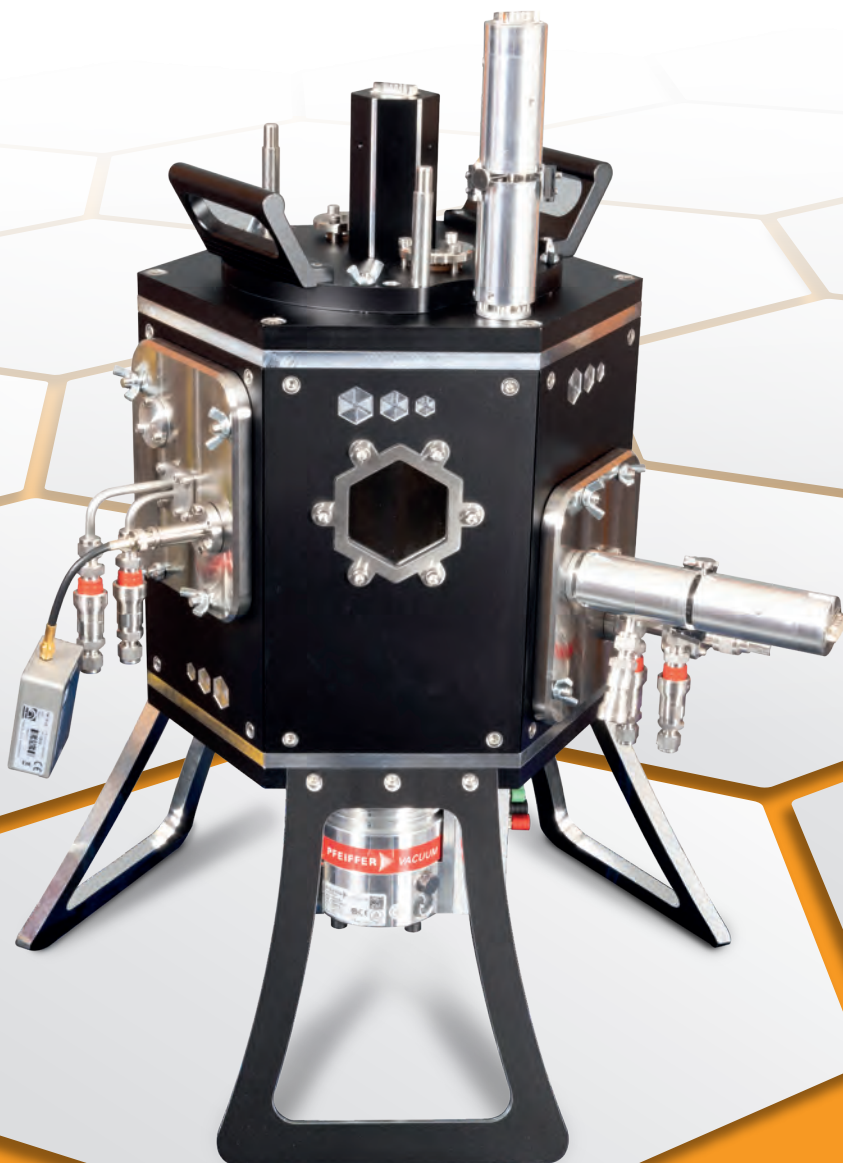
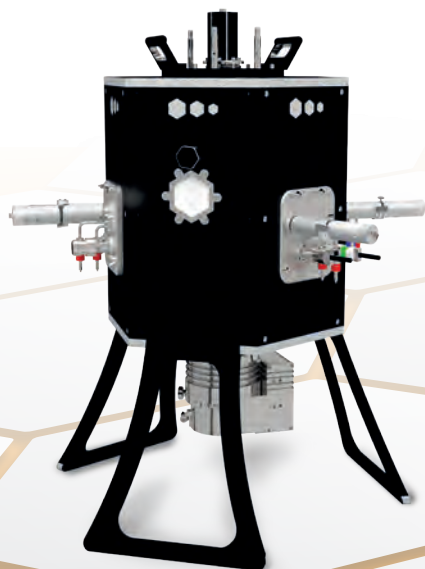




KORVUS TECHNOLOGY

HEX

Modular coating system
for thin film deposition



Sputtering • Organics Deposition • E-Beam Evaporation
Coating Research & Development • Glovebox Compatible

