

MonacoPRO. OCT Analysis



Purpose

This document will provide guidance on utilizing the OCT analysis functionality available within OptosAdvance™ for MonacoPro devices.

This document is specific to the United States market. Not all products, services, or offers are approved or available in every market. Approved labeling and instructions may vary from one country to another. For country specific product information, see the appropriate country website or Instructions for Use (IFU).

NOTE: Full operating instructions and device warning and cautionary messaging are provided in the Instructions for Use. Please review the IFU (G-108707) prior to operating the device. The IFU can be found at optos.com/IFU. Scan the QR Code below for direct access:



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Segmentation Generation

Segmentation reports are generated by capturing Retina Topography and/or ONH Topography scans on the device. Colorized reference data will display for patients 22 years and older.

ONH Topography scan capture will provide:

- ONH Cup/Disk metrics and ONH Nerve Fiber thickness map (ONH)
- Retinal Nerve Fiber Layer thickness profile (RNFL)

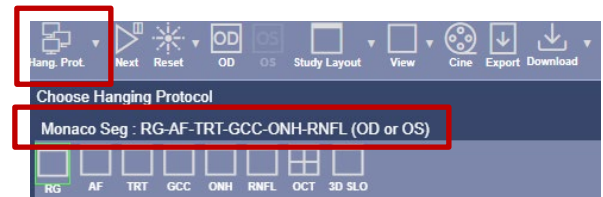
Retina Topography scan capture will provide:

- Total Retinal Thickness map (TRT)
- Ganglion Cell Complex thickness map (GCC)

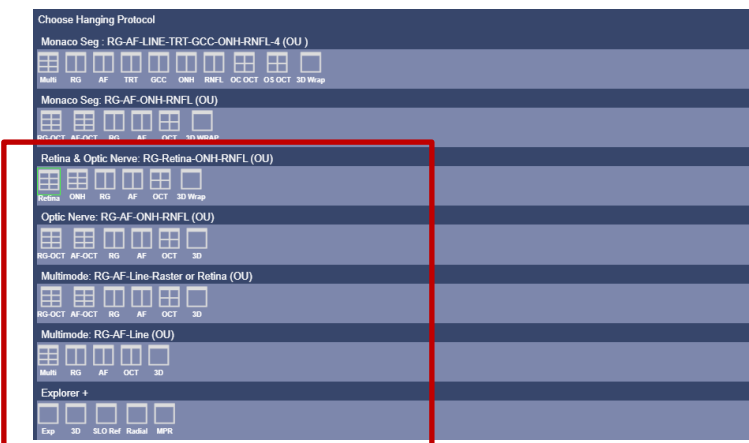
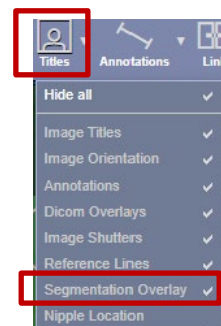
Segmentation Report View

- 1 | Select the **Hanging Protocols** icon (Hang. Prot.) from the toolbar.
- 2 | Locate the **Monaco Seg** header menu option. The stages of views are shown underneath.

- a. RG: Displays the RG **optomap**®
- b. AF: Displays the AF **optomap**
- c. TRT: Total Retinal Thickness Analysis
- d. GCC: Ganglion Cell Complex Analysis
- e. ONH: Optic Nerve Head Analysis
- f. RNFL: Retinal Nerve Fiber Analysis



- 3 | Select the **Next** button on the toolbar or use your right arrow key on your keyboard to advance to each stage of the Hanging Protocol. You can also manually select each stage from the Hanging Protocol icon to navigate.
- 4 | To remove the segmentation lines on the scans, select the Titles tool from the toolbar, and choose Segmentation Overlay.
- 5 | There are additional OCT views available from the Hanging Protocol menu that do not contain analysis reports. They will not contain the Monaco Seg menu header. See Section Standard B-Scan Views.



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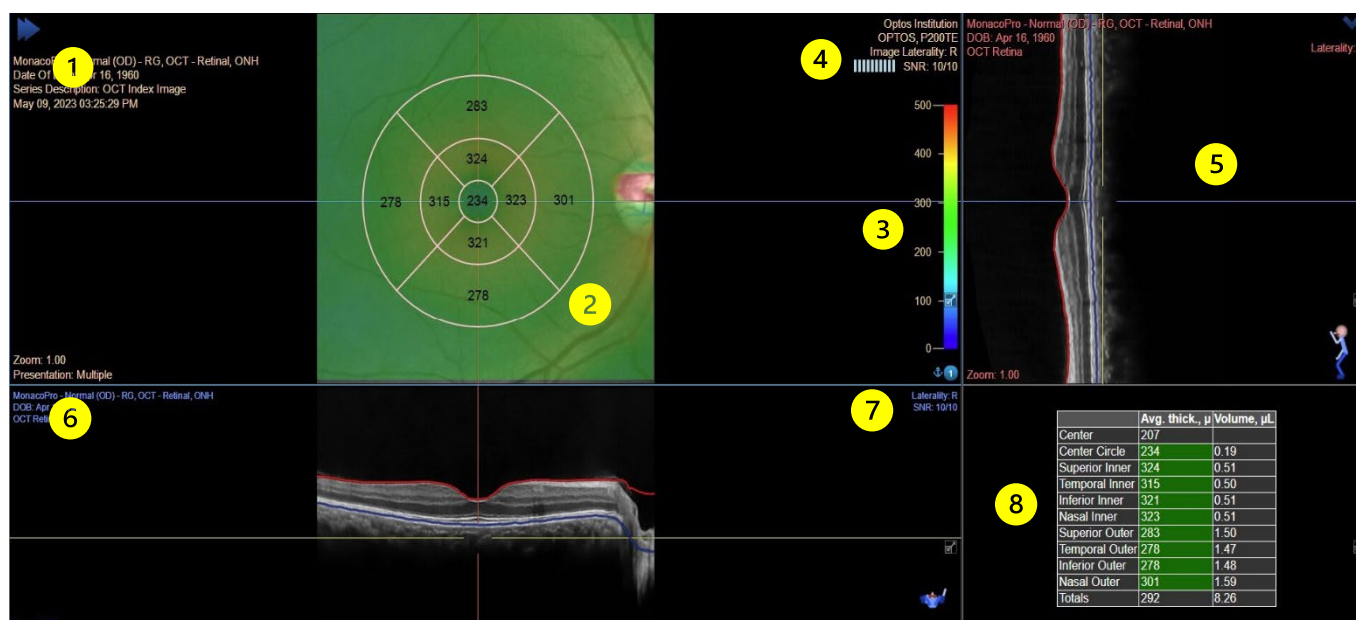


