

ATS0300 Series

Mechanical Bearing Screw-Driven Linear Stage

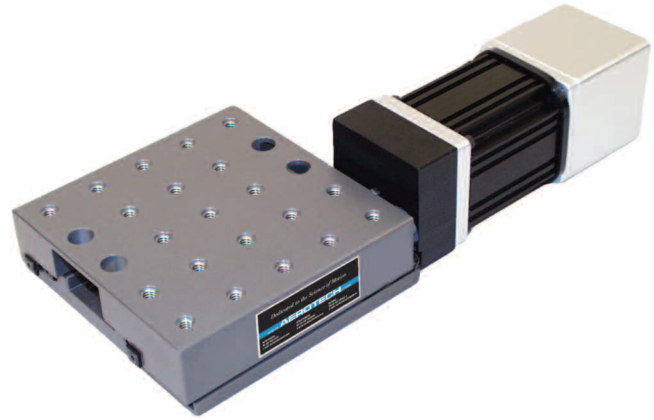
Precision-ground, high-accuracy lead screw

Ultra-fine resolution

Crossed-roller bearings for high load capacity and smooth motion

Includes cogless, brushless servomotor

Compact profile



The ATS0300 provides an economical solution for applications requiring fine positioning in a confined area.

Construction Features

ATS0300 series stages feature bases made from a special alloy aluminum tooling plate for good stiffness and long-term stability. Other high quality features are crossed-roller linear bearings for smooth travel and excellent payload characteristics, a precision-ground lead screw for high accuracy, and hardcoat treated base and table for high resistance to marring and scratching. Table mounting holes have Helicoil™ stainless steel inserts to permit multiple screw insertions without thread wear.

The ATS0300's precision-ground lead screw results in submicron resolution.

Multi-Axis Combinations

ATS0300 series stages are easily configured in XY, XZ, or XYZ arrangements. The precision-machined HDZ3 right angle L-bracket is designed for Z-axis applications, and the HDT3 bracket is ideal for lower profile configurations.

Options

Both metric and English mounting and bolt-hole patterns are available. A large thru-hole aperture version is available that is ideal for applications requiring backlighting. As is the case with all ATS series stages, the ATS0300 may be vacuum prepared to 10^{-6} torr.

Motors and Drives

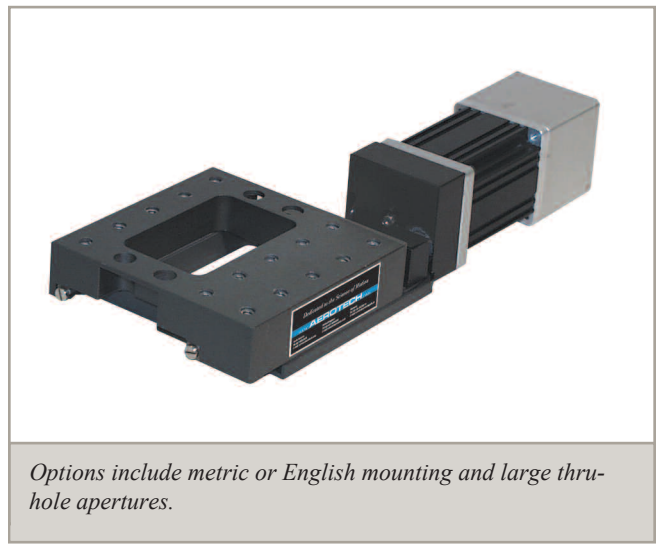
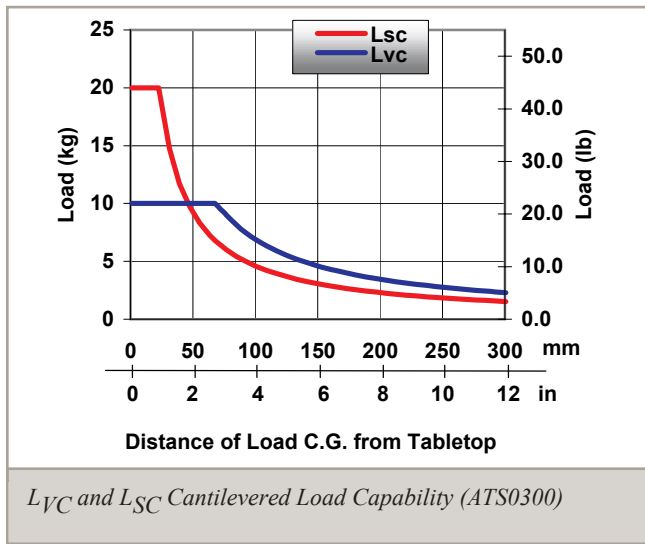
The standard motor included with the ATS0300 is Aerotech's BMS series brushless, slotless motor. This motor utilizes an ironless design so there is no cogging, which results in no torque ripple throughout the range of motion.

