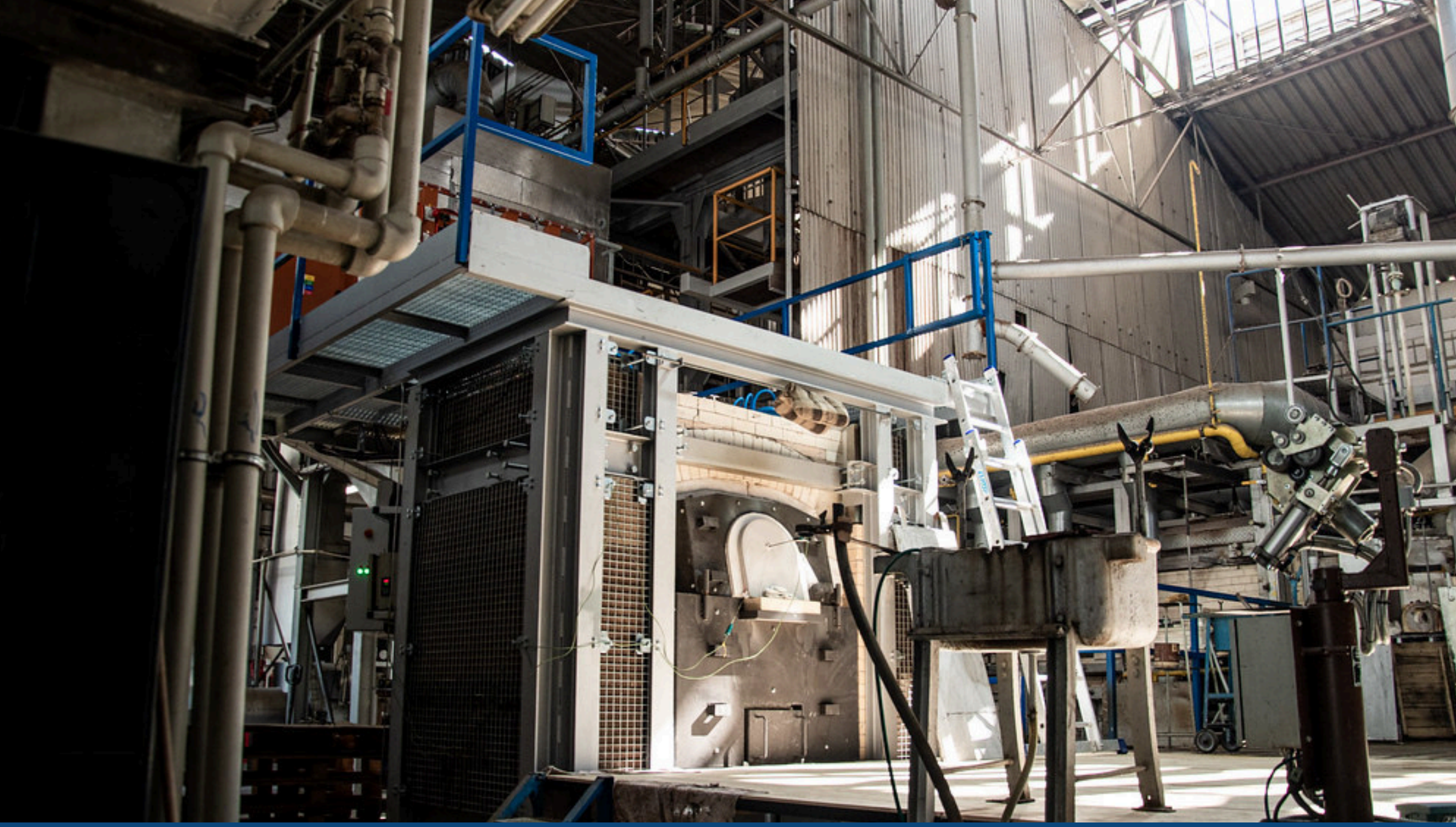


SAGA® KATERINČIN

SAGA ProCrystal 500

The new era of glass melting

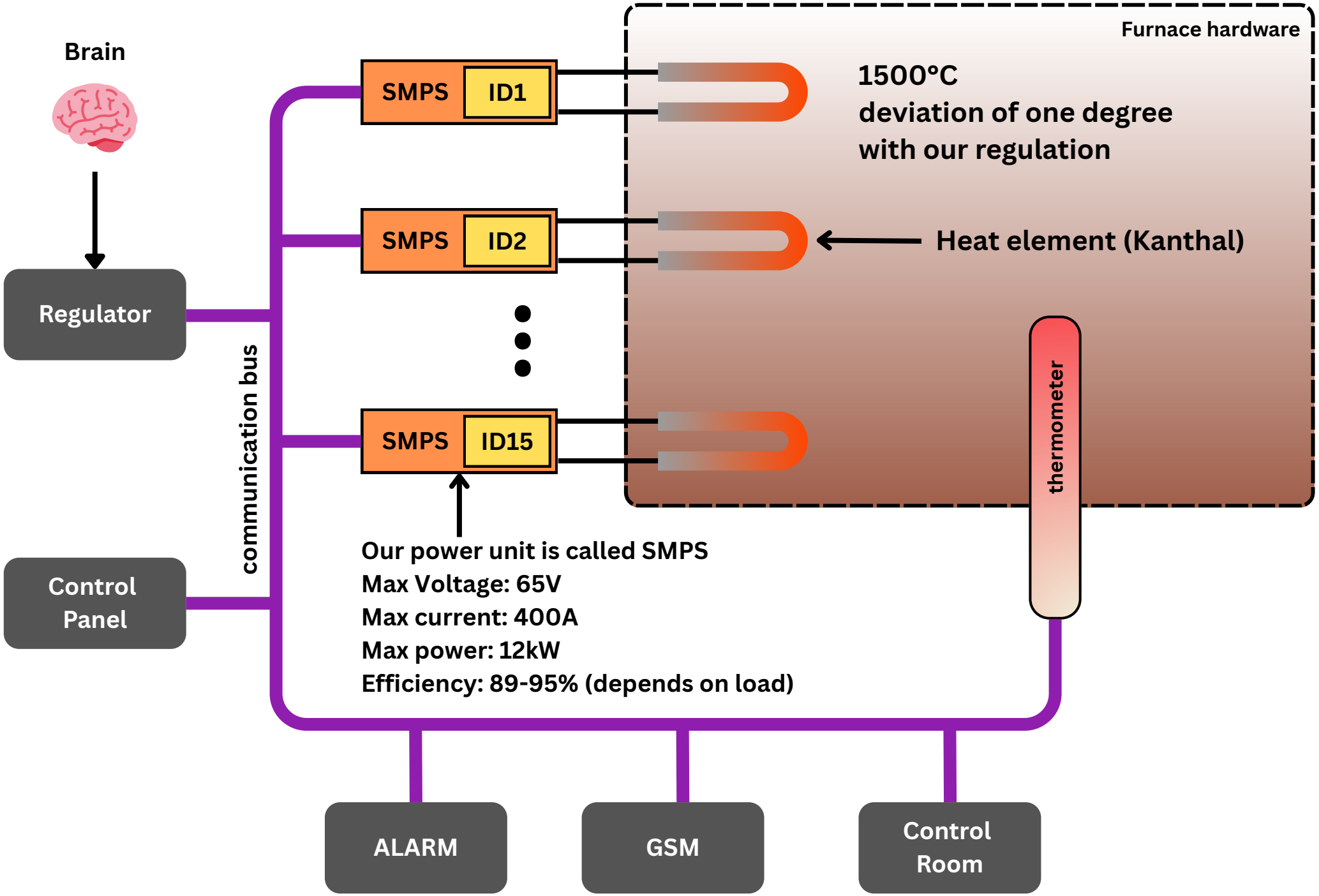
SAGA Pro Crystal 500
is an electrically powered, inverter-driven pot furnace designed
for melting up to **500 kg** of glass.