Total Retinal Thickness Analysis

Hanging Protocol: TRT (Total Retinal Thickness)

Tips for reviewing the TRT:

- The retinal thickness is based on ILM → RPE
- To evaluate quality of the scan, ensure that scan capture placement is correct. Retina Topography scan should be centered on the macula area. The B-scan should be oriented correctly and not upside down. SNR values of 6 and above offer more reliable segmentation measurements.
- Scroll through volume scans (5 and 6) using the scroll wheel on your mouse to view all 97 B-scans.
- Contour, Grid, and Edit tools are accessible via the **View Tools** icon on the left side menu.



1	SLO with thickness map view	5	Vertical B-Scan (extracted)
2	9-field ETDRS grid (6mm)	6	Horizontal B-Scan
3	Thickness color gauge	7	Individual B-Scan SNR
4	Average Volume SNR value	8	ETDRS value table

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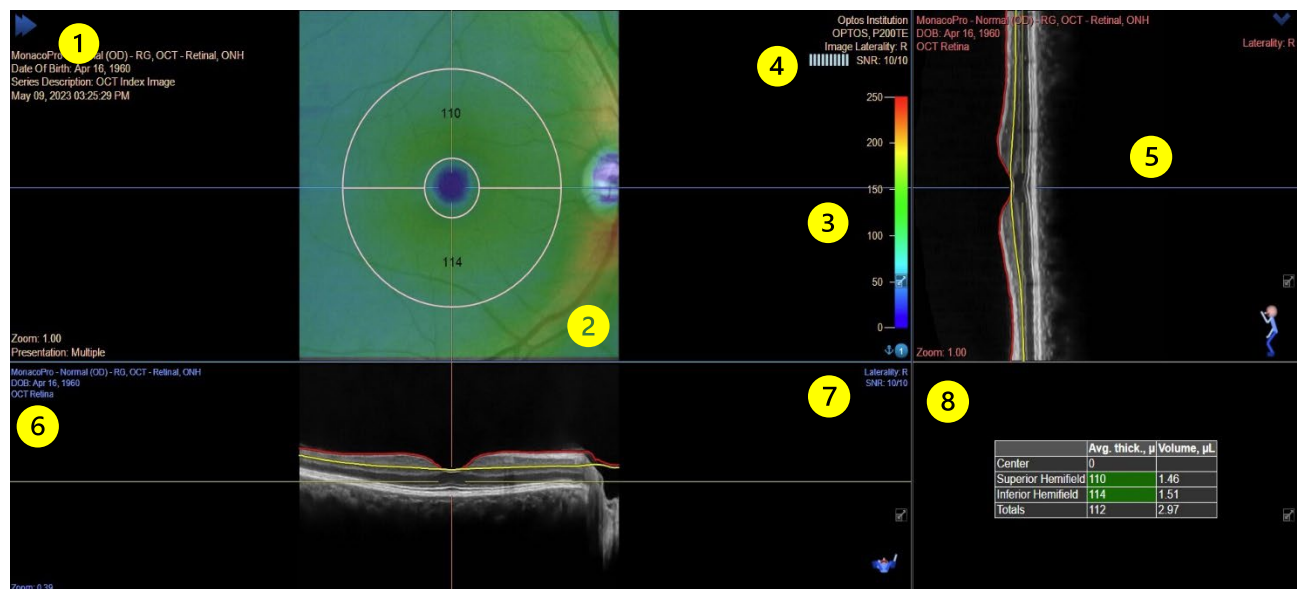


Ganglion Cell Complex (GCC) Analysis

Hanging Protocol: GCC

Tips for reviewing the GCC:

- GCC thickness is based on ILM → IPL Boundary (NFL, GCL, IPL)
- To evaluate quality of the scan, ensure that scan capture placement is correct. Retina Topography scan should be centered on the macula area. The B-scan should be oriented correctly and not upside down. SNR values of 6 and above offer more reliable segmentation measurements.
- If the hemifield grid (2) is not centered on the fovea, hover over its center until you see a square in the box and move this to the correct location.
- Scroll through volume scans (5 and 6) using the scroll wheel on your mouse to view all 97 B-scans.
- Contour, Grid, and Edit tools are accessible via the **View Tools** icon on the left side menu.



