

# Cartesian Robots

Maximize your Application's Throughput

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Minimal Tracking Error

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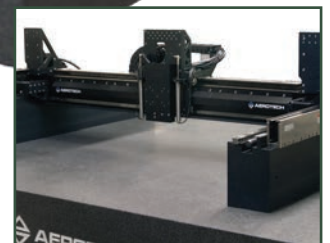
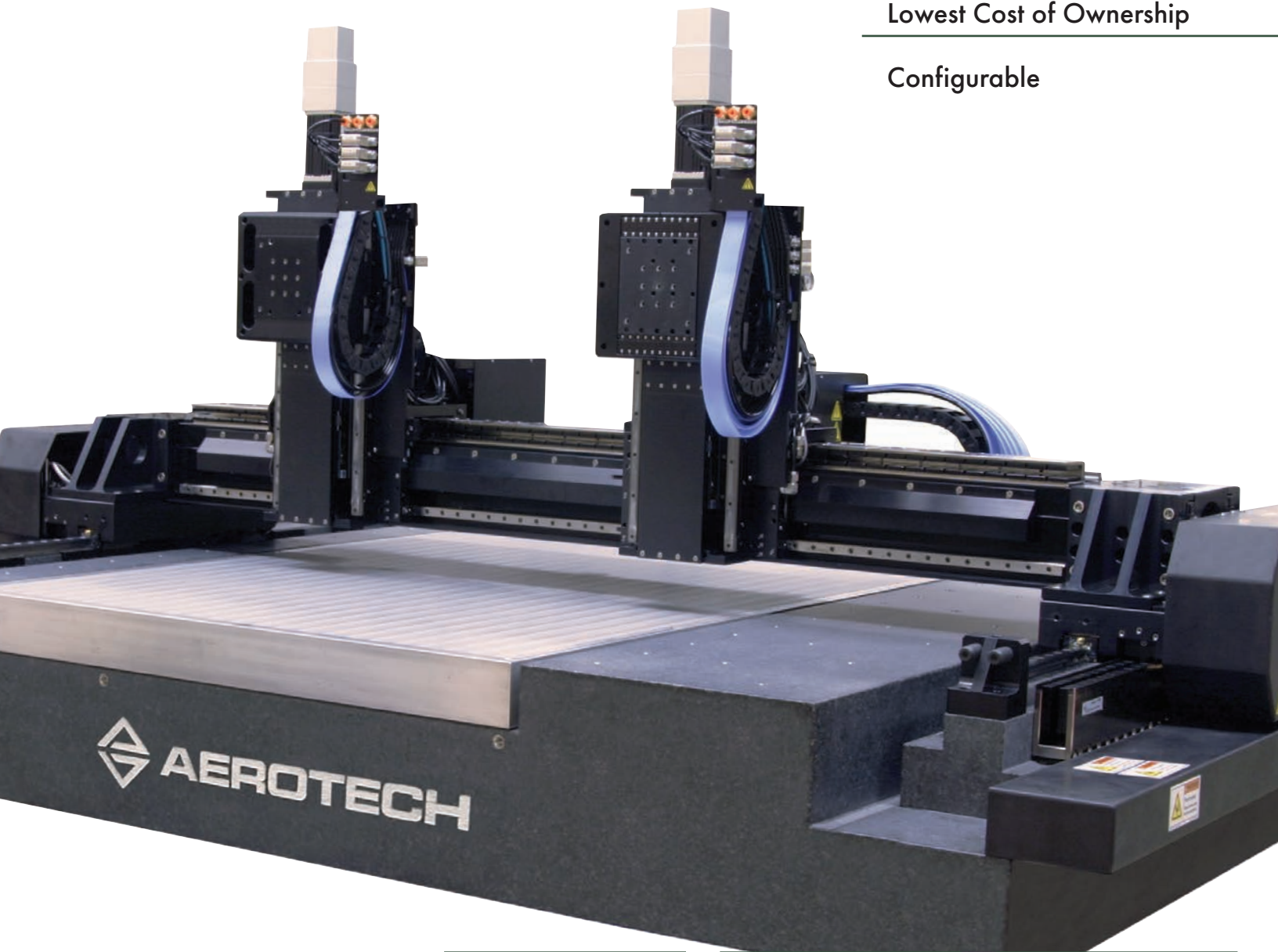
Flexible Design

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Lowest Cost of Ownership

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Configurable



# Broad Product Line to Meet Your Needs

Aerotech supplies cartesian robots for many of the world's largest manufacturers. These systems are carefully engineered to provide superior performance in a variety of applications. With our extensive line of products, Aerotech can deliver the ideal gantry customized to meet your unique application requirements.

