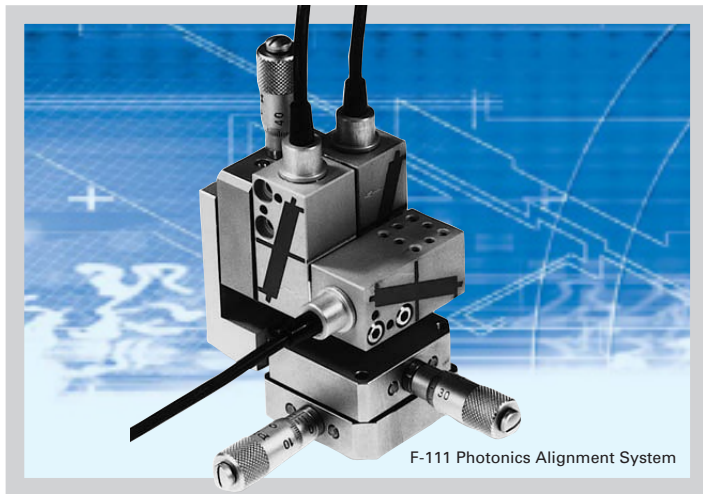


# F-111

## Compact Hybrid Manual/Piezoelectric Photonics Alignment System



F-111 Photonics Alignment System

- PZT Drives with Sub-Nanometer Resolution
- Precision Mechanics with Crossed Roller Bearings
- 6 x 6 x 6 mm Travel Range
- 30 x 30 x 30 μm PZT Fine Travel Range

The F-111 photonics alignment system is an ideal solution for applications where a coarse "operating" position can be set manually and an ultra-high-resolution alignment process (tracking, scanning etc. with sub-nm resolution) is started from that position.

### High-Resolution Piezo Drives

The F-111 is based on the M-313.00 XYZ translation stage (see page 7-20) and the P-282.10 XYZ piezo Nano-Positioner (see page 2-25). The advantage of the piezoelectric fine adjustment is based on its extremely high resolution, responsiveness and electrical controllability. If used with an external optical power meter

and control software, the F-111 can be used as semi-automatic aligner or scanner with a range of 30 x 30 x 30 μm.

The E-463 piezo amplifier (see page 6-40) is recommended as driving system. It comes with an analog high-speed interface (0 to 10 V). For digital control with a computer, the E-500 modular PZT control system with E-507 amplifier modules (see page 6-23) and optional E-516.i3 computer interface (see page 6-27) is available.

For motorized alignment, please refer to the new F-130, integrated motorized/piezoelectric alignment system featuring closed-loop piezo drives (see page 8-20).

### Application Examples

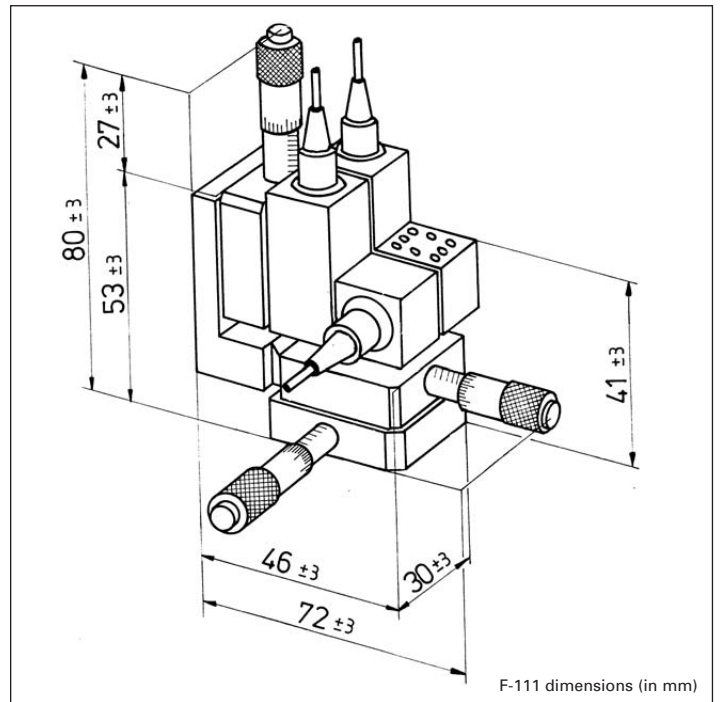
- Photonics packaging
- Optical device testing
- Fiber alignment
- Micro-manipulation (life sciences)

