



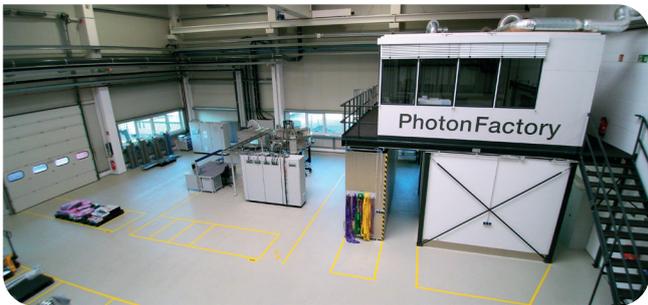
**HELIOS series**  
 For optical filters and applications  
 on device wafers

**Key benefits**

- ★ Outstanding thickness distribution (<math>< \pm 0.5 \%</math>)
- 🛡️ Absorption-free optical layers
- 🔄 Direct coating on:
  - Structured and unstructured substrates
  - Silicon and Glass Wafers
- 🔍 Accurate thickness control
  - Layer stacks up to 1000 layers
  - Single-/ multilayers up to 10  $\mu\text{m}$
  - High precision even for thin layers > 5 nm
- ✓ Low particle density



**Dedicated production area**



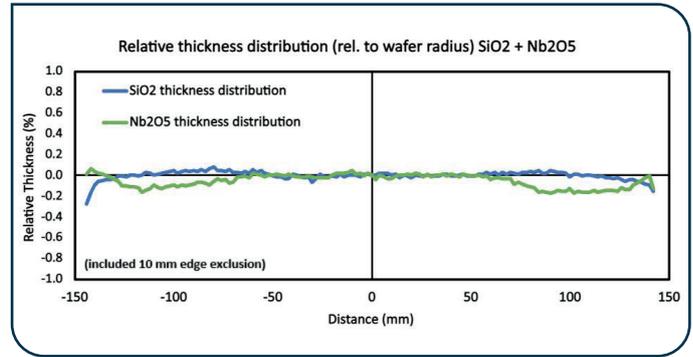
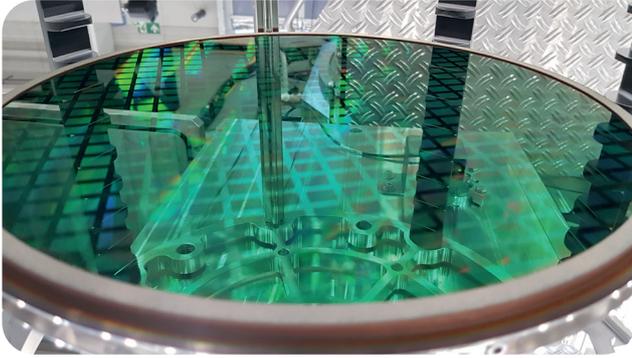
- Clean, highly professional assembly area for high end machines
- High quality assembly
- Clean area for machine testing and qualification
- Higher Quality and less errors of your product

**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



## 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  $<5$  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 <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Nb <sub>2</sub> O <sub>5</sub> , Ta <sub>2</sub> O <sub>5</sub> , HfO <sub>2</sub> , ZrO <sub>2</sub> , HfO <sub>2</sub> , Si <sub>3</sub> N <sub>4</sub> , ITO, Al, Ag, SiH	
Capacity		12* pcs. at Ø 200 mm / 8"	10 pcs. at Ø 300 mm/ 12" (including sub-rotation)
Process stations	Dual-magnetrons	3x	4x**
	RF plasma sources	1x	1x
	Coating Ø (standard)	≤ 200 mm / ≤ 8"	≤ 300 mm / ≤ 12"
	(optional)	≤ 150 mm / ≤ 6"	≤ 200 mm / ≤ 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 288" x 242" x 118"	8.0 m x 4.5 m x 3.4 m 315" x 177" x 133"
Substrate handling	Manual Loading	<ul style="list-style-type: none"> <li>• Single wafer loading</li> <li>• Single cassette loading (up to 13 wafers)</li> <li>• Multi cassette loading (up to 3x 13 wafers)</li> </ul>	<ul style="list-style-type: none"> <li>• Multi cassette loading (3x 13 wafers)</li> </ul>
	Semiconductor-ready loading solutions	<ul style="list-style-type: none"> <li>• Wafer cassette loading (up to 25 wafers)</li> <li>• SMIF integration</li> </ul>	<ul style="list-style-type: none"> <li>• FOUP and EFEM integration</li> </ul>

(\* ) One substrate less when optical monitoring is used (\*\* ) Mix of rotatable/planar cathodes customizable