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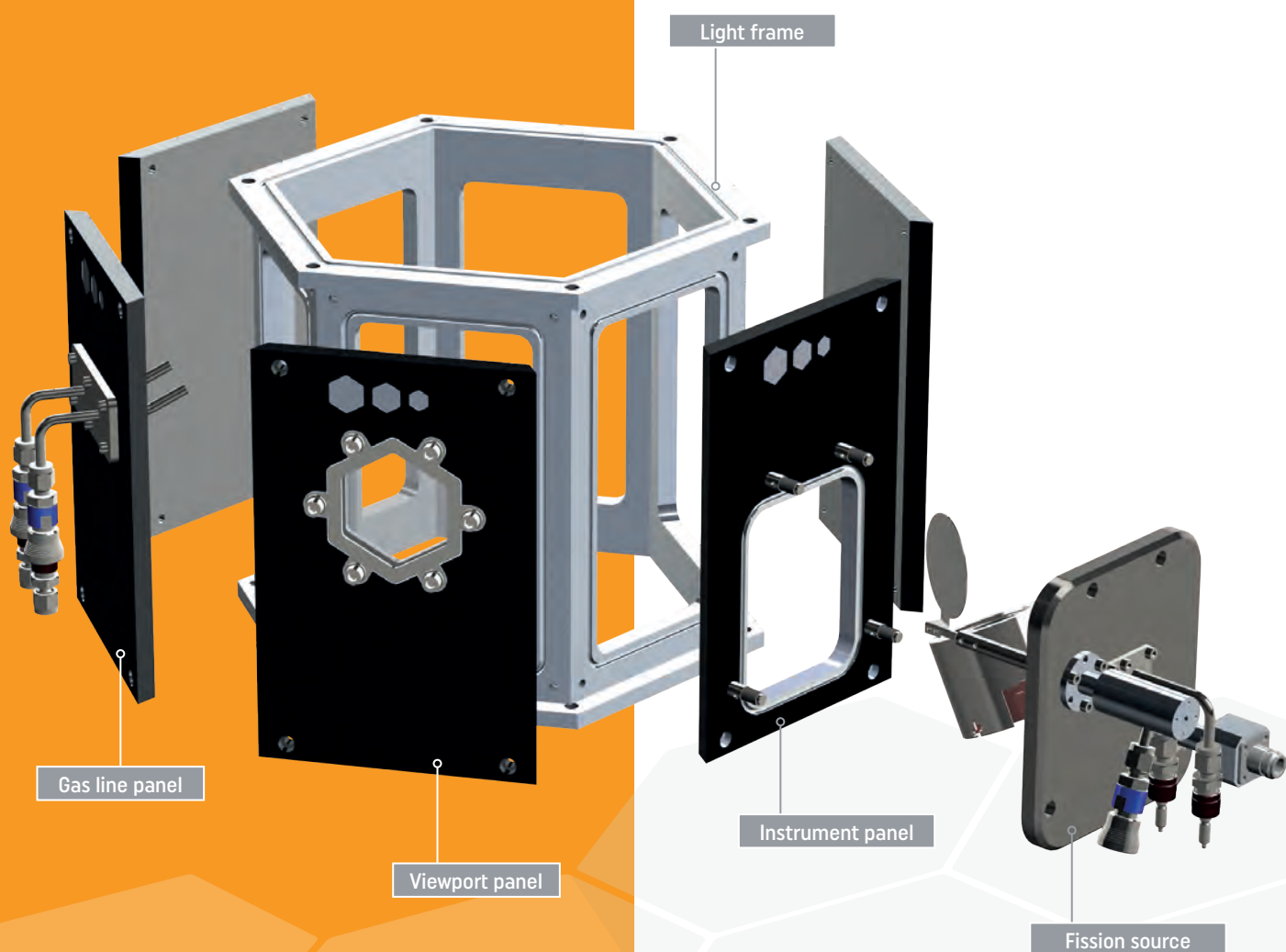
Unit 1 Kings Grove Industrial Estate | Maidenhead | Berkshire | SL6 4DP | UK
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The HEX deposition system is highly flexible and versatile, offering users the ability to re-configure and upgrade their HEX

ADAPTABLE CHAMBER DESIGN

The vacuum chamber frame is machined from a single billet of Aluminium making it lightweight and weld free, whilst providing a rigid structure.

The panels can be mounted efficiently without the need for specialist tools. This quick change concept minimizes downtime during system reconfiguration and maintenance procedures.



