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BIOSCIENCE

3D Cell Culture and Beyond

## Quick Start Guide:

# Using VitroPrime™ 3D Culture and Imaging Plate (96-well) with MetaXpress® on Molecular Devices Imaging Platforms

Catalog #: VP-3D96W5

Revision No: v1.0  
Revision Date: 06/2026

[www.thewellbio.com](http://www.thewellbio.com)  
[support@thewellbio.com](mailto:support@thewellbio.com)

US TF: +1 866.3D.CELLS  
TEL: +1 973.855.4955

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# Quick Start Guide: Using VitroPrime™ 3D Culture and Imaging Plate (96-well) with MetaXpress® on Molecular Devices Imaging Platforms



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Please refer to the product datasheet for the VitroPrime™ 3D Culture and Imaging Plate (96-well) for all required specifications (see last page of this document). The measurements should be used to accurately configure the plate parameters within the MetaXpress® software. Any missing values are also seen in Figure 4.

Once the plate specifications have been entered and saved, proceed with Laser Autofocus as recommended by the software and the Technical Support of Molecular Devices.

For detailed calibration procedures specific to your imaging platform, or if you encounter technical difficulties with your software, please consult Molecular Devices Technical Support.

## Quick Plate Guide

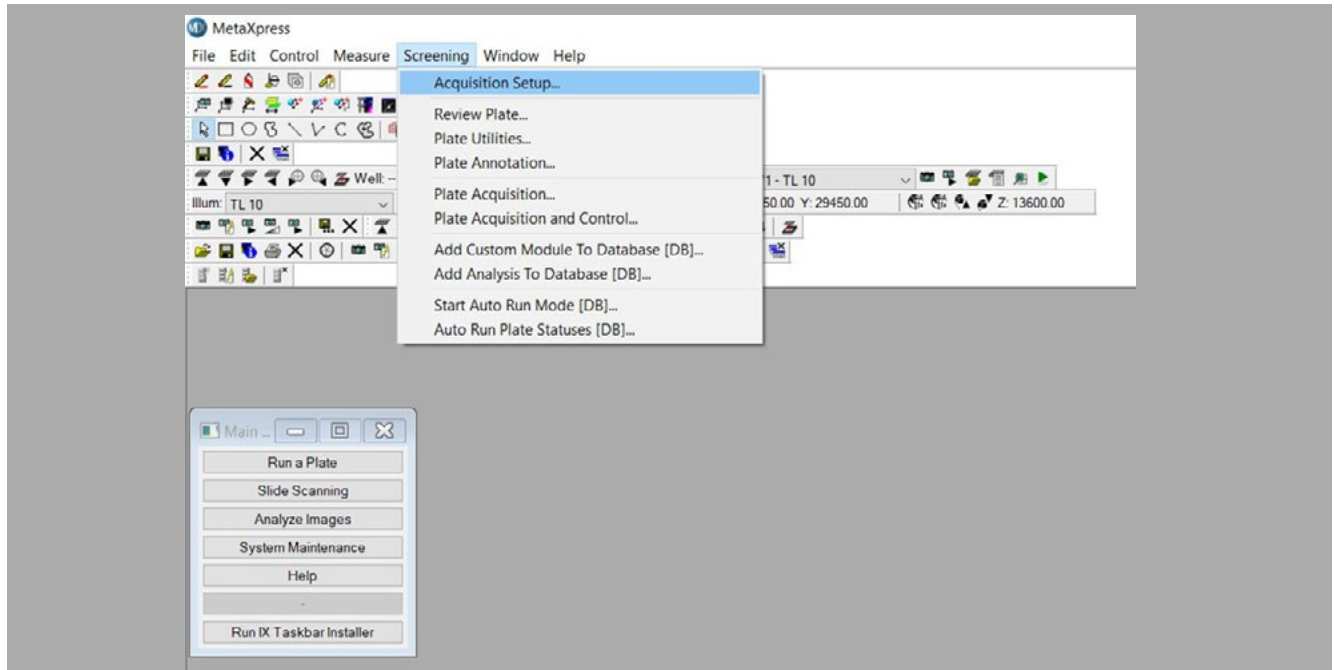
To configure a new plate:

1. Navigate to “Screening”, click on area to open tab and choose Plate Acquisition Setup → Plate within the MetaXpress® software (See Figure 1).
2. See Figure 2 and 3.
3. Follow the instructions to set values and plate name as seen in Figure 4
  - a. Input the plate parameters according to the specifications outlined below and any missing values, see Figure 4 entries and the Plate TDS at the end of this document.

