

# FiberCouple 130 Series

## Dual Carriage, Fiber-Coupling Stage

Dual carriage on common bearing

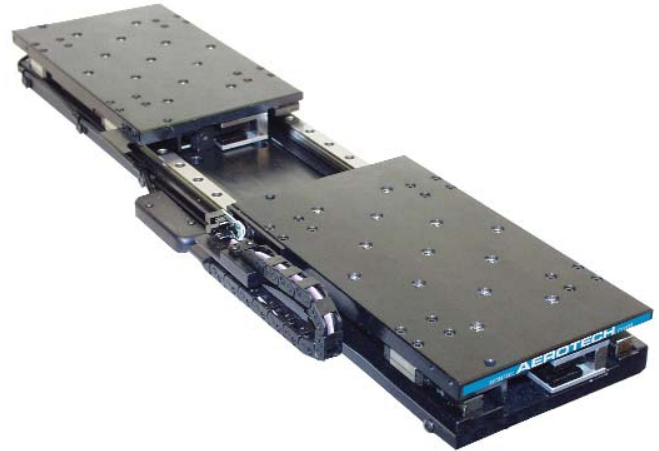
Independent or coordinated motion

2.5 nm resolution

Noncontact linear motor drive

Turnkey drive and control electronics

Auxiliary axes available



Aerotech's FiberCouple 130 is the first system designed to meet the unique demands associated with fiber coupling. Accurately coupling a fiber requires a stage system that is capable of opposing motion, is very accurate in the axial direction, and offers outstanding velocity stability. The FiberCouple 130 optimizes all of these requirements in a compact, precise package.

### Dual Carriage Design

A single set of linear bearings ensures that axial motion is true. This approach eliminates the need for cumbersome and time-consuming stage alignments typical of traditional approaches. This compact design also offers greater range of motion for each carriage by allowing each carriage access to the entire range of travel.

### Linear Motor Drive

Years of experience serving the OEM marketplace are reflected in this system, which has been designed for 24/7 operation. The linear motor drive of the FiberCouple 130 is a noncontact device, which means there is no maintenance or parts to wear. And unlike a screw-based system, the performance of the stage doesn't change over time, making it the ideal solution for low-maintenance, full-scale production.

Since the linear motor is a direct-drive device, there is no backlash, windup, or friction normally associated with a lead-screw or ball-screw drive. The resulting velocity stability is far superior to alternate technologies.

### Synchronized Control

Axes can be operated in a synchronized mode or independently. When synchronized, the position and velocity of each axis is precisely coordinated. They can be commanded to operate in the same or opposite directions with a constant, synchronous velocity. Axes may also be controlled independently, which is useful for setup and load/unload operations. Since both modes are software enabled, users may alternate between them during a single process.

### Control Platforms

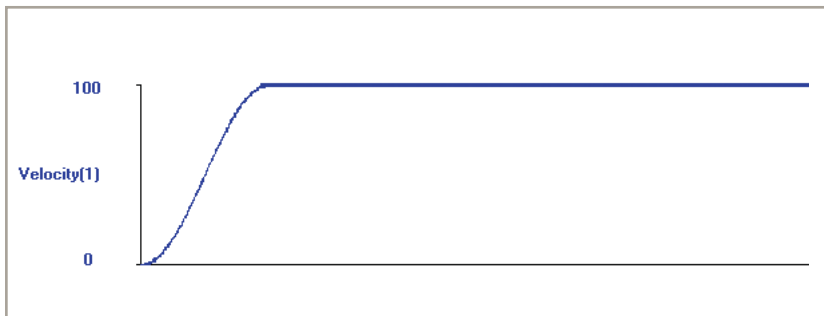
All of Aerotech's industry leading motion controllers are available to drive a FiberCouple 130 system. Available platforms include the A3200, Ensemble™, and Soloist™ controllers as rack-mount or panel-mount configurations. All Aerotech controllers come with a range of flexible software packages. These include easy-to-use Windows®-based user interface software, LabVIEW® drivers, and C and Visual Basic® libraries.

# FiberCouple 130 Series SPECIFICATIONS

| Basic Model                 | FiberCouple 130  |
|-----------------------------|--|
| Total Travel                | 140 mm (5.5 in) travel available to either carriage          |
| Drive System                | Dual Linear Brushless Servomotor - BLMUC-95-A                |
| Feedback                    | Noncontact Linear Encoders                                   |
| Resolution                  | 10 nm (0.40 µin)(300 picometers with Automation 3200)        |
| Maximum Travel Speed        | 300 mm/s (12 in/s)   |
| Maximum Load                | 12.0 kg (26.4 lb)  |
| Accuracy <sup>(1)</sup>     | ±0.3 µm (±12 µin) per axis <sup>(1)</sup> ; ±3 µm (±120 µin) |
| Bidirectional Repeatability | ±50 nm (±2 µin) per axis <sup>(1)</sup> ; ±100 nm (±4 µin)   |
| Straightness and Flatness   | ±2.0 µm (±80 µin)  |
| Material                    | Aluminum   |
| Finish                      | Black Anodize  |