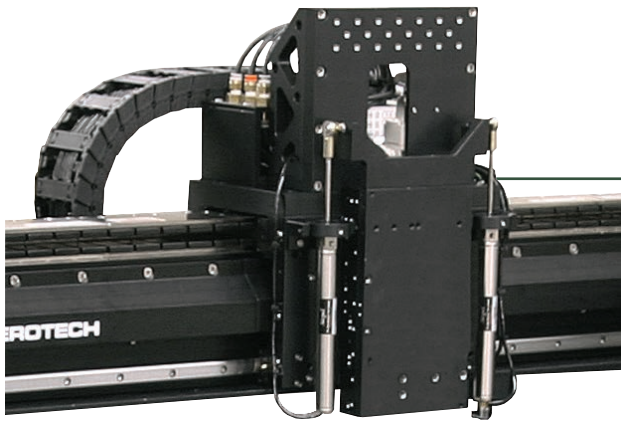
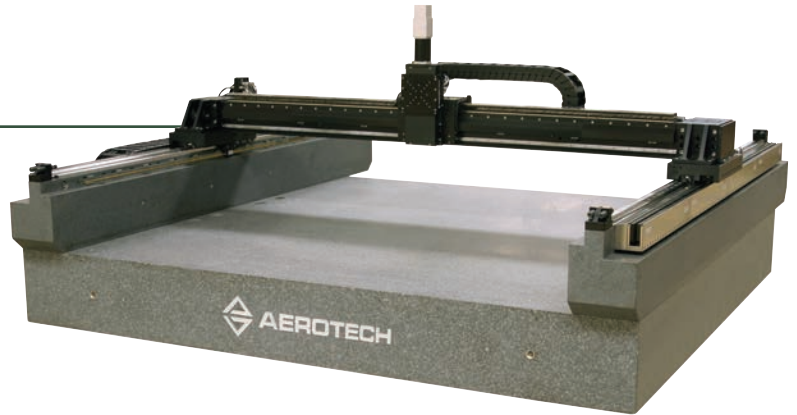
## Cartesian Robot Comparison Table

Product Family	Cartesius-HD	Cartesius-LM	AGS1000	AGS10000	ASGS15000	AGS15000	ABG10000	
								
Relative Performance	Good	Good	Better	Better	Better	Best	Best	
Maximum Travel	1500 mm x 600 mm	1500 mm x 500 mm	500 mm x 500 mm	1500 mm x 1500 mm	800 mm x 800 mm	1500 mm x 1300 mm	1000 mm x 1000 mm	
Drive System	Ball Screw with Brushless Rotary	Noncontact Linear Motor	Noncontact Linear Motor; Dual-Driven Lower Axis					
Maximum Resolution	To 0.1 $\mu\text{m}$	To 0.01 $\mu\text{m}$	To 1 nm				To 0.25 nm	
Maximum Travel Speed	1.4 m/s	2 m/s	2 m/s	3 m/s	2 m/s	3 m/s	1 m/s	
Maximum Acceleration	1 g (10 $\text{m/s}^2$ )	3 g (30 $\text{m/s}^2$ )	2 g (20 $\text{m/s}^2$ )	3 g (30 $\text{m/s}^2$ )	2 g (20 $\text{m/s}^2$ )	5 g (50 $\text{m/s}^2$ )	0.5 g (5 $\text{m/s}^2$ )	
Finish	Black Anodized/Hard Coat Surfaces; ESD Optional							
Recommended Controller	Ensemble/Soloist		A3200/Ensemble		A3200			

# Configurable Options Maximize Flexibility

## Travel Length

Fully configurable and custom travel lengths up to 2000 mm x 1750 mm ensure each gantry is right-sized for its application, from compact to extended travel.



## Z Axis

Linear motor or ball-screw vertical axis allows for component pick and place, tool height adjustment, and laser focus adjustment.

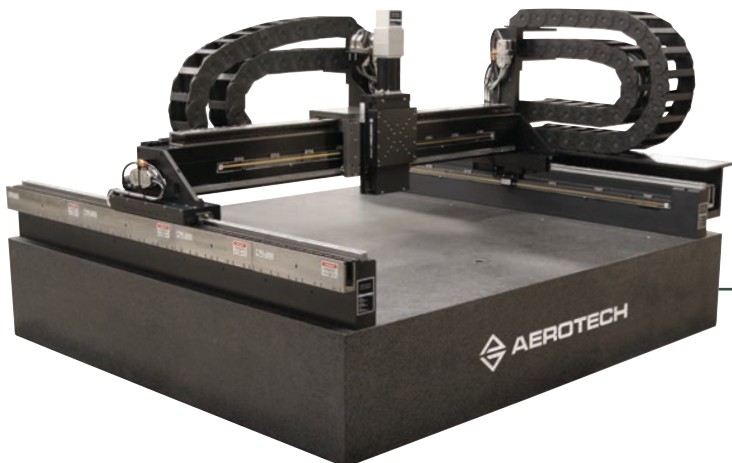
## Riser Height

Configurable riser height permits seamless integration of conveyor systems, process equipment, or automated part handling equipment.



