The Pathology Company

Leica BIOSYSTEMS

WebScope

User's Guide

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WebScope User's Guide

This document applies to eSlide Manager Release 12.2 and later.

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Customer Resources

- For the latest information on Leica Biosystems Aperio ePathology products and services, please visit www.LeicaBiosystems.com/ePathology.

Disclaimers

- Use normal care in maintaining and using Aperio ePathology servers. Interrupting network connections or turning off the servers while they are processing data (such as when they are analyzing eSlides or generating an audit report) can result in data loss.
- This manual is not a substitute for the detailed operator training provided by Leica Biosystems Imaging or for other advanced instruction. Leica Biosystems Imaging Field Representatives should be contacted immediately for assistance in the event of any instrument malfunction. Installation of hardware should only be performed by a certified Leica Biosystems Imaging Service Engineer.
- ImageServer is intended for use with eSlides created by scanning glass slides with the scanner. Educators will use Aperio ePathology software to view and modify eSlides in Composite WebSlide (CWS) format.

Patents

- Aperio ePathology products are protected by U.S. Patents: 6,711,283; 6,917,696; 7,035,478; 7,116,440; 7,257,268; 7,428,324; 7,457,446; 7,463,761; 7,502,519; 7,518,652; 7.602.524, 7,646,496; 7,738,688 and licensed under one or more of the following U.S. Patents: 6,101,265; 6,272,235; 6,522,774; 6,775,402; 6,396,941; 6,674,881; 6,226,392; 6,404,906; 6,674,884; and 6,466,690.

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1 Overview

WebScope is a web-based, platform-independent eSlide viewer that you can access from any workstation, including Macintosh or Linux, with an Internet browser and Adobe Flash Player.

WebScope offers a rich set of features that enhance your eSlide viewing, such as:

- eSlide annotations – Create and view annotations on the eSlide to emphasize the slide image or to identify an area for analysis using Aperio ePathology image analysis algorithms. See *"Prerequisites and Compatibility" on page 6* for information on user permissions needed to create or save annotations.
- Analyze eSlides – Analyze regions of the eSlide or the entire eSlide using Aperio image analysis algorithms. See *"Chapter 5: Analyzing eSlides" on page 26* for details. Also see "Prerequisites and Compatibility" below for information on scenarios in which you cannot analyze eSlides.
- eIHC Quick Analysis – Quickly and easily mark and analyze tumor regions using the appropriate algorithm for the eSlide's stain and body site. See *"Chapter 4: eIHC Quick Analysis" on page 22* for details.
- Clinical View – Access the clinical view for just the tools and functionality needed for a clinical workflow. See *"Using Clinical View" on page 12* for details
- Adjust brightness and contrast – By adjusting the brightness and contrast of the eSlide view, you can adjust the look of the eSlide to suit your preferences. For details, see " *"Adjusting Brightness and Contrast" on page 11*.
- Navigate the eSlide – You can use multiple tools to zoom in and out and move around the eSlide. See *"Depending on the type of eSlide you are viewing, the Information window can contain:" on page 10* for details.

Intended Use

For research use only. Not for use in diagnostic procedures.

Installation

WebScope is automatically installed with:

- eSlide Manager – The eSlide management system manages all your eSlides as well as the associated information, such as case, project, specimen, and analysis information. eSlide Manager uses the Aperio ImageServer to view and store the eSlide images.
- ImageServer Gallery – When accessing ImageServer directly on a Digital Slide Repository, a gallery of eSlides displays. Each eSlide contains links to open either with WebScope or ImageScope.

Prerequisites and Compatibility

This section contains notes on requirements and compatibility.

Internet Browser Compatibility

The following Internet browsers are supported for use with WebScope:

- Microsoft Internet Explorer versions 7, 8, and 9
- Mozilla Firefox versions 2, 3, and 12

Adobe Flash Compatibility

WebScope is a Flash application. You must have Adobe Flash Player version 8 or later installed as an Internet browser plug-in.

User Permissions

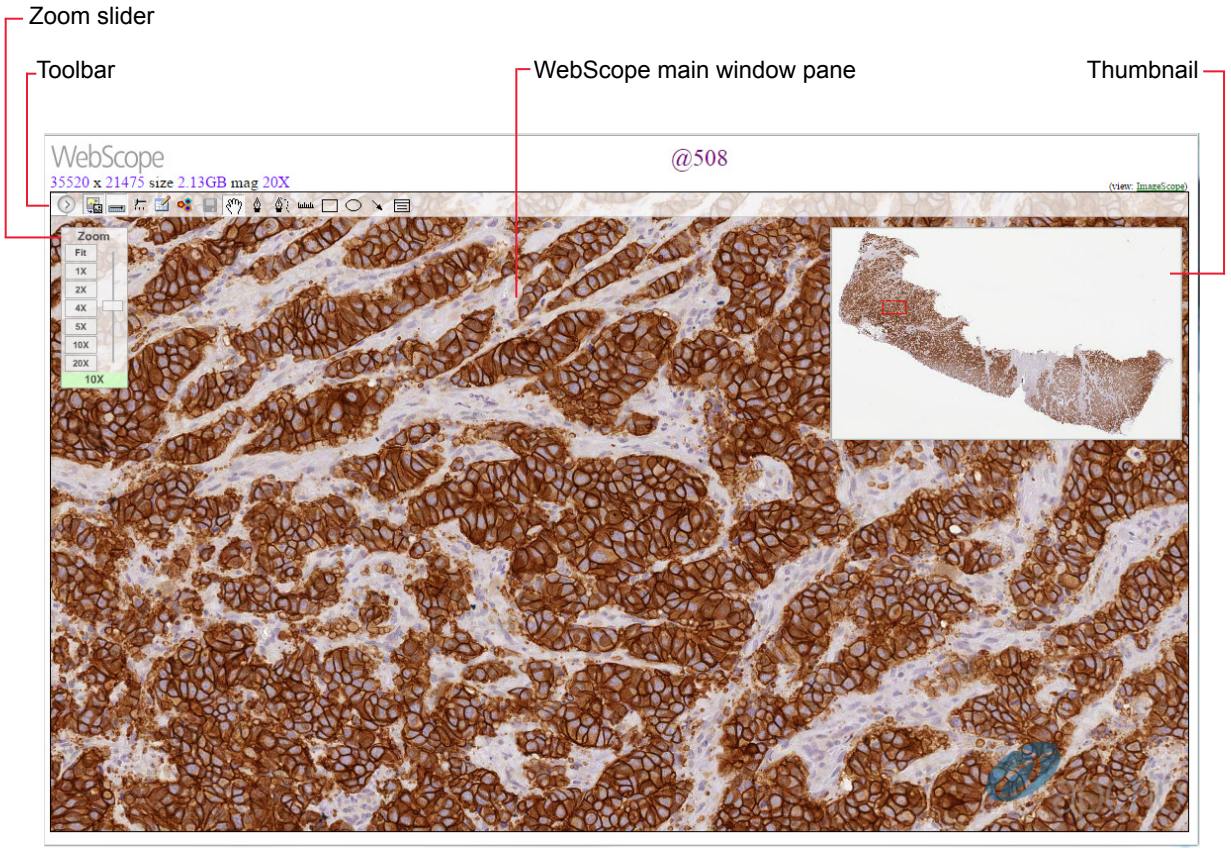
The user role associated with your eSlide Manager login defines your user privileges in eSlide Manager and WebScope. To create and save annotations or to run analysis on eSlides, your eSlide Manager user role must contain these permissions. If your user role does not include these permissions, these features are not available to you in WebScope. For more information on your user role, consult your eSlide Manager administrator.