The glass melting technology based on inverter units,
developed by our company, represents a unique and time-proven solution
offering several **key advantages**:

- **independent control of each heating element**
- **uniform temperature distribution throughout the furnace**
- **easy component replacement in case of failure**
- **cost-effective and mechanically simple maintenance**

The furnace topology is built around a custom-developed controller that communicates with **15 independent inverters**, each **connected** to a separate **molybdenum heating element.**

The inverters continuously communicate with each other as well as with the controller, which serves as the central control unit – the brain of the entire furnace


Brain
Regulator
Control Panel
communication bus
SMPS
ID1
SMPS
ID2
SMPS
ID15
Furnace hardware
1500°C
deviation of one degree
with our regulation
Heat element (Kanthal)
thermometer
Our power unit is called SMPS
Max Voltage: 65V
Max current: 400A
Max power: 12kW
Efficiency: 89-95% (depends on load)
ALARM
GSM
Control Room

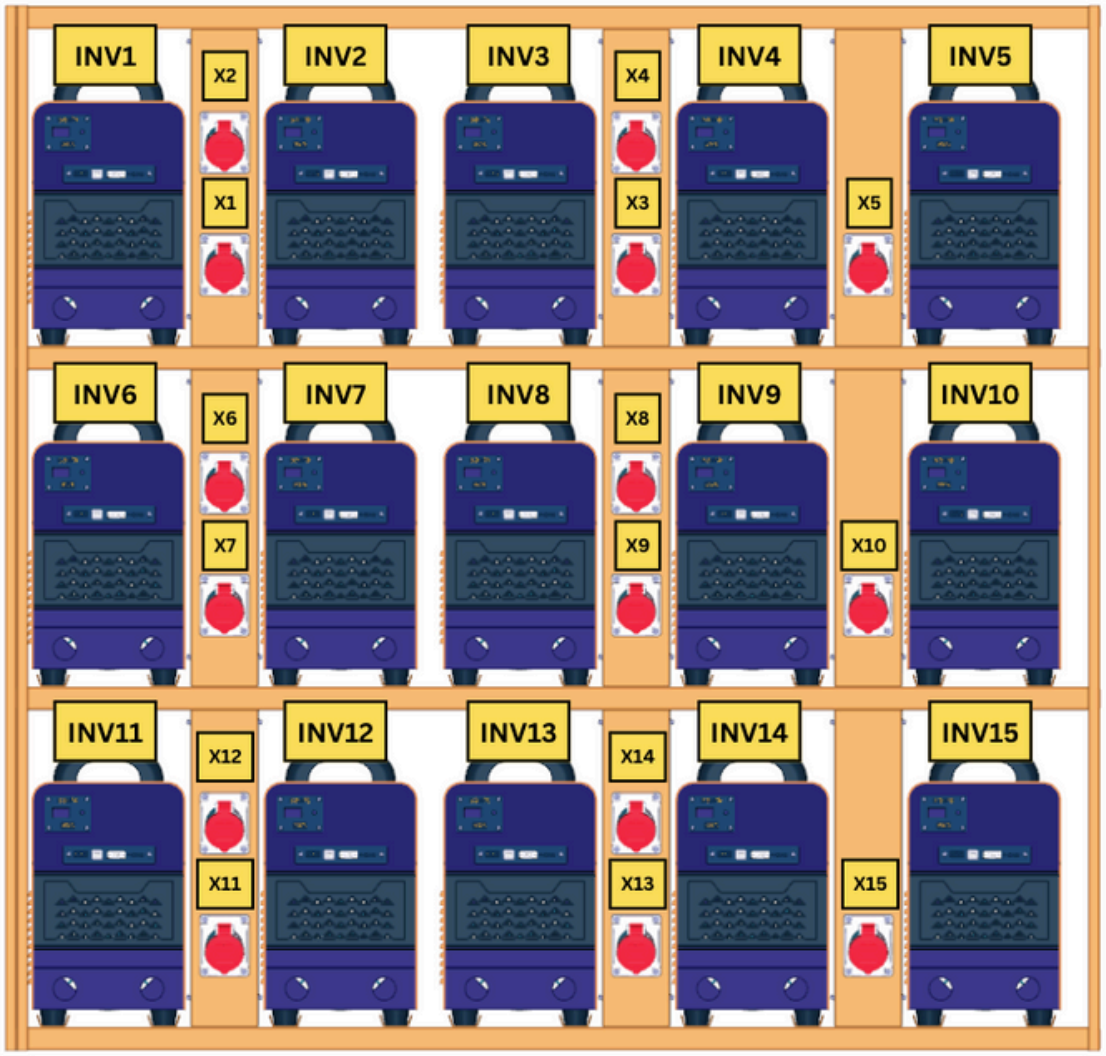
The advantage of individual control of each heating element includes:



