



Imaging Instructions

Get the best images for your patients

1. Setup

Always begin by making sure the image server is switched on. If turned off, switch on the server prior to turning the device on.

Server Login:

- Username: *optosadmin*
- Password: *optomap*

Silverstone Login:

- Username: _____
- Password: _____

OptosAdvance Login:

- Username: _____
- Password: _____

You are responsible for the security of user accounts and the maintenance of password security.

2. Creating New Users

Once logged into the tablet:

- Select To admin
- Select Users
- Select New user
- Enter the details for the new user and select if they will be an Administrator or Operator

3. Between Patients – Best Practice

Use an alcohol wipe to clean the chin rest, forehead rest, and face pad. Let the alcohol air dry. Do not use tissues as it will increase lint on the camera mirror.

4. Preparing to Image

It is preferable that imaging is performed in a dimly lit room. However, images can be captured in any illumination.

Key points to communicate – only if you feel the patient needs reassurance.

- It is non-invasive and painless, the multi-mode **optomap** ultra-widefield (UWF™) image and OCT scan take less than 90 seconds
- **optomap**® UWF imaging is world leading digital technology
- The OCT uses eye-safe scanning light.

Search to see if the patient has been imaged in the past, using a variation of patient name, date of birth and/or patient ID. If patient is not found, select New patient and provide the name, date of birth, and patient ID.

If on Modality Worklist, search patient name, patient ID or accession number.

5. Correct Positioning

Click **To Capture** at the top right of the tablet screen to proceed to image capture.

Select appropriate mode; **optomap**, multimode, angiography, or OCT.

An **optomap** image will be taken first regardless of the mode selected.

The patient should be sitting up straight directly in front of the device, looking straight ahead, with their feet flat on the floor and their hands in their lap.

Adjust the table height to align the patient's canthus with the canthus markers on the device.

Ask the patient if they can see the blue light – have them guide themselves in keeping the light at the center of their vision, turning their head slightly so that their nose is outside the aperture and their forehead rests on the forehead rest. The patient should be positioned as if they were looking through a keyhole of a door.

Adjust the chinrest up/ down to support the patient's chin. Check that the patient's chin does not go beyond the edge of the chin rest.

The patient should remain in position as you use the hand controller to adjust the X, Y, and Z alignment.



6. List of Hand Control Buttons for Silverstone



The hand controller is used to make changes to patient alignment and to capture images.

Ask the patient to remain still to allow you to adjust the scan head to the correct alignment position. Use the fine adjustment alignment on the hand controller to finish aligning the crosshair to the center of the patient's pupil.



The alignment target should be GREEN when the scanhead is in correct position. Use the "+" and "-" to adjust between the red and blue target.



BLUE = too far out.



GREEN = correct position.



RED = too close

Let the patient know that there will be a bright green sweep of light as the device captures the image. Ask patient to blink and then to open both eyes wide and capture the image.

Ask the patient to remain in the position in order to capture all required scans.

Your device may have auto-laterality. Once an image has been taken, the laterality will appear. If the system could not identify which eye was captured you will be given the opportunity to choose the correct eye in the bright orange boxes at the bottom right of the screen. If image quality is not acceptable, you can delete image.



Additional tips to get the best image

- Use little finger to hold top lid open when taking image.
- Ask them to blink and open eyes wide just before you take an image.
- Slow gentle movements are key.
- If pupils are small – cover other eye with either your hand, or using their own hand.

| Button | UWF mode | OCT mode |
|--------|------------------------------------|----------------------------------|
| | Toggle XYZ / OCT adjustment | Toggle XYZ / OCT adjustment |
| | Lower chin rest | Move OCT scan towards choroid |
| | Raise chin rest | Move OCT scan towards vitreous |
| | Fine adjust: Left, right, up, down | Move scan: left, right, up, down |
| | Move camera away from patient | Move focus towards choroid |
| | Move camera towards patient | Move focus towards vitreous |
| | Top button: capture image | Top button: capture scan |

7. OCT Capture

Note: If OCT mode is selected prior to **optomap** capture, the system will take a color **optomap** before allowing OCT scanning. This is necessary as the **optomap** image is used for OCT scan placement (see below).

