



---

---

---

---

# OPTICAL COHERENCE TOMOGRAPHY

# RS-330

---

---

---

---

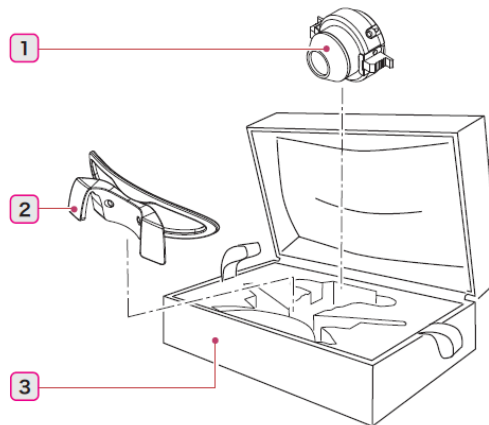


**Performing Anterior  
OCT scans**

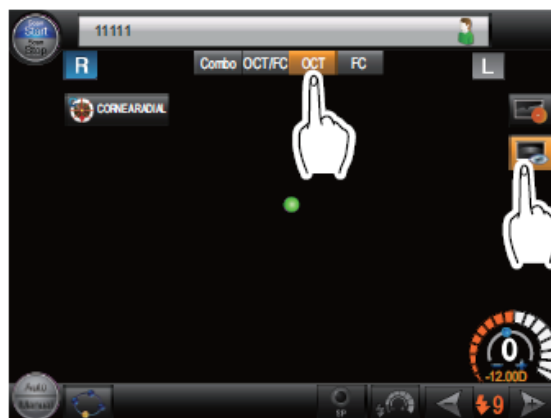
## Setting up for Anterior OCT capture

To attach:

- By attaching the anterior segment lens (1) onto the front aperture of the RSD you can achieve pachymetry measurements and Anterior Chamber Angles (ACA).
  - The anterior segment should be in the black box (3) along with a spacer (headrest) (2).



- Press the '3 & 9' grey springs together and align the white peg on the segment with the notch on the front on the objective lens. This should be at a 2 o'clock position. Then carefully release the springs when in position.
- Select the patients record and press OCT Capture, 'please wait' will appear. When this message disappears select **OCT mode**.
- At the RHS there are 2 boxes – TOP for posterior OCT scans, BOTTOM for anterior OCT scans. Alternatively change from retina to cornea on the monitor using the keyboard.
- Press this button. It will have an orange glow behind it indicating it is active.



- A message will appear on the screen. Please ensure the compensation lens is pushed all the way into the OCT. (The compensation lens is the black stick with -/+ on it on the LHS of the OCT main body. Check the anterior segment is in position.



## To capture CORNEAL LINE, CORNEAL CROSS OR CORNEAL RADIAL scans

- Align the patient as normal on the head rest / chin rest.
- The Anterior OCT measurements are performed in manual mode and require slow, steady movements for safety and accuracy.
- The default setting is **CORNEAL RADIAL** (corneal radial allows Pachymetry measurements).
- There is the option of 6 or 12 scans lines covering 2-8mm width.
- The patient has the same central fixation as posterior OCT (green dot), but it is now more out of focus.
- Ensure the device is at a maximum distance from the patient, pulled back as far as possible towards the operator.
- Align the GREEN fixation dot on the OCT screen with the centre of the Px pupil.
- As you slowly push towards the Px, move your gaze to the monitor where you can view the corneal section as it rises from below.
- It is advisable to position the image a few mm below the horizontal AMBER line at the top of the box.
- Press '**Optimize**' on the RSD base.
- When both images are symmetrical press the button on the joystick to capture the measurements.
- Repeat for the other eye.
- Save and close, then view from menu page.

## Reviewing corneal OCT scans

- Go into the Px file. Select R & L corneal radial scans and double click.
- If good data has been measured the corneal section will be displayed with a thickness map at the LHS of the screen.
- The information from the Anterior OCT scans cannot be used to *diagnose* keratoconus as it is not a topographer, but information of thinning can easily be seen from the thickness map and the position of the apex can be seen.
- At the top R corner of the heat map there will be a number. This is the central pachymetry value.
- On the corneal scan there is the option to measure points of interest (R click and select for options).
- Below the scan there is options to view in **POSITIVE BLACK & WHITE, NEGATIVE BLACK & WHITE, FALSE COLOUR**. In addition to this there is the option to add or remove layers.

## Capturing ACA line scan

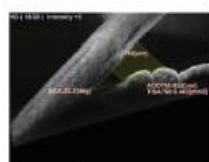
- From the scan list select ACA line
- Align the patient as normal on the head rest / chin rest.
- It is recommended to do 2 measurements for each eye for ACA to allow better analysis.
- With ACA measurement there is **NO** internal fixation. The external fixation lamp can be positioned or ask the Px to look at a point on the RSD casing.
- Initially measurement can be taken easiest at the NASAL limbus or TEMPORAL limbus.
- Align the GREEN fixation dot on the RSD screen with the temporal or nasal limbus.
- As you slowly push towards the Px, move your gaze to the monitor where you can view the anterior chamber angle as it rises from below.
- Aim to position the iris on the orange line towards the bottom of the capture box and the angle itself in the centre of the capture box. Press '*Optimize*' on the RSD base.
- Press the button on the joystick to capture the measurements.
- Save and close, then view from menu page.

## Reviewing ACA results

- Go into the Px file. Select ACA line scan and double click.
- To measure angle right click on the OCT image and select '*angle measuring mode*'
- To measure it requires the position of the scleral spur to be selected along with the back surface of the cornea, then the top of the iris. Then click finish. The software generates an angle measurement in degrees.
- A conversion / comparison to Van Herrick may be required.
- The ACA measurements can be subjective using this measuring method. The main point of interest is whether the angle is open, closed or anything potentially blocking it.

### Angle Measurement

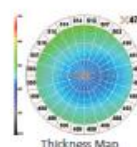
- ACA  
Angle between posterior corneal surface and iris surface
- AOD500 (AOD750)  
Distance between iris and a point 500  $\mu\text{m}$  (or 750  $\mu\text{m}$ ) from the scleral spur on posterior corneal surface
- TISAS00 (TISA750)  
Area circumscribed with AOD500 (or AOD750) line, posterior corneal surface, line drawn from scleral spur in parallel with AOD line, and the iris surface



Angle Measurement

### Corneal Measurement

- Corneal thickness  
Corneal thickness of apex and user selected sites
- Corneal thickness map  
Map of corneal thickness plotted radially



Thickness Map



Corneal Measurement