

GREENOx.e 170



Main features

The GREENOx boiler is three pass, wet back, low thermal load boiler, with single pass flame combustion chamber, connected to pressure jet burners for gas, oil and dual fuel operation. The boiler is designed to be used in systems with water temperature between 60 and 100 °C (safety thermostat set at 110 °C).

Some of the product's main features are related below:

- carbon steel **boiler body**.
- large volume **combustion chamber** for low heat release, three pass wet back horizontal boiler with two gas passes and a completely submerged rear chamber.
- laser cut **tube plates**
- EN10217-2 P235GH **smoke tubes** welded to tube plates, fitted with special helical turbulators.
- **boiler shell** with flow and return flanged connections, with pockets for thermostats and gauges, inspection doors, all manufactured with approved welding procedures.
- **circular casing** in anodized aluminum with high density glass wool, thick mattress insulation.
- **flat front door** with reversible opening, inner high-insulating ceramic lining, pivoting on hinges, easily opened with equipped lever by drilled ferrules. as to guarantee a perfect combustion gas seal and allow all maintenance operations.
- **flat rear door**, manufactured in high quality steel to guarantee high heat resistance, constructed in one piece that can be easily opened and that allows tube inspections, fastened with bolts, equipped with chimney connection and cleaning door.

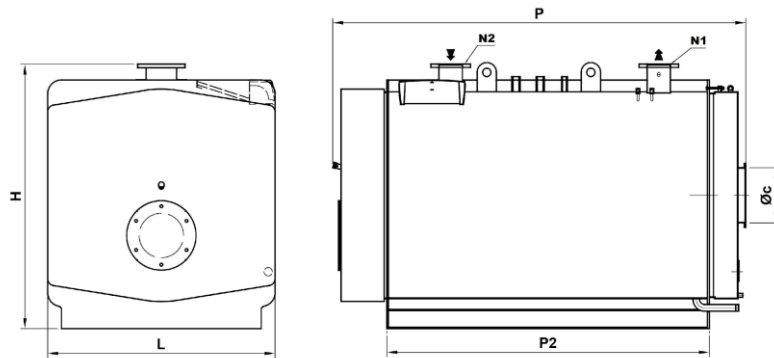
The control panel is sold separately

Product CE marked according to the European Directives in force: - 92/42/CE (applicable up to 400 kW) - 2009/142/CE - 2004/108/CE - 2006/95/CE

Standard equipment:

- Complete insulating casing
- Turbulators
- Cleaning brush

OVERALL DIMENSIONS



PRODUCT TECHNICAL DATA TABLE

Feature	U.M.	Value
Maximum heat output	kW	1700
Maximum heat output	kCal/h	1462000
Maximum heat input	kW	1784
Maximum heat input	kCal/h	1534240
Design pressure	bar	5
Hydraulic test pressure	bar	7,5
Efficiency at 100% load (ref.N.C.V.)	%	95,29
Flue gas resistance	mbar	6,0
Fluid side pressure drop ($\Delta T=12K$)	mbar	56
Max design temperature	°C	110
Total water volume	l	2300
Heating surface	m ²	47,37
Electrical power supply	V	230
Nominal frequency	Hz	50
Insulation class		IP40
Total weight (empty)	kg	4300
DIMENSIONS :		
H - Height	mm	2065
L - Total Width	mm	1800
P - Length	mm	2932
P2	mm	2324
N1	DN	150
N2	DN	150
Øc - Flue connection diameter	mm	400
Inside diameter combustion chamber	mm	884
Length combustion chamber – reversing chamber	mm	2210
Furnace volume	m ³	1,308

NOTE = The weights indicated in this offer may vary depending on the accessories chosen upon ordering and any required customisations. Request the equipment weight to the sales office after the order.

Boiler control panel with eterm ® electronic board and etermWEBready



Description :

The system makes it possible to view the boiler plant on the web page thanks to the modem and the SIM card already installed.

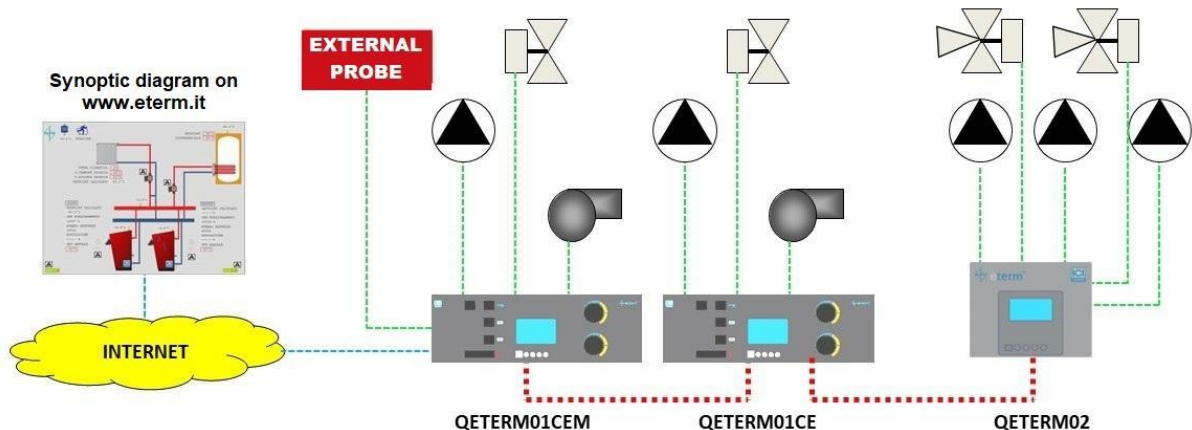
The panel is able to manage a two stage or modulating burner and can control, within the limits of the available outputs, pumps and plant room valves.

