

● Batch production

Beneq P400A



OVERVIEW



The Beneq P400A is a highly optimized, production-proven batch ALD system for high-volume manufacturing of optical coatings and moisture barriers. P400A is large enough to offer significant capacity, but small enough to maintain excellent uniformity within batches and short cycle times.

FEATURES

Size

Coat parts with a size between 20 and 300 mm. Batch setups can be optimized for specific parts, wafers, or sheets with a maximum batch size for flat substrates up to 8 m².

Optimization

The P400A was designed specifically to coat various substrates in an optimized batch size. This tool lives at the intersection of large batch size, fast deposition, and incomparable uniformity.

Robustness

The P400A is equipped with high-capacity precursor sources, deactivation and filtration systems to enable easy deposition of micron-thick film stacks.

Substrate examples

- Highly curved lenses, optical fibers, and optical microstructures
- Printed circuit boards and scintillators

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SPECIFICATIONS

Process type	Thermal ALD
Integration	Stand-alone
Dimensions (L x W x H)	2400 × 930 × 2420 mm
Vacuum chamber dimensions	Ø 400 mm
Temperature range	25–550 °C
Substrate type	• Wafers • Glass or metal sheets • 3D and freeform parts
Substrate space	• 240 × 240 × 720 mm • 370 × 470 × 25 mm

BATCH PRODUCTION EQUIPMENT

Beneq’s P-series provides the largest-scale, general-purpose ALD production systems ideal for coating diverse substrate types and thick films. It is easy to scale up ALD deposition from the R&D phase to full manufacturing workflows.



Beneq P800
The Beneq P800 is specifically designed to coat big parts of complex shapes or large batches of smaller parts.



Beneq P1500
The world’s largest ALD reactor uniquely designed for coating very wide area sheets, lenses, and 3D components.