ISP 12R034FPI0001 A
ISP System® patented

Nanopositioning Linear Stage

NLS II x series

ON-THE-FLY SCANNING NANO-POSITIONING

The ***NLS + series*** is a product range based on a reliable technology providing nanometric resolution motion in horizontal direction. These stages were created to address the new needs in nanotechnology (scanning electron microscope, laser lithography, atomic force microscopy, wafer manufacturing, spectroscopy, ...).

They are particularly adapted to on-the-fly scanning applications.

The x-y motion is obtained through a combination of two NLS stages

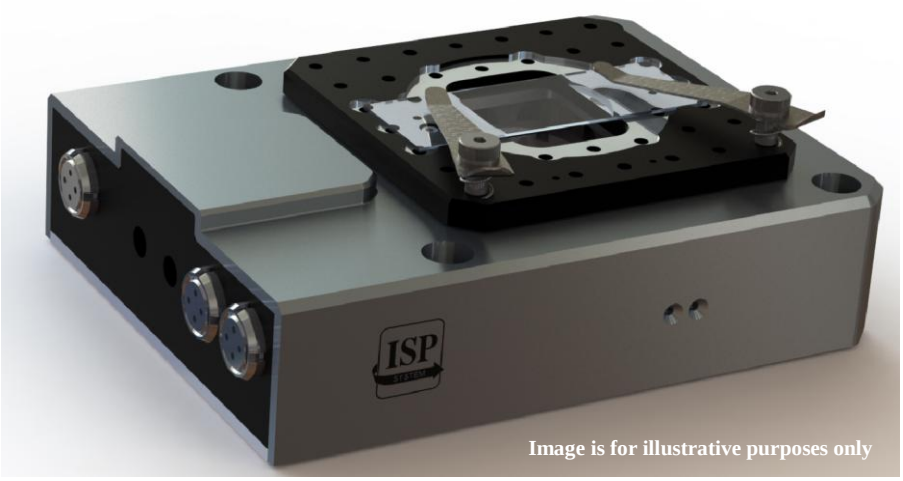

Image is for illustrative purposes only

Features:

- Sub-nanometer positioning resolution
- Absolute position closed-loop control
- Travel range of up to 10 mm
- Excellent closed-loop speed control on the whole stroke (speed variation <10%)
- Small foot print regarding to the travel
- X-Y movement through combination of two stages
- Patented guiding system for optimized straightness in 3 directions
- Dedicated electronics hardware and software available
- Triggered for synchronisation with customer application
- Vacuum and Ultra High Vacuum versions available
- Free aperture through the stage
- Remote motor → no electromagnetic perturbation near the pay load

Visit our web site www.isp-system.fr

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Nanopositioning Linear Stages

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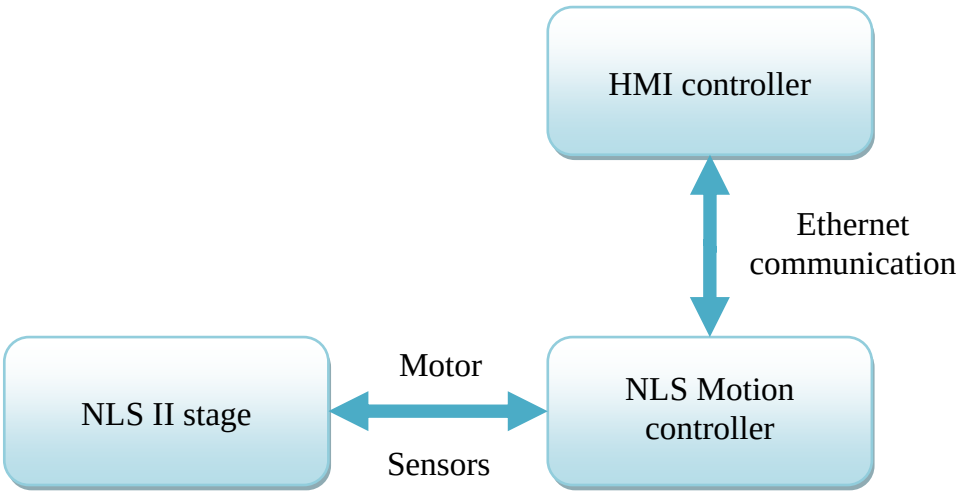
Technology	Availabilities
Motor	remote Voice-coil **(VC)**
Pressure compliance	Atmospheric **(ATM)**, Low Vacuum **(LV),** High Vacuum **(HV)** or Ultra High Vacuum **(UHV)**
Motion controller	Closed Loop (**CL)**
Displacement sensors	Optical **(O) or** Capacitive **(C)**
Travel	Up to 10 mm
Static resolution	**0.2nm** at 2Hz
Sensor dynamic resolution	**10nm dynamic** resolution at 1KHz
Static accuracy	**+/-10nm**
Near straightness in the three directions (angular/linear)	**1µrad/ ±30 nm (5 mm travel)**
Pay load	250 g
Scanning mode	On-the-fly scan
Maximum speed	10 mm/s
Speed variation over 10mm stroke	**<10%** of nominal speed
Working direction	Horizontally
Temperatures	Working temperature 0 to 30°C; Baking 150°C
Size	156x120x43.5mm
Weight	1.3kg
Body materials	Stainless steel or Aluminium

