



NanoMove

Translation Stage with Linear Motor for ultra-precise Positioning

The **NanoMove** series is ideal for positioning with less than 100 nm repeatability and high dynamics. Typical examples are the placement of optical and opto-electronic components like VCSEL, laser and diode arrays, the active alignment of fiber optics, planar waveguides and the calibration of sensors. NanoMove is available with travel ranges between 50 mm and 200 mm.

The bodies of the stages are made of **high-strength and stress-free aluminium**. This warrants high mechanical stability over an extended time. The stages have a height of only 40 mm which is of advantage when space is limited.

Multi-axes arrangements are configured without adapter plates. The platform has M6 holes in a 25 mm pattern. The mounting of the load is therefore easy. A friction-free pneumatic counter balance annuls the weight of the platform and load if the stage is mounted vertically. The performance of the stage is not negatively affected.

Rigid crossed-roller bearings provide a perfectly linear movement and high load capability. The bearings are stronger than on comparable competing stages – therefore, all forces and torques are safely mastered. The bearings have a very smooth operation and the runout is less than 1 µm over a 50 mm travel. The 3-phase linear motor generates a constant force resulting in a corresponding movement of the platform. The dynamic behavior is ideal for finest positioning.

A **linear optical sensor** detects the actual position of the platform and serves as the base for ultra-precise positioning with a resolution of 20 nm or less. As the sensor measures the real position of the platform, all errors associated with conventional drive trains are eliminated. The low heat dissipation of the motor does not have an impact on the sensor.

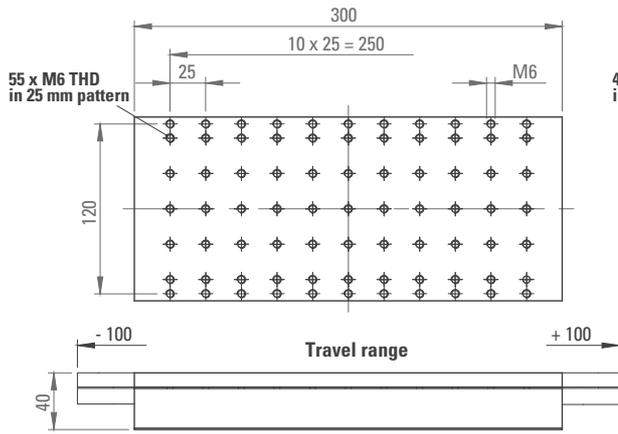
In addition to the linear optical sensor, NanoMove uses hall sensors which detect the phase when the stage gets activated. Without these sensors there is the risk that the platform will move without control for some distance which may impair equipment and parts. Optical limit switches at each end of the travel prevent a hard stop of the platform.

- Low profile
- XY configuration without adapter plates
- Linear motor with excellent dynamics
- Rigid crossed-roller bearings
- Repeatability better than 100 nm
- Position control with linear optical encoder

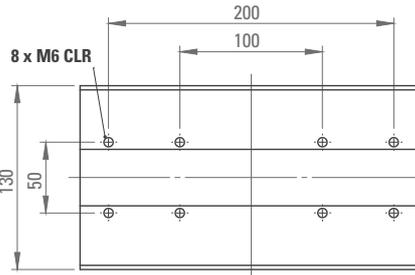
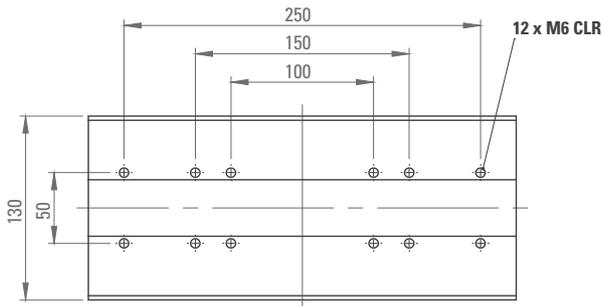
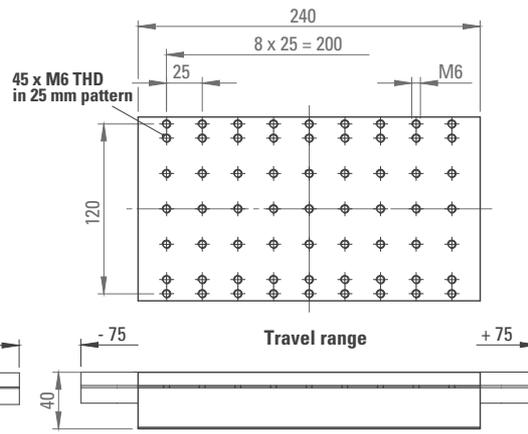
Technical Data

Travel range	50 mm, 100 mm, 150 mm, 200 mm
Velocity	up to 200 mm/s
Resolution	20 nm
Repeatability	< 100 nm
Load capacity	20 kg
Runout	< 1 µm/ 50 mm
Weight	2.8 kg (NanoMove-50) 3.2 kg (NanoMove-100) 3.6 kg (NanoMove-150) 4.0 kg (NanoMove-200)

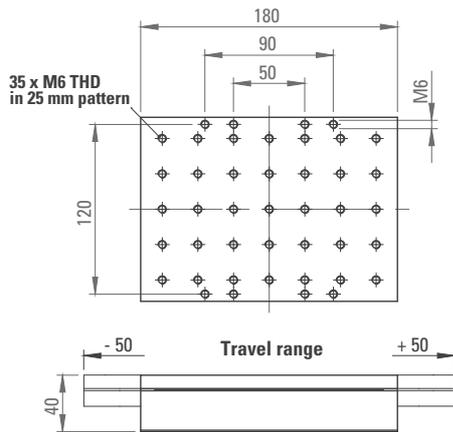
NanoMove-200



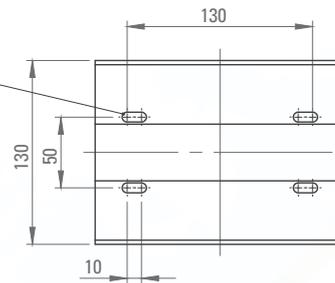
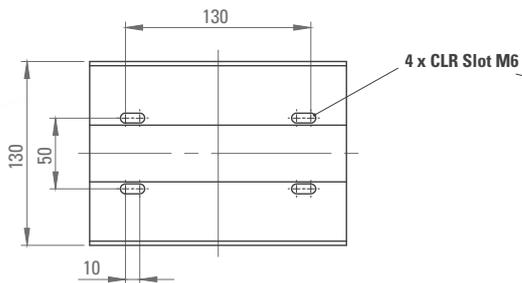
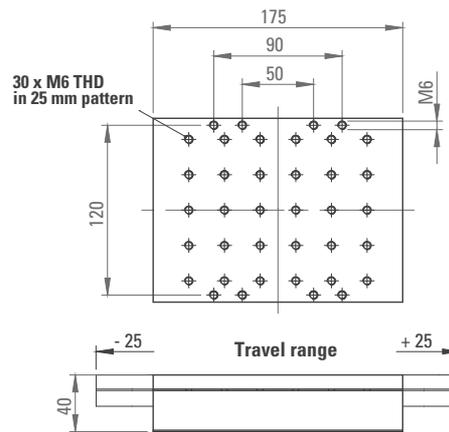
NanoMove-150



NanoMove-100



NanoMove-50



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