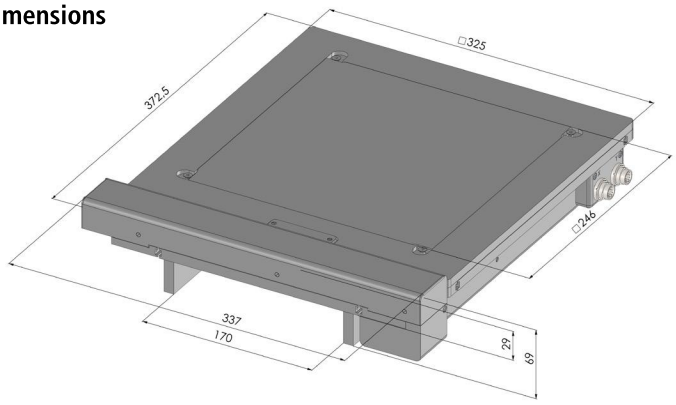
Märzhäuser Wetzlar GmbH & Co. KG
In der Murch 15 | 35579 Wetzlar | Germany
Tel.: +49 6441 9116-0 | Fax: +49 6441 9116-40
info@marzhauser.com | www.marzhauser.com

Scanning Stage SCAN 200 × 200 for Upright Microscopes

Specifications

Travel range	max. 200 × 200 mm
Travel speed	max. 120 mm/s (with 2 mm ball screw pitch) max. 240 mm/s (with 4 mm ball screw pitch)
Repeatability	< 1 µm[1] (bidirectional)
Accuracy	±3 µm[1]
Resolution	0.01 µm (smallest step size)
Orthogonality	< 10 arcsec
Motor type	2-phase stepper motor
Limit switches	continuously adjustable light barriers
Material / surface	aluminium / anodic coating, black lacquered
Weight	approx. 8.9 kg

Dimensions



Order Information

Order No.: 00-24-836-0000 (2 mm)
Order No.: 00-24-837-0000 (4 mm)

Product Features

- flat, ergonomic design with rounded corners
- L-shaped support stages optional available
- **5 years guarantee**, if the scanning stage is operated in the system with the Märzhäuser TANGO controller

Accessories

Metall plate (included in delivery)
Order No.: 00-24-801-0011

Wafer holder
rotatable, for 5", 6" and 8" wafers
Order No.: 00-29-840-8000

Wafer holder
rotatable, for 6", 8" and 12" wafers
Order No.: 00-29-340-8000

Vacuum wafer holder
rotatable, for 6" and 8" wafers
Order No.: 00-29-850-8000

For more products please visit:
www.marzhauser.com

[1] measured according to VDI/DGQ 3441
Specifications valid with TANGO controller only.

