# NanoMax™ SM Fiber Launch with 20 µm Piezos and Sensors

## Specifications

- **Manual Travel:** 4 mm
- **Thermal Stability:** 1 µm/°C
- **Differential Adjusters**
  - Coarse Adjustment: 0.5 mm/rev
  - Fine Adjustment: 50 µm/rev
- **Piezoelectric Travel:** 20 µm
- **Manual Drive Resolution:** Provides 50 nm Resolution Over a 300 µm Travel Range
- **Piezoelectric Actuator Resolution:** 5 nm When Operating with Internal Piezo Displacement Sensors.
- **Max Piezoelectric Drive Voltage:** 75 VDC
- **Crosstalk:** 20 µm/mm of Travel (Max)
- **Resonant Frequency (±10%):** 375 Hz (No Load) 200 Hz (275 g Load) 150 Hz (575 g Load)
- **Load Capacity:** 2.2 lbs (1 kg)
- **Deck Height:** 62.5 mm from the Base of the Stage to the Mounting Surfaces of the Moving Platform, the Accessory Beam Height is 75 mm from the Bottom Surface of the Stage
- **Accessories:** Mounted on the Top Deck of the Stage:
  Large Fixed Bracket (AMA009)
  Microscope Objective Mount (HCS013)
  Adjustable Force Fiber Clamp (HFF001)
  Cable Strain Relief (HFS001)
- **Recommended Controller:** BPC203 (See Page 642)

*Note: All measurements related to the performance of the piezoelectric actuators are made with Thorlabs' model BPC203 piezo driver, which can be found on page 642.*

**Displacement Sensor**

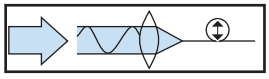
The strain gauge displacement sensor, directly attached to the body of the piezoelectric element, provides an analog signal that is proportional to its displacement. When combined with low noise electronics, the resolution obtained is better than 5 nm.

Microscope Objective Sold Separately (See Pages 960 - 963)

Patents 6,186,016 and 6,467,762

### When Performance Matters

When long-term stability and ease-of-use are of paramount importance, we recommend this series of NanoMax launch systems.



### NanoMax™ Stage with High Resolution Manual Adjusters and Piezoelectric Actuators

The MAX373D Fiber Launch System is built from our MAX311D three-axis translation stage; for details on this stage, please see page 547. This stage and accessory package are ideally suited for use with our NanoTrak™ auto-alignment system (see pages 646 - 651 for details). The 20 µm of piezoelectric travel provides sufficient electrical control of the position of the optical fiber to ensure rapid 'first-light' detection as well as automatic optimization of the coupling efficiency.

The MAX373D utilizes three strain gauge displacement sensors to provide a voltage signal that is linearly proportional to the displacement of the piezoelectric element. Using this signal, it is possible to compensate for hysteresis, creep, or thermal drift that is inherent to all piezoelectric elements. Additionally, the use of the displacement sensor in combination with our NanoTrak™ auto-alignment system allows one to precisely optimize the coupling efficiency of an optical system; then, once aligned, the displacement sensors can be used to stabilize the position of the system while subsequent operations are performed.

| ITEM # | METRIC ITEM # | $ | £ | € | RMB | DESCRIPTION |
|---|---|---|---|---|---|---|
| MAX373D | MAX373D/M | $ 3,088.93 | £ 2,224.03 | € 2.687,37 | ¥ 24,618.77 | NanoMax™ SM Fiber Launch System with Piezos and Sensors |

Polaris™
Pointing the Way to Precision Alignment

- Heat-Treated Stainless Steel Minimizes Temperature-Dependent Hysteresis to Less than 2 µrad Deviation after Temperature Cycling
- Actuators Matched to Body/Bushing to Reduce Drift and Backlash
- Sapphire Seats Ensure Long-Term Durability

POLARIS-K1

POLARIS-K05

POLARIS-K1-H

Mechanical and Temperature Test Data at www.thorlabs.com

For more details, see pages 244 - 246