



Focal Points



Application Note FP-164

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Colony Measurement Tools Using the ColonyDoc-It™ Imaging Station

Introduction

Colony counting, once a tedious and time-consuming task, has been greatly simplified with tools such as UVP's ColonyDoc-It™ Imaging Station (Fig. 1) and Doc-It Colony Counter software.

Once the colony plate is imaged, the Doc-It Colony Counter software is capable of creating numerous reports regarding the attributes of the sample. Such results include the number of colonies, the area of each colony, the perimeter of each colony, colony circularity, and so forth. Another useful tool in the Doc-It Colony Counter software is the colony measurement tool.



Fig. 1 – ColonyDoc-It Imaging Station

Measurement Preparation

In addition to the aforementioned analysis capabilities, the Doc-It Colony Counter software contains the capability to perform several measurement functions on imaged colonies. Measurement capabilities include length, angle and area. In order to perform measurements, however, a colony must have been imaged and readily viewable in the software, as shown in Fig. 2.

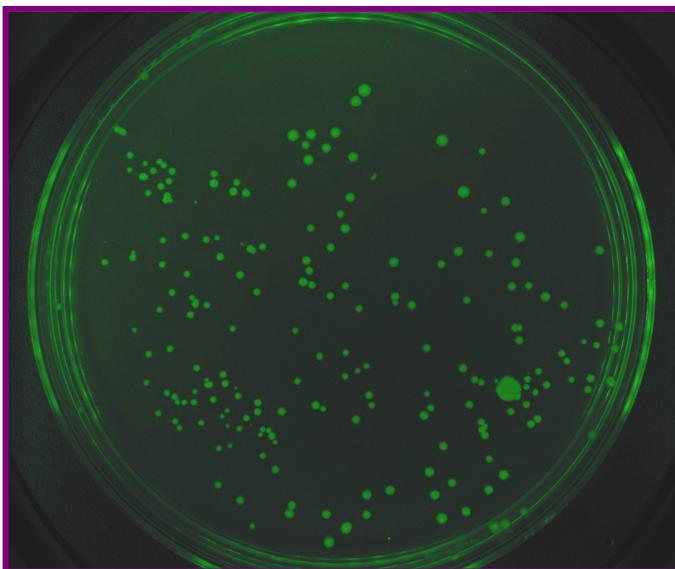


Fig. 2 – GFP Colonies

The next step is to locate the measurement tools within the software. These tools can be found in the upper-center portion of the Doc-It Colony Counter software, as indicated by the highlighted red area in Fig. 3 below.

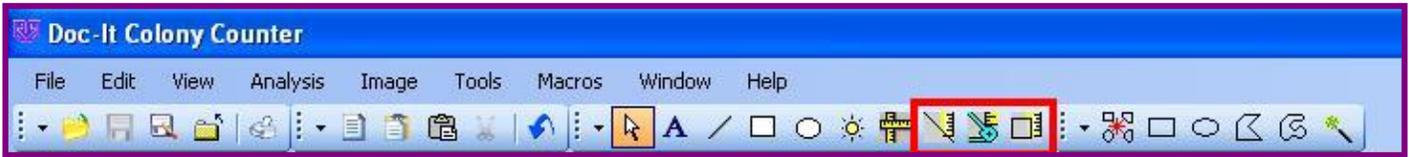


Fig. 3 – Measurement Tools (highlighted in red)

Measure Length

Using the “Measure Length” tool, it is possible to measure the length of a particular feature within an image. To measure the length of a specific feature (Fig. 4):

- Click the “Measure Length” button in the “Annotations” toolbar (shown in the red area in Fig. 4).
- Click one edge of the feature.
- Move to the other edge of the feature. As the mouse is moved, the scale tool will show how many pixels (unless the calibration process has been performed) are contained in the straight line drawn with the tool.
- Click the other edge of the feature. The image will now display the total length measurement value.
- Right-click on the new measurement annotation displayed to change the appearance of the annotation. If desired, change the line thickness, line style, font size, or general formatting of the line and value displayed.