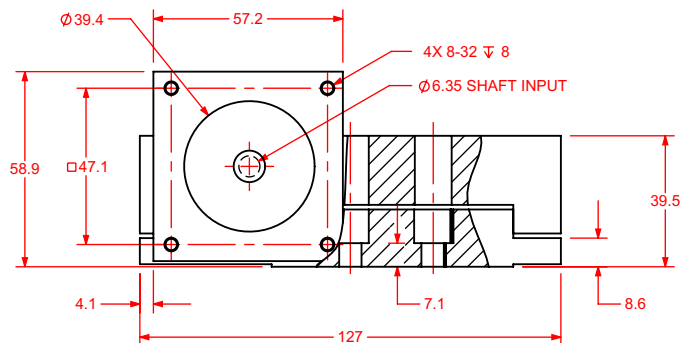
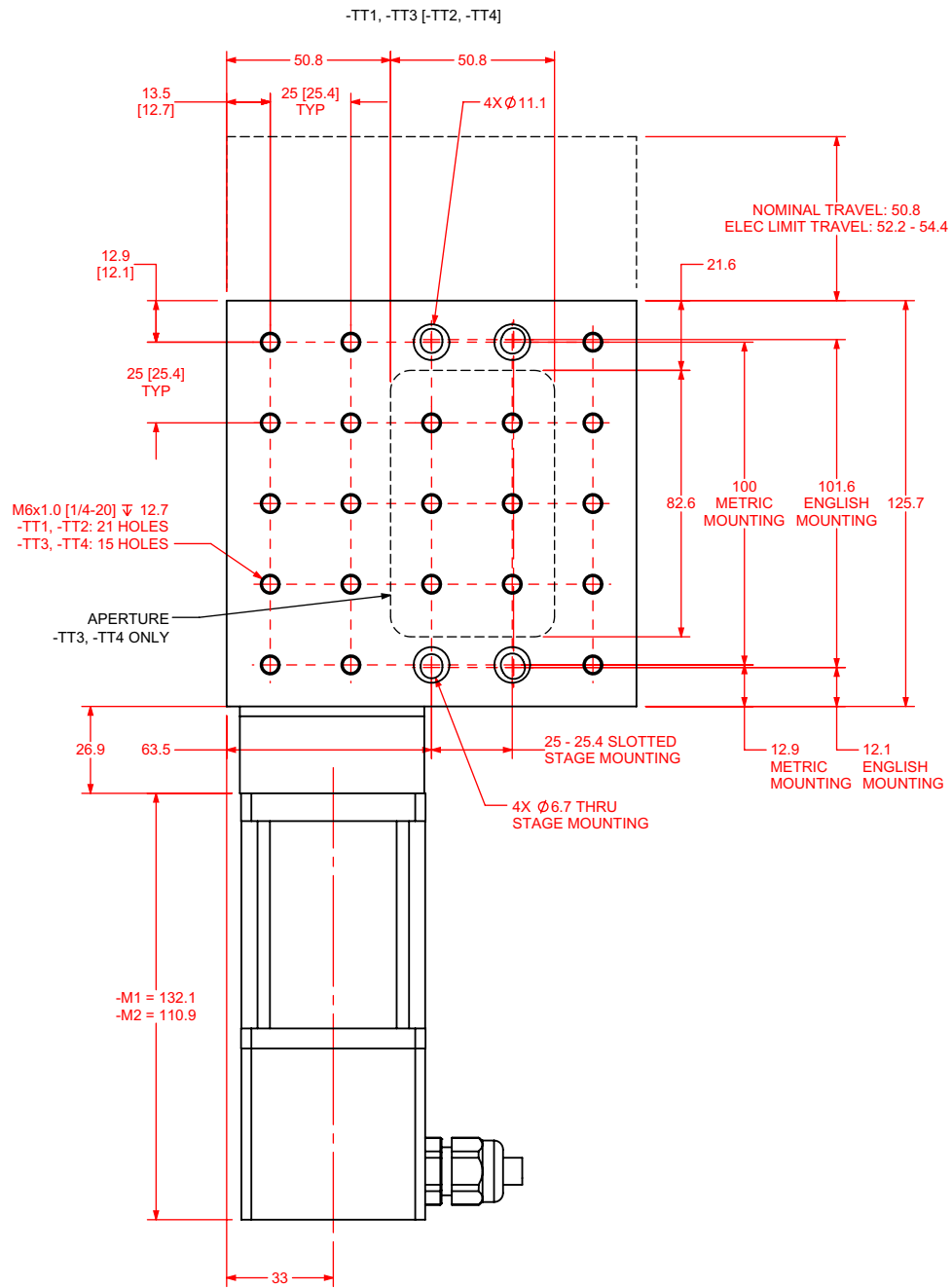
ATS0300 Series SPECIFICATIONS

