

Rostock Cornea Module - Quick Operation Notes

► Preparing the Rostock Cornea Module

1. At the objective tube of the laser scanning camera, set the refraction to **+12 diopters**. Adjust the camera to the lowest position.
2. **Mount** the Rostock Cornea Module objective on the objective tube of the laser scanning camera. Hold the camera on the back and push the Module as far as possible onto the camera.
3. Turn down the special **forehead rest**, and mount the additional **chinrest**.
4. Apply a large drop of **contact gel*** on the front surface of the microscope lens, avoiding air bubbles in the drop. (*high viscous eye gel, as GenTeal® / Comfort Gel).

WARNING: The use of ultrasound and low viscosity gels on this instrument may destroy the microscope!!

5. Remove a **TomoCap** from its sterile container and mount it on the holder to cover the microscope lens. Push it as far as possible over the holder.

CAUTION! Risk of Infection. Do not touch the front surface of the TomoCap during its mounting. Please use gloves. Only use the sterile TomoCaps provided.

6. Move the laser scanning camera as far backwards as possible on the camera mount.




► Preparing the patient

1. **Explain the procedure to the patient.** Ask if there are any contraindications for the examination. The RCM should not be used if corneal integrity is questionable.
2. Apply one drop of a **topical anesthetic** in the eye(s) to be examined.
3. Apply a **gel tear substitute** into both eyes to prevent blinking .

CAUTION! Avoid direct contact of the containers of the local anesthetic and the gel with the patient's eye.

► Create a new exam – reset instrument

1. From the Patient Database window, **create** a new patient record by selecting the shortcut key from the symbol bar, or **open** an existing patient's file with the mouse.
2. Select the symbol  for the start of a **new examination**.



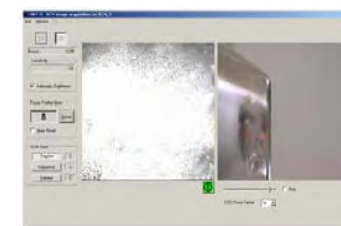
3. Choose **Device Type:** select “Heidelberg Retina Tomograph II - Cornea” from the drop down menu. Add **Operator and Study Information (Optional)**.

4. The **Cornea Module Settings** dialog box appears. Choose the field lens inserted. Click OK. After this step, the Image Acquisition window appears.



5. **Adjust the focal plane** to the outer surface of the TomoCap: The inner and outer surface can be distinguished by their bright laser reflection, the PMMA material, approx. 500 µm between the two surfaces, appears black with small white reflections.

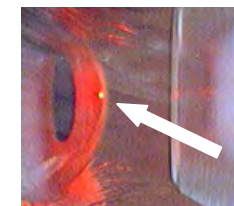
Focus the RCM posteriorly until the bright laser reflection of the outer surface is seen in the left window. **Note:** To move the focal plane posteriorly (to deeper layers), rotate the RCM objective clockwise from the operator's point of view.



6. Make a **section scan** and push the button “Reset” to set the focus position to “0”. You can reset the focus again later during the scan.

► Alignment and cornea coupling

1. Ask the patient to put his or her head into the **head rest**. Make sure that the chin sits firmly on the chin rest and that the forehead rests firmly in the forehead rest.
2. If not already done, **start image acquisition** so that you see a live image of the CCD camera on the monitor.
3. **Position the CCD camera** such that the optical axis of the CCD camera runs perpendicular to the optical axis of the laser scanning camera. The camera should be on the patient's **lateral side**. If necessary, adjust the focus of the CCD camera to the apex of the cornea or the region of the eye you want to image.
4. Move the laser scanning camera toward the patient until the patient's cornea is at a distance of about 5 to 10 mm from the TomoCap of the Rostock Cornea Module. Use the adjusting knobs on the headrest to position the cornea, limbus or conjunctiva you want to image towards the laser beam. For images of the central



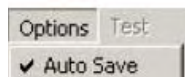
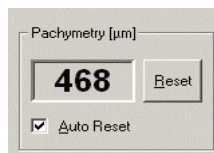
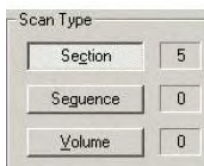
cornea, move the camera until you **observe the reflex of the laser beam** from the cornea exactly at the anterior pole of the cornea. (see arrow).

5. Ask the patient to open his or her eyes as wide as possible. Move the laser scanning camera slowly towards the patient until the TomoCap **contacts** the patient's cornea.
6. A slight contact of the Rostock Cornea Module with the patient's cornea is sufficient. In an optimal adjustment, a **thin tear film bridge** between the TomoCap and the cornea is visible on the CCD camera live image.
7. You will now see images of the cornea in the live image of the laser scanning camera.

CAUTION! Do not apply pressure to the cornea. Observe the CCD camera live image and be sure the patient's cornea does not appear flattened. Once contact has been established, do not move the position of the headrest transversally, in order to avoid sliding on the cornea with the TomoCap.

➤ Acquiring images

1. **Adjust the focal plane** of the Rostock Cornea Module to the cell layer you are interested in by manually adjusting the RCM objective. **Select the type of images** you plan to acquire.
2. To acquire a section image, volume or sequence scan, **hit the foot switch** briefly and release it instantly. During the sequence scan, you can (slowly) turn the RCM objective to move the focal plane position. A second tap on the foot switch will end the sequence scan. The volume scan cannot be stopped, and during the scan the objective must not be turned!
3. **Pachymetry:** the **Reset button** allows you to reset the current location of the focal plane to 0. If the option Auto Reset is ticked, the focal plane position automatically resets at the location where the very first image is acquired. The control displays the current focal plane position in μm , relative to the position determined as 0.
4. **Option Auto Save:** the images of Sequence and Volume scans are automatically stored. If it is not selected, you must manually save the images by clicking on the Save button.



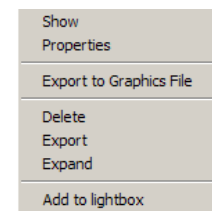
➤ After the examination

1. To turn the camera off, **click the Camera Power button in the acquisition window.**
2. **Remove the TomoCap and dispose of it. Clean** the front surface of the microscope lens with distilled water and a soft tissue.



➤ Viewing images

1. Double-click with the left mouse button on the image icon to view the image. The images representing the 0-plane or images which have been used for cell counts are marked in the top left corner. Clicking on the image icon with the right mouse button will open the menu.



➤ Printing examination reports

1. Select the desired images into the **lightbox** or highlight them. If you want to include single images of **Sequence or Volume scans** into the printout, you first have to expand the Sequence or Volume scan.
2. Click with the right mouse button on one of the selected image icons to open the context menu and select item "**Print**". In the section "**Reports**" of the print dialog, you can specify the printout (number of images or cell count printout).

➤ Cell count

1. Browse to the icon of the cornea image in which you want to count the cells.
2. Select "Cell Count" from the menu and choose the cell count icons

Define the ROI (region of interest)



Mark the cells in the ROI.



Save the ROI and cell count results



Delete results, restart counting



The cell density is automatically displayed in the cell count window.