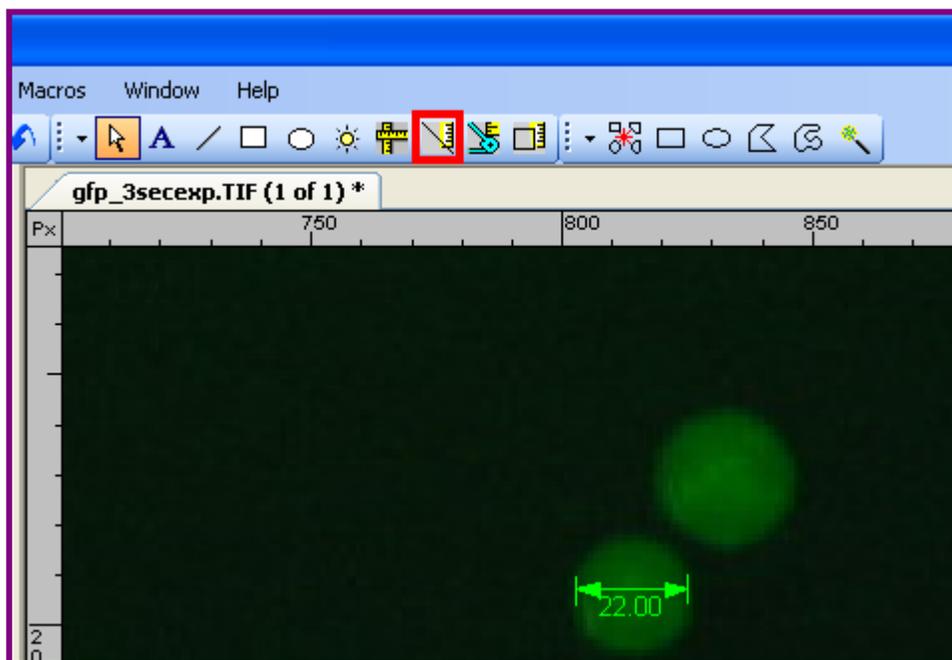


Fig. 4 – Measure Length

Measure Angles

Using the “Measure Angle” tool, it is possible to measure the angles between features within an image. To measure angles within an image (Fig. 5):

- Click the “Measure Angle” button in the “Annotations” toolbar (shown in the red area in Fig. 5).
- Form a line by clicking on one edge of the feature and then click again to finish the line.
- To measure the distance between the line just drawn and second line, move the mouse away from the line. Notice how as the mouse is moved, the scale tool shows how many degrees are contained in the angle drawn with the tool.
- Click to freeze the angle in the desired position. The new angle measurement annotation now appears.
- Right-click on the new measurement annotation displayed to change the appearance of the annotation. If desired, change the line thickness, line style, font size, or general formatting of the line and value displayed.