1	SLO with thickness map view	5	Vertical B-Scan (extracted)
2	GCC hemifield grid (6mm)	6	Horizontal B-Scan
3	Thickness color gauge	7	Individual B-Scan SNR
4	Average Volume SNR value	8	Hemifield value table

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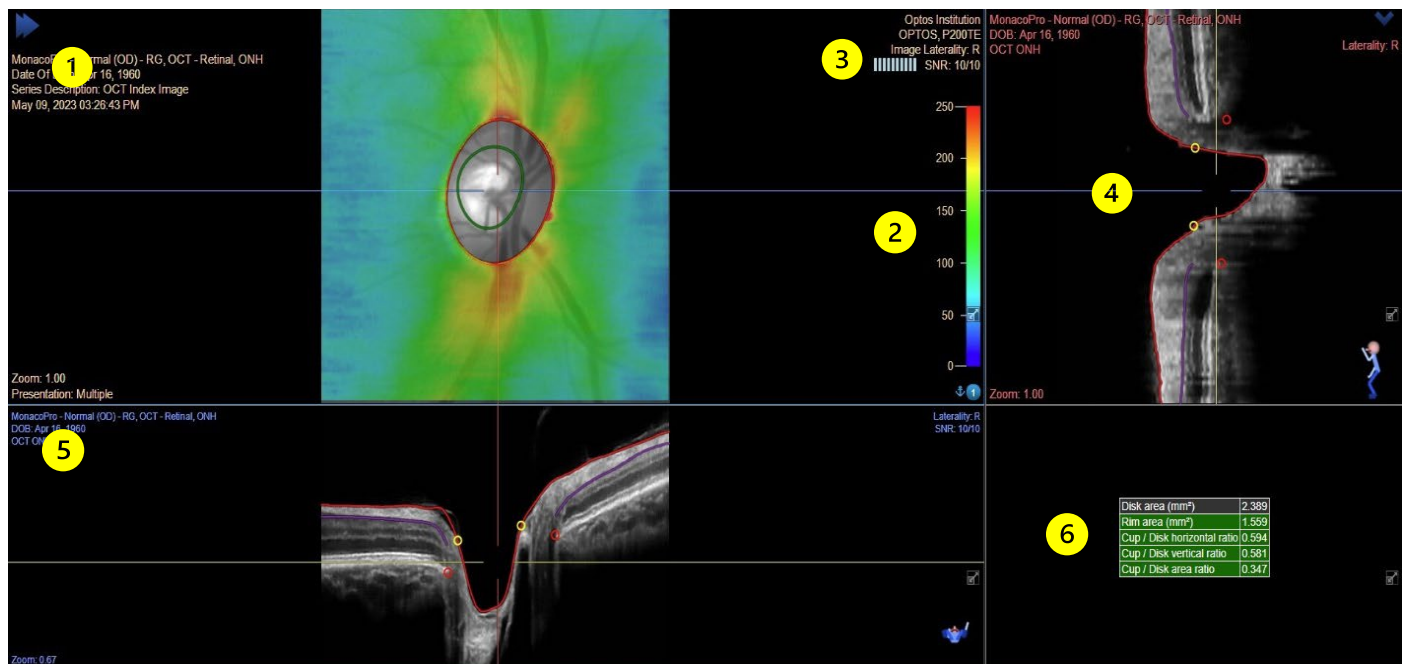


Optic Nerve Head Analysis

Hanging Protocol: ONH

Tips for reviewing the ONH:

- ONH analysis is based on Bruch's Membrane Opening (BMO) and a reference plane point.
- To evaluate quality of the scan, ensure that scan capture placement is correct. ONH Topography scan should be centered on the optic nerve head. The B-scan should be oriented correctly and not upside down. SNR values of 6 and above offer more reliable segmentation measurements.
- The Nerve Fiber thickness map is shown by default (1). You can toggle the NFL thickness map on/off within the **View Tools** menu option.
- Scroll through the volume scans (4 and 5) using the scroll wheel on your mouse to view all 97 B-scans.
- NFL thickness map on/off and edit tools are accessible via the **View Tools** icon on the left side menu.



- BMO points (disc) ●
- Reference plane points on ILM (cup) ●
- Editable BMO points and outlines

1	SLO with thickness map & cup/disc outlines	4	Vertical B-Scan (extracted)
2	Thickness color gauge	5	Horizontal B-Scan
3	Average Volume SNR value	6	ONH cup and disc metrics

