MetaXpress® 6 Software Guide

Plate Acquisition Setup Interface

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Chapter Purpose

The purpose of this chapter is to guide the user through the **Plate Acquisition Setup** dialog interface. This chapter explains the components of the interface and how to navigate within the dialog.

This chapter will not cover setting up an image acquisition protocol. Refer to corresponding chapters for details on setting up an acquisition.

Plate Acquisition Setup Dialog

Plate Acquisition Setup is the dialog used for building, testing and optimizing image acquisition protocols.

Open **Plate Acquisition Setup**

- In the main toolbar click on

OR

- Under the **Screening** menu, select **Plate Acquisition Setup**

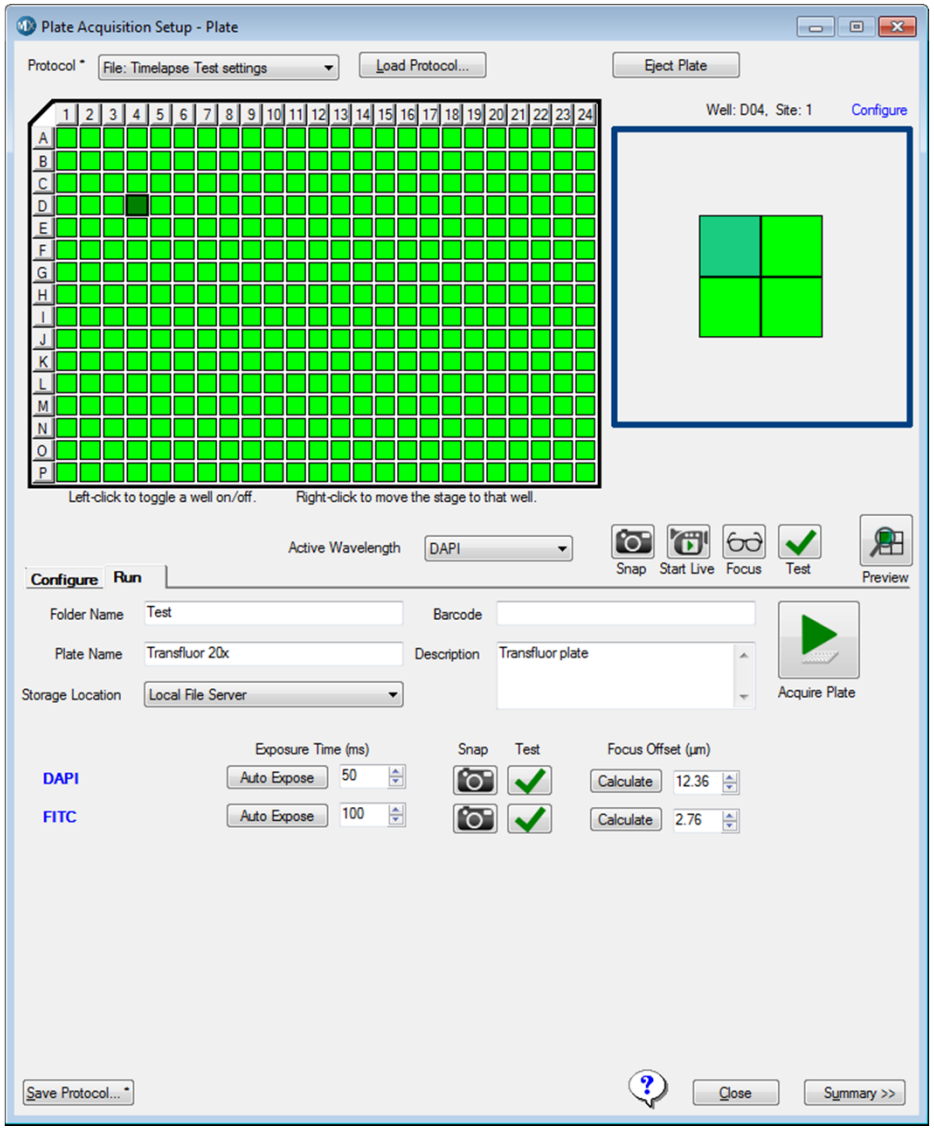


Plate Acquisition Setup Dialog

There are multiple forms of interaction within this dialog

- Select **tabs** to access and configure specific settings
- Click on **buttons** to enable the specified action
- Select choices from **drop-down menus**
- Enter numerical values into **spin boxes**
- Click on **hyperlinks** (blue text) to go to advanced settings

