Installing the Software

Spectralis Device
1) Switch off the laser box of the SPECTRALIS device
2) Close the HEYEX
3) Insert the CD into the PC drive. Wait for the automatic startup of the installation program or manually run the program from the root directory.
4) Follow the instructions to install the software
5) Switch on the laser box
6) Follow the instructions to install the driver

Viewing Stations
1) Insert the CD into the PC drive. Wait for the automatic startup of the installation program or manually run the program from the root directory.
2) Close the HEYEX
3) Follow the instructions to install the software
Key Features of Software Version 5.1

Acquisition Module
- Redesigned acquisition window with multiple preset OCT scan patterns and scan parameter settings: easier and more comprehensive operation of the device
- AutoRescan™ function: any available fundus imaging mode can be used for follow-up exams
- Automatic image brightness control: no need to adjust image brightness manually
- Significantly extended OCT tracking time: Running out of tracking time is expected to be an unlikely event

Viewing Module
- Orientation adjusted normative database for glaucoma: higher sensitivity to detect changes in RNFL thickness outside normal limits
- RNFL thickness progression printout: comprehensive recording of RNFL changes
- Vitreous imaging mode: better visualization of vitreous and vitreal-retinal interface
- 3D view preferences: select default view for OCT volume scans
- Thickness map preferences: define default thickness map
- Follow-up examinations: default option to automatically compare the current exam to the most recent exam
- Segmentation line editing: easier changes in segmentation lines

Scan Planning Tool
- Free 90-day trial: experience the benefits this exciting software tool offers to improve workflow and patient data management.
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5. **Appendix A – OCT Acquisition Window – Preset Buttons**
1 General Information

Software release 5.1 includes the Spectralis Acquisition module version 5.1, Spectralis Viewing module 5.1 and Heidelberg Eye Explorer software version 1.6.2.

This document describes the new features and revisions made in Spectralis software release 5.1 compared with release 4.0 and 5.0, respectively.

Please note that the latest software version for Spectralis OCT Plus, Spectralis HRA and Spectralis HRA+OCT was version 4.0. All descriptions provided in this document apply to these devices.

The latest software version for the Spectralis OCT was version 5.0. Most features described for the Acquisition module in sections 2.1 and 2.4 of this document have already been implemented in this software version. All other descriptions provided in this document apply to 5.0 users as well.

To verify the current versions of the Heidelberg Eye Explorer, Acquisition, and Viewing modules, click Help from the menu bar and select About in the Database window to display the About dialog box.

![Fig. 1.1 Versions of the Heidelberg Eye Explorer (HEYEX), Acquisition and Viewing modules]

Software release 5.1 is compatible with all firmware versions of the Spectralis device.
2 Acquisition Module

2.1 Acquisition Window

In the Spectralis Acquisition window, live images are displayed at the bottom for the cSLO and OCT modes if the device is in ART mode. Although most adjustments are performed automatically, image quality can benefit significantly from adjustments to the eye camera distance and the focus during scanning.

To facilitate this, the size of the live images for cSLO fundus images and SD-OCT cross-sectional scans has been increased compared with version 4.0 (see fig. 2.1)

![Fig. 2.1 Acquisition window](image)

The Acquisition window (fig. 2.1) displayed on the computer screen has been modified. For easier operation of the system, various options are now available on the computer screen:

- Selection of High-Speed (HS) or High-Resolution (HR) mode (accessible via a drop-down list)
- Selection of internal fixation light (accessible via a drop-down list)
- Select/cancel OCT module
- Switch camera on/off

![Fig. 2.2 HR/HS mode, internal fixation light control, OCT module, switch camera on/off](image)
Multiple *Preset* OCT scan patterns

- **Fast** volume scan
- **Dense** volume scan
- **Detail** scan with very high resolution
- Posterior pole scan (**P. Pole**)
- Optic nerve head volume scan (**ONH**)
- **RNFL** circle scan
- Seven-line volume scan (**7Lines**)

A summary of the settings of each preset scan pattern is provided in **Appendix A**.

