

ecodense[®]

CONDENSING BOILER

CONDENSING BOILERS and CASCADE SYSTEMS



www.ecodenseboilers.com



ECODENSE CONDENSING BOILERS



ECODENSE condensing boilers provide high-efficiency energy generation with their “*Premix Technology*” and “*Condensing Technology*”. Providing an advantage in boiler room plannings and conversions with its compact structure in terms of area of use, **ECODENSE** condensing boilers, when used as **CASCADE**, meet high-capacity energy requirements with line-up operation and also expand the life-cycle by ensuring equal aging in boilers.

CONDENSING TECHNOLOGY

At the end of the combustion process, a large proportion of heat is released outside along with flue gases. The condensing technology does not allow releasing of this heat; provides higher energy saving. In the heat exchanger, the heat of water is drawn and sent to the heating system. When compared with a conventional combustion system, more than 100% of energy in the fuel used can be converted into heat.

CASCADE SYSTEM

In these systems, multiple devices that are connected to each other engage/disengage as needed. In the cascade systems, all devices operate as modulating control. In order to ensure simultaneous control of all boilers, they must be connected to the control unit.

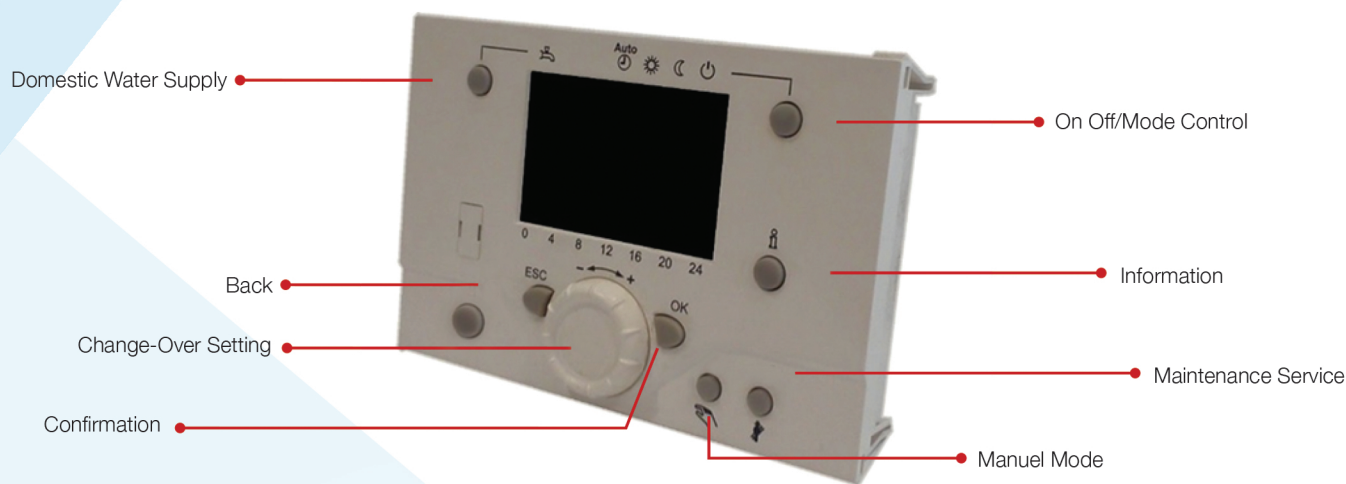
With ECODENSE condensing boilers, it is possible to control up to 16 boilers as CASCADE SYSTEM. If any one of the boiler operating redundantly fails, the next boiler connected serially engages automatically and no problem is experienced in the order of operation. Thus, serviceability and maintainability of these boiler are ensured.

PREMIX TECHNOLOGY

Mixing of gas and air required for combustion in order to achieve high-efficiency combustion before they arrive to burner is called as “Premix Technology”. By a frequency-controlled fan, it is possible to provide ideal air content required for combustion at each capacity during 5:1 modulating operation.

BOILER SAFETY

- When outdoor temperature goes below +4 °C, the boiler automatically protects itself and prevents from freezing.
- The boiler protects itself, when the temperature of flue gas exceeds the set value during operation,
- The boiler protects itself during unexpected high temperatures with combustion space safety thermostat.



CONTROL PANEL FEATURES

- 1 - Selectable system control language from the languages defined in Languages options.
- 2 - You can control the system using weekly time program and set the system to turn on/off 3 times a day. The system operates in comfort mode during programmed periods and in economy mode at other times for economic use.
- 3 - Controller can be used to add vacation mode for the heating circuit. During vacation period, the heating circuit operates according to the freezing temperature or economy temperature for energy efficiency.
- 4 - You may control the heating circuit by parameters presented in the device;
 - The device can operate in 3 different temperature modes: comfort mode, economy mode and freezing mode.
 - Heating curve can be adjusted depending on climate conditions.
 - Adjustable minimum and maximum water temperature for floor heating systems. (Floor heating systems must comprise 3-way mixture valve.)
 - You can use the floor drying function to adjust the heating temperature for newly finished floor.
- 5 - For the boiler, the same settings as the heating circuit are available.
 - The boiler operation can be programmed with desired time schedule. (Day/hour setting),
 - Boiler and the heating circuit can operate at the same time, or the boiler heating can be prioritized using priority assignment.
 - To prevent viral formation in long term non-circulating water, legionella function can heat the boiler water to high temperatures at specific periods to eliminate viruses.
- 6 - The last 20 errors in the control device can be viewed using the relevant parameter.
- 7 - It is compatible to run with solar power.
- 8 - Swimming pool heating is possible using solar power and boiler.
- 9 - Cascade module can allow the system to operate as cascade.
 - For wall mounted boilers, 16 boilers, including 1 master and 15 slave boilers, can be controlled as cascade system.
 Cascade system operation;
 - Ensures equal aging of boilers,
 - Prevents frequent activation and deactivation of boilers.
- 10 - Additional modules and additional zone control device can be added to the control device in line with the project requirements. Additional modules enable;
 - Instantaneous water heater control,
 - Return water temperature control,
 - Heating circuit control.
- 11 - Maintenance and special operation menu can be used to define maintenance intervals. The boiler's operating times can be measured, service signal and maintenance time alert can be issued at specified intervals and the time since the last maintenance can be tracked.
- 12 - Commissioning mode can be used to conduct inlet/outlet tests of equipment during commissioning.
- 13 - Room units can be connected to the control device. Room unit can be used to control the heating circuit

