

## 1 Prepare your Facility

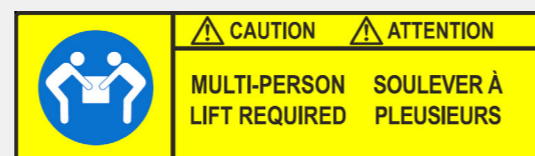


Thank you for choosing BC43. Use this quick start guide to get up and running with the new instrument and start collecting data.

**CAUTION:** There are laser safety, finger crush and lifting hazards associated with this product. Read all of the **SAFETY AND WARNING INFORMATION** at the beginning of the User Guide before installing or operating this product. Access to technical documentation is available at: [andor.oxinst.com/downloads](http://andor.oxinst.com/downloads)



Please observe the following warning when lifting the BC43 Instrument:



### Essential Guidance

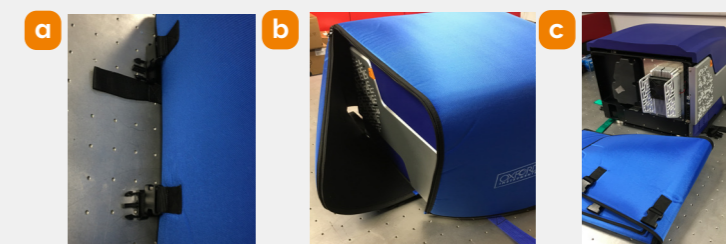
- Handle the BC43 and accessories with care.
- Ensure 250 mm clearance around unit and power supply vents (Do **not** block vents when operating on benchtop).
- Keep dry, <70% humidity non-condensing.
- Use correct power supply and cables.
- Operate between 18°C and 25°C. Store between 0°C and 50°C.
- When moving the instrument from outside or from a storage area that isn't close to room temperature, it is advisable to unpack the product and leave it at room temperature for 4 hours before using the instrument.
- Performing procedures, using controls, or adjusting the instrument other than as specified in the manual may result in hazardous radiation exposure.

## 3 Unpack BC43

The BC43 instrument is shipped with a lifting harness and dust cover.

**Note the dust cover is attached to the lifting harness and must not be removed prior to lifting and positioning the BC43 on the workbench on which it is to be used. Ensure the BC43 is placed on a level surface.**

1. Remove the BC43 from the shipping packaging using the supplied lifting harness straps. One set of lifting handles are provided per person and a three-person lift is required. Each person lifting the unit should lift a pair of straps of the same colour: either blue, green or black.
2. Once the BC43 has been placed on the bench and moved into position the top part of the dust jacket can be unclipped from the base and then unzipped.



Remove the dust jacket on the BC43 unit. a) Unclip the side straps. b) Unzip the side panel. c) Remove the dust jacket.

3. Remove the base of the lifting harness by sliding out the supporting base panel.

Please see the user guide for full instructions.

## 2 Supplied Components

BC43 with dust cover and lifting harness	Microscopy 3D joystick (Spacemouse)	Microscope objectives (as ordered)	Sample holder	Microscope sample slides (x2)	Multiwell stage holder	Documentation scan or visit: <a href="http://andor.oxinst.com/welcome">andor.oxinst.com/welcome</a>
Computer workstation & monitor	Fusion software (copy supplied on workstation)	USB 3.0 cable	Power extension cord (x5)	Power supply unit	Power distribution unit	Country specific power cord

## 4 Connect BC43

- 1 Connect monitor to workstation using the supplied adaptor. Connect both to the power distribution unit.
- 2 Connect the keyboard, mouse and 3D joystick to the PC.
- 3 Connect BC43 and PC via USB 3.0 Cable. Ensure to connect to the correct USB 3.0 port on PC (match orange labels).
- 4 Connect BC43 to the power supply and power distribution unit.
- 5 Power up the PC.
- 6 Turn on BC43.
- 7 Once the blue LED is solid, start the Fusion software, available on the desktop.

