



### **ETEL S.A.**

Zone Industrielle  
2112 Môtiers  
Switzerland

T +41 32 862 01 00

[etel@etel.ch](mailto:etel@etel.ch) · [www.etel.ch](http://www.etel.ch)



# Stacked Platform

VULCANO XYZ3TH

# **ETEL**

# **ETEL**

The VULCANO XYZ3T<sup>H</sup> stacked platform is a 9 axes platform moving in X, Y, Z, Tip-Tilt and Theta directions. It is a mechanical bearing stage integrating ironcore linear motors as well as high precision optical encoders, and mainly dedicated to point-to-point applications.

The VULCANO XY part of it is a three-piece-design stacked system resulting in a cost engineered solution combining high dynamics, great bidirectional repeatability, and outstanding position stability.

The bottom axis is composed of two linear motors controlled in a gantry mode moving on three decoupled linear bearings. The upper linear motor lays on a stiff and light baseplate allowing travels up to 650 mm.

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

### VULCANO XYZ3T<sup>H</sup> PLATFORM

This platform can also be integrated with ETEL's QuiET Active Isolation System to reach ultimate performance.



The standard platform shown above includes an ETEL Z3T<sup>H</sup> combined module on the XY assembly. The Z3T<sup>H</sup> combined module provides 364° Theta rotation, a Tip-Tilt correction over  $\pm 0.1^\circ$  and dual Z-axes: a coarse Z axis for wafer loading and unloading, and a fine Z axis for precision motion. The Z3T<sup>H</sup> module allows a reduction of XY move and settle times and a correction of the stage flatness.

Other modules moving in Theta or ZTheta can also be considered.

## PERFORMANCE

	Y1-Y2	X	FINE Z	TIP-TILT	COARSE Z	THETA
Total stroke	490 mm	420 mm	$\pm 2$ mm	$\pm 0.1^\circ$	12 mm	364°
Speed	Up to 1.5 m/s	Up to 1.5 m/s	0.05 m/s	-	0.1 m/s	10 rad/s
Acceleration	Up to 2.5 g	Up to 2.5 g	0.1 g	-	0.2 g	55 rad/s <sup>2</sup>
Position stability	$< \pm 1$ nm	$< \pm 1$ nm	$\pm 2$ nm	$\pm 0.004$ arcsec	-	$\pm 0.004$ arcsec
Bidir. repeatability	Down to $\pm 250$ nm		$\pm 10$ nm	-	-	$\pm 0.35$ arcsec
Move and settle times 25 mm within $\pm 100$ nm	$< 130$ ms		-	-	-	-
Typical payload	-	-	-	-	0.15 kg	1 kg

## PRODUCT HIGHLIGHTS

- Compact footprint
- Nanometer position stability
- High dynamics: 2.5 g, 1.5 m/s
- Low move and settle times
- ISO1 clean room compatible
- Tip-Tilt correction over  $\pm 0.1^\circ$
- Double Z integration
- Built-in gravity compensator in Z
- Outstanding Z straightness
- Enhanced Z repeatability and jitter
- Ability to correct stage flatness
- Built-in vacuum supply at chuck level

## TYPICAL APPLICATIONS

The use of this platform is suitable for, but not limited to:

- Wafer Process Control applications such as Overlay Metrology, Critical Dimension and Thin film Metrology
- Advanced packaging applications