- Users can customize individual OCT scan parameters. Pressing one of the **Custom** buttons for a few seconds will assign the current scan settings to that button.
- Each preset defines the scan pattern, field of view of the fundus image (15°, 20° or 30°), ART setting, fixation target setting, and the scanning resolution (High-Resolution or High-Speed), among other parameters. To erase the settings of a **Custom** button, right-click the button and choose **Delete** from the context menu.
- Advanced OCT scan adjustments can be selected directly on the screen, including
  - OCT scan geometry
  - Scan orientation
  - Scan size
  - B-scan density
  - Number of ART frames (slider)

The number of A-scans for each B-scan is given.

- The OCT color scale can be changed. Choose **OCT Color Scale** from the **Setup** menu. The selected color scale will become the default display of OCT scans in the Acquisition module.
Modifications of the scan pattern include:

**Fig. 2.7** Move OCT scan pattern off-center.
Drag the center of the scan pattern and move the scan to any position within the fundus image.

**Fig. 2.8** Rotate OCT scan pattern
Rotate volume scans to any angle by clicking and dragging either end of the central scan line.

### 2.2 OCT Tracking Time

All Spectralis devices strictly monitor the light exposure of the patient’s retina during examination, to ensure it is below laser class I limits at all times. This results in a limitation of the time during which the eye tracking system is on. If the maximum tracking time is reached, the following functions are disabled for the respective eye: follow up examinations, single B-Scan acquisition in ART (Automatic Real Time) mode, and ART volume scans.

In software version 5.1 the eye tracking monitor was optimized resulting in a significantly increased tracking time while still maintaining patient safety. **To run out of tracking time is expected to be an unlikely event with software 5.1.** The tracking time is no longer displayed in the Acquisition window. However, an alert “**Warning: Only 30 seconds of OCT tracking time left!**” appears in the System Status Line at the bottom of the Acquisition window when the tracking time approaches its limit.

### 2.3 OCT Scanning With Active Eye Tracking Disabled

It is now possible to acquire single line OCT scans (single B-scans) even when Eye Tracking is impaired by strong eye movements or very low fundus image quality. Eye Tracking is automatically disabled when acquisition is not possible for 2 seconds.

After the acquisition, a warning message “**Warning: Strong eye movements during image acquisition detected!**” will appear.

Important: In this case, the OCT scan may not be registered correctly to the fundus image.
When such an image is opened in the Analysis window, the scan line in the fundus image is shown as a dashed green line indicating that the location of an acquired scan may not correspond to the line indicated on the fundus image. The dashed green line is also visible on the thumbnail image in the Patient File window (figure 2.9).

![Fig. 2.9 The dashed green line indicates that the single line OCT scans was acquired without Eye Tracking](image)

If an image acquired without Eye Tracking is defined as a reference image, a warning will appear: “This is a low quality image and may be affected by eye movements. It is not recommended to use it as a reference for follow-up acquisition.”

### 2.4 Automatic Image Brightness Control

The algorithm for the *Automatic Brightness Control* for cSLO fundus images has been improved. For easier operation of the device.

The following systems offer manual and automatic image brightness control:

- Spectralis HRA+OCT
- Spectralis OCT PLUS
- Spectralis HRA.

Select the *Automatic Image Brightness Control* via the *Auto* button in the ‘More’ menu on the control panel.

![Fig. 2.10 Image Brightness Control setting on the control panel](image)

Please note that for Spectralis OCT, the *Automatic Image Brightness Control* is the only control option.
2.5 AutoRescan™ Function

The proper integration of the various Spectralis models (Spectralis HRA, Spectralis OCT, Spectralis OCT PLUS, Spectralis OCT BluePeak, Spectralis OCT PLUS BluePeak, and Spectralis HRA+OCT) into the clinical workflow is critical for allocating resources efficiently. This ensures quality patient care and facilitates the management of increasing patient volume.

The HEYEX database and AutoRescan function allow users to perform follow-up OCT scans using different devices of the Spectralis product family. The cSLO image acquired simultaneously with the OCT scan serves as the registration link for this purpose.

As depicted in fig. 2.11, any available fundus imaging mode can be used for follow-up scanning. For example, the initial exam can be performed with the Spectralis HRA+OCT in FA+OCT mode and follow-up exams can be performed with the Spectralis OCT in IR+OCT mode.