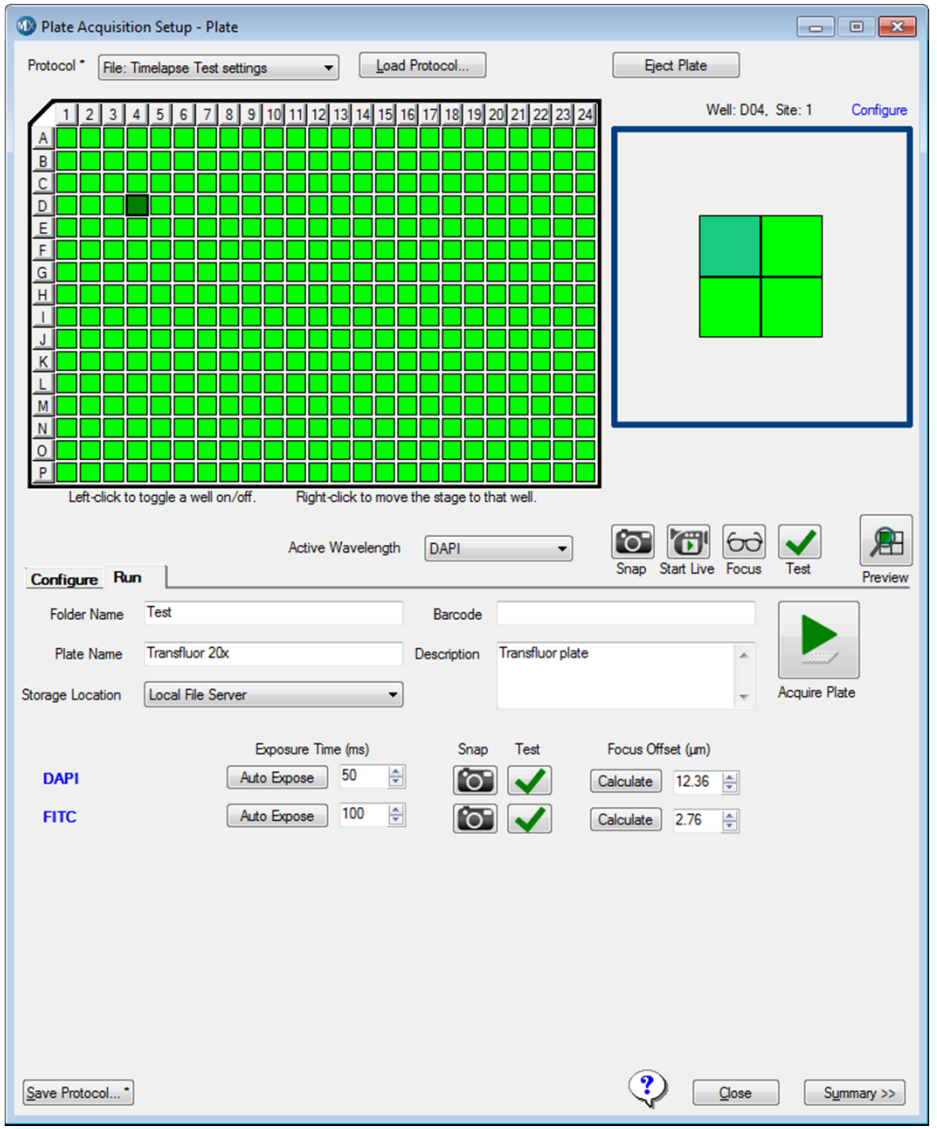


Plate Acquisition Setup Dialog

Loading protocols and plates

- Load a recently-used protocol by clicking on the **Protocol** drop-down menu
- Load any saved protocol by clicking on the **Load Protocol** button
- Click on the **Eject Plate** button to open the door and insert or remove a plate
- Click on the **Load Plate** button to close the door

