



- ***Highest Performance***
- ***Easy Handling***
- ***Upgradability***
- ***Reasonable Price***

***DME Igloo Stage
With DS 95 SPM Head***



Danish Micro Engineering A/S
DME NanoTechnologie GmbH

The Tool for Fast and Reliable SPM Results

DME DualScope™ 95 SPM Scanner Series

With the DualScope™ 95 SPM scanner series we provide the ultimate unification of ease of use and performance! Decade lasting experience in the field of SPM application and manufacturing are united in the DS 95 SPM scanners to help the user achieve the best and most reliable results in the shortest possible period of time.

The **compact design** of the DualScope™ 95 SPM scanner guarantees outstanding stability and scan rates.

The unique **plug and play cantilever exchange** secures fast and safe operation of the instrument.

An **integrated optical axis** in the SPM scanner provides total visual control during approach and positioning.

The DualScope™ 95 SPM scanner provides the facilities for **all common and advanced SPM modes**.

Integrated electronics in the scan head guarantees lowest noise values in electrical SPM modes.

DualScope™ 95 multi mount allows installation of the DualScope™ 95 SPM scanner into DME stages and other facilities like nanoindenters, optical microscopes, etc.

Integrated Optical Axis



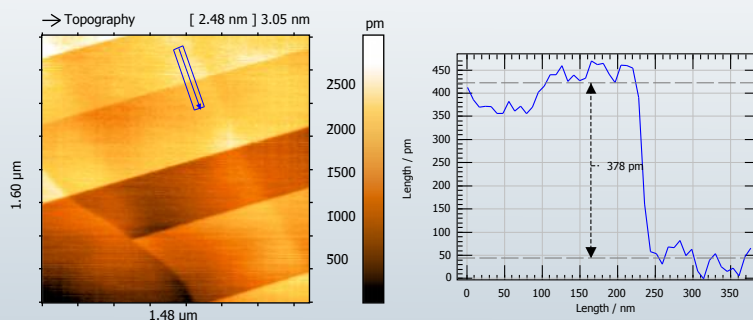
Multi Mount for the Installation in DME Stages and Wherever Needed

Highest Stability by Compact Design

95mm

On-Side Amplifier Electronics and Contacts

Easy Plug and Play Cantilever Exchange



Superior stability and ease of use: Atomic layers on HOPG in less than 1 minute from switching on the system.

