger with wetted surface combustion chamber
- Fast drawing: 14 l/min
- Depth 15 cm
- Digital display
- Summer/Winter switch
- Output and Flow rate selectors
- Battery supply for ignition device

TS Version

- Ultra thin heat exchanger with wetted surface combustion chamber
- Fast drawing: 13 l/min
- Depth 11 cm
- Two modulation stage burner
- Continuous auto-diagnosis
- Safety protection and lockout
- Digital display and touch buttons
- 230 V supply

Technical Data

IDRONIK		TN 14	TS 13
NOMINAL OUTPUT	*kW*	25-12,5	22,5-8,5
WATER EFFICIENCY at nominal load	*%*	91,5	91
WATER EFFICIENCY at part load	*%*	90	89
ADJUSTABLE TEMPERATURE RANGE	*°C*	35-60	35-60
D.H.W. PRODUCTION with Δt=25K	*l/min*	14	13
WATER WORKING PRESSURE	*bar*	0,5-10	0,5-10
SMOKE EVACUATION DUCT	*mm*	120	60/100
LENGTH OF EVACUATION DUCT		min 0,5 m vert.	min 1 m max 3 m
GAS CONNECTION	*Ø*	1/2”	3/4”
WATER CONNECTIONS	*Ø*	1/2”	1/2”
DRAUGHT		natural	room sealed
PROTECTION DEGREE	*IP*	X2D	X4D
ELECTRICAL SUPPLY	*V*	battery 2x1,5 V	230
FREQUENCY	*Hz*	-	50
DRY WEIGHT	*kg*	35	36

PAR

Floor standing steel unit with built-in gas or oil pressure jet burner under the same casing

Available in models: open or sealed room

- Small dimensions, due to the vertical disposition of smoke ways with plane turbolators
- D.H.W. produced by anti-scaling stainless steel plate heat exchanger, with priority pressure switch and its own dedicated pump
- Two pumps: for heating and D.H.W. production
- Pre-mounted and pre-wired burner, also in sealed room version
- Pre-mounted pump, expansion tank and safety devices
- Swinging panel board
- Silent operation: 50 dB

Optionals:
- Oil burner with pre-heater
- For gas burner: LPG nozzle kit

Technical data

PAR		C24	C30
NOMINAL OUTPUT	*kW*	20,8÷26,1	26,9÷30,1
EFFICIENCY		★★ CE	★★★ CE
EFFICIENCY at FULL LOAD	*%*	92,2	92,6
EFFICIENCY at PART LOAD	*%*	89,5	89,5
D.H.W. TANK CAPACITY	*l*	-	-
D.H.W. PRODUCTION in continuous Δt 25 K	*l/min*	13,7	16,9
HEIGHT	*mm*	840	840
WIDTH	*mm*	450	450
DEPTH	*mm*	600	600
WEIGHT	*kg*	114	122

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	30	38	45	60
NOMINAL OUTPUT	*kW*	21	26	30	35	44	52	70
EFFICIENCY	*%*	91,3	92,9	90,9	92,1	91,7	91,2	90,9
HEIGHT	*mm*	830	830	830	830	920	920	1020
WIDTH	*mm*	570	570	570	570	660	660	760
DEPTH	*mm*	675	675	775	775	815	815	905
WEIGHT	*kg*	120	120	140	140	210	210	280

Maximum Working Pressure 4 bar

EXOCELL

Pressurised steel boiler for gas or oil pressure jet burners, combined with D.H.W. production storage tank

- Self cleaning, reversed flame, dry combustion chamber
- Patented anti-condensing system and stainless steel adjustable turbolators
- Cast iron door with double opening (left and right) with ceramic fibre insulation
- Integral panel board
- 100 litre glass lined D.H.W. storage tank, with inspection flange and magnesium anode,
- Full insulation of the boiler body with a 50 mm thick glass wool mattress

Technical data

EXOCELL		1-27	30
NOMINAL OUTPUT	*kW*	31,4	34,9
EFFICIENCY	*%*	90,2	90,4
D.H.W. TANK CAPACITY	*l*	100	100
*D.H.W. PRODUCTION**	*l/min*	10,5	10,5
HEIGHT	*mm*	1350	1350
WIDTH	*mm*	610	610
DEPTH	*mm*	674	674
WEIGHT	*kg*	166	166

* *in continuous Δt 30 K*

LENIADENS

Wood logs fired steel boiler, with total gasification and pyrolytic combustion checked through lambda sensor, with very high effciency (> 91%) and combustion chamber under negative pressure.

- Inverted flame combustion
- Efficiency higher than 91% (class 5) according to pr EN 303-5: 2011
- Very low CO emissions (class 5) according to pr EN 303-5: 2011
- 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

Technical data

LENIADENS		28	35	45	60
*NOMINAL OUTPUT **	*kW*	28,4	35,13	45,11	60,19
WATER EFFICIENCY	*%*	91	91	91	91
BOILER WATER CONTENT	*l*	175	175	193	242
MAX. WORKING PRESSURE	*bar*	3	3	3	3
FIREWOOD STORE VOLUME	*l*	172	172	172	234
WOOD LOGS LENGTH LENGTH	*cm*	50	50	50	70
HEIGHT	*mm*	1775	1775	1775	1775
WIDTH	*mm*	610	610	610	610
DEPTH	*mm*	1160	1160	1227	1494
DRY WEIGHT	*kg*	550	570	640	790

**Output obtained with a fire wood having a humidity of 15%*

LENIADENS

LAMBDALENIA

LAMBDALENIA BICOMB

LAMBDALENIA

Wood fired steel boiler with pyrolytic combustion at total gasification with very high efficiency, equipped with lambda probe to control the oxygen in the combustion

- Inverted flame combustion
- High efficiency (for solid fuel) over 85%
- Very low CO emission (Class 3) in according to EN 303-5.
- Optimisation and combustion control via the motorized regulation of primary and secondary air
- Suction fan for gasification of the wood
- Integral anti-condensing system with modulating thermostatic valves (Unical Patent)
- Wood store and combustion chamber wide inspection doors to facilitate loading and maintenance
- Self cooling doors with a special system of preheating for primary and secondary combustion air
- Casing insulation with 60 mm thick glass wool mattress
- Safety exchanger for over heating prevention, composed of steel coil immersed directly in the boiler water
- Automatic smoke by-pass, activated by the opening of the loading door
- Rear smoke chamber with lateral doors for inspection and cleaning
- Control panel Lambda Modul System with friendly use display
- Recirculation pump kit (Optional)
- Recirculation Puffer pump kit (Optional)

"BICOMB" Version

In addition to the wood fired boiler an other steel boiler, for pressure jet oil or gas burner, with the following characteristics, is fitted on top of it:

- Dry, self cleaning, reversed flame combustion chamber
- Anti-condensation system with adjustable stainless-steel baffles
- Cast-iron door with reversible opening (L.H. and R.H. side) and ceramic fibre insulation
- Integral insulation, for boiler body and casing, with 60 mm glass-wool insulation
- Automatic ignition of the auxiliary boiler when the wood is finished

Technical data

LAMBDALENIA		25	30	35	45	60
NOMINAL OUTPUT MAX.	*kW*	24,6	29,7	34,9	45,4	60
NOMINAL INPUT	*kW*	28,9	34,8	40,8	52,9	69,4
EFFICIENCY	*%*	88	88	88	88	88
WOOD STORE CAPACITY	*l*	100	145	145	200	280
WOOD LOGS LENGTH	*cm*	33	50	50	70	100
HEIGHT - WIDTH	*mm*	1461 - 730				
DEPTH	*mm*	1014	1184	1184	1384	1684
WEIGHT	*kg*	425	480	480	580	700

LAMBDALENIA BICOMB		25	30	35
NOMINAL OUTPUT MAX.	*kW*	24,6	29,7	34,9
NOMINAL INPUT	*kW*	28,9	34,8	40,8
NOMINAL OUTPUT FOR OIL	*kW*	24,1	31	31
EFFICIENCY	*%*	88	88	88
WOOD STORE CAPACITY	*l*	100	145	145
WOOD LOGS LENGTH	*cm*	33	50	50
HEIGHT - WIDTH	*mm*	1906 - 920		
DEPTH	*mm*	1014	1184	1184
WEIGHT	*kg*	497	560	560

*Output obtained with a fire wood having a humidity of 15%

LAMBDALENIA

Technical data

PIREN 2S PIREN 2S MODUL		25	27 HR	30	32 HR	35	45	60
*NOMINAL OUTPUT**	*kW*	24,6	27	29,7	32	34,9	45,4	60
HEAD INPUT	*kW*	28,9	29,6	34,8	35	40,8	52,9	69,4
EFFICIENTY	*%*	85,1	85,1	85,5	85,5	85,5	85,8	86,5
CAPACITY OF WOOD STORAGE	*l*	100	145	145	200	145	200	280
WOOD LOGS LENGTH	*cm*	33	50	50	70	50	70	100
HEIGHT - WIDTH	*mm*				1461 - 730			
DEPTH	*mm*	950	1120	1120	1320	1120	1320	1620
WEIGHT	*kg*	425	480	480	580	480	580	700

PIREN 2S BICOMB MODUL		25	30	35
*NOMINAL OUTPUT**	*kW*	24,6	29,7	34,9
HEAD INPUT	*kW*	28,9	34,8	40,8
NOMINAL OUTPUT FOR OIL	*kW*	24,1	31	31
EFFICIENCY	*%*	85,1	85,5	85,8
CAPACITY OF WOOD STORAGE	*l*	100	145	145
WOOD LOGS LENGTH	*cm*	33	50	50
HEIGHT - WIDTH	*mm*		1906- 920	
DEPTH	*mm*	950	1120	1120
WEIGHT	*kg*	497	560	560

**output obtained using wood with max 15% humidity*

PIREN 2S

Wood fired steel boiler with pyrolysis combustion at total gasification

- Inverted flame combustion
- High efficiency (for solid fuel) over 85%
- Low CO emission (Class 3) in according to EN 303-5.
- Optimisation and combustion control by regulation of primary and secondary air
- Assisted combustion using wood gasification sucting fan
- Integral anti-condensing system with modulating thermostatic valves (Unical patented)
- Wood store and combustion chamber wide inspection doors to facilitate loading and maintenance
- Door whit a special system of preheating for primary and secondary combustion air
- Casing insulation with 60 mm thick rock wool mattress
- Safety exchanger to prevent over heating composed of steel coil immersed directly in the boiler water
- Automatic smoke by-pass activated by the opening of the loading door
- Rear smoke chamber with lateral door for inpection and cleaning.
- Recirculating pump kit (Optional)
- Control panel for Puffer

"MODUL" Version

- Modulating control panel with automatic management of the temperature and modulating fan depending on to the boiler and room temperature, able to control an auxiliary boiler
- On request also a Lambda sensor

"BICOMB MODUL" Version

In addition to the wood fired boiler is positioned a built-in auxiliary boiler, gas or oil operated with the following features:

- Dry, self cleaning, combustion chamber for reversed flame
- Anticondensing system with adjustable stainless steel
- Cast-iron door with reversible opening and ceramic fibre insulation
- Integral boiler body insulation with reinforced rock wool mattress 60 mm thick
- Panel board for automatic start of the auxiliary boiler when the fire wood is finished

PIREN 2S

AIREX 2S

AIREX 2S BICOMB MODUL

AIREX 2S

Total gasification wood fired steel boiler with standard electomechanical panel board

- Inverted flame combustion
- Construction with 8 mm thick steel plates construction
- High efficiency (for solid fuel) over 84%
- Optimisation and combustion control by regulation of primary and secondary air
- Wood gasification sucting fan
- Integral anti-condensing system with modulating thermostatic valves (patented)
- Wood store and combustion chamber wide inspection doors to facilitate loading and maintenance
- Combustion chamber with refractory catalyst
- Boiler body insulation with 60 mm thick glass wool mattress
- Safety exchanger to prevent over heating composed of steel coil immersed directly in the boiler water

"MODUL" model

Standard panel board with modulating operation for the temperature control and the management of the fan, able to control the alongside auxiliary boiler.

