Leybold

UNIVEX

Experimental systems for thin film coating and space simulation

184.04.02

Experimentation systems

Vacuum based Physical Vapor Deposition (PVD) processes are critical and enabling components of many modern technologies and components. Both researching new fundamental phenomenon and developing new products require laboratory testing and integration of PVD processes.

Having a reliable, repeatable and professional platform on which to perform research and pilot-scale experiments of vacuum coating is essential to efficient and cost effective development. The UNIVEX family of vacuum coating systems make professional results possible.

UNIVEX systems are standardized for reliability, but modular and highly configurable to adapt to changing process requirements. This flexibility enables upgrades or retrofits as research or development needs change over time.

Applications

- Sensor technology
- Optoelectronics
- Dactyloscopy / Forensic analysis
- Spectacle and precision optics
- OLED / Display
- Tribology / Wear protection
- Lift-off processes
- Laser
- Storage media
- Solar
- Thermovoltaics
- Glass coating (UV protection, Lotus effect)
- Superconductors
- Foil coating
- Decorative coatings / Costume jewelry
- Medical devices
- Space simulation

Process components

- Thermal evaporation
- Organics evaporation
- Electron beam evaporation
- Effusion cells
- DC sputtering
- RF sputtering
- Ion sources
- Process gas inlet
- Film thickness measurement
- Substrate rotation
- Substrate bias
- Substrate manipulation
- Planetary drives
- Heating, cooling, tempering
- Shrouds
- Load lock

customized to your needs

Space simulation
Thin film deposition units
UNIVEX

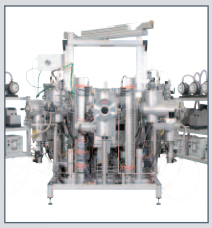
The UNIVEX system range is well established for experimental coating and thin film deposition applications in university and industrial research and pilot production.

UNIVEX are multipurpose coating systems for the production of functional physical deposition (PVD) layers. Features such as modular designs, variable chamber sizes and a numerous accessories make UNIVEX systems versatile across wide fields of applications

Leybold provides UNIVEX system solutions, customizable for specific process needs. Our UNIVEX enable highly reproducible results through easy operation with either manual or full process control.





The entire line

UNIVEX –

Advantages

- Universally configurable for almost all vacuum PVD coating processes
- Simple to operate
- Compact footprint
- Easy to retrofit and upgrade
- Incorporates modern vacuum technology and electronics

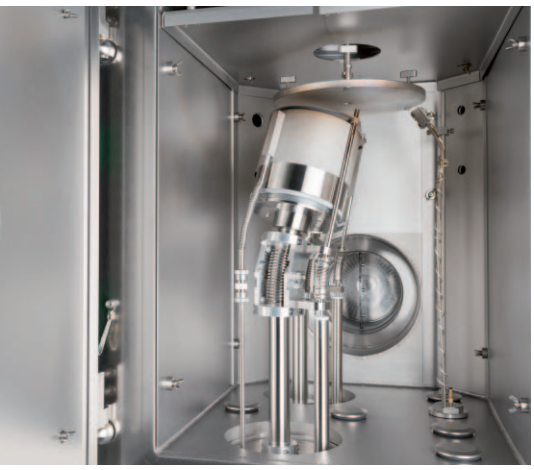
UNIVEX Box Coating systems are designated by number representing their chamber widths

Basic models

- **UNIVEX** 250 - 900
- **UNIVEX G** Glove Box Systems
- **UNIVEX C** Cluster Tool
- **UNIVEX D** Dactyloscopy
- **UNIVEX S** Space Simulation

- from experiment
to series production

Box coating systems



Advantages

- Modular system design
- Pump system optimized to the application
- Multi-purpose vacuum chamber
- Convenient access to all installed equipment
- Simple operation
- Multiple deposition techniques in same chamber
- Cleanroom compatible

Design

- Compact unit with direct access to the process chamber
- The UNIVEX box coaters systems consist of a process and a control module:

Process module:
- vacuum chamber
- coating components
- pump system

Control module:
- PLC, PC controller
- HMI visualization
- Power supply and distribution