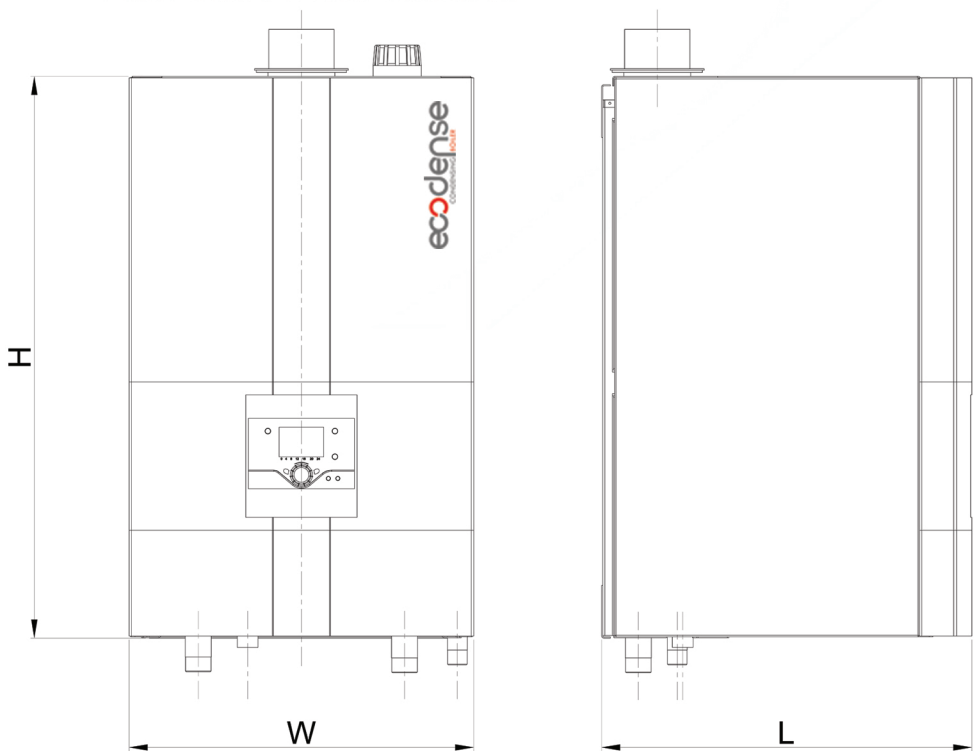
WALL-HUNG CONDENSING BOILER



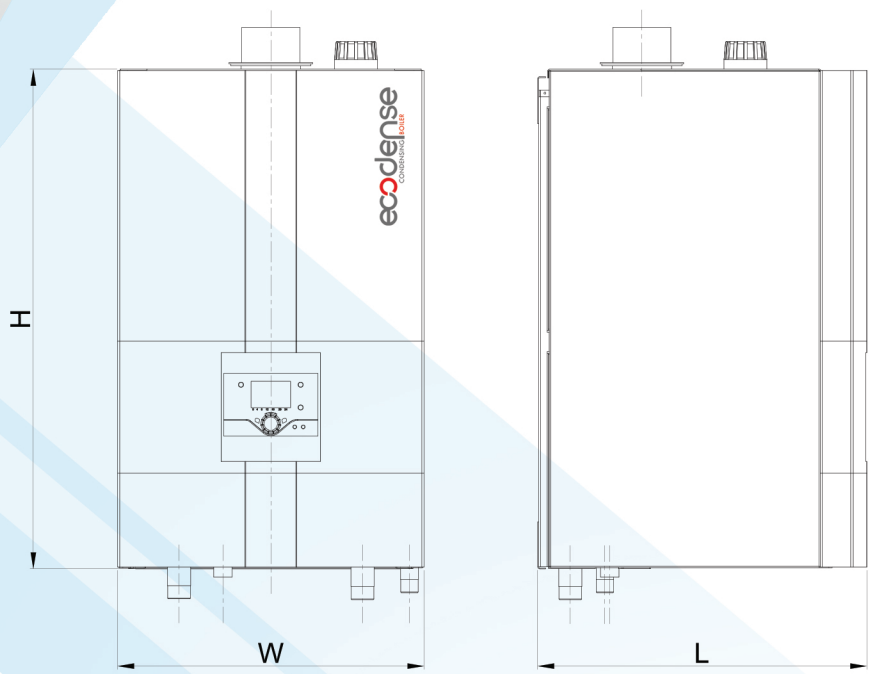
SPECIFICATIONS

- High efficiency with Premix condensing technology and micro-flame metal fiber coated steel burner,
- 5 different capacity option between 65 kW-150 kW in WT series aluminum spiral heat exchanger, 5 different capacity option between 70 kW-155 kW in WTC series Al-Si-Mg sand cast heat exchanger single condensing boilers and up to 2400 kW in CASCADE systems,
- When used as CASCADE, the panel on the boiler allows controlling 16 boilers + 1 outdoor sensor + 1 mixing valve,
- Provides energy saving through 5:1 modulating operation,
- Allows simple control with illuminated LCD panel which provides ease of use; and error codes and boiler information can be displayed on this panel,
- Daily and weekly operation schedule can be programmed,
- Seasonal heat program can be prepared during summer and winter times,
- Option of use with Natural Gas and LPG,
- Operation in lower noise values,
- Environmentally-friendly with lower NOx and CO emission rates.