"BICOMB MODUL" model

In addition to the wood fired boiler there is a built-in pressurised steel boiler for gas or oil pressure stainless jet burner with the following features:

- Self cleaning dry combustion chamber with reversed flame
- Anti-condensing system with adjustable steel turbolators
- Cast iron door with double opening (left and right) with ceramic fibre insulation
- Body and casing insulation with 60 mm thick glass wool mattress
- Panel board for the automatic start of the auxiliary boiler when the wood is finished

Technical data

AIREX 2S AIREX 2S MODUL		25	40	50	65	80
*NOMINAL OUTPUT **	*kW*	29	47	58	65	80
WATER CAPACITY	*l*	90	110	140	170	220
HEIGHT	*mm*	1415	1545	1545	1595	1595
WIDTH	*mm*	560	655	655	755	755
DEPTH	*mm*	1170	1170	1370	1430	1730
WEIGHT	*kg*	396	485	603	760	927

AIREX 2S BICOMB MODUL		25	40	50
*NOMINAL OUTPUT **	*kW*	29	47	58
WATER CAPACITY	*l*	120	155	195
HEIGHT	*mm*	1775	1955	2005
WIDTH	*mm*	560	655	655
DEPTH	*mm*	1170	1170	1370
WEIGHT	*kg*	470	570	730

* *output obtained using good quality wood with max 15% humidity*

AIREX 2S

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 89%
- 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

Dati Tecnici

AIREX		150	200
*NOMINAL OUTPUT **	*kW*	149,3	199,7
EFFICIENCY	*%*	89	89
BOILER WATER CONTENT	*l*	430	493
MAX. WORKING PRESSURE	*bar*	3	3
WOOD STORE VOLUME	*l*	495	580
WOOG LOGS LENGTH	*cm*	100	120
HEIGHT	*mm*	1860	1860
WIDTH	*mm*	800	800
DEPTH	*mm*	2201	2461
DRY WEIGHT	*kg*	1475	1626

**output obtained using good quality wood with max 15% humidity*

AIREX 150/200

GASOGEN 3 2S

GASOGEN GLG3 2S

GASOGEN 3 2S

Total gasification wood fired steel boiler

- Construction with 8 mm thick steel plates construction
- Inverted flame combustion
- High efficiency (for solid fuel) over 84%
- Optimisation and combustion control by regulation of primary and secondary air
- Assisted combustion using wood gasification fan
- Wood store and combustion chamber wide inspection doors to facilitate loading and maintenance
- Combustion chamber with refractary catalyst
- Boiler body insulation with60 mmthick glass wool mattress
- Panel board controlling automatically the water temperature and fan operation
- Safety exchanger to prevent over heating composed of steel coil immersed directly in the boiler water
- Integral anti-condensing system with modulating thermostatic valves (Unical patented)

Optional:
- panel board DUO AUTOMATIC for control fan auxiliary boiler besides

GASOGEN GLG3 2S model

Added to the wood furnace there is a pressurised steel boiler for gas or oil pressure jet burner, as follows:

- Self cleaning dry combustion chamber with reversed flame
- Anti-condensing system with adjustable stainless steel turbolators
- Cast iron door with double opening (left and right) with ceramic fibre insulation
- Body and casing insulation with 60 mm thick glass wool mattress
- Panel board for the automatic start of the auxiliary boiler when the wood is finished

Technical data

GASOGEN G3 2S		G25	G40	G50	G65	G80
*NOMINAL OUTPUT **	*kw*	*29*	*47*	*58*	*76*	*93*
WATER CAPACITY	*l*	*90*	*110*	*140*	*170*	*220*
HEIGHT	*mm*	*1415*	*1545*	*1545*	*1595*	*1595*
WIDTH	*mm*	*560*	*655*	*655*	*755*	*755*
DEPTH	*mm*	*1260*	*1260*	*1460*	*1515*	*1815*
WEIGHT	*kg*	*366*	*455*	*574*	*712*	*862,5*

GASOGEN GLG3 2S		GLG 25	GLG 40	GLG 50
*NOMINAL OUTPUT **	*kw*	*29*	*47*	*58*
WATER CAPACITY	*l*	*120*	*155*	*195*
HEIGHT	*mm*	*1775*	*1955*	*2005*
WIDTH	*mm*	*560*	*655*	*655*
DEPTH	*mm*	*1280*	*1350*	*1400*
WEIGHT	*kg*	*470*	*570*	*730*

* *output obtained using good quality wood with max 15% humidity*

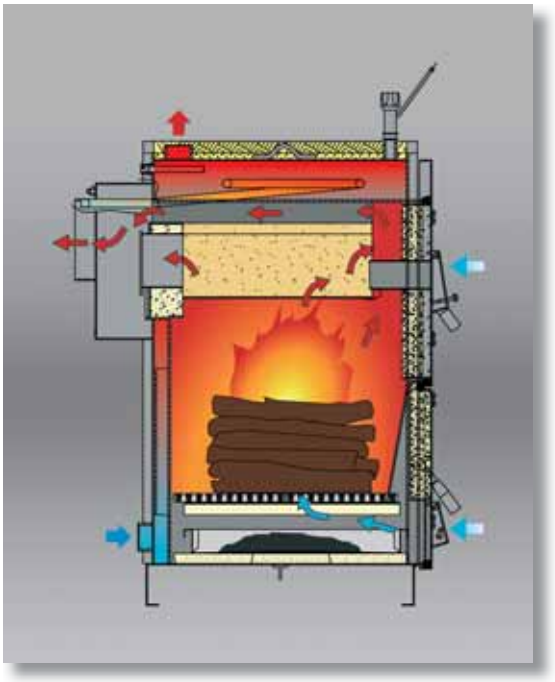
GASOGEN 3 2S

FOKOLUS

Steel boiler wood fired

- 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
- Wool rock, anti-tear, casing insulation
- Special refractory catalyst tile
- Manual by-pass

Boiler operation scheme



Technical data

FOKOLUS		20	30	40
*HEAT OUTPUT**	*kW*	20	33	42
WOOD STORAGE CAPACITY	*kg*	70	125	165
HEIGHT	*mm*	1260	1260	1260
WIDTH	*mm*	572	652	652
DEPTH	*mm*	776	946	1146
WEIGHT	*kg*	250	340	402

* *output obtained using good quality wood with max 15% humidity*

FOKOLUS

Da sinistra: STILE 16, STILE 27

STILE

High efficiency, hydronic space heating appliance fired by wood pellets

- 2 Models with 16 and 27 kW output
- New and particularly stylish design, due to:
  - Door glass partially darkened that allows to see only the flame
  - Upper and lower front inserts in darkened crystal, 4 mm thick
  - Enamelled side panels in three parts
  - Panel board with glass protecting screen
  - 3 different colours are available
- Large pellet capacity reservoir for a long operation autonomy (60 kg on model 27), (28 kg on model 16)
- Fast opening door for access to the ash trays
- Completely removable top and side panels for normal operational service
- Long lever handle
- Adjustable basement feet
- Combustion crucible in stainless steel AISI 310S
- Easy operation and remarkable saving tanks to the modulating management of the produced output
- Large heat exchanger protection surface against the direct flame
- Bidirectional remote control on model 27 kW
- Infrared remote control on model 16 kW
- Controlled combustion system with smoke temperature recovering
- Pressure switch for smoke draught control
- Room sealed operation
- Automatic re-ignition in case of blackout
- Water temperature monitoring
- Possibility of output setting on 5 levels
- Weekly programmer
- Expansion vessel and circulating pump standard supplied inside the casing

Optional:
- Domestic Hot Water production Kit (on model 27 kW)

Standard Equipment

STILE	16	27
INFRARED REMOTE CONTROL	●	NO
BIDIRECTIONAL REMOTE CONTROL	NO	●
WEEKLY PROGRAMMER ON BOARD	●	●
FLUE OUTLET PRESSURE CONTROL	●	●
HEAT OUTPUT SETTING ON 5 LEVELS	●	●
WATER TEMPERATURE CONTROL ON DISPLAY ON BOARD	●	●
FORCED DRAUGHT SYSTEM WITH SMOKE TEMPERATURE RECOVERY	●	●
SYSTEM CIRCULATION PUMP	●	●
D.H.W. PRODUCTION KIT	NO	○
EXPANSION VESSEL	●	●

● *Fitted as standard* ○ *Optional* NO *Not foreseen*

Technical Data

STILE		16	27
HEAT OUTPUT	*kW*	3,1÷10,3	5,2÷20
GLOBAL EFFICIENCY	*%*	90	90
CONTAINER CAPACITY	*Kg*	28	60
OPERATION AUTONOMY	*h*	9/28	10,7/36,4
BOILER CAPACITY	*l*	10	35
PELLET CONSUMPTION min/max	*Kg/h*	1/3,1	1,65/5,62
HEIGHT	*mm*	1024	1390
WIDTH	*mm*	560	610
DEPTH	*mm*	660,5	710
WEIGHT	*kg*	200	300

STILE

From the left: KALDUS 15, KALDUS 27

KALDUS 2S

Pellet fired, room sealed, high output hydro unit

- Available in 2 models with a 15 and 27 kW output
- Standard 8 litre expansion vessel for 27 kW model
- Capacious container
- Easy to operate and money saving
- Bidirectional remote radiocontrol (27 kW model)
- Infrared remote control (15 kW model)
- Controlled combustion system with latent heat recovery
- Flue outlet pressure switch control
- Room sealed operation
- Safety glass
- Automatic reignition in case of black-out
- Supervision of water temperature
- Possibility of setting the output on 5 levels
- Weekly programmer

