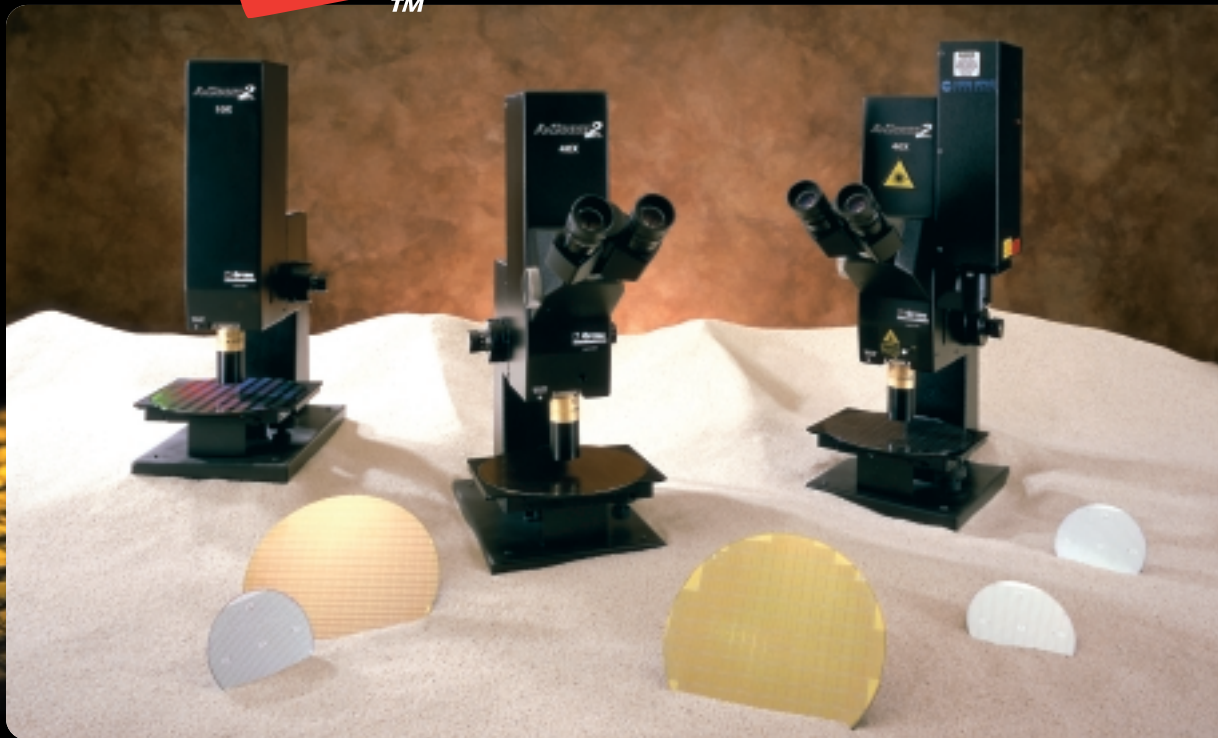


# A-Zoom<sup>2</sup><sub>TM</sub>

RE-ENGINEERED  
FOR IMPROVED  
OPTICAL PERFORMANCE



## 10X and 40X Series Analytical Probing Microscopes

*Next-Generation Single-Objective  
Video Microscopes from Optem*

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*True 10:1 and 40:1 Optical Zoom Ratios*

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*Broader Fields-of-View*

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*Higher Numerical Aperture for Improved  
Resolution and Greater Light-Efficiency*

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*Manual and Automated Zoom, Focus  
and Illumination Functions*

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*New 10X High-Resolution Objective*

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*Single- and Dual-Objective Slider Modules*



*Changing The Way The World Views Microscopes*

## The Next Generation of Single-Objective Analytical Probing Microscopes from Optem

Now available exclusively authorized Optem dealers and OEMs, **A-Zoom2** represents the next generation of analytical microscopes for inspection, development, testing and analysis in the micro-electronics, telecommunications and high-tech arenas.

Specifically re-engineered to meet the needs of today's semiconductor probing station manufacturers, the new **A-Zoom2** far surpasses its *A-Zoom* predecessor, delivering significantly improved optical performance and greater reliability. Dramatic gains in field-of-view, low-end magnification, optical zoom ratio, and numerical aperture, combine to provide a more powerful and effective optical system for on-wafer quality control and analysis.

With precision zoom optics and a unique single-objective design, **A-Zoom2** eliminates disruptive and time-consuming manipulation of multiple objectives on a single nosepiece, while also providing an extended and continuous magnification range.

