

## UPL-120 Precision Z Stage

Excellent Accuracy for High Loads



- Travel range 13 mm (1/2")
- Unidirectional repeatability to 0.05  $\mu\text{m}$
- Load capacity to 20 kg
- Integrated optical limit switches
- Available with direct-measuring encoder

### Reference-class Z stage

Extremely accurate and reliable positioning. Crossed roller guides for smooth feed at high loads. Stress-relieved aluminum base for highest stability. Drive variants with DC motor and 2-phase stepper motor. Noncontact limit switches.

### Position measurement

- Integrated rotary encoder on the motor shaft (variants with DC motor).
- Integrated linear encoder. Direct position measurement of the motion platform without influence on the positioning precision by mechanical play or hysteresis in the drivetrain

### Fields of application

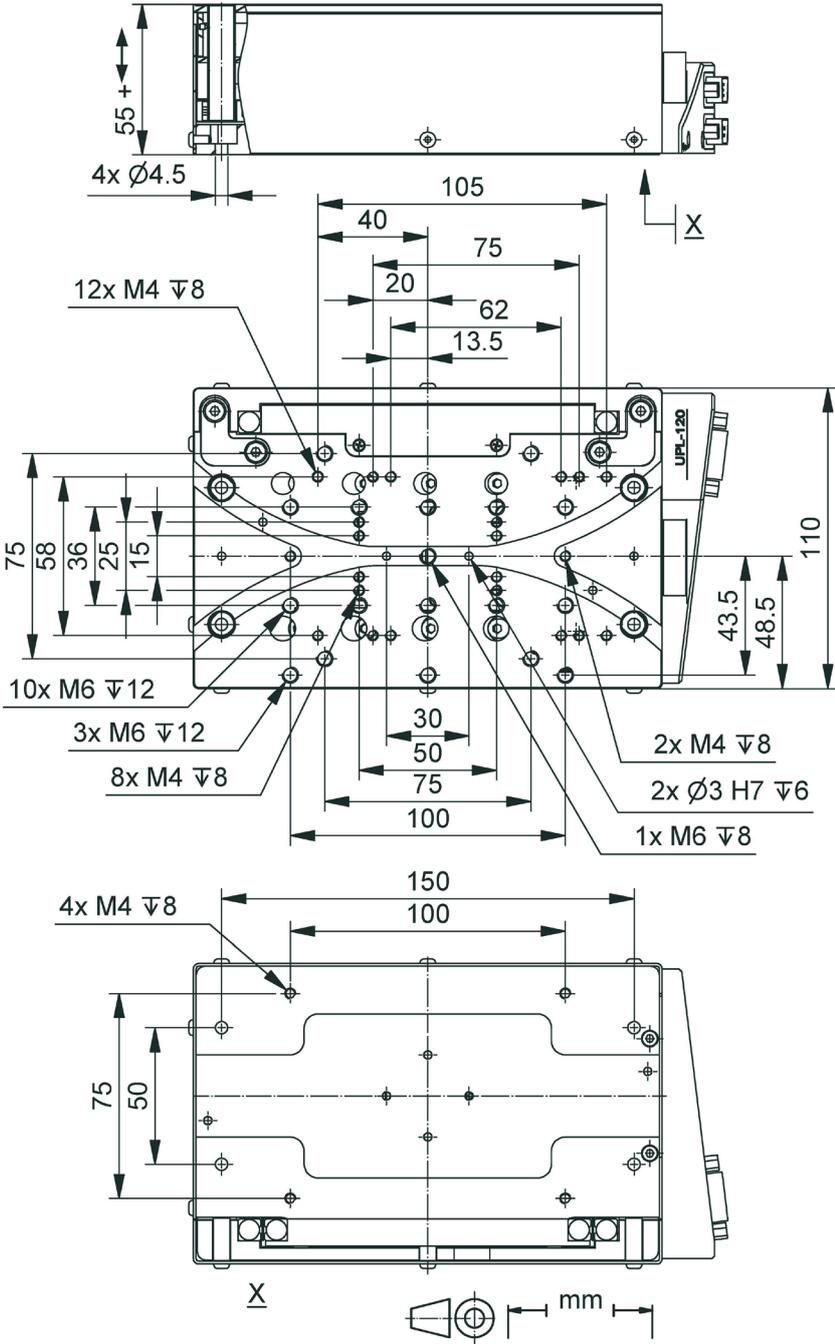
Industry and research, e.g., semiconductor inspection, fiber alignment.