Fig. 2.11 Automatic Rescan registration links for the Spectralis product family. For the Spectralis OCT BluePeak and Spectralis OCT PLUS BluePeak (not shown), baseline and follow-up exams can be performed in either IR+OCT and FAF+OCT mode.
2.6 Further Changes

- If no internal fixation target is selected in the Acquisition window, the external fixation target is automatically activated.
- The number of A-scans per B-scan is displayed (see fig. 2.5).
- ART averaging of faint images (e.g., autofluorescence images) has been improved. This leads to crisper ART images with better contrast.
- For circle scans, the program now checks more thoroughly whether the scan is at a valid position. If the displacement is too large, the circle overlay will be shown in red and acquisition is not possible.
- The angiography injection timers are not displayed if the device does not support angiography modes (Spectralis OCT and Spectralis OCT Plus). The Injection Timer window is opened only for Spectralis models that allow angiographies (Spectralis HRA and Spectralis HRA+OCT).
- The HRA image caption shows “Autofluorescence” (FA or FA+OCT mode) or “IR Autofluorescence” (ICGA or ICGA+OCT mode) while the injection timer is not running. Starting the injection timer changes the HRA image caption to “Fluorescein Angiography” or “ICG Angiography”.
- For follow-up examinations, the number of images used to average ART Mean images can now be set to different values, then chosen for the initial reference examination.
- The entries in the Eye Data dialog now default to the values of the last examination.
- The “Quality” value shown in the Image Information dialog represents the quality of the stored B-scan, and not the quality of the live image at the time of image acquisition as in earlier versions.
3 Viewing Module

3.1 Displaying Images and Viewing Preferences

3.1.1 Analysis Window

The Analysis window can now be minimized using the standard Windows button.

3.1.2 3D Vitreous Display Option

The Vitreous viewing mode has been introduced as a display option in the 3D View tab. This display option replaces the Cube option.

This option allows for better visualization of the vitreous and the vitreal-retinal interface. A typical example of an OCT scan in the Vitreous display option is shown in fig. 3.2.

3.1.3 3D View Preferences

Options for 3D view preferences were added to take into account individual customer preferences while viewing 3D OCT images.

In the Analysis window, use the option Preferences from the Options menu (fig. 3.3).
In the 3D View tab of the Preferences window you can select the default view for volume scan images (Vitreous or Surface) (fig. 3.4).

Select the Show Grid check box to display the grid by default.

3.1.4 Thickness Map Preferences

In the Thickness Map tab Analysis window (fig.3.5), select Preferences from the Options menu.

In the Thickness Map tab of the Preferences window you can define the default view for the thickness map.

You can select the concentric rings of the default grid (fig. 3.6):

- 1, 2, 3 mm,
- 1, 2.22, 3.45 mm, or
- 1, 3, 6 mm ETDRS.
3.1.5 OCT Position Marker

In the Display and Thickness Profile tabs of the Analysis window, you can now select or clear a position marker using the Show Position Marker option on the OCT Image menu (fig. 3.7).

![Fig. 3.7 Select / Deselect OCT position marker](image)

3.2 Orientation-Adjusted RNFL Normative Database and Fovea-Disc Tracking

For OCT circle scans the retinal nerve fiber layer (RNFL) is automatically segmented and the RNFL thickness is measured along the scan. The thickness measurements are compared to a normative database.

In software 5.1 the normative database has been orientation-adjusted. The adjustment corrects for different inclination angles of the symmetry line from the optic nerve head to the fovea, which are caused by anatomical variation and by head tilt during the scan. Orientation adjustment has reduced the statistical variance of the RNFL values in the database. As a result, the detection of RNFL thickness values outside the normal limits now has a higher sensitivity.

Fovea-Disc Tracking - The same orientation adjustment is applied to the RNFL thickness measurement of each individual exam. All patient images track fovea-to-disc axial alignment to ensure anatomically accurate start-stop of the TSNIT data. Fovea-Disc Tracking is possible only when the internal nasal fixation light is activated (RNFL scan default). In the thickness graph tab the green position marker on an OCT scan and thickness graph can be offset laterally, if the orientation of the OCT scan does not match the mean orientation in the normative database.

![Fig. 3.8 The orientation-adjusted database provides a higher sensitivity the detect abnormal values of RNFL.](image)
3.3 Follow-Up Examinations

You can now change the default for the automatic comparison to compare the current exam to the most recent exam. Modify this setting in the Miscellaneous Options section by selecting the Compare new exam to last visit check box.