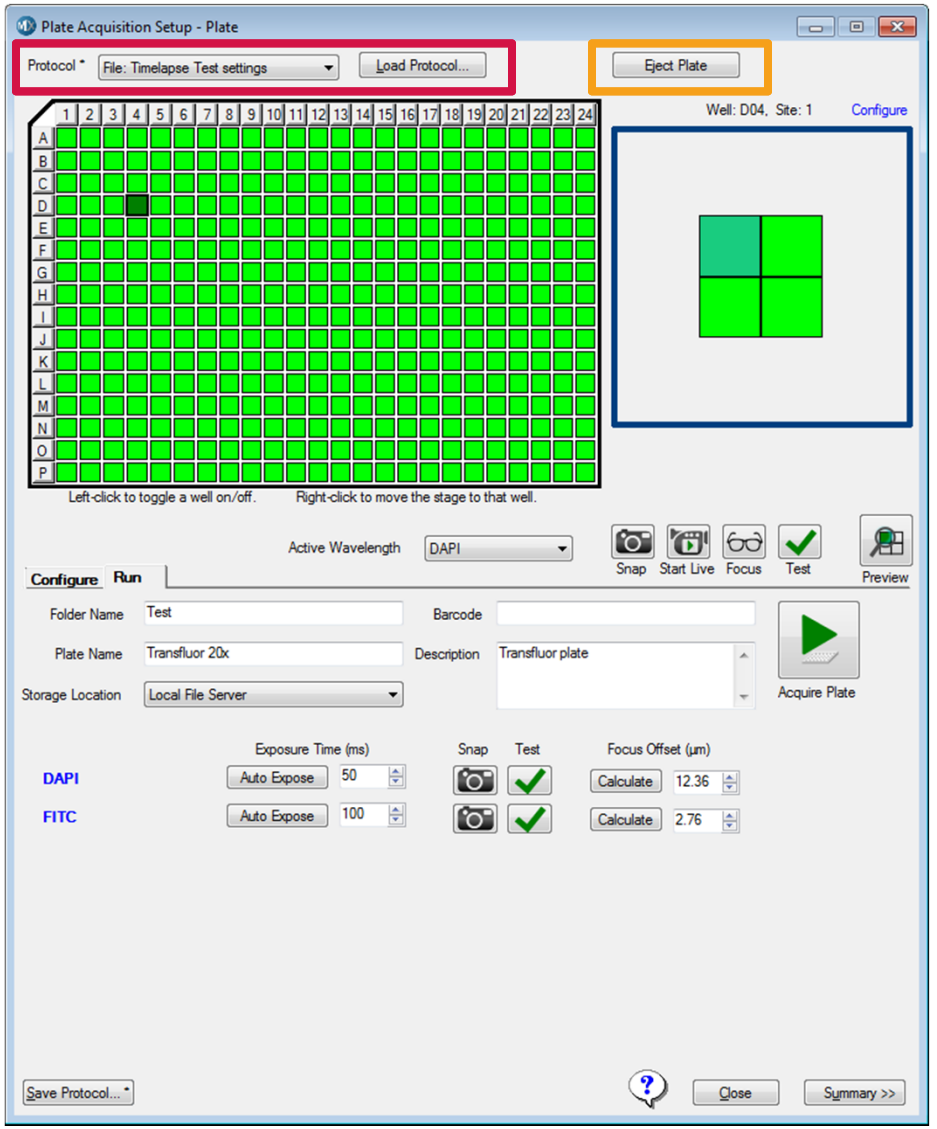


Plate Acquisition Setup Dialog

Plate view

- Plate view shows the format of the plate currently selected on the **Plate** tab (described later)
- In the plate layout, left-click and drag to select wells to be imaged (green), deselect wells by left-clicking again (gray)
- Right-click a well to move the stage to that position (dark green)

Well View

- Well view shows the configuration specified on the **Sites to Visit** tab (described later)
- Left click to selected sites (green), Left-click again to deselect sites (gray)
- Right click on a site to move the stage to that position (dark green)

