

A detailed 3D CAD model of a mechanical assembly, likely a component of a machine. The model is rendered in a light blue and grey color scheme. It features a base plate with various slots and a central vertical assembly consisting of a stack of thin plates or a coil, supported by a frame. The background is a plain white surface.

i300B — ARSIRA 001-2084

Technical Data Sheet

Společnost je zapsána v OR u Městského soudu v Praze oddíl **B XXXVI**, vložka 86

Luwex, a.s., Stará Spojovací 2418/6, CZ-190 00 Praha 9, IČO:00138207, DIČ:CZ00138207

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Horizontal Growth (Baghdasarov) Furnace System is an advanced process tool for the growth of crystals. The system is optimized for controlled process development and user safety.

HIC i300B furnace system can be customized to grow max 300mm length sapphire crystals. The overall system is designed for ease of maintenance, repair and use in production and research mode. The cabinet contains the heating, power control, electrical, vacuum and gas handling systems.

HIC i300B is operated through our CVDWinPrC™ process control software that automatically logs data and graphically shows the time dependent values of user selected parameters. CVDWinPrC™ also allows users to load preprogrammed recipes, modify, check /create new recipes and view real time or saved execution data.

HIC i300B is designed to meet today's more stringent safety standards. The system has application customized safety protocols imbedded into relay logic, PLC and CVDWinPrC™ software for maximum operator and equipment safety.

HIC i300B consists of one controlled furnace subsystem in a horizontal configuration. This subsystem is called "Melting & Growth" Furnace. The Melting & Growth Furnace is capable of operation from ambient to 2300°C and adjustable in 1°C increments.

The Furnace Assembly is attached to a linear slide that allows it to be raised and lowered manually to facilitate loading and unloading of the Ampoule and to provide the required automatic precision movement for high quality Crystal Growth.

HIC i300B Linear Drive subsystem move the Furnace Assembly through the process zones between a start position and stop position.

Standard Configuration:

- CVDWinPrC™ based process control software for Real Time Process Control, Data Logging Display, Recipe Generation and Editing
- 350x450x50mm maximum crystal growth Crystal
- Crystal Linear movement
- Melting Furnace & Melting:
 - 3 Zone Resistance Furnace for Temperatures up to 2300°C
 - Temperature control loops are PID controlled and user changeable
- Vacuum System
- Linear Motion System
- Proprietary Real-Time Cascade Process Temperature Control
- Mass Flow Controlled UHP Gas Lines
- Comprehensive Software and Hardware Safety Interlocks
- Three (3) Year Warranty

Options:

- Customer Specified Crystal Sizes

Applications:

- Sapphire monocrystal, Ti Sapphire, YAG, Nd:YAG, Ytterbium YAG, Cerium YAG, and Ruby

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Main Technical Characteristics

Max Working Temp	2300°C
Working Pressure	5*10⁻²Pa
Power	35Kw(In the working Temperature)
Pulling rate	0.5-60mm/h
Heater	Resistive; Tungsten & Carbon
Cooling	Water 3600l/h
Precision of Temperature Regulation	1 °C
Furnace Size	1200x2400x2010mm
Weight	2.4T
Min Necessary Room	12m³
Vacuum system	Consists of a Fore Vacuum pump and a TurboMolecular Vacuum pump
Vacuum control	Assembled on the IONVAC v90 model
Vacuum Valves	4 atm air pneumatic pressure
Temperature Control	PID Regulation
Input program and Visualization	9"Touchscreen

Facility Requirments

Electrical	400v	3 phase	50hz
Cooling Water	3600l/h		
Pneumatic Supply	Clean Dry Air/ Argon		
Process Gases	Argon		
Air-conditioned Room			

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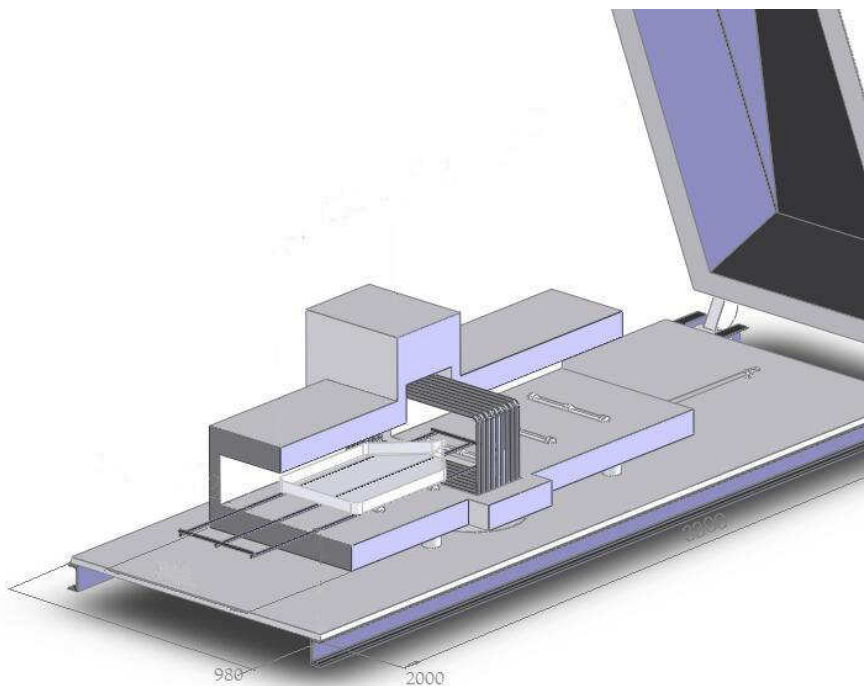
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Facility Height

Min 4 meters

Maintenance

- The maintenance of the Vacuum equipment must be undertaken as noted in the technical passports of the producer.
- After each process insides must be cleaned with a alcohol soaked mop.
- Before reloading the machine close the Heat & Melting furnace with silica gel mats.
- After every 3-4th process, the Heating & Melting unit must be visually checked in case of need change the carbon or tungsten sheets.



Technical support

For additional technical or other questions please contact Mr.:

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