

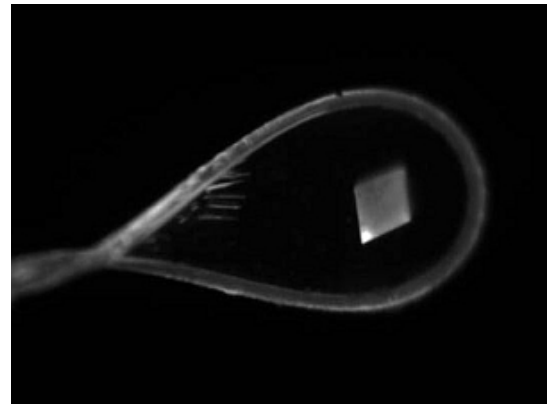
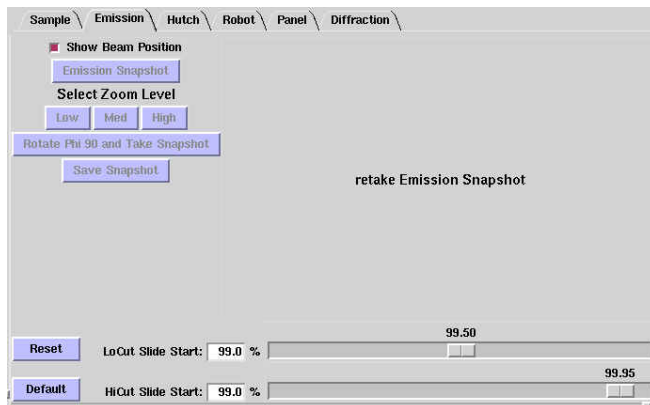
Using the VISEX microscope

The Vixex microscope (sold by Jan Scientific) has been mounted in a custom positioner and installed on the beam line. This camera may help to visualize protein crystals by making them glow in Vixex light emission images. Most sample loops and mounts also glow in these emission images. The microscope has been mounted and aligned at 45° to the sample view camera (see image to the right), and a new video Tab (Emission) has been added to the video widget in the Hutch, Sample and Screening tabs in Blu-Ice. When an Emission snapshot is recorded, the phi-axis is rotated by 45° so the view seen in the Emission picture is in the same orientation as you see in the sample camera. The phi axis is returned to the original location after the snapshot is taken.



Taking an Emission snapshot

To take an Emission snapshot, first orient the loop appropriately using the Sample camera. Select the Emission tab on the video widget as shown below left. For medium and high zoom settings, the zoom level of the Emission camera view will be identical to the zoom level you have selected in the Sample camera view. Because there has been no image taken, it will say retake Emission Snapshot. Click “Emission Snapshot”. The screen will go black and once the snapshot has been acquired, an image will appear similar to that shown below right. This snapshot can be saved using the “Save Snapshot” button.



Once an Emission snapshot has been taken, an additional snapshot at 90° can be collected using the “Rotate Phi 90 and Take Snapshot” button (this button is initially inactive but become active after you have collected the first image). In addition, the three zoom buttons on the Emission camera widget also become active and you can switch zoom levels if you wish. If your crystal is clearly visible in the Emission snapshot, this view can then be used to pinpoint the location of the crystal, and the crystal centered in the beam in the usual way (the click to center feature also works for the image in the Emission camera).

If the Emission image appears too dull, you can use the bottom slide bars to make adjustments. Move the bottom bar (Hi-Cut Slide) to the left to brighten the image. If the image appears too bright, you can slide the upper bar (Low-Cut Slide) to the right. Clicking “Reset” to the left of the slide bars will set both slide bars to 0 and clicking “Default” will move them to their default values of 99.5 and 99.95 respectively.

Hutch Lighting

When an Emission snapshot is taken, the lights in the hutch, along with the Sample Lights (Back Light and Side Lights), are turned off. For safety reasons, if the hutch door is open, the lights will not turn off. To take an Emission snapshot from a terminal outside the hutch with the hutch door open, turn off the hutch lights manually using the switch next to the hutch door. For remote users this will not be an issue.

If for some reason the Emission snapshot fails to be taken and Blu-Ice hangs, clicking “Abort” will return Blu-Ice to its normal state. If this happens, the hutch lights will come on but the Back Light and Side Lights may not. To reactivate the Back Light and Side Lights, select the Sample camera from the video widget and click the “Turn On” button under Back Light in the Sample Lights Control widget (shown below).