Specifications are subject to change without notice.
Issue: September 2017

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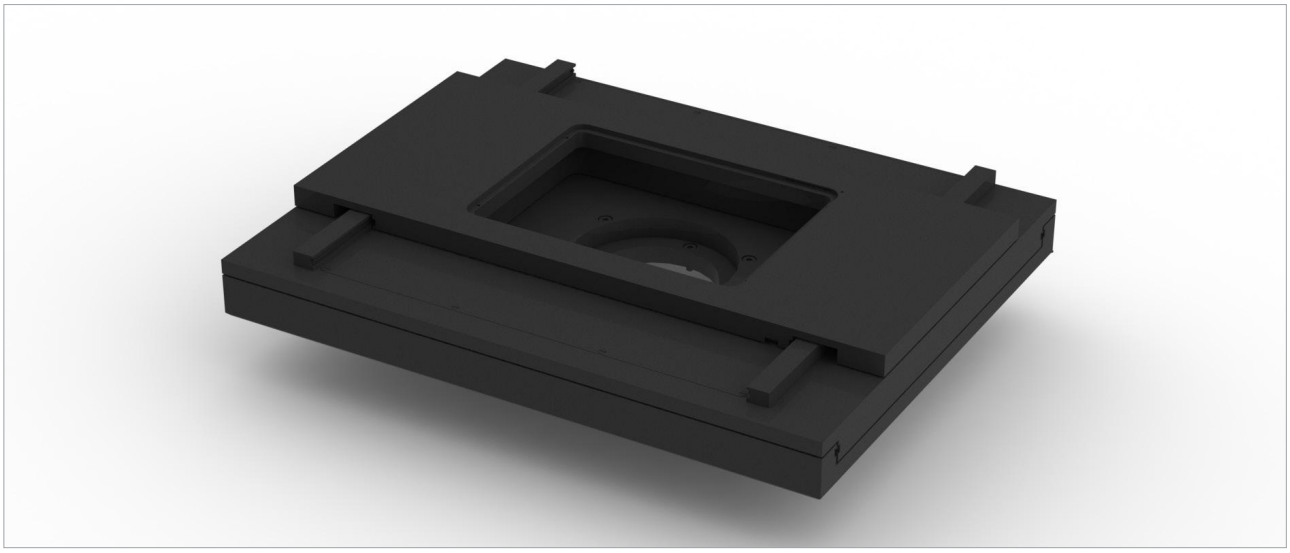
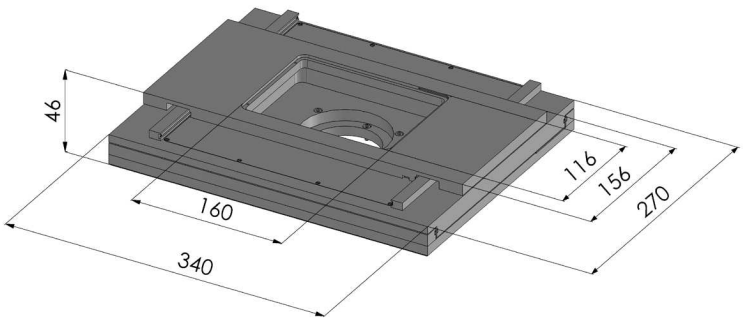


Motorized Microscope Stage S mot i 150 × 100 for Stereo Microscopes

Specifications

Travel range	max. 150 × 100 mm
Travel speed	max. 50 mm/s
Repeatability	< 1 µm[1] (bidirectional)
Accuracy	±3 µm[1]
Resolution	0.05 µm (smallest step size)
Orthogonality	< 10 arcsec
Motor type	2-phase stepper motor
Limit switches	wear-free Hall sensors
Material / surface	aluminium / anodic coating, CERASIST® lacquer
Load	5 kg
Weight	approx. 7.5 kg

Dimensions



Order Information

Order No.: 45-24-610-0000

Product Features

- for material applications
- suitable for samples weighing up to 5 kg
- integrated controller TANGO integrale
- flat, ergonomic design
- plain surface for easy cleaning
- CERASIST® surface, free of wear

Accessories

Glass plate 160 × 116 × 3 mm
(included in delivery)
Order No.: 00-24-427-0810

Metal plate 160 × 116 × 3 mm
Order No.: 00-24-427-0011

2-axes joystick digital
Order No.: 00-76-200-1820

For more accessories please visit:
www.marzhauser.com

[1] measured according to VDI/DGQ 3441
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Issue: March 2018

