

SiCma

PRODUCT OVERVIEW

CRYSTALLIZE YOUR VISION



Achieving high-quality crystals starts with the right PVT-Equipment.

Our SiCma PVT system empowers you to optimize your crystal growth process from the very beginning. Reliable and flexible: Grow a wide range of materials with precise control and reproducible results – laying the foundation for efficient and cost-effective power electronics production.

SiCma

PVT TECHNOLOGY

DESIGNED FOR THE HIGHEST YIELD

High-purity SiC and AlN crystals up to 12 inch: the SiCma series combines precise process control with a compact design – repeatable across your entire fleet.

Above 2,000 °C, the source material sublimates inside a closed crucible and deposits layer by layer on the cooler seed to form a monocrystalline boule. Since a single run takes days to weeks, repeatability is what determines your yield. SiCma controls temperature, pressure and gas atmosphere precisely enough to keep results comparable from process to process and from system to system – on a small footprint, AGV-ready, and integrated into your fab via SECS/GEM or OPC-UA.



Exceptional Product Quality

Precise temperature control within the furnace ensures the formation of ultrapure and defect-free crystals, ideal for demanding applications in power electronics, sensors, or optoelectronics.



Optimized Yield and Efficiency

The furnace design maximizes crystal output and minimizes material losses, enabling you to achieve greater productivity and cost savings.



Reliable and Reproducible Processes

Advanced monitoring and control systems guarantee stable growth conditions, supporting consistent quality and reproducibility.



Adaptability

The furnace can be configured for various source materials and crystal sizes, meeting your specific production requirements.



Process support

By our process experts at PVA Technology Hub.



Protection and safety

CE compliance for the safety of employees and facility.

TECHNICAL PARAMETERS

By investing in our SiCma furnace, you will receive a state-of-the-art solution for crystal growth offering.

SPECIFICATIONS	
Key Features and Options	■ Rotation drive for a uniform temperature distribution in the hotzone. ■ Different chamber sizes for up to 12 inch crystal growth. ■ Turbomolecular Vacuum Pump for the cleanest process environment. ■ Coil lift allows changing the height of the heatzone before or during the process. ■ Pyrometer on top and bottom with automatized adjustment. ■ Software options to integrate the machine in your workflows.
Chamber Diameter	Ø 380–600 mm
Chamber Height	950 mm
Max. accepted Temperature	2,400 °C
Heating Control	2,400 ± 2 °C control mode switch at 2,400 ± 2 °C Heating speed more than 15 °C/min
Control Modes	■ Temperature control ■ Power control
Power Converter	50 kW 7–12 kHz (depending on coil and Hotzone configuration)
Ultimate Vacuum	≤ 1 x 10 ⁻² mbar (without turbomolecular pump)
Pressure Range	5–950 mbar
Accuracy Pressure Control	5 mbar ± 0.5 mbar 10 mbar ± 0.5 mbar 100 mbar ± 1.0 mbar
Process Gases	Argon, Nitrogen and Hydrogen
Total Weight	approx. 1,850 kg

Please note that various options are available, and the selected options may result in variations to the final specifications.

MODULAR BY DESIGN. READY TO SCALE.

Our modular system design enables the growth of a wide bandgap materials using the PVT process. This flexibility allows you to easily adapt production to different material requirements and expand application possibilities.

Thanks to our scalable production capabilities, we are able to deliver multiple systems per week. This means you can quickly ramp up your own production and respond flexibly to changing market demands, with minimal waiting times for new equipment.





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