Optional:
- D.H.W. production kit (27 kW model)

Standard Equipment

KALDUS 2S	15	27
INFRARED REMOTE CONTROL	🔥	NO
BIDIRECTIONAL REMOTE CONTROL	NO	🔥
WEEKLY PROGRAMMER ON BOARD	🔥	🔥
FLUE OUTLET PRESSURE CONTROL	🔥	🔥
HEAT OUTPUT SETTING ON 5 LEVELS	🔥	🔥
WATER TEMPERATURE CONTROL ON DISPLAY ON BOARD	🔥	🔥
FORCED DRAUGHT SYSTEM WITH SMOKE TEMPERATURE RECOVERY	🔥	🔥
SYSTEM CIRCULATION PUMP	🔥	🔥
D.H.W. PRODUCTION KIT	NO	🔥
EXPANSION VESSEL	NO	🔥

🔥 *Fitted as standard* 🔥 *Optional* NO *Not foreseen*

Technical Data

KALDUS 2S		15	27
HEAT OUTPUT	*kW*	3,1÷10,3	5,2÷20
GLOBAL EFFICIENCY	*%*	90	90
CONTAINER CAPACITY	*Kg*	28	60
OPERATION AUTONOMY	*h*	9/28	10,7/36,4
BOILER CAPACITY	*l*	10	35
PELLET CONSUMPTION min/max	*Kg/h*	1/3,1	1,65/5,62
HEIGHT	*mm*	1039	1390
WIDTH	*mm*	550	640
DEPTH	*mm*	640,5	706
WEIGHT	*kg*	230	300

KALDUS 2S

PELLEXIA

Hot water, carbon steel, thermal group- with nominal output of 27 kW and 40 kW - equipped with modulating pellet burner and pellet reservoir for automatic feeding

Pellet reservoir capacity: 150 kg
Autonomy of operation over 23 hours at nominal output, in continuous operation without turning off the burner, equal to ca. 6 days of normalized domestic operation.
Carbon steel boiler body with combustion chamber partially covered with refractory, 3 smoke passes.

- Certified efficiency higher than 90.3%
- Class 3 according to EN 303-5
- Wide and deep combustion chamber in order to assure:
  - Complete combustion of the air/pellet mixture
  - Cleaning of the wet walls
- Intermediate refractory stones between furnace and second pass that determine the inversion of the smokes
- Wide arc in steel entirely wet, that constitutes the 3rd smoke pass and acts as real heat exchanger
- Safety heat exchanger
- Casing insulation with tear resistant mineral wool mattress, 60 mm thick.

Pellet burner

Complete of:
- Fan
- Certified burner control
- Ignition and combustion assembly in thermal steel
- External cap in thermoforming

Output modulation step by step, in four levels for:
- Consumptions optimization and polluting emissions reduction

Panel board that assures all the normal functions (ignition, extinction, re-setting, etc.) and besides:
- Visualization of the information through display
- Weekly programming
- Output management in “D.H.W. mode” that allows the combination with D.H.W. storage tanks.
- Visualization, with message, of the pellet level
- Signalling of pellet reserve (20%) through capacitive sensor
- Switch off at 10% reserve; notice for the consumer, due to lack of the pellet.

Safety devices

- Sensor against “pellet clogging”
- Thermostat against burner overheating
- Signalling of correct operation state of the sensors
- Protection against momentary electrical blackout, through the intervention of the control software that activates a correct procedure of turning off of the burner
- Overheating protection of the boiler water through the activation of all the pumps and procedure of automatic turning off of the burner
- Visualization of the alarms through sliding message on the display
- C.H. expansion vessel,10 litres
- C.H. safety valve, set at 3 bar and automatic air vent.

Options:
- Recirculation pump kit
- Thermostatic valve and recirculation pump kit
- Remote control

Technical Data

PELLEXIA		27	40
NOMINAL OUTPUT min./max.	*kW*	8÷27	13÷40
GLOBAL EFFICIENCY	*%*	90,4	90,3
PELLET RESERVOIR CAPACITY	*kg*	150	150
BURNER AUTONOMY (at min./max. output)	*h*	23/71	15,8/45,6
BOILER WATER CONTENT	*l*	67	67
PELLET CONSUMPTION (at min./max. output)	*kg/h*	2,1/6,4	2,1/6,4
HEIGHT	*mm*	1415	1415
WIDTH	*mm*	990	990
DEPTH	*mm*	1578	1758
DRY WEIGHT	*kg*	477	694

PELLEXIA

PAG 80÷120 wall-hung

PAG 150÷400 floor standing

PAG

Gas fired, room sealed, forced draught, storage type, D.H.W. heater, with electric ignition

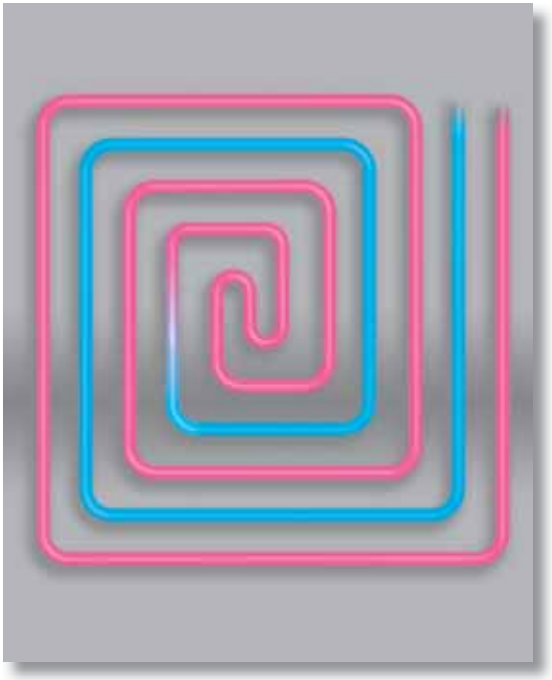
Wall hung version
storage capacity 80 - 120 litres

Floor standing version
storage capacity 150 - 180 - 220 - 300 - 400 litres

- Efficiency over 90% because of:
  - special combustion chamber designed with the upper bottom water cooled
  - pre-heating of combustion air
- Glass lined steel storage tank, with inspection flange and magnesium anode
- High density polyurethan insulation
- Stainless steel burner
- Maximum D.H.W. inlet pressure: 4,5 bar (for higher pressure it's necessary to install a pressure reducing valve)

Technical Data

PAG		80	120	150	180	220	300	400
NOMINAL OUTPUT	*kW*	4,7	4,7	17	17,5	25,8	28	28
HEATING TIME Δt 25° C	*min*	28	43	17	19	16	20	26
HEATING TIME Δt 45° C	*min*	50	77	30	34	28	36	47
D.H.W. PRODUCTION in continuos Δt 25° C	*l/h*	153	153	610	654	839	912	930
D.H.W. SINGLE DRAWING Δt 45° C	*l*	85	85	340	360	466	507	507
HEIGHT	*mm*	1040	1040	1925	2125	1660	2015	2365
WIDTH	*mm*	460	460	520	520	720	720	720
DEPTH	*mm*	460	460	520	520	720	720	720
WEIGHT	*kg*	53	78	119	132	211	256	300



STRATINOX

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

In the UNICAL program of water distribution pipes there are the following diameters: 16 - 17 - 20 mm, all with a thickness of 2 mm. All the pipes are supplied in rolls of 200 - 500 and 600 metres

Pipes

Pipes PE-X (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 (UHMWP) 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 EVOH 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 (UHMWP); whose reticulation, obtained by chemical treatment with peroxide at very high pressure, gives the pipes a particular malleability and an utilization ease. The presence of EVOH barrier grants the conformity to the norm DIN 4726.

Multi-layer pipes:

The high quality compound homogeneously joins the outer and inner pipes to the aluminium pipe.
The aluminum intermediate part prevents the passage of gaseous substances, avoiding every danger of corrosion due to oxygen infiltrations and damages for the exposure to UV rays.

- **PE-RT/AL/PE-RT**
  The external and internal pipes in polyethylene are obtained from a medium density row material and, subsequently submitted to a chemical treatment in order to grant a high standard of utilization under high temperatures and pressures. Uniform, longitudinally welded, perfectly round, 0.2 mm thick aluminium pipe.

Insulating board in expanded polystyrene

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 250, 10 mm thick - EPS 200, 20 or 30 mm thick.
  Base for PE-X pipes or multi-layer pipes (16/17/20 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

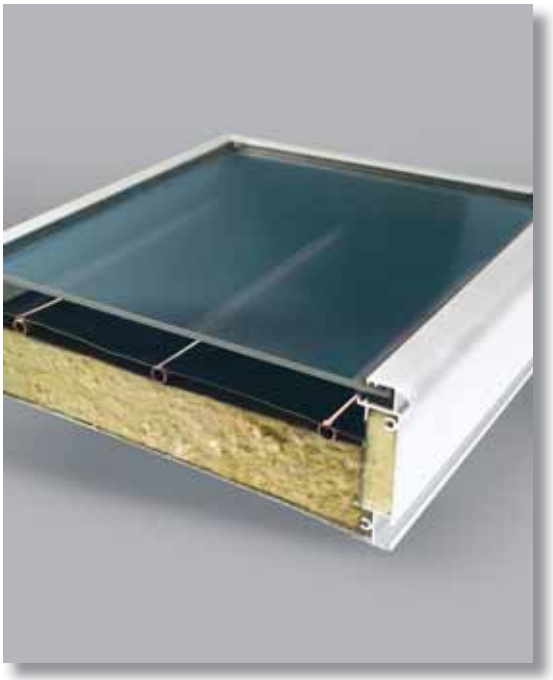
Floor Heating Accessories

- Automatic regulations (see M 3000 S description)
- 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