When ready to begin, an OCT scan pattern menu will appear (see below for scan pattern details). Select the desired scan pattern and drag the scan outline to the area of interest on the **optomap**.

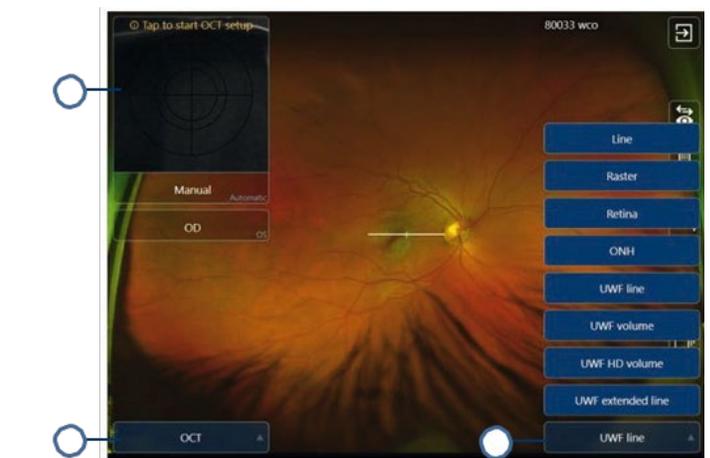


FIGURE 11: List of OCT scan types

| No. | Description |
|-----|-----------------------------|
| 1 | Live external view. |
| 2 | Primary scan type selector. |
| 3 | OCT scan tune options. |

OCT Capture (section 7) continued

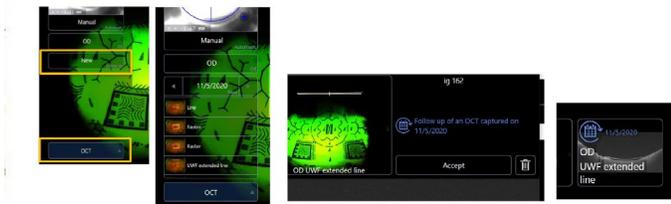
Position and align the patient and system as described in section 5. Click the **Capture** button on the hand controller to begin optimization. Remind the patient to maintain focus on the middle of the green X target while ignoring the red lines or circles. The patient can blink normally throughout this process.

Wait for the optimization to complete before making manual adjustments. When optimization is complete, the OCT scan and Signal to Noise (SNR) will be displayed (see below for SNR details).

At this point, you can adjust scan location using the hand controller (see section 6). For best resolution, position the OCT in the top 1/3 of the screen. Before capturing the scan, remind the patient to open eye wide for the scan.

When scanning is complete, review OCT for blinks, blank areas, centration and quality by pressing on the play button at the top left of the screen. After reviewing, **Accept or Delete** and recapture the scan.

Repeat scan allows for continuous monitoring of a lesion by locating and displaying a previous OCT scan location on the **optomap**.



Signal to Noise Ratio (SNR): SNR describes OCT scan quality. A high SNR indicates a good scan while a low SNR scan may be pixelated and faint. If the SNR is lower than 6, consider repeating the scan. Have the patient blink a few times first. Use the “+” or “-” for SNR improvement.

If the location and SNR need readjustment, select **OCT setup** above the right side of the OCT scan. The following options are available:

- **Redo All** – Repeats full optimization
- **Redo Auto-focus** – Improves SNR
- **Redo Auto-location** – Enables tracking
- **Redo Auto-depth** – Adjusts scan position

On-screen OCT messages: During OCT scanning the system may provide status or error message:

Averages: reports the number of scans included in the averaged scan.* For example “20/25” indicates 20 scans were included from 25 captured.