EXTERNAL DIMENSIONS

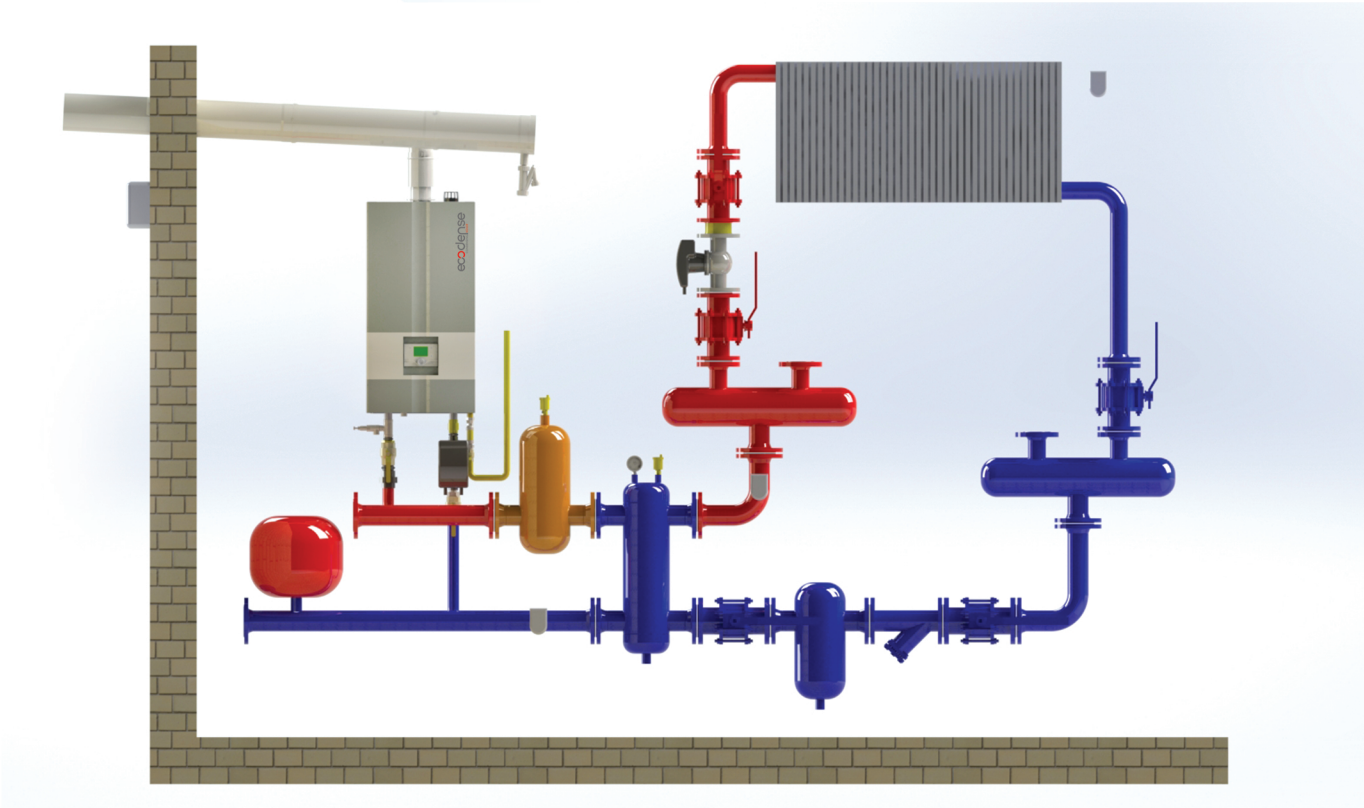


MODEL	W mm	H mm	L mm
WT 65	465	725	585
WT 80	465	725	585
WT 100	465	900	500
WT 125	465	900	500
WT 150	465	1090	500



MODEL	W mm	H mm	L mm
WTC 70	550	895	470
WTC 100	550	895	570
WTC 115	550	895	570
WTC 125	550	895	720
WTC 155	550	895	850

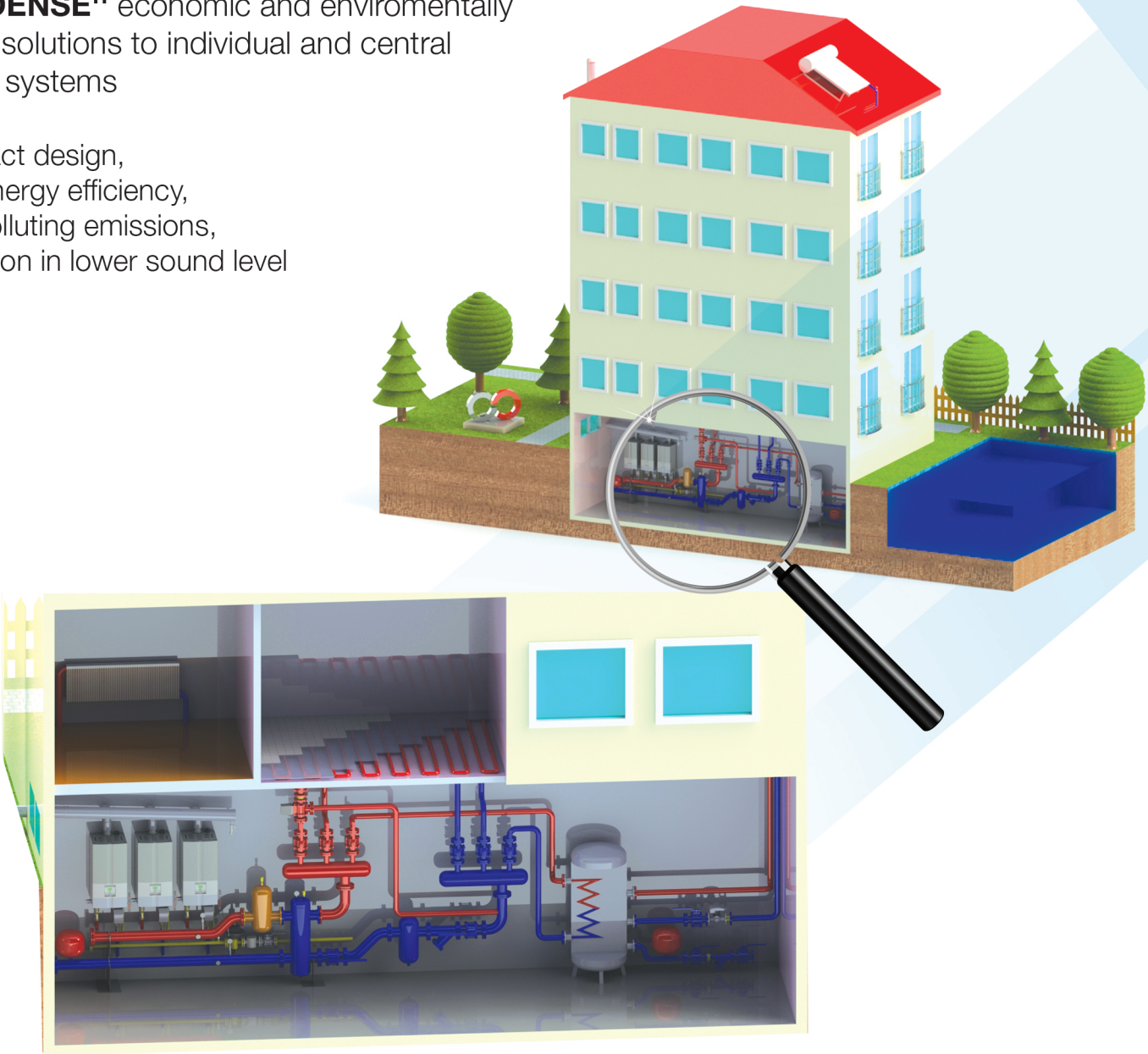
CIRCUIT DIAGRAM



Single condensing boiler circuit diagram: Radiator Heating

"ECODENSE" economic and enviromentally friendly solutions to individual and central heating systems

- Compact design,
- High energy efficiency,
- Low polluting emissions,
- Operation in lower sound level



