

Product specification

DME 2468

Introduction :

DME's well-known DualScope™ scanners are designed as standard microscope objectives with built-in *Atomic Force Microscope (AFM)*. When the scanners are fitted into the nosepiece of a standard, infinity corrected *Optical Microscope (OM)*, you will benefit from the combination of the AFM and the OM plus the facilities offered by the two instrument types, respectively. This combination hence provides the additional possibility of generating *Scanning Probe Microscope (SPM)* images with an extremely high resolution in 3D - hereby offering the possibility of characterizing details down to the low end of the micrometer scale.

AFM with built-in optical microscope :

In many cases, however, a separate and dedicated SPM equipment set-up may be required. Such cases include the demand for combining an initial optical investigation of samples for details, selected by means of an optical objective (like in the optical microscope) followed by further investigations by means of the SPM equipment with AFM-mode.

This requirement is solved by DME's "stand alone" system, **DualScope™ Manual Stage DS M95** equipment, consisting of :

- Scanner stage [DME 2469]
- Stage platform with X-Y table [DME 2327]
- CCD camera [DME 2329]
- Monitor [DME 2337]
- CCD Camera PSU [DME 2350] with illumination control for reflected light as well as transmitted light (for transparent samples).

The Scanner options :

The DualScope™ Manual Stage DS M95 is designed and dimensioned specially to fit the DualScope™ scanners DS 95-200 [DME 2370] and the DualScope™ scanners DS 95-50 [DME 2452].

The complete, operational system :

Equipped with scanner, DualScope™ C-21 Control system [DME 2365], image software [DME 2355], and PC, you have a *fully operational DualScope™ Micro-*



DualScope™ Manual Stage DS M95

scope which provides the possibility of placing and studying objects of up to \varnothing 50 mm on the manual X-Y table, which allows a movement of 4 mm.

The flexibility of the DualScope™ Manual Stage DS M95:

The stage platform is equipped with rubber vibration dampers. When the DualScope™ Stage is placed on a solid table in an almost vibration free location, extremely good, reproducible measuring results can be obtained by the DualScope™ Manual Stage DS M95 - with details (in the x,y,z directions), including 3D imaging, far beyond what can be obtained using a traditional optical microscope setup (Diffraction limitation).

A scanner stage equipped with CCD camera and a suitable DualScope™ scanner can be used directly as a microscope, by placing it above the sample - or on top of it, if allowed.

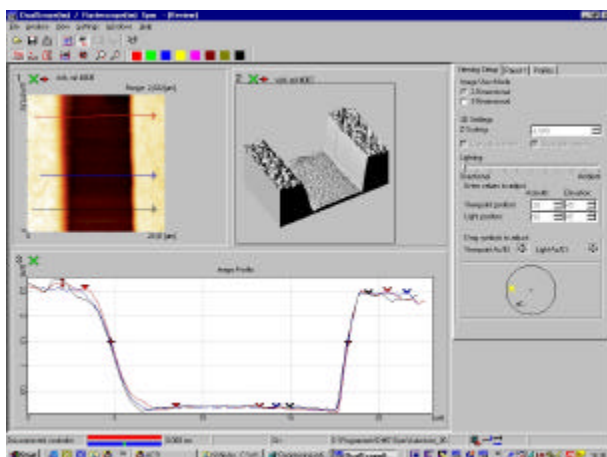
This scanner stage may even be placed above the sample on an inverted optical microscope.

The combined analytical features obtained :

The DualScope™ Microscope solution provides all the basic facilities required such as *optical microscope image with low resolution (shown on the monitor) - to allow selection of the relevant location on the surface - plus the unique analytical AFM-facilities combined in one instrument.*

The supplementary specifications :

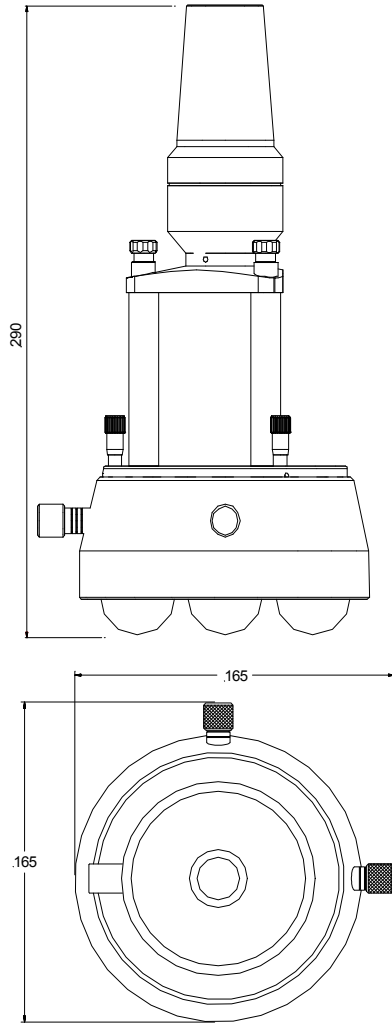
The above description solely concerns the DualScope™ Manual Stage DS M95 equipment. Regarding the scanners, controller, and image software reference is made to their individual Product specifications.



DualScope™ Manual Stage DS M95

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DualScope™ Stage Dimensions in mm

The **DualScope™ Manual Stage DS M95** has the following main data:

DualScope™ Scanner Stage [DME 2469] :

Height × Width × Depth: 117 × 125 × 125 mm
 Weight: 1.5 kg
 Max height adjustment w. micrometer screws: 5 mm
 For DME scanner: DS 95-200.

DualScope™ Stage Platform [DME 2327] :

Height × Width × Depth: 72.5 × 165 × 165 mm
 Weight: 1.4 kg
 Illumination through window in the middle.
 Light source: LED.
 Manual X-Y table movement: 4 mm.

DualScope™ CCD Camera and Optics [DME 2329] :

Height × Width × Depth: 126 × 58 × 58 mm
 Semi automatic colour CCD: 537(H) × 597(V) pixels.
 Image type: PAL.
 Standard video signal: ± 1 Volt pp, 75 Ohm
 Min. illumination: 8 lux

Monitor [DME 2337] :

Height × Width × Depth: 346 × 340 × 414 mm.
 Weight: 15 kg
 Colour monitor, 14", industrial quality
 Main power: 100 - 240 V AC, 50 - 60 Hz, 80 W.

CCD Camera PSU [DME 2350] :

Height × Width × Depth: 60 × 150 × 115 mm.
 Weight: 450 g
 Main power: 100 - 240 V AC, 50 - 60 Hz, 20 W
 Monitor/frame grabber: BNC

Technical Specifications and Analytical Properties with DualScope™ Scanner DS 95-200 :

Scan area :	Max. 200 x 200 micron
Z-range :	15 micron
Focal length :	95 mm
Mode :	SenseMode™ (an AC variant), DC (contract), Lateral Force
Sample positioning :	manual x,y-table, built-in (z-positioning by piezomotor)
Sample viewing :	CCD camera with monitor
Scanning procedure :	up to 1024 x 1024 measuring points (even at 300 x 300 nm Scan area)
Scanned image analysis :	The imaging software (Windows9X/NT/2000) offers scanned image and multi profile analysis. "Software-experts" guide you through the scanner set-up.

Local representative

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Manufacturer of Scanning Probe Microscopes
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