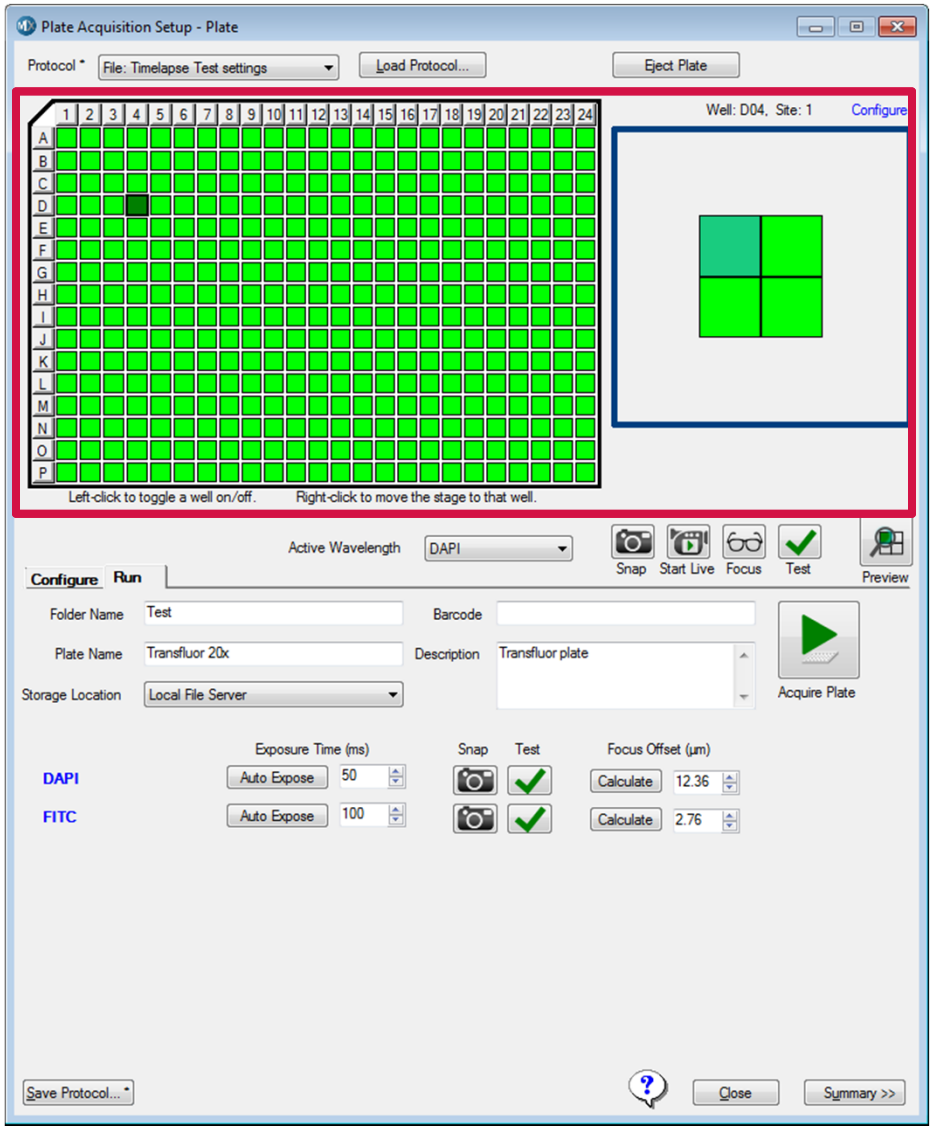


Plate Acquisition Setup Dialog

Active wavelength tools

- **Active Wavelength**: The choices in the drop-down menu are determined by what has been selected on the **W** (Wavelength) tabs (described later)
- **Snap**: acquire an image at the selected well/site, active wavelength, and current Z position
- **Start Live**: open a live view at the selected well/site, active wavelength, and current Z position
- ***Note*** using Live mode can result in photobleaching and photoxicity of your sample.
- **Focus**: run an autofocus operation and snap an image at the selected site/well and active wavelength
- **Test**: run autofocus and snap an image at the selected site/well for the active wavelength only. If Z Series is enabled, all Z-planes and 2D projection image will be displayed
- **Preview**: run autofocus and snap an image at the selected well/site for all wavelengths selected on the **W** tabs. If Z Series is enabled, only the 2D projection image will be displayed