APPROPRIATE SOLUTIONS FOR WIDE RANGE OF CAPACITIES



WT SERIES ALUMINUM SPIRAL HEAT EXCHANGER WALL HUNG CONDENSING BOILER TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	UNIT	WT 65	WT 80	WT 100	WT 125	WT 150
CAPACITY						
Maximum Heating Capacity	kW	65	80,0	100,0	125,0	150,0
Minimum Heating Capacity	kW	20	20,0	25,0	25,0	25,0
Maximum Thermal Output (80°C / 60°C)	kW	63,7	78,4	98,0	122,5	147,0
Minimum Thermal Output (80°C / 60°C)	kW	19,7	19,7	24,6	24,6	24,6
Maximum Thermal Output (50°C / 30°C)	kW	68	84,0	105,0	131,0	157,0
Minimum Thermal Output (50°C / 30°C)	kW	21,5	21,5	26,8	26,8	26,8
EFFICIENCY						
Pmax. (80°C / 60°C)	%	98,0%	98,0%	98,0%	98,0%	98,0%
Pmin. (80°C / 60°C)	%	98,5%	98,5%	98,4%	98,4%	98,4%
Pmax. (50°C / 30°C)	%	104,6%	105,0%	105,0%	104,8%	104,7%
Pmin. (50°C / 30°C)	%	107,5%	107,5%	107,2%	107,2%	107,2%
%30 (30°C)	%	109,0%	109,0%	109,0%	109,0%	109,0%
USAGE WATER CIRCUIT						
Temp. Adj. Range with Ext. Storage Tank Usage	°C	10-65	10-65	10-65	10-65	10-65
CENTRAL HEATING CIRCUIT						
Maximum Operating Temperature	°C	90	90	90	90	90
Quantity of Water	Lt	5	5	7	7	9
Maximum Operating Pressure	bar	6	6	6	6	6
Minimum Operating Pressure	bar	0,8	0,8	0,8	0,8	0,8
GAS SPECIFICATIONS						
Gas Type		G20-G31	G20-G31	G20-G31	G20-G31	G20-G31
Gas Inlet Pressure (G20)	mbar	21	21	21	21	21
Gas Inlet Pressure (G31)	mbar	37	37	37	37	37
COMBUSTION DATA						
Maximum Fume Temperature (80°C / 60°C)	°C	65	65	65	65	65
Minimum Fume Temperature (80°C / 60°C)	°C	60	60	60	60	60
Maximum Fume Temperature (50°C / 30°C)	°C	42	42	43	45	45
Minimum Fume Temperature (50°C / 30°C)	°C	32	32	33	35	35
ELECTRICAL SPECIFICATIONS						
Voltage & Frequency	V / Hz	230/50	230/50	230/50	230/50	230/50
Protection Class	IP	X5D	X5D	X5D	X5D	X5D
Energy Consumption	W	100	100	200	200	300
Electrical Fuse	Amper	3	3	6	6	6
HYDROLIC INSTALLATION SPECIFICATIONS						
Gas Connection	inch	3/4"	3/4"	3/4"	3/4"	3/4"
Central Heating Circuit Inlet/Outlet	inch	1"	1"	1"	1"	1"
GENERAL SPECIFICATIONS						
Net Weight	kg	50	50	70	70	90
Chimney Diameter (Ø)	mm	80/125	80/125	80/125	80/125	80/125
NOx Class		5	5	5	5	5
G 20 Natural Gas, G 31 LPG						

WTC SERIES CAST HEAT EXCHANGER

WALL HUNG CONDENSING BOILER TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	UNIT	WTC 70	WTC 100	WTC 115	WTC 125	WTC 155
CAPACITY						
Capacity	kW	70.0	100.0	115.0	125.0	155.0
Nominal Thermal Power - Max. (80°C / 60°C)	kW	62.0	90.0	109.0	115.0	142.0
Nominal Thermal Power - Minimum (80°C / 60°C)	kW	14	19	19	18	33
Nominal Thermal Power - Max. (50°C / 30°C)	kW	69.0	98.0	113.0	123.0	153.0
Nominal Thermal Power - Minimum (50°C / 30°C)	kW	16.0	22.0	22.0	21.0	37.0
EFFICIENCY						
Pmax. (80°C / 60°C)	%	96.0%	98.0%	96.0%	96.0%	96.0%
Pmin. (80°C / 60°C)	%	94.0%	95.0%	95.0%	95.0%	96.0%
Pmax. (50°C / 30°C)	%	106.0%	105.0%	104.0%	104.0%	104.0%
Pmin. (50°C / 30°C)	%	107.0%	108.0%	106.0%	106.0%	109.0%
%30 (30°C)	%	107.1%	107.1%	107.1%	107.1%	107.1%
CENTRAL HEATING CIRCUIT						
Maximum Operating Temperature	°C	90	90	90	90	90
Quantity of Water	Lt	6.5	8.5	8.5	10.5	12.5
Maximum Operating Pressure	bar	6	6	6	6	6
Minimum Operating Pressure	bar	0.8	0.8	0.8	0.8	0.8
GAS SPECIFICATIONS						
Gas Type		G20	G20	G20	G20	G20
Gas Inlet Pressure (G20)	mbar	21	21	21	21	21
COMBUSTION DATA						
Fume Temperature	°C	30-65	30-65	30-65	30-65	30-65
Flue Gas Flow Rate	kg/s	0.029	0.041	0.052	0.058	0.076
Nox Class						
CONNECTION SPECIFICATIONS						
Condensing connection	Ø	R3/4"	R3/4"	R3/4"	R3/4"	R3/4"
Waste gas output connection	mm	80	100	100	115	127
Gas connection	Ø	R 3/4"	R 3/4"	R 3/4"	R 1"	R 1"
Hot/cold water connection	Ø	R 1"	R 1 1/4"	R 1 1/4"	R 1 1/4"	R 1 1/2"
ELECTRICAL SPECIFICATIONS						
Energy Consumption	W	160	190	190	260	260
Voltage & Frequency	V-Hz	230V-50Hz				
G 20 Natural Gas						