## Cable Management Systems

Integration of customer cables, including signals for sensors, vision, autofocus height sensors, or fiber laser beam delivery simplify final assembly.



# "T" Style Cartesian Robots

Cartesius-HD and Cartesius-LM Series

Component Inspection

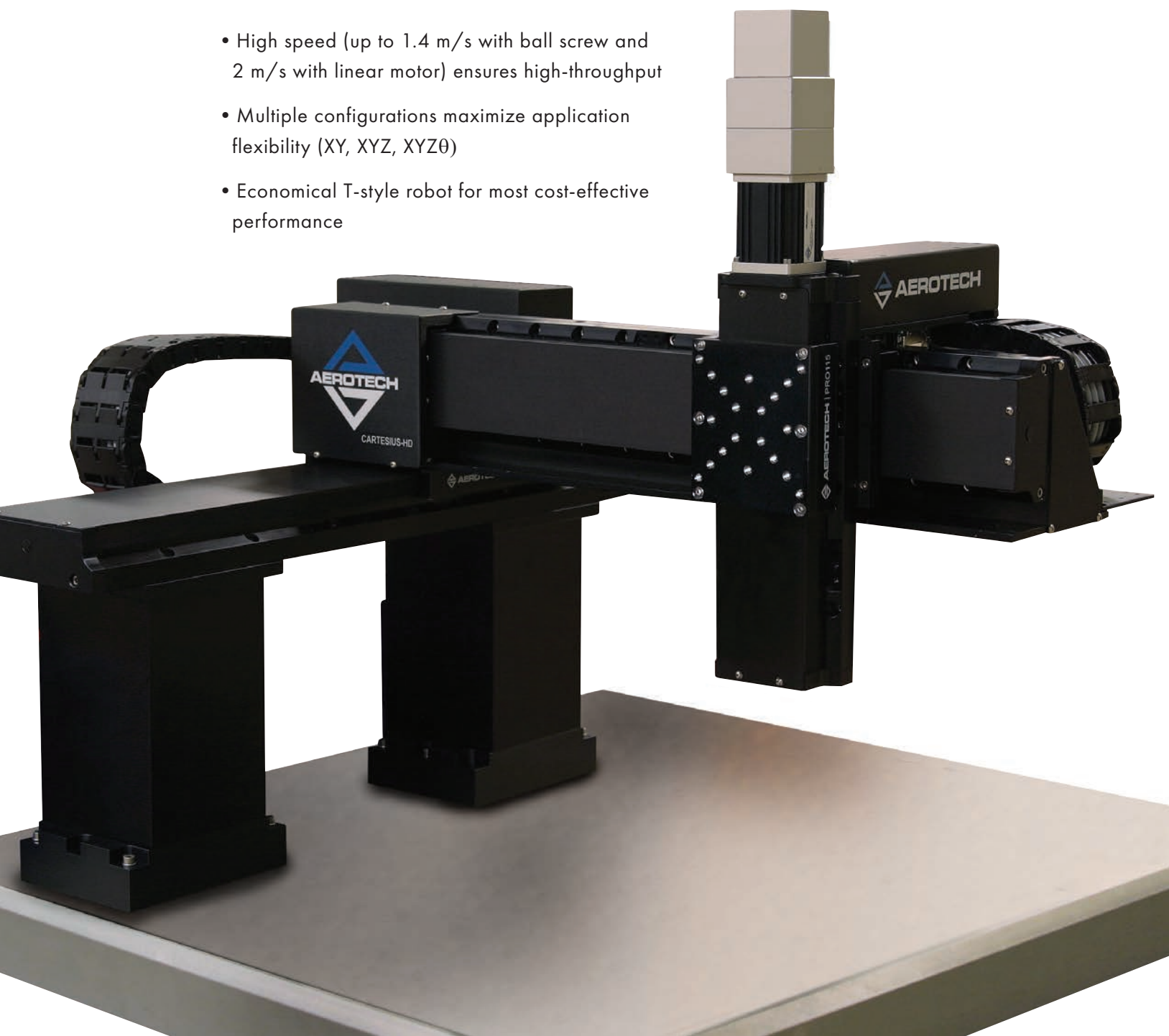
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Component Assembly