Internal view



TITANIUM

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

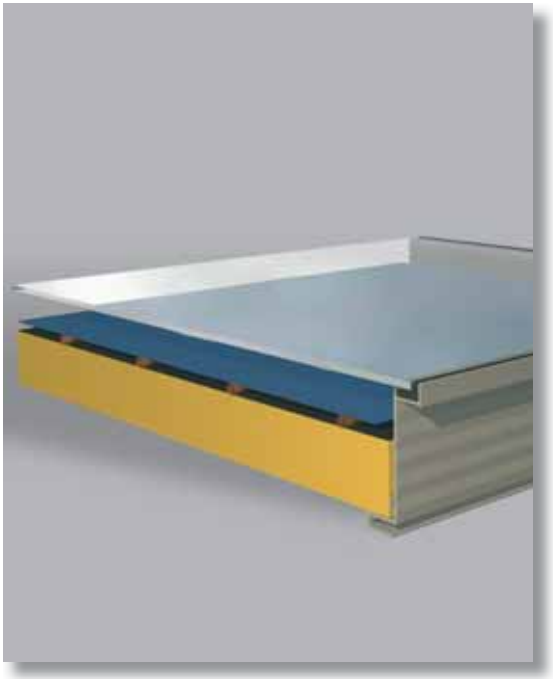
- Copper plate collector
- Total surface absorber, with highly selective TITAN treatment “SUN SELECT”
- Extra-clear, tempered, highly transparent, coated, 4 mm thick collector glass
- High density, lateral and rear rock-wool insulation, 45 mm thick
- Box in painted aluminium profiles
- Collector tested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

Opzionali:
- 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 $\eta 0$		0,775	0,775	0,73
LOSSES COEFFICIENT $\alpha 1$	W/m^2K	3,91	3,91	3,94
LOSSES COEFFICIENT $\alpha 2$	W/m^2K^2	0,0081	0,0081	0,0070
SUGGESTED COLLECTOR FLOW RATE	*l/h*	80	80	100
PRESSURE LOSSES (HYDR. RESISTANCE)	*mbar*	1,26	1,26	1,74
COLLECTOR WATER CONTENT	*l*	1,6	1,6	2

Internal view



BLUETECH 2500

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

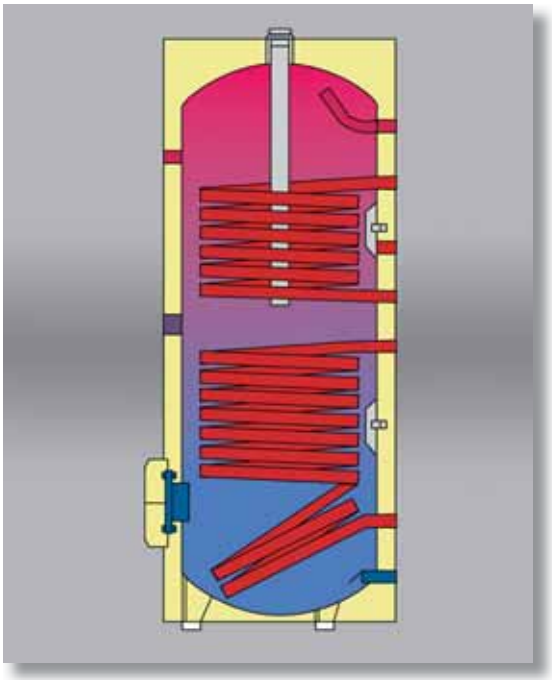
- Copper plate absorber, ultrasonic welded on 12 copper pipes dia. 8x0.5 mm, for transferring the thermal carrier fluid, with high selective treatment “h PLUS” (absorption 95% - emission 5%)
- Collector glass 3.2 mm thick, extra clear, tempered and highly transparent
- High density, rear rock-wool insulation, 40 mm thick
- External box in aluminium profiles, with total dimensions 2150 x 1170 x 83 mm
- Collector total surface 2.51 m^2, absorbing surface 2.3 m2
- Collector tested and certified according to EN 12975
- 1” connecting unions and gaskets included

Opzionali:
- Assembly frames and fittings for roof or garden installation for 1, 2, 3, 4, 5, 6 collectors
- Circulation groups
- Solar regulators
- Professional briefcase for thermal solar plants
- Solar circuit filling pump
- AISI 316 L stainless steel piping, dia. 16-20-25 mm

Technical data

BLUETECH 2500		
DIMENSIONS	*mm*	2150x1170x83
WEIGHT	*kg*	42
COLLECTOR PIPING DIA	*mm*	22
BOX MATERIAL		aluminium
GLASS TYPE		extra clear, tempered, prismatic
NET ABSORBING SURFACE	m^2	2,3
COLLECTOR TOTAL SURFACE	m^2	2,51
ABSORBING PLATE MATERIAL		copper
SURFACE TREATMENT		“η PLUS”
ABSORPTION	*%*	> 95
EMISSION	*%*	< 5
OPTICAL EFFICIENCY η 0		0,76
LOSSES COEFFICIENT α 1	W/m^2K	3,826
LOSSES COEFFICIENT α 2	W/m^2K^2	0,0094
SUGGESTED COLLECTOR FLOW RATE	*l/h*	70
PRESSURE LOSSES (HYDR. RESISTANCE)	*mbar*	1,3
COLLECTOR WATER CONTENT	*l*	1,7

from left: tanks BISER, tanks BIKOMPACT



TANKS BISER E 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
- Six 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
- Three 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

Technical data

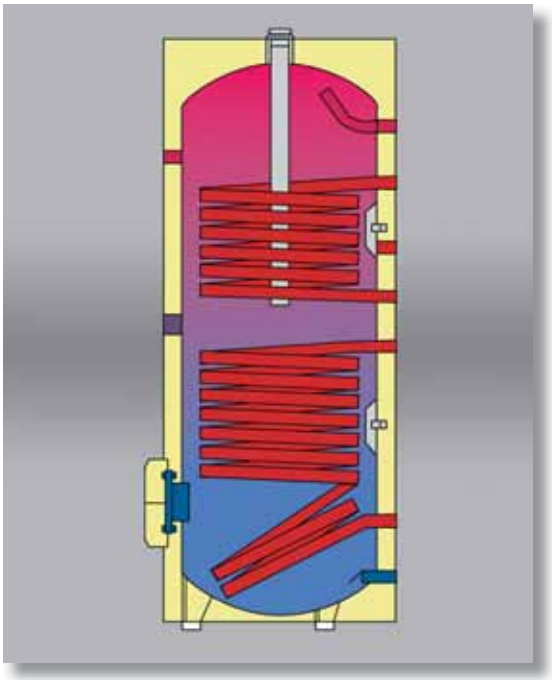
BIKOMPACT		300
WATER CONTENT	*l*	300
DIMENSIONS	*mm*	640x1615
INSULATION THICKNESS	*mm*	70
UPPER COIL SURFACE (auxiliary boiler)	m^2	0,9
EXCHANGE CAPACITY OF UPPER COIL	*KW*	22
LOWER COIL SURFACE (solar)	m^2	1,5
EXCHANGE CAPACITY OF LOWER COIL	*KW*	36
DRY WEIGHT	*kg*	130

BISER		200	300	500	800	1000	1500	2000
CAPACITY	*l*	212	291	502	765	900	1450	2054
DIMENSIONS	*mm*	600x1215	600x1615	750x1640	990x1845	990x2105	1200x2185	1300x2470
INSULATION	*mm*	50	50	50	100	100	100	100
UPPER HEAT EXCHANGER (INTEGRATION)	m^2	0,5	1,1	1,3	1,6	1,6	1,8	2,8
OUTPUT OF UPPER HEAT EXCHANGER	*KW*	12	26	33	40	40	47	73
LOWER HEAT EXCHANGER (SOLAR SYSTEM)	m^2	1,5	1,8	2,2	2,7	3,0	3,4	4,6
OUTPUT OF LOWER HEAT EXCHANGER	*KW*	36	44	55	68	75	88	120
DRY WEIGHT	*kg*	95	130	170	220	265	365	480

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

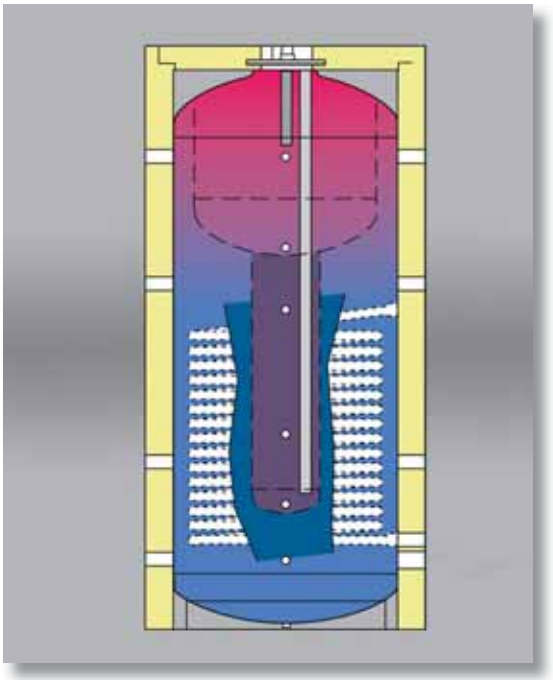
BX		200	300	500
WATER CONTENT	*l*	205	281	482
DIMENSIONS	*mm*	1287x600	1684x600	1780x752
INSULATION THICKNESS	*mm*	50	50	50
UPPER HEAT EXCHANGER	*m^2*	0,72	0,8	1,23
EXCHANGED OUTPUT UPPER EXCHANGER	*KW*	16	20	29
SOLAR EXCHANGED LOWER EXCHANGER	*m^2*	1,3	1,3	1,84
EXCHANGED OUTPUT LOWER EXCHANGER	*KW*	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

SANRIS

Combined solar tank for forced circulation systems for Domestic Hot Water production and heating integration, with total capacity from 660 up to more than 2000 litres

- Double tank
- Double anticorrosion enamelling, at 860°C
- Magnesium anode against the corrosion
- Total insulation with PU foam
- 5 bulb holders, for thermostats and thermometer
- Electric heater connection
- Outer covering in PVC
- Simplified installation, due to the direct connection to the tank of:
  - solar circuit
  - auxiliary boiler circuit
  - heating circuit
  - D.H.W. circuit



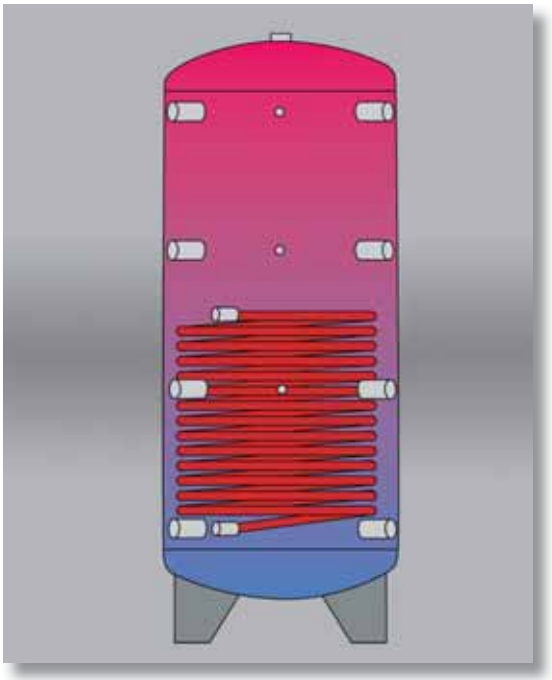
Technical data

SANRIS		500	800	1000	1500	2000
TOTAL CAPACITY	*l*	662	773	855	1450	2054
D.H.W. STORAGE TANK CAPACITY	*l*	170	205	220	330	420
DIMENSIONS	*mm*	950x1710	950x1980	990x1985	1200x2085	1300x2430
INSULATION	*mm*	100	100	100	100	100
SOLAR HEAT EXCHANGER SURFACE	m^2	2,5	2,7	3	3,3	3,8
HEAT EXCHANGER OUTPUT	*kW*	63	68	75	86	99
MAX WORKING PRESSURE OF D.H.W. STORAGE TANK	*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*	290	325	360	430	545

