

F-130 · F-131

Compact XYZ Hybrid Motorized/Piezoelectric Photonics Alignment Systems

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F-130.3SD XYZ Alignment System, 1 nm resolution, with optional F-603.22 ferrule holder (see page 8-26).

- Up to 15 mm Travel
- 1 nm Resolution
- Closed-Loop Piezo Drives Available
- Stepper- & DC-Motor Drives

F-130 are compact computer-controllable XYZ alignment and positioning systems combining the advantages of ultra-high-resolution piezo drives with the long travel range of motorized stages.

They are based on the M-110/M-111 micropositioning stages (see page 7-36) and the P-611

rapid piezo NanoAlignment units (see page 8-16).

The F-130/F-131 is available in 8 different versions, with stepper- and DC-motor coarse drives, and open- and closed-loop piezoelectric fine drives. (see Ordering Information).

The motor drives provide better than 0.05 μm resolution over a travel range of 5 and 15 mm. The piezo fine drives feature a 100 μm travel range in X, Y and Z, with zero-stiction, zero-friction flexure guiding systems and 1 nm resolution.

Several fiber, waveguide and optics adapters are available from PI (e.g. model F-603.60, see "Fiber, Objective and Waveguide Holders", see page 8-26).

The C-880 multi-axis automation platform (see page 9-6) is recommended as controller.

Ordering Information

F-130.3SD
XYZ Alignment System, 5 mm / 100 μm , DC Motor/Encoder, C/L Piezo

F-130.3SS
XYZ Alignment System, 5 mm / 100 μm , Stepper Motor, C/L Piezo

F-130.3OD
XYZ Alignment System 5 mm / 100 μm , DC Motor/Encoder, O/L Piezo

F-130.3OS
XYZ Alignment System, 5 mm / 100 μm , Stepper Motor, O/L Piezo

F-131.3SD
XYZ Alignment System, 15 mm / 100 μm , DC Motor/Encoder, C/L Piezo

F-131.3SS
XYZ Alignment System, 15 mm / 100 μm , Stepper Motor, C/L Piezo

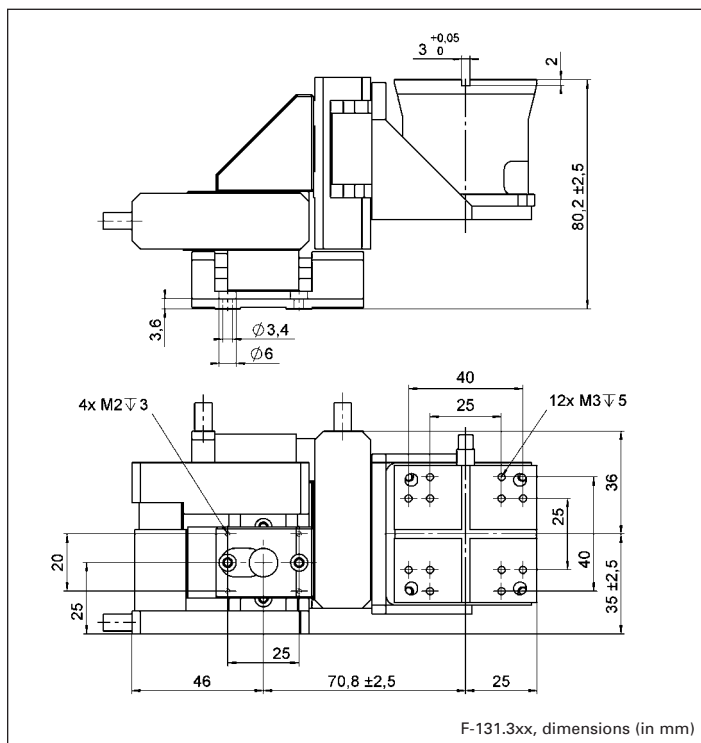
F-131.3OD
XYZ Alignment System, 15 mm / 100 μm , DC Motor/Encoder, O/L Piezo