Inverter also called
SMPS

- continuous monitoring of the **aging and condition of each heating element**
- **highly precise power regulation** enabled by accurate measurement of electrical and operating parameters
- **extended service life** of the heating elements
- in the event of a failure, the heating element can be replaced in a **simple and safe manner**,
  without the need to shut down the entire furnace,
  as is common with competing solutions

The inverters are mounted in a **rack**, providing **easy and quick access** for maintenance or service interventions.



Rack

The heating elements are located in the **furnace dome**
and are **easily accessible** for maintenance or service purposes.



A **high-precision temperature sensor** is positioned in the **center of the dome**, ensuring **accurate temperature** measurement inside the furnace.



The furnace operation is continuously monitored
by a **custom-developed alarm system**,
which supervises the internal furnace temperatures,
the functionality of individual components, the heating and cooling
temperature curves, as well as other critical operating parameters.

In the event of a malfunction or any deviation,
the system **automatically triggers an alarm**,
sends a notification via the **GSM module**,
and, if necessary, switches the furnace into an **emergency mode**.

This prevents overheating, uncontrolled cooling, or damage to the glass batch.

All **telemetry data**, temperatures, temperature curves, alarm states, and other operational information are stored
in a database on the main control computer.

This allows retrospective viewing and evaluation of temperature parameters, curves, energy consumption, and other key data.