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
DIMENSIONS	*mm*	850x1695	990x1975	1200x2090	1300x2405	1450x2645
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

UNISUN SYSTEM

Preassembled solar system for D.H.W., with 212 litre storage tank and built-in solar system controller. It can be combined with instantaneous, traditional or condensing wall hung gas boilers

MODEL	UNISUN SYSTEM *combined with wall hung gas boiler*	Traditional combi boiler	Condensing combi boiler
EVESUN	*EVE 05 24 CTFS*	☺	
ALKSUN 24	*ALKON 09 24 CTFS*		☺
ALKSUN 28	*ALKON 28 CTFS*		☺

Unisun System is made of:
A high stratification vertical storage tank, with 212 litre water content and a coil for D.H.W. production
- Elliptical cross-section coil with 1.5 m^2 exchange surface
- Total insulation with hard PU foam , 50 mm thick
- 180/120 mm dia. flange for inspection and easy service
- Bulb holders for thermostat and thermometer
- Anticorrosion magnesium anode
- Max. working pressure 10 bar (D.H.W. circuit) and 6 bar (coil circuit)
- Max. working temperature: 95°C

Electronic controller for the complete management of solar systems with accumulator, including:
- Sensors and electrical connections for the control of circulation groups, the solar collector and the integration heat source.
- ON/OFF switch
- Manual or automatic pump operation
- Differential regulator for the intervention of the solar pump
- Regulation of integration
- Regulation of anti-freezing function
- Regulation of differential hysteresis

Two-column circulation group for the control of solar systems, including:
- Circulation pump
- Full passage ball gate valves
- Air venter
- Safety valve at 6 bar
- Manometer
- Dial thermometers fitted on the gate valves
- Flow and return gate valves
- Filling/drain valve
- Flow meter and adjuster
- Connection for expansion vessel
- Insulation in black EPP and connections

Expansion vessel for D.H.W.: 6 litre
Expansion vesser for solar system: 25 litre

For the completion of the solar installation, UNICAL proposes the combination with the solar collectors TITANIUM, TITANIUM XL and BLUETECH 2500, which can be connected to UNISUN SYSTEM with just two pipes.

UNISUN SYSTEM

Technical data

EVESUN - ALKSUN 24 - ALKSUN 28		
WORKING PRESSURE MIN. – MAX.	*bar*	0,5 - 3
MAX. WORKING TEMPERATURE SOLAR CIRCUIT	*°C*	85
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
HEIGHT	*mm*	2155
WIDTH	*mm*	655
DEPTH	*mm*	648

UNISUN SYSTEM
Possible combinations:

EVESUN

boiler installed: EVE 05 24 C

instantaneous traditional combi boiler
output 24 kW
bithermic heat exchanger
stainless steel burner

★★★ CE

model	nominal output min/max *kW*	water η at part load *%*
EVE 05 24 C	10,1 ÷ 24,6	91,8

ALKSUN 24

boiler installed: ALKON 09 24C

instantaneous condensing combi boiler
output 24 kW
heat exchanger in Al/Si/Mg
premix modulating burner

★★★★ CE

model	nominal output min/max *kW*	water η at part load in condensing mode *%*
ALKON 09 24 C	4,7 ÷ 24	107,2

ALKSUN 28

boiler installed: ALKON 28C

instantaneous condensing combi boiler
output 28 kW
heat exchanger in Al/Si/Mg
premix modulating burner

★★★★ CE

model	nominal output min/max *kW*	water η at part load in condensing mode *%*
ALKON 28 C	5,9 ÷ 28,6	108,6

UNISUN SYSTEM

Technical data

EVESUN INC - ALKSUN 24 INC - SLIMSUN 35 INC		
MIN/MAX PRESSURE IN THE HEATING CIRCUIT	*bar*	0,5 - 3
WATER CONTENT OF SOLAR / D.H.W. EXPANSION VESSEL	*l*	18 / 6
MAX ABSORBED ELECTRICAL POWER	*W*	60
INSULATION PROTECTION DEGREE	*IP*	X5D
DRI WEIGHT (without boiler)	*kg*	90
D.H.W. storage tank		
TANK CAPACITY	*l*	147,6
INSULATION FIBER P	*mm*	20
HEAT EXCHANGE SURFACE	*m^2*	1,2
MAX. EXCHANGED OUTPUT	*kW*	36
D.H.W. PRODUCTION 10°C/45°C (heating 80°C/60°C)	*l/h*	900
MAX. WORKING TEMPERATURE	*°C*	95
HEIGHT	*mm*	2200
WIDTH	*mm*	950
DEPTH	*mm*	350

Note: The same building in box of HELIOS INC

UNISUN INC

Assembly completely built-in, constituted by: Solar System for production and storage of 150 l of D.H.W., built-in solar system manager, combinable with a condensing or conventional gas boiler, certified for operation in output range.

MODEL	UNISUN INC *combined with wall hung boiler*	CHARACTERISTICS
EVESUN INC	*EVE 05 24C*	conventional instantaneous boiler, 24 kW output, dual copper heat exchanger, stainless steel burner
ALKSUN 24 INC	*ALKON 09 24 C*	condensing instantaneous boiler, 24 kW output, Al/Si/Mg alloy heat exchanger, premix modulating burner
SLIMSUN 35 INC	*ALKON SLIM 35*	condensing instantaneous boiler, 35 kW output, Al/Si/Mg alloy heat exchanger, premix modulating burner

UNISUN INC 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

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

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

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

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 TITANIUM, TITANIUM XL and BLUETECH 2500 collectors, very easily connectable to the UNISUN INC via two pipes only.

HELIOS INC 35/200

★★★★CE

Solar System for fixing in a wall, for heating and D.H.W. production 2 solar tanks of 100 litres. With room sealed condensing gas boiler – Integral management of solar system – Simplified installation thanks to the pre-assembled modules.

Metallic box for in wall installation
- Protection degree IPX5D
- Two storage tanks, solar circulation group, expansion vessels, services module, exchangers, pumps for high and low temperature heating circuits.

Solar module composed of:
- Electronic differential controller with variable hysteresis
- One column circulation group
- Solar expansion vessel of 18 litres
- Stainless steel plate heat exchanger for solar circuit /primary water accumulator.

Double vertical storage tank of primary water (technical water) with total capacity of 200 litres.
- PU foam HD total insulation
- Max. working pressure: 6 bar
- Max. working temperature: 95°C
- Loading mode with different priority

ALKON HELIOS gas, room sealed condensing boiler,
soundproofed, with pre-mix burner and electronic ignition, for outdoor installation

- CLEVER automatic filling group (after 3 automatic restorations in the 24 hours the boiler sends a notice signal)
- Very high modulation ratio 1:6.5
- Ultra-flat boiler body in Al/Si/Mg for high water circulation
- Premix modulating burner with constant air/gas ratio (SCOT system), Low NOx (Class 5 according to EN 297 and EN 483)
- Modulating pump
- Expansion vessel of 12 litres.

Services module
- High temperature direct circuit with dedicated pump
- Low temperature mixed circuit with dedicated pump
- D.H.W. priority flow switch
- Step by step mixing valve
- Stainless steel 24 plate D.H.W. heat exchanger

Remote control console
- Visualization and adjustment of all the control parameters
- Restoration and filling of the heating circuit water
- Operation in sliding temperature
- Antifreeze protection
- Pump with anti-jamming system
- Pump overrun for overheating prevention
- Management of solar circulation group
- Management of boiler module intervention.

Options:
- Modulating chrono-thermostat REGOLAFACILE
- Continuous regulation
- Economic reduction
- Fittings/valves kit

Technical Data

HELIOS INC 35/200		
BOX DIMENSIONS (height x width x depth)	*mm*	2200x950x350
PROTECTION DEGREE	*IP*	X5D
WATER CONTENT OF THE TWO STORAGE TANKS	*l*	2x100
MAX. WORKING TEMPERATURE OF HEATING CIRCUIT	*°C*	95
MAX. WORKING PRESSURE OF HEATING CIRCUIT	*bar*	3
MAX. WORKING PRESSURE OF D.H.W. CIRCUIT	*bar*	6
D.H.W. HEAT EXCHANGER		24 plates
SOLAR HEAT EXCHANGER		12 plates
SOLAR EXPANSION VESSEL WATER CONTENT	*l*	18
Condensing boiler		
NOMINAL OUTPUT min./max	*kW*	5.3÷35
EFFICIENCY CLASS		★★★★ CE
EXPANSION VESSEL WATER CONTENT	*l*	12
*CONTINUOUS D.H.W. PRODUCTION **	*l/h*	18.6

**Granted without solar contribution*

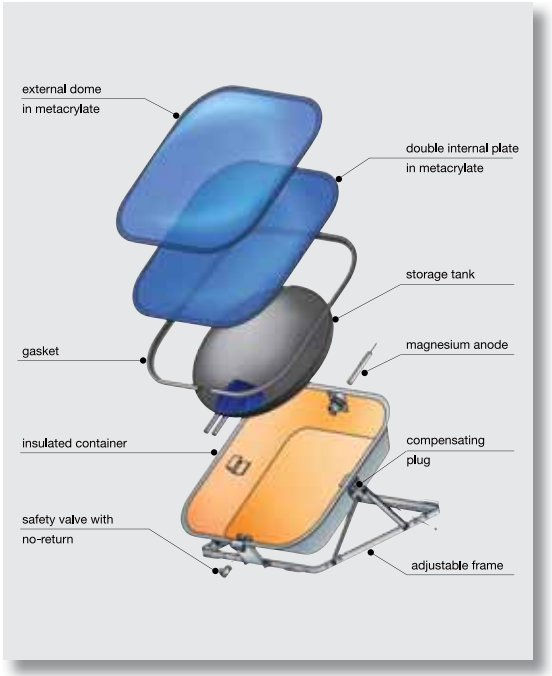
HELIOS INC

SUNBUSTER

Solar panel with built-in direct storage tank

SUNBUSTER is made off:
- 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

component description



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

collector detail

SINGLE SUN

Natural circulation kit with highly efficient solar collector and built-in storage tank, for roof or garden installations

