

# SIGNATONE

## A-Zoom $\mu$ Single-Objective Zooming Video Microscope\*... Designed for Productivity, Engineered for Precision

Originally developed to locate and inspect the finest electronic traces using even finer electronic probes in semiconductor and integrated circuit applications, A-Zoom $\mu$  Microscopes offer extended zoom ranges with numerical apertures capable of resolving feature geometry in the sub-micron range. The field-proven A-Zoom $\mu$  offers streamlined operation and economy in the manual A-Zoom $\mu$ . The A-Zoom $\mu$  offers a broad range of features and options to ensure the perfect brightfield imaging solution for most any micro inspection application.

The exclusive single-objective zoom optical design combines with precision opto-mechanics and Long Working Distance Objectives to deliver extended magnification imaging with maximum working space in and around your subject. With ample working room for instruments, tooling and fixtures, A-Zoom $\mu$  reduces damage to delicate devices often caused by incidental contact.



Well established in analytical probing applications in micro-electronics and semiconductor manufacturing, the time-tested line of Signatone probe stations afford streamlined and compact integration of multiple microscopes with the A-Zoom $\mu$  being one of our industry favorites.

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## Key Features of the A-Zoom $\mu$

### 1) On-Board LED Illumination

Adjustable 10-watt LED provides crisp contrast for both eyepiece and video viewing without the need for external light source.

### 2) Extended Magnification

Double your magnification range for greater viewing flexibility using the 2X optical amplifier.



### 3) Heavy-Duty Focus Block

Heavy-duty focus block offers 50mm precision travel to establish fine-focus and provide a stable and streamlined mounting interface.

### 4) 7:1 Manual Zoom

Engage precision optomechanics with a smooth, graduated zoom dial for precision field-of-view adjustment across an expansive single-objective magnification range.

### 5) Single-Objective Design

Optimized for use with Optem M-Plan APO Long-Working Distance Objectives to meet a range of magnification requirements. Optem Objectives further increase working room with a generous 95mm parfocal distance from objective shoulder to image plane and up to 34mm working distance from front lens. Optem M-Plan APO Objectives deliver exceptional field flatness with zero chromatic aberration.

### 6) Maximum Working Space

The unique single-objective design and compact lower housing combine to offer spacious 360° working access for specialized tooling, instruments and probe tips. This increased work space safeguards against accidental contact damage for delicate subjects and assists in maintaining environmental chamber integrity where cleanroom conditions are required. This design further eliminates cumbersome nose turret manipulation and subject repositioning.

### 7) Optimized for 1/2" Cameras

Standard C-Mount ISO port provides camera flexibility to meet most any prober imaging requirement.

### 8) Trinocular Head Options

A-Zoom $\mu$  Micro comes standard with a fixed trinoc head and 10X eyepieces, yielding 50/50 or 100% unidirectional, erect image transmission. Tilting Binocular eyepiece and camera-only head options are also available.

### 9) Matching Fields

Achieve matching eyepiece and on-screen fields-of-view across the entire 7:1 zoom range when paired with 1/2-inch cameras.

### 10) Ergonomic Design

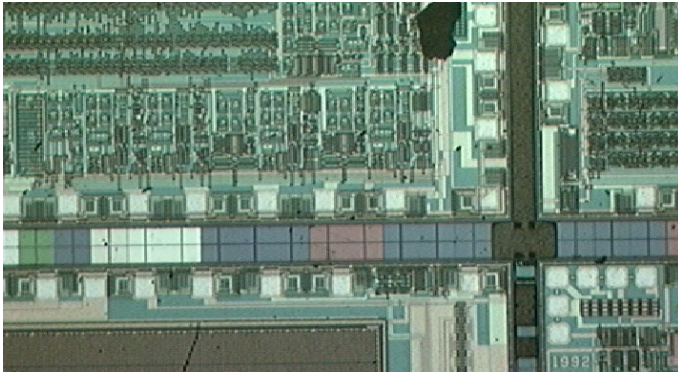
All magnification adjustments are located along right side of instrument and can be easily adjusted with a single hand.



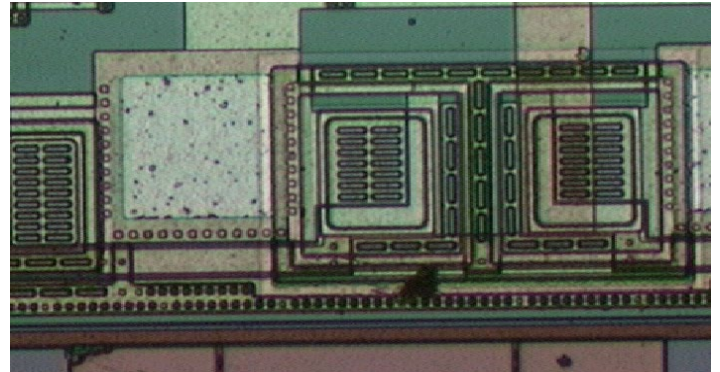
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Signatone designs and manufactures probing solutions that serve a wide range of markets and applications in the areas of industrial manufacturing, metrology, research and development, defense and aerospace all in relation to the semiconductor industry.

The A-Zoom $\mu$  features a zoom optical range capable of covering the limited magnifications of existing multi-objective microscopes and all magnifications in between. A variety of video and eyepiece options afford viewing flexibility to meet specific operator preference and ensure maximum probing and inspection productivity.



A-Zoom $\mu$  Image: 5x objective at zero zoom ratio  
50x Magnification



A-Zoom $\mu$  Image: 5x objective at 7:1 zoom ratio  
350x Magnification

## A-Zoom $\mu$ Micro Performance Specifications

Long Working Distance (mm) Infinity- Corrected Objective	Working Distance	Visual Magnification	Visual Field- of- View ( $\varnothing$ mm)	Video Field- of- View Low High
<b>Optem 2X M- Plan Apo</b>	34mm	22X – 152X	10.1 – 1.44	6.1 x 8.1 – 0.87 x 1.15
<b>Optem 5X M- Plan Apo</b>	34mm	54X – 381X	4.0 – 0.58	2.4 x 3.2 – 0.35 x 0.46
<b>Optem 10X M- Plan Apo</b>	34mm	109X – 762X	2.0 – 0.29	1.2 x 1.6 – 0.17 x 0.23
<b>Optem 20X M- Plan Apo</b>	20mm	218X – 1525X	1.0 – 0.14	0.6 x 0.8 – 0.09 x 0.12
<b>Optem 50X M- Plan Apo</b>	13mm	545X – 3812X	0.4 – 0.06	0.24 x 0.32 – 0.03 x 0.05

Values shown assume 2X Optical Amplifier is not engaged. Camera FOV is calculated with recommended 1/2" sensor format.

## Optem Long Working Distance Objectives

### Optem M-Plan APO, Infinity-Corrected

- |                          |              |
|--------------------------|--------------|
| • 2X / 0.055NA / 34mm WD | 28-21-02-000 |
| • 5X / 0.14NA / 34mm WD  | 28-21-05-000 |
| • 10X / 0.30NA / 34mm WD | 28-21-10-000 |
| • 20X / 0.42NA / 20mm WD | 28-21-11-000 |
| • 50X / 0.55NA / 13mm WD | 28-21-50-000 |