UNIVEX 250
UNIVEX 400
UNIVEX 600
UNIVEX 900

compact, high performance systems

System details

Vacuum chamber

- Box-shaped stainless steel vacuum chambers UNIVEX 250-600
- Octagonal stainless steel vacuum chamber UNIVEX 900
- Hinged door for simple chamber access
- Viewing window with coating protection
- Removable stainless steel protection panels
- Flexible layout for chamber bottom and chamber top
- Connecting flanges for pump system and process components
- Coolable and heatable chamber walls optional

Vacuum system

- Mechanical forevacuum pump (dry compressing or oil sealed)
- High vacuum pump (turbomolecular or cryo pump)
- Vacuum valves
- Pressure measurement devices

Glove box systems

UNIVEX G
matches easily with a glovebox of your choice

Advantages

- Direct and easy access to process equipment via front side sliding door
- Convenient service access via back side hinged door
- Customized system configuration
- Integration of any process components
- Easy operation via full color touch-screen

Typical applications

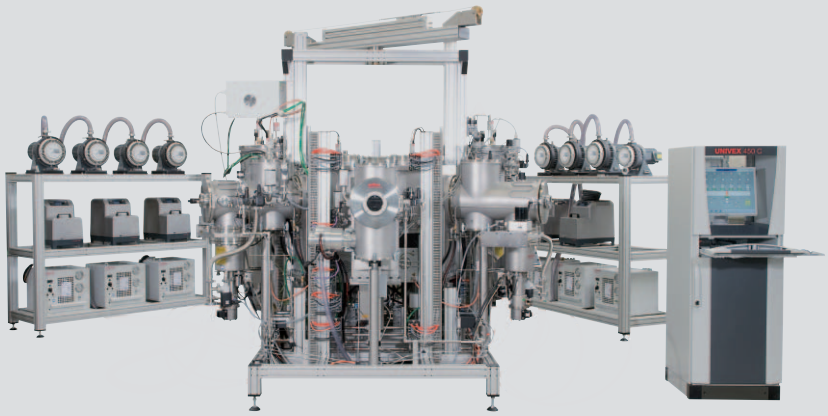
- Vacuum deposition of metals onto oxygen/ moisture sensitive layers, including organic electronics or biological samples
  - Organic based photovoltaics (OPV)
  - Organic light-emitting diodes (OLED)
  - Flexible / organic electronics

Vacuum chamber

- Box-shaped stainless steel vacuum chambers UNIVEX 250 G - 450 G
- Sliding front door for easy chamber access through the glove box
- Viewing window with coating protection
- Removable stainless steel coating protection panels
- Flexible layout for chamber bottom and chamber top
- Connecting flanges for pump system and process components

All system components with exception of the sliding door are accessible from outside the glove box