## 5 Install the Microscope Objectives

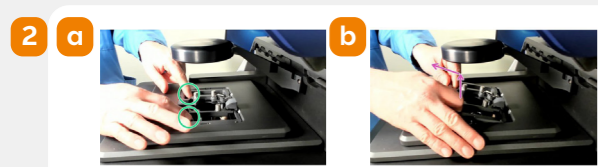
Ensure that the BC43 Unit is recognised by the Fusion software before installing the objective lenses.

The objectives are shipped separately from the main unit during transit and must be self-installed. Ensure that the objective lenses are placed into the correct nosepiece positions, as per the objective selection in Fusion and nosepiece numbering. Please use the following instructions to add the objectives to the BC43 unit.

1. Open the BC43 unit.



2. Remove the sample holder.
  - a
  - b

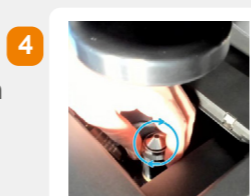


3. In the Fusion software interface select the air (dry) immersion objective to be installed. Clicking the selected objective icon will rotate the objective turret to the correct engaged position.



Objectives as ordered displayed here.

4. Remove the nosepiece cap and **screw in the objective lens** corresponding to the selected icon in the Fusion interface. Continue to turn the objective lens barrel clockwise until it is tight.



5. Repeat steps 3 - 4 for all air (dry) immersion objective lenses.

6. If present select the oil immersion objective, Fusion will prompt for confirmation of the selection. Select 'yes.'

7. The stage will move to allow this objective to be installed.

8. Replace the sample holder. **Ensure to keep the sample holder in the correct orientation as shown in the diagram and that the fixed arm is on the right.**



Lock facing you as you place the sample holder

## 6 Add & Find a Sample on BC43

1. First, select the **Convallaria sample** from the provided microscope slides.
2. Select the 2x Objective within Fusion.
3. Lift open the BC43 unit lid.
4. Place the sample in the sample holder, note, there is no need to remove the sample holder.
5. Ensure that you place the sample with the **coverslip facing down towards the objective lens**.  
**Note: The right-hand side of the sample holder is fixed and the left-hand side can be adjusted to accommodate the size of the sample slide.**
6. Use the silver clips to secure the sample to the sample holder.
7. With the lid of the BC43 open, **use the 3D joystick** to move the sample over the objective. Observe your sample with the lid open and position the specimen with the joystick until it is over the center of the objective lens.
8. Close the BC43 unit lid and see the next section.

