

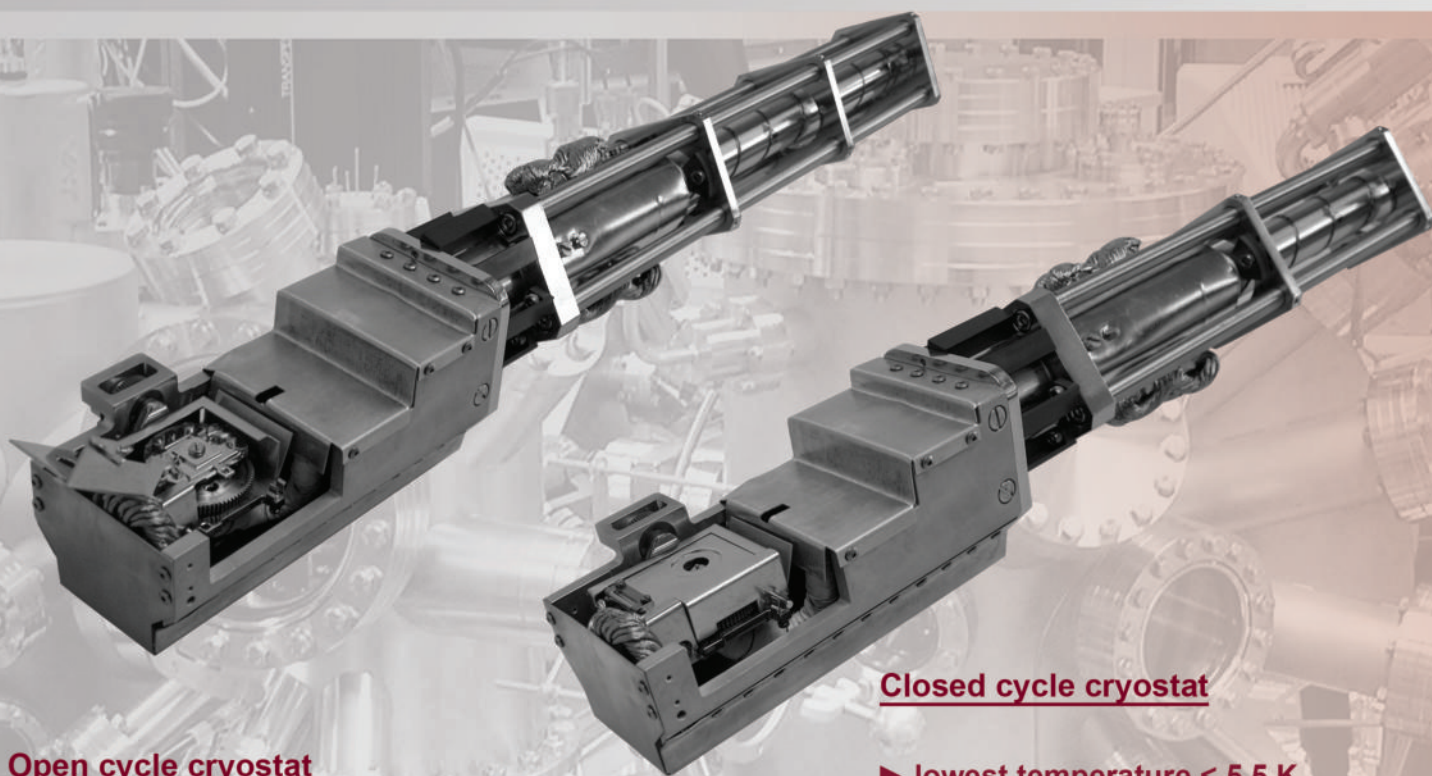


OmniVac

Surface Analysis and Vacuum Technology

5/6 Axes Cryo-Manipulator

HPM Cryo



Open cycle cryostat

- ▶ lowest temperature < 3 K
- ▶ temperature range 3 K - 400 K
- ▶ fast cooling rate RT to 10 K < 15 min
- ▶ sample current measurement dark current < $5 \cdot 10^{-14} \text{A}$
- ▶ additional sample stage

Closed cycle cryostat

- ▶ lowest temperature < 5.5 K
- ▶ temperature range 5.5 K - 400 K
- ▶ fast cooling rate RT to 6 K < 4 hours
- ▶ sample current measurement dark current < $5 \cdot 10^{-14} \text{A}$
- ▶ additional sample stage
- ▶ temperature stability < 0.2 K/ 6 days

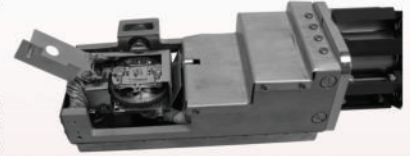
HPM Cryo 5/6 Axes Cryo-Manipulator

The **OmniVac HPM Cryo** manipulator series provides access to the temperature range below 10 K, e.g. for low temperature angle resolved photoemission experiments (ARPES).

Due to its efficient shielding solution, only low He consumption of < 1 l/h is needed to reach guaranteed temperatures of 7 K. Temperatures as low as to 3 K are possible.

Basing on the **OmniVac HPM manipulator series**, the **HPM Cryo manipulator series** offer +/- 12,5 mm or +/- 25 mm X/Y-range and up to 500 mm Z-range. Use of a differentially pumped rotary feedthrough allows for full 360° z-rotation.

Additionally, azimuthal sample rotation of +/- 90° or/and sample tilt of -15° to +65° can be integrated.



HPM Cryo-cooling/heating (open cycle)

<i>He- cooling</i>	<3 K (5 axes), <5K (6 axes)
<i>He- consumption</i>	0.5 l/h at > 10 K, 1 l/h at lowest temperature
<i>Indirect resistive</i>	< 400 K
<i>Heating</i>	

HPM Cryo-linear manipulation

<i>Design</i>	DN 160 CF flange mounted XY-motion module
<i>Range</i> <i>(full square range)</i>	+/- 12,5 mm XY, 500 mm Z
<i>Resolution</i>	5 µm (manual) 0.5 µm (motorized)
<i>Repeatability</i>	5 µm (manual) 1 µm (motorized)
<i>Max. speed</i>	2 mm/sec

HPM Cryo-rotational manipulation

<i>Z-rotation (R1 axis)</i>	full 360°
<i>Azimuthal rotation (R2 axis)</i>	+/- 90°
<i>Sample tilt (R3 axis)</i>	-15° - +65°
<i>Angular resolution</i>	0.1°

Included Items: LakeShore 331 S, Cryogenic Temperature Controller
Janis Research ST-400 UHV Cryostat
Options: Janis Research ST-402 UHV Cryostat for Cryogenic temperature < 3 K (5 axes)

- ▶ Temperature < 3K/5K
- ▶ 5/6 Axes
- ▶ low He consumption
- ▶ easily accessible sample
- ▶ software integration for standard energy analyzers
- ▶ compatibility to standard flag style sample holder systems
- ▶ full motorization



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