



**Environmental Control**

**CO<sub>2</sub> Enrichment**



**www.solentsci.com**  
Tel: +44 (0)870 774 7140 E-mail: sales@solentsci.com



## CO<sub>2</sub>

For the pH of the medium to remain constant over the duration of the imaging the headspace above the medium needs to be kept at approximately 5% CO<sub>2</sub> in air. Rather than try and keep the entire atmosphere inside the large enclosure at 5% CO<sub>2</sub> whilst having warm air circulation a small inner enclosure, or workhead is used.

This use of a small workhead also helps when considering humidity control. If the entire atmosphere inside the large enclosure was saturated with water vapour then the microscope's environmental specification would be compromised.

This control of the headspace atmosphere is achieved by trickling in humidified 5% CO<sub>2</sub> at a rate just quicker than it is leaking out maintaining a very slight positive pressure. The typical flow rate needed to achieve this is a few ml/min.

A simple source of 5% CO<sub>2</sub> in air is a gas cylinder containing pre mixed 5% CO<sub>2</sub> in air. This gas mix is commonly available from many gas vendors in many countries.

A simple gas flow control is all that is needed here.



Some labs have an in-house supply of 100% CO<sub>2</sub> so dilution of this supply is another option. Solent Scientific offer two gas mixers (Single outlet & Multiple outlet) which deliver the mixed gas at the required flow rate of a few ml/min compared to many other commercially available gas mixers which work at flow rates in the region of 1 litre per minute.



## CO<sub>2</sub> Workheads

Live cell imaging involves studies in many sample holders. For microscopes equipped with objective with a working distance of 1 mm or more we offer:

### 35mm Petri Dish Workhead



### Microscope Slide Workhead



### Multiwell Micro Titre Plate Workhead



For microscopes using oil objectives it is not possible to view right up to the edge of the sample holder. We offer a workhead which will accommodate Ibidi  $\mu$ -Slide slide chambers. Here we can observe right up to the edge of the sample wells.