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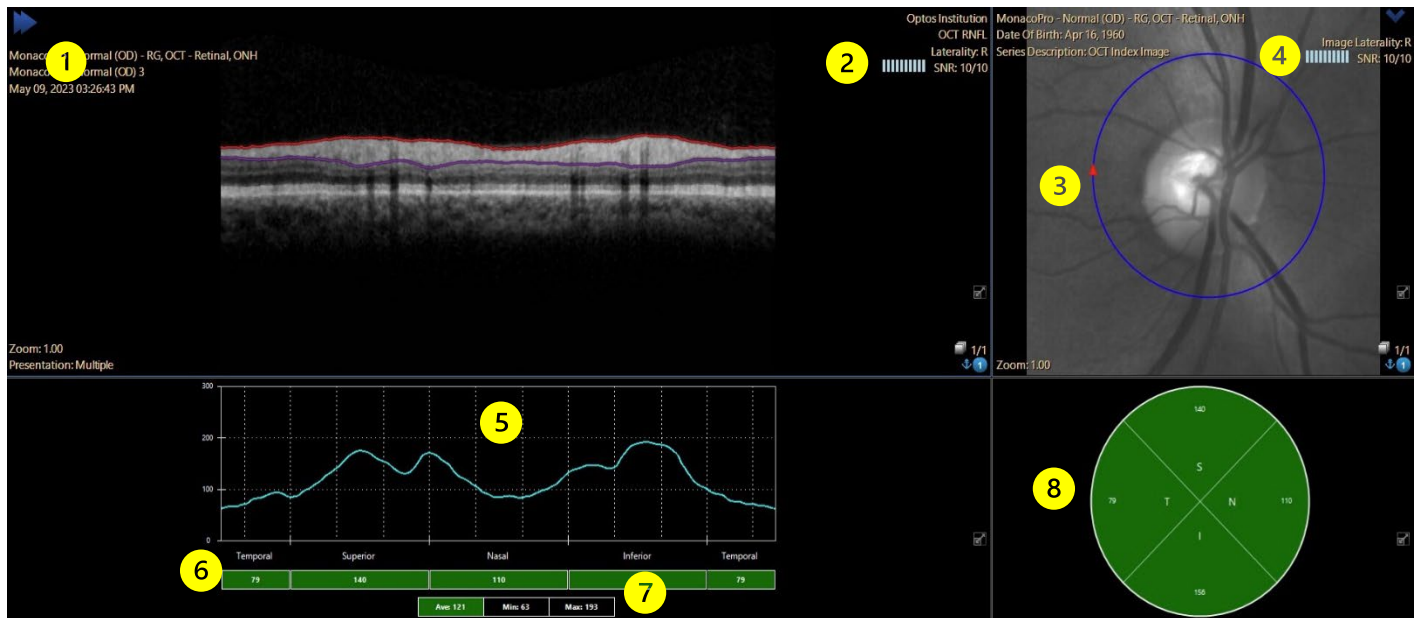


Retinal Nerve Fiber Layer Analysis

Hanging Protocol: RNFL

Tips for reviewing RNFL:

- RNFL Analysis is based on the ILM>outer NFL boundary.
- Circle is a T-S-N-I-T sequence.
- RNFL is auto extracted from the ONH Topography scan.
- To evaluate quality of the scan, ensure that scan capture placement is correct. ONH Topography scan should be centered on the optic nerve head. SNR values of 6 and above offer more reliable segmentation measurements.
- Edit tools are accessible via the **View Tools** icon on the left side menu.



1	RNFL scan with segmentation	5	RNFL thickness line graph
2	Individual B-Scan SNR	6	4-sector graph values
3	Auto ONH center detection on SLO overlay	7	Average, Minimum, Maximum thickness
4	Average Volume SNR value	8	Quadrant wheel

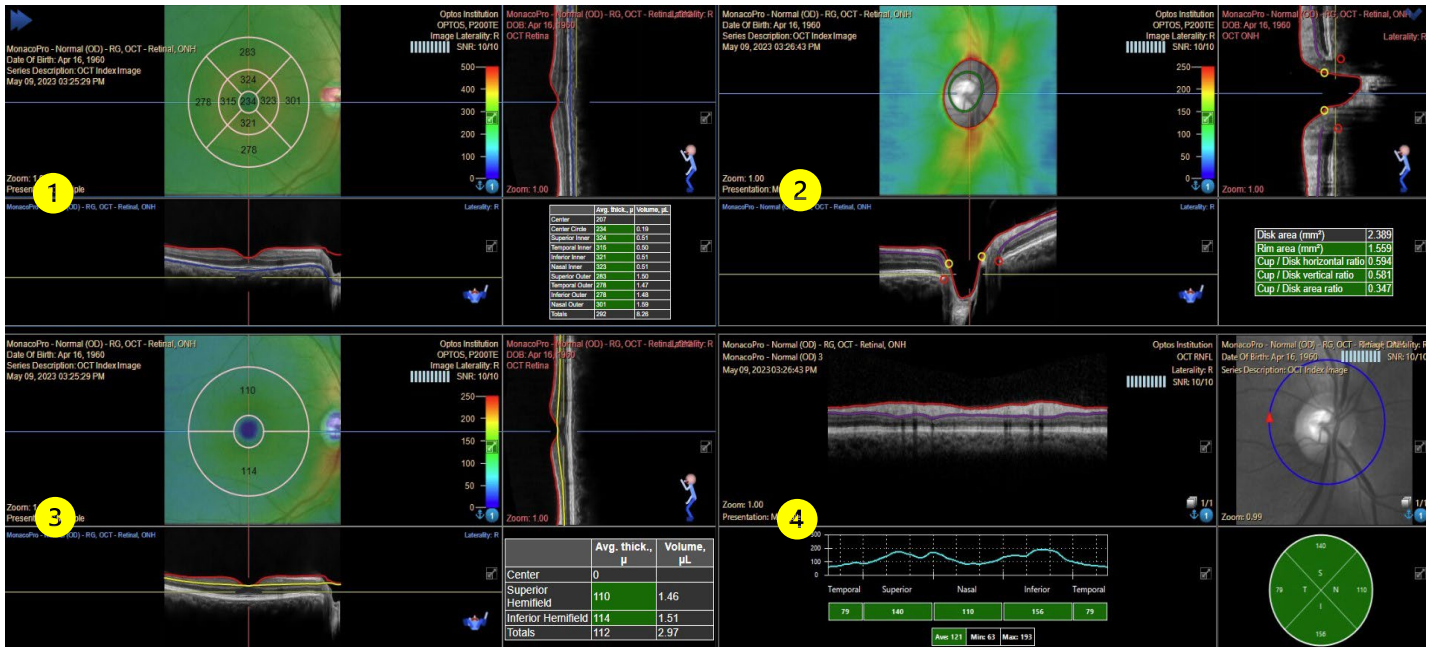
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TRT, GCC, ONH, and RNFL Reports

Hanging Protocol: OD OCT, OS OCT

This stage of the Hanging Protocol, displays all four analyses on one screen per eye, provided both the Retinal Topography and ONH Topography scans were captured.