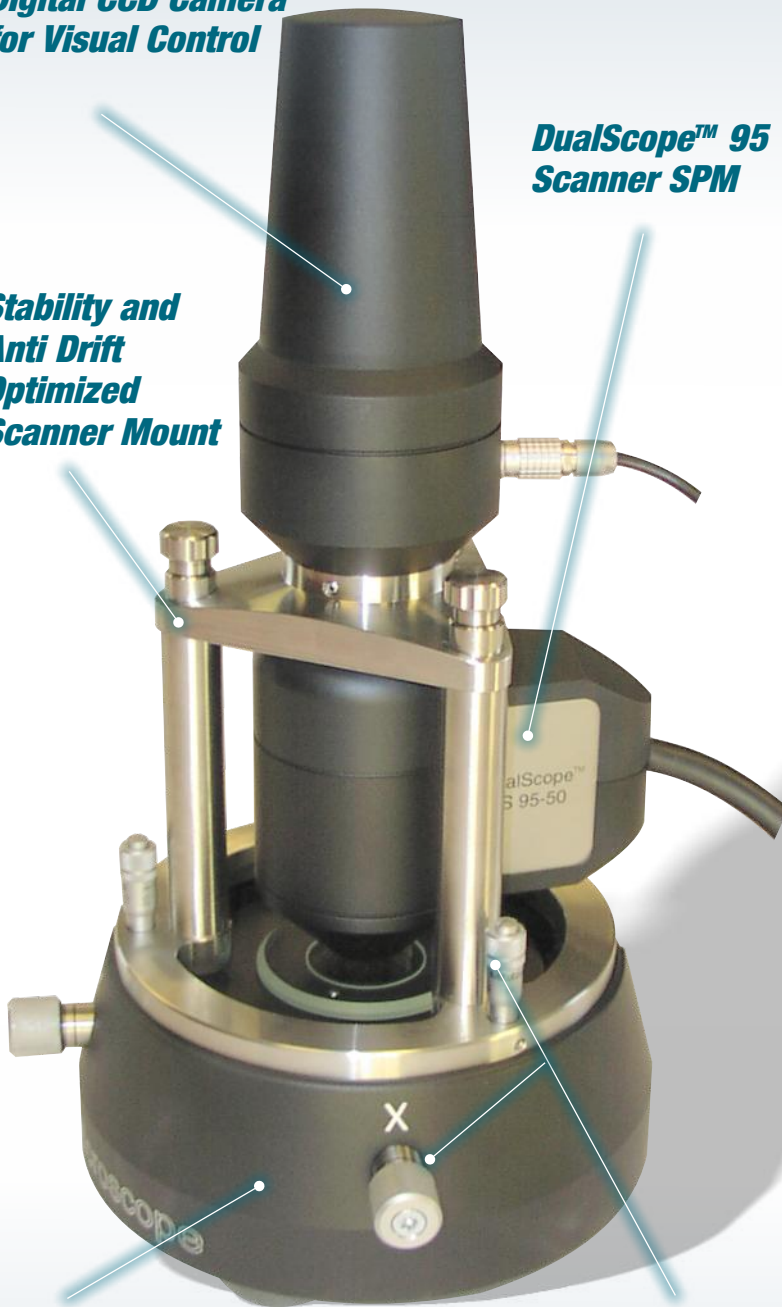
DME DualScope 95 AFM Scanner

Your first, but not last step into nano science

**High Resolution
Digital CCD Camera
for Visual Control**

**DualScope™ 95
Scanner SPM**

**Stability and
Anti Drift
Optimized
Scanner Mount**



**Stage Base with
Sample Table and
Transmission Light
Source**

**High Precision
Manual XY
and Z Sample
Positioning**

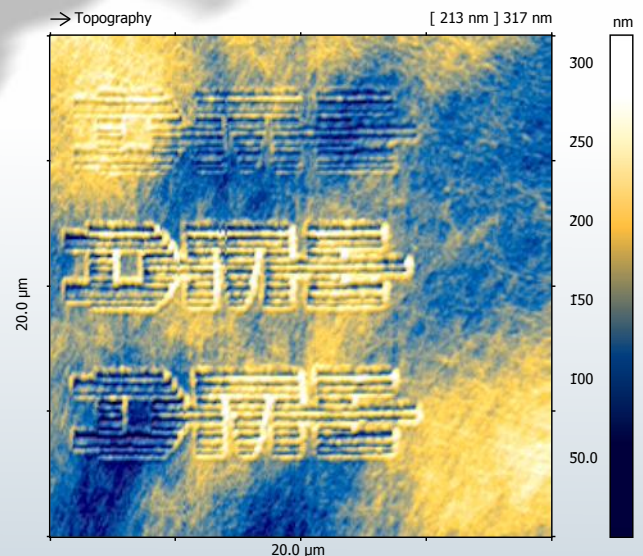
Outstanding stability and easy handling at an affordable price level.

A **handling and performance optimized design** makes it the optimal system for everyday measurement routines on small samples.

The total visual control via the CCD allows **exact sample positioning**. The short mechanical loop, paired with the circular design of base and scanner mount guarantee **highest stability and lowest drift values**.

Its modular design provides **full upgrade possibilities** to motorized or large sample stages.

As a “pure SPM” alternative for optical microscope or OEM integrated DualScope™ 95 systems in nano indenters etc., the DME igloo stage is a valuable choice.



The DME Logo imprinted in a polymer thin film by using the lithography function in the ScanTool software

DME Igloo Stage

System specifications:

System configuration possibilities

	Scanner	Stage	Controller	Software
DS95 50 Igloo	DualScope 95 50	Igloo Stage	C26 SPM Controller	ScanTool
DS95 200 Igloo	DualScope 95 200	Igloo Stage	C26 SPM Controller	ScanTool
DS95 50 small granite	DualScope 95 50	Small granite	C26 SPM Controller	ScanTool
DS95 200 small granite	DualScope 95 200	Small granite	C26 SPM Controller	ScanTool
DS95 50 ProberStation	DualScope 95 50	ProberStation	C26 SPM Controller	ScanTool
DS95 200 ProberStation	DualScope 95 200	ProberStation	C26 SPM Controller	ScanTool

Options:

DiProWA digital programmable waveform analyzer

Glueing Tool (cantilever assembly)

Thermo stage

Liquid cell

Feedback:

32 bit internal resolution

Full digital (PID filtered) or digital/analog (filtered P) operation in contact, dynamic and STM modes

Digital Lock-in based AC detection

Fully digital AC signal synthesizer (Q Booster) and demodulator

Built in automatic self test

Flash memory for fast firmware updating

Automatic Z detector gain adjustment

Supported Modes:

Contact mode, intermittent mode (AC), non-contact mode, frequency modulation mode, lateral force mode, force spectroscopy, EFM, kelvin probe force microscopy, MFM, scanning capacitance microscopy, STM

SPM Facts:

Scanner:

Scanrange: DS 95 50 (E) 50 μm x 50 μm x 5 μm
DS 95 200 (E) 200 μm x 200 μm x 15 μm

Accuracy and noise:

Hardware linearized scan motion in z direction

Noise Level < 0.05 nm rms in vertical direction (Z)

Scan Speed: up to 100 $\mu\text{m}/\text{s}$ (DS 95 50)
up to 50 $\mu\text{m}/\text{s}$ (DS 95 200)

Detection:

Self adjusting laser / cantilever deflection system

Min. amplitude setting in AC mode < 1 nm

Electronics:

Triple CPU Design, 1x 32 MHz, 1x16 MHz, 1 FPGA 80 MHz, for autonomous scan operation and realtime processing

Stage:

Sample size up to 50mm

XY movement of sample from 16mm

Z high adjustment 5mm (larger optional)

passive vibration isolation

high resolution digital CCD camera

LED transmission and reflecting illumination

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