If this check box is left clear, the current exam will automatically be compared to the baseline exam unless the reference image has been manually changed to another image in the progression series.

Please note: In network environments this needs to be set at the acquisition PC. It becomes effective for viewer stations within the network.

3.4 Segmentation Lines

3.4.1 Exporting Images and Movies with Segmentation Lines

If you start the export of an OCT image or volume scan movie from the Analysis window (i.e., Thickness Profile tab, or Display tab after activating the segmentation lines by clicking Show Layer Segmentations on the OCT Image menu), segmentation lines are displayed in the exported image and AVI file.

Fig. 3.9 Default Preferences for reference images

Fig. 3.10 Thickness Profile tab
### 3.4.2 Deleting Segmentation Points

For difficult clinical cases, clinical studies or measurements in thickness that are not standardized in the software, it can be helpful to revise and amend the position of the segmentation lines. With software version 5.1, more than one segmentation point can be deleted at a time.

The image to the right shows the segmentation lines for the retina.

Click the segmentation line button and click the segmentation line of interest.

In order to delete several points at once, select these points by drawing a box around them, or press `CTRL + A` to select all points.

Once the relevant points are selected (blue), right-click the selected area and choose the **Delete Points** from the context menu or press the **DEL** key to delete the points.

All selected points are deleted. Please note that the minimum number of segmentation points for a segmentation line is three.

![Fig. 3.11 Deleting multiple segmentation points](image-url)
3.4.3 Excluding Thickness Profile of Selected B-Scans for Thickness Maps

Depending on the severity of disease and the associated disruptions and alterations of the individual retinal layers, automatic segmentation of the retina or RNFL thickness may be challenging. This directly translates to the thickness maps displayed for 3D OCT volume scans. Changing the segmentation lines manually was described in section 3.1.2.

This section addresses the exclusion of single B-scans from the calculation of thickness maps.

The image to the right shows the segmentation lines for the retina.

Click the Segmentation line button and click the segmentation lines of interest.

You can disable segmentation lines by right-clicking the line and choosing Disable Segmentation from the context menu.

When a segmentation line is disabled, the Thickness Profile will not be displayed. In volume scans, the respective B-scan will not be used for the Thickness Map computation.

You can enable segmentation lines again by right-clicking the line and choosing Enable Segmentation from the context menu.

Fig. 3.12 Exclusion of B-scans
3.5 Progression Series

3.5.1 Closing a Progression Series

The AutoRescan™ function allows the automatic repetition of follow-up scans for the individual patient. Once a baseline image has been defined, the automatic rescan function places the OCT scans at the exact same location during follow-up exams.

A series of follow-up examinations can now be closed, to prevent the baseline image of the series from appearing in the Follow-up Selection window of the Acquisition module.

Select any scan within a series to close the entire progression series.

Right-click one image in a series, click Progression, then Close/Open.

An open progression series will be closed.

A closed progression series will be re-opened.

To indicate that a series is closed, the program marks the image thumbnails with a lock symbol.

All images in a series of examinations are marked with this symbol.

3.5.2 Ex/Include Images From a Progression Series

Individual images within a progression series can be excluded using the option Progression > Ex/Include shown in fig. 3.12. The excluded images no longer appear in the OCT image Analysis window and are no longer part of the progression printout.
3.6 Lightbox

When viewing a volume or pattern scan in the Display or Thickness Profile tab, the Add to Light Box command copies only the currently viewed single B-scan to the lightbox, not the whole volume.

This simplifies printing a selection of B-scans from a volume.

Fig. 3.15 Add single B-scan to the lightbox

3.7 XML Data Export

To export XML files, select Export > as XML from the menu in the Patient File window. The default folder storing XML exports can be updated using the Preferences window.

Select the destination folder in the Preferences window to change the default location of exported files.

Fig. 3.16 Exporting XML file from the Patient File window

Fig. 3.17 Select destination folder for export files
3.8 Printouts

- Patient names on the printouts are shown as <Lastname>, <Firstname>.
- OCT printouts without a thickness profile (e.g., “Selected image only”, “x Images per Page”) will not show the green vertical marker line in the OCT image.