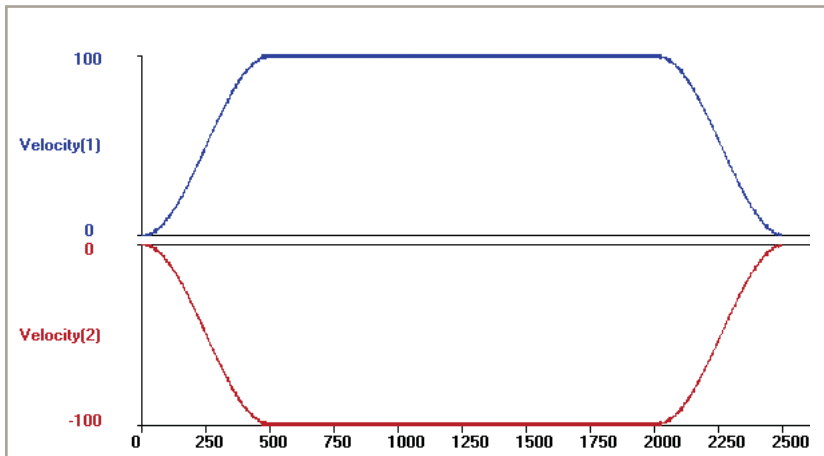
Note:

1. Values with Aerotech controls and HAL option.



## Constant Velocity

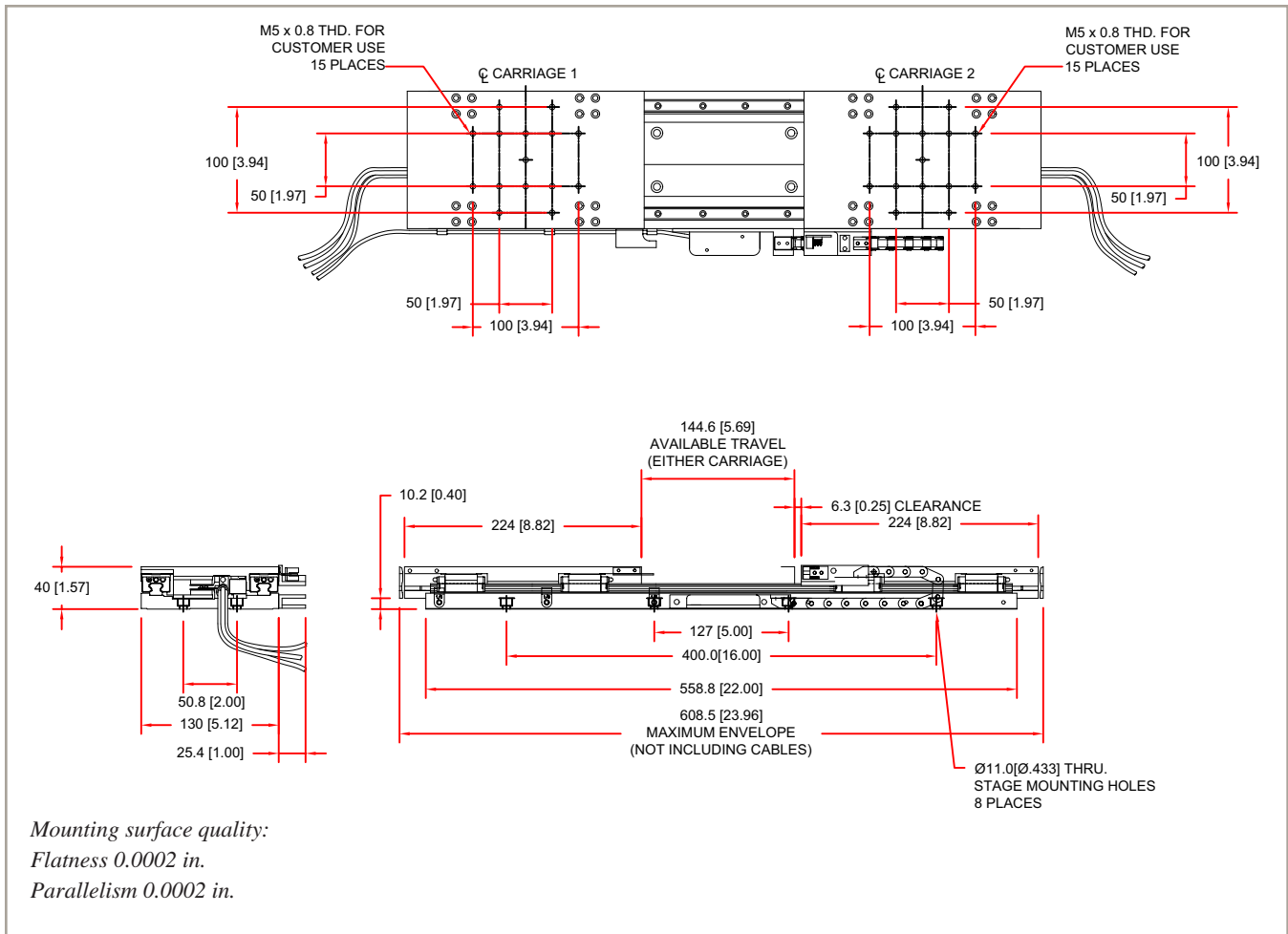
*FiberCouple's linear motor drive yields unparalleled velocity control.*



## Synchronous Motion

*State-of-the-art control algorithms ensure fully coordinated motion.*

## FiberCouple 130 Series DIMENSIONS and ORDERING INFORMATION



### Ordering Example

|                    |      |
|--------------------|------|
| FC130              | -140 |
| <b>Travel (mm)</b> |      |
| -140               |      |

### FiberCouple 130 Series Fiber Positioner

FC130                      Linear motor, linear-encoder-based fiber coupling positioner. Independent dual carriages.

### Linear Stage Travel

-140                      140 mm (5.5 in) total travel. Available to either carriage.

### Controller Platform

-A3200                      Automation 3200 software-only controller, Npaq with MXR, DP32020E amplifiers, cables, and software