FLOOR TYPE CONDENSING BOILER SPECIFICATIONS



FT SERIES ALUMINUM SPIRAL
HEAT EXCHANGER



FTC-S/ FTC-X SERIES
CAST HEAT EXCHANGER

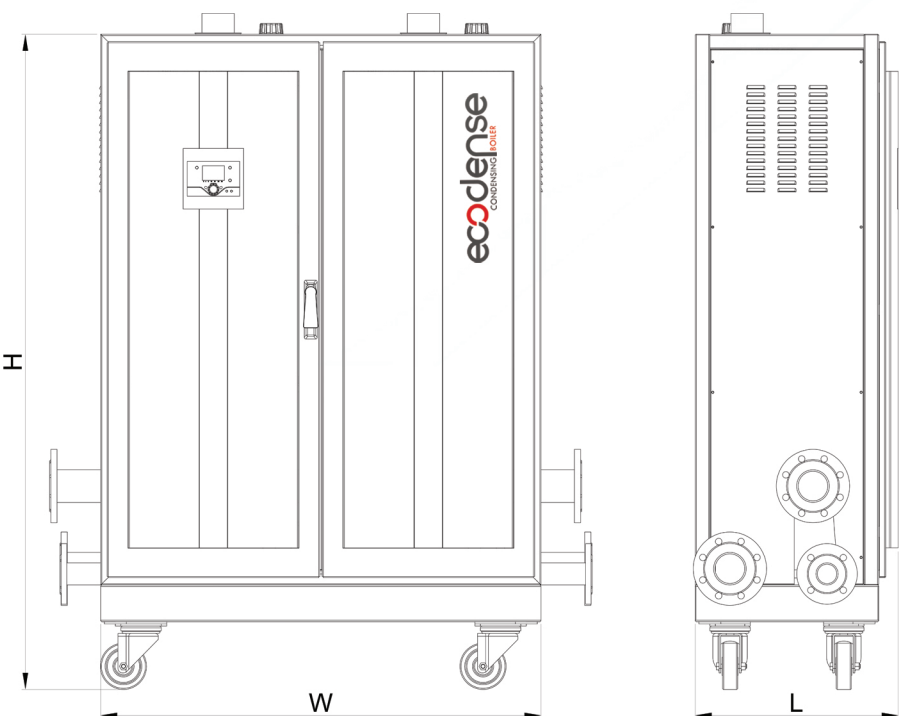
ALUMINUM SPIRAL HEAT EXCHANGER FLOOR TYPE CONDENSING BOILER



SPECIFICATIONS

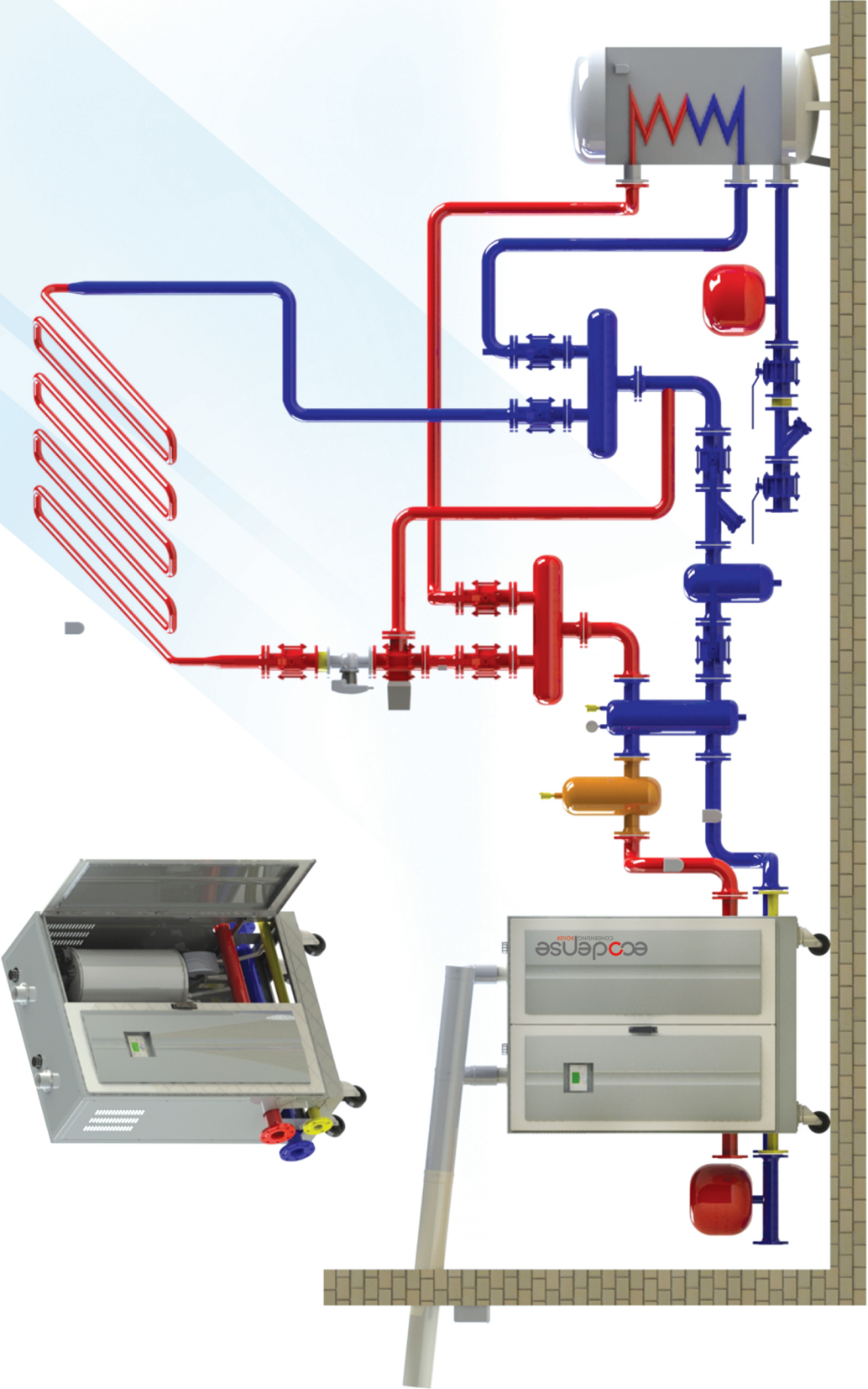
- Homogenous heat distribution with Premix condensing technology and micro-flame metal fiber coated steel burner,
- A wide option of capacity up to 250 kW in individual boilers and up to 2000 kW in CASCADE systems,
- Provides energy saving through 5:1 modulating operation,
- ECODENSE floor type Condensing boilers can control up to 8 modules as CASCADE,
- Allows simple control with illuminated LCD panel which provides ease of use; and error codes and boiler information can be displayed on this panel,
- Daily and weekly operation schedule can be programmed,
- Seasonal heat program can be prepared during summer and winter times,
- Option of use with Natural Gas and LPG,
- Provides an advantage in boiler room plannings and conversions with its compact structure in terms of area of use
- Operation in lower noise values,
- Environmentally-friendly with lower NOx and CO emission rates.

EXTERNAL DIMENSIONS



MODEL	W mm	H mm	L mm
FT 250	1200	1790	560

CIRCUIT DIAGRAM



Single module circuit diagram: Floor Heating+Boiler

**FT SERIES ALUMINUM SPIRAL HEAT EXCHANGER
FLOOR TYPE CONDENSING BOILER TECHNICAL SPECIFICATIONS**

TECHNICAL SPECIFICATIONS	UNIT	FT 250
CAPACITY		
Maximum Heating Capacity	kW	250,0
Minimum Heating Capacity	kW	25,0
Maximum Thermal Output (80°C / 60°C)	kW	245,0
Minimum Thermal Output (80°C / 60°C)	kW	24,6
Maximum Thermal Output (50°C / 30°C)	kW	262,0
Minimum Thermal Output (50°C / 30°C)	kW	26,8
EFFICIENCY		
Pmax. (80°C / 60°C)	%	98,0%
Pmin. (80°C/60°C)	%	98,4%
Pmax. (50°C / 30°C)	%	104,8%
Pmin. (50°C / 30°C)	%	107,2%
%30 (30°C)	%	109,0%
USAGE WATER CIRCUIT		
Temp. Adj. Range with Ext. Storage Tank Usage	°C	10-65
CENTRAL HEATING CIRCUIT		
Maximum Operating Temperature	°C	90
Maximum Operating Pressure	bar	6
Minimum Operating Pressure	bar	0,8
GAS SPECIFICATIONS		
Gas Type		G20-G31
Gas Inlet Pressure (G20)	mbar	21
Gas Inlet Pressure (G31)	mbar	37
COMBUSTION DATA		
Maximum Fume Temperature (80°C / 60°C)	°C	65
Minimum Fume Temperature (80°C / 60°C)	°C	60
Maximum Fume Temperature (50°C / 30°C)	°C	45
Minimum Fume Temperature (50°C / 30°C)	°C	35
ELECTRICAL SPECIFICATIONS		
Voltage & Frequency	V / Hz	230/50
Protection Class	IP	X5D
Energy Consumption	W	400
Electrical Fuse	Amper	6
GENERAL SPECIFICATIONS		
Chimney Diameter (Ø)	mm	80/125
NOx Emission Class		5
G 20 Natural Gas, G 31 LPG		