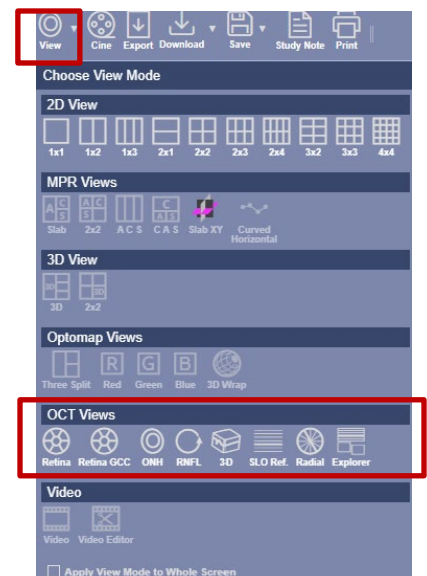
1	TRT	3	GCC
2	ONH	4	RNFL

OCT Views

There are multiple ways to view your reports. You can manually select an OCT view from the View tool.

- 1 | Select **View** from the toolbar.
- 2 | Locate the OCT Views header and select the applicable OCT view:
 - a. Retina
 - b. Retina GCC
 - c. ONH
 - d. RNFL

3D View, Radial View, and Explorer View are covered in subsections below.



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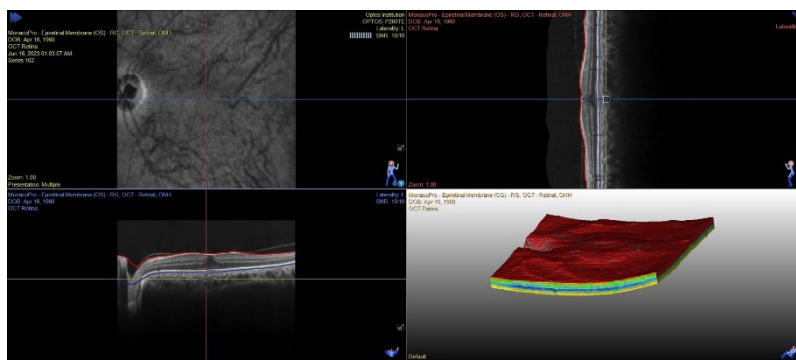
3D Views

The 3D View is intended for use with Retina Topography and ONH Topography.

Open an OCT and select **View** from the toolbar, then select **3D**.

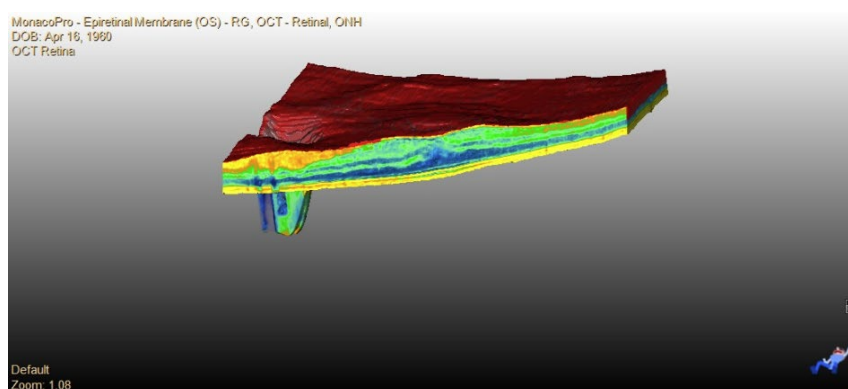
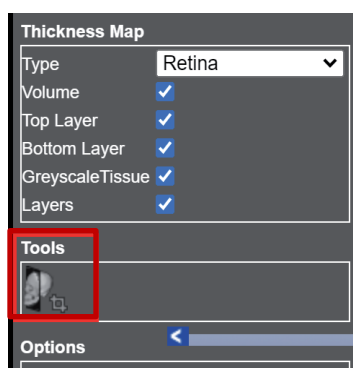
In this view are the following viewports:

- A enface/coronal view in the main (top-left) Multi-Plane Reformat (MPR) viewport
- Cross-sectional OCT images shown in the additional MPR viewports (bottom-left and top-right)
 - These represent different orientations, such as axial and sagittal.
- A 3D image is shown in the bottom-right. In the 3D viewport, the tissue above the top layer and below the bottom layer has been removed for easier view of the layer depths.



To utilize the Plane Clipper tool, follow the steps below:

- 1 | Select **View Tools** from the left-hand menu.
- 2 | Beneath the Tools header, select the Plane clipper icon.
- 3 | To use the tool, click (or tap) the 3D image and then drag to push the plane in and out.



