

## Multi Dimensional Acquisition:

### Z Series Tab

#### Abstract

The Multi Dimensional Acquisition (MDA) dialog box provides tools and options for most multidimensional applications. This note will describe the Z Series Tab. For further information on Multi Dimensional Acquisition see T20117, T20121, T20122, T20123, T20124, T20125, T20126, T20128 and T20129. If you have a hardware focus drift compensator on your microscope, please refer to T20058 and T20118.

#### The Z Series Tab

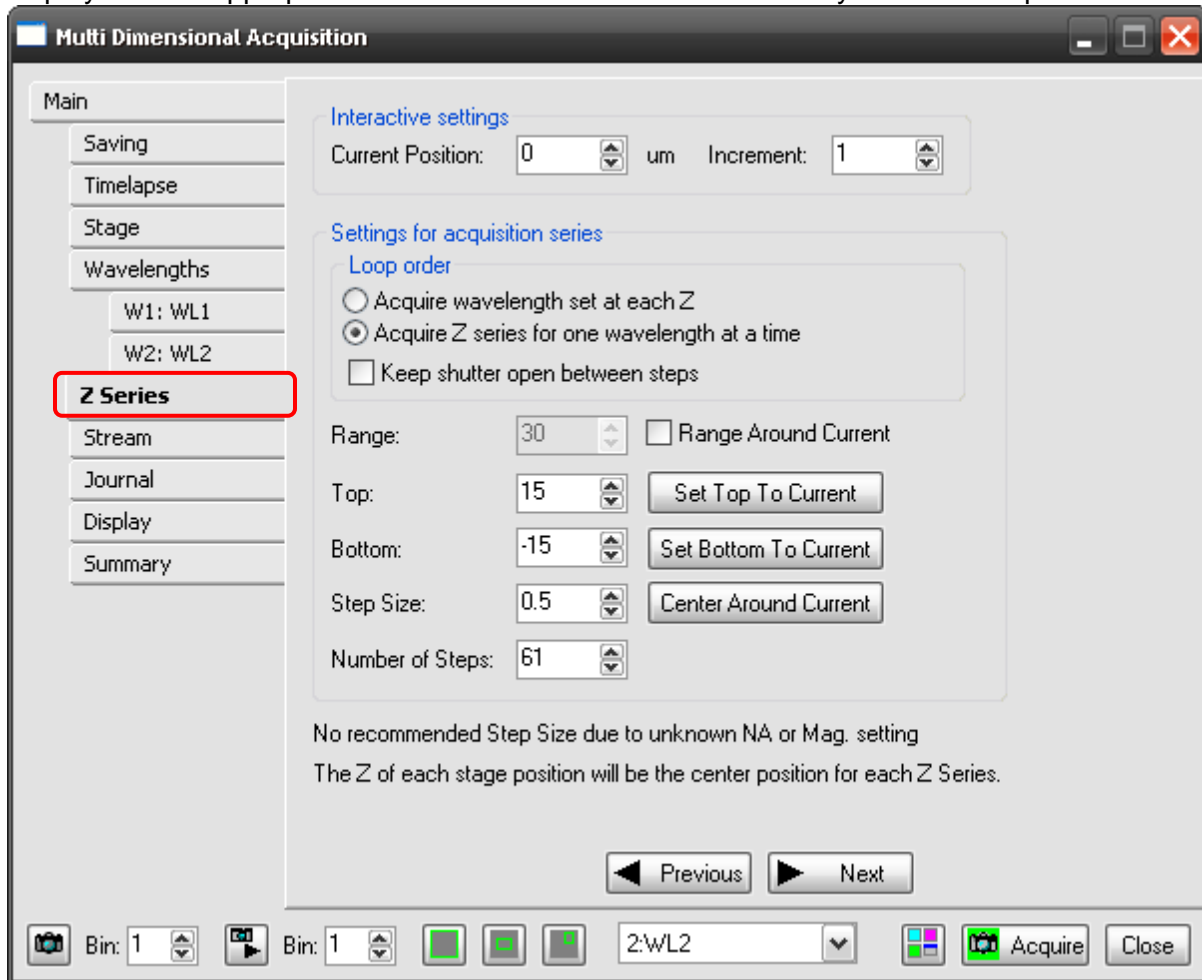
The Z Series tab is where a z series can be configured for the experiment. This tab will only be displayed if the appropriate hardware is installed and detected by the MetaMorph® software.

ARTICLE #T20127

**PRODUCTS**  
MetaMorph®  
Version 7.0 or above

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The screenshot shows the 'Multi Dimensional Acquisition' dialog box with the 'Z Series' tab selected. The interface includes a sidebar with navigation options: Main, Saving, Timelapse, Stage, Wavelengths (W1: WL1, W2: WL2), **Z Series** (highlighted with a red box), Stream, Journal, Display, and Summary. The main area is titled 'Interactive settings' and contains the following controls:

- Current Position:** 0 um
- Increment:** 1
- Settings for acquisition series:**
  - Loop order:**
    - Acquire wavelength set at each Z
    - Acquire Z series for one wavelength at a time
    - Keep shutter open between steps
  - Range:** 30  Range Around Current
  - Top:** 15
  - Bottom:** -15
  - Step Size:** 0.5
  - Number of Steps:** 61

At the bottom of the dialog, there is a warning: "No recommended Step Size due to unknown NA or Mag. setting. The Z of each stage position will be the center position for each Z Series." Navigation buttons for 'Previous' and 'Next' are also present. The status bar at the bottom shows 'Bin: 1', '2:WL2', and an 'Acquire' button.