Monitor Recommendations

Because Aperio eSlides are by design high resolution and information rich, for best results you should use a high quality monitor to view them. Make sure the monitor is at the proper viewing height and in a room with appropriate lighting. We recommend any high quality LCD monitor meeting the requirements recommended in the *Aperio ePathology System Requirements*.

Quick Tour of WebScope

The WebScope main window displays the eSlide. The WebScope window also contains a menu bar, a main toolbar, the thumbnail image, and a zoom slider.



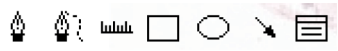
Main Window Icons

Icon	Description	For more, see…
	Indicates that an Integrated Color Management color profile was embedded in the image when the slide was scanned and that the profile is being used to adjust the view of the image. The icon displays at the top of the WebScope window.	*ImageScope User's Guide* for information on the benefits of Aperio Integrated Color Management.

Main Toolbar Icons - Standard View

Icon	Description	For more, see…
	Pin or unpin the menu bar	*"WebScope Menu Bar" on page 8*
	Show/hide thumbnail	*"Navigate with the thumbnail window"* in the table on page 8
	Show/hide zoom slider	*"Change the magnification"* in the table on page 11
	Adjust brightness/contrast	*"Adjusting Brightness and Contrast" on page 11*
	Show/hide Annotations window	*"Chapter 3: Using Annotations" on page 15*
	Analyze the eSlide	*"Chapter 5: Analyzing eSlides" on page 26*
	Save annotations	*"Chapter 5: Analyzing eSlides" on page 26*
	Pan - move the image in the WebScope window	*"Move around the eSlide" in the table on* page 10

The following tools are used to draw annotations. For details, see *"Chapter 3: Using Annotations" on page 15*.



Keyboard Shortcuts

To ensure that the keyboard shortcuts are used by WebScope rather than your browser, click on the WebScope main window to set focus on that window before using a shortcut.

Key	Description
F11 key	Turn full screen display on and off.
H key	Show or hide annotations
Control G	Show or hide Analysis window
Control A	Show or hide Annotations window
A	Zoom in
Z	Zoom out

WebScope Menu Bar

When the menu bar is open, it appears beside the toolbar.

To keep the menu bar open every time you open WebScope, click the push-pin button  . The button changes to indicate the menu bar is pinned  .

The WebScope menu bar is hidden by default. Click the arrow button to open or close the menu bar.

Note that if you are using clinical view, the toolbar contains just those tools used in the clinical workflow. See *"Using Clinical View" on page 12* for details.

You can right-click in the WebScope window to access a shortcut menu that contains many of the same features available from the toolbar.

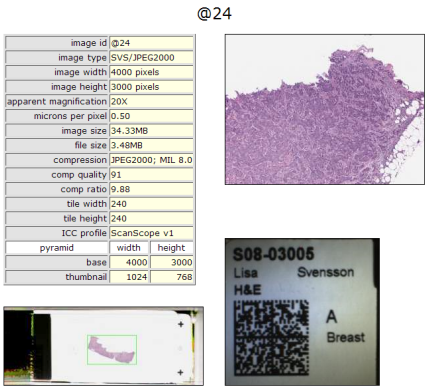
Opening eSlides in WebScope

The method for opening the eSlide differs depending on the Aperio product you are using with WebScope:

If you are using:	You open WebScope like this:
eSlide Manager *without* ImageScope installed on your workstation	Go to an eSlide page and click the thumbnail image.
eSlide Manager *with* ImageScope installed	When ImageScope is installed on your workstation, the eSlide automatically opens in ImageScope. To open the eSlide in WebScope, press the W key on your keyboard while clicking the thumbnail image in eSlide Manager.
ImageServer	When accessing ImageServer directly on the eSlide Repository, a gallery of eSlides appear with links for WebScope and ImageScope. Click the **WebScope** link under the eSlide or the thumbnail image. *Note: WebScope requires that you have Adobe Flash Player installed. If you do not have Adobe Flash Player, a message appears asking if you want to install it.*

Viewing Information on the eSlide

To view information on the eSlide, go to the **Image** menu and select **Information**.

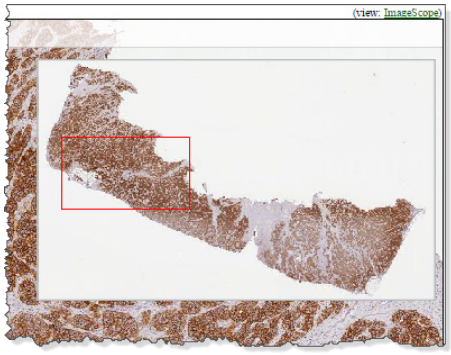


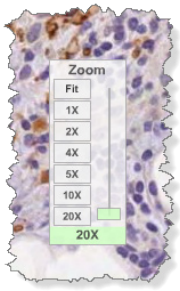
Depending on the type of eSlide you are viewing, the Information window can contain:

- The eSlide image ID (@xxxx) used to identify the eSlide image by Aperio ePathology software.
- Information on the eSlide image.
- The entire eSlide, the portion of the glass slide that was scanned.
- The macro image, the image of the entire glass slide from which the scan was made.
- The label that was scanned from the glass slide.

Navigating in WebScope

WebScope has many tools for navigating the eSlide image.

To do this:	Do this:
Move around the eSlide	• Click inside the eSlide image and hold down the mouse button while dragging the image. (If another tool is selected, click the button.) • Use the arrow keys on your keyboard to shift the image in different directions. (Hold down the Shift key to move a greater distance.)
Navigate with the thumbnail window (The example on page 7 shows the location of the thumbnail window.)	Do the following: • Click inside the thumbnail window to move to the corresponding location on the eSlide. • Drag the box to change the view in the Viewer window. Click to show or hide the Thumbnail window. 

