

# LAI Automated 4 Slide Sperm Finding and Documentation System Specifications



## Computer

Automated System operations are controlled through a computer with the following minimum configuration:

- Pentium 4 Computer, keyboard and mouse, LCD Color Monitor,
- 512RAM, 250GB Hard Drive,
- DVD-RW, CD-RW,
- Microsoft Windows XP operating system software,
- Microsoft Office Professional software,
- LAI Automated Sperm Finding and Documentation Software
- User Manual.

## Camera

For Image Capture the system uses a Scientific/Instrument Grade Color 5 Mega pixel Firewire digital Camera that features:

- 2/3" progressive scan interline sensor
- CCD color (Bayer Mosaic), 5.0 mega pixel image
- 2580 x 1944 active pixel resolution
- 3.4  $\mu\text{m}$  x 3.4  $\mu\text{m}$  pixel size
- 2/3" optical format C-mount for microscope or camera lens
- 8/10-bit digitization, 30-bit color digitization
- 20 MHz 8-bit, 10 MHz 10-bit readout frequency
- 3.5 fps full resolution 8-bit frame rate, higher speeds with binning and ROI functions
- 1.6 milliseconds to 17.9 minutes exposure control in 1 microsecond increments
- 1x1, 2x2, 3x3, and 4x4 Binning Modes with full color images
- Electronic Shutter Control
- Camera includes 2 year limited warranty.

## Microscope

The camera is mounted on an Olympus BX41 Brightfield Microscope or BX51 Infinity Corrected Epifluorescent Microscope, specifically configured for automated Sperm Finding. Both microscopes feature:

- Rigid Ergonomically designed Y-shaped Microscope Frame, with five position Rotatable Nosepiece,
- Lamphouse for bright field illumination,
- Trinocular Observation Tube,
- two 10x Eyepieces,
- Abbe Condenser with a 1.1 numeric aperture providing coverage over the 4X to 100x objective range,
- 40x Plan Achromat Objective,
- C-Mount Camera Mounting Adapter,
- Dust Cover
- User manuals.
- Microscope components include 1 year limited warranty.

In addition, the BX51 Microscope includes:

- Universal Reflected Light Illuminator Module,
- Mercury Lamphouse, and Mercury Power Supply Source,
- Wide Band emission UV, Blue and Green excitation Mirror Cubes,

## Automated Stage and Focus

The Microscope is fitted with

- LAI Servo Motor Driven Focus
- LAI Servo Motor Driven 4 Slide XY Stage with zero lag piezo-electric linear servo motors equipped with encoder feedback for precise control of stage motions and positioning, capable of 5 $\mu\text{m}$  steps