SPECIFICATION

	HEX	HEX-L
Maximum Sample Size	4" (100mm) diameter	6" (150mm) diameter
Standard Turbo Pump	80 ls ⁻¹	300 ls ⁻¹
Optional Turbo Upgrades	300 ls ⁻¹	700 ls ⁻¹
Maximum Deposition Sources	3 (plus QCM)	6
Load Lock Option	No	Yes

RELIABLE DEPOSITION SOURCES

FISSION MAGNETRON SPUTTERING SOURCE

Designed for 2" diameter targets, the sputter sources are equipped with SmCo magnets and accept targets with thickness ranging from 0.5 to 6mm of non-magnetic materials and up to 1mm for magnetic materials.

The sources can be used with DC, RF, pulsed DC or HIPIMS power supplies.



ORCA ORGANIC MATERIAL DEPOSITION SOURCE

The ORCA organic deposition source operates between 50 and 600°C. Sensitive organic materials can be evaporated with precise control due to water-cooling and temperature feedback loop.



Additional supplementary information sheets are available.

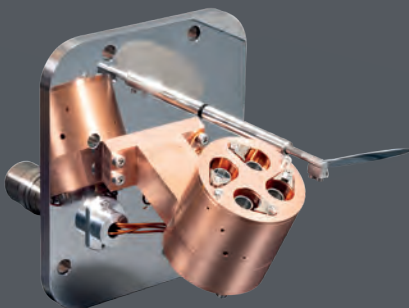
TAU E-BEAM EVAPORATOR (METALS)

Our high-accuracy (sub-monolayer) mini E-beam evaporators are ideal for ultra-thin film deposition of metals with reliable process control.

The range consists of a single pocket and a four-pocket source.

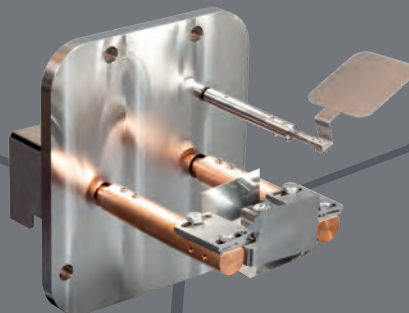
The control electronics allows up to four sources/pockets to be operated simultaneously.

Material can be evaporated from rods or material held in a crucible.



TES THERMAL BOAT SOURCE

The thermal boat source allows for the integration of a range of thermal boats for the deposition of both metals and organics/polymers. A cost effective source.



CUSTOMISABLE SAMPLE STAGE

EFFICIENT SAMPLE EXCHANGE

The sample stage is fitted with two ergonomically designed handles for easy transfer to and from the chamber.



ROTATING STAGE

Optional RF or DC bias



ROTATING HEATING STAGE

Temperature: 100-500°C



ROTATING COOLING STAGE

Water Cooled



COMPACT CONVENIENT DESIGN

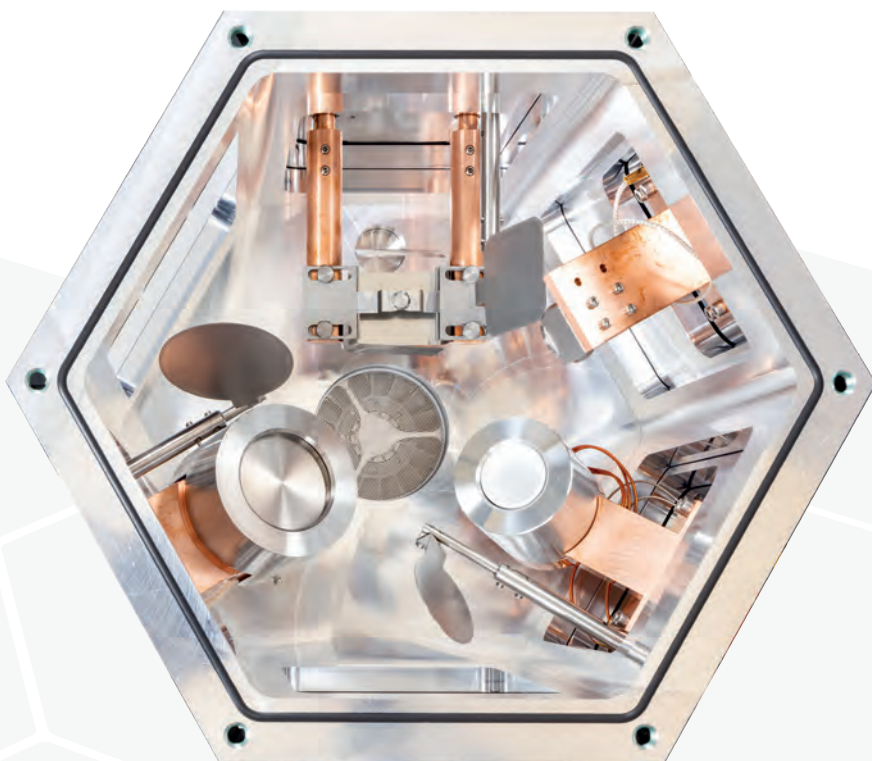
Innovative collapsing sample shutters and compact component design allow the HEX and HEX-L to accommodate large samples within a small system chamber.