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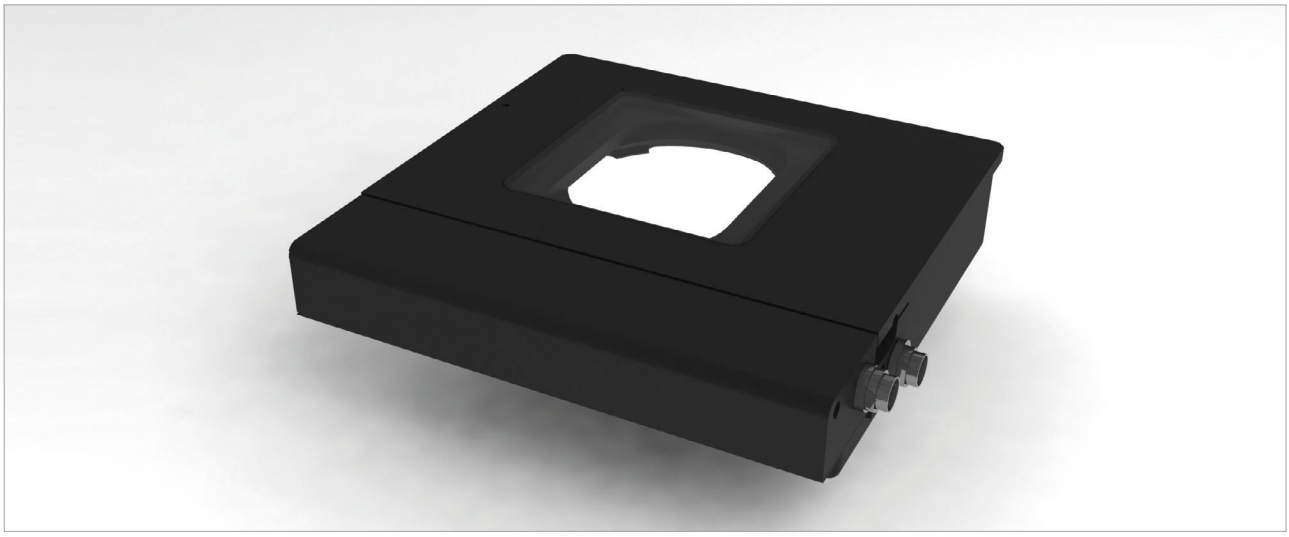
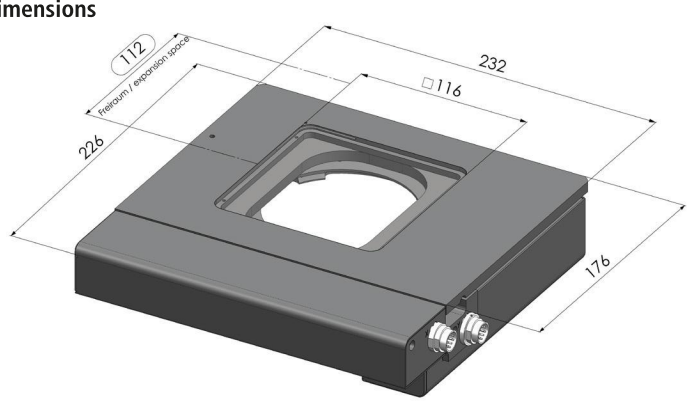


Scanning Stage SCAN 75 × 50 for Upright Microscopes

Specifications

Travel range	max. 75 × 50 mm
Travel speed	max. 25 mm/s (with 1 mm lead screw pitch) max. 50 mm/s (with 2 mm lead screw pitch)
Repeatability	< 1 µm (bidirectional) [1]
Accuracy	±3 µm [1]
Resolution	0.01 µm (smallest step size)
Orthogonality	≤ 5 arcsec
Motor type	2-phase stepper motor
Limit switches	light barriers
Stage opening	116 × 116 mm
Material / surface	aluminium / anodic coating, black lacquered
Weight	approx. 2.6 kg

Dimensions



Order Information

Order No.: 00-24-561-0000
(1 mm lead screw pitch)

Order No.: 00-24-562-0000
(2 mm lead screw pitch)

Product Features

- flat, ergonomic design with rounded corners
- plain surface for easy cleaning
- exchangeable stage inserts for different kinds of applications
- motor cable connection front right
- integrated electronic stage identification device ETS for automatic identification of the scanning stage and parametrization of the controller
- **5 years guarantee**, if the scanning stage is operated in the system with the Märzhäuser TANGO controller

Accessories

Glass plate (included in delivery)
Order No.: 00-24-401-0810

Stage insert for 1 slide 76 × 26 mm (3" × 1")
Order No.: 00-29-401-8010

For more accessories please visit:
www.marzhauser.com

[1] measured according to VDI/DGQ 3441
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Issue: March 2022

