

## 3000°C Laboratory Graphitization Furnaces

### Product Introduction

CX-GF-Lab is vertical top loading induction heating furnace with round hot zone shape. This model is ideal for various research applications and new materials development. Simple operation and easy maintenance process of this furnace, save time and budget in research projects. With maximum operating temperature of 3000°C, this model can be used for many research applications.



### Application

Sintering and Graphitization treatment of carbon materials, synthetic graphite film (Polyimide graphite film and abbreviated PI film), heat conductive materials, carbon fiber rope, carbon fiber, C/C composites, heat treatment of Graphene, Lithium battery negative electrode materials, VGCF negative material, purification and de-ironing process of Carbon Nanotubes (CNTs), sintering of high temperature ceramics, other materials which can be sintered or melted in graphite hot zone (carbon included environment).

### General Features

- Fully automatic operation.
- Internal closed loop water cooling system which is installed inside furnace structure in a compact size and ideal for limited spaces in laboratories.
- Patented design of consumable materials of the hot zone in way that they can be easily replaced within 1 hour by a general trained operator.
- Excess inlet and outlet vacuum/gas ports reserved for future requirements in laboratory researches.
- Imported high accuracy pyrometer with temperature measuring range of 1000~3200°C or 0~3200°C (optional). The accuracy of temperature measurement is 0.2~0.75%.
  - High precision smart temperature controller which can store 20 programs with total 400 segments.
  - IGBT power supply with protections and controls on overload, short circuit and other failure problems.
  - Stable hydraulic lifting system for the chamber lid.
  - Induction coil covered by high quality alumina coating in order to avoid short circuit between coil and carbon felt.
  - High vacuum pneumatic valves equipped with position indicator in order to automatic control of the vacuum and gas supply system.
  - Over-temperature, over-pressure, gas status, water lack and power failure alarms and automatic mechanical interlock for over-pressure protection.



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### Optional Features

- High Vacuum System: Vacuum and high vacuum operation of these furnaces is only possible up to 2200°C.
- Gas Purification System and Gas Quality & Flow control system
- Closed Loop Cooling Water System

### Technical Details

Model	CX-GF20/30VT
Max Working Temperature	3200°C (<2 hours) 3000°C (Continuous Working)
Usable Space (mm) Dia. * H	φ200×350
Max. Loading Capacity(L)	10L
Temperature Uniformity (ΔT between 1000°C and 2200°C)	±10°C
Max. Heat-up Rate (CEDRT)*	200 °C/min
Heating Power	80 KW
Frequency	4000 Hz (auto-track)
Ultimate Vacuum (CEDRT)*	$1.2 \times 10^{-3}$ mbar
Optional High Vacuum (CEDRT)*	$5 \times 10^{-5}$ mbar
Pressure Rise	$6.7 \times 10^{-3}$ mbar/hr
Working Atmosphere	High Vacuum (Optional) / Vacuum / Inert Gas (Ar or N <sub>2</sub> ) Vacuum and high vacuum atmosphere is only permitted up to 2200°C.
Supply Voltage	3P, 380V, 50Hz/60Hz (customized)
Cooling Water Pressure	1.5~2.5 bar
Cooling Water Temperature	≤28°C
Overall Dimensions (mm)	1260*2760mm
Weight (kg)	1500KG

\* CEDRT: Clean, Empty, Dry, Room Temperature Furnace

### Product display