The HEX system can be positioned on the electronics rack, saving valuable Lab space.

The HEX-L is supplied with an additional movable base stand.

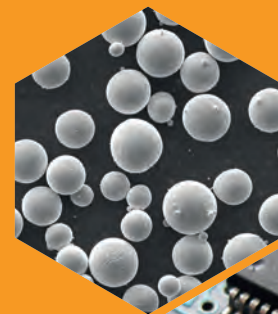


HEX on Electronics Rack



APPLICATION

The unique design and flexibility makes it a powerful platform for a range of applications:



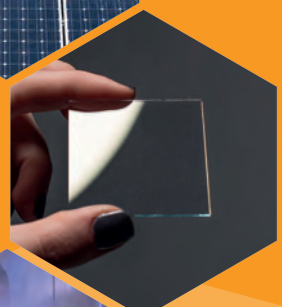
Sample preparation for surface analysis, SEM, TEM, AFM/SPM and electron spectroscopy

Research and development of new coatings



Electrical contacts for solar cells and semiconductor applications

ITO coatings



Sputter deposition



Teaching and training

AUTOMATED SYSTEM

NIOBIUM SYSTEM CONTROL SOFTWARE

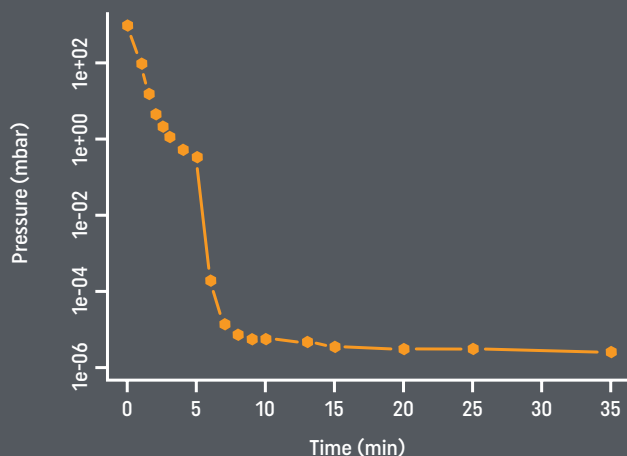


The Niobium automation software package allows the user full PC control over the HEX deposition system and components. The full data-set can be written to a log-file, charting of multiple parameters

is possible and sophisticated process programming is enabled via step-based procedures including ramping and conditional options.

RAPID PUMP DOWN

HEX pump down curve with 300ls⁻¹ turbo pump



The HEX system is shipped as standard with an 80ls⁻¹ turbo pump (optional 300ls⁻¹ upgrade) while the HEX-L standard is a 300 ls⁻¹ turbo (optional 700 ls⁻¹ upgrade). Both are backed by oil-free pumps and pressure is measured by a full-range gauge.

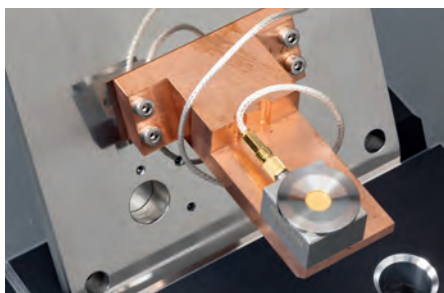
The low chamber volume allows rapid pumpdown, with operational pressure for typical applications being reached in less than 10 minutes.

The system base pressure with standard pumps is 5×10^{-6} mbar and 2×10^{-6} mbar with the HEX and HEX -L respectively, although with routine system maintenance, lower pressures are commonly reached.