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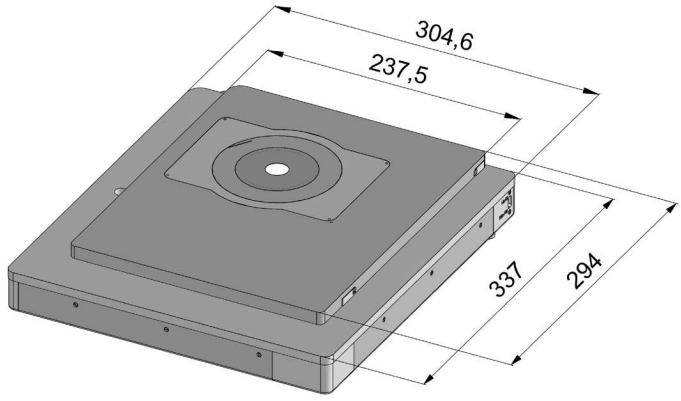
Tel.: +49 6441 9116-0 | Fax: +49 6441 9116-40
info@marzhauser.com | www.marzhauser.com

Stage insert not included in delivery

Scanning Stage SCAN IM 100 × 100 for Nikon Eclipse MA200

Specifications

Travel range	100 × 100 mm or 48 × 48 mm [1]
Travel speed	max. 120 mm/s
Ball screw pitch	2 mm
Repeatability	< 1 µm (bidirectional) [2]
Accuracy	±3 µm [2]
Resolution	0.01 µm (smallest step size)
Orthogonality	≤ 5 arcsec
Motor type	2-phase stepper motor
Limit switches	wear-free Hall sensors
Material / surface	aluminium / anodic coating, black lacquered
Weight	approx. 6.7 kg



Order Information

Order No.: 00-24-595-0000

Product Features

- for material applications
- flat, ergonomic design
- compatible with NIS-Elements in connection with the TANGO controller
- compatible with original Nikon specimen holders Ø 108 mm
- integrated electronic stage identification device ETS for automatic identification of the scanning stage and parametrization of the controller
- **5 years guarantee**, if the scanning stage is operated in the system with the Märzhäuser TANGO controller

Accessories

Stage insert 160 × 110 × 3 mm (suitable for Nikon specimen holders Ø 108 mm), Order No.: 00-24-595-0013

Stage inlays with inner diameter
Ø 30 mm, Order No.: 00-0029-0595-2010
Ø 40 mm, Order No.: 00-0029-0595-2020
Ø 60 mm, Order No.: 00-0029-0595-2030

For more accessories please visit:
www.marzhauser.com

[1] travel range limitable via switch
[2] measured according to VDI/DGQ 3441
Specifications valid with TANGO controllers only.

