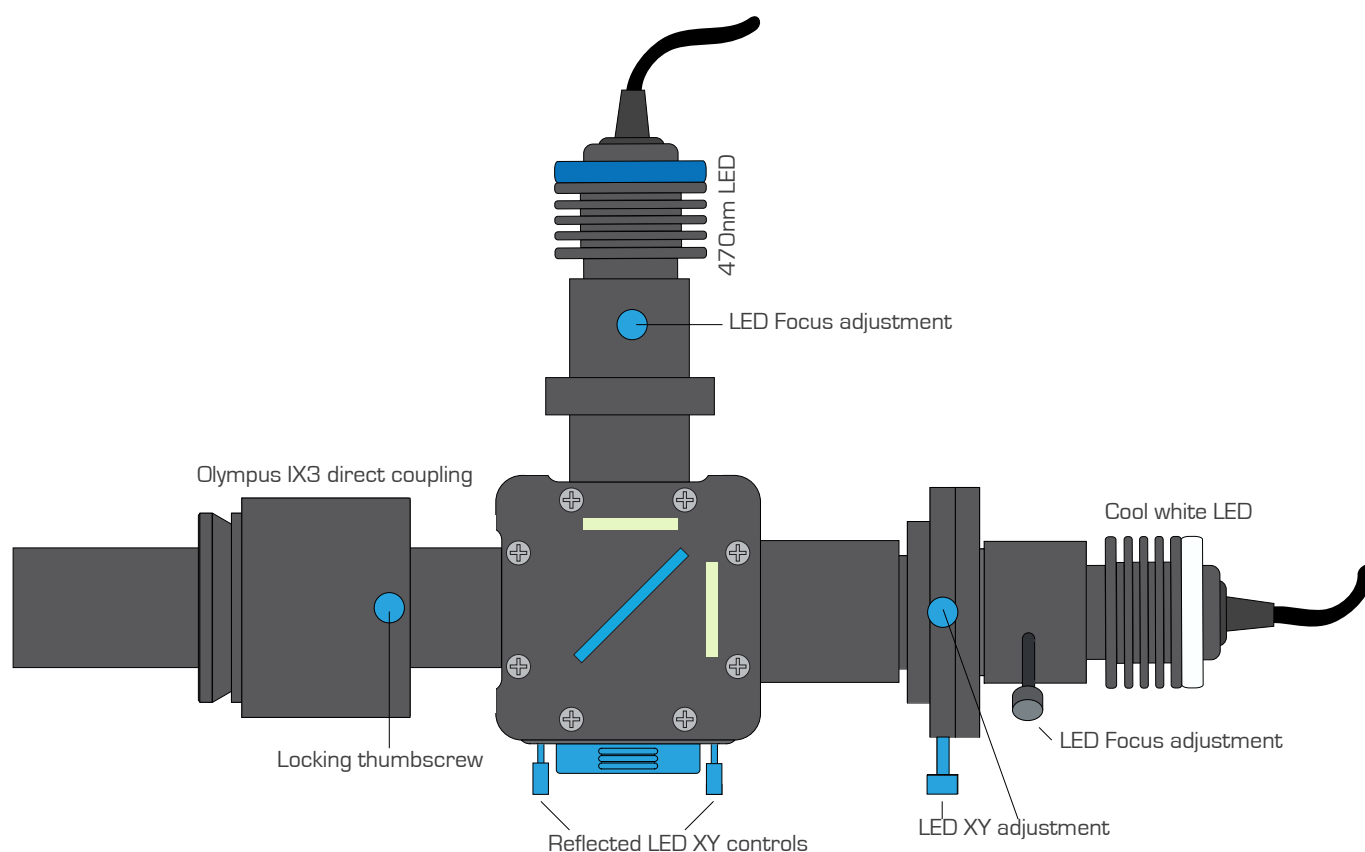


The following quick start guide details alignment and focussing of your Cairn Research LED (or liquid light guide) light source using our modular microscope couplings. In this example, a dual port coupling is described, but the same principle applies to all our microscope couplings, which allow up to four LEDs to be mounted simultaneously on a variety of different microscope frames.

Please exercise caution when aligning your LEDs or light guide, particularly in the UV range. Ensure intensity is low and never view the LED directly.



1) Attach the coupling to your microscope

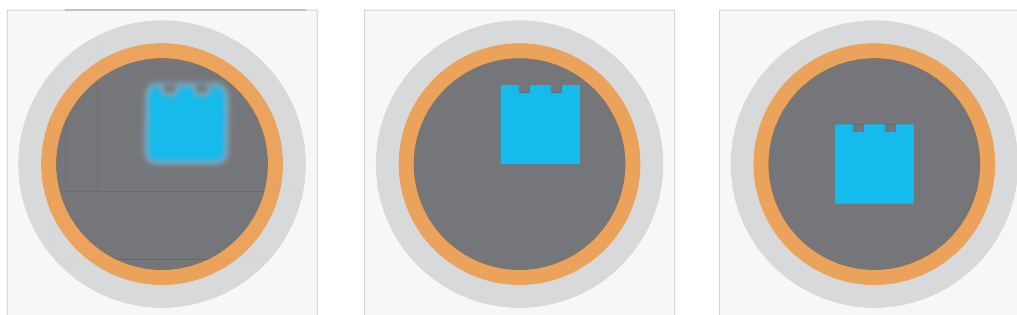
Cairn microscope adapters are either supplied to couple onto an existing epi-illuminator, or are used in place of the epi-illuminator as a 'direct' coupling.

- a. If attaching to your existing epi-illuminator, a male bayonet coupling is normally supplied which attaches to your microscope epi-illuminator via a large grub screw.
- b. For Cairn direct couplings, a tube is also supplied (containing the relevant microscope tube lens). Insert this tube as far as possible into your microscope and secure to the bayonet coupling using the locking thumbscrew. Then secure the bayonet coupling to your microscope frame.

- 2) Align and focus the transmitted LED at the back focal plane of the objective
 - a. Move to a blank objective position on the objective nosepiece, remove any cover caps and place a small piece of white paper in this position. Alternatively, place an objective centering tool in the light path.
 - b. Loosen the LED focus adjustment screw and slide the LED head in Z within the coupling until the image of the LED comes into sharp focus on the piece of paper (or centering tool). Lock off this position by securing the thumb screw. A notch is present in the LED housing to help locate this lock off screw and prevent the LED being fully pulled out of the coupling.
 - c. Centre the focussed image of the LED using the LED XY adjustment (blue) screws.
- 3) (If applicable), align and focus the reflected LED at the back focal plane of the objective

Follow steps 1 – 3 above as per the transmitted LED. The XY adjustment controls for the reflected LED are located on the door of the dual port coupling. This action tips and tilts the dichroic mirror housed within the Cairn filter cube. The LED focus adjustment remains the same.

Repeat the X, Y, Z adjustment for all your LEDs – once locked off, the controls should not need to be adjusted unless the coupling is removed.



- 4) (If applicable), align and focus the output from a light guide

The same X, Y, Z adjustment applies to an output from a liquid light guide housed within our standard coupling. In this case, a clearly defined, centered circle indicates correct set-up at the back focal plane of the objective.

For further assistance, please do not hesitate to contact our Tech support team:

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