

Image Capture

Image capture either by camera or computer is an area in which Brunel Microscopes has spent time developing experience and some particular expertise. We pride ourselves on working directly with customers to design image capture solutions that meet individual and specific needs. This is an area that changes rapidly and only an overview is given here - nevertheless the principles are standard. We have a specific web site dedicated to image capture that will have up to date details of current recommendations - www.microscopyimaging.co.uk, and the current price list will reflect up to date information.

Image capture includes the following:

- Still **camera** images either digital or film with either SLR (35mm) or compact camera.
- Video clips taken from **CCTV** cameras, camcorders or short clips taken by still digital cameras.
- Direct **computer** capture of still images or video clips from both digital and analogue output cameras.
- **Software** designed to assist with the depth of focus problems of microscope images.

Taking photographs - Photomicrography



Photography adapters

This is relatively straight forward for 35mm film/digital cameras and compact digital cameras.

SLR Cameras - film and digital

- 35mm SLR cameras - film and digital. With these types of cameras the lens system is removed and only the camera back is used. In effect the microscope becomes the temporary lens system for the camera back. There are a small number of these cameras that have a sophisticated feedback mechanism from the lens to the camera body and without the lens the camera will not work. These cameras are just not suitable. Check that the camera to be used will operate its shutter and exposure control when the lens is removed.



Parallax system

- The other factor to consider is the viewing screen. Most SLR cameras (digital and film) have heavily frosted viewing screens that can make exact focusing with a microscope difficult. The parallax photography system overcomes this problem by using a focusing periscope that enables the specimen to be focused without using the camera viewing screen. The parallax system can only be used with trinocular compound and stereomicroscopes.

- An SLR camera can be attached to monocular, one eyetube of a binocular or to a trinocular tube using a simple adapter that couples to the camera back by a T2 ring that has the fitment to suit the camera. A photoeyepiece is recommended as these produce a photograph that has better focus towards the edges. The accessories listed for each of our models will show the appropriate adapters. We also have adapters to reduce the trinocular eyetubes of Leica (Leitz) and Olympus microscopes to standard size diameter.

Compact digital cameras

- There are a very large number of digital compact cameras and most, but not all, can be used for microscopy. Unlike SLR types the lenses of compact cameras cannot be removed, and because there are many different styles and designs of this type of camera, the exact mechanism of attachment varies.

- In simple terms compact digital cameras can be divided into those that have a screw thread on or around the lens housing and those without screw threads. Brunel Microscopes manufacture to our own design two adapters that can attach most compact cameras to most microscopes. For full up to date details of the adapters needed for an individual camera please consult our web site www.microscopyimaging.co.uk or telephone for advice.

- Our own adapter the Unilink will fit into standard compound microscope eyetubes or, using an insert adapter, into the 30 or 30.5mm eyetubes of stereomicroscopes. The Unilink has an integral lens and a 37mm male screw thread. Cameras with a lens screw thread can be attached to the Unilink via suitable step rings. Cameras with a lens diameter greater than 52mm will tend to show vignetting of the image and are therefore not recommended. A number of cameras have screw threads but also have an external telescopic zoom lens, many of these have tube adapters with a screw thread at the end that allows the lens to zoom in and out within the adapter. Again we advise that you locate your particular camera make and model on our web site and this will tell you exactly what you need.

- Cameras without a lens screw thread can be attached to the Unilink by the Link arm accessory. This is a stainless steel framework that attaches to the camera via its tripod bush (all but the smallest of cameras have these) and screws into the Unilink. Irrespective of the position of the tripod bush of the camera, the framework can be adjusted to allow the camera to be held securely looking down the lens of the Unilink. Depending on the diameter of the camera lens it will be necessary to zoom into the image in order to fill the complete frame of the photograph.

- A small number of compact digital cameras are just too physically small to be suitable, and it is possible to gain some indication of the suitability of a camera by simply holding it above the eyepiece of the microscope and attempting to fill the field of view of the camera by adjusting its position. Our technical support would be pleased to assist during office hours, and our web site is kept up to date with information about new camera models as they become known.



Unilink and Linkarm adapters



Unilink/linkarm



Unilink