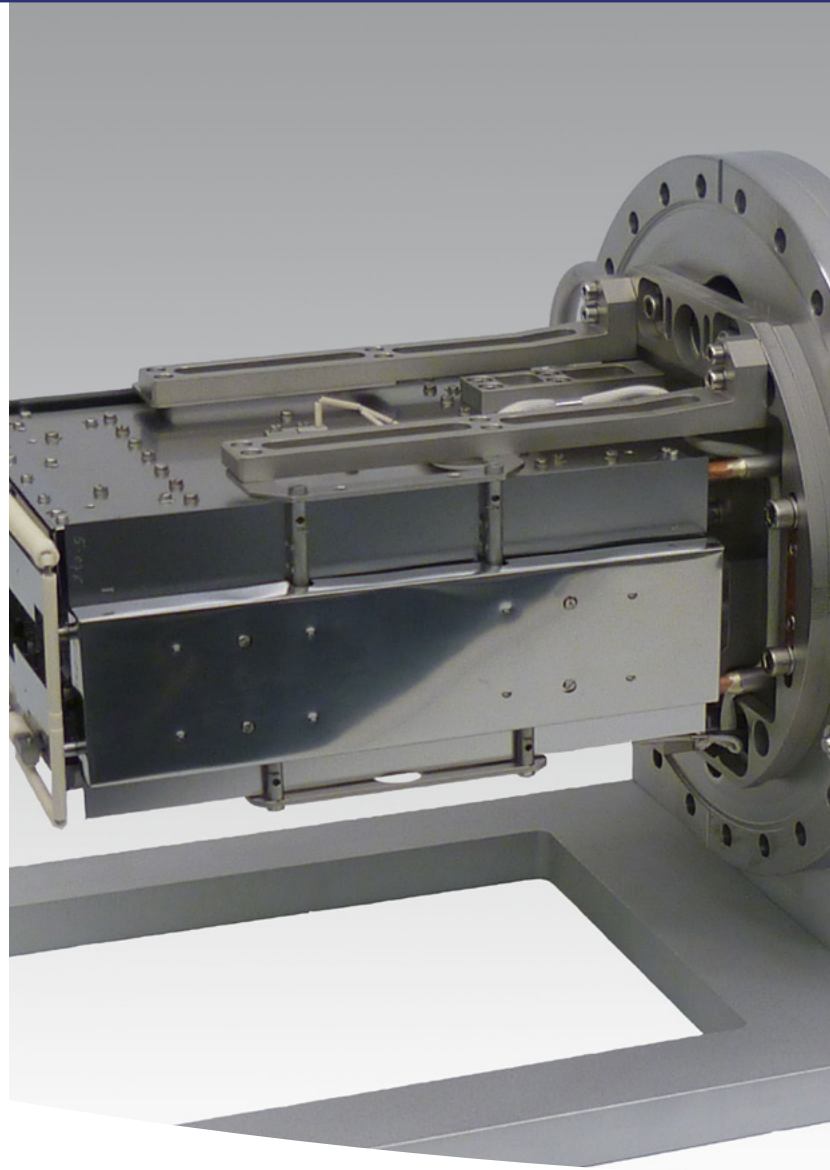
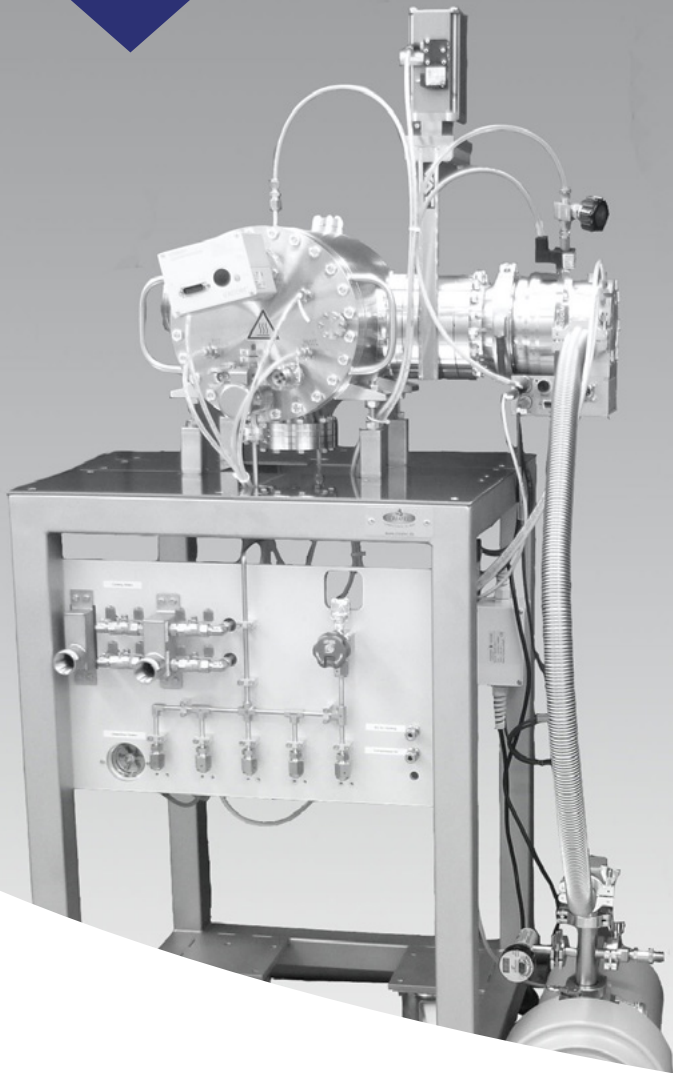