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Radial Views

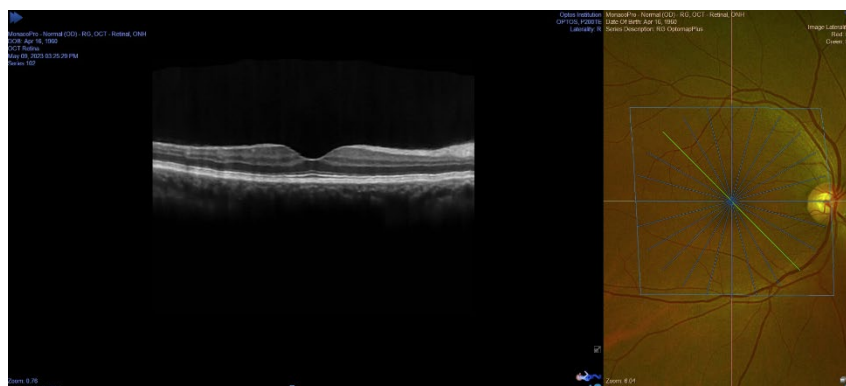
The Radial View allows you to scroll through fixed- angle cross sections that are extracted from a volume scan. The outline of the original raster volume scan is shown on the enface by a blue rectangular border in the right viewport.

Open an OCT and select **View** from the toolbar, then select **Radial**.

You can move the center point by clicking and dragging the white box to the desired location. Hover your mouse over the B-scan and scroll through the interpolated 'spokes'.

To update the number of spokes (6, 12, 24, 36, or 48), select **View Tools** from the left-hand menu.

Note: If the Radial View is not available for the scan type, it will be grayed out.

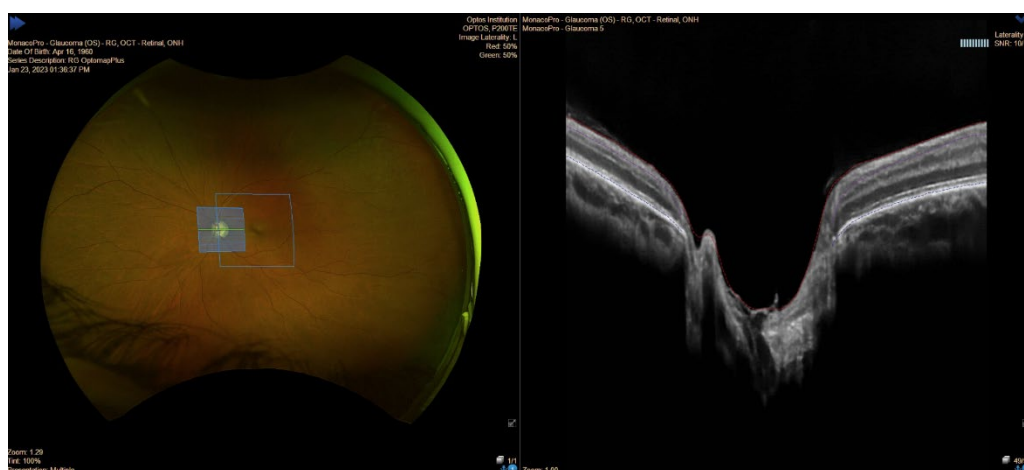


Explorer Views

Explorer View allows you to see and select all available OCT scans taken on the same day. Explorer views are also available from the Hanging Protocol menu dropdown.

Open an OCT and select **View** from the toolbar, then select **Explorer**.

All available OCT scans will be highlighted on the **optomap** image. Select the scan you want to view from the **optomap**, and the right viewport will change to the corresponding OCT.



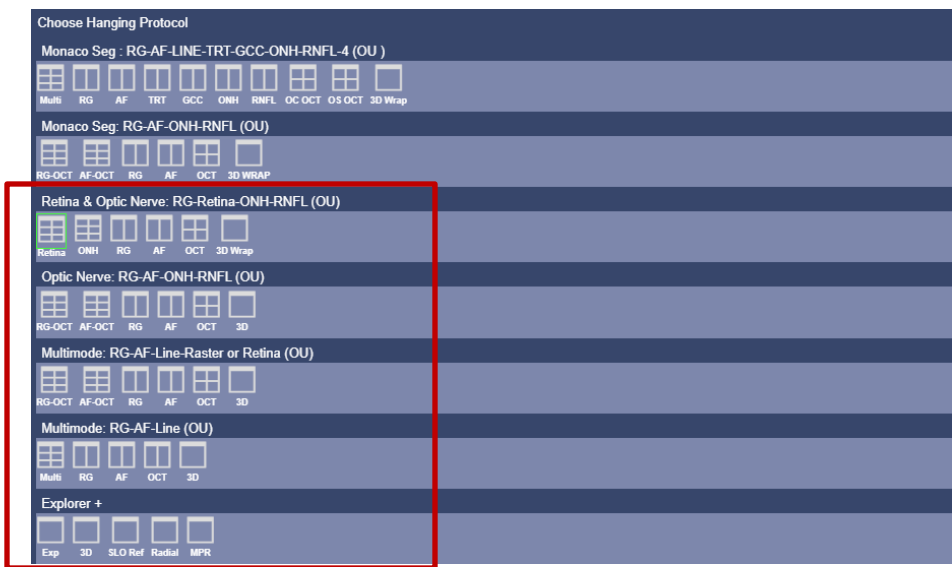
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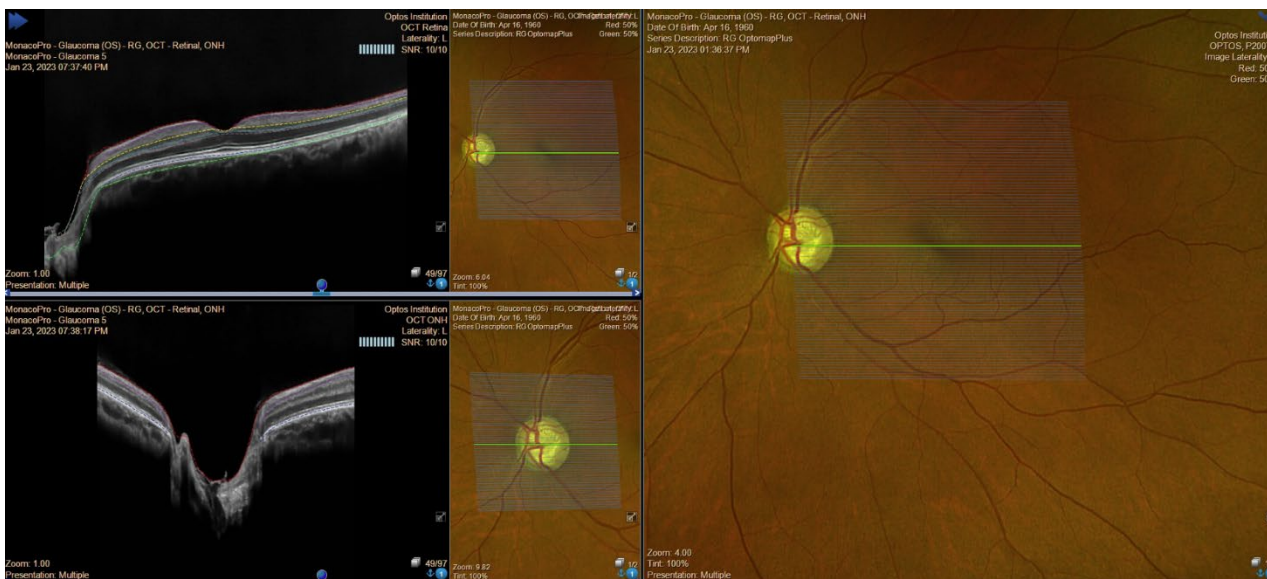
Standard B-Scan Views

