



GLOVEBOX-COMPATIBLE MODULAR PVD SYSTEM

MiniLab 090

Modular PVD for air-sensitive device research, protected transfer and advanced materials workflows.

8"

MAX SUBSTRATE

Yes

GLOVEBOX COMPATIBLE

800°C

SUBSTRATE HEATING

$<5 \times 10^{-7}$

BASE PRESSURE (MBAR)

Glovebox-integrated modular PVD for air-sensitive research

MiniLab 090 is the strongest fit where glovebox integration, larger substrates and modular PVD development must work together. A box-type stainless-steel chamber with front and rear doors supports both in-glovebox loading and external service access, with a high aspect-ratio geometry ideal for evaporation and the option of magnetron sputtering.

- Glovebox-compatible front + rear door chamber
- Sputtering and thermal / LTE evaporation by configuration
- Substrates up to 8" (200 mm); heating to 800°C
- Strong fit for oxygen- and moisture-sensitive materials
- High aspect-ratio chamber for uniform evaporation
- Application-led config for PV, OLED and quantum work

Why choose the MiniLab 090

- ✓ **Protected, air-sensitive workflows**
Front and rear doors enable in-glovebox loading with external service access.
- ✓ **Multiple deposition techniques**
Thermal / LTE evaporation and magnetron sputtering in one protected platform.
- ✓ **Integration flexibility**
Add glovebox, load-lock, transfer and automation capability when the application requires it.
- ✓ **Research-to-pilot thinking**
Develop and prove practical deposition processes before committing to production-scale infrastructure.

Key features

- 🔑 **Glovebox integration**
Front sliding door for in-glovebox loading; rear door for service access.
- 🔧 **Modular research architecture**
Configure sources, stages and monitoring around the research programme.
- 📦 **Sputter & evaporation**
Magnetron sputtering plus TE1 / LTE thermal sources by configuration.
- 📏 **High aspect-ratio chamber**
Long working distances for high-uniformity evaporation.
- ⊕ **Larger substrates**
Substrate positioning up to 8" (200 mm); heating to 800°C.
- 📱 **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.

Air-sensitive stacks

Materials where oxygen or moisture changes the result.

- Glovebox-compatible setup
- Protected workflow integration
- PV, OLED and sensitive interfaces

Protected modular PVD

Flexible sources inside a controlled-atmosphere chain.

- Sputtering and evaporation methods
- Process gas options
- Recipe-led operation

Sensitive material R&D

Programmes where the approach may change over time.

- MiniLab modularity
- Larger substrate positioning
- Long-term adaptability

Technical specifications

| Parameter | Specification |
|---------------------------|---------------------------------|
| System type | Glovebox-compatible MiniLab PVD |
| Base pressure (HV) | $<5 \times 10^{-7}$ mbar |
| Sputtering | Available by configuration |
| Thermal / LTE evaporation | TE1 + LTE sources |
| HiPIMS / pulsed DC | HiPSTER 1 + Pinnacle 1.5 kW |
| Max substrate size | 8" (200 mm) |
| Substrate heating | Up to 800°C (SSIC heater) |

| Parameter | Specification |
|---------------------|-------------------------------|
| Substrate bias | RF + DC bias |
| Load lock | Optional (up to 8") |
| Glovebox compatible | Yes; front + rear door |
| Dual chamber | Available |
| Control software | PC + IntelliDep |
| Rate / thickness | Up to 4 × QCM; SQC-310 option |
| Chamber material | Stainless steel; CF flanges |
| 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

- Enhancing the performance and photostability of perovskite solar cells — Aalto University
- TCTA:Ir(ppy)₃ green emissive blends in OLETs — Aalto University
- Transmissive hybrid metal-dielectric metasurface bandpass filters — University of Cambridge
- Hafnium aluminate-polymer bilayer dielectrics for OLETs — Aalto University
- High-efficiency semitransparent solar cells from sputtered Sb₂S₃ films — Luleå University of Technology
- Rewritable resistive memory effect in a carbazole-methacrylamide memristor — Charles University