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PCB Marking

- High speed (up to 1.4 m/s with ball screw and 2 m/s with linear motor) ensures high-throughput
- Multiple configurations maximize application flexibility (XY, XYZ, XYZ $\theta$ )
- Economical T-style robot for most cost-effective performance



# Compact Gantries

AGS1000 Series

- Compact design offers superior performance, minimizing machine footprint
- Powerful linear motors enable high accelerations and micron-level dynamic tolerances
- Custom finishes minimize static charge buildup for ESD-sensitive applications

Fuel-Cell Manufacturing

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Device Assembly

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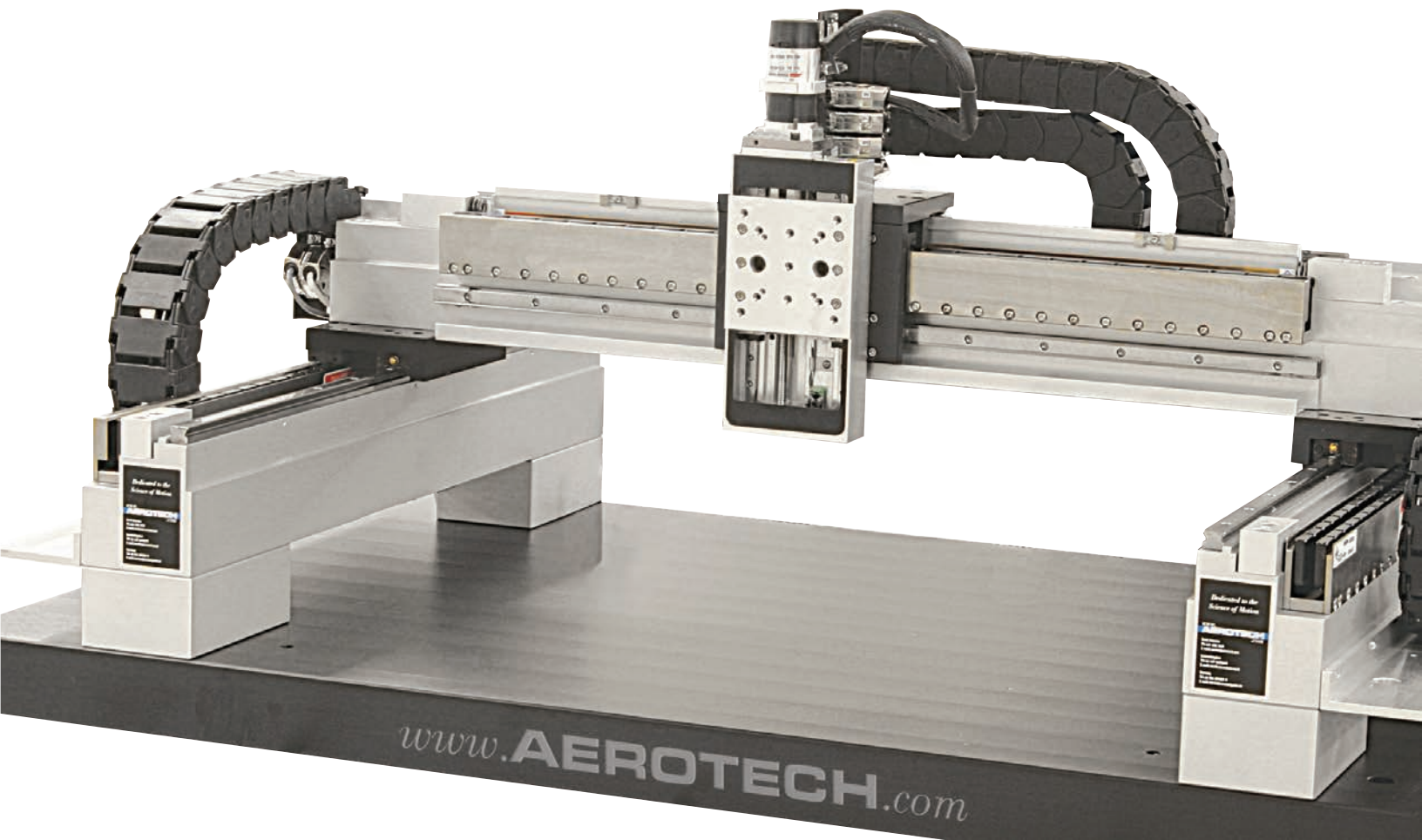
Dispensing