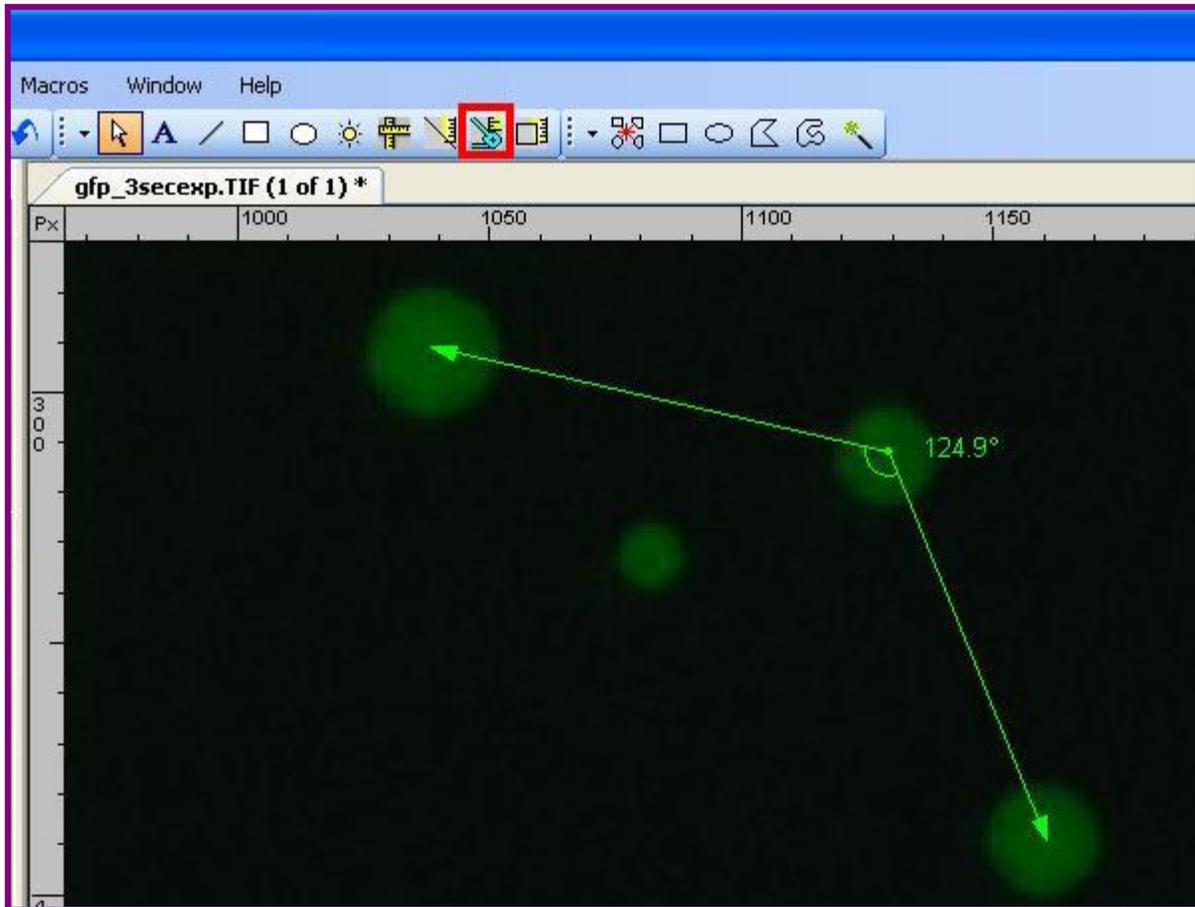


Fig. 5 – Measure Angle

Measure Area

Using the “Measure Area” tool, it is possible to measure the area of a particular region within an image. To measure area within an image (Fig. 6):

- Click the “Measure Area” button in the “Annotations” toolbar (shown in the red area in Fig. 6).
- Form a rectangle by clicking onto the image and drawing the rectangle on the image.
- Click again to finish changing the shape of the rectangle.
- The new area measurement annotation now appears in pixels (unless the calibration process has been performed).
- Right-click on the new measurement annotation displayed to change the appearance of the annotation. If desired, change the line thickness, line style, font size, or general formatting of the line and value displayed.

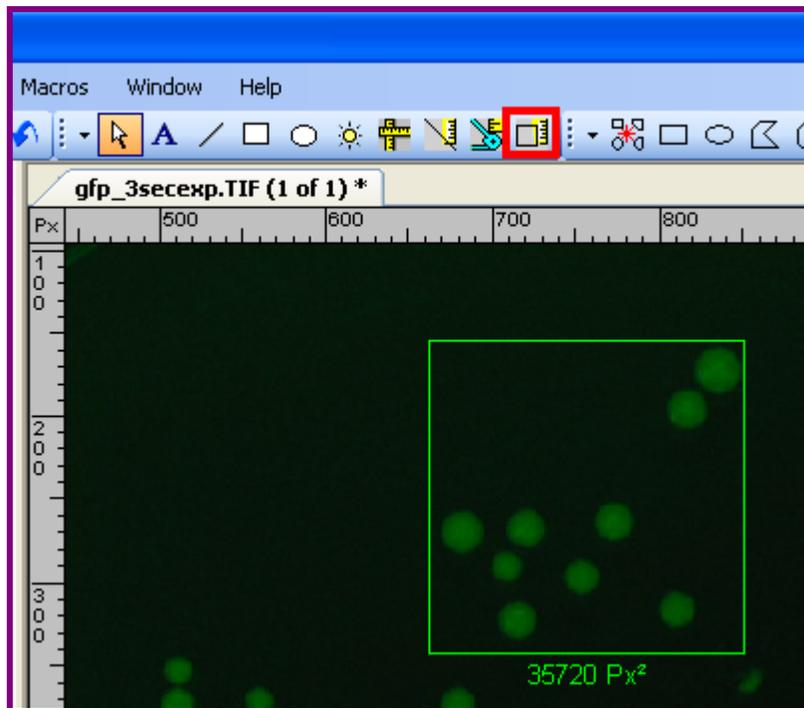


Fig. 6 – Measure Area