



CRYOVAC

low temperature technologies

UHV overview



More than 45 years of experience
in building cryogenic system
for research and industry



Cryostats

Besides a broad range of customized systems, we offer many basic cryostats, which can be further equipped with a choice of options.



UHV (STM) JT Cryostat

The UHV / STM bath JT (Joule Thomson) cryostat is a JT stage (< 1 K) mounted on an ultra-low loss helium bath cryostat with a nitrogen shield and two vapor cooled radiation shields for added performance. The system was initially conceptualized for STM, TEM and AFM measurements, whereby ultra-low vibrations are required for atomic resolution. The JT stage allows the system to work down to 450 mK (^3He) or 1.0 K (^4He), with little to no additional helium consumption. With its high performance and compact design, this system is a



staple of the SPM community. As with all our systems, the UHV JT cryostats can be modified to best suit your individual needs.

UHV (SPM) Bath Cryostat

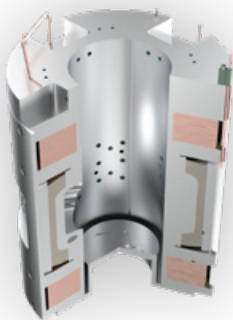
The SPM / UHV Bath Cryostat is an ultra-low loss helium bath cryostat with a nitrogen shield with two vapor cooled radiation shields added for increased performance. The system was initially conceptualized for STM, TEM, and AFM measurements, whereby ultra-low vibrations are required for atomic resolution. With its high performance and compact design, this system is a staple of the SPM community.



As with all our systems, the UHV Bath Cryostats can be modified to best suit your individual needs.

UHV Magnet

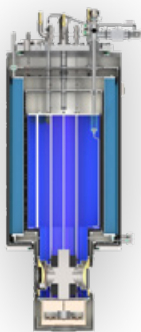
The UHV Magnet is a compact split pair dry superconducting magnet suitable for UHV-environments. The magnet generates a magnetic field of 3 T for novel experiments at nanoscale. It is also fully customizable to meet individual needs and uses a split pair design that allows for sample transfer and optical access from the side. The magnet can be ramped up to its maximum current within a short time. The purposeful low stray field limit prevents detrimental magnetic field effects from nearby electronics. The field homogeneity is



optimized for improved performance for STM/TEM/AFM measurements.

UHV (STM) Magnet Cryostat

The UHV/STM Magnet Cryostat is a low loss helium bath cryostat housing a UHV bore 1/2/3D superconducting magnet with an optional 1 K pot or JT stage. The system has a nitrogen shield and two optional vapor cooled radiation shields for added performance. The system allows for versatile conventional superconducting magnets to be used in UHV conditions.



Do you have questions about
our products or need help?
Just contact us:

Konti UHV

The Konti UHV is a cold finger, fully UHV compatible continuous flow cryostat. This high cooling power cryostat is used for various application such as VT-SPM / TEM / AFM, sample transfer, and scattering setups. With hundreds of products delivered, this capable cryostat plays a pivotal role in the UHV community.



Konti UHV with Manipulator

The Konti UHV 6-axes is a cold finger, fully UHV compatible continuous flow cryostat with up to 6 axes of sample movement. This variable temperature cryostat is used for various application such as VT-SPM / TEM / AFM, sample transfer, and scattering set ups. Here, the 6 axes are XYZ, z-rotation (polar rotation), x-goniometer (azimuth rotation), and y-goniometer (tilt rotation).



UHV (STM) 1K Bath cryostat

The UHV/STM 1K bath cryostat is a 1K helium pot suitable for both single shot and continuous operation. It is mounted and fed from an ultra-low loss helium bath cryostat with a nitrogen shield with two vapor cooled radiation shields for added performance. The system was initially conceptualized for STM, TEM and AFM measurements, whereby ultra-low vibrations are required for atomic resolution. With its high performance and compact design, this system is a



staple of the SPM community. As is with all our systems, the UHV bath cryostats can be modified to best suit your individual needs.



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Accessories

Beside these standard cryostat systems and a broad range of customized variations CRYOVAC manufactures and offers all necessary accessories to operate these systems, such as:

- **Temperature controllers**
- **Transfer lines (standard and customized)**
- **LHe and LN₂ level meter and refilling option**
- **Exhaust gas controllers**
- **Exhaust gas control magnetic proportional valve**
- **Automated / manual gas handling systems (GHS)**
- **Exhaust gas line heating hoses**
- **Exhaust gas He / N₂ pumps**
- **Pumping and control system for isolation vacuum**
- **Pumps (vacuum, cryogenic)**
- **Dewars (storage, transport, lab)**
- **LHe / LN₂ level monitors and controllers**
- **Helium recovery and liquefaction systems**
- **UHV chambers**

Services

CRYOVAC offers a broad range of services such as:

- **Consulting**
- **Training**
- **Cryogenic courses**
- **Design and feasibility studies**
- **In house measuring services performed in our low temperature systems**

CRYOVAC GmbH & Co. KG

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More than 45 years of experience in building cryogenic system for research and industry. We offer a broad range of cryostats and equipment fully customized to meet your individual research needs, e.g.:

- Refrigerator systems
- Bath cryostats
- Continuous flow cryostats
- Low temperature systems
- Magnet cryostats
- Accessories, e.g. transfer lines, controller, GHS, recovery and liquefaction systems
- Consulting, training and design studies

All systems are **custom and hand-made**, all design, engineering, machining, and assembly is done **in-house**, which allows us to fully vary options for customers and respond fast to your desired changes, even once the manufacturing process is underway. Design and engineering of our systems is done in close cooperation with our customers, starting from the first idea and initial design, you will be part of the process with the help of our **R&D department**, so as to ensure the best solution for your experiment or application. You can either choose from a broad range of stafiing-designs, customizable to the very last detail or challenge us with your unique problem and we will start from scratch.

We are glad to **support** you with the installation of your system and answer any questions you may have during operation.

We are looking forward to hearing from you.



www.cryovac.de