NLS II x series Motion controller architecture



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NLS controllers are Windows®-based interfaces providing powerful diagnostic, development, and analysis tools (simple automation tasks, observe the system behavior, system optimization…) on a user-friendly platform. Jog-mode allows the user to program motion profiles and to call them manually or in operating.

NLS controller has a host-mode operation allowing you to send commands with your PC via Ethernet for immediate execution. Jog-mode is completed by fly-scan and step-by-step modes available to triggered motion and acquisition on the same clock. Synchronous data transfer can be initialized by the user and acquisitions can be triggered on a master input clock.

	NLS Motion controller
Platform	NLS software
Languages supported	C, C++, LabVIEW (VIs supplied), …
Operating system	Windows 7
Operating profiles	Manual, jog, flyscan and step-by-step
Data acquisition	Synchronous
Acquisition triggered	Yes

Controller technical data	**Specifications**
Power supply	100-240VAC/50-60Hz 4.5A
Resolution	24-bit
Motion profiles	Position and speed
Speed profile	Trapezoidal
Communication	Ethernet
Motor supply	±12VDC/1A
Position sensor	Sin/Cos
Homing sensor	Photomicrosensor (accuracy ±1µm)
Trigger input	0-5V TTL (max freq. 1kHz)
Working temperature	0 to 50°C
Storage temperature	-20°C to+70°C
Cooling	Forced convection
Dimensions	4U depth 260mm
Weight	8 Kg
Maximum cable length between stage and controller	5m (P_{atm}), 3m (vacuum) If longer cables necessary, to be discussed acc. to the application

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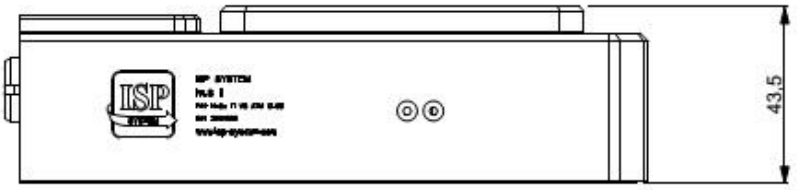
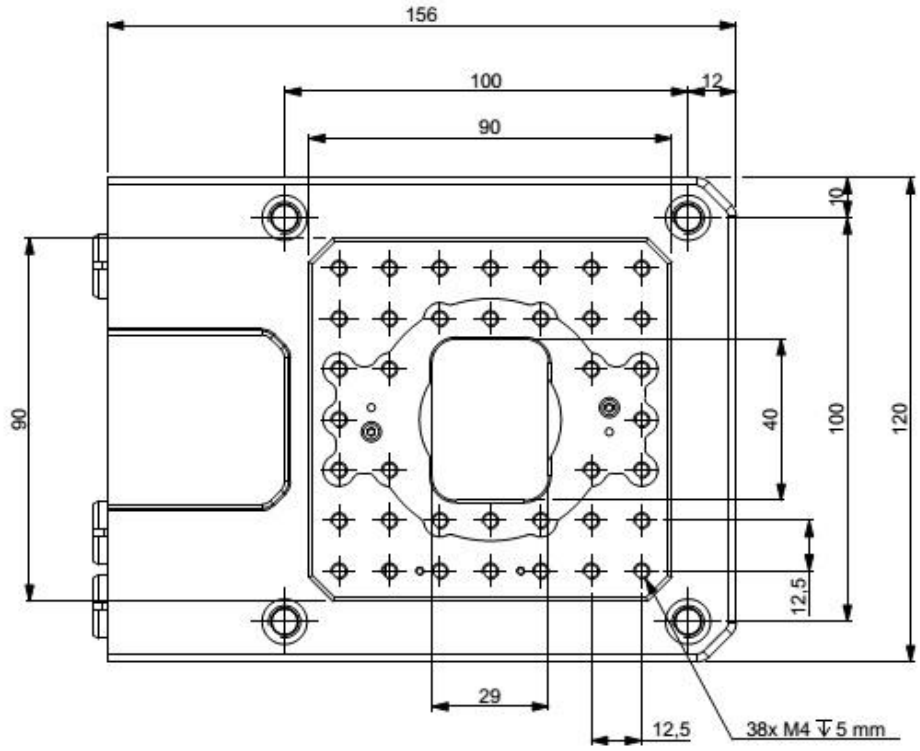
Dimensions (in mm)





** Please notice that further data and measurements are available on request.*

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