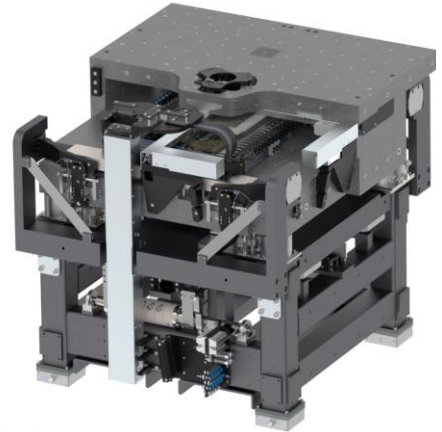


## Key Features

- X/Y Stage with Focus Axis (Z)
- Impulse Decoupled X- & Y-Axis
- High-Precision Positioning  $< \pm 100 \text{ nm}$
- Position Stability  $< \pm 5 \text{ nm}$
- Repeatability  $< \pm 40 \text{ nm @ } 3\sigma$
- Y-Axis Acceleration up to  $8 \text{ g}$
- 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  $8 \text{ g}$ ; water cooling allows travel profiles with up to  $2 \text{ g}$  continuous acceleration.
- The Y-axis natural frequency, including wafer chuck, exceeds  $500 \text{ Hz}$ .
- The compact XY-stage has a height of just  $87 \text{ mm}$  from the granite base.

- Large top plate (granite) to accommodate customer applications.

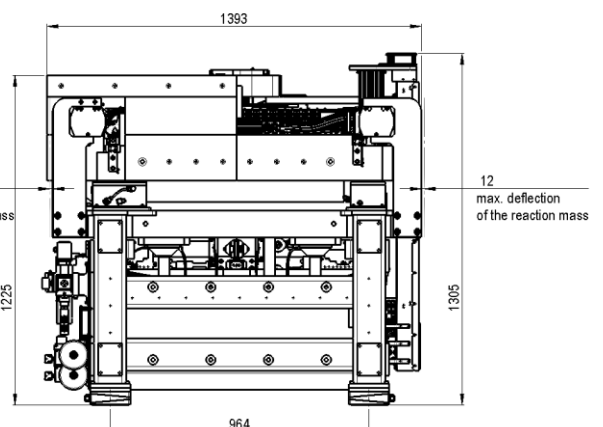
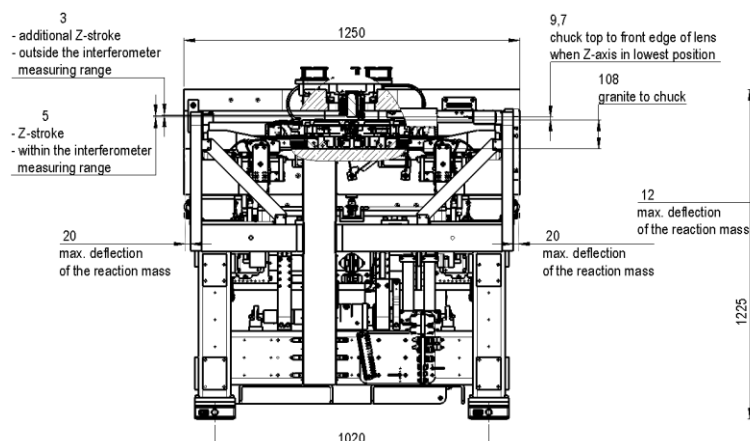
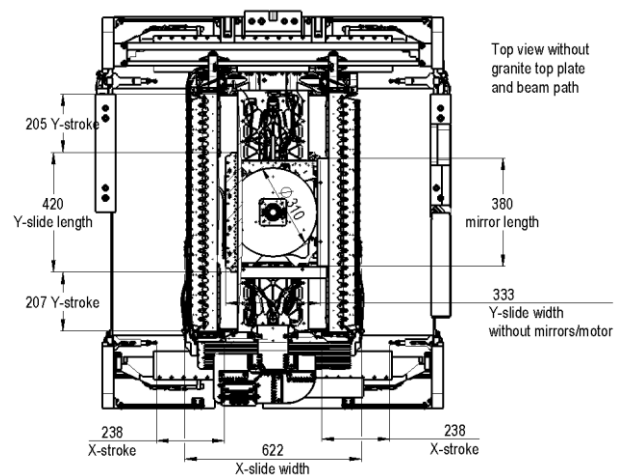
### Applications

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 (3 $\sigma$ )	nm	< $\pm 150$
Accuracy Z	nm	< $\pm 60$
Repeatability X/Y (3 $\sigma$ , bidirectional)	nm	< $\pm 40$
Repeatability Z (bidirectional)	nm	< $\pm 20$
Horizontal Straightness X/Y	$\mu\text{m}$	< 2
Vertical Straightness X/Y	$\mu\text{m}$	< 2
Pitch X/Y	$\mu\text{rad}$	< 10
Roll, Yaw X/Y	$\mu\text{rad}$	< 5
Pitch, Yaw Z	$\mu\text{rad}$	< 3
Max. Speed (X/Y) with 10 kg payload	mm/s	X = 1,600 / Y = 600
Max. Acceleration unloaded (X/Y)	m/s <sup>2</sup>	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 $\mu\text{m}$ signal periode
Interferometer		Value
Type		SP 5000 DI/F
Resolution		5 $\mu\text{m}$
Wave Length / Class	nm	632.8 / 2M
Drive	Unit	Value
Type X/Y (2 drives for X-axis)		3-phase, synchronous, ironless
Intermediate Circuit Voltage	V <sub>DC</sub>	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

Subject to technical modifications and typographical errors.