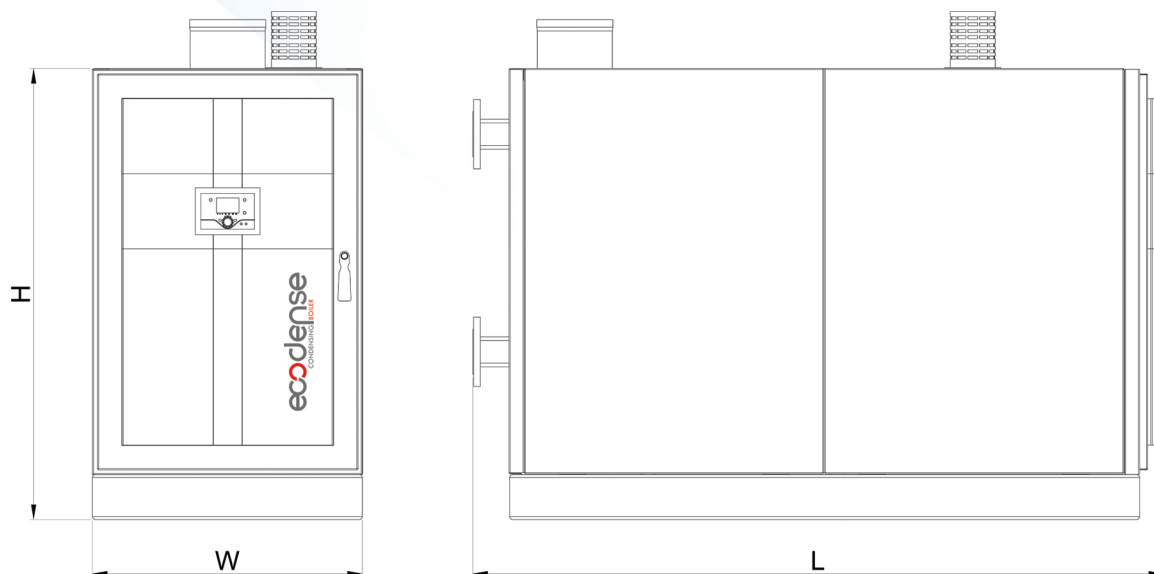
CAST EXCHANGER FLOOR TYPE CONDENSING BOILER



SPECIFICATIONS

- Homogenous heat distribution with Premix condensing technology and micro-flame metal fiber coated steel burner,
- Aluminum silicate alloy cast casing exchanger that provides high operating efficiency with high heat transfer,
- A wide option of capacity up to 70 kW- 500 kW in individual boilers and up to 8000 kW in CASCADE systems,
- Provides energy saving through 5:1 modulating operation,
- Allows cascade connection up to total 16 boilers, including 1 master and 15 slave boilers,
- Allows simple control with illuminated LCD panel which provides ease of use; and error codes and boiler information can be displayed on this panel,
- Daily and weekly operation schedule can be programmed,
- Seasonal heat program can be prepared during summer and winter times,
- Option of use with Natural Gas and LPG,
- Provides an advantage in boiler room plannings and conversions with its compact structure in terms of area of use,

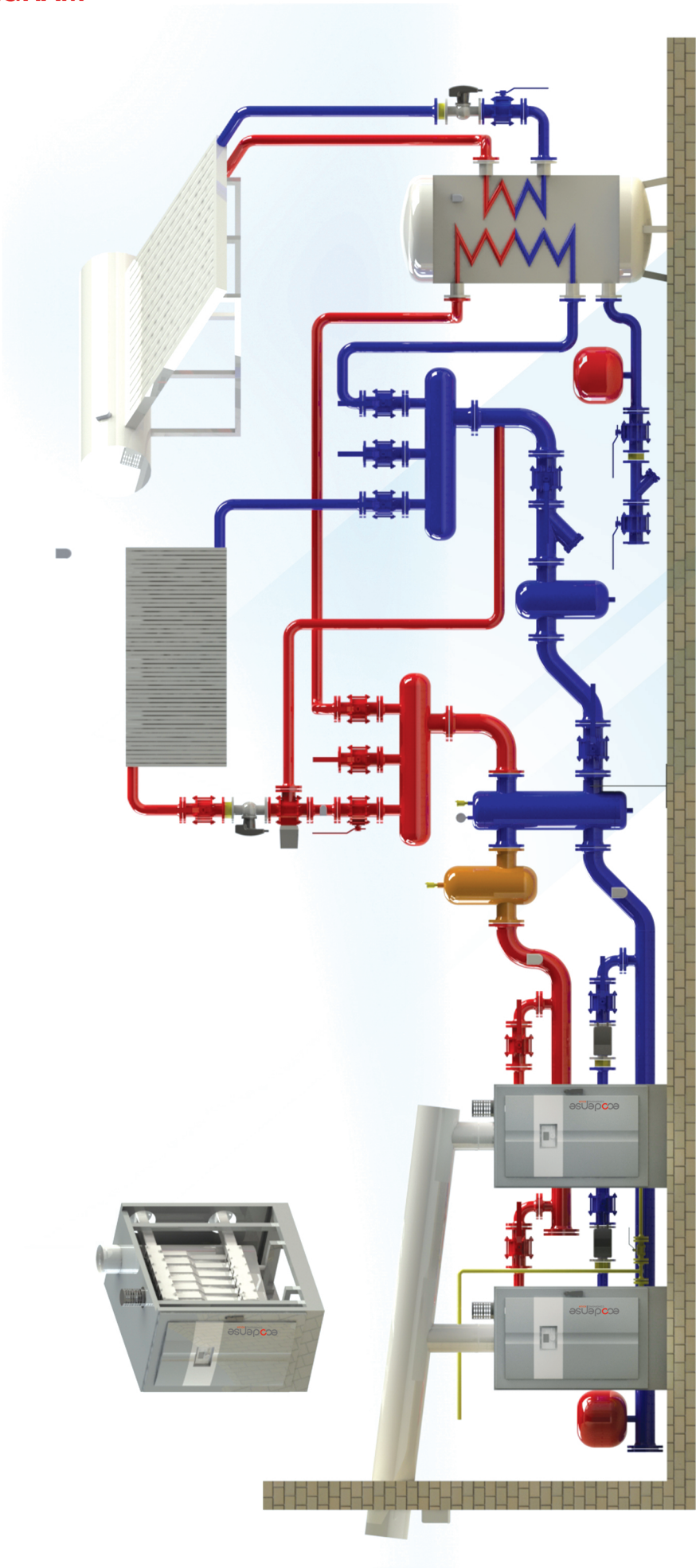
EXTERNAL DIMENSIONS



MODEL	W mm	H mm	L mm
FTC-S 70	490	1270	870
FTC-S 100	490	1270	870
FTC-S 115	490	1270	870
FTC-S 125	490	1270	1150
FTC-S 155	590	1270	1420
FTC-S 190	590	1270	1420

