

Dynamic Micropositioning Stage

LOW PROFILE, LINEAR ENCODER



M-683

- + Piezoceramic linear drive with excellent dynamics
- + Max. velocity 350 mm/ s
- + Low profile: only 21 mm
- + Travel range 50 mm
- + Encoder resolution 0.1 µm
- + Vacuum- compatible versions available
- + Compact XY combination possible
- + Excellent guiding accuracy due to crossed roller bearings
- + Self- locking, no heat generation at rest, no servo jitter
- + Excellent start / stop dynamics
- + Integrated linear encoder option for highest accuracy

Precision- Class Micropositioning Stage

Integrated piezoceramic direct drive. Vacuum- compatible versions to 10^{-6} hPa are available

PILine® Piezo Ultrasonic Drive

Self- locking, no heat generation at rest. Excellent start / stop dynamics. Crossed roller guides. Non- contact limit and reference point switches

Direct- Metrology Linear Encoder

Excellent linearity and repeatability

Fields of Application

Research and industry

Specifications

	M-683.2U4	Unit	Tolerance
Active axes	X		
Motion and positioning			
Travel range	50	mm	
Integrated sensor	Linear encoder		
Sensor resolution	0.1	µm	
Min. incremental motion	0.3	µm	typ.
Bidirectional repeatability	±1	µm	typ.
Unidirectional repeatability	0.2	µm	typ.
Pitch	±150	µrad	typ.
Yaw	±50	µrad	typ.
Velocity	350	mm/ s	max.
Reference point switch repeatability	±1	µm	typ.
Mechanical properties			
Guiding	Crossed- roller bearings		

Load capacity	50	N	max.
Push / pull force	6	N	max.
Holding force	6	N	max.
Drive properties			
Motor type	PILine® U-164 (dual motor)		
Reference point switch	Optical		
Limit switches	Hall- effect		
Miscellaneous			
Operating temperature range	0 to 50	°C	
Material	Al (black anodized)		
Dimensions	130 mm × 95 mm × 21 mm		
Mass	0.65	kg	±5 %
Cable length	1.5	m	±10 mm
Connector	MDR, 14- pin		
Recommended controller	C-867 PILine® controller incl. driver		

Ask about custom designs!

Order Information

M-683.2U4

PILine® High- Speed Linear Stage, 50 mm, 6 N

M-683.2V4

PILine® High- Speed Linear Stage, 50 mm, 6 N, Vacuum Compatible to 10⁻⁶ hPa

Ask about custom designs!

Controllers / Drivers / Amplifiers

[C-867 PILine® Motion Controller](#)

Related Products

[M-663 Compact Linear Positioning Stage](#)

[M-664 Precision Stage with Linear Piezo Drive](#)

[U-264 RodDrive OEM Piezomotor Direct Drive](#)

[M-122 Precision Micro- Translation Stage](#)

[M-126 High- Resolution Translation Stage](#)

Technology

[PILine® Ultrasonic Piezomotors | Ultrasonic piezomotors dispense with the mechanical complexity of classical rotary motor/ gear/ leadscrew combinations in favor of costs and reliability. Learn more ...](#)