To view a non-segmented series, change the Hanging Protocol to a non-segmented view. There are multiple customized views available for use depending on OCT review preferences.

- 1 | Select **Hanging Protocol** on the toolbar.
- 2 | Select a menu option without analysis:
 - a. Retina and Optic Nerve
 - b. Optic Nerve
 - c. Multimode
 - d. Explorer



*Dotted lines can be toggled off/on by selecting **Titles** on the toolbar and selecting **Segmentation Overlay**

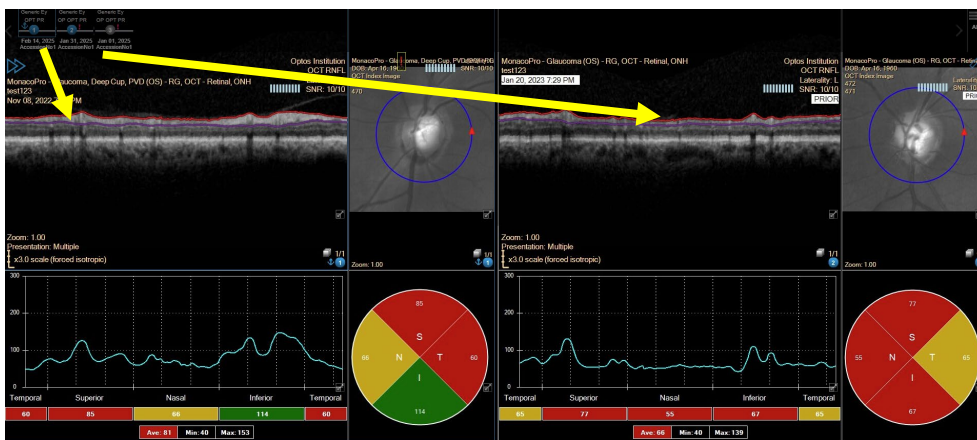
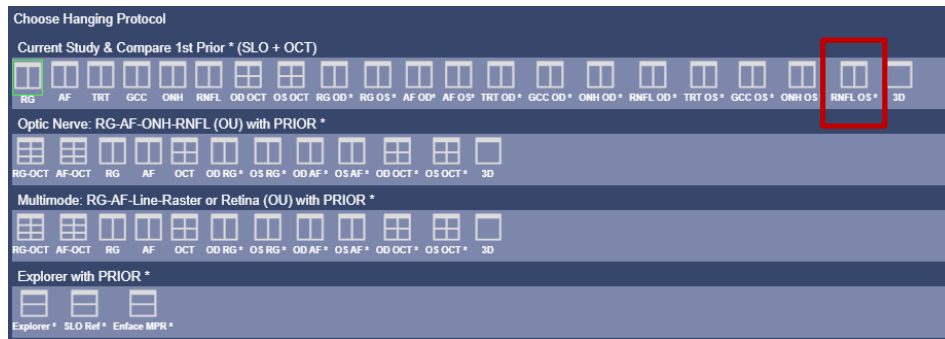


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Comparing OCT Scans from Multiple Visits