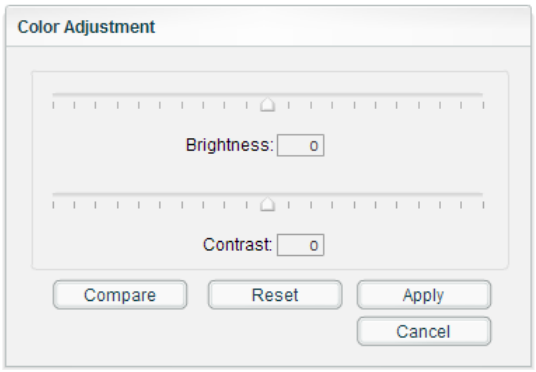
To do this:	Do this:
Change the magnification	To quickly zoom to the maximum magnification, double-click with the cursor on the image in the main window.
	Use the Zoom Control to select a magnification of Fit, 1x, 2x, 4x, 10x, 20x, or higher, depending on your scanner and the scan magnification used. Select **Fit** to display the entire eSlide in the Viewer window. 
Zoom using the keyboard	Press the A key to zoom in, and press the Z key to zoom out.

Adjusting Brightness and Contrast

You can adjust the brightness and contrast to an eSlide for the current viewing session. The changes you make are not saved with the eSlide image. (To make permanent changes, use the Digital Slide Studio application.)

To adjust the brightness and contrast of the eSlide image:

1. Click on the toolbar or go to the **Image** menu and select **Adjustment**.



2. When the Color Adjustment window appears, adjust the brightness or contrast by moving the corresponding sliders.
3. After making your adjustments, you can:
   - Click **Compare** to view the image without the adjustments.
   - Click **Apply** to apply the changes or **Cancel** to exit without making the changes.

Using Clinical View

To optimize WebScope for clinical use, select **Clinical Toolbar** from the **View** menu. The clinical toolbar contains only the tools needed for drawing tumor regions and selecting a report image:

When using clinical view, you use the Summary View of the Annotations window to analyze eSlides. See *"Chapter 4: eIHC Quick Analysis" on page 22* for details.

The eSlide Manager user settings determine whether the clinical or standard toolbar appears when you open WebScope. To changes these settings, contact your eSlide Manager administrator.

To return to the standard WebScope toolbar, go to the **View** menu and select **Standard Toolbar**.

Creating Bookmark Links

You can create a link to send to others that opens a specific eSlide in ImageScope or WebScope.

With the eSlide open in WebScope, go to the **Image** menu and select **Custom Bookmark**. When the link page appears, you can copy and paste the link for ImageScope or WebScope.

For WebScope links, select the options you want to make available to your recipients:

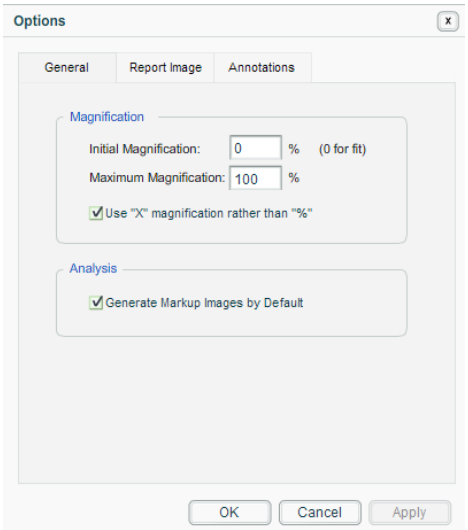
- Display navigation window (thumbnail)
- Display toolbar
- Display menubar
- Display annotations

2 WebScope Options

You can set the WebScope options for magnification and analysis, report images, and annotations.

Access WebScope Options

To access the WebScope options, go to the **Tools** menu and select **Options**.



Setting the General, Report Image, and Annotations Options

The following table describes the tabs available from the Options window:

Options tab	Description
General	The General tab contains magnification and analysis options. The **Magnification** options are: ▸ **Initial Magnification** – The magnification for images when they are first opened. Specify from 1 to 100 percent, or 0 to fit the entire eSlide in the main window. ▸ **Maximum Magnification** – Specifies how far you can zoom into the image. Note that if you use a value greater than 100%, the image resolution does not change. ▸ **Use "X" magnification rather than "%"** – The zoom slider displays magnification as "2x," 4x," and so on, using the same terminology as a microscope objective. X-magnification is turned on by default. To use percentages, clear this check box. The **Generate Markup Images** check box in the **Analysis** section enables you to always generate a markup image when you run an analysis. The markup image is a visual representation of the quantitative data. (If you do not select this option, you can still create a markup image when you run the analysis. See *"Running an Analysis" on page 27*.)
Report Image	These settings provide a combination of fixed or selectable sizes and resolutions for the report images you create. (See *"Selecting eSlide Manager Report Image" on page 16* for information about report images.) If you press and hold the Control key when drawing a report image, WebScope creates the image at a specific size. The **Fixed Region Size** determines the size of that report image. Other options on this tab determine the resolution of the report image: ▸ The full resolution options capture the report image at 100% magnification even if you are viewing the slide at a different magnification. ▸ The current resolution options capture the report image at the magnification you are using to view the image.
Annotations	The **Default Annotation Colors** options enable you to change the color used for each annotation layer. Click the colored box above the annotation layer. When the color window appears, select a color box or enter a standard hexadecimal code used for web color palettes. You can define up to five colors. If you use more than five annotation layers, the colors start over at Layer 6. If you press and hold the Control key when drawing certain annotations, WebScope creates the annotation at a specific size. The **Fixed Size Regions** options define the width and height of rectangle and circle annotations, and the length of ruler and arrow annotations.

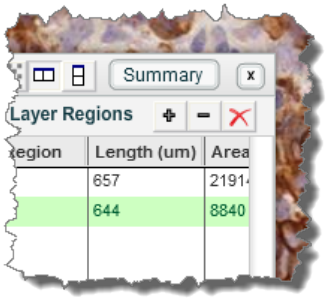
3 Using Annotations

Use annotations to define a region of interest on the eSlide, measure an object, or indicate an interesting area that you want to highlight. You can also use annotations to define the areas of the eSlide on which to perform or not to perform an algorithm analysis.

Summary and Detailed Views

This chapter discusses using the Annotations window in detailed view.

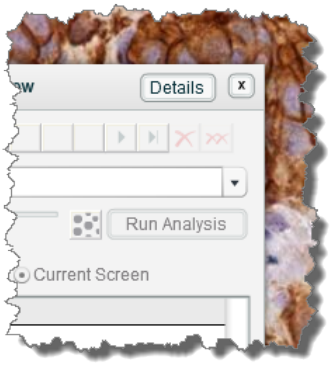
If the **Summary** button appears on the window, you are in detailed view.



If the **Details** button appears, you are in summary view, which is used for quick eIHC analysis. For details on summary view and eIHC analysis, see *"Chapter 4: eIHC Quick Analysis" on page 22*.