3.8.1 RNFL Thickness Progression Printout

Software 5.1 includes an additional printout. This is dedicated to record the progression of RNFL thickness measurements for an individual patient.

The examinations are listed chronologically, i.e. the oldest exams are displayed first.

Major elements of the printout are:

- The OCT circle scan for each examination, shown with the RNFL segmented.
- The comparison of each scan with the normative database including quantitative sector analysis.
- The RNFL thickness profile on the right side indicates the changes in RNFL thickness with respect to the reference exam. Loss of RNFL is shown red.

![RNFL Thickness Progression Printout](image)

Fig. 3.18 RNFL Thickness Progression printout

3.9 Further Changes

- It is no longer possible to set a single scan of an expanded volume scan as a reference for a progression series. To perform follow-up scans for a single B-scan from a volume, extract the single image first, and then make it a reference image. To extract a single image, view the desired B-scan to be extracted and choose Extract as Single Image from the Image menu in the Analysis window.
- The Export as E2E function is no longer available in the expanded view of a volume scan, as this could cause incomplete volume scans.
- Display of patient names in language-specific characters on printouts has been optimized.
4 Scan Planning Tool – Free 90-Day Trial

The Scan Planning Tool (SPT) is a novel software tool that was designed to improve workflow and patient data management in practices and hospitals.

The SPT is an optional software module. Software release 5.1 includes a trial version of the SPT valid for 90 days after installation. To purchase the software module please contact your Heidelberg Engineering representative. The days remaining in the trial period are displayed in the header of the SPT window. An alert is given when the period has expired.

4.1 Introduction

![Typical example – Integration of the SPT into the clinical workflow](image)

The Scan Planning Tool (SPT) allows users to plan OCT scans offline on the basis of cSLO fundus images acquired with any Spectralis or HRA2 device. Imported to the Spectralis OCT, Spectralis OCT Plus or Spectralis HRA+OCT, the planned OCT scans are automatically performed at the predefined location.

The SPT has been developed to facilitate the clinical workflow in diagnostic imaging and therapy. The SPT for example allows Spectralis HRA users to plan OCT diagnostic steps as part of the review of cSLO fundus images. OCT scans can be planned at any time in patient management. Even for a clinical site without local OCT capacities, OCT scans can be reliably planned, securely documented and precisely scanned later with a Spectralis at a different location.

The SPT allows Spectralis OCT, OCT Plus and HRA+OCT users to plan follow-up diagnostics steps reliably and safely. The SPT improves patient documentation by defining a comprehensive OCT scan worklist and eliminating the need for hand drawings to plan OCT scans during the review of Spectralis fundus images.
4.2 Scan Planning Tool - Overview

4.2.1 Using the Scan Planning Tool

Below is a comprehensive and quick overview of the steps needed to use the SPT software.

- **Select the cSLO image of interest** for OCT scan planning directly via the Database window. Right-click the selected image thumbnail and select **Scan Planning Tool** from the context menu.

- **Plan the OCT scan** on the basis of the selected cSLO image. This is the main function of the SPT and will be described in this document.

- The planned OCT scan is defined as a reference scan in the patient file, indicated by a small red icon.

- **Perform the OCT scan** at the planned scan position during the patient’s follow-up visit. This step is carried out by the Spectralis Acquisition module.

---

**Fig. 4.2 SPT overview**
4.2.2 Supported Diagnostic Images

OCT scan planning is performed on confocal Scanning Laser Ophthalmoscope (cSLO) fundus images acquired with the Spectralis HRA, Spectralis OCT, Spectralis OCT Plus or Spectralis HRA+OCT. The SPT is also compatible with cSLO images acquired with the HRA2.

Only fundus images with a field of view (FoV) of 30° x 30° or smaller can be used.

CSLO fundus images can be **single-mode images**, including:
- Infrared images (IR),
- Red-free images (RF),
- Fluorescein angiography images (FA),
- Indocyanine angiography images (ICGA), or
- Fundus autofluorescence images (FAF).

**Simultaneous cSLO imaging modes** are supported by the Scan Planning Tool as well, such as:
- Indocyanine + fluorescein angiography (ICGA+FA)
- Fluorescein angiography + infrared (FA+IR)
- Indocyanine angiography + infrared (ICGA+IR)
- Fundus autofluorescence + infrared (FAF+IR)

For each mode, each of the two images can be selected for OCT scan planning.

