TSAxx-C Series Slim Motorized Linear Stages, 30–50 mm Travel, 44 mm Height

Model TSAxx-C Series · waveqvanta.com/products/tsaxx-c-series-slim-motorized-linear-stages

Low-profile crossed-roller linear stages for high-resolution motion where vertical space is limited.



The TSA-C series are slim motorized linear stages with a table height of 30 mm and an overall height of only 44 mm. A ground φ8 × 1 screw, crossed-roller guides and a high-quality shaft coupling deliver high-resolution motion in height-restricted setups. Mechanical limit switches and an origin sensor protect the stage, and the self-locking screw allows the stage to be used as a Z axis.

Key features

- Ground screw with 1 mm lead and standard two-phase 42 stepping motor; 5 µm full step, 0.625 µm at 8 microsteps
- Crossed-roller guides for 10 kg horizontal load capacity
- Slim profile: 30 mm table height, 44 mm overall height
- Self-locking screw supports Z-axis use (5 kg vertical load)
- Mechanical limit switches and origin sensor for safe operation and easy maintenance
- Hand wheel for manual adjustment; standard mounting holes for multi-axis setups

Specifications

Travel Range	30 mm (TSA30-C); 50 mm (TSA50-C)
Table Size	90 × 90 mm (TSA30-C); 90 × 110 mm (TSA50-C)
Table Height / Overall Height	30 mm / 44 mm
Drive	Ground screw, φ8 × 1
Guide	Crossed-roller bearing guides
Body	Black anodized aluminum alloy
Resolution (Full / Half Step)	5 / 2.5 µm
Resolution (8 Microsteps)	0.625 µm
Max Speed	10 mm/s (zero load, motor at 600 rpm)
Repeatability	≤ ±5 µm
Backlash	≤ 7 µm
Motor	Two-phase 42 stepping motor, 1.8°
Motor Current / Holding Torque	1.7 A / 0.42 N·m
Limit / Origin Sensors	2 mechanical limit switches + 1 origin sensor, built-in
Load Capacity (Horizontal / Vertical / Inverted)	10 / 5 / 3 kg

Model overview

Model	Travel (mm)	Table (mm)	Weight (kg)
TSA30-C	30	90 × 90	1.3
TSA50-C	50	90 × 110	1.4

Typical applications

- Positioning in height-restricted spaces

- Compact Z-axis (vertical) adjustment
- Multi-axis stage stacks with low overall height
- Precision sample and optics positioning