To go to the detailed view, click the **Details** button.

Note: If you do not see the Details button, this means you are in clinical viewing mode. For more information, see "Using Clinical View" on page 12.



Annotation Drawing Tools

The annotation drawing tools are located on the main toolbar.

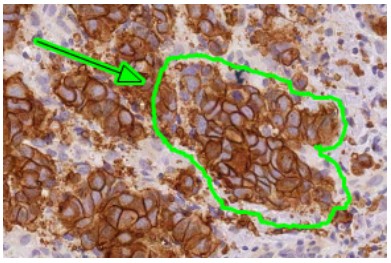
The following table describes how to use each tool:

Tool		Description
	Pen	Draw a freehand annotation. Freehand annotations are often used to identify tissue of interest to analyze.
	Negative Pen	Draw an area to exclude from analysis.
	Ruler	Draw to measure a slide feature. If the image was not created by an Aperio scanner, the unit of measure may be pixels instead of microns or millimeters. You can set the image resolution in ImageScope so that the WebScope ruler displays measurements on these images in microns or millimeters. See the *ImageScope User's Guide* for details.
	Rectangle	Draw a rectangle. Rectangles are often used to identify an area of the eSlide to analyze. To draw a square, hold down the Shift key while you draw.
	Ellipse	Draw an elliptical annotation. Hold down the Shift key while you draw to draw a circle.
	Arrow	Draw an arrow to draw attention to a slide feature. Place your cursor on the image in the main window close to the object you want to point at, click and drag away from it. The further you drag, the larger the arrow appears.
	Report image	Select an area to include in a eSlide Manager report. (See the *eSlide Manager Reporting User's Guide* for information on the optional reporting product.)

*You can also access the annotation tools by right-clicking and selecting the tool from the shortcut menu, or by going to the **Tools** menu, selecting **Drawing**, and selecting the tool you want to use.*

Drawing Annotations

To draw an annotation on the eSlide, click one of the drawing tools on the main toolbar, left-click, and move across the eSlide in the main window. You will see the annotation on the eSlide. For example, the pen and arrow were used on the eSlide below:



Selecting eSlide Manager Report Image

A Report Image is captured from an eSlide or specimen, and can be included in eSlide Manager reports that include the associated eSlide or specimen.

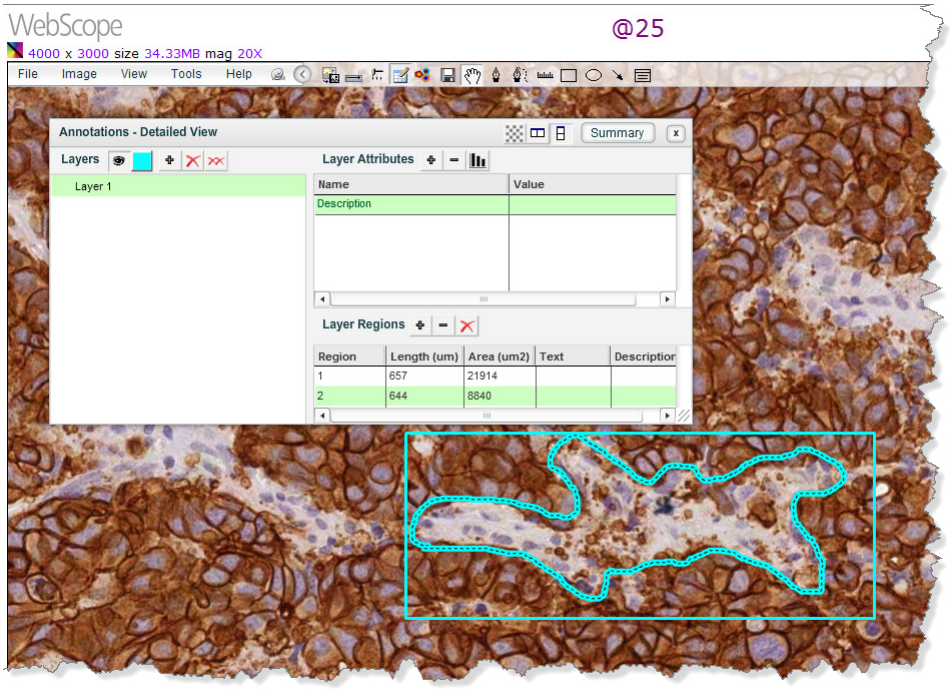
With the eSlide or specimen image open in WebScope, click the icon on the main toolbar, and then click to select an area of the eSlide to display in a report. The area selected is saved as an annotation with the text label "Report Image." You can have only one report image on an eSlide, and the report template used must contain images in order for this image to display.

To draw an area of a fixed size, hold down the Control key while you draw. See *"Report Image"* in the table under *"Setting the General, Report Image, and Annotations Options" on page 14* for information on setting the fixed size of a report image.

Using the Annotations Window

To open or close the Annotation window, click .

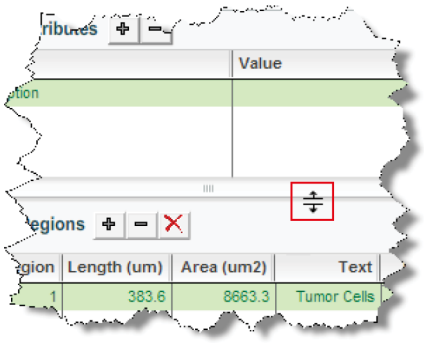
The Annotations window shows information about the annotations you have drawn. For example, the Annotations window below shows the length and area in microns of two annotations drawn using the pen and negative pen drawing tools.



If the resolution of the image is not known, measurements in the Annotations window appear in pixels rather than in microns. You can use ImageScope to set the image resolution so that WebScope knows the microns per pixel measurement for the image, and can display microns. For details, see the ImageScope User's Guide.

Arranging the Annotations Window

You can move the panes of the Annotation window to suit your preferences, choose a vertical or horizontal arrangement, and select whether you can see the eSlide behind the Annotations window.

Header	Header
Moving pane boundaries	To rearrange a pane, place your pointer on a pane boundary until you see the ⇹ symbol, then drag the boundary: 
Change the orientation	To set the Annotations window into either a vertical or horizontal configuration, click ▯ or ▭ at the top of the Annotations window.
Setting transparency	If you want to see through the Annotations window, click the Transparency icon ▩ at the top of the window. Click it again to make the window opaque.

Enabling/Disabling Annotations

To enable or disable annotations, go to the **View** menu and select **Disable Annotations**. When annotations are disabled, all annotations disappear and a warning symbol appears over the Annotations icon on the toolbar: ⚠. You cannot create or save annotations in this mode.

To enable annotations after disabling them, click ⚠ on the toolbar.