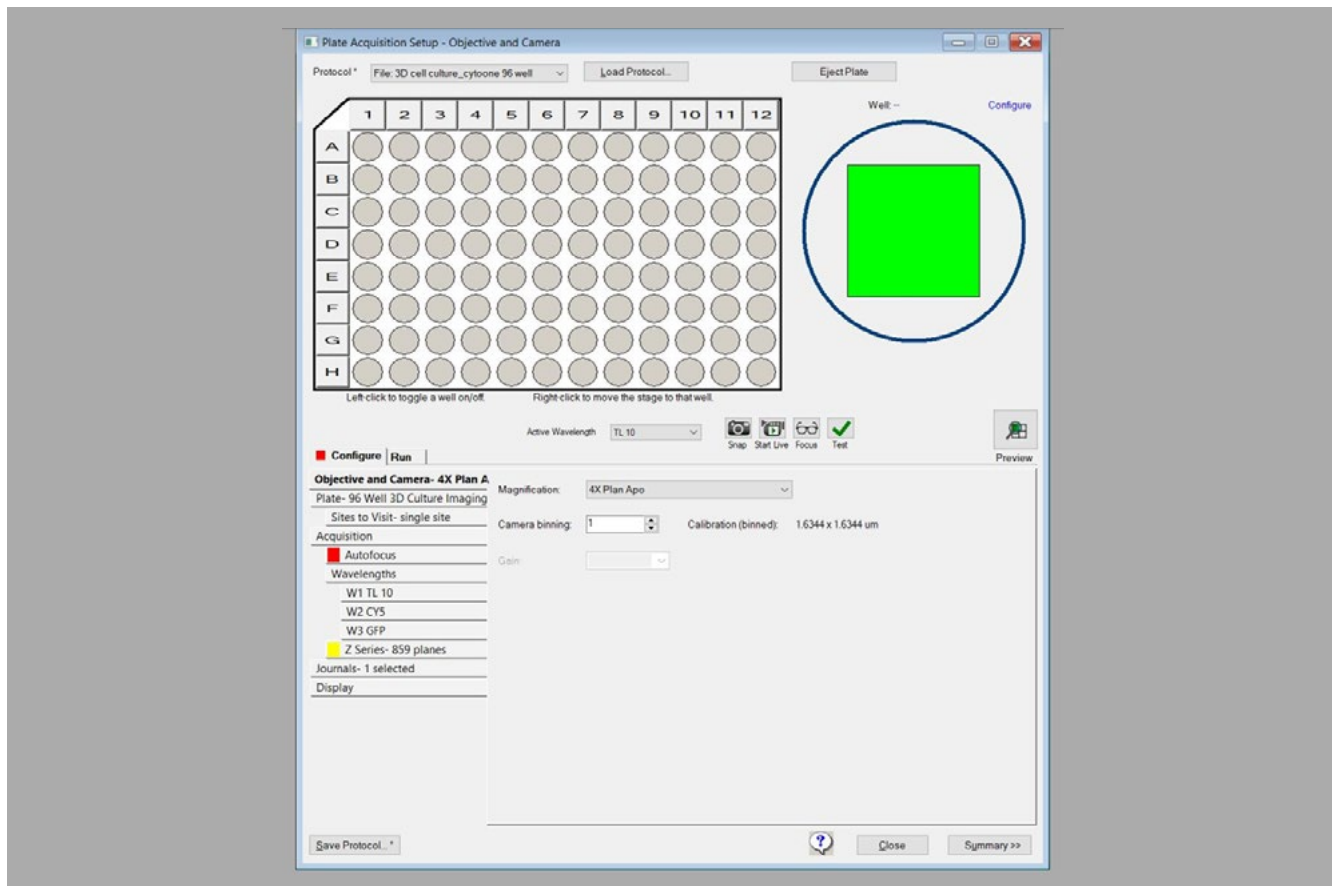
Top Row	Second Row	Third Row	Fourth Row
Number of Rows: 8	Well Diameter: 5600	Column Offset: 13780	Row Offset: 12380
Number of Columns: 12	Column Spacing: 9000	Row Spacing: 9000	Well Depth: 10550 (may need to be adjusted to 12050 after or by laser autofocus)
Well shape: Circle	Plate Length: 127.6	Plate Width: 85.6	Plate Height: 14.3
Well bottom: Flat			
Plate bottom: Continuous			