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Printed Electronics

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Component Inspection



# High Performance Gantries

AGS10000 Series

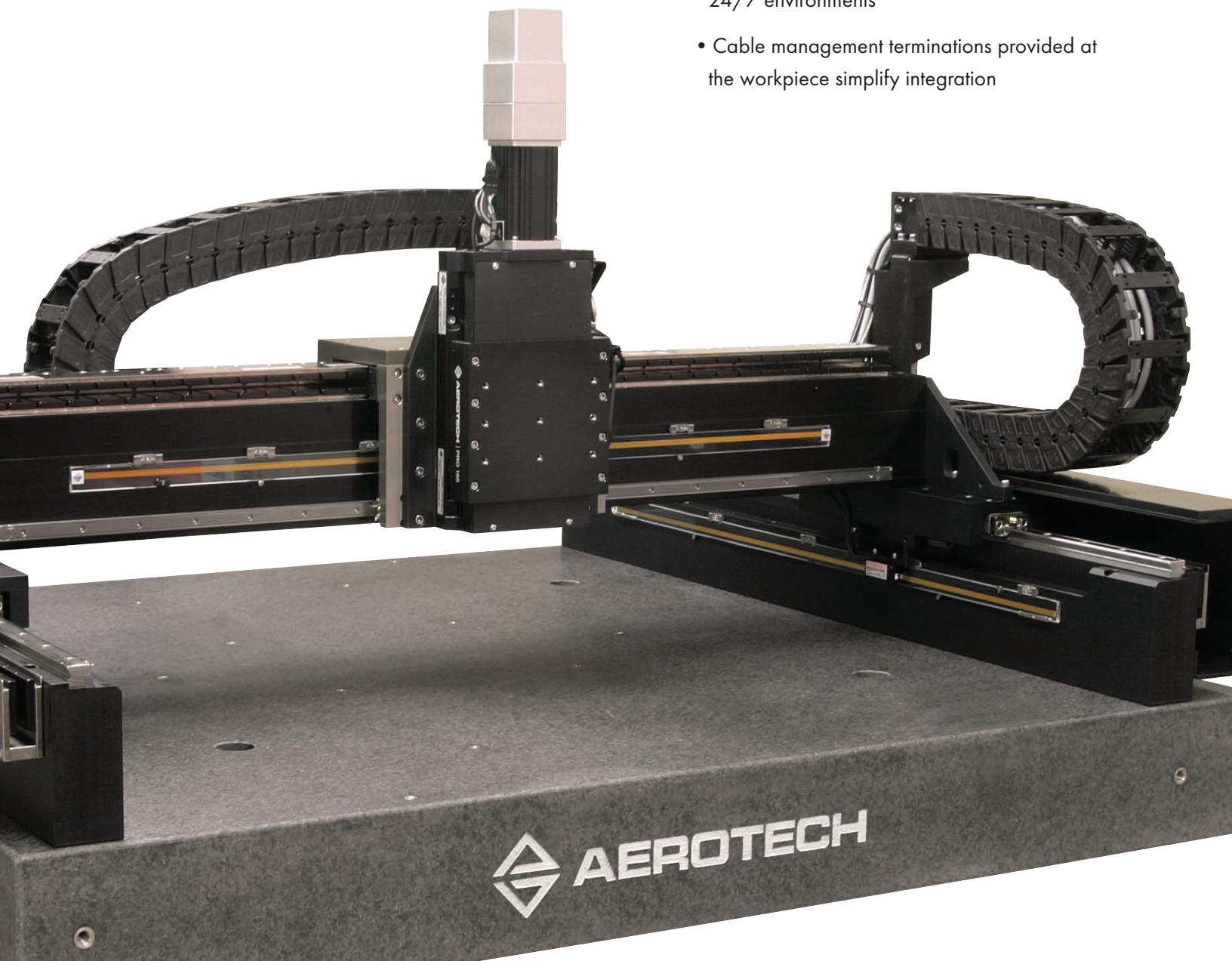
Printed Electronics

High-Speed Component Pick and Place

Component Inspection

Photovoltaic Manufacturing

- Linear motors allow up to 3 g acceleration and 3 m/s velocity, minimizing process time
- Components designed for minimal maintenance ensuring reliable operation in 24/7 environments
- Cable management terminations provided at the workpiece simplify integration



# High Performance Gantries

## AGS15000 Series

- Optimized design improves geometric tolerances at high speeds
- Up to 5 g acceleration maximizes throughput
- Advanced thermal design ensures consistent accuracy and performance over time
- Pneumatic counter-balanced linear motor vertical axis for precise, high-bandwidth focusing of processing head
- Mounting surfaces on bridge structure enable attachment of optics for free-space laser delivery systems or galvo scanners