Basic Model		ATS03005
Total Travel		50 mm (2 in)
Bus Voltage		Up to 160 VDC
Maximum Travel Speed		4 mm/s (0.2 in/s)
Maximum Load ⁽¹⁾	Horizontal	25.0 kg (55.1 lb)
	Vertical	9.0 kg (19.8 lb)
	Side	9.0 kg (19.8 lb)
Accuracy		2.5 µm/25 mm (100 µin/in)
Repeatability	Unidirectional	0.3 µm (12 µin)
	Bidirectional	1.0 µm (40 µin)
Straightness & Flatness		2.5 µm/25 mm (100 µin/in)
Nominal Stage Weight	Less Motor	1.4 kg (3.1 lb)
	With Motor	2.5 kg (5.5 lb)
Construction		Aluminum Body/Hardcoat

Note:

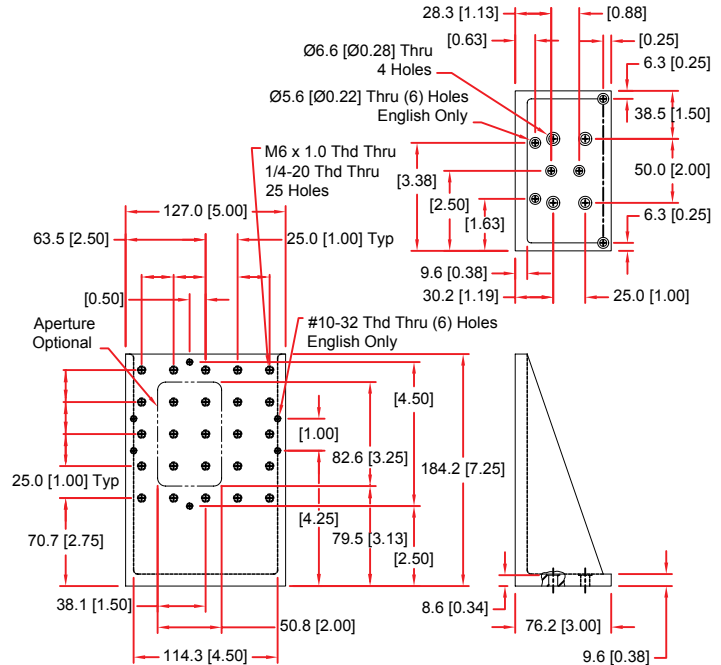
1. Payload specifications are for single-axis system and based on lead screw and bearing life of 250 km (10 million inches) of travel.