## Specifications

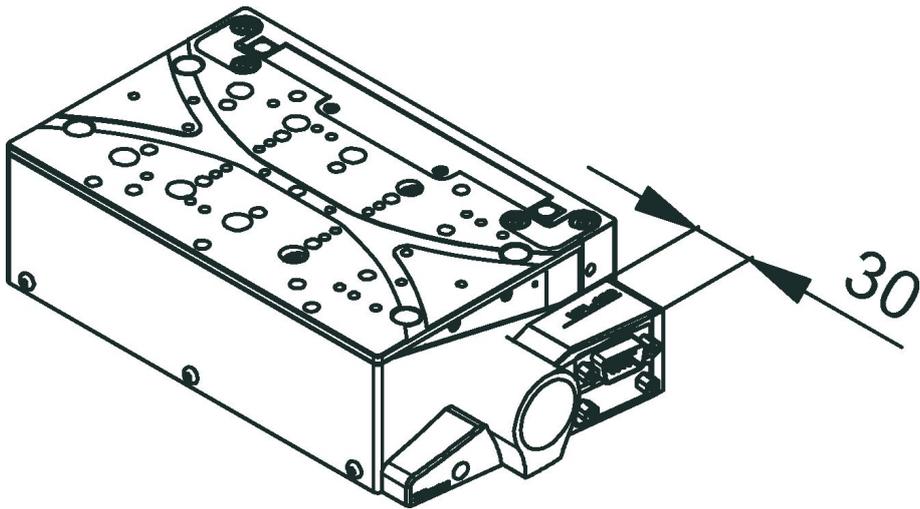
	6635911030	6635921030	66359x1230	Unit	Tolerance
	Z stage with DC motor and rotary encoder	Z stage with stepper motor	Also with linear encoder (direct position measurement)		
Active axes	Z	Z	Z		
<b>Motion and positioning</b>					
Travel range	13	13		mm	
Integrated sensor	Rotary encoder		Linear encoder		
Sensor resolution rotary encoder	5000			Cts./rev.	
Design resolution	0.0134	1.34 (full step)	0.05	µm	typ.
Minimum incremental motion	0.5	0.5	0.1	µm	
Unidirectional repeatability	0.5	0.5	0.1	µm	
Backlash	2	2		µm	
Bidirectional repeatability	3	3	±0.1	µm	
Crosstalk, angular error xry (pitch)	±100	±100		µrad	
Crosstalk, angular error xrz (yaw)	±100	±100		µrad	
Velocity	6	6		mm/s	max.
<b>Mechanical properties</b>					
Load capacity	200	200		N	max.
Holding force	30	60		N	max.
<b>Drive properties</b>					
Motor Type	DC motor	2-phase stepper motor			
Operating voltage	0 to ±12			V	
Motor power	17			W	
Limit switches	Optical	Optical			
<b>Miscellaneous</b>					

Operating temperature range	-20 to 50	-20 to 50		°C	
Material	Aluminum, black anodized	Aluminum, black anodized			
Recommended controllers/drivers	C-863 (one channel)	SMC Hydra (two channel) C-663 (one channel)	SMC Hydra (two channel)		