Stencil Cutting

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Flat-Panel Processing

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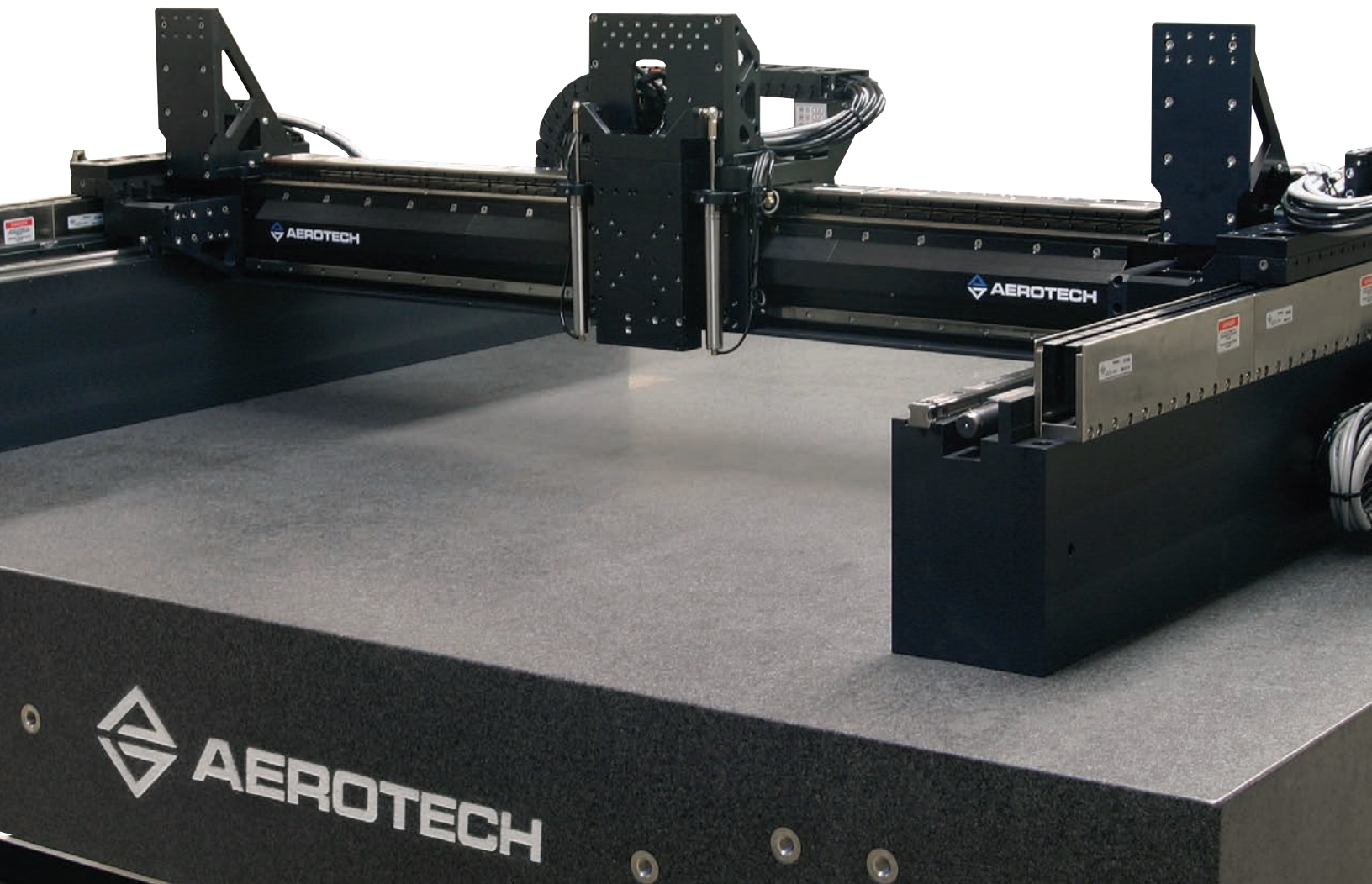
Laser Cutting

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Laser Welding

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Laser Micromachining



# Sealed Gantries

ASGS15000 Series

## Laser Cutting

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## Laser Micromachining

- Sealed design protects internal components for use in harsh environments
- Optimized design and stiff mounting surfaces permit micron-level dynamic accuracies at high speeds
- Aerotech's Position Synchronized Output (PSO) fires a configurable event trigger in real-time directly from the encoder position, maximizing process speed





