

## **Workstation**

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

- COMET Computer Workstation and Software with Extended Dynamic Range Imaging Capability
- Tower Configuration Computer with 19"LCD Color Monitor, 1 GB RAM, 250GB Hard Drive, DVD/CD/RW Recorder, Optical Mouse
- Computer comes with 3 Year Parts & Labor Limited Warranty, (Computer must be returned to Loats Associates, Inc. for warranty service),
- Microsoft Windows XP Professional operating system software
- Microsoft Office 2003 Small Business version applications software
- Comet Assay Analysis System Software with Extended Dynamic Range Image Acquisition Control and Processing Capability, Software security block and user manual

## **Camera**

For Image Capture the system uses an Enhanced Quantum Efficiency Cooled Scientific/Instrument Grade digital Camera which features:

- a zero-defect 2/3" 1392 X 1040 pixel progressive scan CCD
- with (6.45 X 6.45 $\mu$ m) microlensed imaging cells for enhanced image light collection and dynamic range,
- housed in a lightweight 920g) camera body
- the camera body has an integral Peltier thermo-electric cooler providing  $-25^{\circ}$  C cooling from ambient for reduction of thermal dark current noise generation during extended exposures (0.15e/pix/s);
- the camera is linked directly to the host computer through an IEEE 1394 (FireWire) cable for power and programmatic control of on-chip integration and other camera functions;
- the camera provides 12bit digital output,
- programmable gain and offset control, and
- real time transfer of image data to display RAM.
- Camera includes 1 year limited warranty.
- When operated in conjunction with the LAI Extended Dynamic Range Image Acquisition software, the camera enables collection of wide dynamic range images in a 16 bit per pixel monochrome format

## **Microscope**

The camera is mounted on an **Olympus BX51 Infinity Corrected Epifluorescent Microscope**, specifically configured for automated Comet Analysis. The microscope features:

- Rigid Ergonomically designed Y-shaped Microscope Frame, with five position Rotatable Nosepiece, and Lamphouse for bright field illumination, Trinocular Observation Tube, 2-10x Eyepieces,
- Abbe Condenser with a 1.1 numeric aperture providing coverage over the 4X to 100x objective range,
- 10x and 20x Plan Achromat Objectives,
- Universal Reflected Light Illuminator Module,
- Mercury Lamphouse, and Mercury Power Supply Source, Wide Band emission UV, Blue and Green excitation Mirror Cubes,
- C-Mount Camera Mounting Adapter,
- User manuals.

The Microscope is fitted with the LAI Servo Motor Driven Focus and XY Stage with zero lag piezo-electric linear servo motors equipped with encoder feedback for precise control of stage motions and positioning.

## **Optional: Robotic Slide Delivery System**

The Microscope Slides may be batch processed by the system via a **Robotic Slide Delivery System** which features:

- Servo Motor Driven, two axis pick and place unit
- Vacuum Slide Handling for automated pickup of slides stacked in bins and delivery of individual slides to the automated stage of the microscope for analysis. Following analysis the unit retrieves the completed slide and delivers it to the return bin, before proceeding to the next slide.
- The unit typically features three source and three return bins which can hold up to 50 standard 1"x3" microscope slides with #1 coverslips for a total capacity of **150 slides**.