*Averaging is applied only to line and RNFL circle scans.

Movement: indicates the extent of eye movement during capture. For example “12/121” indicates movement was detected on 12 scans out of 121. Review scans in a volume to assess if the movement is significant.

Blink: indicates the number of frames where the tracking system could not detect retinal content. For example “18/121” indicates blinks detected on 18 scans out of the 121. Review scans in a volume to assess if the movement is significant.

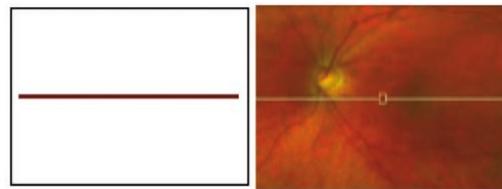
Scan Position Error: indicates misalignment of the patient’s positioning such that the original UWF scan is not in alignment with the live OCT scan. Re-optimization location and recapture to remove this message. In some cases recapture of the UWF image may be necessary.

8. OCT Scan Patterns

Silverstone offers eight (8) distinct scan patterns which offer various scan widths, density, and placement options. The eight scan options are:

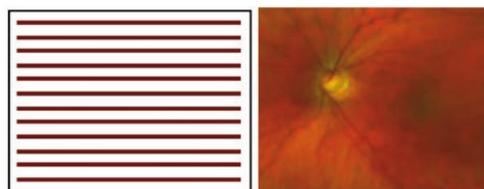
Line scan (14 mm)

A single line scan that can be positioned within the widefield box on the **optomap**. The displayed scan is an average of up to 25 scans for greater clarity and detail.



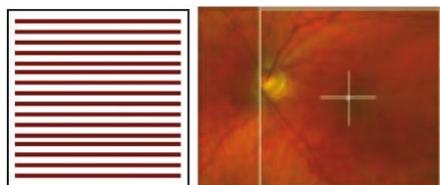
Raster scan (14 × 9 mm)

Covering macula and ONH, this volume scan is composed of 121 b-scans.



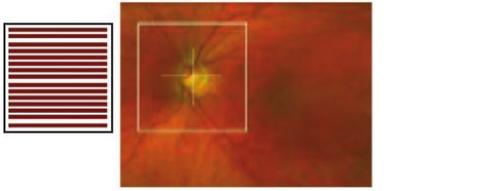
Retina scan (9 × 9 mm)

Centered over the macula, this volume scan is composed of 111 b-scans. Drag the box to move this scan in the area of the macula.



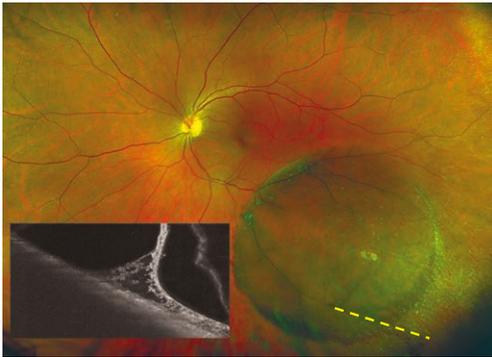
ONH scan (6 × 6 mm)

Centered around the optic nerve head, this volume scan is composed of 111 b-scans. Adjustments to scan location must be made before optimization; the scan must be centered around the ONH.



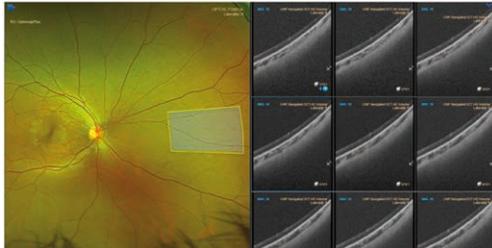
UWF-guided line scan (6 mm)

This line scan can be positioned anywhere on an on-axis **optomap**.