# Ultimate Performance Gantries

ABG10000 Series

- Air-bearing linear axes provide exceptional velocity stability
- All axes are fully preloaded to maximize mechanical stiffness
- Superior pitch, roll, yaw, straightness, and flatness characteristics for ultimate performance

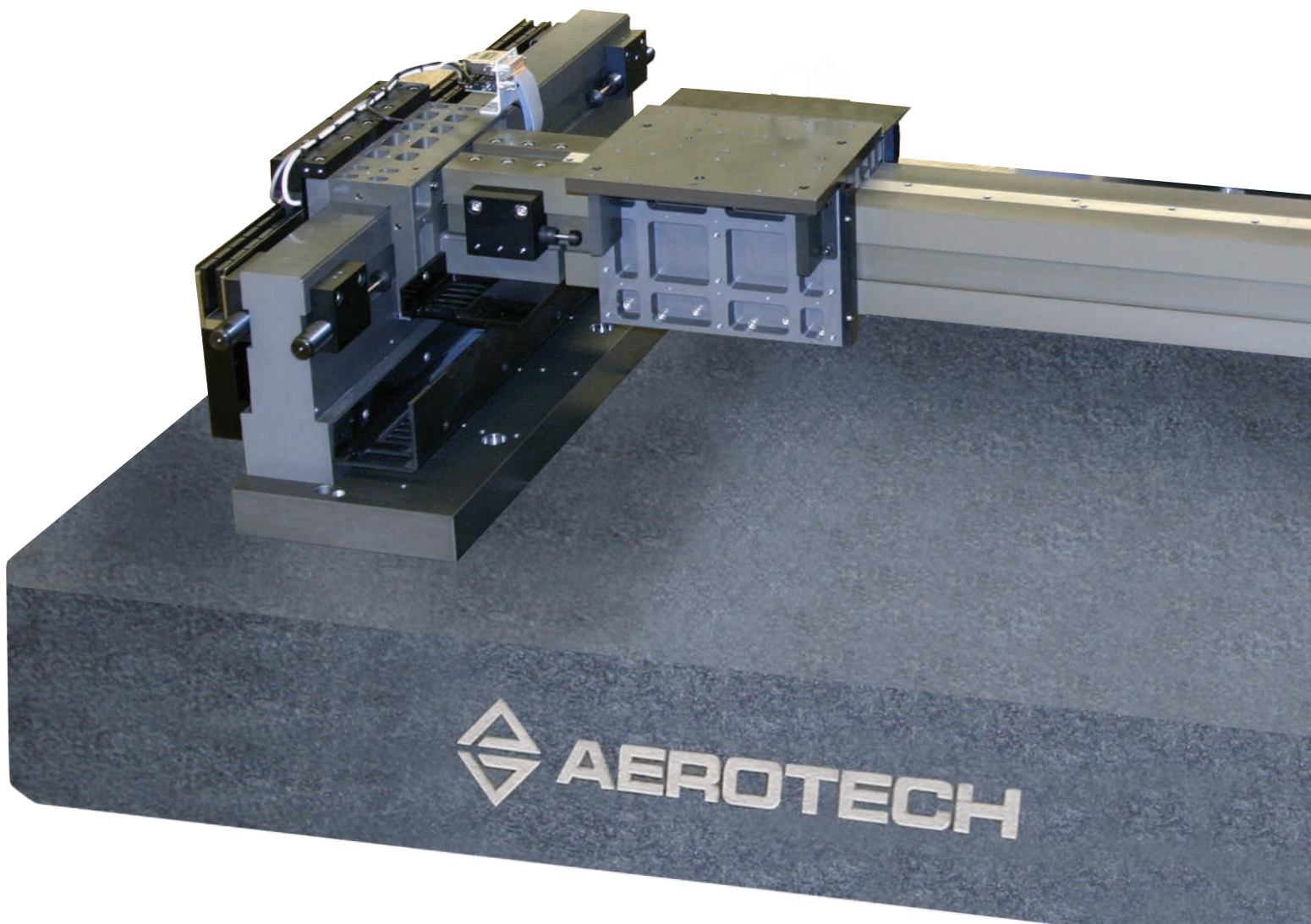
Robocasting

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Profiling

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Flat-Panel Inspection



# Value-Added Options

Available on all Cartesian Robots:



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Weldment with Optional Skins or Doors

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Isolation Systems

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Integrated Electronics

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IO

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ESTOP

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Integrated Pneumatics

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Support Arm with Monitor, Keyboard, and Mouse