**A-Zoom2**... Improved parfocality and parcentricity, refined engineering, ergonomic design, and a wide array of accessories and options... Truly a precision analytical instrument and a throughput workhorse.



### A-Zoom2 Performance Specifications

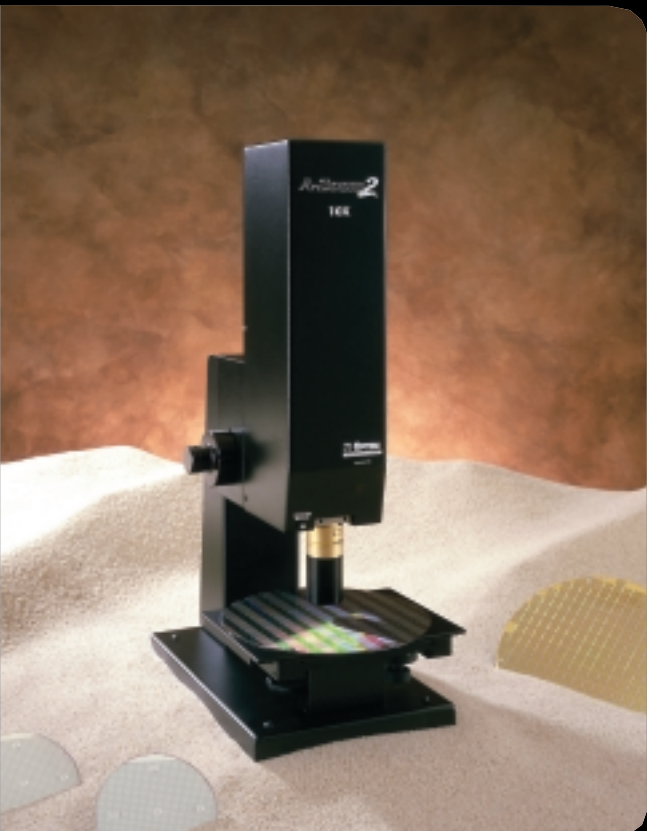
**10X Series**

Infinity-Corrected Objective	Working Distance	Visual Magnification	Visual Field-of-View (ø)	Video Field-of-View	NAVCAM Field-of-View
Milutaya 2X	34mm	28X – 280X	8.5 – 0.85mm	5.1 x 6.8 – 0.51 x 0.68mm	3.4 x 4.5mm
Optem 2.5X	34mm	35X – 350X	6.8 – 0.68mm	4.1 x 5.4 – 0.41 x 0.54mm	2.7 x 3.6mm
Optem 5X	34mm	70X – 700X	3.4 – 0.34mm	2.1 x 2.8 – 0.21 x 0.28mm	1.4 x 1.8mm
Optem 10X	19mm	140X – 1,400X	1.7 – 0.17mm	1.0 x 1.3 – 0.10 x 0.13mm	0.7 x 0.9mm
Milutaya 20X	20mm	280X – 2,800X	0.9 – 0.09mm	0.5 x 0.7 – 0.05 x 0.07mm	0.34 x 0.45mm
Milutaya 50X	13mm	700X – 7,000X	0.34 – 0.034mm	0.21 x 0.28 – 0.021 x 0.028mm	0.14 x 0.18mm
Milutaya 100X	6mm	1400X – 14,000X	0.17 – 0.017mm	0.10 x 0.13 – 0.010 x 0.013mm	0.07 x 0.09mm

**40X Series**

Infinity-Corrected Objective	Working Distance	Visual Magnification	Visual Field-of-View (ø)	Video Field-of-View	NAVCAM Field-of-View
Milutaya 2X	34mm	15X – 600X	16.0 – 0.40mm	9.0 x 12.0 – 0.22 x 0.30mm	4.5 x 6.0mm
Optem 2.5X	34mm	44X* – 750X	5.4 – 0.31mm	3.2 x 4.3 – 0.19 x 0.25mm	3.6 x 4.8mm
Optem 5X	34mm	325X – 1,500X	6.4 – 0.16mm	3.7 x 5.0 – 0.09 x 0.12mm	1.8 x 2.4mm
Optem 10X	19mm	75X – 3,000X	3.2 – 0.08mm	1.8 x 2.4 – 0.045 x 0.060mm	0.9 x 1.2mm
Milutaya 20X	20mm	150X – 6,000X	1.6 – 0.04mm	0.9 x 1.2 – 0.022 x 0.03mm	0.45 x 0.60mm
Milutaya 50X	13mm	375X – 15,000X	0.84 – 0.016mm	0.37 x 0.50 – 0.009 x 0.012mm	0.18 x 0.24mm
Milutaya 100X	6mm	750X – 30,000X	0.32 – 0.008mm	0.18 x 0.24 – 0.004 x 0.006mm	0.09 x 0.12mm