Working with Layers and Attributes

Each group of annotations can exist on a separate layer. This allows you to organize information and related annotations by doctor or department or by category. For example, one layer of annotations may be drawn by Dr. Garcia, while another layer of annotations may be drawn by Dr. Edwards. When you analyze the eSlide, the image analysis results appear in another layer.

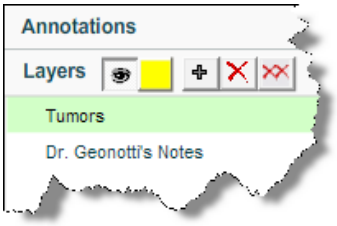
Each layer uses a different color so that you can tell one from another on the eSlide image. (To change the colors, see *"Annotations"* in the table under *"Setting the General, Report Image, and Annotations Options" on page 14* for details.)

Each layer can have one or more attributes. An attribute can simply be text stored with that layer. For example, you can add manual scores to an annotation. See *"Adding Layers, Layer Attributes, and Region Attributes" on page 20* for details.

Showing/Hiding Layers and Viewing Annotations

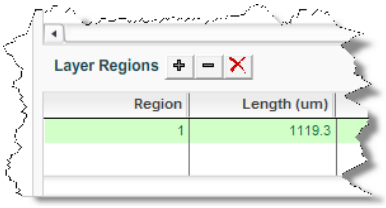
To make an entire layer visible or invisible on the main window:

1. Click to select a layer in the Layers pane.
2. Click  . (When this button is down, the annotations in that layer are visible; when it is raised, the annotations are not visible).



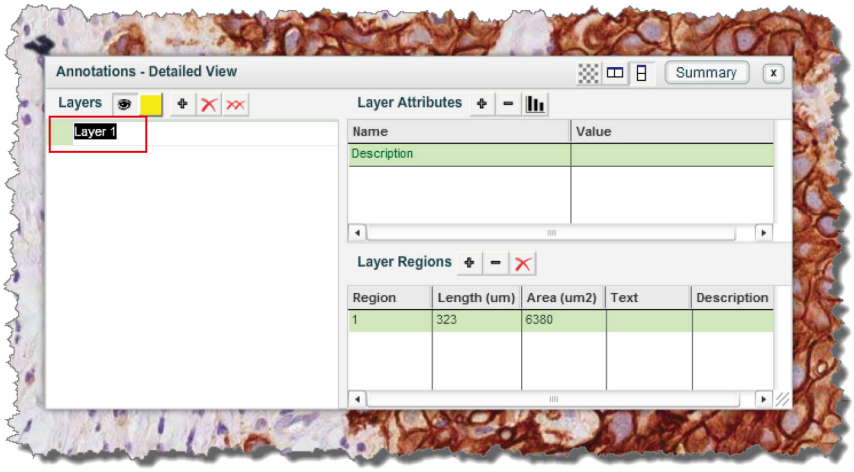
You can also press the H key on your keyboard to make all annotations visible or invisible.

To see an annotation centered on the eSlide image, click that annotation's Region number in the Layer Regions area of the window.



Renaming Layers and Attributes

By default, WebScope uses simple names like Layer 1 to identify layers and attributes. To change the name, double-click the layer. When it is highlighted, as shown below, type a new name:



Adding Layers, Layer Attributes, and Region Attributes

You can create your own layers, layer attributes, and region attributes. (Region is another word for annotation.) You may find this useful for organizing information about the eSlide and for separating annotations made by people in different departments.

To add a new layer:

1. Click  in the Layers pane and a new layer appears in that pane.
2. To change the name of the new layer, double-click on its default name and type a new name.

To add a new layer attribute or region attribute:

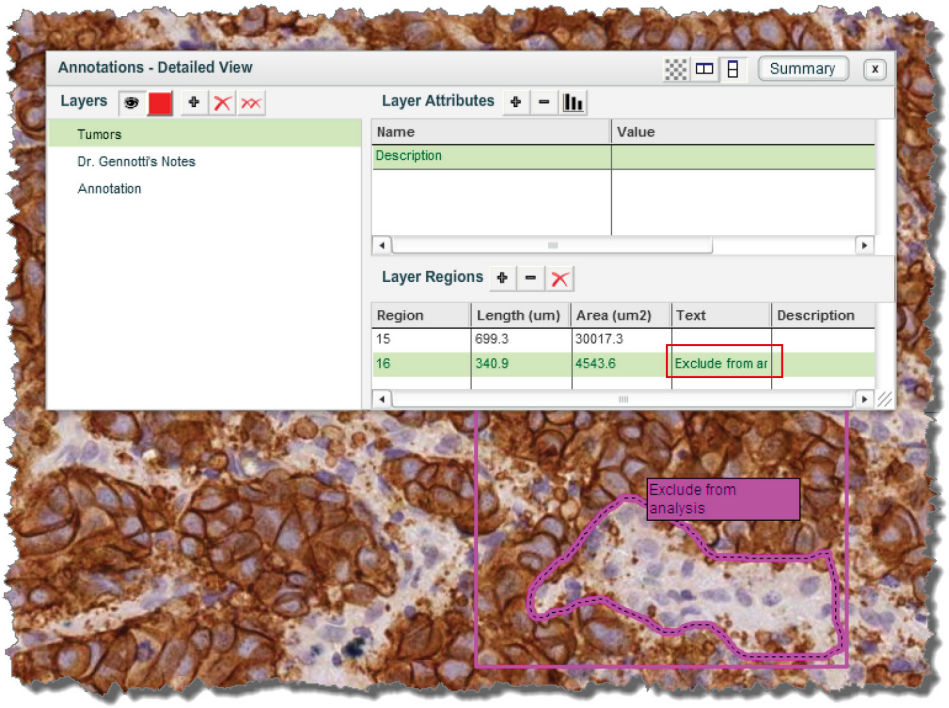
1. Click the  button in the Layer Attribute or Layer Region area of the Annotations window. A new window pops up when adding layer attributes and region attributes asking for the name of the new attribute.
2. Click **Apply** to add the new attribute or **Cancel** to exit back to the Annotations window.

Adding Text Labels

To add a text label to an annotation in the WebScope image display:

1. Go to the Layer Regions pane in the Annotations window.
2. On the line for the annotation you want to label, double-click the field in the Text column and type the text for the label.

   The text label appears on the eSlide image:



Changing Layer Colors

To change the color of a layer (this changes the color used to display the annotations in that layer on the eSlide image), select the layer in the Layers pane of the Annotation window. Click the color box in the Layers pane to select a new color.

