

1650C Bridgman Furnace for Directional Solidification of Polycrystalline Ingots

BFCRY-1500



BFCRY-1500 is a 1650C max. Bridgman furnace for directional solidification of Polycrystalline Ingots upto 37mm diameter. Three individual controlled heating modules & speed adjustable cooling fans at furnace exit provide advantages to create larger temp. gradient at the melt/crystal interface as needed. Automatic crucible retrieving system enables the most convenient way for sample loading/unloading. Optional crucible rotation stage can be added at additional cost for single crystal ingot growth.

Features:

- Three stacked heating modules with independent temperature measurement and control enable the flexibility of creating various temperature gradients along the length of the heated area
- Two speed adjustable cooling fans with TC at the exit of the furnace allow the better control over the temperature gradient at the melt/crystal interface
- $\phi 42$ mm Alumina sample pulling stage with TC attachment for accurate temperature monitoring of the crucible on top and generate instant temperature plot
- Electric elevated crucible stage enable an automatic and convenient sample loading / retrieving



Technical parameters:

Power Requirements	220VAC single phase, 50/60Hz, 9.5KW
Working Temperature	Heating Element: Silicon molybdenum rod Max. Working Temperature: 1650°C (<1hr) Continuous Operating Temperature: 1600°C
Processing Tube & Flange	High purity alumina furnace tube, Size: ϕ 80mm O.D. x 1000mm L A pair of stainless steel flange is connected to both end of the processing tube which allows for inert gas purging or vacuum during the crystal growing proces
Sample Stage	ϕ 42X40mm H Alumina Sample Stage B type thermocouple insert from the bottom of the sample stage for accurate temperature measurement of the crucible
Crucible Retrieving Mechanism	Automatic sample retrieving system for easy crucible loading / unloading, 700mm max. travel distance
Heating Zones	Three heating zones with independent temperature measurement and control Three zones: 300mm (12") long in total 100mm long for each zone
Temperature Control	Three PID temp. controller with 30 programmable segments for precise control of heating, cooling rate and dwell time. Built-in overheating & broken thermocouple protection. European Temperature controller, with +/- 0.1 °C temperature accuracy. Three B type thermocouples (one for each zone).
Cooling Fans	One speed adjustable cooling fans are installed at the bottom exit of the furnace
Furnace Travel Distance & Speed	As the furnace heater moves upward, the crucible is moving toward the bottom exit of the furnace where the lower temperature is seen. The maximum travel distance of the furnace heater is 200 mm. Travel speed: 0.03-3 mm/hr
Vacuum Pump (Not included)	10E-2 torr via dual stage mechanical vacuum pump 10E-5 torr via Turbo pump The vacuum pump is optional.
Dimension	Controller stage: 860mm L x 600mm W x 1220mm H Furnace stage: 1170mm L X 910mm W X 2500mm H



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