\* Vignetting at low power



## 10X Series

True 10:1 Continuous Optical Zoom

140X – 1400X Magnification Range  
When Used with 10X Objective

60% Gain in NA for added resolution and  
greater light-efficiency when used with  
Optem 5X or 10X High-resolution Objectives

Manual or Motorized Zoom,  
Focus, Illumination and Camera Functions

Parfocal and Parcentric for Throughput Gains

Eyepiece-Equipped and Laser-Ready Models

Single- and Dual-Objective Slider Mounts

NAVCAM™ Dual-View  
Wafer Navigation System Optional

# A-Zoom<sup>2</sup>

## 40X Series

True 40:1 Continuous Optical Zoom

75X – 3000X Magnification Range  
when used with Optem 10X Objective

33% Gain in Low Power Field-of-View

60% Gain in NA for added resolution and  
greater light-efficiency when used with  
Optem 5X or 10X High-resolution Objectives

Manual or Motorized Zoom,  
Focus, Illumination and Camera Functions

Parfocal and Parcentric for Throughput Gains

Eyepiece-Equipped and Laser-Ready Models

Single- and Dual-Objective Slider Mounts

NAVCAM™ Dual-View  
Wafer Navigation System Optional





## Laser-Ready Models

Both the 10X and 40X Series are available in Laser-Ready models for micro-machining, layer passivation, circuit repair, test and R&D needs. *A-Zoom2* Laser-Ready Models feature a

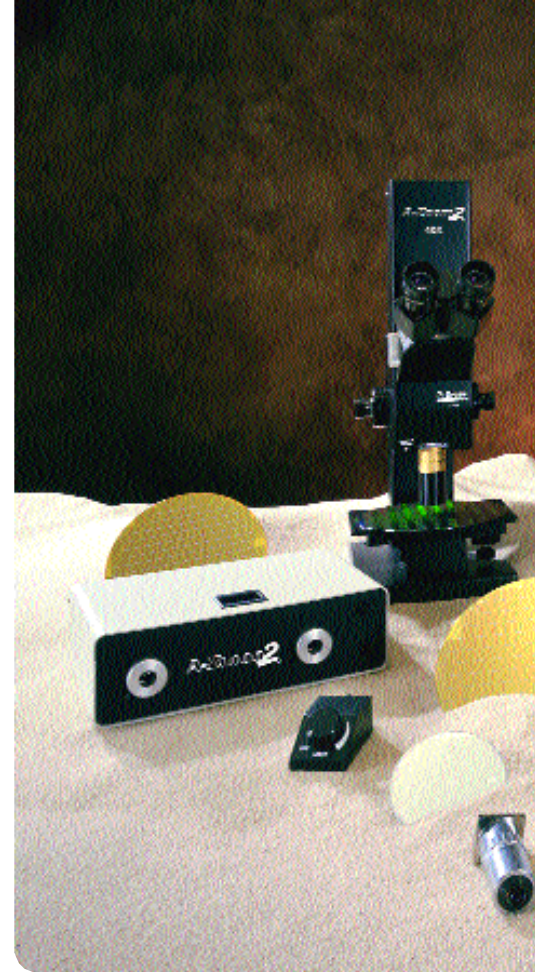
sturdy adapter arm protruding from the right side panel that accepts most major brand lasers used in microelectronic applications.

In standard Laser-Ready configuration, *A-Zoom2* is fully compatible with the following wavelengths:

- Infrared (1064nm)
- Visible-Green (532nm)
- Near-Ultraviolet (355nm)

With minor modifications, *A-Zoom2* will also pass Deep-UV (266nm) lasers, (contact Optem for details).

Aluminum to Chromium, Nitride to Polymide...  
*A-Zoom2* Laser-Ready models make the cut.



## Eyepiece-Equipped Models

For added viewing flexibility and visual assurance, both 10X and 40X Series *A-Zoom2*s are available with 24mm Widefield, 10X Eyepieces. These Binocular Eyepieces provide the operator with field-of-view comparable to that of the video monitor, and feature fully adjustable IPD (inter-pupillary distance), and collapsible rubber eyeguards.



