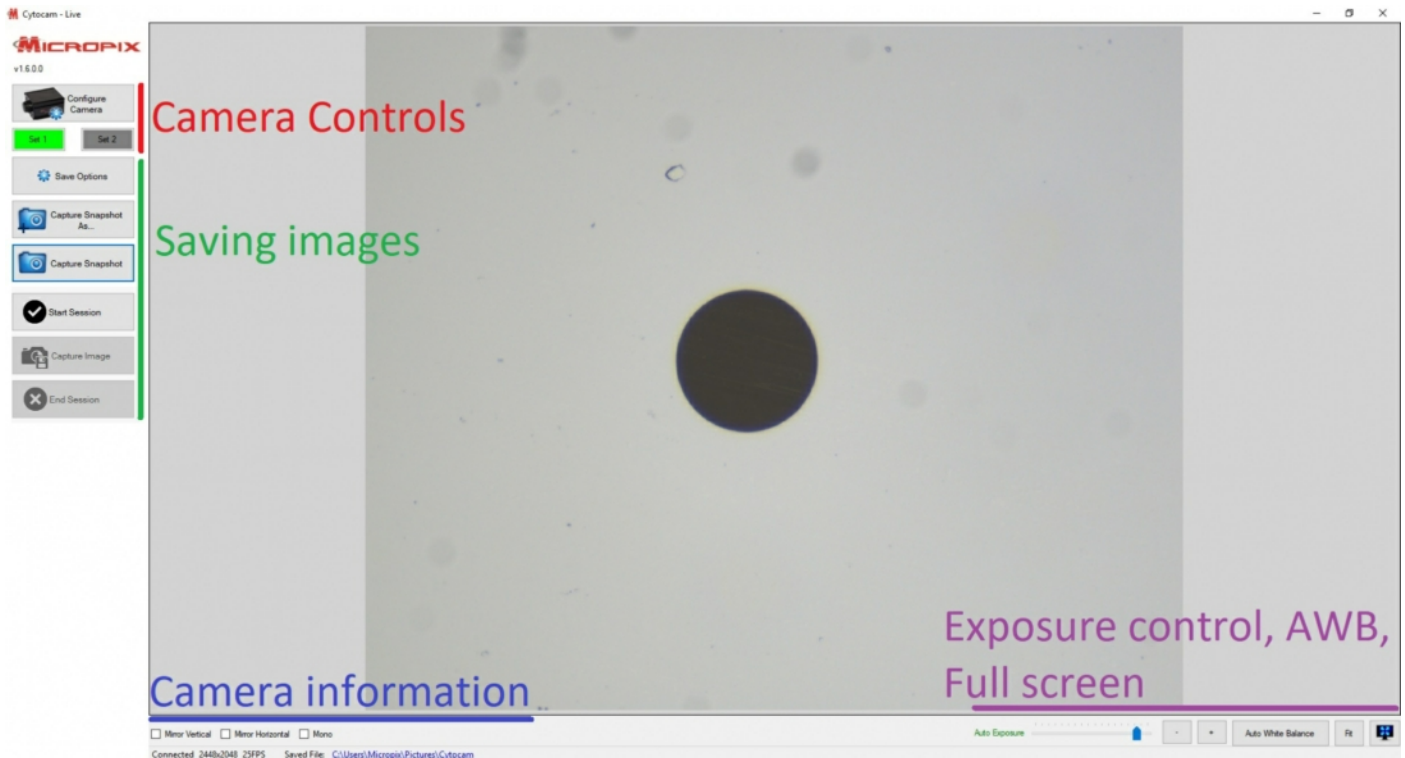


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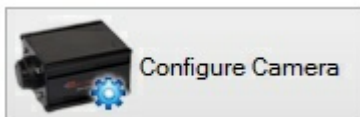
- To start the software double-click the desktop short-cut.
- Or go to **Start > Program Files > Micropix > Cytocam**
- The software will automatically search for your camera and start in Live mode.



