



ATLAS

Vertical Stage with DC Motor for ultra precise Positioning

The vertical translation stages of the **ATLAS series** have a position repeatability of 100 nm or better. They operate without any supporting mechanisms or cantilever arrangements. All errors generally associated with these mechanisms are eradicated. Typical applications for ATLAS are the positioning of optical or electrooptical components like VCSEL, laser- and photodiode arrays, active alignment of fiber optics, planar waveguides, calibration of sensors and precision machining. Travel ranges are 25 mm or 40 mm.

The body of the stage is made of **high quality aluminium** with excellent mechanical characteristics. This ensures high mechanical stability for very long times. M6 holes with a 25 mm pattern simplify the mounting of the load on the platform. The platform is accessible from all four sides which is a significant advantage in automated production processes.

Crossed roller bearings of high quality ensure a high resilience and a straight movement. The bearings are amply fit up in order to control forces implicating a tilting moment. The movement of the stage is smooth and free of stick and friction. The runout over the entire travel range of 40 mm is less than 2 µm.

The vertical movement is generated by a **honed lead screw** with a pre-loaded recirculating nut with excellent friction coefficients which result in a smooth and quiet motion at any speed. The lead screw is driven by a DC motor with high torque. Angular ball bearings hold the lead screw in place and control the axial forces.

The **linear optical encoder** is the base for ultra precise positioning. Generally the resolution is interpolated to 20 nm. As the real position of the platform is detected, all errors associated with lead screws, gear boxes and rotation encoders are of no influence. The little heat generated by the motor does not affect the linear scale which is essential for a drift free operation. Optical limit switches are mounted at each end of the travel range preventing an overshoot of the stage.

Combining **ATLAS** with the linear stages of the **NanoMove series** result in precise, compact motion assemblies. The accuracy of

- **Unobstructed access to the platform from all four sides**
- **Precision lead screw with recirculating nut**
- **Robust crossed roller bearings**
- **DC Motor with high torque**
- **Repeatability < 100 nm**
- **Position control with linear optical encoder**

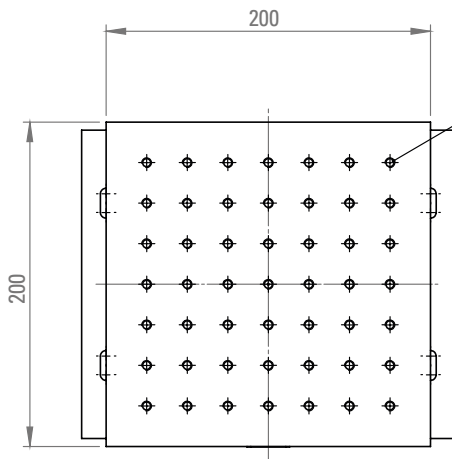
all linear axes is excellent. For angular movement, the **platform VersaPoint** is the ideal choice. It has a common rotational center above the mounting platform which is ideal for mounting optical components exactly in the center of the rotation.

Technical Data

Travel range	25 mm, 40 mm
Velocity	up to 10 mm/s
Resolution	20 nm
Repeatability	100 nm
Load Capacity	5 kg (ATLAS-25) 10 kg (ATLAS-40)
Straightness	2 µm / 40 mm
Weight	4.2 kg (ATLAS-25) 11.8 kg (ATLAS-40)

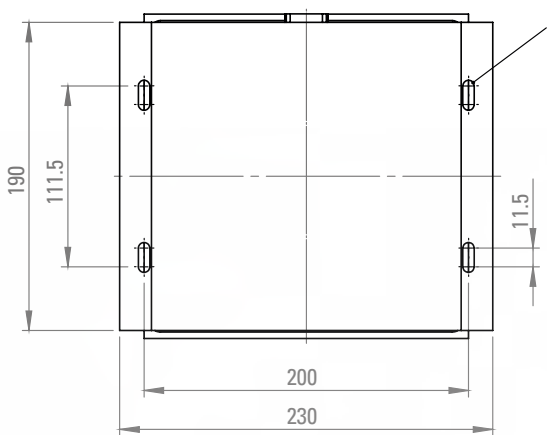
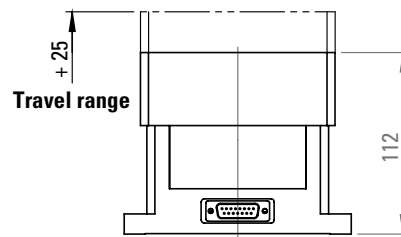
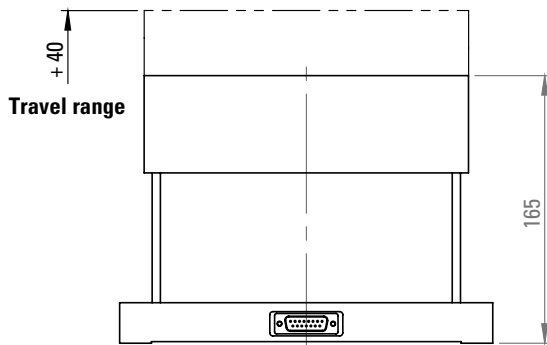
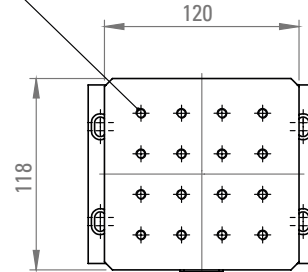
Vertical Stage ATLAS-40

Vertical Stage ATLAS-25

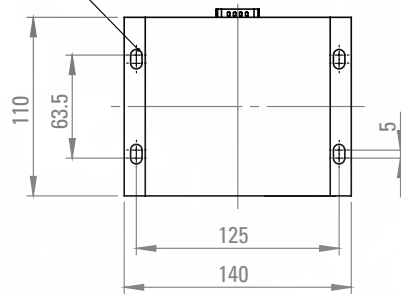


48 x M6
in 25 mm pattern

16 x M6
in 25 mm pattern



M6 CLR Slot



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