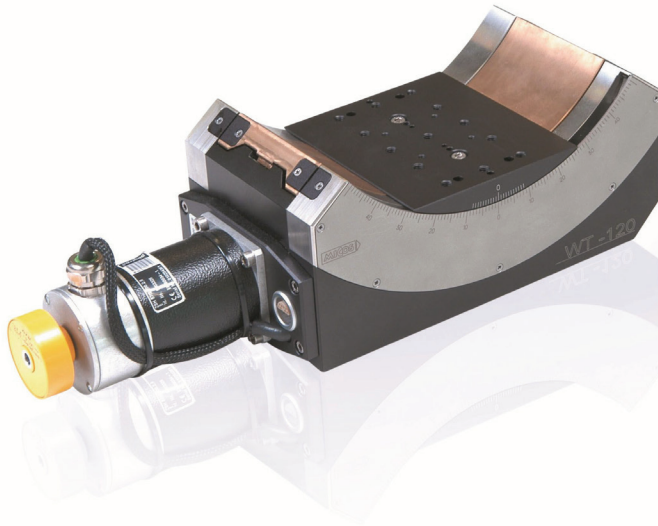


Motorized Precision Goniometer

Long Travel Range, High Loads



WT-120

- Rotation range 90°
- Repeatability to 17.5 μ rad
- Load capacity to 20 kg
- Option: Direct position measurement with angle measuring system
- Combination with WT-90 with shared pivot point

Precision-class goniometer stage

Polished and hardened worm drive with high gear ratio for precision positioning. Two adjustable limit switches. Can be combined with WT-90 for 2-axis motion with shared pivot point.

Versions

- DC servo motor with rotary encoder on the motor shaft
- Stepper motor
- Option: High-resolution optical angle measuring system for direct position measurement
- Vacuum versions available on request

Application fields

Precision microassembly. Metrology. Photonics. Optical alignment.

