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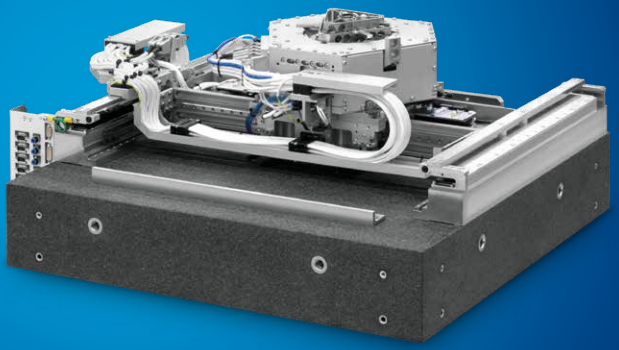

Planar Platform

METIS XYZT

ETEL

The METIS XYZT planar platform is a hybrid planar mechanical/air bearing stage dedicated to step-and-scan applications. It is a 6 axes platform moving in X, Y, Z and Theta directions.

The **hybrid nature** of this planar platform allows the user to enjoy the best qualities of both mechanical and air bearings. The mechanical bearings provide high stiffness in the XY plane, allowing for high accelerations and great bidirectional repeatability. Thanks to the decoupled air bearings, the platform is also able to provide excellent dynamic flatness over the full travel range.

The stage is modular and can be outfitted with the modules best suited to each individual application.

METIS XYZT PLATFORM

The platform can also be integrated with ETEL's QuiET Active Isolation System to further improve system performance.

The standard XYZT planar platform includes an ETEL ZT combined module on the gantry beam of the XY stage. The ZT combined module provides infinite Theta rotation and dual Z-axes: a coarse Z axis for wafer loading and unloading, and a fine Z axis for fine adjustment.

This module can be replaced to best suit the needs of an application, whether that application requires only Z motion, pure Theta motion, or ZT motion with tip/tilt correction.

PERFORMANCE

	XY	Z	T
Total stroke	320 mm	12 mm	-
Speed	1.2 m/s	0.1 m/s	15.7 rad/s
Acceleration	1.2 g	0.2 g	104.7 rad/s^2
Position stability	±25 nm	±15 nm	±0.2 arcsec
Bidirectional repeatability	±0.4 µm	±0.3 µm	±2 arcsec

MAIN FEATURES

- Unlimited rotation in Theta
- Double Z integration
- Built-in gravity compensator in Z (patent pending)
- Built-in vacuum supply at chuck level
- Compact footprint
- ISO2 clean room compatible
- Yaw correction can be achieved by slightly shifting the Y1 and Y2 motors
- Travels in X and Y can be made longer with some limitations on the performance

TYPICAL APPLICATIONS

This platform is currently suitable for:

- Wafer Process Control applications such as Critical Dimension and Thin film Metrology
- Wafer scribing, grooving and dicing
- Laser Annealing
- Back-End of Line Lithography