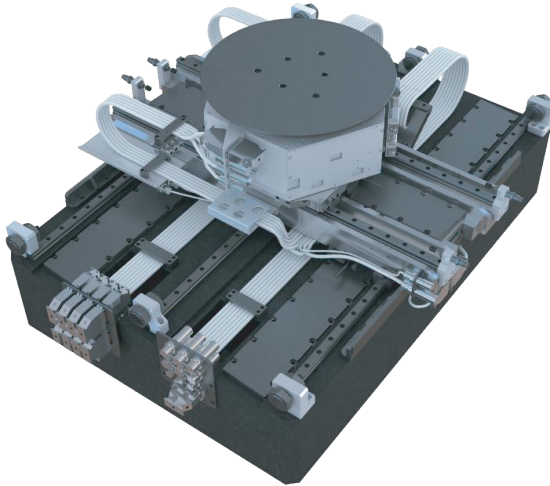


Stacked XYZ3T Stage



Features

- Stacked 7-axis stage with orthogonality design
- Global flatness and straightness up to to sub- μm level
- X/Y axis
 - High stiffness, high precision guide
 - Consistent design of cable disturbing force
- Z3T axis
 - Vertical maglev gravity compensation for high positioning accuracy
 - Flexible guide design
 - Vertical incremental encoder for up to 1.2nm resolution
 - Ultra-thin, lightweight design
 - Rotation velocity up to 150rpm
 - Tip and tilt correction over $\pm 0.2^\circ$

Description

The stage adopts modularization, ultra-thin, orthogonality design, to integrate the Z3T standard module on top of the XYX stacked horizontal motion module for high precision and stiffness motion of X, Y, Rx, Ry, T, and Z-axis with 6 degrees of freedom.

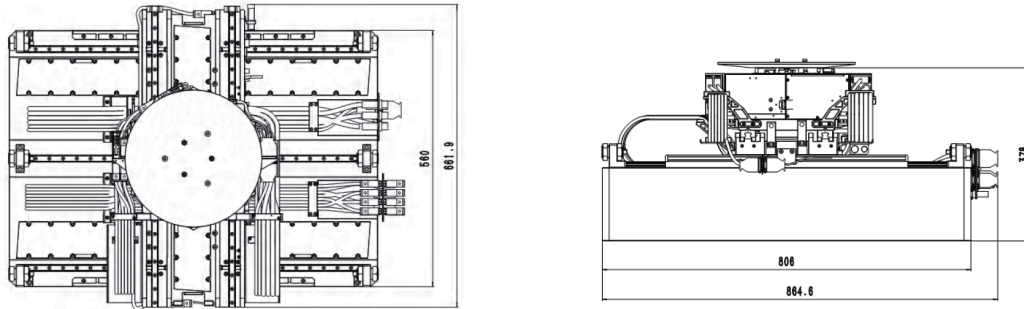
The Z3T standard module adopts compact design and integrates Z, Rx, Ry and T axes, with excellent positioning accuracy, flatness, straightness, stiffness and repeatability. The vertical uses the maglev gravity compensation technology, which has the function of reducing the load of the vertical motor and greatly improving the vertical motion performance and lifetime.

The XYX stacked horizontal motion module adopts integration, orthogonality design with compact, low-profile. High-precision, high-stiffness linear motion in horizontal X/Y axis with 2 degrees of freedom.

Applications

- Wafer production control applications such as: thin film metrology and critical dimension metrology
- Wafer scribing
- Wafer laser thermal annealing
- especially suitable for flip chip die bonding on specific large panels/substrates

Interface Definition



*Interface dimensions from M6S800 in the middle of vertical stroke

Technical Specifications

M6S800-00						
Axes name	X	Y1/Y2	T	Coarse Z	Fine Z	Tip-Tilt
Travel range	456 mm	355 mm	364 °	15 mm	±2 mm	±0.2 °
Max. velocity	1.5 m/s	1.5 m/s	150 rpm	0.1m/s	0.05m/s	-
Max. acceleration	25 m/s ²	25 m/s ²	7200 °/s ²	-	1m/s ²	-
Accuracy_indicative value	±10 μm	±10 μm	±10 arcsec	-		-
Accuracy_calibration value	±0.8 μm	±0.8 μm	±0.75 arcsec	-	±0.02 μm	-
Bidirectional repeatability	±0.35 μm	±0.35 μm	±2 aresec	-	±0.01 μm	-
Position stability (3σ) *	±20 nm	±20 nm	±0.2 aresec	-	±15 nm*	±0.005 arcsec
Straightness	±2.5 μm	±5 μm	-	-	2 μm	-
Pitch	±5 arcsec	±5 arcsec	-	-		-
Roll	±5 arcsec	±5 arcsec	-	-		-
Yaw	±10 arcsec	±1.5 arcsec	-	-	±0.5 arcsec	-
Mechanical properties						
Moving mass (without payload)	16 Kg	40Kg	-	0.4 Kg	10 Kg	-
Max. load	2 Kg (customizable)					
Stage mass	112 Kg					
Dimensions	864.6 mm × 661.9 mm × 378 mm					

*Technical data specified with 8μm pitch encoder and under active vibration isolation environment.

Customization Information

The series is configured with options that can be selected based on the user's actual application. Options include encoders, control system, and more.

Table 1 Encoder Options

-S1	Incremental analog optical linear encoder, 1Vpp
-S2	Incremental digital optical linear encoder, TTL
-S3	Absolute optical linear encoder, BISS