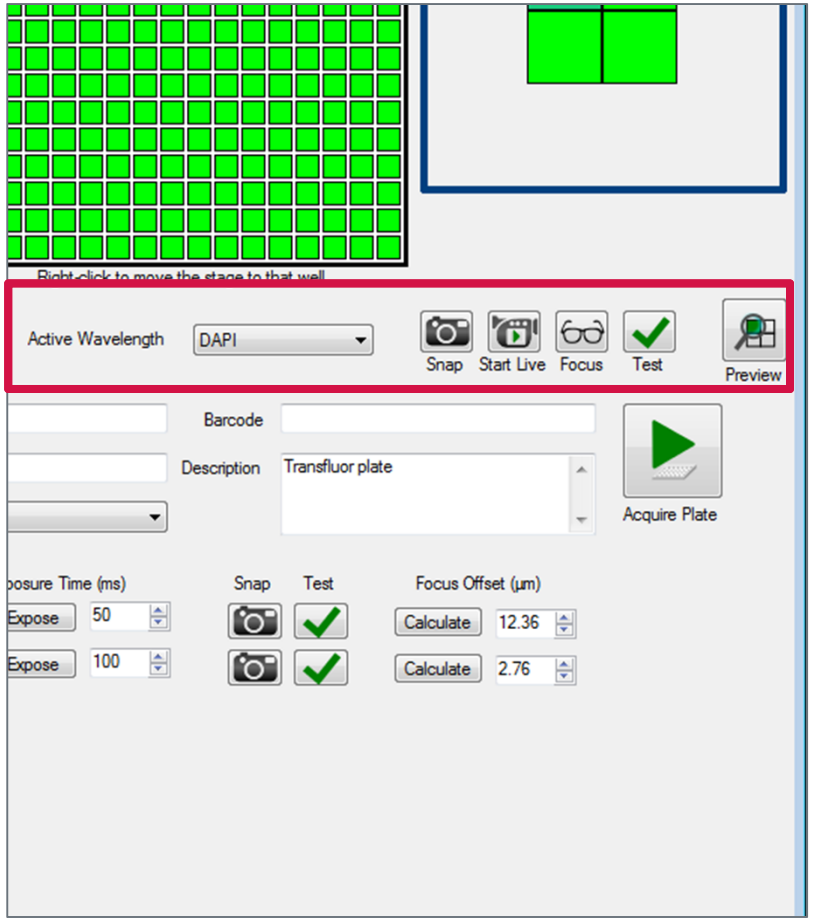


Plate Acquisition Setup Dialog

Run tab

- Name and describe your experiment by entering values for **Folder Name**, **Plate Name**, **Barcode** (optional) and **Description**
- Select the **Storage Location** for the images from the drop-down menu. In most cases, there will only be one choice listed. Consult your administrator on which choice to use.
- Start the image acquisition experiment by clicking the **Acquire Plate** button. This will acquire images in all selected wells/sites using the values specified on the **Configure** tab for wavelengths, Time lapse, and Z series

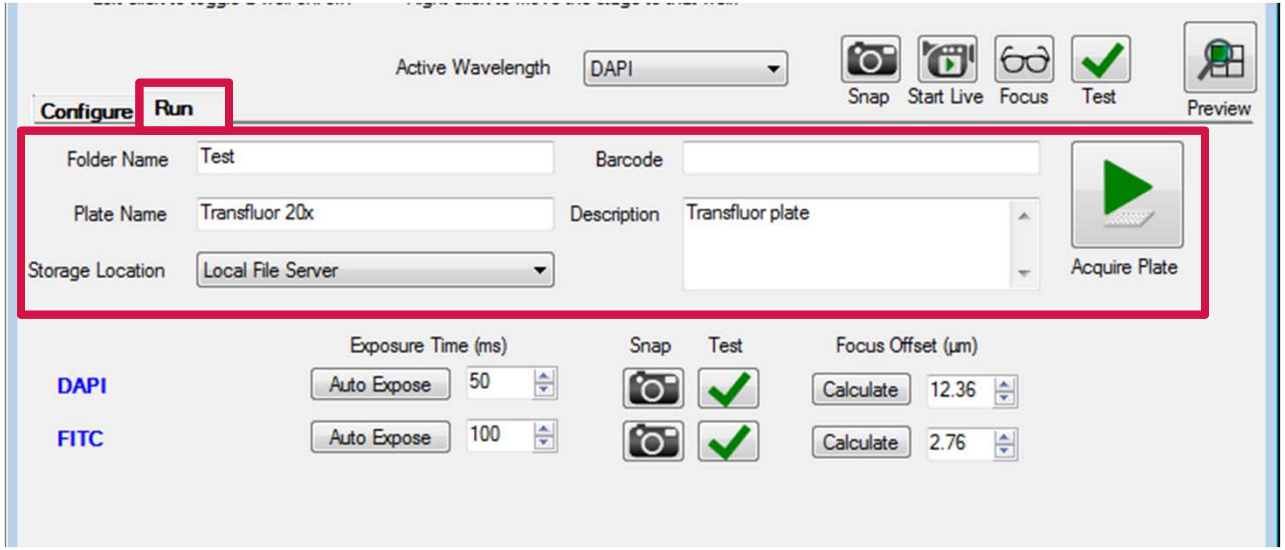


Plate Acquisition Setup Dialog

Run tab (quick-access to wavelength acquisition settings)

- Click on the **Test** button to verify **Exposure Time** and **Focus Offset** settings for each wavelength
  - If Z Series is enabled, all Z steps will be displayed and the last image in the stack will be the 2D projection image
  - Click the **Calculate** button to adjust the focal position (post-laser focus offset) for that wavelength
  - Click the **Auto Expose** button to adjust the **Exposure Time** for that wavelength
  - Click on the wavelength name in blue text to access more advanced settings on the corresponding **W** wavelength tab in the **Configure** section