SINGLE SUN is made off:
- Flat solar collector “TITANIUM”
- Glass lined at 860°C storage tank
- Highly selective solar absorber TITAN “SUN SELECT”
- Panel frame in aluminium
- Extra clear, reflection preventing, tempered glass, with low iron content
- Lateral and rear insulation with rock wool, 45 mm thick
- Lining of the storage tank in ABS and PMMA (polymethylmetacrylate)
- Integral tank insulation in HD 50 mm thick PU foam
- Kit for installation and putting in operation of the system, including:

- Fittings
- Anti-freezing liquid
- Frame for roof or garden installation
- Safety valve
- Digital Thermometer / Thermostat, wall fitted

Technical data

SINGLE SUN		
FEATURES OF THE COLLECTOR		
NUMBER OF COLLECTORS		1
DIMENSIONS OF EACH INDIVIDUAL COLLECTOR	*mm*	2000x1000x100
TOTAL SURFACE OF COLLECTORS	*m^2*	2
TOTAL NET ABOSRBING SURFACE	*m^2*	1,8
SURFACE TREATMENT		TITAN “SUN SELECT”
ABSORPTION INDEX	*%*	95
EMISSION INDEX	*%*	5
FRAME		ALUMINIUM
DRY WEGHT (per each collector)	*kg*	38
FEATURES OF THE STORAGE TANK		
WATER CONTENT	*l*	150
TYPE OF TREATMENT		Glass lining at 860°C
DIMENSIONS (dia. x length)	*mm*	ø 600 x 1150
EXTERNAL LINING		ABS + PMMA
DRY WEIGHT	*kg*	56

DOUBLE SUN

Natural circulation kit with two highly efficient solar collectors and built-in storage tank, for roof or garden installations

DOUBLE SUN is made off:
- Two flat solar collectors “TITANIUM” (4 m²)
- Glass lined at 860°C storage tank of 200 litres capacity
- Highly selective solar absorber TITAN “SUN SELECT”
- Panel frame in aluminium
- Extra clear, reflection preventing, tempered glass, with low iron content
- Lateral and rear insulation with rock wool, 45 mm thick
- Lining of the storage tank in ABS and PMMA (polymethylmetacrylate)
- Integral tank insulation in HD 50 mm thick PU foam
- Kit for installation and putting in operation of the system, including:

- Fittings
- Anti-freezing liquid
- Frame for roof or garden installation
- Safety valve
- Digital Thermometer / Thermostat, wall fitted

Thermostat / digital thermometer supplied as standard

Technical data

DOUBLE SUN		
FEATURES OF THE COLLECTOR		
NUMBER OF COLLECTORS		2
DIMENSIONS OF EACH INDIVIDUAL COLLECTOR	*mm*	2000x1000x100
TOTAL SURFACE OF COLLECTORS	*m²*	4
TOTAL NET ABOSRBING SURFACE	*m²*	3,6
SURFACE TREATMENT		TITAN “SUN SELECT”
ABSORPTION INDEX	*%*	95
EMISSION INDEX	*%*	5
FRAME		ALUMINIUM
DRY WEGHT (per each collector)	*kg*	38
FEATURES OF THE STORAGE TANK		
WATER CONTENT	*l*	200
TYPE OF TREATMENT		Glass lining 860°C
DIMENSIONS (dia. x length)	*mm*	ø 600 x 1400
EXTERNAL LINING		ABS + PMMA
DRY WEIGHT	*kg*	69

SOLECO 160

SOLECO 300

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

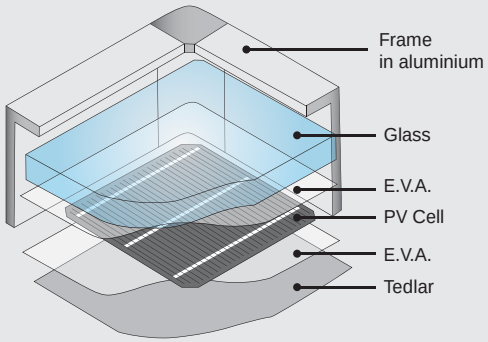
SOLECO		160	220	300
FEATURES OF THE COLLECTOR				
NUMBER OF COLLECTORS		1	2	2
DIMENSIONS OF EACH INDIVIDUAL COLLECTOR	*mm*	2030x1030x87	2030x1030x87	2030x1030x87
GLASS THICKNESS	*mm*	4	4	4
TOTAL SURFACE OF COLLECTORS	m^2	2,09	4,18	4,18
MAXIMUM WORKING PRESSURE	*bar*	6	6	6
TEST PRESSURE	*bar*	10	10	10
MAXIMUM ALLOWED TEMPERATURE	*°C*	210	210	210
DRY WEGHT	*kg*	40,8	40,8	40,8
FEATURES OF THE STORAGE TANK				
WATER CONTENT	*l*	150	200	282
TYPE OF TREATMENT		*Glass lining at 860°C*		
DIMENSIONS (dia. x length)	*mm*	ø 500x1300	ø 500x1300	ø 500x1300
INSULATION in PU FOAM		polyurethane 40 mm		
DRY WEIGHT	*kg*	67	85	107

UNIVOLT

Photovoltaic panel in single crystal silicon for flat surface installation or for positioning on pitches roof

- 96 cells - 125 mm
- High efficiency SINGLE-CRYSTAL cell
- Certification according to EN 61215 and EN 61730
- 4 diodes of by-pass
- Stability of the outlet power
- Tolerance in the outlet power: -2/+3%
- Wide working range (125°C range)
- Frame in anodised aluminium with anti-condensate holes
- Anti-ageing EVA protection
- High transparency tempered glass
- Extreme workability

Structure of a silicon crystal module



Technical data

UNIVOLT		250
ELECTRICAL CHARACTERISTICS		
NOMINAL MAX. OUTPUT P_M	*Wp*	250
NOMINAL TENSION V_M	*V*	48,3
NOMINAL CURRENT I_M	*A*	5,18
OPEN CIRCUIT TENSION V_{OC}	*V*	59,5
CLOSED CIRCUIT CURRENT I_{SC}	*A*	5,6
MAXIMUM TENSION OF THE SYSTEM	*V*	1000
CELL EFFICIENCY	*%*	17
THERMAL CHARACTERISTICS		
OPERATIONAL TEMPERATURE RANGE	*°C*	-40 / +85
NOCT	*°C*	45±2
TEMPERATURE COEFFICIENT P_M	*%/°C*	-0,5
TEMPERATURE COEFFICIENT V_{OC}	*%/°C*	-0,34
TEMPERATURE COEFFICIENT I_{SC}	*%/°C*	+0,05
TOLERANCE CLASS	*%*	-2/+3

UNIVOLT

HELIOINV SINGLE-PHASE / THREE-PHASE

Inverter expressly designed for converting the electric energy, under form of DC (direct current), produced by a photovoltaic module, in AC (alternating current) to be directly sent into the electric net.

- Wide range of inlet tensions
- Smart and innovative design with IP54 protection degree
- High quality aluminium container for indoor and outdoor installation
- Integral DC sectioning device
- All the connections are of coupling type
- Graphic integral display and intuitive commands
- Integral RS485 / Ethernet interface
- Tested by TÜV and approved by VDE
- FDC Full Digital Controlled; with digital regulator of sinusoidal wave
- Very simple mounting through a pre-assembled special guide
- Nominal Output up to an air temperature of 45 °C
- New net protection system, extremely stable and troubles-free

Dati Tecnici

HELIOINV MONOFASE		2.0	3.0	4.2	6.0
*GENERATOR'S MAX. POWER **	W_{STC}	2300	3300	5000	6000
MPP TENSION RANGE	V_{DC}	100...550	100...550	100...550	100...550
MAX. INLET TENSION	V_{DC}	600	600	600	600
INLET CURRENT	A_{DC}	0...11	0...11	0...22	0...22
NOMINAL POWER	*W*	1800	2500	3800	4600
MAXIMUM POWER	*VA*	1980	2750	4180	5060
NET / FIELD NOMINAL TENSION	V_{AC}	230 / 184...300	230 / 184...300	230 / 184...300	230 / 184...300
NET / FIELD NOMINAL FREQUENCY	*Hz*	50 / 45...55	50 / 45...55	50 / 45...55	50 / 45...55
HARMONIC DISTANCE FACTOR AT NOM. POWER	*%*	< 1,5	< 1,5	< 1,5	< 1,5
MAXIMUM EFFICIENCY	*%*	97	97	97	97
AIR TEMPERATURE	*°C*	-20...+60	-20...+60	-20...+60	-20...+60
PROTECTION DEGREE		IP54	IP54	IP54	IP54
CONNECTION SYSTEM		Sistema di onda sinusoidale digitale, senza trasformatore (senza sep. galvanica), a due livelli			
COOLING		Convezione / ventilatore (ventilatore sostituibile dall'esterno)			
DC SECTIONING DEVICE		Sezionatore DC integrato secondo VDE 0100-712			
DIMENSIONS (W x H x D)	*mm*	545 x 290 x 185			
WEIGHT	*kg*	13	13	15	15

** Recommended 15% over-sizing*

Dati Tecnici

HELIOINV TRIFASE		10TF	13TF	15TF
*GENERATOR'S MAX. POWER **	W_{STC}	2 x 6000	3 x 5000	3 x 6000
MPP TENSION RANGE	V_{DC}	250...750	250...750	250...750
MAX. INLET TENSION	V_{DC}	900	900	900
INLET CURRENT	A_{DC}	2 x 16	3 x 16	3 x 16
NOMINAL POWER	*W*	10000	13000	15000
MAXIMUM POWER	*VA*	10000	13000	15000
NET / FIELD NOMINAL TENSION	V_{AC}	3 x 400	3 x 400	3 x 400
NET / FIELD NOMINAL FREQUENCY	*Hz*	50 / 45...55	50 / 45...55	50 / 45...55
HARMONIC DISTANCE FACTOR AT NOM. POWER	*%*	< 3	< 3	< 3
MAXIMUM EFFICIENCY	*%*	98	98	98
AIR TEMPERATURE	*°C*	-20...+60	-20...+60	-20...+60
PROTECTION DEGREE		IP54	IP54	IP54
CONNECTION SYSTEM		a 2 livelli, senza trasformatore		
COOLING		Convezione		
DC SECTIONING DEVICE		Integrato		
DIMENSIONS (W x H x D)	*mm*	550 x 750 x 200		
WEIGHT	*kg*	39	42	42

