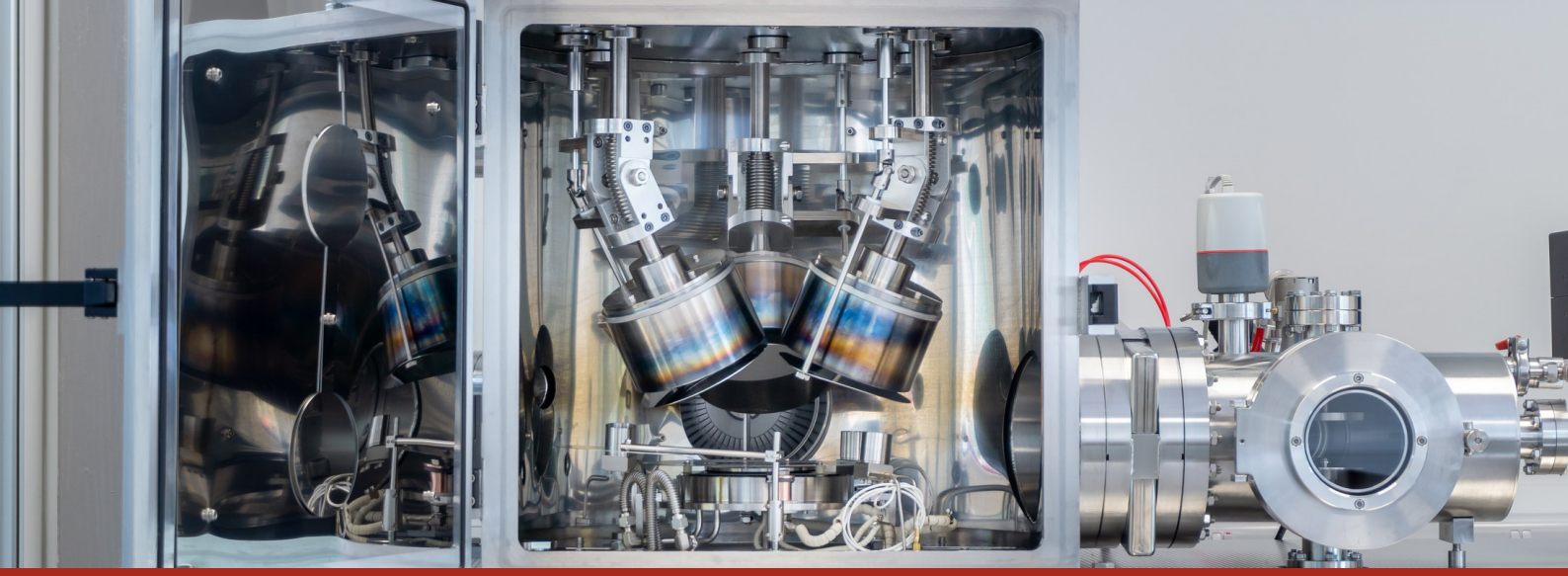

HIGH-CAPABILITY MODULAR PVD SYSTEM

MiniLab 125

Larger modular PVD platform for complex multi-source, multi-technique and larger-substrate research.

12″	5	E-beam	<5×10⁻⁷
MAX SUBSTRATE	SOURCES (UP TO)	3–6 KW OPTION	BASE PRESSURE (MBAR)

High-capability modular PVD for demanding research

MiniLab 125 is Moorfield's high-capability research platform for source capacity, larger substrates, advanced power options and future process flexibility. Optimised for multi-technique work, it combines magnetron sputtering, thermal evaporation and e-beam with substrates up to 12″ and specialist options such as nanoparticle sources, RGA and ion-beam-assisted deposition.

- Capability headroom for demanding R&D programmes
- Sputtering, thermal evaporation and e-beam pathways
- HiPIMS, pulsed DC, NPS, RGA and ion-beam options
- Up to five sources (six as a special build)
- Substrates up to 12″ (300 mm)
- Load-lock, dual-chamber and transfer options

Why choose the MiniLab 125

High source capacity
Up to five sources (six as special build) for complex multilayers and co-deposition.

Multi-technique in one platform
Sputtering, thermal evaporation and e-beam pathways, plus specialist sources.

Integration flexibility
Add load-lock, transfer and automation capability when the application requires it.

Future-ready capability
Headroom and options for programmes whose requirements are expected to grow.

Key features

Modular research architecture
Configure sources, chambers, stages and monitoring around the programme.

Up to five sources
High source capacity (six as a special build) for complex film stacks.

Multi-technique deposition
Sputtering, thermal / LTE evaporation and Ferrotec 3–6 kW e-beam.

Largest substrates
Substrate positioning up to 12″ (300 mm).

Specialist methods
NPS, RGA, ion-beam and beam-assisted deposition by configuration.

Recipe-led control
PC + IntelliDep control with up to 4 QCM and SQC-310 option.

Typical configurations

Start with a proven configuration, then tailor sources, gases, substrate handling and integration around your materials and workflow.

High-capability sputtering

Larger, more complex sputtered film programmes.

- Up to 5-source configuration
- Advanced power options
- Reactive process development

Multi-technique R&D

Sputtering, evaporation and e-beam in one platform.

- Thermal and e-beam options
- QCM and diagnostics
- Flexible chamber architecture

Future-ready platform

Programmes where capability needs grow.

- Large-substrate configuration
- Integration and transfer options
- Long-term adaptability

Technical specifications

Parameter	Specification
System type	High-capability MiniLab PVD
Base pressure (HV)	$<5\times10^{-7}$ mbar
Max sputter sources	Up to 5; 6 special build
E-beam evaporation	Ferrotec 3–6 kW
Thermal / LTE evaporation	TE1 + LTE sources
Other techniques	NPS, RGA, ion beam, IAD
HiPIMS / pulsed DC	HiPSTER 1 + Pinnacle 1.5 kW

Parameter	Specification
Max substrate size	12″ (300 mm)
Substrate heating	Up to 800°C (SSIC heater)
Substrate bias	RF + DC bias
Load lock	Optional (up to 8″)
Dual chamber	Available
Control software	PC + IntelliDep
Rate / thickness	Up to 4 × QCM; SQC-310 option
Warranty	2 years

MiniLab platforms are configurable; exact specifications depend on the final build and are confirmed at quotation.

Selected publications citing the MiniLab range

- Insights into the self-inhibiting photoreduction of Cu_2O in bicarbonate electrolytes — University of Antwerp
- Nanoparticle vacuum deposition sources — Published study
- Direct single-molecule detection with a low-cost smartphone microscope — University of Fribourg
- Thin-film Bragg reflector for monolithic GaAs devices — Published study
- HexAuFoil: cryo-EM with sub-1 Å specimen movement — MRC Laboratory of Molecular Biology
- High-efficiency semitransparent solar cells from sputtered Sb_2S_3 films — Luleå University of Technology