Overview



1: Camera Controls

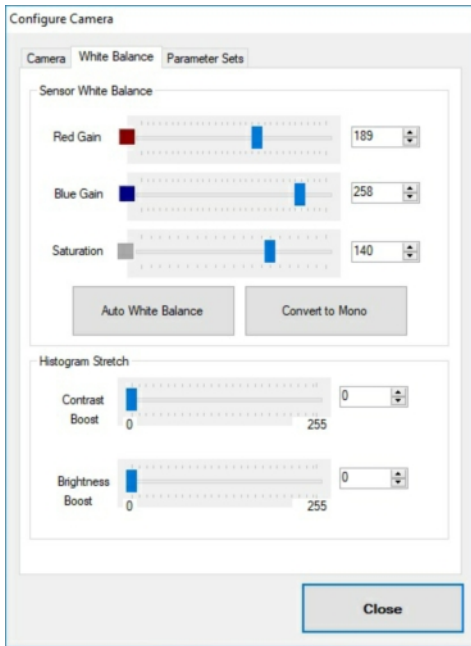


Press **Configure Camera** button to access camera controls.

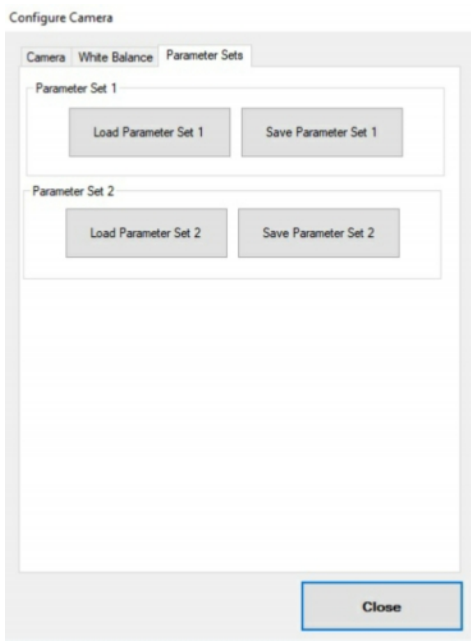
Cytocam always starts in Set1.



- **Frame Rate** - set to maximum. Reducing the Frame Rate allows longer exposure times.
- **Exposure** - Tick Auto (exposure) box then use the **Exposure Auto Target** slider to make the image Lighter or Darker. Untick Auto to manually control exposure time.
- **Gain** - Normally set at 0 (Off). Increase Gain to increase image brightness without increasing exposure time. Use with care as too much Gain can add noise (pixelation) to images.
- **Gamma** - Normally set to 1 (Off). Increase Gamma to more evenly distribute light across the image. However, this can make the image look “washed out”. Reduce Gamma to increase contrast.



- **Sensor White Balance** - Manually adjust Red Gain and Blue Gain if necessary.
- **Saturation** - increases the vibrancy of Red colours without changing the amount of red.
- **Auto White Balance** - Should be Off (grey button). Press button (turns green) when on a blank piece of slide to white balance the camera. Press again to switch off when complete.
- **Convert to Mono** - Converts colour image to mono. Only used in fluorescence imaging.
- **Histogram Stretch** - Used in mono Fluorescence imaging only to reduce background noise (Contrast boost) and increase sample brightness (Brightness Boost).

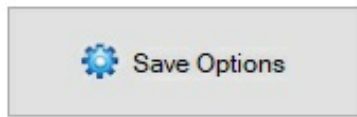


- **Load / Save Parameter Set 1 / Parameter Set 2** - Save your camera settings. Cytocam automatically loads Parameter Set 1 on start-up. Useful if you have samples that require slightly different colour balance settings for example - Set 1 for H&E (increased saturation, higher auto exposure target), Set 2 for Ki67 (less red gain, more blue, reduced auto exposure target).