Deleting Layers, Layer Attributes, Region Attributes, and Annotations

WebScope provides many different ways to delete annotations, layer attributes, and region attributes:

To delete:	Do this:
A single layer	Select the layer in the Layers pane and click the  button in that pane.
All layers	Click the  button in the Layers pane.
A layer attribute	Select a layer in the Layers pane. Click the attribute you want to delete and click the  button.
A region attribute	Select a layer in the Layers pane, select the attribute in the Layer Region pane, and then click the  button.
A region (annotation)	Select the region in the Layer Regions pane, and click the  button in that pane.

4 eIHC Quick Analysis

This chapter discusses how to use the eIHC feature to mark tumor regions and analyze IHC eSlides in one easy step.

The WebScope detailed Annotations window provides a general solution for image analysis and handling annotations. However, a more streamlined version of the Annotations window is also available—the Annotations summary view. The Annotations summary view was specifically developed for analyzing IHC eSlides, and makes the process quicker and simpler by fitting into a pathologist's or researcher's standard workflow.

For details on using the eIHC features and on eIHC setup steps for eSlide Manager, see:

- *eIHC User's Guide*
- *eIHC Guide to eSlide Manager Setup Guide*
- The user's guide for the specific eIHC application you are using

Slide-Specific Processing

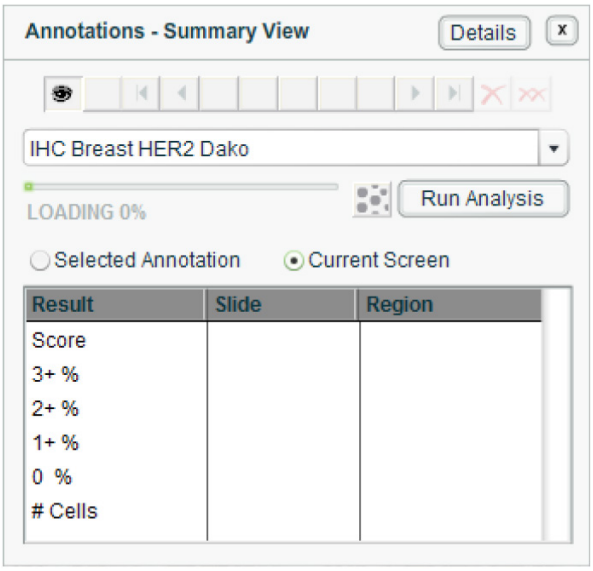
The key to the eIHC workflow is *slide-specific processing*, which defines how the eSlide will be processed based on its stain and type of tissue (body site). Slide-specific processing can define what algorithm is used to analyze that type of slide, how analysis results are displayed and how to interpret those results (alternatively, manual scoring can be set up for the slide), and what comments are available for use by the pathologist or researcher viewing the slide. The slide-specific configuration for each stain/body site combination is defined by the eSlide Manager administrator. Once slide-specific processing is set up, viewing, annotating, and analyzing the eSlide becomes a quick process. See the eIHC Guide to *eSlide Manager Setup Guide*.

The summary view of the Annotations window is designed specifically for working with IHC eSlides to provide a quick way to mark tumor regions and analyze them in one simple step.

Using the Annotations Summary View Window

To open the Annotations window in summary view:

1. Identify an eSlide in eSlide Manager for which stain/body site slide-specific processing is defined.
2. In eSlide Manager, open the eSlide in WebScope by clicking its thumbnail. (If ImageScope is installed on your workstation, press the W key while you click the thumbnail to open the image in WebScope rather than ImageScope.) The Annotations window in summary view displays. (If the window does not look like the example below, click the **Summary** button to return the Annotations window to the summary view):



(If you have chosen clinical view, you cannot see the detailed Annotations window and the Details button does not display. See *"Using Clinical View" on page 12* for more on this view.)

The algorithm appropriate for this type of slide is listed in the drop-down box. You can select another algorithm if you wish from that box.

From this window you can draw annotations to identify areas to analyze and run the analysis, as described in the next section.

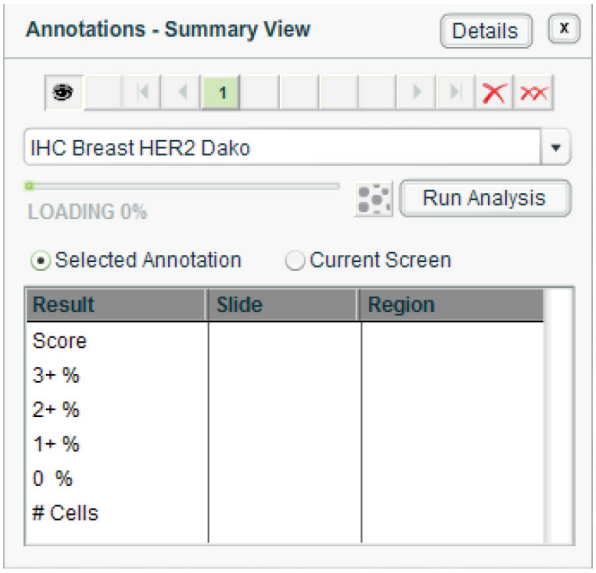
Drawing Annotations and Analysis

To draw an annotation to analyze:

1. With the algorithm that you want to use shown in the drop-down list, use the pen or rectangle drawing tools to draw the areas of the eSlide you want to analyze.

   To navigate between annotations you have drawn, use the numbered buttons or arrow keys.

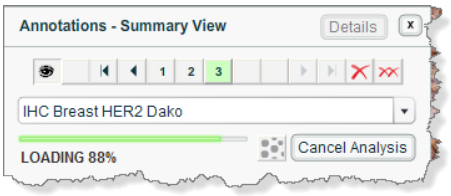
As you draw annotations with the analysis algorithm shown in the drop-down box, the buttons at the top of the window display a number for each annotation.



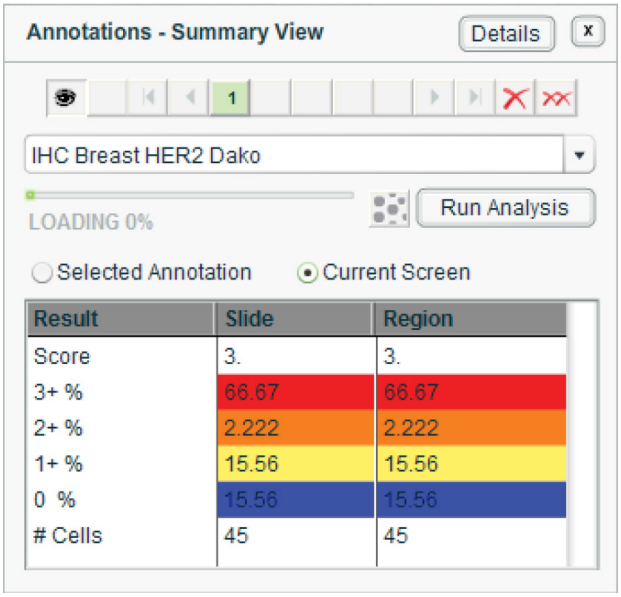
From the Annotations - Summary View window, you can do the following:

- To center an annotation in the window, click the numbered button that corresponds to the annotation.
- Move between the annotations by using the arrow keys or by clicking the numbered button.
- To delete the selected annotation, click . To delete all annotations, click .
- To hide the selected annotation, click .
- To save the annotations to eSlide Manager, go to the **File** menu and select **Save Annotations**.