Main screen



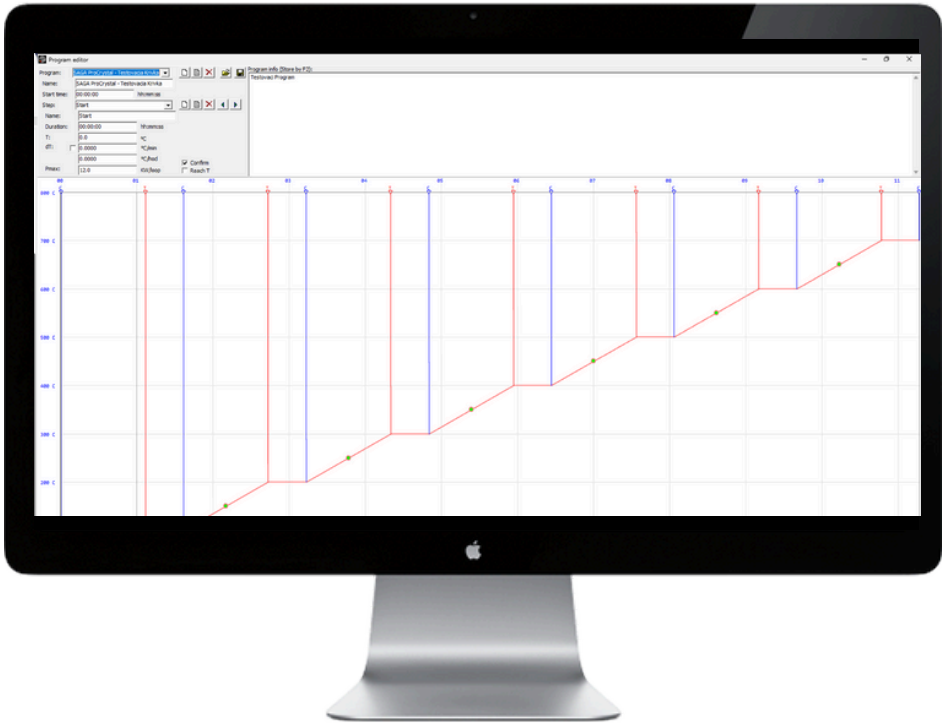
Database screen

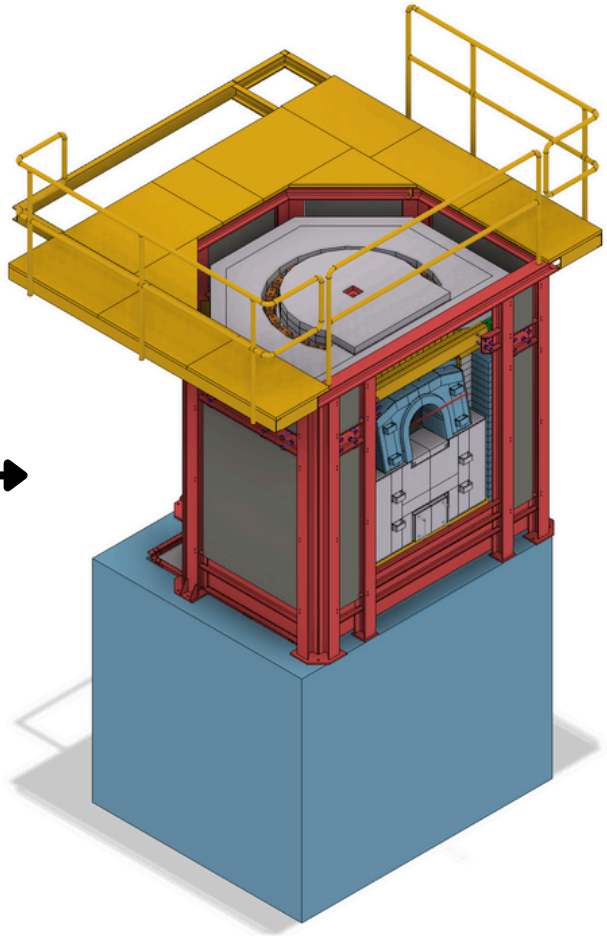


The control computer is also used for
editing program temperature curves and uploading them to the controller.

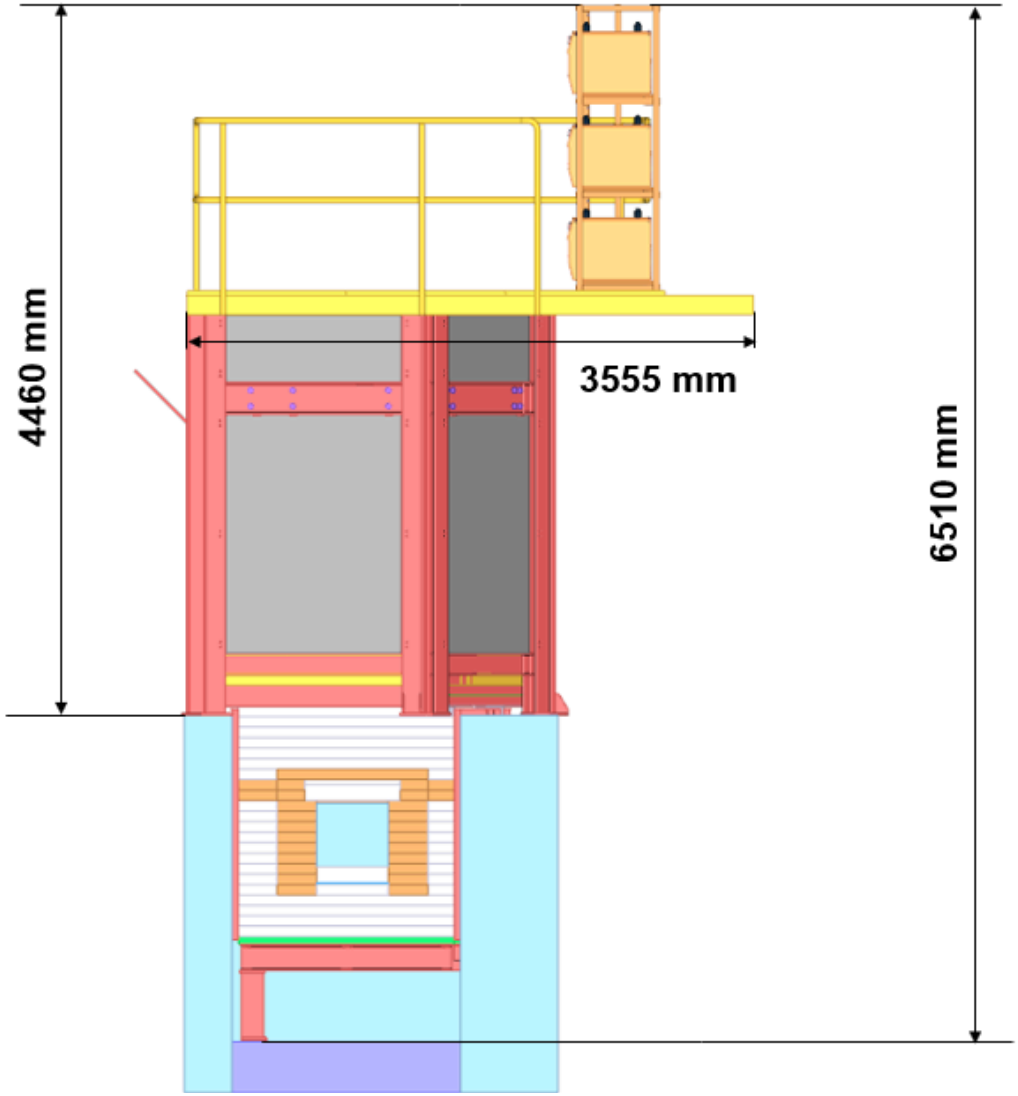
In emergency situations, the furnace is capable of **independent operation without the use of the computer.**