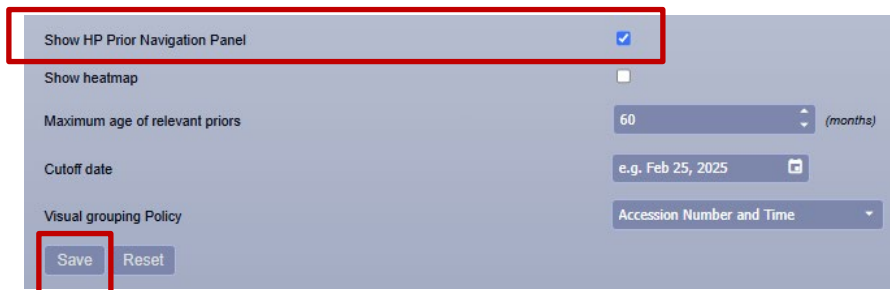
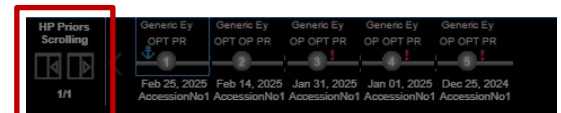
If scans were taken at previous visits, you can compare changes over time within OptosAdvance. **The Hanging Protocol** menu options automatically come with stages to display the current capture and the most recent like prior study. These side-by-side comparisons are indicated by an asterisk (*) in the menu stages. This example shows an RNFL side-by-side comparison.



Scrolling Through Priors

To compare older prior scans side-by-side, follow the steps below. This example will show ONH OS comparison.

- 1 | Ensure your timeline displays **HP Priors Scrolling**.
- 2 | If HP Priors Scrolling is missing: Select the **Settings** icon.
- 3 | Navigate to **System>Timeline** and ensure **Show HP Prior Navigation Panel** is active. Select **Save**. Return to **Directory**.



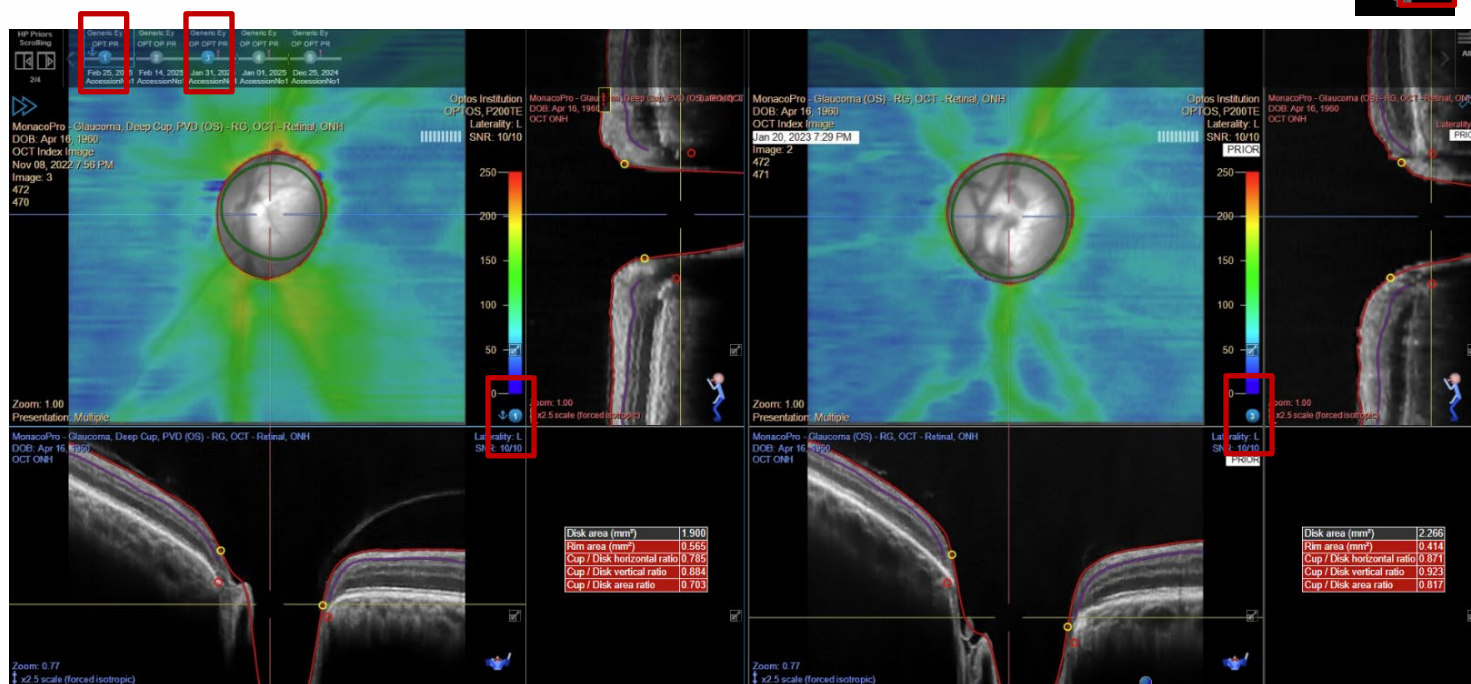
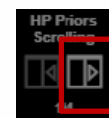
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- Open your desired study and confirm HP Priors Scrolling is displayed in the timeline.
- Select a prior OCT report stage (indicated with an asterisk) to display a current OCT report, and the most recent prior report on the screen.



- Select the **Forward** button on HP Priors Scrolling to change the right viewport to display all the prior matching reports in your timeline.



- Take notice of the blue numbered circles in the timeline. The viewports will display the matching blue circle in the bottom corner of the heatmap view to indicate which date is showing.

This functionality applies to all image modalities and OCT Analysis reports if the correct prior Hanging Protocol is selected first.

For additional information on comparing prior images, review the document titled **OptosAdvance Comparing Prior Images**.