## Reinforced With A Full Array of Accessories to Meet Your Every Optical Need



*A-Zoom2* Microscopes have been designed to incorporate a wide variety of accessories to maximize the versatility of your probe station and analytical system. Whether used as a stand-alone manual research and inspection instrument, or integrated into an OEM's Probing Station, *A-Zoom2* can be outfitted to meet a variety of optical requirements.

Choose from...

- **High-Resolution Objectives**
- **Single- and Dual-Objective Slider Mounts**
- **NAVCAM Dual Monitor Navigation System**
- **Remote Controllers**
- **Console™ Software**
- **Heavy-Duty Focus Blocks**
- **Lamplink™ Illuminator/Power Supplies**

## Optimized for Use With Optem High-Resolution, Infinity-Corrected Objectives

*A-Zoom2* is designed for optimal performance when paired with Optem High-Resolution, Infinity-Corrected Objectives. Optem's High-Res Objectives have been specifically designed to fit most contemporary environmental chambers, providing superior image clarity and promoting wafer test integrity. In applications where fit is particularly snug, Optem High-Res Objectives feature a removable sleeve, shaving an additional 2.7mm off the outside barrel diameter.

Currently available in a variety of magnifications,

- **10X (0.45NA)**
- **5X (0.22NA)**
- **2.5X (0.11NA)**

Optem High-Res Objectives provide superior resolving power.

Your *A-Zoom2* comes standard with a Single-Objective Slider Mount for quick and easy switchover to other objectives. To maximize versatility and throughput, Optem also offers a Dual-Objective Mount Slider Mount that is fully interchangeable with no modification to your *A-Zoom2*. Both Objective Mount Sliders accept M26 x 36TPI thread allowing use of infinity-corrected objectives.





## NAVCAM Dual-View Specimen Navigation System



Optem's *A-Zoom2* NAVCAM system makes finding your way across the most complex specimen quick and easy without changing magnification.

Designed around an internal dual-camera system, NAVCAM allows you to view a real-time, high-magnification, color image on the inspection monitor, while simultaneously navigating across a wide-field, low-magnification image on a separate monochrome 9" monitor.

When used with the proportionate controller (see below), you can switch views between two separate cameras on a single monitor with the simple flip of a switch.

## Proportionate and Digital Remote Controllers

Optem offers a number of Proportionate and Microprocessor Digital Controllers for fully automated remote control of any combination of zoom, focus, illumination on your *A-Zoom2*.



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**Proportionate Remote Controller** offers a basic means of automating your *A-Zoom2*. Available with the following features:

- 11-position dial for pre-set zoom stops
- Rheostat illumination control
- Continuous fine-focus dial
- Coarse focus switch
- Multiple light-source controls
- Proportionate video switch for switchable NAVCAM views using a single monitor

**Digital Remote Controllers** provide five programmable presets for quick and easy recall of zoom and light settings. Digital controllers work in conjunction with Console Software to provide you with the ultimate in computer remote control for any combination of *A-Zoom2* functions.

- Stores five illumination and zoom settings
- Continuous fine-focus (100µm/rev) dial
- Coarse-focus switch
- Multiple light source controls
- LED status displays
- Range-limit indicator
- Standard RS232 connection or optional IEEE-488



## Console Software



For highly repeatable, accurate inspection, take full control of your *A-Zoom2* with Console Software.

- Requires Windows 3.X, 95, 98, NT and 2000
- Controls zoom, focus and illumination.
- Interfaces openly with New Wave Laser Control Software
- Provides 5 presets for instant return to settings
- Compatible with Prober OEM DLL and DDE files
- Open D-Base architecture utilizes DDE for other database connectivity
- On-the-fly "Tool Tips" help function
- Downloadable from Optem web site



## Lamplink Illuminators/Power Supplies

Each **A-Zoom2** System comes complete with a Lamplink light source. Lamplink's combination of illumination and power options add versatility to your system.

Lamplinks come standard with 150 watt EKE lamps, and are available with or without a 15V (90-250VAC, 50/60Hz)

internal power supply. Lamplink's internal power supply can be used to drive both a camera and a motorized focus block, in addition to illuminating your specimen. Lamplink is available in both single- and dual-illuminator models.