** Recommended 15% over-sizing*

ENERPUMP 72 - 97

ENERPUMP 110 - 143 - 173

ENERPUMP

R 410 A ecologic

Air-water high efficiency heat pump for outdoor installation

Available in two versions:
- *RK* for heating and cooling
- *DHW* for heating / cooling and D.H.W. production

- COP up to 4.65 according to EN 14511 (air 7°C / water 35°C)
- EER> 3.8 according to EN 14511 (air 35°C / water 18°C)
- Flow temperature: up to 60°C
- Operation up to -15°C
- Integral HYDRONIC Kit "All in one" composed of:
  - Stainless steel (AISI 316 L) insulated Buffer Tank complete with auxiliary heater, safety valve, air vent.
  - 3 speed pump
  - Expansion vessel
  - Flow switch
  - Water filter
- Cooler R410A
- Stainless steel (AISI 316 L) water / gas plate heat exchanger
- Finned air / gas heat exchanger with anti-corrosive treatment
- Electronic expansion valve
- Peak current limiter and phase control
- Automatic defrosting
- Auto-diagnosis
- Auto-restart
- Digital control, standard supplied

Options:
- On/off Chrono-thermostat REGOLAFACILE
- ENERBOIL storage tanks with high exchange increased coils

Technical Data

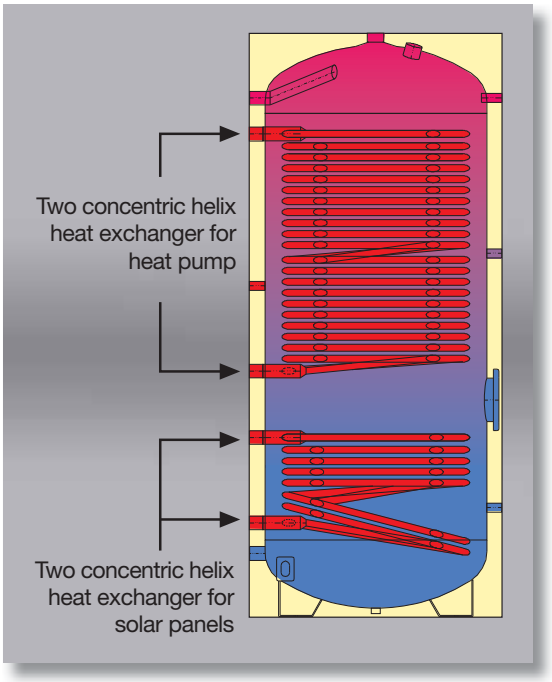
ENERPUMP		72	97	110	143	173
DELIVERED / ABSORBED POWER IN HEATING MODE	*kW*	7,20/1,55	9,77/2,25	10,59/2,50	14,35/3,27	17,29/3,82
DELIVERED / ABSORBED POWER IN COOLING MODE	*kW*	7,30/1,91	9,90/2,60	8,46/2,22	12,79/3,35	16,96/4,45
COP		4,65	4,34	4,24	4,39	4,53
EER		3,83	3,81	3,81	3,82	3,81
DELIVERED / ABSORBED POWER IN D.H.W. MODE (ONLY VERS. DHW)	*kW*	6,95/1,95	8,67/2,65	9,44/2,76	12,68/3,75	16,06/4,47
MAX. ABSORBED POWER (+3 ELECTR. RESISTANCES)	*kW*	2,6 (+6)	3,1 (+6)	4,3 (+6)	5,2 (+6)	5,88 (+6)
SUPPLY	*V/Ph/Hz*	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50
HEIGHT	*mm*	1062	1062	1270	1477	1477
WIDTH	*mm*	1138	1138	1204	1198	1198
DEPTH	*mm*	480	480	480	480	480
NET WEIGHT	*kg*	120	130	155	165	170

HEATING MODE: Flow temp. 35°C – Return temp. 30°C – Outer temp. 7°C / 6°C
COOLING MODE: Flow temp. 18°C – Return temp. 23°C – Outer temp. 35°C
D.H.W. MODE: Storage tank 40°C - Outer temp. 7°C / 6°C

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	*m^2*	3.7	5.2
POWER EXCHANGED BY THE UPPER HEAT EXCHANGER	*kW*	18.5	27.5
LOWER HEAT EXCHANGER	*m^2*	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

A Class deluxe UND A H (wall mounted)

R 410 A ecologic

Compact air conditioner, heat pump type, high performances, highly energy saving

- Energetic class A
- Exchange batteries with wide ventilation surface, made of 5 segments wrapped with micro-grooves “Ultra Inner Groove”
- Multifunction display
- Electronic PCB with microprocessor, controlling all the functions
- Infrared anti-shock remote control, with LCD (Liquid Cristal Display)
- Rotary compressor
- Automatic defrosting system
- High silentness twisted torsion fan
- Test function to make easy the service operations
- Emergency ON switch
- Auto-diagnostic
- Auto-restart
- “Blow” function for mildew prevention, with automatic drying of the internal battery
- Cooling gas R410 A

Functions exploited by the remote control:

- Cooling
- Dehumidification
- Heating
- Ventilation only
- Sleep
- Air swing
- Timer
- Automatic operation
- Blow
- Turbo
- Push buttons lock

Technical data

A CLASS DELUXE		UND A 9H	UND A 12H	UND A 18H	UND A 24H
ENERGETIC CLASS IN COOLING MODE		A	A	A	B
YEARLY CONSUMPTION ESTIMATION (on 500 hrs)	*kW*	410	540	820	1060
OUTPUT IN COOLING MODE	*kW*	2,65	3,52	5,27	6,44
EER		3,23	3,26	3,21	3,03
TYPE OF APPLIANCE		Cooling/Heating			
TYPE OF COOLING		air	air	air	air
OUTPUT IN HEATING MODE	*kW*	2,85	4,01	5,70	6,80
ENERGETIC CLASS IN HEATING MODE		A	A	B	C
NOISE OF INTERNAL UNIT	*dB(A)*	38	38	45	45
NOISE OF EXTERNAL UNIT	*dB(A)*	52	52	56	58
WIDTH INT. UNIT	*mm*	740	805	1020	1020
HEIGHT INT. UNIT	*mm*	250	280	310	310
DEPTH INT. UNIT	*mm*	180	210	228	228
WIDTH EXT. UNIT	*mm*	848	848	913	950
HEIGHT EXT. UNIT	*mm*	540	540	680	700
DEPTH EXT. UNIT	*mm*	320	320	378	412
WEGHT INT. UNIT / EXT. UNIT	*kg*	8 / 35	9 / 40	14 / 46	15 / 59

Professional UPN A H (wall mounted)

R 410 A ecologic

Compact air conditioner, heat pump type, simple and reliable

- Energetic class A
- Exchange batteries with wide ventilation surface, made of 5 segments
- Battery fins of both, internal and external unit, treated for mildew prevention
- Multifunction display
- Electronic PCB with microprocessor, controlling all the functions, from auto-diagnostic to auto-restart
- Infrared anti-shock remote control, with LCD (Liquid Cristal Display)
- Rotary compressor
- Reversible condensate drain
- Automatic defrosting system
- Auto-restart
- Auto-diagnostic
- Emergency ON switch
- "Blow" function for mildew prevention, with automatic drying of the internal battery
- Cooling gas R410 A ecologic

Functions exploited by the remote control:

- Cooling
- Dehumidification
- Heating
- Ventilation only
- Sleep
- Air swing
- Timer ON-OFF
- Automatic operation
- Blow
- Turbo
- Push buttons lock

Technical data

PROFESSIONAL		UPN A 9H	UPN A 12H	UPN A 18H	UPN A 24H
ENERGETIC CLASS IN COOLING MODE		A	A	A	A
YEARLY CONSUMPTION ESTIMATION (on 500 hrs)	*kW*	410,50	502	810	950
OUTPUT IN COOLING MODE	*kW*	2,64	3,22	4,69	6,15
EER		3,21	3,21	3,21	3,24
TYPE OF APPLIANCE			Cooling/Heating		
TYPE OF COOLING		air	air	air	air
OUTPUT IN HEATING MODE	*kW*	2,81	3,51	4,90	6,50
ENERGETIC CLASS IN HEATING MODE		A	A	B	C
NOISE OF INTERNAL UNIT	*dB(A)*	37	38	45	44
NOISE OF EXTERNAL UNIT	*dB(A)*	50	52	55	56
WIDTH INT. UNIT	*mm*	730	790	940	940
HEIGHT INT. UNIT	*mm*	255	265	298	298
DEPTH INT. UNIT	*mm*	174	177	200	200
WIDTH EXT. UNIT	*mm*	776	776	848	913
HEIGHT EXT. UNIT	*mm*	540	540	540	680
DEPTH EXT. UNIT	*mm*	320	320	320	378
WEGHT INT. UNIT / EXT. UNIT	*kg*	8 / 31	9 / 31	13 / 40	13 / 46

A Class deluxe UNAD A HN INV (inverter wall mounted)

R 410 A ecologic

Compact, wall mounted air conditioner, "Inverter system", multi-combination, suitable for installation in all types of domestic and utility rooms

- Energetic class A
- DC Inverter system, with progressive continuous modulation for a better seasonal efficiency and a better comfort in the room
- Rotary compressors
- Six speed fan, with automatic selection
- High silentness twisted torsion fan
- Special, high efficiency exchange battery of the evaporator, bell shaped, in order to optimize the gas-air exchange
- Electronic system for preventive protection of the different components, which is activated at each start
- Friendly use infrared remote control with LCD (Liquid Cristal Display)
- Test function to make easy the service operations
- Emergency ON switch
- Auto-restart
- Auto-diagnostic
- Three speed fan for external unit
- "Blow" function for mildew prevention, with automatic drying of the internal battery
- Cooling gas R410 A

Functions exploited by the remote control:
- Cooling
- Dehumidification
- Heating
- Ventilation only
- Sleep
- Air swing
- Timer
- Automatic operation
- Blow

Technical data

A CLASS DELUXE INVERTER		UNAD A 10HN INV	UNAD A 13HN INV	UNAD A 18H INV	UNAD A 24H INV
ENERGETIC CLASS IN COOLING MODE		A	A	A	A
YEARLY CONSUMPTION ESTIMATION (on 500 hrs)	*kW*	385	540	800	992,5
OUTPUT IN COOLING MODE	*kW*	2,50	3,50	5,28	6,45
EER		3,25	3,24	3,30	3,25
TYPE OF APPLIANCE		Cooling/Heating			
TYPE OF COOLING		air	air	air	air
OUTPUT IN HEATING MODE	*kW*	2,80	4,00	5,85	7,00
ENERGETIC CLASS IN HEATING MODE		A	A	A	A
NOISE OF INTERNAL UNIT	*dB(A)*	37	39	44	47
NOISE OF EXTERNAL UNIT	*dB(A)*	50	52	54	54
WIDTH INT. UNIT	*mm*	790	845	940	1060
HEIGHT INT. UNIT	*mm*	265	275	298	330
DEPTH INT. UNIT	*mm*	170	180	200	208
WIDTH EXT. UNIT	*mm*	776	776	890	890
HEIGHT EXT. UNIT	*mm*	540	540	700	700
DEPTH EXT. UNIT	*mm*	320	320	340	340
WEGHT INT. UNIT / EXT. UNIT	*kg*	12 / 40	13 / 41	13 / 47	16 / 50