Specifications are subject to change without notice.
Issue: April 2018

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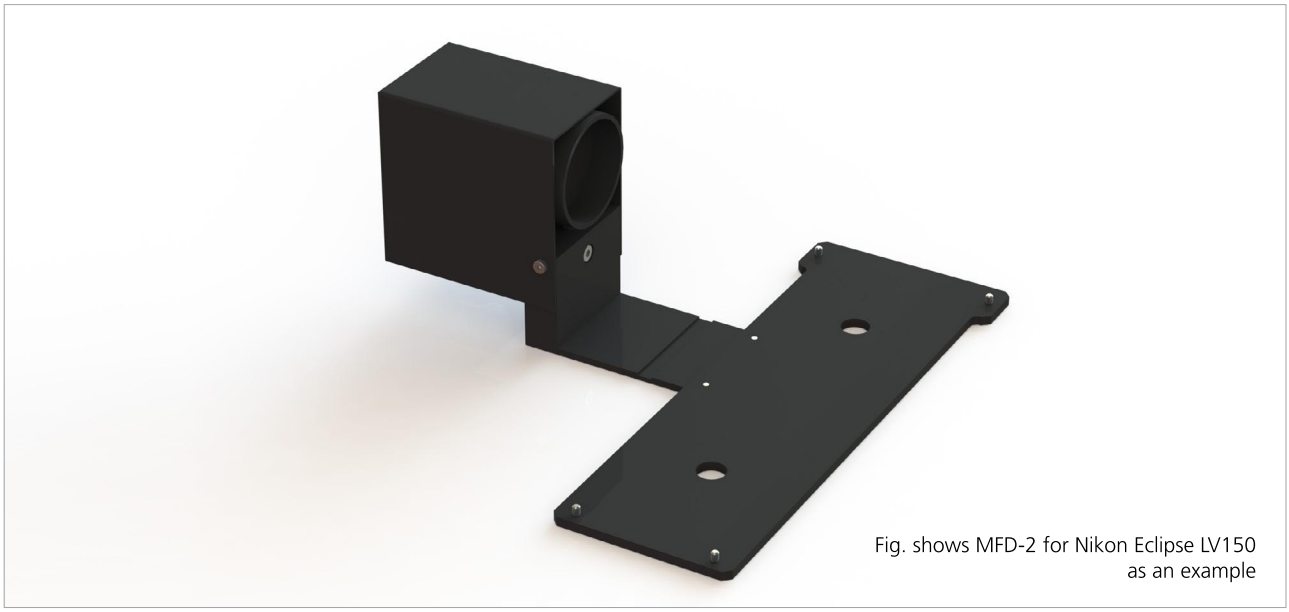

Fig. shows MFD-2 for Nikon Eclipse LV150 as an example

Motorized Focus Drive MFD-2

for Supplementary Motorization of the Z-Axis of Nikon Microscopes

Specifications

Resolution	typical 0.002 µm, depends on the gear ratio of the microscope's fine focus
Motor	2-phase stepper motor
Max. revolutions	60 rev/s
Material	aluminium
Surface	anodic coating, black lacquered
Weight / dimensions	Design, dimensions and weight vary in accordance with the microscope the MFD-2 is used on.

Dimensions

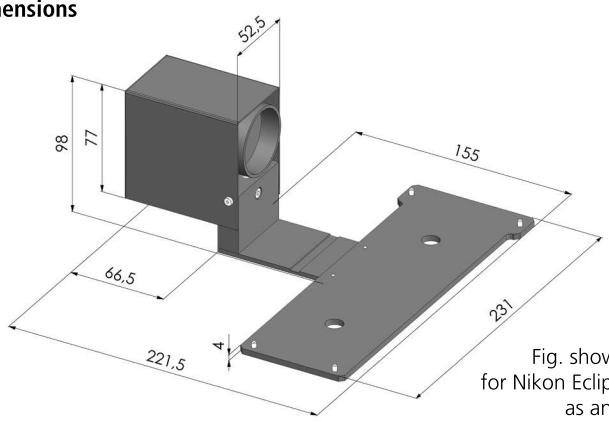

Fig. shows MFD-2 for Nikon Eclipse LV150 as an example

Order Information

MFD-2 for	Order No.
Eclipse MA100, MA100L	45-54-600-0000
Eclipse MA200	45-54-601-0000
Eclipse LV150	45-54-602-0000
Eclipse L200, L300 (left)	45-54-603-0000
Eclipse L200, L300 (right)	45-54-604-0000
Eclipse LV100N/ND, LV150N	45-54-605-0000
Eclipse LV-IM	45-54-607-0000
Eclipse LV100D/DA-U, LV150A	45-54-608-0000
Eclipse MA100N	45-54-609-0000

Product Features

- avoidance of slippage or step loss by rigid connection to the shaft of the fine focus drive
- stable attachment to the base plate of the microscope

Accessories

The MFD-2 can be operated with any Märzhäuser stepper motor controller in conjuction with operating device ERGODRIVE or joystick.

For more accessories for microscopy please visit: www.marzhauser.com

Specifications valid with TANGO controllers only.

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Issue: February 2018

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TANGO Desktop

The High Resolution Stepper Motor Controller Inside of a Desktop Housing.

