

ML 17

Miniature Translation Stages for Ultra Low Temperatures with piezo electric inertial drive



Technical Data

Travel:	5 mm
Max. speed:	1.0 mm/s (with controller CU 17 LT)
Electrical connection:	2 solder points
Mass:	25 g

Load characteristics

Max. load	
M_x	3.0 Ncm
M_y, M_z	1.5 Ncm
F_x (blocking force)	1.0 (1.5) N
F_y, F_z	1.0 N

Resolution (calculated)

Single step	
with 22 V (at 4.2 K)	~ 200 nm
with 42 V (at 4.2 K)	~ 500 nm
with 82 V (at 4.2 K)	~ 1 μ m

(with controller CU 17 LT)

Guidance accuracy (without load)

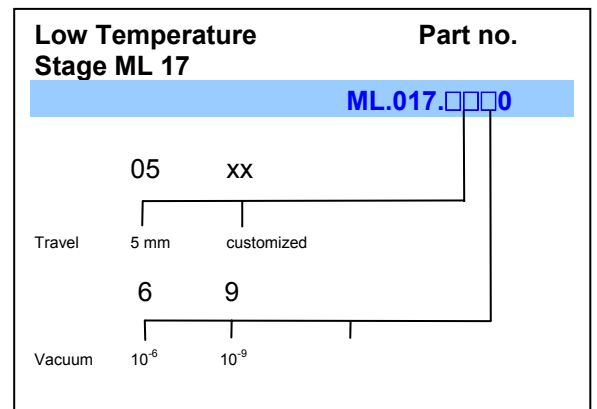
For 5 mm travel:	
Vertical deviation	< 2 μ m
Lateral deviation	< 2 μ m

Specifications

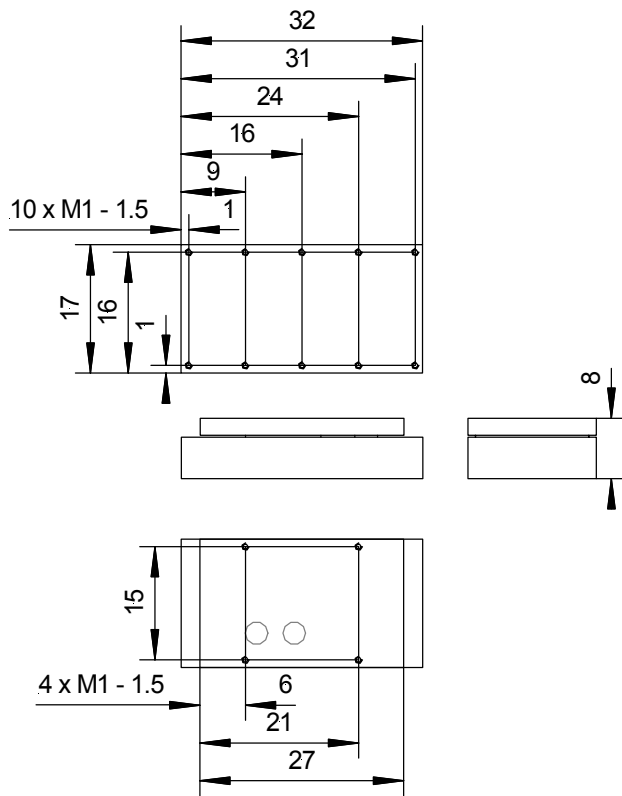
- Piezo driven step motor with low hysteresis
- holds reached position without current
- for use at ultra low temperatures up to 4 K
- step width about 200 nm
- positioning accuracy better than 1 μ m
- velocity up to 1.0 mm/s
- travels up to 5 mm
- xy or xyz combinations possible (L-bracket ML.017.9001 for xyz needed)
- CNC-machined steel body
- precision linear bearings
- no limit switches necessary
- vacuum preparation optionally
- customized designs possible
- driven by USB controller (CU.017.0003)

Application Examples

- Cryo - applications
- Micro-/Nano Technology
- Bio Technology
- Microscopy
- Quality Control
- Metrology
- R & D



Dimensions of the ML 17



xyz – combination of ML 17



CU 17

USB-Controller for Piezo Electric Inertial Drives for low temperature stages ML 17



Technical Data

Power supply: USB-interface

Interface (host): Via USB 1.1

Connections: Stage: 9pin Sub D-connector (female)
PC: USB Type B socket (USB 1.1)

Speed modes: 6 to 63
Sawtooth voltage (0 to 3.1 KHz)
Voltage can be chosen from 22 to 82 V (this gives you the possibility to change the step size and the velocity of the ML 17 stage)

Special feature: Symmetry adjusting for each axis (compensation the load-induced differences in step size in both directions of the movement)

Software for PC
- for DOS, Win 95, Win 2000, Win XP and Win 7:
executable software with action buttons
- for use with own programs:
Borland Delphi 7.0 Unit
DLL for Windows
Wrapper-DLL for LabView etc.

Mass: about 150 g

Dimensions: 118 x 86 x 26 mm (L x W x H)

Delivery includes: USB connecting cable (CK.030.USB0)

Specifications

- Special design for piezo driven inertial motors at low temperatures down to 4 K
- Needs only USB-voltage (only one axis move at the same time)
- Operates up to 3 axes of ML 17 stages
- Plain text ASCII commands for easy integration in your own environment
- Drivers for many operating systems
- Full step operation with variation of the step size and the velocity by changing the output voltage from 22 to 82 Volts
- customized designs possible (interfaces or number of axes)

Application Examples

- Micro-/Nano Technology
- Bio Technology
- Microscopy
- Quality Control
- Metrology
- R & D