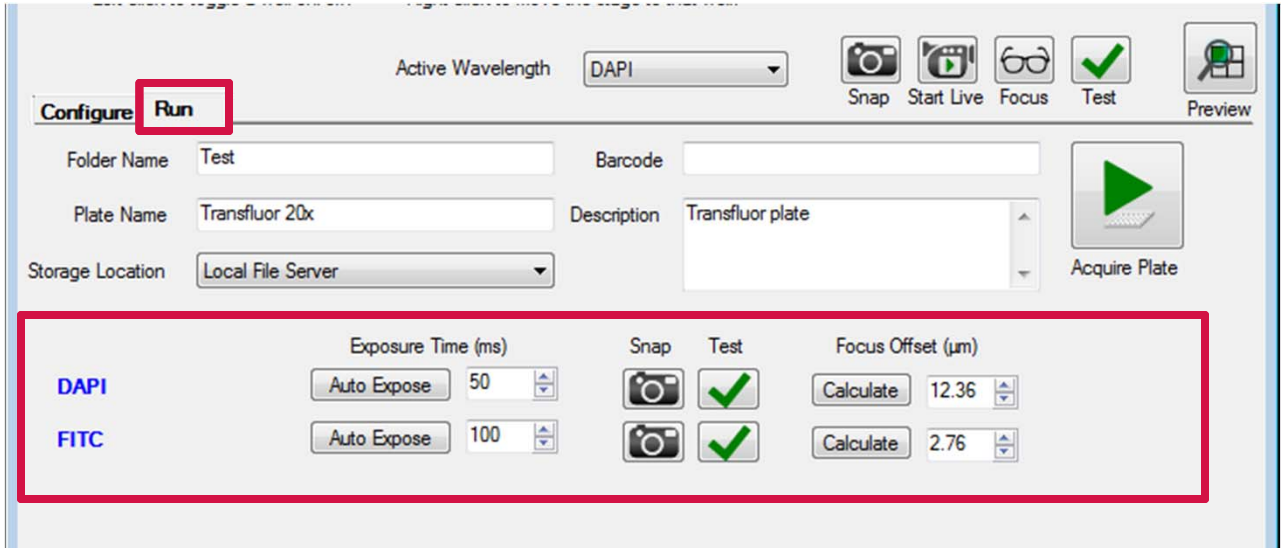
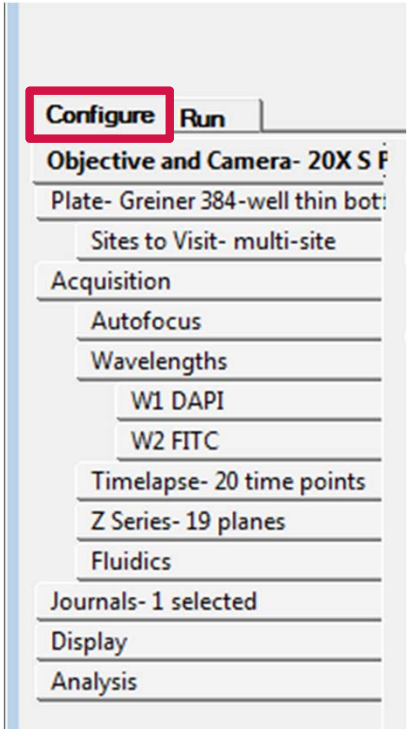


Plate Acquisition Setup Dialog

The **Configure** tab

Use these options to prepare an acquisition protocol for your plate. Simply select the tab to access the options.



- **Objective and Camera**: Select the objective to use for the plate, camera binning, and gain (if available)
- **Plate**: Select the plate type you will use
- **Sites to Visit**: Configure the number and spacing of sites to acquire within each well and the image size (field of view)
- **Acquisition**: Enable optional imaging parameters: image-based autofocus, Z Series, Time series, fluidics, journals, and automatic analysis

Plate Acquisition Setup Dialog

- **Autofocus**: Select options for both laser autofocus and image-based autofocus. Access manual configuration of laser autofocus
- **Wavelengths**: Select the number of wavelengths to acquire
- **Wx** (wavelength): Select the wavelength to acquire and configure the focal position, exposure time, when to acquire this wavelength, **Digital Confocal** (if available) and Z Series options
- **Timelapse** (optional): Select number of time points, interval between time points, total duration of acquisition and well acquisition type
- **Z-Series** (optional): Configure Z Series range, number of steps, step size, and start Z-position and end Z-position.