Example: installation with 1 external unit and 4 internal units

Technical Data

FREEMULTI (external units)		FMX2 18HEN	FMX2 24HEN	FMX4 28HEN	FMX4 36HEN	FMX5 42HEN
ENERGETIC CLASS IN COOLING MODE		A	A	A	A	A
YEARLY CONSUMPTION ESTIMATION (on 500 hrs)	*kW*	750	1090	1240	1515	1795
OUTPUT IN COOLING MODE	*kW*	5,00	7,05	8,00	9,80	11,60
EER		3,33	3,23	3,23	3,23	3,23
TYPE OF APPLIANCE		Raffreddamento/Riscaldamento				
TYPE OF COOLING		aria	aria	aria	aria	aria
OUTPUT IN HEATING MODE	*kW*	5,60	8,20	9,30	11,00	13,00
ENERGETIC CLASS IN HEATING MODE		A	A	A	A	A
NOISE OF EXTERNAL UNIT	*dB(A)*	56	58	59	54	54
WIDTH	*mm*	818	890	890	950	1015
HEIGHT	*mm*	700	700	700	840	1103
DEPTH	*mm*	378	362	362	340	362
WEIGHT	*kg*	43	59	60	75	79

FREEMULTI INVERTER

R 410 A ecologic

Compact, wall mounted air conditioner, Inverter type, high performances and comfort in every type of domestic or utility rooms

- DC Inverter system, with progressive continuous modulation for a better seasonal efficiency and a better comfort in the room
- Rotary compressors
- Six speed fan, with automatic selection
- High silentness twisted torsion fan
- Special, high efficiency exchange battery of the evaporator, bell shaped, in order to optimize the gas-air exchange
- Electronic system for preventive protection of the different components, which is activated at each start
- Friendly use infrared remote control with LCD (Liquid Cristal Display)
- Test function to make easy the service operations
- Emergency ON switch
- Auto-restart
- Auto-diagnostic
- Three speed fan for external unit
- "Blow" function for mildew prevention, with automatic drying of the internal battery
- Energetic class A
- Cooling gas R410 A

Functions exploited by the remote control:
- Cooling
- Dehumidification
- Heating
- Ventilation only
- Sleep
- Air swing
- Timer
- Automatic operation
- "Blow"

Technical Data

WALL MOUNTED (internal units)		FMUN 9HIN	FMUN 12HIN	FMUN 18HIN
NOISE OF INTERNAL UNIT	*dB(A)*	37	38	46
DIMENSIONS (W x H x D)	*mm*	790x265x170	845x275x180	940x298x200
WEIGHT	*kg*	9	10	13
FLOOR/CEILING (internal units)		**FMPS 9HI**	**FMPS 12HI**	**FMPS 18HI**
NOISE OF INTERNAL UNIT	*dB(A)*	45	46	54
DIMENSIONS (W x H x D)	*mm*	836x695x238	836x695x238	836x695x238
WEIGHT	*kg*	27	27	27
BOX TYPE (internal units)		**FMCS 12HIN**		**FMCS 18HIN**
NOISE OF INTERNAL UNIT	*dB(A)*	46		46
*DIMENSIONS (W x H x D) **	*mm*	580x230x580*		580x230x580*
WEIGHT	*kg*	25		25
DUCT TYPE (internal units)		**FMCN 9HI**	**FMCN 12HI**	**FMCN 18HI**
NOISE OF INTERNAL UNIT	*dB(A)*	37	40	42
DIMENSIONS (W x H x D)	*mm*	913x220x680	913x220x680	1012x266x736
WEIGHT	*kg*	27	27	36

* *Dimensions not including the grate*

PS (floor/ceiling)

R 410 A ecologic

Air conditioner for floor or ceiling mounting, heat pump type, suitable for all domestic and utility rooms, because of its high installation flexibility

- Design with rounded and modern appearance
- Exchange batteries with wide ventilation surface
- Rotary compressor (Scroll type for models 36H and 48H)
- Automatic defrosting system
- Multifunction display
- Electronic PCB with microprocessor, controlling all the functions
- Auto-diagnostic
- Auto-restart
- Emergency ON switch
- Energetic class A
- Cooling gas R410 A ecologic

Functions exploited by the remote control:
- Cooling
- Dehumidification
- Heating
- Ventilation only
- Sleep
- Air swing
- ON-OFF programmable Timer
- Automatic operation

Technical data

FLOOR/CEILING		PS05 12H	PS05 18H	PS05 24H	PS05 36H	PS05 48H
ENERGETIC CLASS IN COOLING MODE		B	C	C	C	-
YEARLY CONSUMPTION ESTIMATION (on 500 hrs)	*kW*	580	950	1300	1850	-
OUTPUT IN COOLING MODE	*kW*	3,50	5,35	7,30	10,38	14,00
EER		3,02	2,82	2,81	2,81	-
TYPE OF APPLIANCE		Cooling/Heating				
TYPE OF COOLING		air	air	air	air	air
OUTPUT IN HEATING MODE	*kW*	3,60	5,80	8,20	11,20	15,50
ENERGETIC CLASS IN HEATING MODE		C	B	C	C	-
NOISE OF INTERNAL UNIT	*dB(A)*	46	46	50	54	58
NOISE OF EXTERNAL UNIT	*dB(A)*	56	56	59	60	63
AIR FLOW RATE	m^3/h	550	700	1170	1800	2100
WIDTH INT. UNIT	*mm*	836	836	1300	1590	1590
HEIGHT INT. UNIT	*mm*	695	695	600	695	695
DEPTH INT. UNIT	*mm*	238	238	188	238	238
WIDTH EXT. UNIT	*mm*	848	848	1018	1018	950
HEIGHT EXT. UNIT	*mm*	540	540	700	840	1250
DEPTH EXT. UNIT	*mm*	320	320	412	412	412
WEGHT INT. UNIT / EXT. UNIT	*kg*	27/32	28/40	32/59	48/90	48/112

CS (box type)

R 410 A ecologic

Box, heat pump type air conditioner 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-diagnostic
- Auto-restart
- Emergency ON switch
- Pump for condensate evacuation, supplied as standard
- Cooling gas R410 A ecologic

Functions exploited by the remote control:
- Cooling
- Dehumidification
- Heating
- Ventilation only
- Sleep
- Air swing
- ON-OFF programmable Timer
- Automatic operation

Technical data

BOX TYPE		CS05 18H	CS05 24H	CS05 36H	CS05 48H
ENERGETIC CLASS IN COOLING MODE		C	C	C	-
YEARLY CONSUMPTION ESTIMATION (on 500 hrs)	*kW*	950	1300	1850	-
OUTPUT IN COOLING MODE	*kW*	5,35	7,30	10,38	14,00
EER		2,82	2,81	2,81	-
TYPE OF APPLIANCE			Cooling/Heating		
TYPE OF COOLING		air	air	air	air
OUTPUT IN HEATING MODE	*kW*	5,80	8,20	12,20	15,50
ENERGETIC CLASS IN HEATING MODE		B	C	C	-
NOISE OF INTERNAL UNIT	*dB(A)*	47	47	47	49
NOISE OF EXTERNAL UNIT	*dB(A)*	56	59	62	65
AIR FLOW RATE	m^3/h	550	1180	1660	1660
*WIDTH INT. UNIT**	*mm*	600*	840*	840*	840*
*HEIGHT INT. UNIT**	*mm*	230*	240*	320*	320*
*DEPTH INT. UNIT**	*mm*	600*	840*	840*	840*
WIDTH EXT. UNIT	*mm*	848	1018	1018	950
HEIGHT EXT. UNIT	*mm*	540	700	840	1250
DEPTH EXT. UNIT	*mm*	320	412	412	412
WEGHT INT. UNIT / EXT. UNIT	*kg*	20/40	27/59	32/90	32/112

* *Dimensions not including the grate*

CN (for duct type installations)

R 410 A ecologic

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-diagnostic
- Auto-restart
- Emergency ON switch
- Possible installation with PLENUM system
- Cooling gas R410 A ecologic

Functions exploited by the remote control:
- Cooling
- Dehumidification
- Heating
- Ventilation only
- Sleep
- ON-OFF programmable Timer
- Automatic operation

Technical data

DUCT TYPE		CN05 18H	CN05 24H	CN05 36H	CN05 48H	CN05 60H
ENERGETIC CLASS IN COOLING MODE		C	C	C	-	-
YEARLY CONSUMPTION ESTIMATION (on 500 hrs)	*kW*	950	1510	1300	-	-
OUTPUT IN COOLING MODE	*kW*	5,35	8,59	7,30	14,35	17,00
EER		2,82	2,84	2,81	-	-
TYPE OF APPLIANCE		Cooling/Heating				
TYPE OF COOLING		air	air	air	air	air
OUTPUT IN HEATING MODE	*kW*	5,80	8,90	8,20	15,80	18,80
ENERGETIC CLASS IN HEATING MODE		B	D	C	-	-
NOISE OF INTERNAL UNIT	*dB(A)*	42	48	47	50	53
NOISE OF EXTERNAL UNIT	*dB(A)*	56	59	59	63	64
AIR FLOW RATE	m^3/h	840	1180	2000	2300	2500
WIDTH INT. UNIT	*mm*	1012	1270	1251	1251	1251
HEIGHT INT. UNIT	*mm*	266	268	290	290	330
DEPTH INT. UNIT	*mm*	736	504	744	744	788
WIDTH EXT. UNIT	*mm*	848	1018	1018	950	950
HEIGHT EXT. UNIT	*mm*	540	700	840	1250	1250
DEPTH EXT. UNIT	*mm*	320	412	412	412	412
WEGHT INT. UNIT / EXT. UNIT	*kg*	36/40	37/59	57/90	57/112	66/123

BA TC (air curtain)

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
MOTOR POWER	*W*	70	75	100
AIR SPEED	*m/s*	9	9	9,5
FAN DIAMETRE	*mm*	125	125	125
NOISE LEVEL (max)	*dB(A)*	48	49	50
WIDTH.	*mm*	600	900	1200
HEIGH.	*mm*	210	210	210
DEPTH	*mm*	200	200	200
WEGHT	*kg*	11	15	20

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