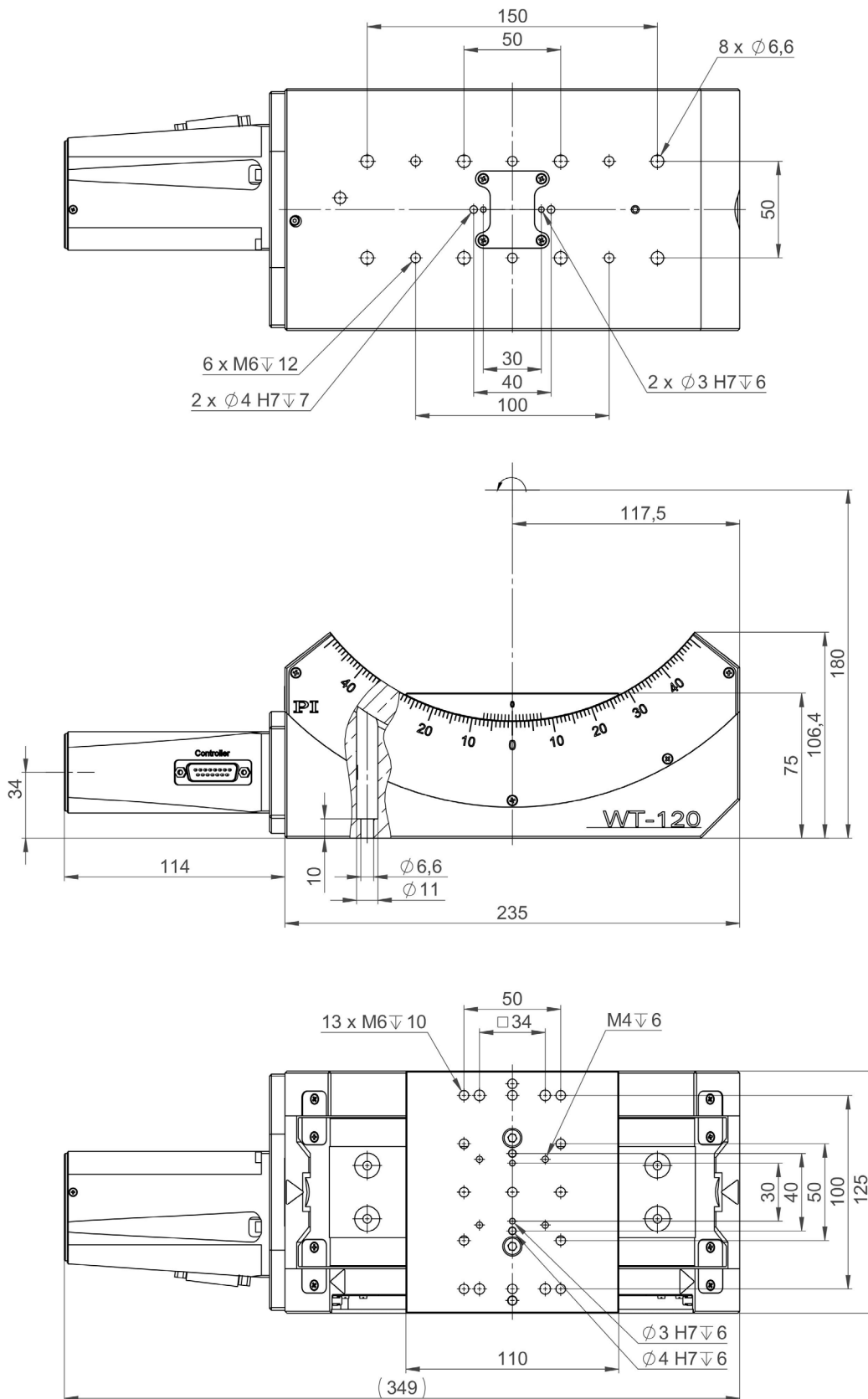
Specifications

	65609110	65609210	65609211	Unit	Tolerance
	With DC motor	With stepper motor	With stepper motor and angle measuring system		
Active axes	θ_x	θ_x	θ_x		
Motion and positioning					
Rotation range	90	90	90	°	
Integrated sensor	Rotary encoder	–	Incremental angle measuring system		
Sensor signal rotary encoder	AB quadrature, RS-422	–	–		
Sensor signal angle measuring system		–	A/B quadrature, RS-422		
Sensor resolution rotary encoder	20000	–	–		
Sensor signal period angle measuring system	–	–	150	μrad	
Design resolution	1.745	174.5	1.5	μrad	
Minimum incremental motion	69.8	69.8	17.5	μrad	typ.
Unidirectional repeatability	87	87	17.5	μrad	typ.
Bidirectional repeatability	± 350	± 350	± 17.5	μrad	typ.
Wobble	± 125	± 125	± 125	μrad	typ.
Angular velocity	30	25	25	°/s	max.
Limit switches	2 × mechanical	2 × mechanical	2 × mechanical		
Gap from rotational axis to surface of the motion platform	105	105	105	mm	
Mechanical properties					
Guide type	Ball bearings	Ball bearings	Ball bearings		
Drive screw type	Worm Gears	Worm Gears	Worm Gears		
Drive screw pitch				mm	
Worm gear ratio	180:1	180:1	180:1		
Torque, power on	8	8	8	N·m	max.
Load capacity	200	200	200	N	max.
Permissible lateral force	90	90	90	N	max.
Permissible torque in θ_y , θ_z	25	25	25	N·m	max.
Drive properties					
Motor type	DC motor	2-phase stepper motor	2-phase stepper motor		
Step resolution	–	200	200	Full steps/rev	