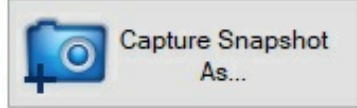
Initial Set-up

- Focus your sample on the screen.
- With Auto exposure ON use the Darker / Lighter slider to make the image look slightly dull (at this point you do not want to over-expose the sensor).
- Move to a black piece of slide.
- Press **Auto White Balance** - the button will turn green and your image should adjust until it becomes **GREY**.
- Press Auto White Balance again to turn it off (button goes grey).
- Go back to your sample.
- Adjust the Darker / Lighter slider to make the image brighter (the background will become whiter with greater exposure).
- Manually adjust **Red / Blue gain** and **Saturation** if required.
- Be sure to **SAVE PARAMETER SET 1** when you are happy with your settings.

2. Saving Images



SAVE OPTIONS: Used to determine the destination and name of images saved when pressing **CAPTURE SNAPSHOT**. Use when you capture multiple images of the same sample. E.g. PatientXYZ001, PatientXYZ002, PatientXYZ003 etc



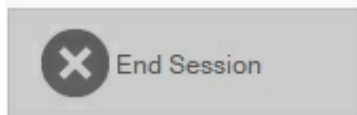
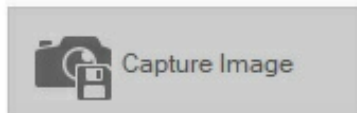
SAVE IMAGE AS... Use to save images one at a time and manually determine destination and file names. Will always open to the folder the last image was saved to.



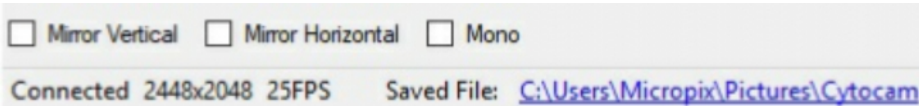
CAPTURE SNAPSHOT Automatically saves an image according to the parameters set within **SAVE OPTIONS**.



Start Session Opens a new session where images are saved with pre-determined image file names that include session number, user, date, speciality and sub-speciality. These lists are customisable by editing the SessionOptions.xml file found in C:\Program Files (x86)\Micropix Ltd\Cytocam. Images are saved to the Image output destination found in "Save Options". Images can then be searched using Windows Explorer based upon any single or combined bit of session data e.g. search by user and / or date and / or speciality etc.

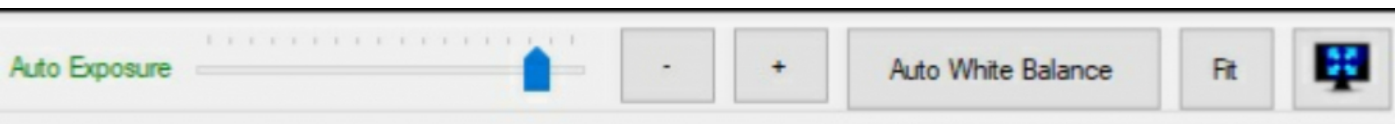



3. Camera information



- Tick **Mirror Vertical** and **Mirror Horizontal** if the image on the screen is upside-down compared to the image down the microscope.
- **Connected** - displays the resolution and current frame rate (frames per second, FPS) of your camera.
- **Saved File** - displays and links to (opens in Windows Explorer) the name and location of your last saved image.
- **Mono** - tick on / off for mono mode (fluorescence imaging only).

4. Exposure control, AWB and Full Screen



- Control the image brightness using the **Auto Exposure** slider or + / - buttons (Darker / Lighter). Placed here for convenience so you don't have to go into the Configure Camera settings.
- Also for convenience we have an Auto White Balance button here. Move to a black piece of slide and press - the button will turn green. Press again to turn off when finished (button should be grey during normal use).
- **ZOOM** - Click in the live image to zoom in. Click and hold to drag the image. This is useful if you want to zoom in and then fine focus on a particular spot. Press **FIT** to return to whole image.
- Press  to enter **FULL SCREEN** mode. Press ESC on your keyboard to return.