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Enclosures

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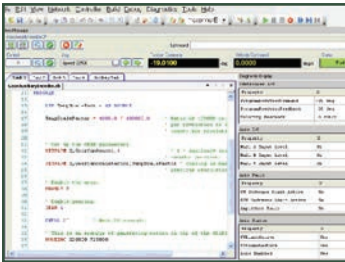
Aerotech's Enhanced Throughput Module (ETM)



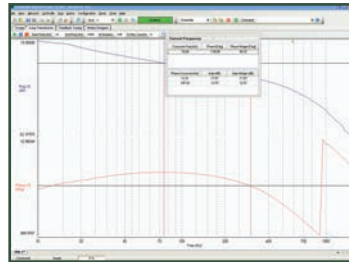
# Control Solutions

## Software

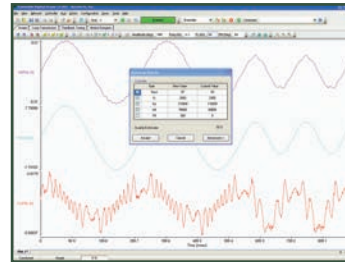
Use preconfigured Aerotech user interface modules or develop your own front-end and applications with .NET, C#, C++, and LabVIEW®.



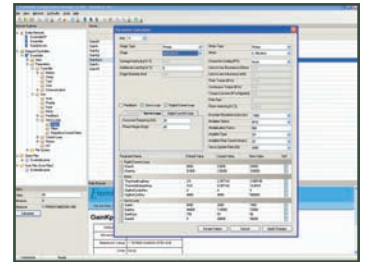
Diagnostics



Loop Transmission



Autotune



PID Calculator

## Award-Winning Controllers



### Automation 3200

- Up to 32 tasks
- PC-based
- RS-274 G-code
- Advanced features for demanding applications
- 1 to 32 axes of coordinated motion
- Scanner control for marking
- Tightly integrated laser functionality
- Retrofit package



### Ensemble

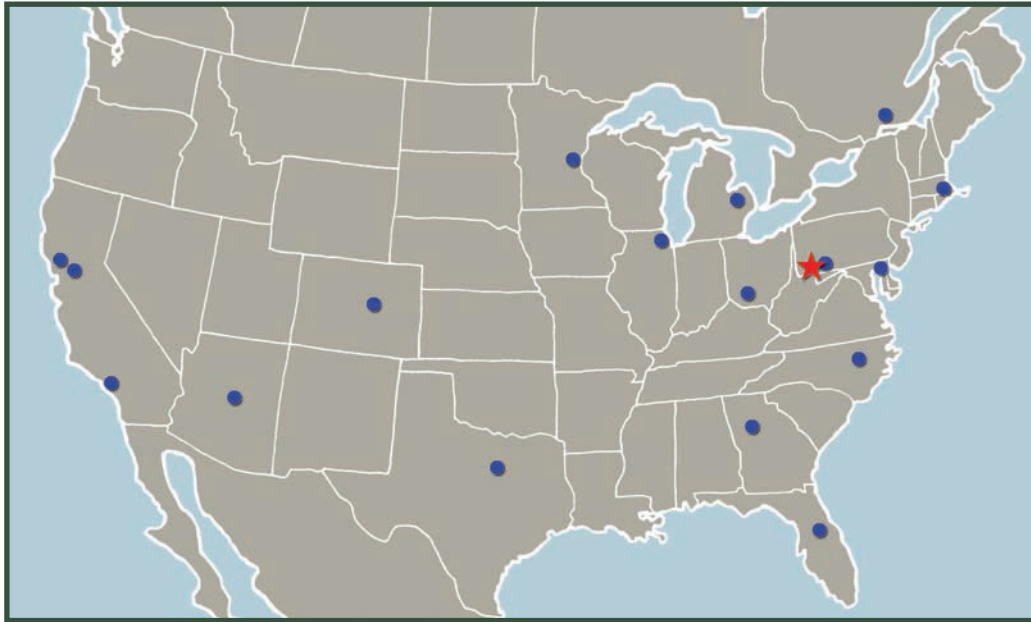
- Up to 4 tasks
- Stand-alone 1- to 10-axis controller
- Versatile, cost-effective, coordinated motion
- PWM or linear drives (10-150 A peak)
- Brushless, brush, or stepper motors
- Desktop or panel mount
- .NET, C++, or LabVIEW®



### Soloist

- Elegant, economical, single-axis controller
- Stand-alone
- PWM or linear drives (10-150 A peak)
- .NET, C#, VB.NET®, LabVIEW®
- Ethernet, USB

# Aerotech's Worldwide Sales and Service Locations



★ - Aerotech Headquarters   ● - Direct Field Sales Office   ▲ - Aerotech Subsidiary   ■ - Representative

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