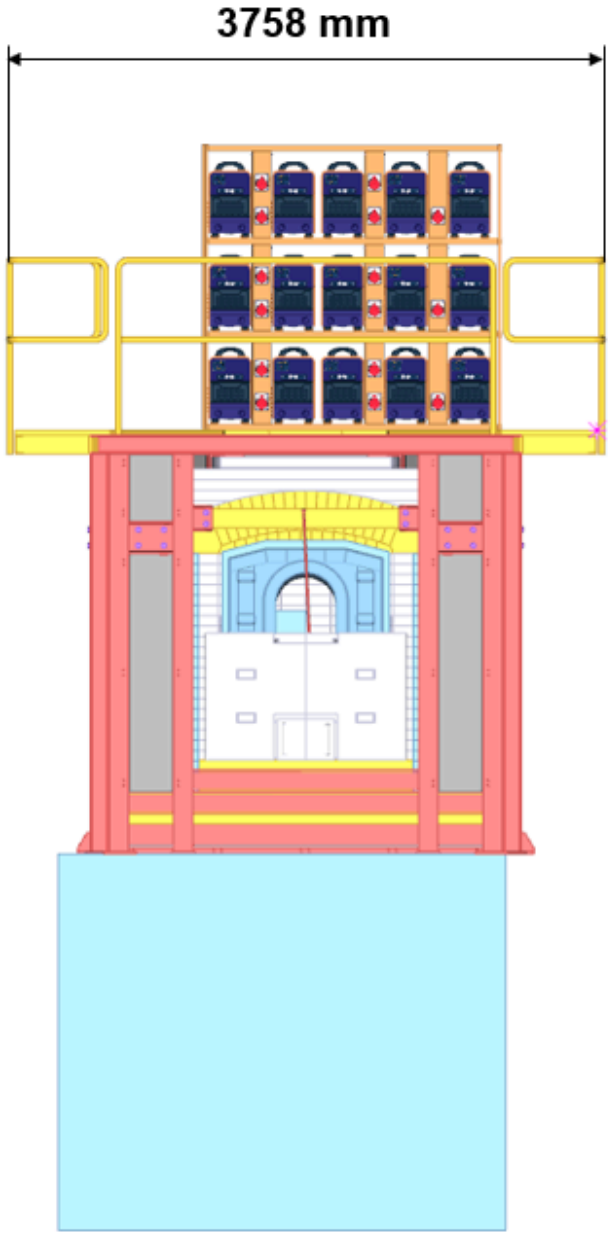
Program Edit Screen





Dimensions:





Specifications:

POT dimensions
Diameter: 1000 - 1050mm
Height: 700 - 750mm

Heat Elements Types
MoSi2

Operating Temperature
1420°C

Max. Operating Temperature
1490°C

Furnace temperation time
10Days

System Efficiency
89-95% (depends on load)

Max. Power consuption
180kW

Max. Invereter (SMPS) Power
12kW



For more informations

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