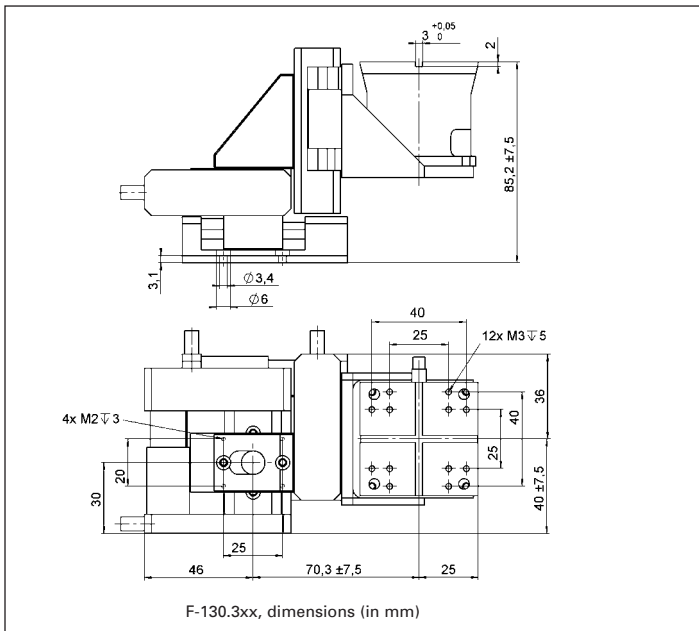
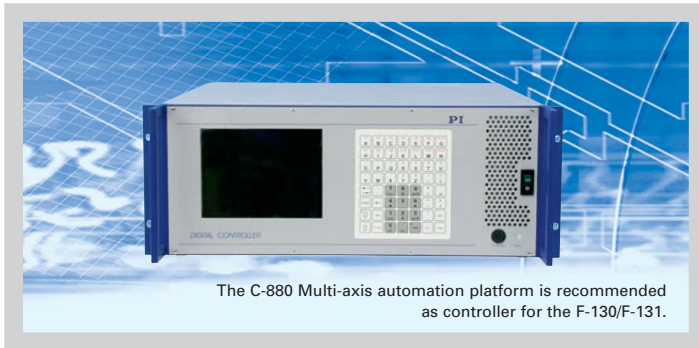
F-131.3OS
XYZ Alignment System, 15 mm / 100 μm , Stepper Motor, O/L Piezo

Ask about custom designs!

Application Examples

- Photonics packaging
- Optical device testing
- MEMS positioning/alignment
- Fiber alignment
- Micromachining
- Micromanipulation (life sciences)
- Semiconductor test systems





Technical Data

Models	F-130.3SD	F-130.3SS	F-130.3OD	F-130.3OS	F-131.3SD	F-131.3SS	F-131.3OD	F-131.3OS	Units	Notes see page 7-96
Key features	Closed-loop DC motors, closed-loop PZT drives	Stepper motors, closed-loop PZT drives	Closed-loop DC motors, open-loop PZT drives	Stepper motors, open-loop PZT drives	Closed-loop DC motors, closed-loop PZT drives	Stepper motors, closed-loop PZT drives	Closed-loop DC motors, open-loop PZT drives	Stepper motors, open-loop PZT drives		
Active axes	X,Y,Z	X,Y,Z	X,Y,Z	X,Y,Z	X,Y,Z	X,Y,Z	X,Y,Z	X,Y,Z		
Motorized travel range (XYZ)	5	5	5	5	15	15	15	15	mm	
Piezo travel range (XYZ)	100	100	100	100	100	100	100	100	µm	
Design resolution (motor)	0.007	0.006	0.007	0.006	0.007	0.006	0.007	0.006	µm	A3
Min. incremental motion (motor)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	µm	A4
Closed-loop / open-loop resolution (PZT)	2/1	2/1	- / 1	- / 1	2/1	2/1	- / 1	- / 1	nm	
Motorized stage	M-110.3DG	M-110.32S	M-110.3DG	M-110.32S	M-111.3DG	M-111.32S	M-111.3DG	M-111.32S		see page 7-30
Piezo drive	P-611.3SF	P-611.3SF	P-611.3OF	P-611.3OF	P-611.3SF	P-611.3SF	P-611.3OF	P-611.3OF		see page 8-16
Material	Al / S	Al / S	Al / S	Al / S	Al / S	Al / S	Al / S	Al / S		L
Recommended controller (see page 9-6)	C-880	-	C-880	-	C-880	-	C-880	-		

Piezo Actuators

Nanopositioning & Scanning Systems

Active Optics / Steering Mirrors

Tutorial: Piezo-electrics in Positioning

Capacitive Position Sensors

Piezo Drivers & Nanopositioning Controllers

Hexapods / Micropositioning

Photonics Alignment Solutions

Motion Controllers

Ceramic Linear Motors & Stages

Index