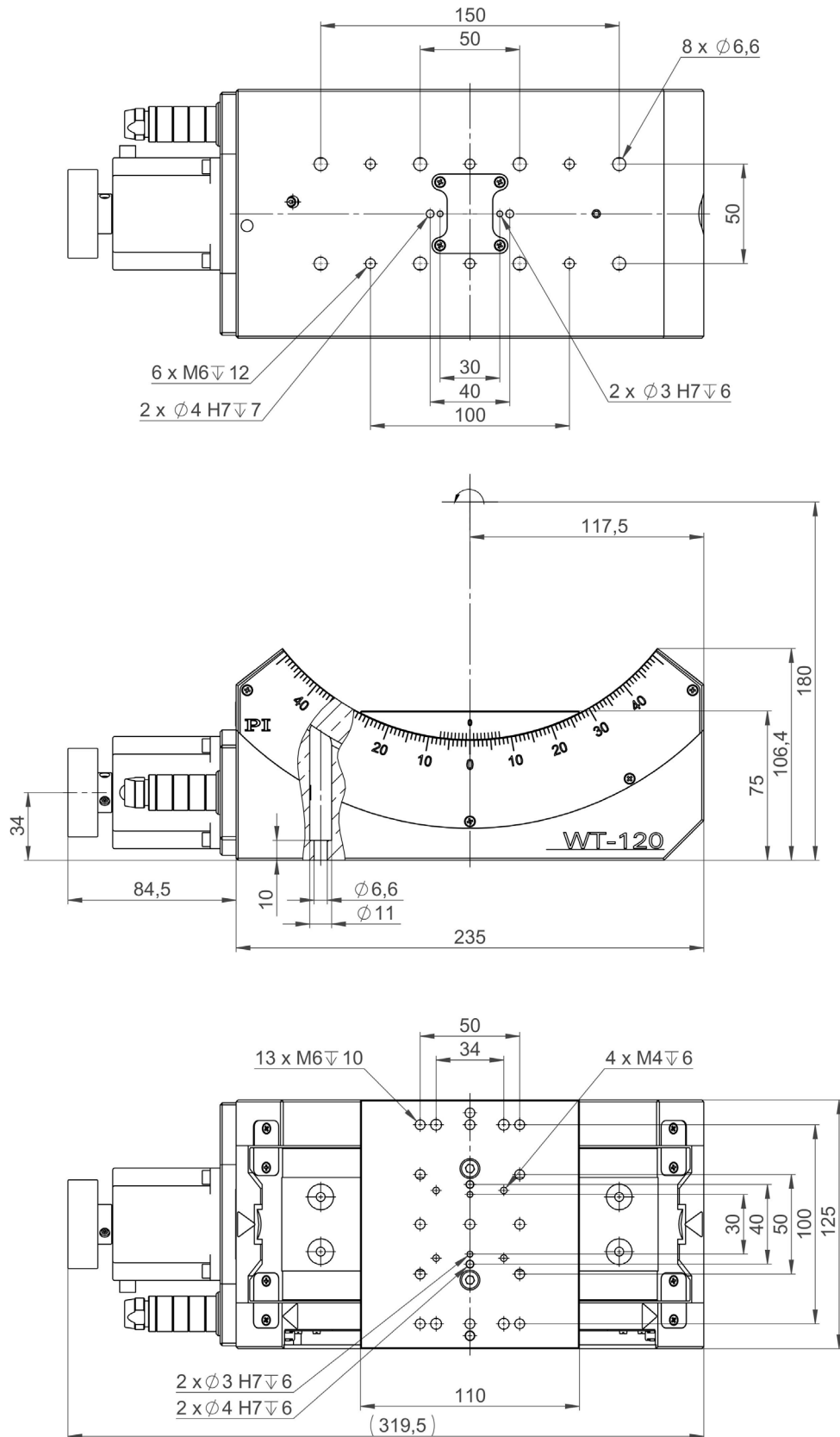
	65609110	65609210	65609211	Unit	Tolerance
Miscellaneous					
Operating temperature range	5 to 40	5 to 40	5 to 40	°C	
Material	Aluminum, black anodized, stainless steel, red bronze	Aluminum, black anodized, stainless steel, red bronze	Aluminum, black anodized, stainless steel, red bronze		
Mass	11.5	11.5	11.5	kg	±5%
Connector	D-sub 15 (m)	LEMO ERA.3S.316 16-pin	LEMO ERA.3S.316 16-pin (motor) D-sub 9 (m) (sensor)		
Recommended controllers/drivers	C-863 (single axis) with C-863.AD12 line driver C-884 (to 6 axes) with C-863.AD12 line driver C-885 with C-863.20C885 (to 40 axes) and C-863.AD12 line driver ACS modular controller	C-663.12 (single axis) SMC Hydra (double axis) C-885 with C-663.12C885 (up to 20 axes) ACS modular controller	C-663.12 (single axis) SMC Hydra (double axis) C-885 with C-663.12C885 (up to 20 axes) ACS modular controller		