It is complete with regulation and safety thermostats that also allow "manual" operation through the activation of electro-mechanical switches.

Thanks to the updatable software, **eterm** ® controller features a number of functions that ICI Caldaie may implement for continuous product improvement.

Main functions:

- etermWEBready remote control
- Enablement of cascade operation with other panels of the same series
- Enablement of managing QETERM02 expansions for control of other pumps or valves
- Enablement of ModBus connection with optional interface
- Delivery temperature climate control (with optional external probe)
- Management of 2 configurable outputs for pumps and valves
- Mixing valve management



The etermWEBready remote control

The control panel is equipped with a **modem with a SIM card** for the remote management service.

The QETERM01CEM control panels have a unique identification code which can be communicated by the customer to make the following requests:

- **Remote configuration** of the controller and of possible slave units
- **Creation of a dedicated web page** for the remote control of the plant

The web page appears as a synoptic diagram created by the boiler room schematic layout, provided by the customer

The service allows:

- **real time view** of the operation of the system
- **remotely send commands** for changing operating parameters, time programs, etc
- **receive alerts** via email
- **extract graphs or tables** of operating data recorded over time

Exclusions

- The service does not include controls on the adequacy of the data read and/or recorded.
- ICI Caldaie declines all responsibility for the use of remote management and programs provided by users.

- The responsibility for the use of remote management and synoptic diagram lies with the customer. ICI Caldaie cannot be held responsible for boiler room operation problems, excessive energy consumption, wear or failure of electromechanical equipment connected to the system in the event of incorrect use of the service.

Notes

- The service has a duration of one year and can be renewed.
- The access to stored data will be guaranteed for a significant period after the expiry of the service (up to a maximum of three months).
- To ensure continuity of acquisition, the service must be renewed at least one month before the expiry.
- The synoptic diagram will be created by ICI technicians on the basis of the boiler room layout and will be published on trial for 30 days. The graphic form and the functionality will be considered accepted by the customer at the expiry of 30 days. If any changes and/or additions are requested in the meantime, ICI Caldaie will assess at its sole discretion, whether to follow up on the request or to renounce the assignment. A dedicated offer in derogation of the below listed rates may be proposed for special requests. If any changes are required after acceptance, after 30 days of publication they will be subject to an offer from ICI Caldaie.
- ICI Caldaie guarantees the service for the year in which it is purchased. There is no obligation to renew.
- Any additional hardware necessary for remote reading and remote control is not included in the above described service and is subject to a regular offer from ICI Caldaie.
- By accepting this service, the customer authorizes ICI Caldaie to process the acquired data in the manner prescribed by law.

Power source

230 Vac

Dimensions

- 170 x 170 x 500 mm

Standard equipment:

- Main switch
- Burner operation switch (Manual / Off / Automatic)
- Operation switch of the 2 programmable outputs (Manual / Off / Automatic)
- 2 Regulation thermostats
- Safety thermostat
- Thermometer
- Microprocessor electronic board
- Boiler probe
- 3G modem
- Antenna with magnetic base for 3G Modem

Extra for biogas for REX, GREENOx, BNX, SIXEN

When biogas is used as fuel, the boiler is modified for higher protection against corrosion and increases its life.

Modifications included:



Front door : the front door internal insulation will be in **CONCRETE**. Boilers having ceramic fiber door insulation will be modified to include a suitably thick concrete insulation.



Rear smokebox: the smokebox is **galvanized** and supplied with a **condensate drain** connection.



Rear tube plate : the rear plate is painted with EPOXY PAINT to protect the surface in contact with the flue gases before the stack.

Here are some notes about the use of **biogas**.

The warranty does not cover damages from flue gas side corrosion; even with the modifications described above, to avoid / reduce flue side corrosion, we recommend to follow the following suggestions:

H2S limit value (Hydrogen sulfide)

The H2S limit value in the biogas should be:

- from 0,1 to 0,2 % (Biogas desulphurated)
- from 1000 to 2000 ppm

Conditions of operation

In order to avoid flue side corrosion in the boiler due to condensation, we recommend:

- avoid frequent switching off, to reduce the cold start ups
- keep the boiler water temperature always above 60°C to avoid flue gas condensation