Optomechanical alignment of transillumination condenser

Here we provide a strategy for alignment of our transillumination kit based upon Olympus IX2-LWUCD condenser (27 mm WD / 0.55 NA).

Illuminate

1. Turn on the LED.
2. Fully open the field stop (Fig. 1); check that light is coming from the condenser.
3. Fully open the aperture stop (Fig. 2) for maximum brightness.

Fig. 1 The field stop iris is located just below the LED housing.

Fig. 2 The aperture stop changes the brightness and illumination NA. Lateral adjusters center the field stop on the camera sensor.

Focus

1. Move the objective to focus on a sample.
2. Focus the image of the transillumination's field stop on the sensor
    1. Manually lower the condenser close to the sample, <27 mm.
    2. Alternate between adjusting the field stop and raising the condenser. If the image on the camera goes very dark, open the field stop until it brightens again. Iterate until the edge of the field stop is visible and sharply in focus.

Center

Use the lateral adjusters (Fig. 2) to center the field stop in the FOV camera.

Done!

Open the field stop so it is just out of view of the camera.

alignment, manual, ramm, transillumination, trans-illumination, Olympus