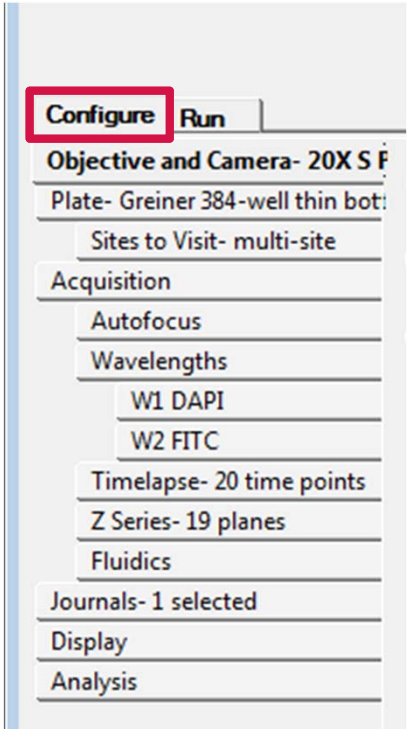


Plate Acquisition Setup Dialog

- **Fluidics** (optional): Set parameters for automated liquid addition using the single channel pipettor (if installed)
- **Journals** (optional): Run custom journals (macros) during acquisition
- **Display**: Set the position and appearance of images displayed during plate acquisition
- **Analysis**: Run an optimized image analysis protocol on the plate after image acquisition is complete. This option is usually used in conjunction with an offline computer that is monitoring the analysis queue or MetaXpress PowerCore™

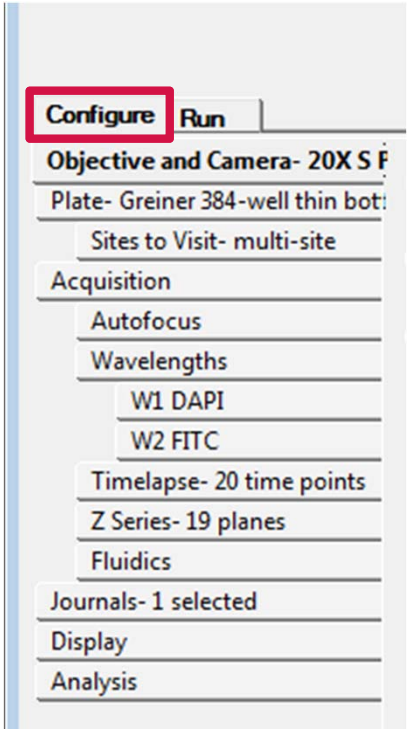


Plate Acquisition Setup Dialog

Save and Close

- Click on the **Save Protocol** button to save the selected acquisition options under a name of your choosing. Molecular Devices recommends saving to a file rather than the database
- A star (*) on the **Save Protocol** button indicates that there are unsaved changes to the protocol
- Click on the **Close** button to exit the **Plate Acquisition Setup** dialog