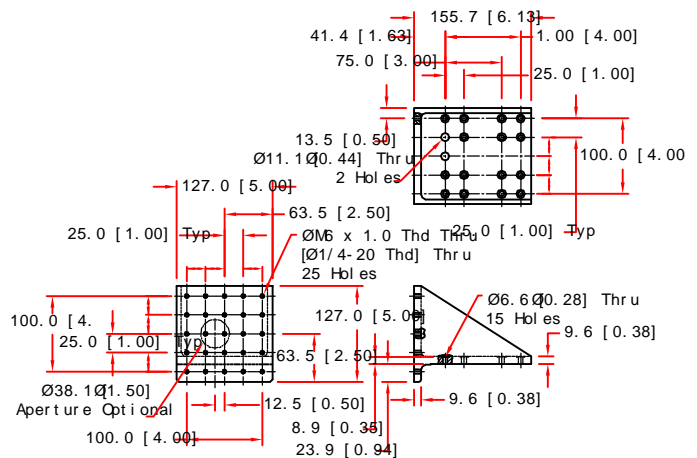
DIMENSIONS: MILLIMETERS

HDZ3 Bracket



Dimensions - Millimeters [Inches]		
Basic Model	Recommended For Series	Weight kg [lb]
HDZ3	ATS0300 (Linear) Stage & ART310 & ART315 (Rotary) Stages	1.1 [2.4]

HDT3 Bracket



Dimensions - Millimeters [Inches]
Basic Model HDT3, HDT3A For ATS0300 Stage - Weight - kg [lb] =

ATS0300 Series ORDERING INFORMATION

Tabletop (Required)

-TT1	Tabletop with metric dimension mounting
-TT2	Tabletop with English dimension mounting
-TT3	Tabletop with metric dimension mounting and aperture
-TT4	Tabletop with English dimension mounting and aperture

Motor (Optional)

-M1	BMS60 brushless servomotor and 1000-line TTL encoder
-M2	SM60 high voltage stepper motor

Limits (Required)

-LI1	Normally-closed limit switches; 5 VDC with 9-pin D connector
-LI2	Normally-open limit switches; 5 VDC with 9-pin D connector

Coupling (Optional)

-CP1	Coupling for 0.250 inch diameter shaft
-CP2	Coupling for 0.375 inch diameter shaft

Metrology (Required)

-PL1	Metrology, uncalibrated with performance plots
-PL2	Metrology, calibrated (HALAR) with performance plots

Integration (Required)

Aerotech offers both standard and custom integration services to help you get your system fully operational as quickly as possible. The following standard integration options are available for this system. Please consult Aerotech if you are unsure what level of integration is required, or if you desire custom integration support with your system.

-TAS	<p>Integration - Test as system</p> <p>Testing, integration, and documentation of a group of components as a complete system that will be used together (ex: drive, controller, and stage). This includes parameter file generation, system tuning, and documentation of the system configuration.</p>
-TAC	<p>Integration - Test as components</p> <p>Testing and integration of individual items as discrete components. This is typically used for spare parts, replacement parts, or items that will not be used or shipped together (ex: stage only). These components may or may not be part of a larger system.</p>

Accessories (to be ordered as a separate line item)

ALIGN-NPA	Non-precision XY assembly
ALIGN-NPAZ	Non-precision XZ or YZ assembly
ALIGN-PA10	XY assembly; 10 arc sec orthogonality. Alignment to within 7 microns orthogonality for short travel stages.
ALIGN-PA10Z	XZ or YZ assembly with L-bracket; 10 arc second orthogonality. Alignment to within 10 microns orthogonality for short travel stages.
ALIGN-PA5	XY assembly; 5 arc sec orthogonality. Alignment to within 3 microns orthogonality for short travel stages.
ALIGN-PA5Z	XZ or YZ assembly with L-bracket; 5 arc second orthogonality. Alignment to within 5 microns orthogonality for short travel stages.
HDZ3	English right angle L-bracket
HDZ3M	Metric right angle L-bracket
HDZ3A	English right angle L-bracket with aperture
HDZ3AM	Metric right angle L-bracket with aperture
HDT3	English low-profile right angle L-bracket
HDT3M	Metric low-profile right angle L-bracket
HDT3A	English low-profile right angle L-bracket with aperture
HDT3AM	Metric low-profile right angle L-bracket with aperture