MODEL	W mm	H mm	L mm
FTC-X 200	620	1285	1430
FTC-X 270	620	1285	1430
FTC-X 340	620	1285	1430
FTC-X 410	720	1285	1940
FTC-X 480	720	1285	1940
FTC-X 550	720	1285	1940

CIRCUIT DIAGRAM



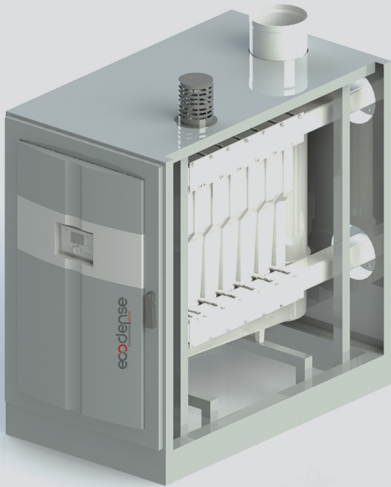
2 cascade condensing boiler circuit diagram: Radiator Heating+Boiler+Solar Heating

FTC-S SERIES CAST HEAT EXCHANGER WALL HUNG CONDENSING BOILER TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	UNIT	FTC-S 70	FTC-S 100	FTC-S 115	FTC-S 125	FTC-S 155	FTC-S 190
CAPACITY							
Capacity	kW	70.0	100.0	115.0	125.0	155.0	190
Nominal Thermal Power - Max. (80°C / 60°C)	kW	62.0	90.0	109.0	115.0	142.0	171
Nominal Thermal Power - Minimum (80°C / 60°C)	kW	14	19	19	18	33	37
Nominal Thermal Power - Max. (50°C / 30°C)	kW	69.0	98.0	113.0	123.0	153.0	187
Nominal Thermal Power - Minimum (50°C / 30°C)	kW	16.0	22.0	22.0	21.0	37.0	41
EFFICIENCY							
Pmax. (80°C / 60°C)	%	96.0%	98.0%	96.0%	96.0%	96.0%	95.0%
Pmin. (80°C / 60°C)	%	94.0%	95.0%	95.0%	95.0%	96.0%	96.0%
Pmax. (50°C / 30°C)	%	106.0%	105.0%	104.0%	104.0%	104.0%	104.0%
Pmin. (50°C / 30°C)	%	107.0%	108.0%	106.0%	106.0%	109.0%	107.0%
%30 (30°C)	%	107.1%	107.1%	107.1%	107.1%	107.1%	107.1%
CENTRAL HEATING CIRCUIT							
Maximum Operating Temperature	°C	90	90	90	90	90	90
Quantity of Water	Lt	6.5	8.5	8.5	10.5	12.5	14.5
Maximum Operating Pressure	bar	6	6	6	6	6	6
Minimum Operating Pressure	bar	0.8	0.8	0.8	0.8	0.8	0.8
GAS SPECIFICATIONS							
Gas Type		G20	G20	G20	G20	G20	G20
Gas Inlet Pressure (G20)	mbar	21	21	21	21	21	21
COMBUSTION DATA							
Fume Temperature	°C	30-65	30-65	30-65	30-65	30-65	30-65
Flue Gas Flow Rate	kg/s	0.029	0.041	0,052	0.058	0.076	0.095
Nox Class	5						
CONNECTION SPECIFICATIONS							
Condensing connection	Ø	R3/4"	R3/4"	R3/4"	R3/4"	R3/4"	R3/4"
Waste gas output connection	mm	80	100	100	115	127	150
Gas connection	Ø	R 3/4"	R 3/4"	R 3/4"	R 1"	R 1 1/4"	R 1 1/4"
Hot/cold water connection	Ø	R 1"	R 1 1/4"	R 1 1/4"	R 1 1/4"	R 1 1/2"	R 1 1/2"
ELECTRICAL SPECIFICATIONS							
Energy Consumption	W	160	190	190	260	260	320
Voltage & Frequency	V-Hz	230V-50Hz					
G 20 Natural Gas							

FTC-X SERIES CAST HEAT EXCHANGER WALL HUNG CONDENSING BOILER TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	UNIT	FTC-X 200	FTC-X 270	FTC-X 340	FTC-X 410	FTC-X 480	FTC-X 550
CAPACITY							
Capacity	kW	200.0	270.0	340.0	410.0	480	550
Nominal Thermal Power - Max. (80°C / 60°C)	kW	184.0	258.0	321.0	390.0	456	522
Nominal Thermal Power - Minimum (80°C / 60°C)	kW	28	36	44	53	60	72
Nominal Thermal Power - Max. (50°C / 30°C)	kW	200.0	269.0	339.0	408.0	477	542
Nominal Thermal Power - Minimum (50°C / 30°C)	kW	32.0	40.0	49.0	58.0	68	79
EFFICIENCY							
%30 (30°C)	%	107.1%	107.1%	107.1%	107.1%	107.1%	107.1%
CENTRAL HEATING CIRCUIT							
Maximum Operating Temperature	°C	90	90	90	90	90	90
Quantity of Water	Lt	18.67	22.96	26.42	32.64	36.9	41
Maximum Operating Pressure	bar	6	6	6	6	6	6
Minimum Operating Pressure	bar	0.8	0.8	0.8	0.8	0.8	0.8
GAS SPECIFICATIONS							
Gas Type		G20	G20	G20	G20	G20	G20
Gas Inlet Pressure (G20)	mbar	21	21	21	21	21	21
COMBUSTION DATA							
Fume Temperature	°C	30-80	30-80	30-80	30-80	30-80	30-80
Flue Gas Flow Rate	kg/s	0.092	0.118	0.145	0.171	0.198	0.224
Nox Class	5						
CONNECTION SPECIFICATIONS							
Condensing connection	Ø	R3/4"	R3/4"	R3/4"	R3/4"	R3/4"	R3/4"
Waste gas output connection	mm	160	160	160	200	200	200
Gas connection	Ø	R 1 1/4"	R 1 1/2"	R 1 1/2"	R 2"	R 2"	R 2"
Hot/cold water connection	Ø	R 2"	R 2"	DN65	DN65	DN65	DN65
G 20 Natural Gas							



OPTIONAL ACCESSORIES



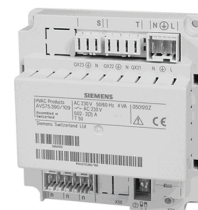
Pump



Checkvalve



6-Bar safety valve



AVS75: Relay connection, solar panel connection, 3way valve connection



QAC34 External Air Sensor

Operable at the range of -30°C to 125°C. Allows connection at maximum 120 meters using cable with 1.5 mm² section. +1/-1 Kelvin tolerance.