ACCESSORIES

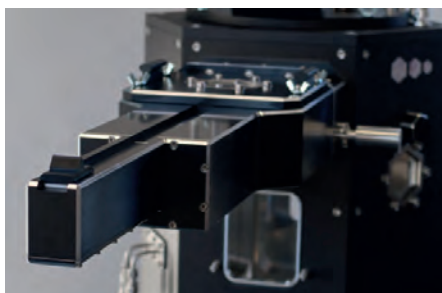
THIN FILM THICKNESS MONITOR

Film deposition rate and thickness can be determined with the use of a quartz-crystal monitor (QCM) which uses the change in resonant oscillation frequency of a thin quartz crystal.



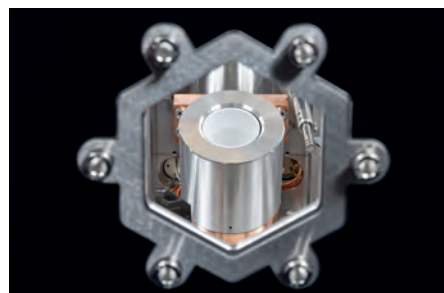
LOAD-LOCK SAMPLE TRANSFER

For applications demanding the highest purity, a load-lock sample transfer system may be employed.



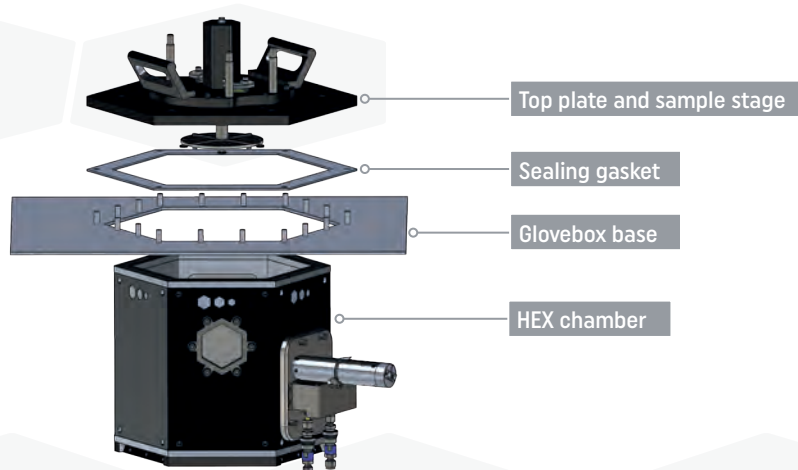
ANALYSIS OPTIONS

The unique architecture of the Hex system also allows users to modify panels to their own design and thereby allowing them to retrofit their own or third-party characterisation techniques.



GLOVEBOX INTEGRATION

Both the HEX and HEX-L are Glovebox compatible and integration can take place at any time as research requirements develop.

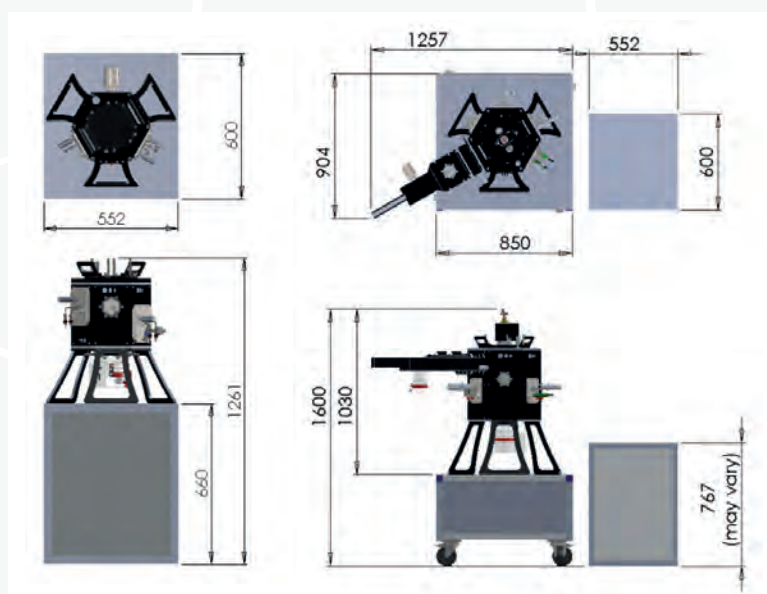


UTILITY REQUIREMENTS

Power: 220V single phase, 16A socket

Water: 0.5l/min, 50psi
6mm OD tube inlet to system

Gas: Ar (sputtering), N₂ (venting, optional) 6mm OD tube inlet to MFC



HEX on electronics rack

HEX-L on frame with electronics rack
(Shown with optional load-lock mounted)



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