2. To analyze the current eSlide with the algorithm shown in the drop-down box:
   a. Select the annotation drawn around the area you want to analyze and select **Selected Annotation**. Or, if you want to analyze the entire area shown in the window, select **Current Screen**.
   b. Click **Run Analysis**. As the analysis runs, you see progress information (for example, Loading 80%).



When the analysis is complete, you see the results:



For more information on using the Annotations summary view window, see the *eIHC User's Guide*.

Incremental Processing

The eIHC analysis applications are incremental algorithms, which means that as you add new regions and click **Run Analysis** on the Annotations window, only the new regions are analyzed. Any time you click **Run Analysis** again, all analysis results are updated.

Incremental processing is useful when a pathologist draws and analyzes a single region, and after reviewing the analysis results wants to select additional regions to analyze. As annotation regions are added or deleted, the analysis results are updated accordingly.

If you delete a region, WebScope will automatically re-run the analysis to update the summary analysis results that included that region. However, adding regions may make the analysis results incorrect until you re-run the analysis.

Enabling/Disabling Pre-processing

Some algorithms can pre-process the image to annotate regions for you (usually to detect possible tumor areas), and the algorithm will then analyze just those regions. If you are using such an algorithm but want to select tumor regions manually, click the pre-processing button on the Annotations summary view window to temporarily turn off this feature. (The button is only enabled when you are using an algorithm with the pre-processing feature.) When disabled, the button looks like this: . Click the button again to turn on pre-processing.

Plotting Results

If you are using an algorithm macro to analyze an eSlide that has result plotting enabled, any plots selected by that macro automatically appear in separate windows when the analysis is complete.

5 Analyzing eSlides

This chapter discusses how to analyze eSlides using WebScope.

Using image analysis algorithms to analyze eSlides gives you a way to automatically examine, count, and find structures of interest. Using an algorithm to look for this information provides precise, quantitative data that is accurate and repeatable.

About eIHC Quick Analysis

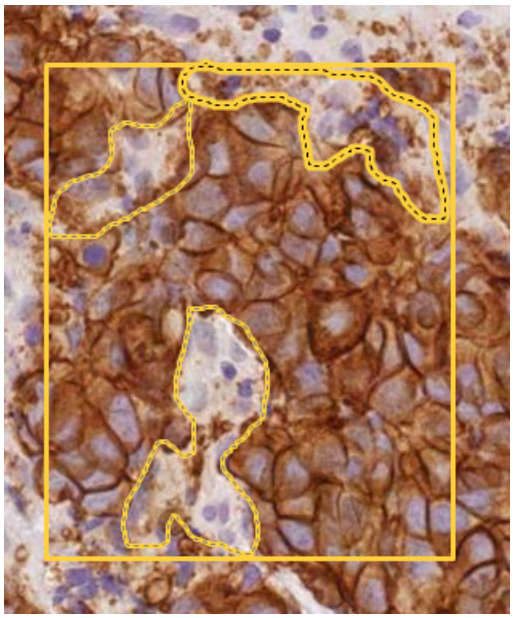
This chapter discusses using the WebScope Annotations window detailed view to view analysis results, which provides a general-purpose solution for research analysis. WebScope provides another way to select tumor regions and analyze them that is optimized for a clinical workflow—see *"Chapter 4: eIHC Quick Analysis" on page 22*.

Preparing for Analysis

Before you can run an image analysis algorithm, a macro for that algorithm must exist. (A macro contains the algorithm parameter settings.) Creating a macro involves opening the eSlide in ImageScope, selecting an image analysis algorithm, fine-tuning the algorithm parameters to suit your application, and saving the macro on eSlide Manager. This procedure is typically done by the eSlide Manager administrator. For details on this process, see the *Aperio ePathology Image Analysis User's Guide* or the *ImageScope User's Guide*.

You can run analysis on an entire eSlide or on one or more annotated regions. If you want to analyze a portion of the eSlide, before the analysis you will want to select the areas of interest by using the WebScope drawing tools (see *"Chapter 3: Using Annotations" on page 15* for details on using these tools).

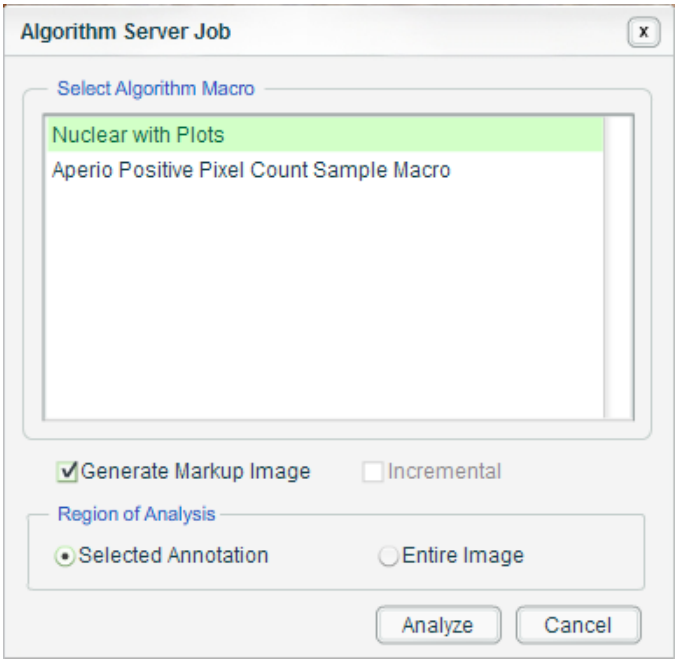
For example, in this IHC ER eSlide, we selected an area of heavy staining by using the rectangle drawing tool, but used the negative pen tool to exclude areas within that rectangle of background tissue that we don't want to analyze.



