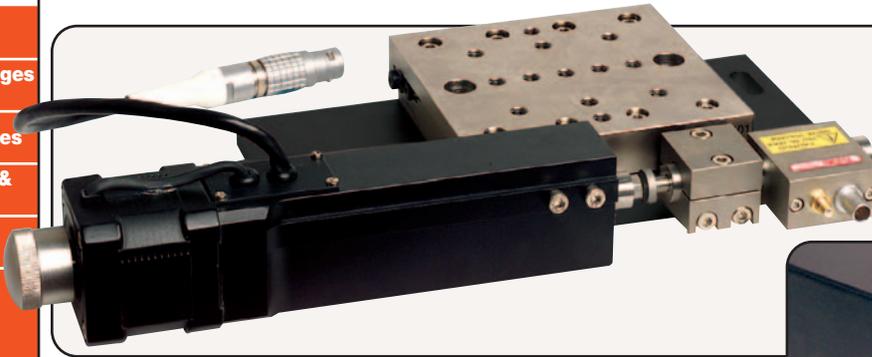
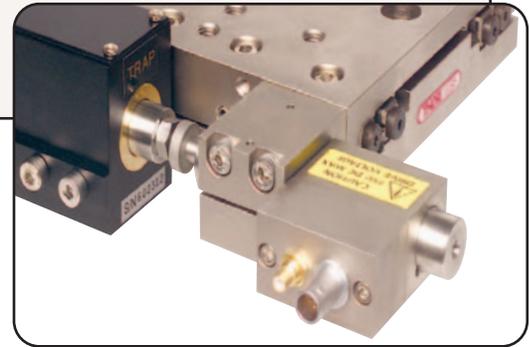


Translation Stages

50mm Travel: Stepper Motor Drive & Piezo Actuator

Rotation Stages
3 Axis Flexure Stages & Accessories
4, 5 & 6-Axis Stages
Drive Electronics & Auto-Alignment
Actuators & Adjusters


Details on the stainless steel stage with the stepper motor drive are presented on the previous two pages.



TravelMax™ Stage with Piezoelectric Option

Combining the DRV014 stepper motor with a piezoelectric actuator, significantly enhances the performance of any high performance motorized stage. The stepper motor provides 4mm/s movement over a 50mm range at 40nm resolution. The piezoelectric actuator provides up to 100µm of range and a resolution of between 20nm - 100nm. This improved resolution and speed is often demanded by many photonic applications. As shown in the order table below, the TravelMax™ stage is offered from stock with six different piezoelectric actuators; 20µm, 40µm, and 100µm travel ranges each available with or without a strain gauge sensor for deterministic control of the

piezoelectric element.

Piezoelectric Actuators

Our piezoelectric actuators are self-contained modules that replace the static pin noted on the LNR50 stage shown in the photograph on page 231. For applications that are susceptible to hysteresis, creep, or thermal drift - present in all piezoelectric transducers - the piezoelectric actuators with built in strain gauges are recommended. The strain gauge is bonded directly to the piezo element and provides a volt signal proportional to the displacement of the piezo. Utilizing a balanced bridge circuit along with this strain gauge, the piezoelectric actuator can be operated utilizing a closed-loop controller to compensate for hysteresis, creep, or thermal drift to provide a positional resolution of 20nm - 100nm. Our APT systems can also self-calibrate to provide highly linear full range scans ±0.5%, versus 15% that is typical of open loop piezo actuators.

Stage & Stepper Motor Specifications¹

- 50mm Travel @ 4mm/sec
- Stepper Motor Actuator, 40nm Minimum Step with 25,600 Microstepper Driver
- Precision Ceramic Tipped Limit Switch for Positive Home Location <0.5µm
- Thermally Matched Stainless Steel Construction for Stability
- Precision Ground Trapezoidal Lead Screw
- Load Capacity > 30kg (66 lbs.) Vertical Load

Piezoelectric Actuator Specifications

- Piezoelectric Element Provides up to 20nm Positional Resolution
- Piezoelectric Actuator Options: 20µm, 40µm, and 100µm Travel
- Piezoelectric Mounted Strain Gauge Option Allows Calibration of Piezo Movement
- Six Piezoelectric Actuator Models Ship from Stock, Other Models Available, Please Call.

¹ All measurements made with our BSC002 stepper motor controller, see page 320 for details.

Auto-Alignment... Fully Compatible

The NanoTrak™ system detailed on page 322 provides a closed loop 2 channel auto-alignment system that is fully compatible with all the stages shown on this page.



TravelMax™ Stage with Stepper Motor Drive & Piezoelectric Actuator

ITEM#	METRIC ITEM#	\$	£	€	¥	DESCRIPTION
LNR50SP20	LNR50SP20/M	\$ 2,973.30	£ 1,699.00	€ 2,427.10	¥ 475,720	50mm TravelMax™ Stage, Stepper Drive & 20µm Piezo
LNR50SP40	LNR50SP40/M	\$ 3,132.50	£ 1,790.00	€ 2,557.10	¥ 501,200	50mm TravelMax™ Stage, Stepper Drive & 40µm Piezo
LNR50SP100	LNR50SP100/M	\$ 3,400.30	£ 1,943.00	€ 2,775.70	¥ 544,040	50mm TravelMax™ Stage, Stepper Drive & 100µm Piezo

TravelMax™ Stage with Stepper Motor Drive & Piezoelectric Actuator with Displacement Sensor

ITEM#	METRIC ITEM#	\$	£	€	¥	DESCRIPTION
LNR50SP20S	LNR50SP20S/M	\$ 3,470.30	£ 1,983.00	€ 2,832.90	¥ 555,240	50mm TravelMax™ Stage, Stepper, 20µm Piezo & Sensor
LNR50SP40S	LNR50SP40S/M	\$ 3,619.00	£ 2,068.00	€ 2,954.30	¥ 579,040	50mm TravelMax™ Stage, Stepper, 40µm Piezo & Sensor
LNR50SP100S	LNR50SP100S/M	\$ 4,119.50	£ 2,354.00	€ 3,362.90	¥ 659,120	50mm TravelMax™ Stage, Stepper, 100µm Piezo & Sensor