In addition, images acquired with **simultaneous cSLO and OCT modes** can be selected:
- Infrared + OCT (IR+OCT)
- Red-free + OCT (RF+OCT)
- Fluorescein angiography (FA+OCT)
- Indocyanine angiography (ICGA+OCT)
- Fundus autofluorescence (FAF+OCT).

Please note that the SPT does not support cSLO images acquired with the HRA Classic.
4.3 Operating the Scan Planning Tool

4.3.1 Starting the Program

To start the program, open the HEYEX database and open a patient file. Select the thumbnail of an existing fundus image acquired in single mode, simultaneous HRA mode, or simultaneous HRA and OCT mode.

Right-click the image thumbnail and select *Scan Planning Tool* from the context menu.

Fig. 4.3 Opening the SPT
4.3.2 SPT Graphical User Interface

The graphical user interface of the SPT was adopted from the Acquisition module. Hence, all measures that completely characterize an OCT scan can be defined here. This includes the geometry and the position of the OCT scan with respect to the fundus image as well as the OCT scan parameters.

*Preset* scan pattern, *Custom* scans and the scan window are identical to those of the Acquisition module and are described in the corresponding User Guide. The *Preset* buttons in the top right corner are for selecting standard scan settings. The *Custom* buttons allow users to define and save customized OCT scan patterns. The OCT scan can be manually defined in the *Scan* window. This includes the geometry of the scan, the orientation of the OCT scan and the size of the OCT volume. Furthermore, the number of ART frames can be defined. Depending on the size of the OCT scan and the choice of *HR* (high-resolution) or *HS* (high-speed) mode, the number of A-scans per B-scan displayed in this window will be adjusted accordingly.

The OCT scan can be moved off-center by left clicking the central spot and dragging the scan to the desired location.

The desired fundus imaging mode can be set in the SPT software. The fundus imaging mode selected for the follow-up exam can be different from the mode the image was originally acquired in.
The *Fixation Light Control* serves to define the position of the internal fixation light in a 3x3 matrix. The central fixation light defines a central position, whereas the other positions move the fixation light to inferior, superior, nasal or temporal positions.

The *size* of the requested fundus image can be defined via a drop-down list. The cubic size can be scaled to 15°x15°, 20°x20°, or 30°x30°.

The *HS* (high-speed) or *HR* (high-resolution) mode can be selected using the buttons displayed in the image to the right. The currently selected mode is shown on the button.

Click *Save* to save the current OCT scan parameters to the database as a “template”. You can save multiple OCT scan templates for the same fundus image by changing the scan parameters and clicking *Save* again. For each single *Save* command, one OCT scan template is saved in the patient file in the HEYEX database.

Click *Exit* to close the SPT program.
4.3.3 Applying the SPT to Different Types of Images

4.3.3.1 Applying the SPT to Images Acquired in a Single HRA Mode

For single cSLO images (i.e., IR, RF, FA, ICGA, and FAF), the graphical user interface and operation of the SPT are the same as described in section 4.3.2.

4.3.3.2 Applying the SPT to Images Acquired in Simultaneous HRA+OCT Mode

For simultaneous HRA+OCT images (i.e., IR+OCT, RF+OCT, FA+OCT, ICGA+OCT, and FAF+OCT), the graphical user interface and operation of the SPT are the same as described in section 4.3.2. The simultaneously acquired cSLO image will be shown in the graphical user interface.

4.3.3.3 Applying the SPT to Images Acquired in Simultaneous HRA Modes

Simultaneous cSLO images such as simultaneous FA and ICGA images give important insights into the structure of pathology. A typical example of a simultaneous FA+ICGA image is shown below (left: FA, right: ICGA).

![Simultaneous cSLO images](image-url)

Fig. 4.8 Simultaneous cSLO images
Each of the two cSLO images acquired in the simultaneous imaging mode can be used for planning OCT scans. When you open the SPT, the left image will be displayed in the graphical user interface by default. This is the FA image for the example shown above.

The cSLO image of interest can be selected via the *Display Image* menu found in the graphical user interface for the SPT.

