

# M-311 – M-318 = Z\_V R c A ` d æ Z \_ Z\_ X D e R X V

## Series of Miniature Translation Stages



M-311.00, M-312.00, M-313.00  
miniature translation stage

- **Extremely Compact**
- **All-Stainless-Steel Construction**
- **X, XY and XYZ Versions**
- **Optional PiezoMike for Nanometer Resolution**
- **4 mm Clear Aperture**
- **Linear Ball Bearings**

The M-310 series of translation stages are our smallest micrometer-driven positioners. The carriage is spring pre-loaded against the micrometer tip for elimination of backlash. M-310 series stages are available in one-, two- or three-axis

configurations. The latter consists of a two-axis stage, an angle bracket and a one-axis stage. Please note that an XY unit cannot be separated into two one-axis stages. The vertical stage in the M-313 XYZ assembly supports the load

through the micrometer spindle (not the preload springs) providing excellent stability.

### PiezoMike Option

Versions with PiezoMike drive provide an additional 25 µm fine range for remotely controlled ultra-high resolution (e.g. scanning or tracking). See page 7-86 for further details.

A special version with piezo block NanoActuators is available as product number F-111 (see page 8-22 in the "Photonics" section, for more examples of M-310 series stages in photonics alignment and packaging).

### Notes

See "Accessories", page 7-92 ff. for adapters, brackets, etc.

### Ordering Information

- M-311.00**  
Miniature Translation Stage, 6 mm
  - M-312.00**  
XY Miniature Translation Stage, 6 mm
  - M-313.00**  
XYZ Miniature Translation Stage, 6 mm
  - M-311.80**  
Miniature Translation Stage with PiezoMike Drive, 6 mm
  - M-312.80**  
XY Miniature Translation Stage with PiezoMike Drive, 6 mm
  - M-313.80**  
XYZ Miniature Translation Stage with PiezoMike Drive, 6 mm
- Accessories**
- M-318.20**  
Angle Bracket (F-010 fiber holder → M-313)
  - M-318.30**  
Combination Plate 30 x 30 mm
  - M-318.00**  
Z-axis Mounting Bracket (included in M-313)
  - M-318.40**  
Adapter Plate for Honeycomb Tables, 1" & 25 mm

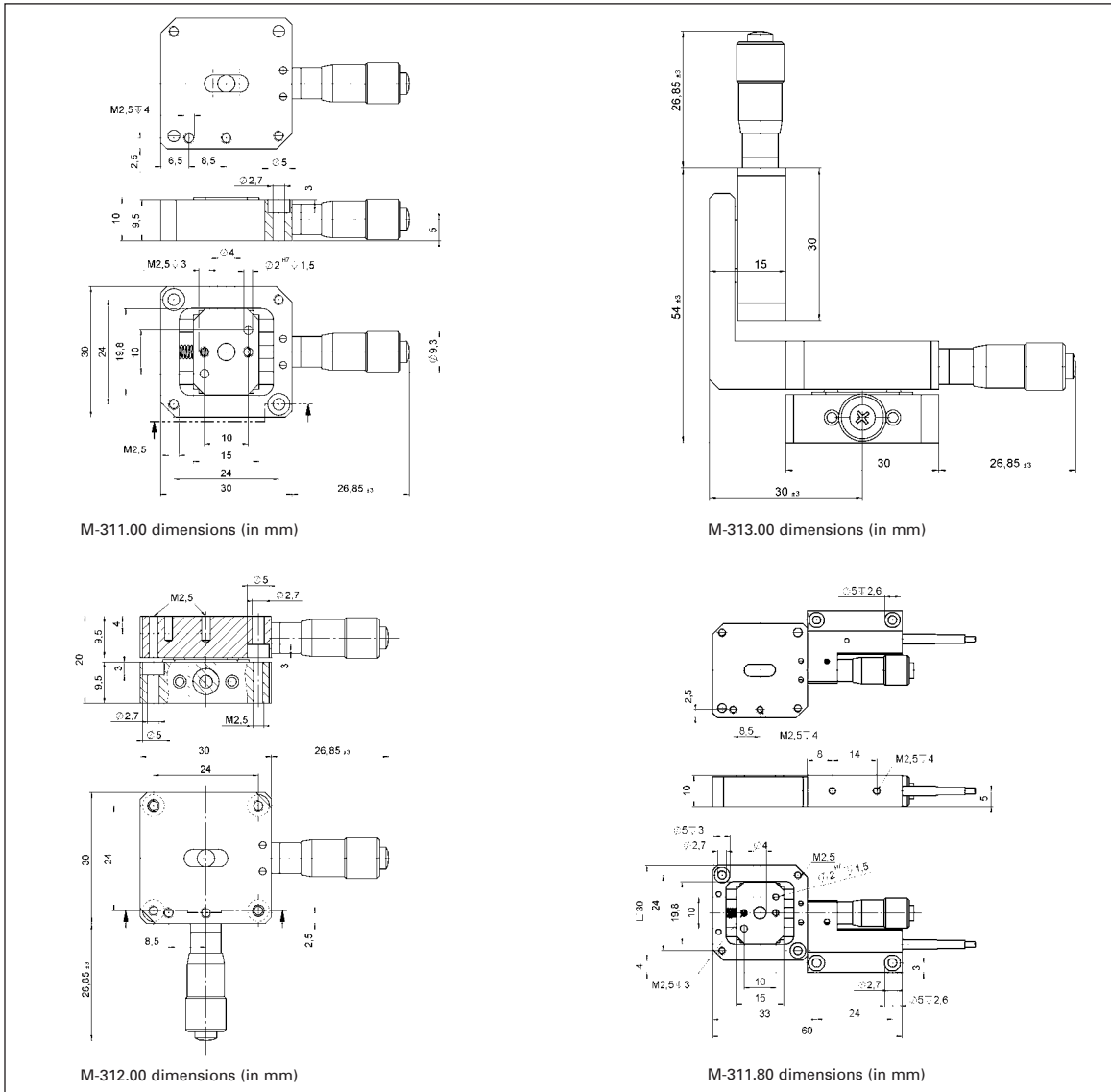
**Ask about custom designs!**



M-313.00 XYZ stage with M-318.20 angle bracket and F-010.00 fiber holder mounted on a pillar pin with M-318.30 adapter plate. See the F-111 on page 8-22 in the Photonics" section, for more examples of M-310 series stages in photonics alignment and packaging.



M-313.80 XYZ stage with P-853 PiezoMikes and optional M-318.20 angle bracket and F-010.00 fiber holder



Piezo Actuators

Nanopositioning &amp; Scanning Systems

Active Optics / Steering Mirrors

Tutorial: Piezo-electrics in Positioning

Capacitive Position Sensors

Piezo Drivers &amp; Nanopositioning Controllers

**Hexapods / Micropositioning**

Photonics Alignment Solutions

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Ceramic Linear Motors &amp; Stages

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### Technical Data

Models	M-311.00	M-311.80	Units	Notes see page 7-106
Travel range	6	6	mm	
Piezo fine travel range	-	25	µm	
Min. incremental motion (piezo drive)	-	0.01	µm	A4
Min. incremental motion (micrometer drive)	1	1	µm	A4
Backlash	2	2	µm	
Straightness	0.4	0.4	µm	
Max. normal load capacity	4	4	kg	B1
Max. push/pull force	20 / 1	20 / 1	N	B2
Drive	M-619	P-853		
Micrometer pitch	0.5	0.5	mm/rev.	
Weight	58	100	g	
Body material	N -S	N -S		L
Recommended piezo driver (codes explained p. 6-11)	-	A, C, G		