Cluster tool systems



UNIVEX C
the cluster tool solution

Advantages

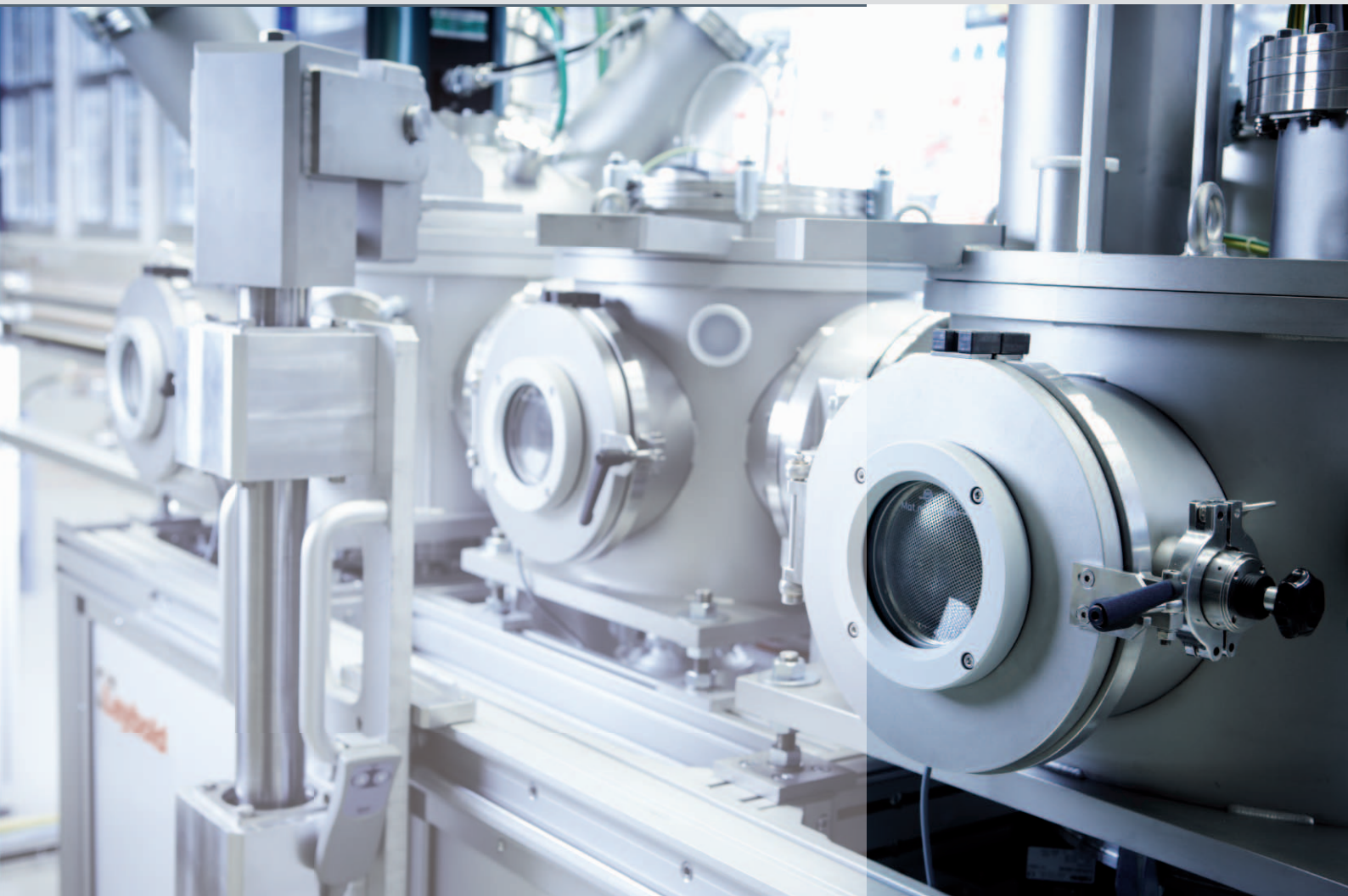
- Customized system design
- Programmable, recipe controlled process sequence
- Fully automated process control
- Excellent process vacuum, low residual gas contaminates
- Easy operation via full color touch-screen PLC

Design

- Central load lock system
- Central transfer chamber with vacuum robot
- Separate pump systems for each chamber
- PLC controlled, fully automated system operation

Typical applications

- Automated coating sequences in research, development and pilot production
- Multiple deposition chambers for sputtering metals and dielectrics
- Applications with high demands for wafer throughput or complex layer requirements, including a variety of materials to be deposited without breaking vacuum



Dactyloscopy systems

UNIVEX D

proven in laboratories for criminal investigations

Advantages

- Easily controllable thermal coating process
- Coating of large areas up to 800 x 400 mm
- Short cycle times, depending on the material with the fingerprint evidence
- Good contrast and visibility on multicolor surfaces
- The material containing the finger print evidence remains undamaged

Typical applications

- Metal evaporation process to reveal fingerprints on items containing finger print evidence

Space simulation

UNIVEX S

customized system solutions for space simulation

System design

- Typically, the system comprises a cylindrical vacuum chamber with high vacuum system and supply module with process controller
- The simulation chamber is generally equipped with temperature controllable trays and shrouds, which may be both heated and cooled in a vacuum
- The process module is moved manually along rails so that the simulation chamber can be opened for loading

Typical applications

- Thermal vacuum experiments for simulation of space conditions

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