This menu is activated for simultaneous cSLO images only. The menu will be adapted to the actual simultaneous mode images.

In the FA+ICGA example given above, clicking the *ICGA* button will open the corresponding ICGA image.

![Fig. 4.9 Applying the SPT for simultaneous cSLO images](image)
4.4 Displaying Planned OCT Scans in the HEYEX

Planned OCT scans are saved as additional thumbnail images in the patient file. To distinguish acquired scans from planned scans, the scan pattern in thumbnails of planned scans is indicated in yellow. The planned scans are saved in the same examination tab as the cSLO fundus image which was used for scan planning. Once a planned scan is carried out, the acquired scan is saved in a new examination tab.

For each planned OCT scan that is saved in the SPT window, a separate thumbnail image will be automatically generated.

The display of the thumbnail image consists of:

- the underlying cSLO fundus image that has been used for OCT scan planning
- the planned OCT scan illustrating the geometry, size, position and orientation of the scan pattern.

Each of the generated thumbnail images will contain a small red image icon, which labels the image as a reference image in a progression series.

The annotation of the thumbnail image consists of:

- the mode of the cSLO fundus image used for scan planning followed by the field of view (FoV) of this image
- the requested cSLO fundus imaging mode for the follow-up exam followed by the FoV of the requested image.
4.5 Acquiring Planned OCT Scans

The OCT scans planned with the SPT are acquired in the same manner as all follow-up examinations with the Spectralis system.

- After the **Follow-Up** button in the Acquisition module is clicked, a cSLO image with a yellow scan template will appear in the list of available baseline examinations.

- Each of these images can be selected for the follow-up examination to acquire the planned OCT scan.

- After the follow-up images are acquired and saved, they are stored in the patient file and labelled with the corresponding progression series icons.

- The original SPT image will be indicated with the yellow baseline icon and the red reference icon will be moved to the acquired follow-up image.

**Fig. 4.11** Follow-up window

**Fig. 4.12** Saved OCT scans
## 5 Appendix A – OCT Acquisition Window – Preset Buttons

<table>
<thead>
<tr>
<th>Description</th>
<th>Fast</th>
<th>Dense</th>
<th>Detail</th>
<th>Posterior Pole</th>
<th>ONH</th>
<th>RNFL</th>
<th>7 Lines</th>
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<td>High-Resolution</td>
<td>High-Speed</td>
<td>High-Speed</td>
<td>High-Speed</td>
<td>High-Resolution</td>
</tr>
<tr>
<td>Fixation Light²</td>
<td>Central</td>
<td>Central</td>
<td>Central</td>
<td>Nasal</td>
<td>Nasal</td>
<td>Nasal</td>
<td>Central</td>
</tr>
<tr>
<td>ART Mean³</td>
<td>9</td>
<td>16</td>
<td>16</td>
<td>9</td>
<td>9</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>Scan Dimensions⁴</td>
<td>20° × 20°</td>
<td>20° × 20°</td>
<td>15° × 5°</td>
<td>30° × 25°</td>
<td>15° ×15°</td>
<td>12° (diameter)</td>
<td>30° × 5°</td>
</tr>
<tr>
<td>B-Scan Spacing</td>
<td>240 micron</td>
<td>120 micron</td>
<td>30 micron</td>
<td>120 micron</td>
<td>60 micron</td>
<td>-</td>
<td>240 micron</td>
</tr>
<tr>
<td>Pos X⁵</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>2.6</td>
<td>2.6</td>
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</tr>
<tr>
<td>Pos Y⁵</td>
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<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>-2.1</td>
<td>-2.1</td>
<td>0.0</td>
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<tr>
<td>Tilt Angle⁶</td>
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<td>0</td>
<td>0</td>
<td>7°</td>
<td>0</td>
<td>-</td>
<td>0</td>
</tr>
</tbody>
</table>

¹ FoV – Field of View
² Internal fixation light
³ ART Mean – number of images averaged
⁴ Width x Height
⁵ Position of scan center in degrees, starting from the center of the image. Negative values are in T/S sectors, positive values in N/I.
⁶ The orientation of the preset OCT scans is defined according to the temporal-nasal direction. When the eye is changed, the orientation of the scan is adjusted accordingly.