# RTA System

Rapid Thermal Annealing System  
for a wide range of applications



## *Highlights*

- Heat treatment of sample holders
- Annealing under UHV atmosphere or special gas atmosphere
- Heating stage with high power, quartz lamps and control unit
- Adjustable and mobile support frame
- Gas inlet

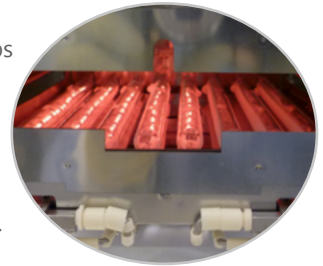
The RTA System is used for rapid thermal annealing of wafers, either in ultra-high vacuum (UHV) or other atmospheres like oxygen or nitrogen, with a variable pressure range up to atmospheric pressure. The wafer is heated by an array of high-power quartz lamps. The complete system consists of two UHV chambers, the load-lock chamber and the process chamber. Both chambers are pumped by turbomolecular pumps and are equipped with a pressure measurement system that spans the range from 1000 mbar down to  $10^{-9}$  mbar.

With a magnetically coupled transfer system the wafer is transferred into the reaction chamber. Viewports allow the direct observation of the RTA process. A gas handling system can be installed to provide an exactly defined gas pressure level in the reaction chamber. During the RTA process, this atmosphere can be analyzed with a quadrupole mass spectrometer.

Optionally, the system can be automated using our process control software cVac, including vacuum control and process documentation. Other options include custom designed magnets to modify the process conditions or to measure the response of the sample wafer during the RTA process.

TYPE	RTA-CT
HEATING RATE	1 - 100 K/sec
TEMPERATURE RANGE	100 - 800 °C <small>optional 1000 °C</small>
TEMPERATURE UNIFORMITY	$\pm 5 \%$ <small>edge excluded</small>
MAX. WAFER SIZE	up to 4 inch <small>or as specified</small>
COOLING	water
HEATING ELEMENTS	quartz lamps
THERMOCOUPLE	type C
PRESSURE RANGE	1000 - $10^{-9}$ mbar

Quartz heater lamps array adapted in size to the processed wafer. Several quartz lamps are regularly spaced within a cooling system.



## Equipment for RTA System

- Additional sample rotation
- Magnet
- Pyrometer
- Transfer automation
- Water cooling system with interlock
- Pressure measurement system