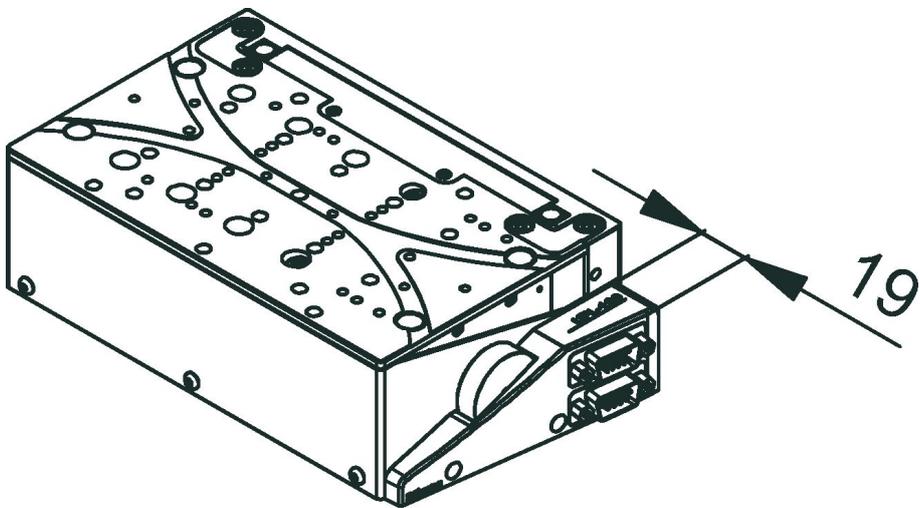
## Drawings and Images



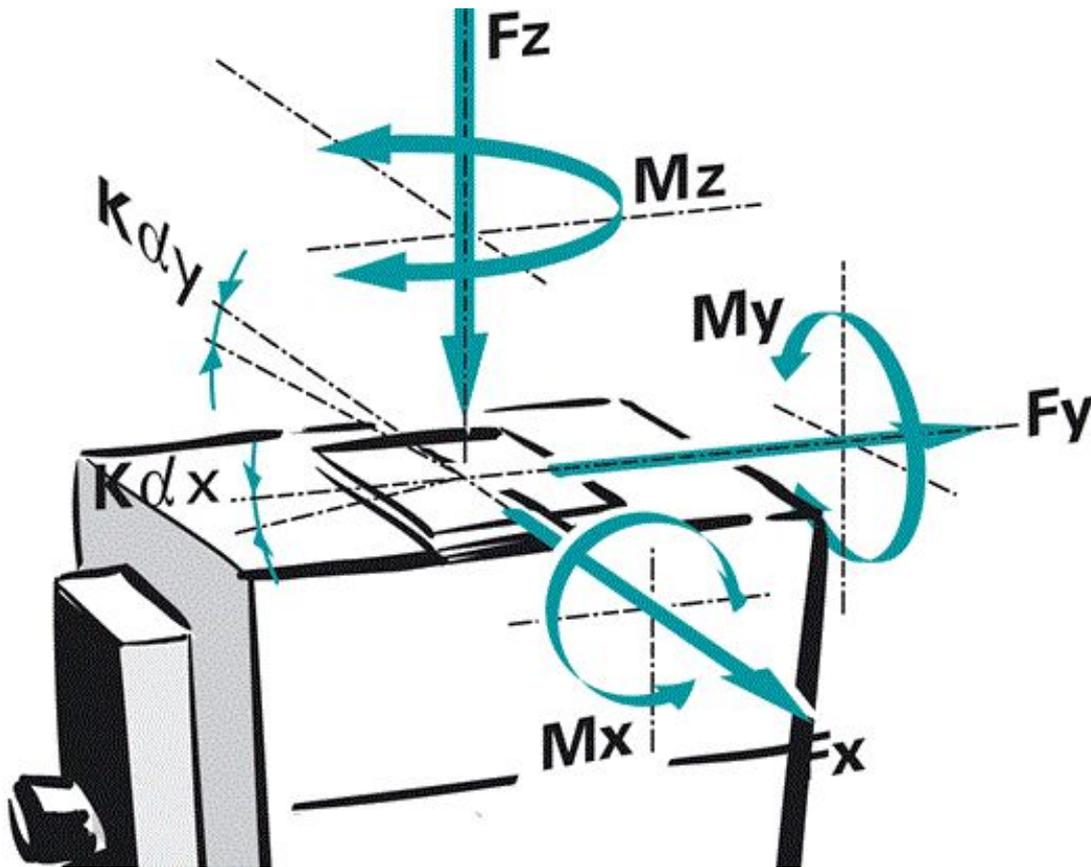
UPL-120, dimensions in mm



*UPL-120, DC motor, dimensions in mm*



*UPL-120, stepper motor, dimensions in mm*



*Direction of the axes and torques for Z stages*

## Ordering Information

### **6635911030**

UPL-120 Precision Z Stage, 120 mm Width, DC Motor, 13 mm Travel Range, 15 kg Load Capacity, Optical Limit Switches

### **6635921030**

UPL-120 Precision Z Stage, 120 mm Width, Stepper Motor, 13 mm Travel Range, 20 kg Load Capacity, Optical Limit Switches

## **Z stages with direct position measurement**

### **6635911130**

UPL-120 Precision Z Stage, 120 mm Width, DC Motor, 13 mm Travel Range, 15 kg Load Capacity, Linear Encoder with A/B Quadrature Signal Transmission, Optical Limit Switches

### **6635921130-0001**

UPL-120 Precision Z Stage, 120 mm Width, Stepper Motor, 13 mm Travel Range, 20 kg Load Capacity, Linear Encoder with Sin/Cos Signal Transmission, Optical Limit Switches

## **For accessories, please specify when ordering**

### **720090000**

Connection Cable for Stages with Stepper Motor, 3 m

### **720190000**

Connection Cable for Stages with DC Motor, 3 m

### **721090000**

Cable Set for Stages with Measuring System, 3 m