

M-UHV Platforms

Modular turnkey solutions for ultra-high vacuum experimentation

Research Applications

- Surface Science
- Catalysis
- Metallurgy
- Photovoltaics
- Semiconductor
- Energy
- Combinatorial Material Studies

UHV Analytical Techniques

- X-ray photoelectron spectroscopy (XPS)
- Mass spectroscopy
- Low energy electron diffraction (LEED)
- Auger electron spectroscopy (AES) ... and more

Versatile, modular, turnkey UHV platforms
for sample preparation, deposition,
treatment and analysis



Features

- **Chamber:** 304 SST UHV chamber | 12" D x 10" L | Multi-angled confocal CF ports
- **Vacuum Pumps and Gauging**
 - High vacuum pump** – TURBOVAC T 450i: 450 l/s turbomolecular pump | Oil-free hybrid bearing system
 - Intermediate HV pump** – TURBOVAC SL80: 80 l/s turbomolecular pump | Oil-free pump | Ceramic bearings
 - Fore-vacuum pump** – SC5D: 5 m³/h scroll pump | Oil free pump
 - UHV pressure gauging** – IONIVAC IE 414: Bayard-Alpert sensing system | Range up to 1 x 10⁻¹¹ Torr
- **Substrate Handling**
 - Substrate holder:** Omicron style transferable sample holder | Substrate size: up to 1" diameter | Provision for direct thermocouple contact to the substrate | Temperature control range from 70 to 1100 K with LN₂ cooling
 - Substrate Manipulation:** +/- 1" (25 mm) XY travel | 24" (600 mm) Z axis stroke | Differentially pumped precision rotary manipulator
- **Residual Gas Analyzer (RGA):** Quadrupole residual gas analyzer electron multiplier detection system | 1 to 100 amu
- **Electrical Cabinet:** Contains the power supply stage along with the advanced PLC controls | Includes the Mains switch, enable function and the PLC with touchscreen HMI control
- **iPC with full system control:** Industrial PC (iPC) with fully integrated PLC controls | Includes a 160 GB hard drive, 4 GB DDR3-RAM, and a Windows 7 Professional operating system
- **Software:** Front end software is built upon the above iPC | Software includes consolidated display and control of the tools on the system, including the pumping system, pressure gauges, substrate temperature, RGA | Supports remote diagnostics and troubleshooting
- **Standalone PC:** 1U rackmount PC with dedicated display for additional tools | Includes Intel Xenon E3-1220V3/3.1 GHz processor, 4GB RAM, 1 TB HDD, and a Windows Server 2012 R2 operating system

Additional Options

- **Load-lock assembly:** Includes SL80 turbomolecular pump | SC5D backing scroll pump | IONIVAC Transmitter ITR 90 pressure gauge: Combination of hot-cathode ionization gauge and a Pirani sensor with continuous pressure measurement from 1 x 10⁻¹⁰ Torr to Atm
- **Sputter ion gun:** With adjustable beam size from 2-20 mm dia. and 15 uA beam current at operating pressure less than 5 x 10⁻⁶ Torr in the main chamber
- **E-beam heating option:** For attaining temperatures in excess of 1000 °C
- **Magnetic rotary manipulator:** Replaces the differentially pumped rotary manipulator
- **Alternate substrate holders:** For samples larger than 1" in size



 **SHOP NOW – 24/7**

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