QAD36 Clamp Type Temperature Sensor

Operable at the range of -30°C to 125°C. Allows connection at maximum 80 meters using cable with 1 mm² section. +0.5/-0.5 Kelvin tolerance.



QAZ36 Immersion Type Temperature Sensor

Operable at the range of 0°C to 95°C. +0.5/-0.5 Kelvin tolerance. 2 meters long.



OCI345.06 CASCADE Module

For wall mounted boilers, 16 boilers, including 1 master and 15 slave boilers, can be controlled as cascade.

Webserver

You can connect to the web server device from anywhere in the world to monitor and control your system.



- Remote access to your facility, and monitoring operating values,
- Adjustment of system hour, minute and year details,
- Language selection setting,
- Time program setting (Heating circuit, boiler, external time program)
- Vacation mode setting for heating circuits (controlling the heating circuit as per the anti-freeze protection mode in buildings for prolonged non-use)
- Changing temperature values of heating circuits,
- Setting boiler operating temperature and changing the boiler's operating mode (operation by 24 hours or time program)
- Controlling legionella function in boiler circuit,
- Controlling swimming pool circuit and changing temperature values,
- Controlling cascade parameters,
- Setting parameters of solar powered system,
- Setting accumulation tank or hot water storage tank parameters,
- Configuration settings (Relay and sensor assignment)
- Resetting system to factory settings,
- Monitoring system errors, viewing error times (Last 10 errors)
- Viewing maintenance time and defining maintenance interval,
- Testing the relays connected to the system,
- Viewing status information of cascade system,
- Viewing information on heat generation and consumption,
- Changing operating modes (economy, comfort, anti-freeze protection and automatic operation modes)

HEATING COMPONENTS

MANOMETER

Minimum one manometer covering a range of 0-6 bars must be installed to the system. The manometer must be placed in a manner easily visible from the charging point, and preferably, must be connected to the same point with the expansion tank.

SEDIMENT TRAP

The substances like dirt, sludge, sediment, etc., present in the installation water may result in failure of boiler and installation components, stress on heat transfer surfaces and decrease in efficiency. In order to prevent this, a sediment trap to be added to the system prevents penetration of such substances into the installation.

AIR SEPARATOR

The air inside the installation dissolves by increase of temperature and circulates through the system in aeriform. This results in cavitation in the installation, decrease in efficiency and noise. The air inside the installation can be removed by use of an air separator

BALANCE VESSEL

The main duty of balance vessel is to provide thermal equilibrium through enabling mixing of cold fluid from the installation with hot water from the boiler. Additionally, they are used to compensate potential pressure differences in a system containing multiple pumps. The balance vessel must be positioned upright.

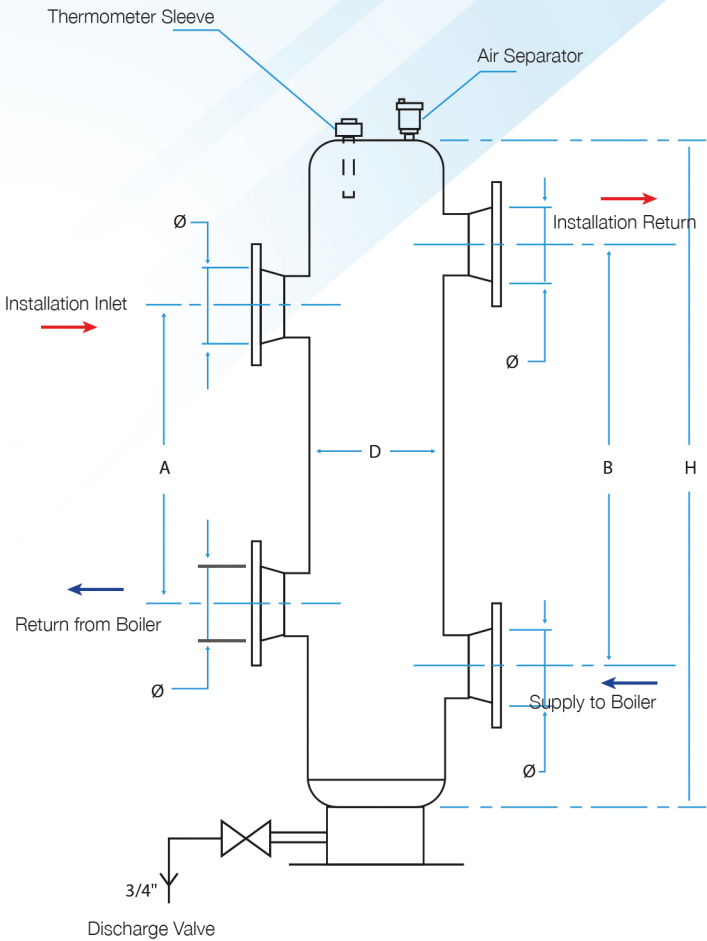
SIZING OF BALANCE VESSEL:

In order for healthy operation of balance vessel, it must be designed in proper dimensions.

- The discharged water temperature of the boiler should be measured at top of the balance vessel. For this, a 1/2" sleeve must be welded on top of the vessel; also an air purger must be mounted.
- Dimensions shown below are minimum dimensions required to be applied.

SYSTEM CAPACITY	A	B	H	BALANCE VESSEL DIAMETER D	INLET OUTLET DIAMETER Q
Kw	cm	cm	cm	mm	mm
65	33	38	48	100	50
90	38	44	55	125	50
115	42	47	59	125	65
130	47	54	68	150	65
170	54	62	77	150	80
230	59	67	84	200	80
345	72	82	103	200	100
460	83	95	119	250	100
575	93	106	133	250	125
690	102	116	145	300	125
805	110	126	157	300	150
920	118	134	168	350	150
1035	131	150	188	350	150
1150	138	157	197	400	200
1265	144	164	206	400	200
1380	150	171	214	450	200
1495	155	178	222	450	200
1610	162	185	230	450	200
1725	169	192	238	450	200

TOTAL CAPACITY (kW)	EXPANSION TANK CAPACITY (lt)	TOTAL CAPACITY (kW)	EXPANSION TANK CAPACITY (lt)
65	60	270 - 360	300
90	80	460 - 570	500
114	100	685 - 800	750
130	125	920	900
180	150	1030	1000
228	200	1140	1250



EXPANSION TANK CAPACITY

The expansion tank's initial pressures must be adjusted properly to the system and the tank must be placed in parallel to the installation return line.



ecodense®
CONDENSING BOILER

TERMO ISI SİSTEMLERİ TİC. VE SAN. A.Ş.

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