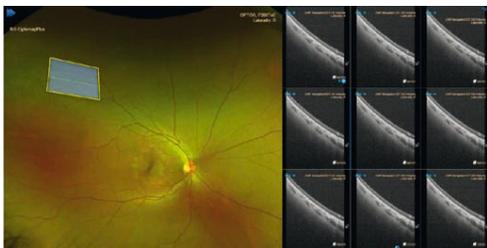
UWF-guided volume scan (6 × 6 mm)

This volume scan is composed 121 b-scans and can be positioned anywhere on an on-axis to **optomap**.



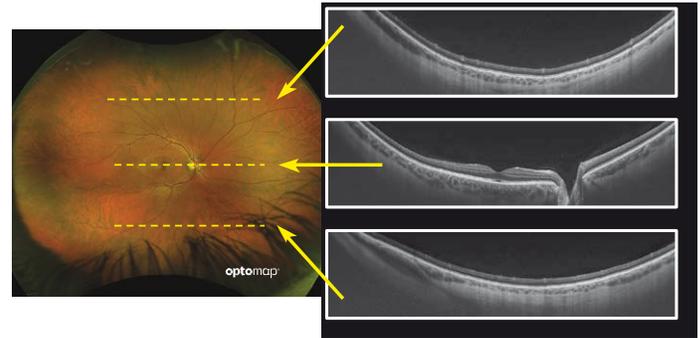
UWF-guided HD volume (6 × 3.5 mm)

This high density scan is composed 121 b-scans in a 3.5 mm high volume and can be positioned anywhere on an on-axis **optomap**.



UWF-guided extended line scan (23 mm)

This 23 mm wide line scan is centered on the **optomap** and can be placed into the far periphery superiorly and inferiorly. The example below shows three possible placements.



10. Multi-mode Capture

Multi-mode allows the operator to perform a defined sequence of **optomap** and OCT captures, by stepping through the desired mode settings.

Note: Multi-mode may be customized. On the device, go to admin, tap multi-mode and then create your custom multi-modes and tap save. These will now be available in the image capture screen.

- Select Multi-mode and the required laterality
- Position the patient
- Capture the following by clicking on the hand controller
 - **Multi-mode** image 1 – **optomap color**
 - **Multi-mode** image 2 – **optomap af**
 - **Multi-mode** image 3 – OCT raster scan
- Select **Finished multi-mode**

11. Angiography Capture

Silverstone angiography mode offers both fluorescein and ICG angiography. **Note:** *color and AF images should be taken prior to FA/ICG images.*

Change to **Angiography** mode.

Selecting Angiography will allow the manual selection of FA or ICG images. In Angiography mode, the FA or ICG timers will run separately and are started when you take the first image. If injecting both FA and ICG combine the timer by pressing the lollipop at the top of the screen to combine timers.

The injection should be administered when the patient is properly aligned.

The contrast will be adjusted automatically while performing an FA or ICG. To increase the contrast manually, slide the contrast control to the right. To decrease the contrast manually, slide the contrast control to the left. The contrast for FA and ICG are set separately.

When you have finished imaging, tap on the image review button at the bottom right of the screen and edit laterality and/or delete images as needed.

Once imaging is complete, tap on the arrow on the top right of the screen. A summary will be displayed and timer(s) will be stopped.

Tap **Finished Patient**.

12. Tips for Optimal Imaging

UWF

- Ask patient to blink and open eyes wide just before capture.
- Slow gentle movements are key.
- If pupils are small, cover the other eye.
- If needed, hold top lid open with a finger while imaging.
- For small pupils or an IOL it may help to capture when the target is slightly in the red.
- For large pupils it may help to capture when target is slightly in the blue.

OCT

- Have the patient blink a few times before capturing the image.
- Ensure the live OCT feed is centered and level.
- OCT scans strongest when positioned in the top 1/3 of the screen.
- Adjust focus control to increase the signal strength.
- The live OCT feed should fill the touch screen window.
- If there is signal loss on the edges, confirm pupil is correctly aligned.

KEY CONTACTS

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