Connecting cables for motor and sensor are not in the scope of delivery and must be ordered separately.
Ask about customized versions.

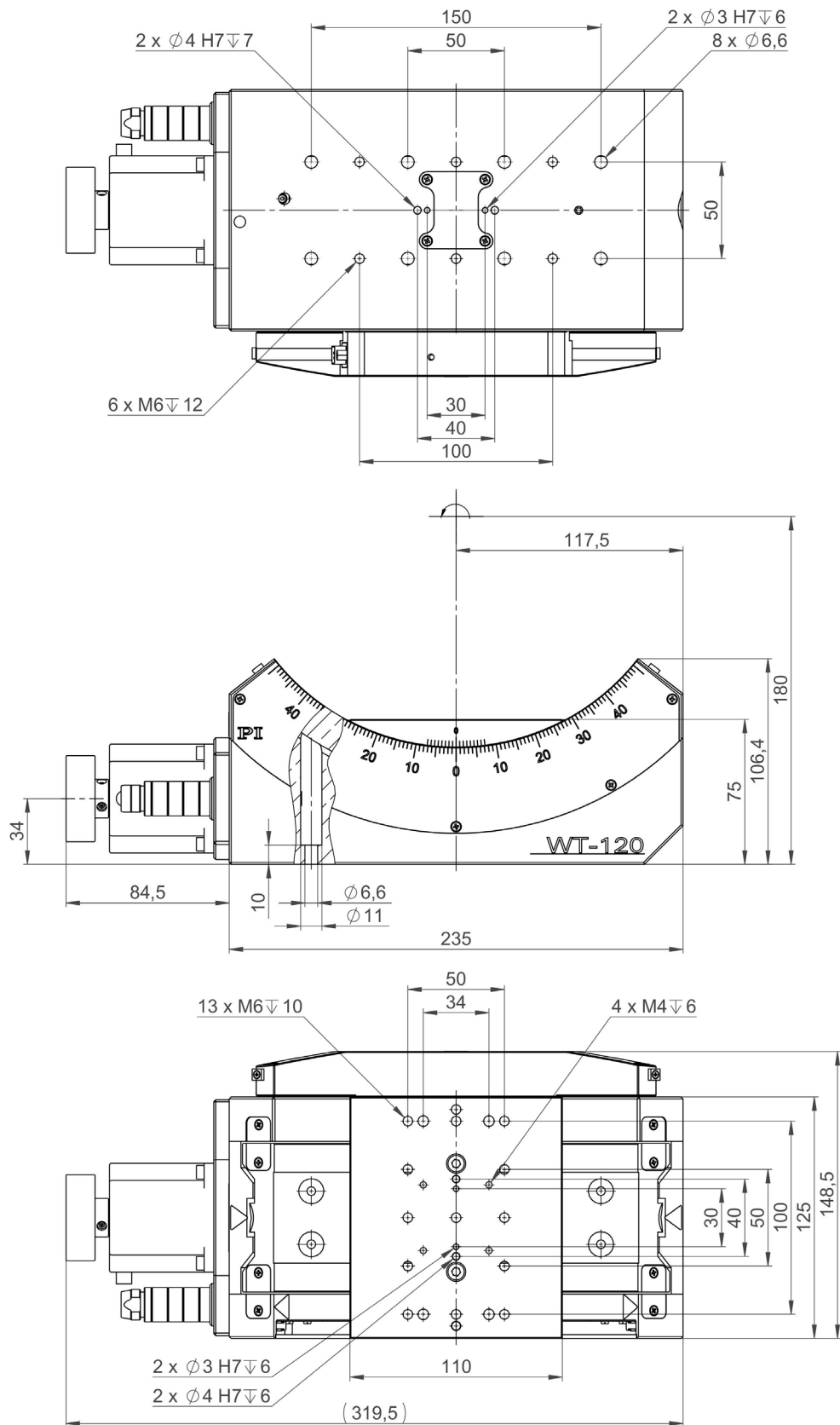
Drawings / Images



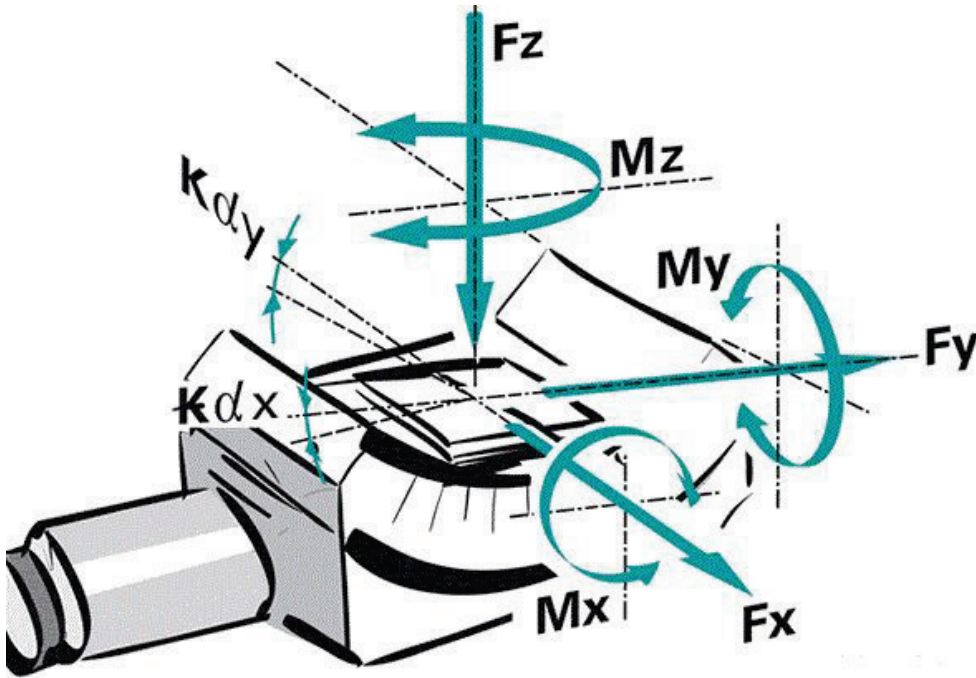
65609110, WT-120 goniometer with DC motor, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.



65609210, WT-120 goniometer with stepper motor, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.



65609211, WT-120 goniometer with stepper motor and incremental angle measuring system, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.



Direction of the axes and torques for goniometer stages

Ordering Information

65609110

WT-120 goniometer stage, 125 mm width, DC motor, $\pm 45^\circ$ rotation range, mechanical limit switches

65609210

WT-120 goniometer stage, 125 mm width, stepper motor, $\pm 45^\circ$ rotation range, mechanical limit switches

65609211

WT-120 goniometer stage, 125 mm width, stepper motor, $\pm 45^\circ$ rotation range, angle measuring system with A/B signal quadrature signal transmission, mechanical limit switches