### Related Products

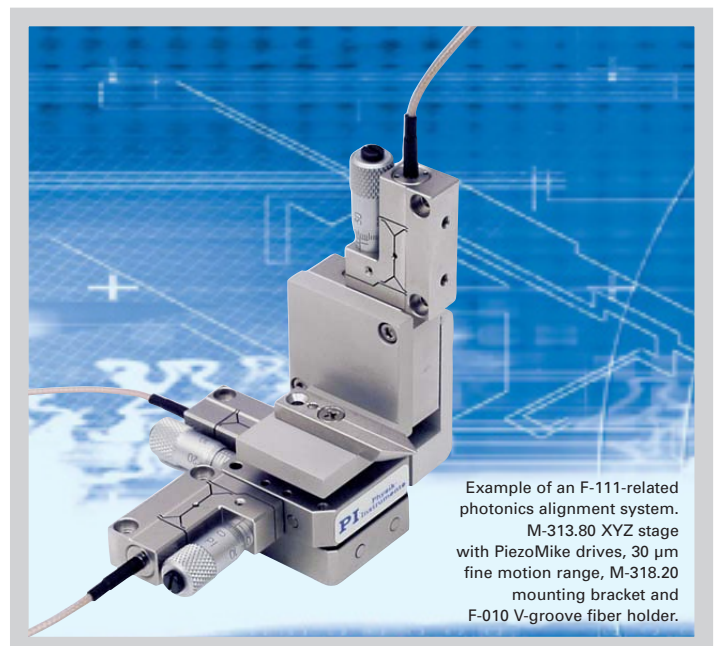
The M-313.80 XYZ stage (see page 7-20) with PiezoMike drives (replaces the manual micrometers). It is modular and can also be configured with only one or two PiezoMike high-resolution drives.

### Ordering Information

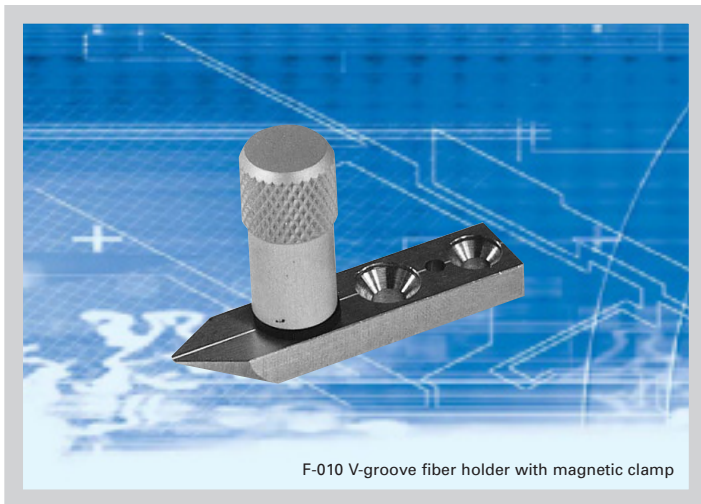
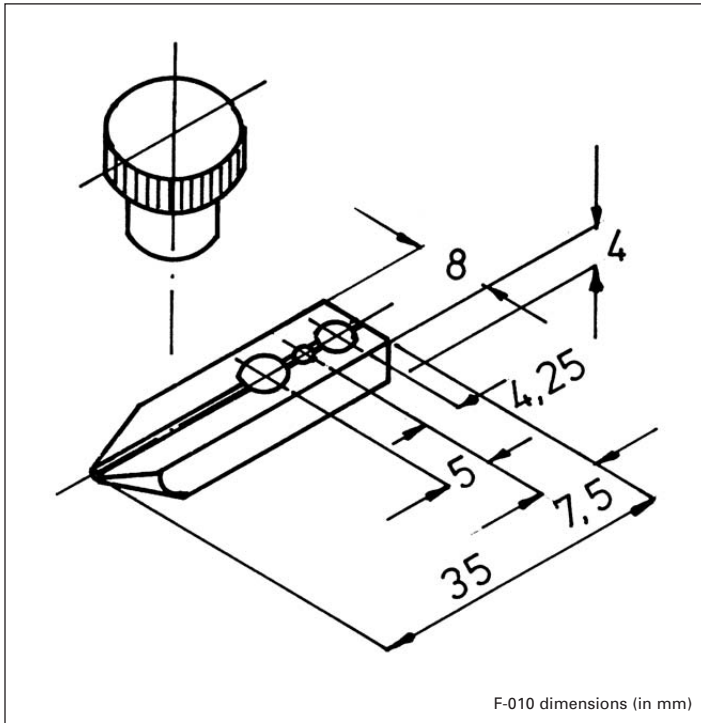
- F-111.00**  
XYZ Piezoelectric Photonics Alignment System, 6 mm, 30 μm
- F-010.00**  
Fiber Holder with Magnet
- Ask about custom designs!



F-111 dimensions (in mm)



Example of an F-111-related photonics alignment system. M-313.80 XYZ stage with PiezoMike drives, 30 μm fine motion range, M-318.20 mounting bracket and F-010 V-groove fiber holder.



### Technical Data

Models	F-111.00	Units
Axes	X, Y, Z	
Travel range (manual)	6	mm
Piezo fine travel range	30	$\mu\text{m}$
Resolution (piezoelectric)	0.3	nm
Resolution (micrometer drive)	1	$\mu\text{m}$
Max. load (Z-axis)	20	N
Mechanical positioning system	M-313.00, see page 7-20	
Piezoelectric positioning system	P-282.10, see page 2-25	
Weight	0.4	kg
Recommended amplifier/controller	E-463, E-500 w/ 3 x E-507	

Piezo Actuators

Nanopositioning &amp; Scanning Systems

Active Optics / Steering Mirrors

Tutorial: Piezo-electrics in Positioning

Capacitive Position Sensors

Piezo Drivers &amp; Nanopositioning Controllers

Hexapods / Micropositioning

**Photonics Alignment Solutions**

Motion Controllers

Ceramic Linear Motors &amp; Stages

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