

Rapid Automated Modular Microscope (RAMM) System



Modular Design for Rapid Automation Development

- Featuring automated high-speed XY stages, precision piezo & motorized Z focusing, and a wide range of scanning options
- Configurable with infinity-corrected optics, dichroic filter cubes, multi-wavelength excitation and emission filterwheels, shutters, and detectors including cameras and photomultipliers
- Auto-focus, focus stabilization, tracker, and robotic specimen loader available
- Arrangement provides a solid platform for high throughput screening, genetic sequencing, experimental research, and much more
- Designed for flexible cost-effective OEM development using high quality high MTBF components to reduce cost and increase customer satisfaction

We Create Solutions

*Applied Scientific Instrumentation, Inc. ♦ 29391 W Enid Rd ♦ Eugene, OR USA 97402-9533
(541) 461-8181 ♦ (800) 706-2284 ♦ info@ASImaging.com ♦ www.ASImaging.com*

Stages and Linear Translators

ASI's stages and linear translators are specifically designed to provide a high resolution, and highly repeatable, means of controlling position. All axes derive their precise control through the use of closed-loop servomotors with high-resolution rotary encoders (or optional linear encoders) for positioning feedback. The stages utilize crossed-roller slides, a high-precision lead screws, and zero-backlash miniature geared DC servomotors for smooth and accurate motion. The microprocessor-controlled control unit provides for RS-232 and USB communication with a host computer.

Specifications for Standard Configuration (with 6.35 mm pitch Lead Screws)

XY stage range of travel	At least 100 mm x 90 mm
Linear translation range of travel	At least 50 mm
Resolution (rotary encoder step)	22 nm
RMS repeatability	< 700 nm
Maximum velocity	7 mm/sec

Lead Screw Options

Lead Screw Pitch Options	Rotary Encoder Resolution	Maximum Speed
25.40 mm (Ultra-coarse)	88 nm	28 mm/sec
12.70 mm (Super-coarse)	44 nm	14 mm/sec
6.35 mm (Standard)	22 nm	7 mm/sec
1.59 mm (Fine)	5.5 nm	1.75 mm/sec

★ Standard Lead Screw Accuracy is 0.25 μ m per mm.

Option Linear Encoders: Resolution = 10 nm, Accuracy = ± 3 μ m per length of scale

Modular Infinity Microscope

ASI's modular microscope system offers a flexible solution for specialized applications. Major components are connected with universal mating rings which provide accurate alignment and rotational flexibility.

Basic Components:

- **Tube Lens Section** – Image-Forming Section with 200 Mm Focal Length Tube Lens
- **C-Mount** – Camera Port
- **Infinity Space Beam Splitter Cube** – Can be used for Epi-Fluorescence Filter Cube or as Right-Angle Objective Adapter
- **Objective Adapter** – Options for Nikon CFI60, Mitutoyo, or Olympus RMS-Thread Objectives
- **Universal Coupling** – Used on all Infinity-Space Components for Design Flexibility

Optional Components:

- **C-Mount Beam Splitter** – Provides a Second Camera / Detector Port
- **Filter Wheel Adapter** – Use with ASI's FW-1000 Filter Wheel

Specifications

Tube Lens	200 mm Focal Length
Beam Splitter	Olympus AX/BX/IX-series Cube
Beam Splitter Optical Length	60 mm
Camera Port	C-Mount
Objectives Supported	Nikon CFI60 Series, Mitutoyo LWD Series, ★ Olympus ∞ -Corrected

★ Olympus Objectives will have Overall Magnification 1.11 \times Objective Marking.

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