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Find the *Newport LTA-HS* at our website: *Click HERE*

LTA Series

Precision Motorized Actuators



- Up to 50 mm travel in a space saving design
- Non-rotating tip improves motion smoothness and has no wear
- Exceptional position sensitivity
- Adjustable limit switch prevents damage from over-travel
- Convenient manual positioning knob

LTA actuators are designed to fit into existing manual stages and other opto-mechanical components as direct replacement for manual micrometers. The LTA series features a space-saving design with the motor and lead screw mounted side-by-side. This reduces the actuator length by 50% and minimizes the unwanted effects of long cantilever loads on micro-positioning equipment. The non-rotating tip prevents wear and avoids periodic motion variations which can be caused by variable contact between a rotating tip and its mating surface.

Precision motion is accomplished through a miniature DC servo motor with optimized output torque. This allows for faster motion and high load capacity. The LTA-HL is recommended for heavy load applications. It features a robust, 8 mm diameter rod and a M12-0.5 mounting bezel that is compatible with the UMR8 and MVN80 linear stages (see page 877 and see page 899). The LTA-HS is optimized for high-speed applications and provides a longer travel range. The mounting interface of the LTA-HS is compatible with a large number of Newport and other manufacturer's manual components.

The LTAPPV6 has been designed specifically for vacuum applications up to 10^{-6}hPa. It is comparable to the design of the LTA-HS, but features a miniature stepper motor instead of a DC servo motor and a gear reducer.

Common to all models is a movable limit switch that prevents over-travel. The switch positions can be changed in minutes to adjust the maximum travel position. A manual adjustment knob permits quick positioning of the actuator when the motor is off. A scale indicates coarse actuator position in both millimeters and inches.

Design Details

Base Material	Stainless steel body
Drive Mechanism	Non-rotating lead screw
Drive Screw Pitch (mm)	1.0
Reduction Gear	LTA-HL, LTAPPV6: 1:66
	LTA-HS: 1:14
Feedback	LTA-HS, LTA-HL: Motor mounted rotary encoder, 2048 cts/rev.
	LTAPPV6: None
Limit Switches	Mechanical switches, both ends, max. travel limit is adjustable
Origin	Uses minimum travel limit for homing, typically <4 µm repeatability
Motor	LTA-HS, LTA-HL: DC servo motor UE1724SR
	LTAPPV6: 2-phase stepper motor UE16PP, 1 full step = 0.631 µm
Cable Length	LTA-HS, LTA-HL: 3 m
	LTAPPV6: 1.5 m white Teflon cable, standard connector
MTBF	10 000 h at 25N load and with a 10% duty cycle
Weight [lb (kg)]	LTA-HS, LTA-HL: 1.1 (0.5)
	LTAPPV6: 0.77 (0.35)

Specifications

	LTA-HS	LTA-HL	LTAPPV6
Travel (mm)	50	25	50
Resolution (µm)	0.035	0.0074	0.00631[1]
Minimum Incremental Motion (µm)	0.1	0.05	0.06
Uni-directional Repeatability (µm)	0.15 typical, 0.5 guaranteed	0.15 typical, 0.5 guaranteed	0.5 guaranteed
Bi-directional Repeatability (µm)[2]	0.6 typical, 2 guaranteed	0.6 typical, 2 guaranteed	2 guaranteed
On-Axis Accuracy (µm)	5 typical, 15 guaranteed	2 typical, 8 guaranteed	15 guaranteed
Maximum Speed (mm/s)	5	1	0.5[4]
Axial Load Capacity (N)	50	120	40
Side Load Capacity[3]	5 N	20 N	5 N

[1] Equals 1/100 of a full step
[2] After backlash compensation
[3] Avoid side loads during motion
[4] 0.2 mm/s when used with SMC100PP

See the Metrology Tutorial Section (see page 775) for more information on typical and guaranteed specifications

Ordering Information

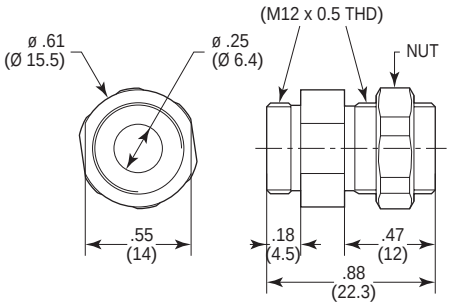
Model	Description
LTA-HS	Motorized actuator, high speed version, 50 mm travel
LTA-HL	Motorized actuator, high load version, 25 mm travel
LTAPPV6	Motorized actuator, like LTA-HS, 0-50 mm travel, vacuum compatible to 10^{-6} hPa, incl. LTA-M12 adapter
LTA-M12	M12-0.5 mounting adapter for LTA-HS to URM8, MVN80 and SL products

Recommended Motion Controllers/Drivers:

XPS (see page 844)	
ESP300 (see page 849)	
SMC100CC (see page 851)	LTA-HS and LTA-HL only
SMC100PP (see page 851)	LTAPPV6 only

Dimensions

Model LTA-M12



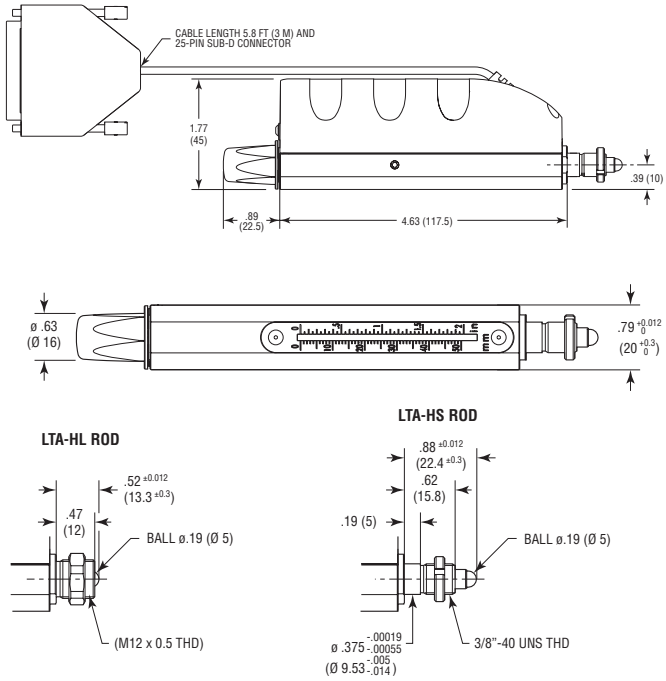


LTAPPV6 vacuum compatible actuator.



The LTA Series actuator is compatible with most standard Newport manual stages and opto-mechanical components like the 426 Series translation stage.

Model LTA-HS



CAD *See our website for CAD files*

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