Product Features

TANGO Desktop is the ready-to-be-plugged-in desktop version of the TANGO product family. The modular design allows for a tailored configuration of the controller. In the maximum configuration, up to four stepper motors can be connected. The positioning is done through programming or via manual operating device. Digital and analogue inputs/outputs provide numerous additional functions.

Control of up to 4 axes

- different model types available for operation of 1–4 axes
- optional module POS3 provides 3 additional auxiliary axes
- sensitive manual operation via Joystick or ERGODRIVE

Maximum torque, even at high speed

- 48 V motor voltage, up to 4,200 rpm
- phase currents of up to 2.5 A

High position resolution

- 819,200 microsteps/revolution
- exact positioning within sub-µm range
- smooth running of motors

Energy-efficient ecological design

- lower power dissipation, resulting in decreased caloric development and lower power consumption
- no fan required

Software support for easy integration

- „Microsoft Authenticode Certificated Driver", compatible to all Windows operating systems including Windows 10 (32/64 bit)
- compatible with native instruction set of TANGO product family
- programming by means of DLL, LabView VI and software „SwitchBoard"

Order Information

TANGO 1 Desktop[1]	00-76-150-1801
TANGO 2 Desktop[2]	00-76-150-1802
TANGO 3 Desktop[3]	00-76-150-1803
TANGO 4 Desktop[4]	00-76-150-1804

Options

AUX I/O	on request
Encoder interface	on request
POS3	on request
Snapshot/trigger[5]	00-76-801-5800

Accessories

1-Axis Joystick	00-76-100-0823
2-Axes Joystick	00-76-200-0820
3-Axes Joystick	00-76-300-0820
3-Axes Joystick[6]	00-76-300-0821
4-Axes Joystick[6]	00-76-400-0820
ERGODRIVE 2[2]	00-27-322-1600
ERGODRIVE 3[3]	00-27-322-1500
PROFILER SCD CL	00-76-900-4840
Motor cable Z-axis[7]	00-76-102-9803
Motor cables XY-axes[7]	00-76-202-0808
Motor cables XYZ-axes[7]	00-76-302-0809
Motor cable 4th axis[7]	00-76-402-0810

For more accessories please visit:
www.marzhauser.com

[1] for 1 axis
[2] for 2 axes
[3] for 3 axes
[4] for 4 axes
[5] activation code needed
[6] with multi-function wheel
[7] cable length: 2 m

Issue: May 2017

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In der Murch 15 | 35579 Wetzlar | Germany
Tel.: +49 6441 9116-0 | Fax: +49 6441 9116-40
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Motor Output Stage

Number of axes	1 to 4
Supported motor types	stepper motors 2 or 4 phases, individual adaption to various motor types
Step resolution	4,096 micro-steps/macro-step, 819,200 micro-steps/revolution (with 200-step motor)
Phase current	axis 1 to 3: max. 1.25 A or 2.5 A (selectable) axis 4: max. 1.0 A
Motor current setting	motor current adjustment control from 0.03 A to max. phase current, adjustable via software, motor phase correction, short-circuit-proof outputs
Motor current reduction during standstill	0...100 % of motor current setting
Power supply	100...240 V AC standard: int. 48 V power supply, optional: int. 24 V power supply, ext. 24 V or 48 V power supply

Positioning

Positioning modes	distance and vector positioning, positioning by setting speed and direction, simultaneous positioning of vectors and single axes, manual positioning, endless rotation
Speed range	0.000001...70 rps (each axis individually)
Acceleration	0.0001...20 m/s², linear or sin² (each axis individually)
Travel range	depending on motor and spindle pitch (e.g. max. ±2.6 m with 200-step motor and 1 mm spindle pitch)
Instruction set	TANGO native (more than 180 instructions), Venus-1, Venus-2, others on request
Processing speed	up to 250 vectors/s (depending on PC model and software)