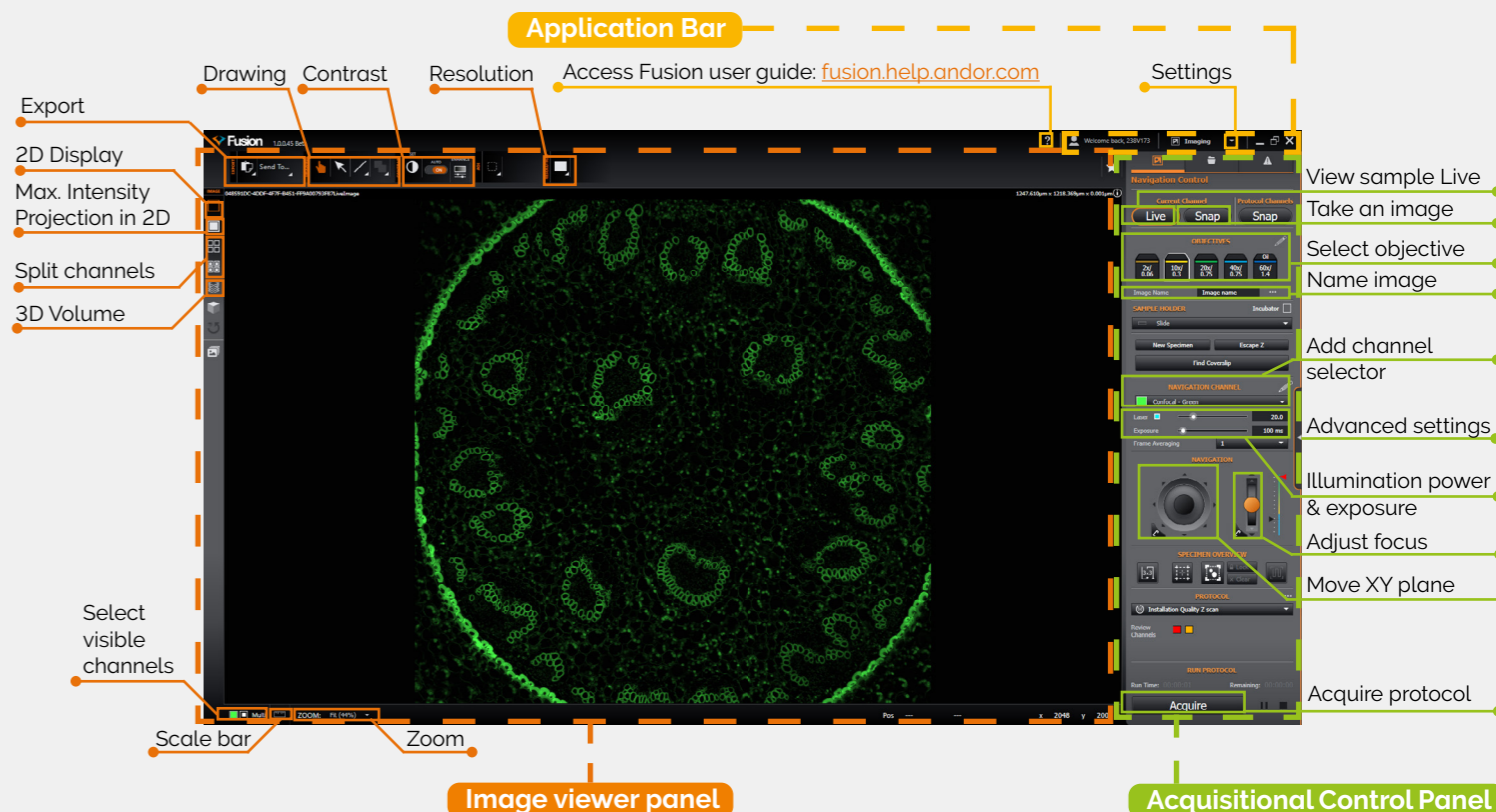
Please see the BC43 user guide for more guidance on finding your sample.



Left-hand button toggles XY - Z, and right-hand button toggles sensitivity.

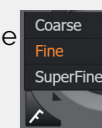
## 7 Start Acquiring Data

Once your sample is aligned, familiarise yourself with the Fusion user interface to get started acquiring data. Hover over any button to get a description of its functionality.



### Acquire your first images

1. With your sample loaded onto the sample stage (Section 5), select the DPC or Brightfield channel from the **add channel selector** dropdown in the Acquisitional Control Panel.
2. Press **Live** to see the sample on the selected channel. Adjust exposure (using **Illumination power & exposure**) until the image is visible in the live preview.
3. You might not see your sample straightaway. If so, open the top cover lid and ensure the sample is positioned over the objective lens. Close the lid. Then focus the sample using the focus adjustment slider.
4. Select the 10x objective.
5. Select **Find Coverslip**, this will move the sample close to the focus position. Press **Live**.
6. Use the Microscopy 3D joystick (Spacemouse), click right button and select Fine (F) mode as indicated in the Fusion interface. Then adjust focus by rocking the 3D joystick (Spacemouse) backwards and forwards.
7. Enter an image name for the acquisition in **Name image**.
8. Press **Snap**. Your image will appear in the **Image Viewer Panel**.
9. To acquire a fluorescence image, change the channel in the **add channel selector** to **Green Channel** and press **Snap**.



To learn about multi-dimensional protocols, including multiple channels, time series and further options please see our user guide available at [andor.oxinst.com/downloads](http://andor.oxinst.com/downloads)

## ? Troubleshoot

The optics in BC43 are factory adjusted before delivery and the design has few adjustable or moving parts. Therefore, it requires minimal interaction once setup in the software and in use. **Refer to the Standard Procedures and Troubleshooting sections of the BC43 user guide.** For further assistance please contact Andor Customer Support.

Online access to technical documentation is available at: [andor.oxinst.com/downloads](http://andor.oxinst.com/downloads)