

Short manual: LAUE

The Laue apparatus consists of the x-ray instrument and an image plate detection system that reads the data. Here is a description how to use it:

Generator

- 1) Switch on:
 - Push the “cooling water” button down (in the NIM crate]. This will make cooling water flow, the flow is checked by the HV generator system.
 - Turn the key of the HV supply to “on”.
- 2) Start the instrument:
 - Push the “START” button.
 - You will see HV and current settings. Typical are 25 KV and 25 mA, confirm the setting with “ENTER”. The use of higher voltage is not recommended. This setting gives a reasonable exposure time between 1 and 2 min. Use other settings only in exceptional cases (ask the Lab responsible).
 - On question “EINFÄHREN”, answer “JA/yes” with “ENTER” and give the time to the last use of the instrument. If unknown, say “1 WOCHEN/1WEEK”.
 - IT IS IMPORTANT FOR THE LIFETIME OF THE X-RAY TUBE TO RUN IT UP SLOWLY !!!** This procedure will take about 5 min.
- 3) With HV on, you can now take data:
 - Make sure that all windows are closed, otherwise the interlock will not allow you to open the shutter. Push the F3 button to open the shutter.

Camera and exposition:

- 1) Insert a fresh image plate into the camera. Make sure that the cutouts of the film and camera coincide. Close the camera. A little bit of daylight on the film is acceptable.
- 2) Place the camera (cutout mark “up”) on the X-ray shutter. **DO NOT USE FORCE.** Be careful with the very thin collimators, do not bend it.
- 3) Adjust the sample – film distance (~3cm typical) and open the shutter for the preselected time. Take off the camera and process the film.

Processing (needs several reformatting the files generated by scanner..., see below:

Before, generate a directory under “D:/LAUE/your_name”. Files saved somewhere else will be deleted.

- 1) Insert the film in the scanner
- 2) On the computer:
 - START the “BAS READER”, login “guest”, pw “guest”
 - Press “READ SCANNER”.
 - Save
 - START “TINA”
 - READ “filename.BAS”
 - SAVE AS “filename.TIF”
 - Start “Irfanview”
 - READ “filename.TIF”
 - Rotate right, horizontal flip until the cutout appears at the right corner (The scanner produces a mirror image).
 - Resize (500*500) for OrientExpress.
 - SAVE “filename.pdf”
 - Start “OrientExpress, READ “filename.pdf” and analyse...
- 3) Remove the image plate from the scanner and place it in the “Eraser”.