## Interactive Settings

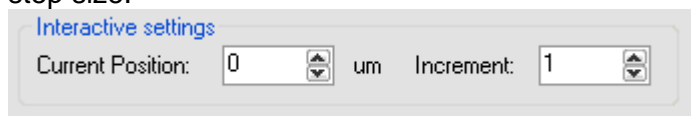
### Current Position

- Sets and indicates the current Z position coordinate. Select or type a new value in this box to change the position. The units of calibration are shown to the right of this box.

### Increment

- Sets and indicates an increment value for the Current Position box. The value in the Increment box controls the increment size when using the arrow buttons to set the current position in the Current Position box.

**NOTE:** The range value always equals the number of steps minus one multiplied by the step size.



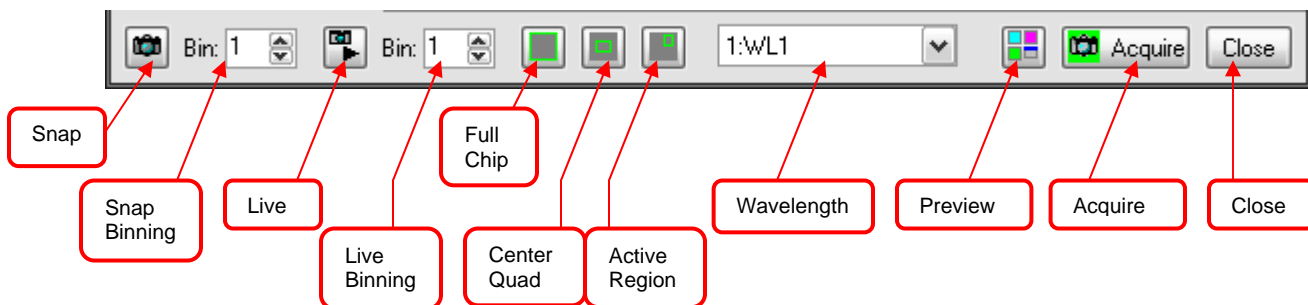
## Settings for Acquisition Series

- **Loop Order** determines the integrated order of priority of wavelength acquisitions and Z-series acquisition in a series containing both.
- **Acquire wavelength set at each Z** – For a specific Z position, all wavelengths to be acquired for that location are acquired before moving to the next Z position. This is the default setting.
- **Acquire Z series for one wavelength at a time** – All Z positions for a specific wavelength are acquired before moving to the next wavelength.
- **Keep shutter open between steps** – Keeps the shutter open during a continuous Z series acquisition for a single wavelength. The option, *Acquire Z series for one wavelength at a time* must be selected to enable this option.
- **Range** sets and indicates the total range in units between the top and bottom Z positions. Use this setting to automatically set the Top and Bottom positions based on the current position. The top and bottom positions are based on the current position being the center position. To set a value for Range, Range Around Current must be checked.
- **Range Around Current** enables you to automatically specify the top and bottom Z positions based on the value you enter in the Range box. The current position is applied as the center position of the range. When you change the current position, the values for top and bottom are automatically updated. Set the range value in the Range box.
  - NOTE:** When Range Around Current is selected, the Top and Bottom settings boxes, and the Set Top To Current, Set Bottom To Current, and Center Around Current buttons are deactivated
- **Top** sets and indicates the position for the top of the Z series. To set the top of the series value to the current position value, click Set Top to Current.
- **Set Top to Current** sets the top position value to the current position.
- **Bottom** sets and indicates the position for bottom of the Z series. To set the bottom of the series value to the current position value, click Set Bottom to Current.
- **Set Bottom to Current** sets the bottom position value to the current position.
- **Step Size** sets and indicates the distance to move the Z motor between steps.

**NOTE:** As you change the value for either step size or number of steps the other value changes proportionally.

- **Center Around Current** sets the current Z position as the center of the Z series. The values set for Top and Bottom will change based on the new value applied as the center. The range established between the top and the bottom remains constant. This function enables you to reposition the center of the Z series without affecting the range, step size, or number of steps.
- **Number of Steps** sets and indicates the number of steps in the Z series.

Across the bottom of the MDA dialog box are the functions for snapping an image, binning, live, live binning, chip dimensions, wavelength chooser, preview, acquire and close. These options are always available no matter which tab is selected.



If there are any further questions, please contact Technical support at 800-635-5577 x1820 or [support.dtn@moldev.com](mailto:support.dtn@moldev.com).