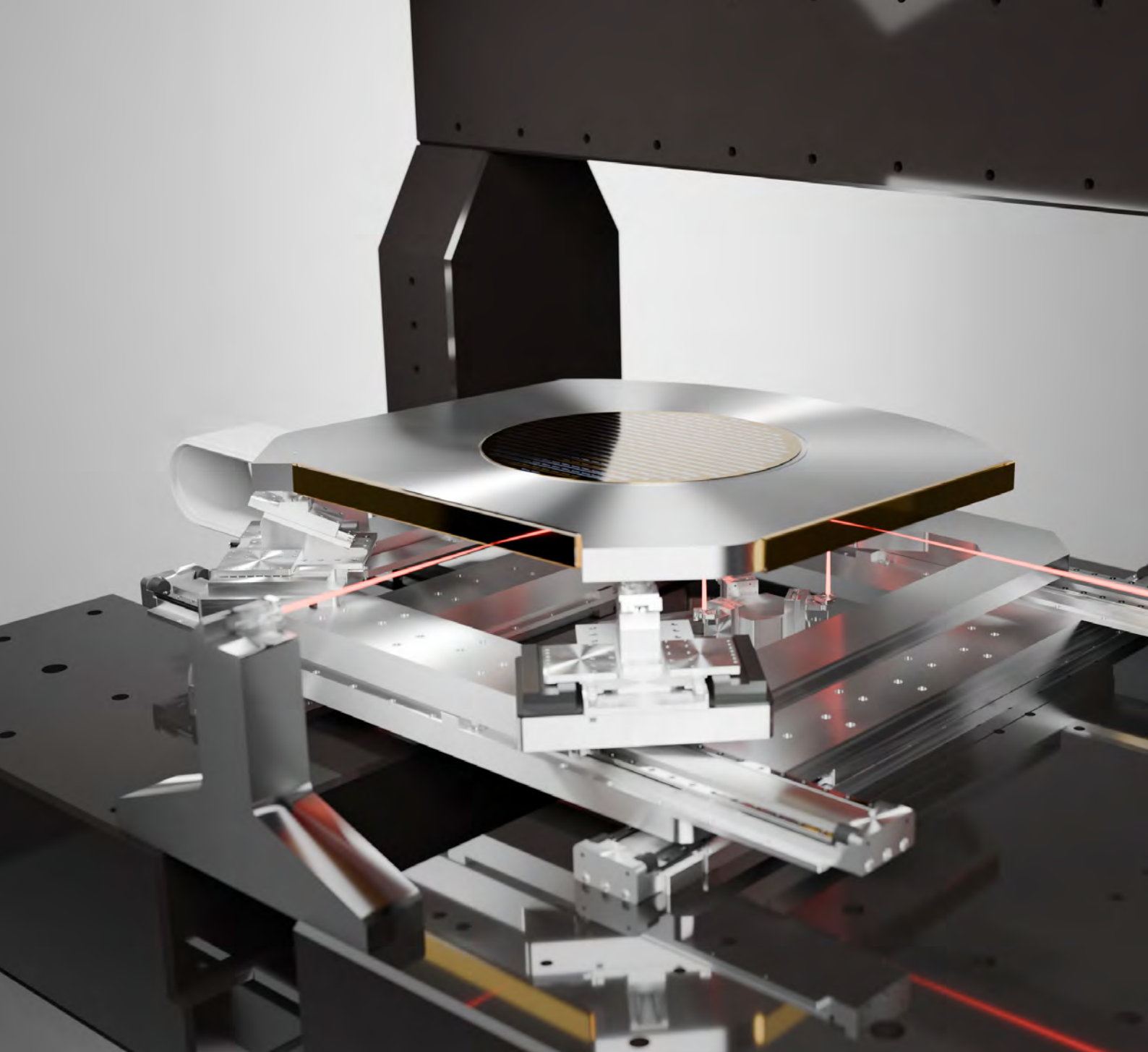




Wafer Stages

High-Precision Wafer Positioning Solutions
for Semiconductor Manufacturing

SmarAct Wafer Stages

Precision Engineered for Your Process

In semiconductor manufacturing and research, precise wafer positioning is the key to higher yield, better alignment, and faster process control. SmarAct wafer stages deliver exactly that, combining nanometer precision, unmatched configurability, and seamless integration into your existing setup. With in-house engineering and full customization, SmarAct provides the ideal solution for any wafer application.

Our wafer stages can be configured for wafers up to 300 mm and offer between 2 and 6 degrees of freedom. You can choose between piezo drives for ultra-fine positioning, electromagnetic drives for long travel and dynamics, or combine both technologies for the perfect balance. For the ultimate precision upgrade, the wafer stage can be equipped with the **PICOSCALE® Interferometer** in combination with METIRIO® optical encoders, connected via SmarAct's Module Link for direct, real-time synchronization. This setup enables picometer-level feedback and closed-loop control, even when measuring directly on the wafer or chuck surface.