Interfaces and Functions

Communication	RS-232 (up to 115,200 baud) and USB 2.0, CAN bus (prepared)
Encoder interface (optional)	connection of incremental length and angle measuring systems type nanoScale[1], 1Vpp or RS-422 (selectable via software) for precise positioning in closed-loop operation, analog resolution: 16 bit, max. frequency with RS-422: 30 MHz
Operating devices (optional)	Joystick, ERGODRIVE (automatic identification of all operating devices)
Additional inputs/outputs (AUX I/O, optional)	analog input 0–5 V, analog outputs 0–10 V, TTL I/O, TTL limit switch inputs
Connection of additional peripherals	e.g. LED 100, PROFILER SCD CL, Liquid Dispenser
Input/output functions	save coordinates / move to coordinates, emergency stop, safety shutdown of output stage, fast trigger functions (optional), output of analog voltage, limit switch evaluation, closed-loop positioning (optional)
Other functions	on-board measuring of temperature, position correction with and without measuring system

Ambient Conditions

Ambient temperature	+5 °C...+45 °C
Cooling	convection, no fan required
Humidity	85 % max., non-condensing
Dimensions (L × W × H)	238 × 103.5 × 160 mm (without cables/plugs)
Weight	approx. 2.5 kg (without cables/plugs)

[1] MR/analog 5Vpp

For more technical details please refer to the operating manual which we will gladly provide on request.

Issue: May 2017

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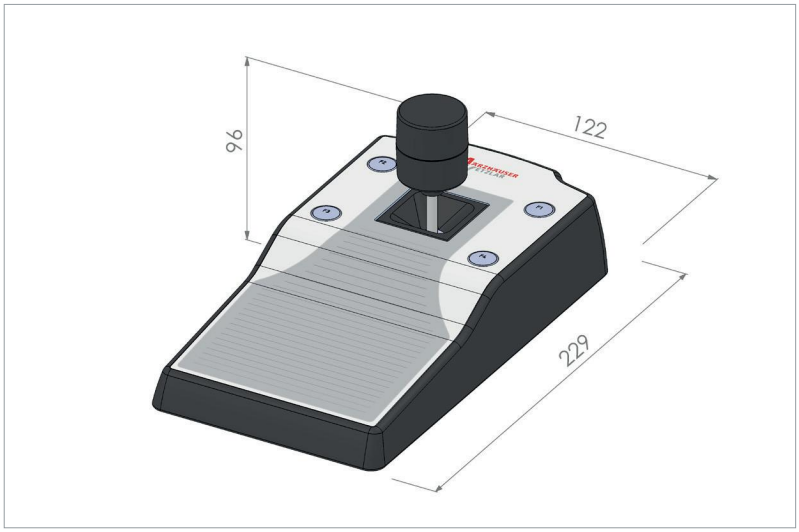
3-Axes Joystick for TANGO Controllers

Specifications	analog	digital
Number of axes	3 (XYZ)	
Interface	HD D-Sub 15-pin	Mini USB
Compatibility	TANGO Desktop TANGO PCI-E	TANGO Desktop neo TANGO PCI-E neo TANGO 3 mini [1] TANGO integrale [1]
Material/suface	control panel: membrane keyboard housing: ABS-plastic with haptic coating housing bottom: stainless steel	
Dimensions	229 × 122 × 96 mm (L × W × H)	
Weight	approx. 1.0 kg	



Order Information

3-Axes Joystick analog
Order No.: 00-7604-0300-0000

3-Axes Joystick digital
Order No.: 00-7604-1300-0000

Product Features

- sensitive, manual positioning
- various configuration options
- free and precise programming of travel speed
- control of the LED illumination LED 100 possible
- 4 freely programmable function keys (e. g. for position capture, velocity select etc.)
- membrane keyboard with high durability
- soft touch and insensitive haptic coating on the side surfaces
- easy cleaning

For more accessories for microscopy please visit: www.marzhauser.com

TÜVNORD TÜV NORD CERT GmbH DIN EN ISO 9001 tuev-nord.de

[1] compatible with all versions
Specifications valid with TANGO controllers only.

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Issue: May 2025