

# Solver P47H-PRO



## Description

SPM Solver P47H-PRO features its versatility. The number of available measurement and influence methods and modes is huge. Scanning-by-probe scheme allows characterization of samples with sizes up to 100x100x20mm and weight ~300 g. The letter H in the model name means head-associated scanning. The model can be adopted for measurements in a controlled gas environment, in liquids, with sample heating up to 130°C.

The AFM head can be easily removed for Stand Alone operation allowing samples with unlimited sizes to be measured.

## Applications

- Materials Science
- Semiconductors
- Optical and magnetic storage development
- Thin films
- Medicine & biology
- Polymers

## Operation modes

### Microscopies:

**in air:** STM/ Atomic Force Microscopy (AFM) (contact + semicontact + noncontact)/ Lateral Force Microscopy (LFM)/ Phase Imaging mode/ Force Modulation mode/ Adhesion Force Imaging/DC&AC Magnetic Force Microscopy (MFM) / DC&AC Electrostatic Force Microscopy (EFM)/ Scanning Capacitance Microscopy (SCM)/ Kelvin Probe Microscopy (KPM)/ Spreading Resistance Imaging (SRI)/AFAM

**in liquid:** Atomic Force Microscopy (AFM) (contact + semicontact + non-contact)/ Lateral Force Microscopy (LFM)/ Phase Imaging mode/ Force Modulation mode/ Adhesion Force Imaging.

### Spectroscopies:

AFM (force-volume imaging, amplitude-distance, phase-distance curves), STM (I(z), I(V), Local Barrier Height (LBH), Local Density of States (LDOS).

### Lithographies:

**in air:** AFM (Force (scratching + dynamic plowing) and Current (DC&AC ))/ STM;

**in liquid:** AFM (scratching + dynamic plowing).

### Nano-manipulations:

Contact Force.

<b>Specifications</b>		
<b>Sample size</b>		100x100x20 mm
<b>Scanners</b>		50x50x2.5 µm (±10%); 100x100x5 µm (±10%); 100x100x3.5 µm (±10%) (for Shear Force only)
<b>Min. Scanning Step</b>		0.006 nm; 0.012 nm; 0.012 nm
<b>Scan Type</b>		By Probe
<b>SPM Heads</b>		AFM; STM: 30 pA – 50 nA, RMS noise 4 pA; Shear Force
<b>Optical viewing system</b>		Resolution 3 µm Numerical aperture 0.1 Magnification 48x to 578x Horizontal field of view 2 to 0.49 mm
<b>Vibration Isolation</b>		Passive isolation is integrated Active anti-vibration system is available by request

<b>Components</b>		
<b>Measuring heads &amp; scanners</b>		SFC050, SFC050SEMI, SFC100, SFC100SEMI, SNC100, SNLG100, SFC050L, SFC100L, CH01L, AD001, SF002, ST005, ST006, SC103, SC110, SC150
<b>Adjustment units</b>		AU006, AU007, AU028
<b>Legs</b>		LG001, LG006
<b>Liquid cells</b>		MP3LC
<b>Approach systems</b>		SCB02A
<b>Vibration and acoustic isolation systems</b>		AC004, DBM01
<b>Special devices</b>		AFAM03, XYZ01
<b>Optical systems</b>		CCD03o, CCBC1, CCBM1, TR003
<b>Electronics</b>		BL022MT, BLOXYZ
<b>Interface cards</b>		IN004, IN005
<b>Software</b>		SWD01, SWD02, SWD05
<b>Cables</b>		CE002, IC001
<b>Toolkits</b>		SU003, SU001, SU007, SU008, SU015