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## Light-Modifying Accessories

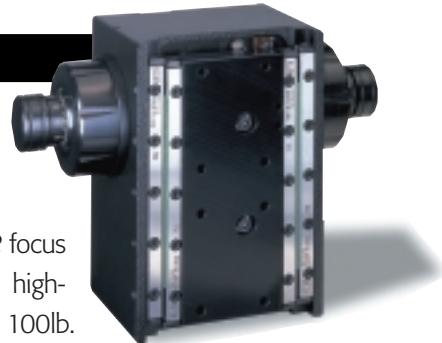
**Polarizer/Analyzer Accessory** is ideal for use with LCD inspection and other applications requiring light-restriction flexibility. The compact Polarizer/Analyzer Module slides quickly into the accessory port located on the right side of the microscope. The **A-Zoom2** manual Iris Diaphragm module is also available for quick and easy illumination level control. Ideal for stand-alone inspection stations, the compact Iris Module uses the same port as the Polarizer accessory.

## Heavy-Duty Focus Blocks

To ensure optical stability and minimize vibration, Optem offers a Heavy-Duty Focus Block on which to mount your **A-Zoom2**.

Available in 2" and 8" travel for working distance flexibility, **A-Zoom2** focus blocks can be motorized or manually operated. They feature high-precision mechanics for infinite fine focus adjustment, and boast a 100lb. (45kg) capacity. The unique worm-drive design and ball bearing movement provide smooth run-out and effectively eliminate fall or backlash to maintain sharp focus.

**A-Zoom2** Focus Blocks can also be specified with rotary encoders for basic feedback, or with linear encoders to assure the highest possible positioning accuracy.



## A-Zoom2 Technical Specifications

### Microscope

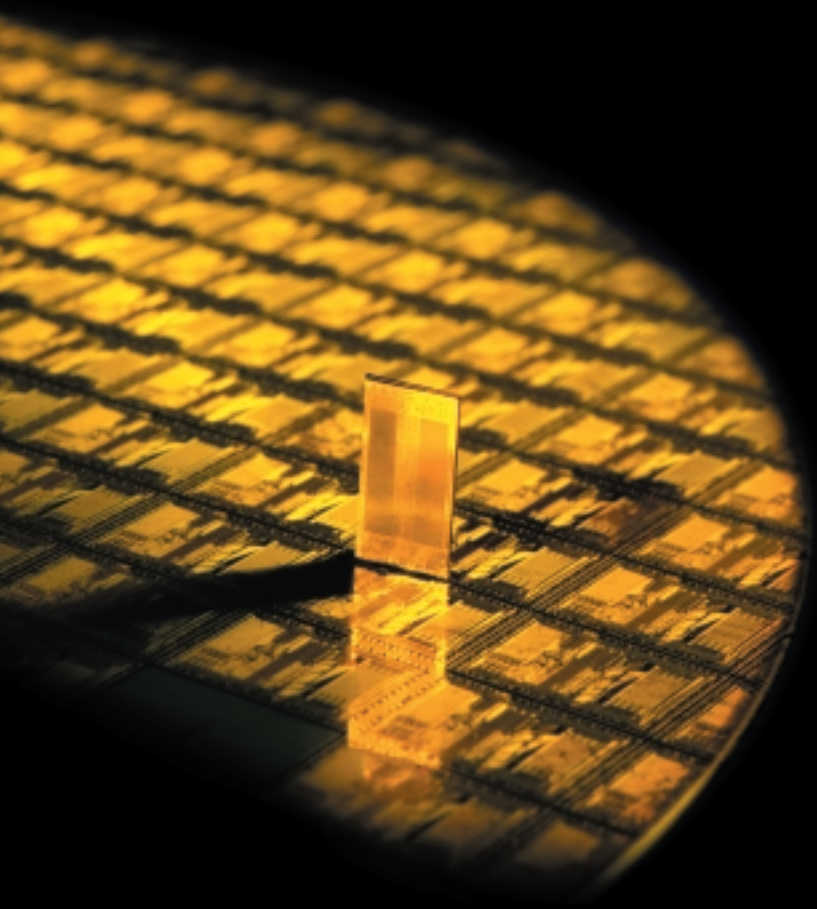
Dimensions.....	14.25"H x 4"W x 4.38"D
Weight (w/ Focus Block).....	14 lbs. (6.4 Kg)
Focus (Manual).....	2" Travel (optional motorized)
	8" Travel (optional motorized)

### Power Supply

Dimensions.....	8.25"W x 4"H x 8.25"D
Weight.....	9 lbs. (4.1 Kg)
Electrical Specs.....	90-250V AC, 50/60 Hz, 3A operates from Lamplink 15V DC, 3A power supply



Contact Optem for the Dealer Nearest You



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