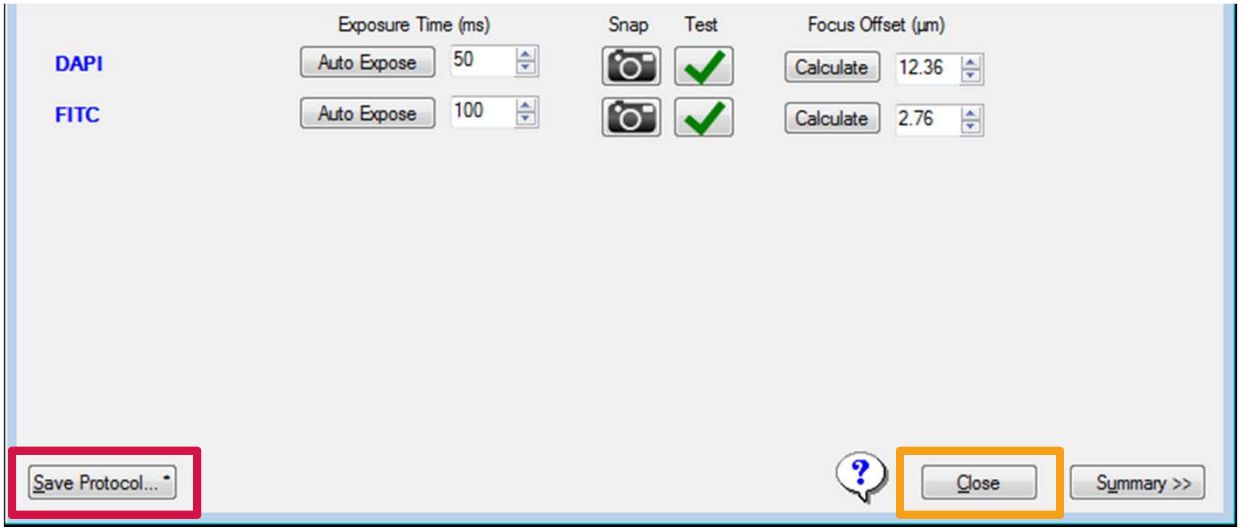
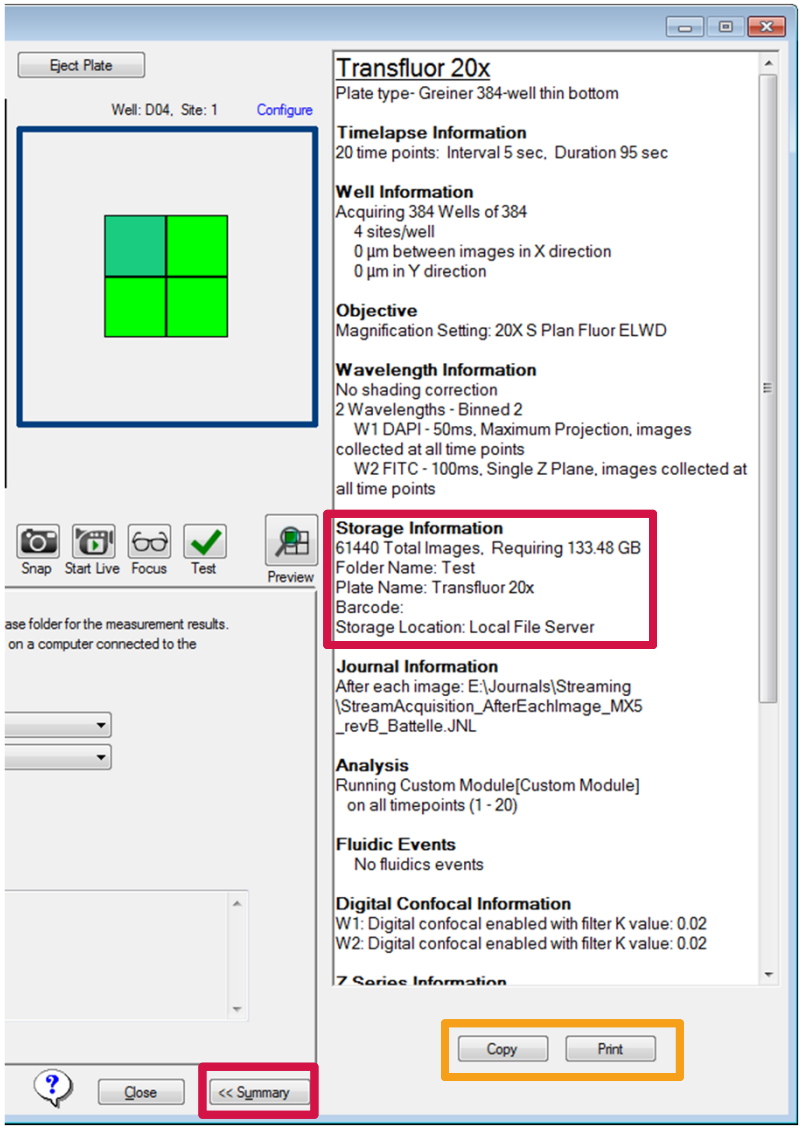


Plate Acquisition Setup Dialog

Protocol summary

- Click on the **Summary>>** button to display the protocol summary panel
- The summary displays the selections made on the tabs in the **Configure** section
- In particular, pay attention to the **Storage Information** section for the estimated image storage requirements for the protocol
- The summary information can be printed or copied into another document



Support Resources

- F1 / HELP within MetaXpress® Software
- Support and Knowledge Base: http://mdc.custhelp.com/
- User Forum: http://metamorph.moleculardevices.com/forum/
- Request Support: http://mdc.custhelp.com/app/ask
- Technical Support can also be reached by telephone:
  - 1 (800) 635-5577
  - Select options for Tech Support → Cellular Imaging Products → ImageXpress Instruments

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