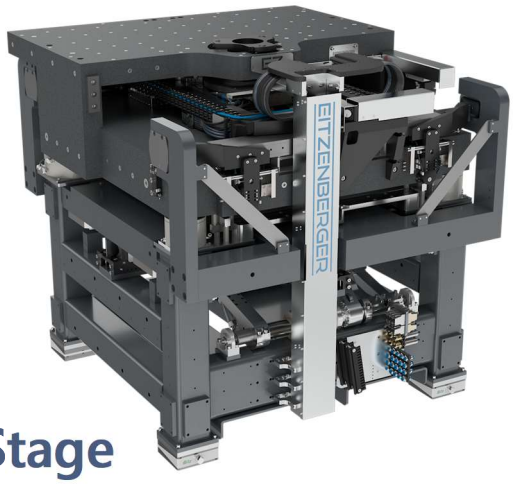
EZ-GS0760

EITZENBERGER
KINEMATIK MIT LUFT

Key Features

- X/Y Stage with Focus Axis (Z)
- Impulse Decoupled X- & Y-Axis
- High-Precision Positioning < ± 100 nm
- Position Stability < ± 5 nm
- Repeatability < ± 40 nm @ 3 σ
- Y-Axis Acceleration up to 8 g
- Integrated X/Y SIOS Differential Laser Interferometer
- Quick-swap Lift-Pin Mechanism



Dynamic Wafer Stage

Concept and Design

The EZ-GS0760 wafer stage has been developed for high-dynamic processes, such as laser fuse cutting. It offers excellent repeatability, optimal accuracy, and exceptional dynamic performance.

Built-in features:

- Mechanical impulse decoupling in both the X- and Y-axes for enhanced dynamic and positional stability.
- The unique design with a common reaction mass for both axes keeps reaction forces independent of the measuring frame and minimizes mass.
- A high-resolution SIOS differential laser interferometer ensures virtually Abbe-error-free performance, minimizing measuring errors at the point of interest, even at maximum dynamics.
- Outstanding Y-axis acceleration up to 8 g; water cooling allows travel profiles with up to 2 g continuous acceleration.
- The Y-axis natural frequency, including wafer chuck, exceeds 500 Hz.
- The compact XY-stage has a height of just 87 mm from the granite base.
- Large top plate (granite) to accommodate customer applications.

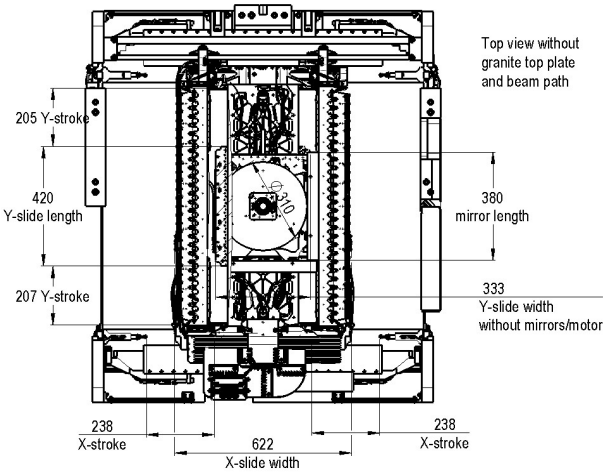
Applications

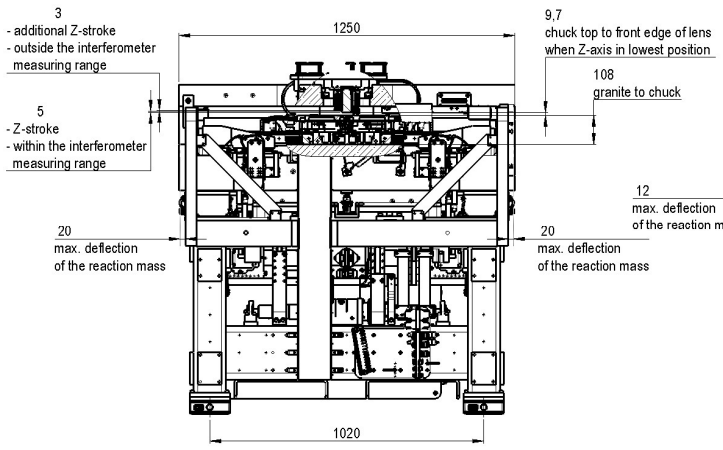
Fuse cutting, high-precision positioning, scanning, and on-the-fly laser processes

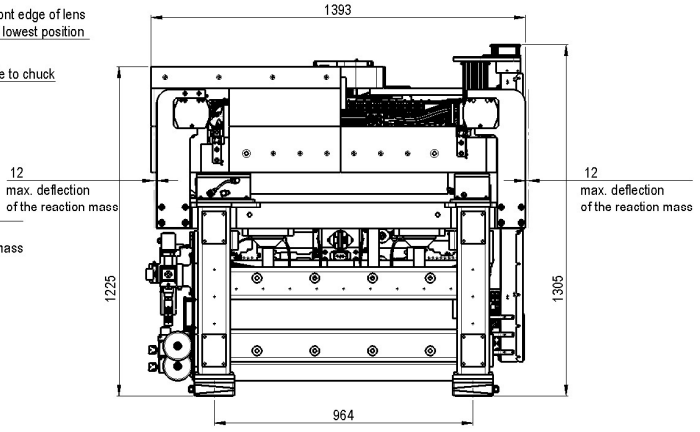
Drive Control

We offer the EZ-GS0760 stage with the following drive controller:

- Triamec TSD series







Specifications

Type	Unit	Value
Positioning Range X/Y	mm	450 x 400
Stroke Z	mm	8
Max. Payload X/Y (for dynamic applications)	kg	10
Max. Payload Z (for dynamic applications)	kg	0.5
Accuracy X/Y (3σ)	nm	< ±150
Accuracy Z	nm	< ±60
Repeatability X/Y (3σ, bidirectional)	nm	< ±40
Repeatability Z (bidirectional)	nm	< ±20
Horizontal Straightness X/Y	µm	< 2
Vertical Straightness X/Y	µm	< 2
Pitch X/Y	µrad	< 10
Roll, Yaw X/Y	µrad	< 5
Pitch, Yaw Z	µrad	< 3
Max. Speed (X/Y) with 10 kg payload	mm/s	X = 1,600 / Y = 600
Max. Acceleration unloaded (X/Y)	m/s^2	X = 2 / Y = 80

Mechanical Data	Unit	Value
Both Axes (X/Y)		active impulse decoupled
Dimension w x l x h	mm	1,250 x 1,395 x 1,245
Reaction Mass	kg	1,245
Total Mass	t	3

Encoder		Value
Type		incremental
Signal		1 Vpp, 4 µm signal periode

Interferometer		Value
Type		SP 5000 DI/F
Resolution		5 pm
Wave Length / Class	nm	632.8 / 2M

Drive	Unit	Value
Type X/Y (X-axis with soft gantry drive)		3-phase, synchronous, ironless
Intermediate Circuit Voltage	V_{DC}	up to 600 / 330
Constant Force X / Y	N	383 / 220
Peak Force X / Y	N	2,122 / 867

Interfaces and Environment	Unit	Value
Supply Pressure	bar	6
Vacuum Pressure	bar	-0.65
Air Consumption	Sl/min	< 150
Vacuum Consumption	Sl/min	< 60
Limit Switch		normally closed
Media at workpiece level		2x vacuum hose Ø6, 3x cable Ø6
Clean Room Suitability		applicable

Drive Control		Value
High end		Triamec TSD series