Running an Analysis

To analyze the eSlide in WebScope:

1. Open the eSlide in WebScope, as discussed in *"Chapter 1: Overview" on page 5.*
2. Click  on the WebScope main toolbar to open the Annotations window.
3. To select an area of the eSlide to analyze, use the annotation drawing tools (see the section above for an example). If you have more than one layer of annotations, select the Annotations layer that contains the annotations you want to use for analysis.
4. Click  on the WebScope main toolbar to open the Algorithm Server Job window:



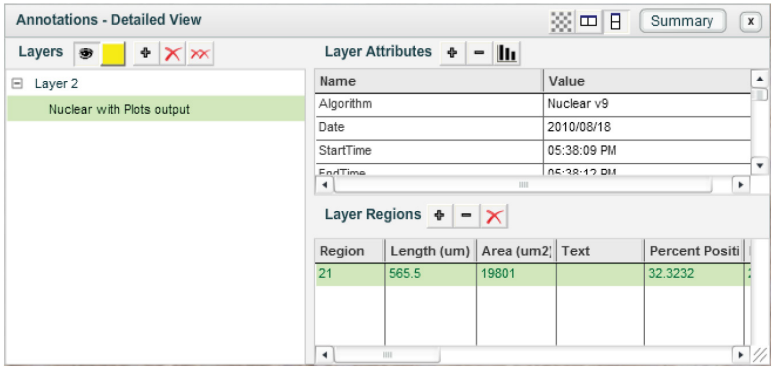
   a. Click one of the algorithm macros listed in the window to select it.
   b. If you want a visual representation of the analysis on the eSlide image in addition to the quantitative results, select the **Generate Markup Image** check box.
   c. If you want to analyze the entire image of the eSlide in the WebScope window, select **Entire Image** under **Region of Analysis**. To analyze only the annotated areas, select **Selected Annotation**.
   d. Click **Analyze**.

   WebScope displays a status message during analysis, and lets you know when the analysis is complete.

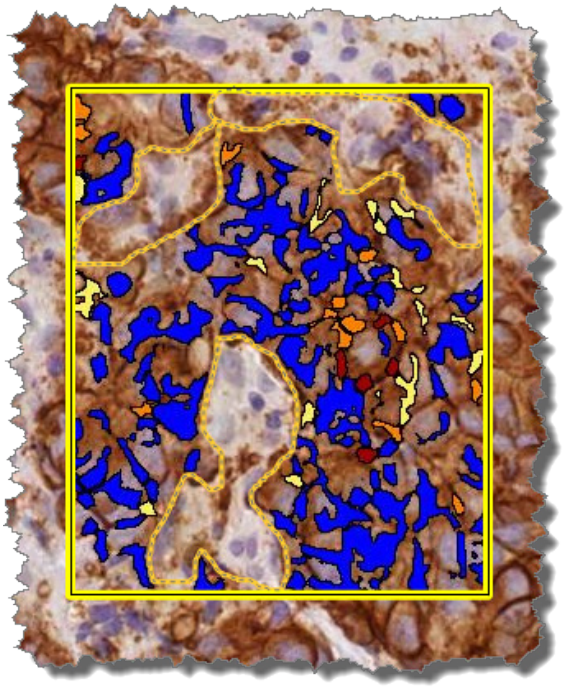
Analysis Results

When the analysis is complete, quantitative results appear in a new layer in the Annotations window.

For example:

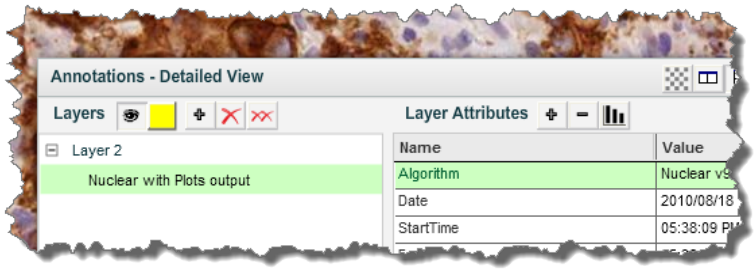


If you requested a mark-up image, the eSlide image also contains a visual representation of the analysis results. (For information on the meaning of the different pseudo-colors used in the mark-up, see the user's guide for the algorithm you are using.)

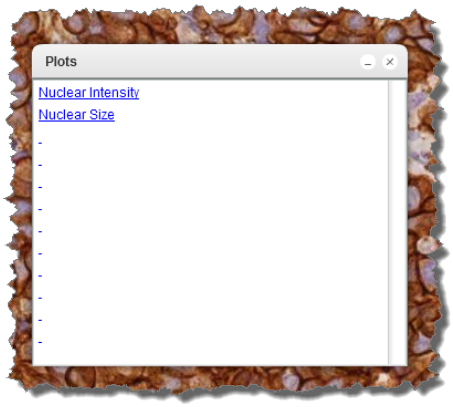


Plotting Analysis Results

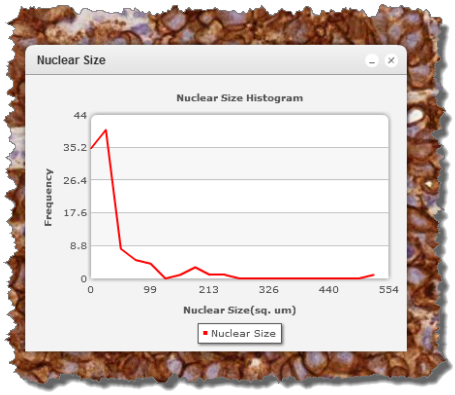
If the algorithm macro used to analyze the eSlide has data plots enabled, you can click the **Plots** button to view the results in graphical form. (Not all algorithms allow result plotting. When creating the algorithm macro, view the input parameters to see if plotting is available with that algorithm.)



Click the **Plots** button to open a window that lists the available plots.



Click a link in the Plots window to open the corresponding plot chart. For example, click the **Nuclear Size** link in the Plots window to see the Nuclear Size Plot.



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Symbols

- The following symbols may appear on your product label or in this user's guide:

	Manufacturer
	Date of manufacture (year - month - day)
	European Union Authorized Representative
	In vitro diagnostic device
	Serial number
	Relative humidity range
	Storage temperature range
	Electronic and electrical equipment waste disposal
	The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions. *Le point d'exclamation dans un triangle équilatéral vise à avertir l'utilisateur qu'il s'agit d'instructions d'utilisation et d'entretien importantes.*
	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons. *Le symbole de l'éclair avec la pointe de flèche dans un triangle équilatéral vise à avertir l'utilisateur que le boîtier du produit présente une « tension dangereuse » non isolée d'une amplitude suffisante pour constituer un risque d'électrocution.*
	The flat surface with waves symbol within an equilateral triangle is intended to alert you to the presence of hot surfaces which could cause burn damage. *Le symbole d'une surface plane et de vagues dans un triangle équilatéral vise à avertir l'utilisateur de la présence de surfaces chaudes qui peuvent causer des brûlures.*
	The UV lamp within an equilateral triangle is intended to alert you to the presence of UV light within the product's enclosure that may be of sufficient magnitude to constitute a risk to the operator. *La lampe UV dans un triangle équilatéral vise à avertir l'utilisateur de la présence de rayonnement UV dans le boîtier du produit qui peut être d'une amplitude suffisante pour constituer un risque pour l'utilisateur.*

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