



HELIOS series.

For optical filters and applications on device wafers.

Key benefits.



Outstanding thickness distribution
($< \pm 0.5\%$)



Absorption-free optical layers



Direct wafer coating on:

- Structured substrates
- Unstructured substrates

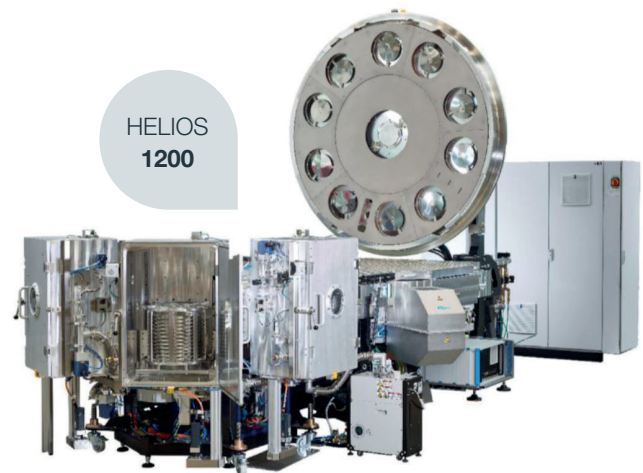


Accurate thickness control

- Layer stacks up to 1000 layers
- Single-/ multilayers up to $10\ \mu\text{m}$
- High precision even for thin layers $> 5\ \text{nm}$



Low particle density



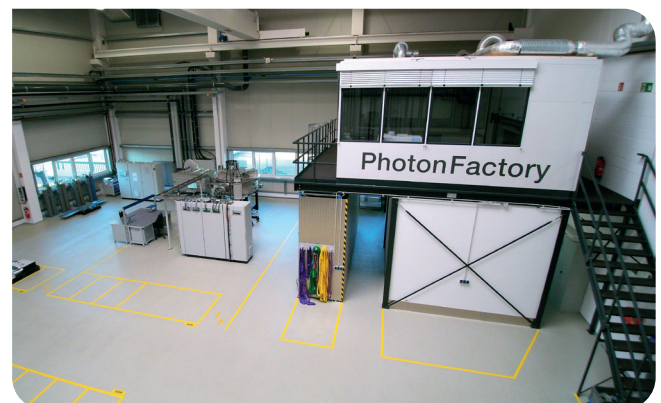
Optics meets Semiconductor.

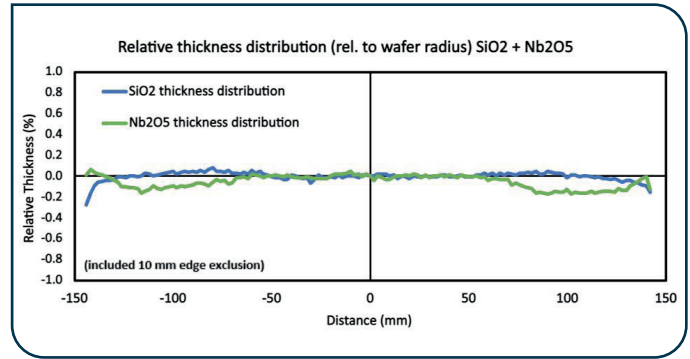
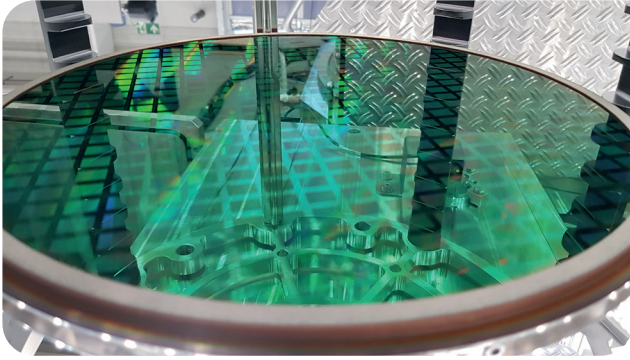
Our industry-proven **LEYBOLD OPTICS HELIOS series** for fast, precise and fully-automated thin-film coatings is the ideal system for the challenging needs of the semiconductor industry.

Application examples.

- Photonics
- Ambient light sensing
- Hyperspectral imaging
- Gesture and Facial recognition
- Color filter
- LiDAR sensor
- Wafer Level Optics

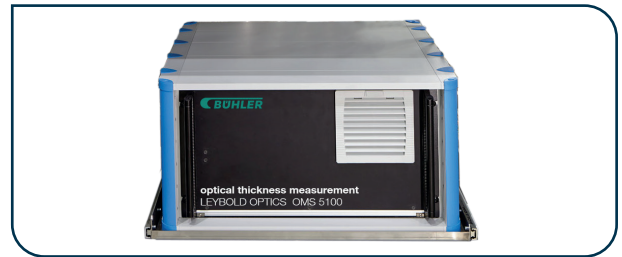
Dedicated production area.





LEYBOLD OPTICS OMS 5100.

- In-situ direct measurement of optical thickness
- Reproducible layer thickness $\pm 0.2\%$ run to run
- Precise rate calibration for very thin layers $<5\text{ nm}$
- No optimization runs needed at the machine



Technical data.

System		HELIOS 800	HELIOS 1200
Technology		Plasma-assisted reactive magnetron -sputtering (PARMS/ PARMS+)	
Applications		MF sputtering (optional: RF, DC sputtering)	MF sputtering
Coating material		SiO ₂ , Al ₂ O ₃ , Nb ₂ O ₅ , Ta ₂ O ₅ , HfO ₂ , ZrO ₂ , HfO ₂ , Si ₃ N ₄ , ITO, Al, Ag, SiH	
Capacity		12* pcs. at Ø 200 mm / 8"	10 pcs. at Ø 300 mm/ 12"
Process stations	Dual-magnetrons	3x	4x**
	RF plasma sources	1x	1x
	Coating Ø (standard)	$\leq 200\text{ mm} / \leq 8"$	$\leq 300\text{ mm} / \leq 12"$
	(optional)	$\leq 150\text{ mm} / \leq 6"$	$\leq 200\text{ mm} / \leq 8"$
Layer monitoring	Time control	Yes	Yes
	Optical monitoring	LEYBOLD OPTICS OMS 5100, LEYBOLD OPTICS WB-OMS (1200)	
Dimensions	Width x length x height	7.3 m x 6.2 m x 3.0 m	8.0 m x 4.5 m x 3.4 m
		288" x 242" x 118"	315" x 177" x 133"

(*) One substrate less when optical monitoring is used

(**) Mix of rotatable/planar cathodes customizable



Application
example