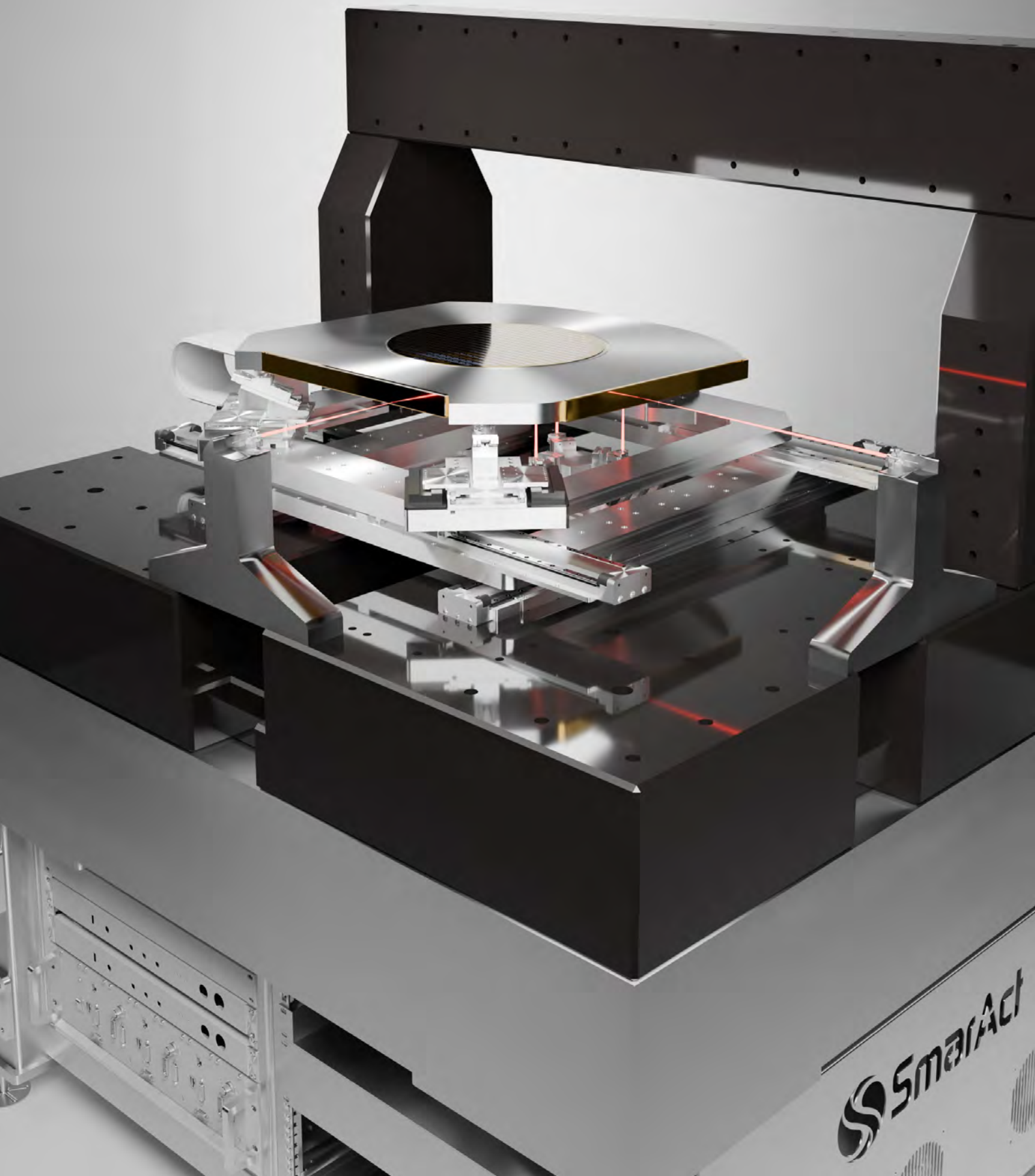
Control is handled effortlessly through the **MCS2** modular control system, offering full compatibility with EtherCAT® for easy integration into automated production environments.

Every stage can be customized to your needs. From layout and travel range to environmental compatibility. Optional granite bases ensure maximum rigidity and vibration damping, while double-sided wafer access enhances process flexibility. Various wafer chucks, such as vacuum, electrostatic, or mechanical designs, can be seamlessly integrated to fit your specific process requirements.

SmarAct wafer stages combine precision, modularity, and customization in one platform — ready to evolve with your application and push the limits of what's possible in wafer positioning.

Specification Table	
Wafer sizes	Up to 300 mm
Access to wafer	Single or double sided
Movement configuration	2-6 degrees of freedom
Drive technology	Electromagnetic direct drive and/or piezo based
Smallest motion increment	Around 1 nm / 3µ° depending on setup
Unidirectional repeatability	+/- 50 nm
Advanced precision upgrade	Optional PICOSCALE® Interferometer integration
Extended environmental options	HV, UHV
Material options	Non-magnetic, stainless steel, Titanium
Granite base	optional
Chucks	Vacuum, electrostatic, mechanical

SMARACT WAFER STAGES PRECISION PERFECTED, YOUR WAY.



With the development and production of market-leading solutions in the field of high-precision positioning, automation and metrology, the SmarAct Group reliably accompanies their customers in achieving their goals. The broad product portfolio – from single positioning stages to complex parallel kinematics, miniaturized robots, control systems and measurement technology – is complemented by automated microassembly solutions. Even the most challenging customer requirements can be met by maximum adaptability and complete in-house production.

Since its founding in 2005, SmarAct has steadily grown from a small team of engineers to a group of companies with three independent business units and over 300 highly skilled members. Today, SmarAct relies on years of experience and, above all, on a very passionate team with unconditional customer focus.

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