4. Follow the instructions seen in Figure legend areas for remaining Figures to complete the Laser Auto Focus Wizard.

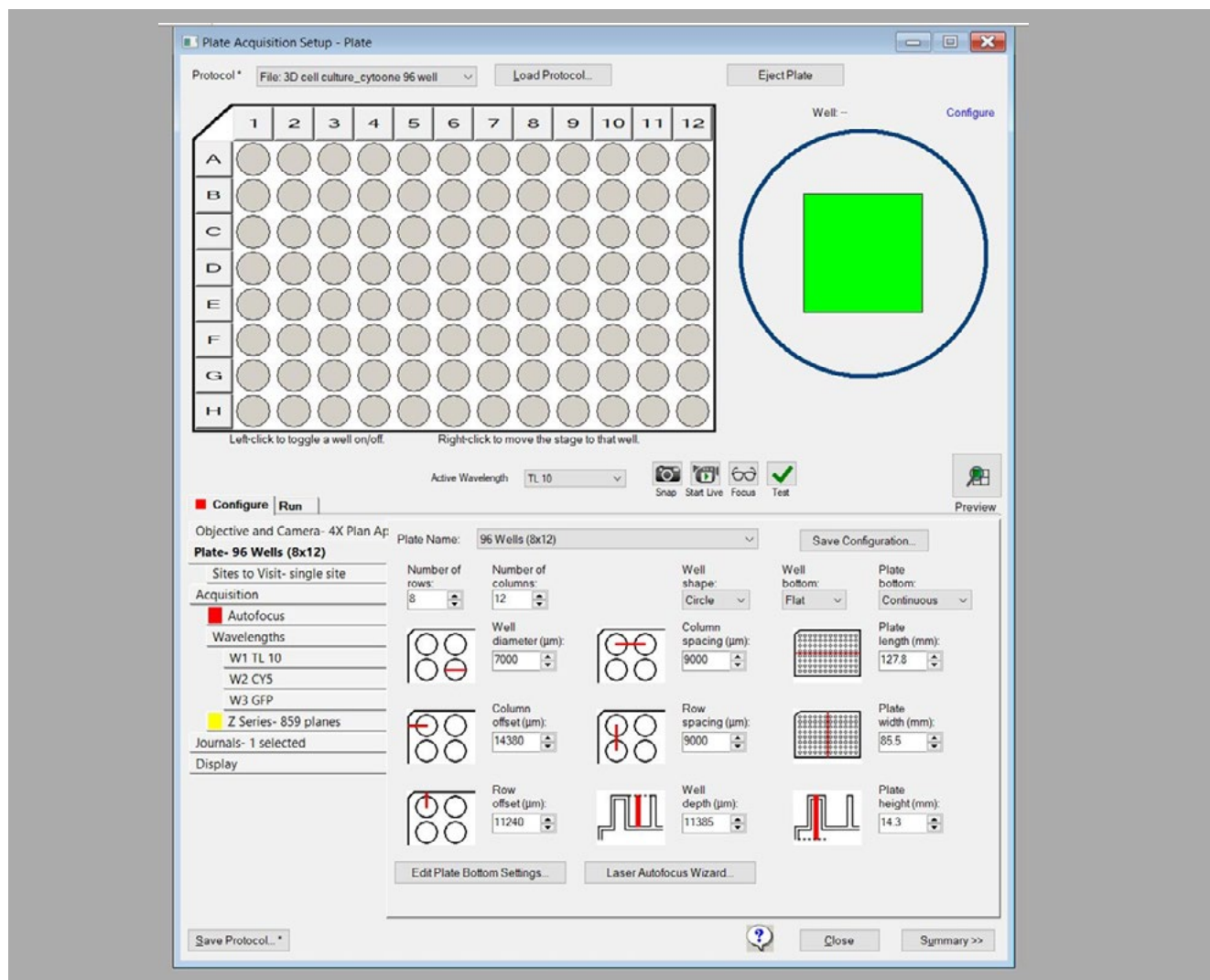
## Figures



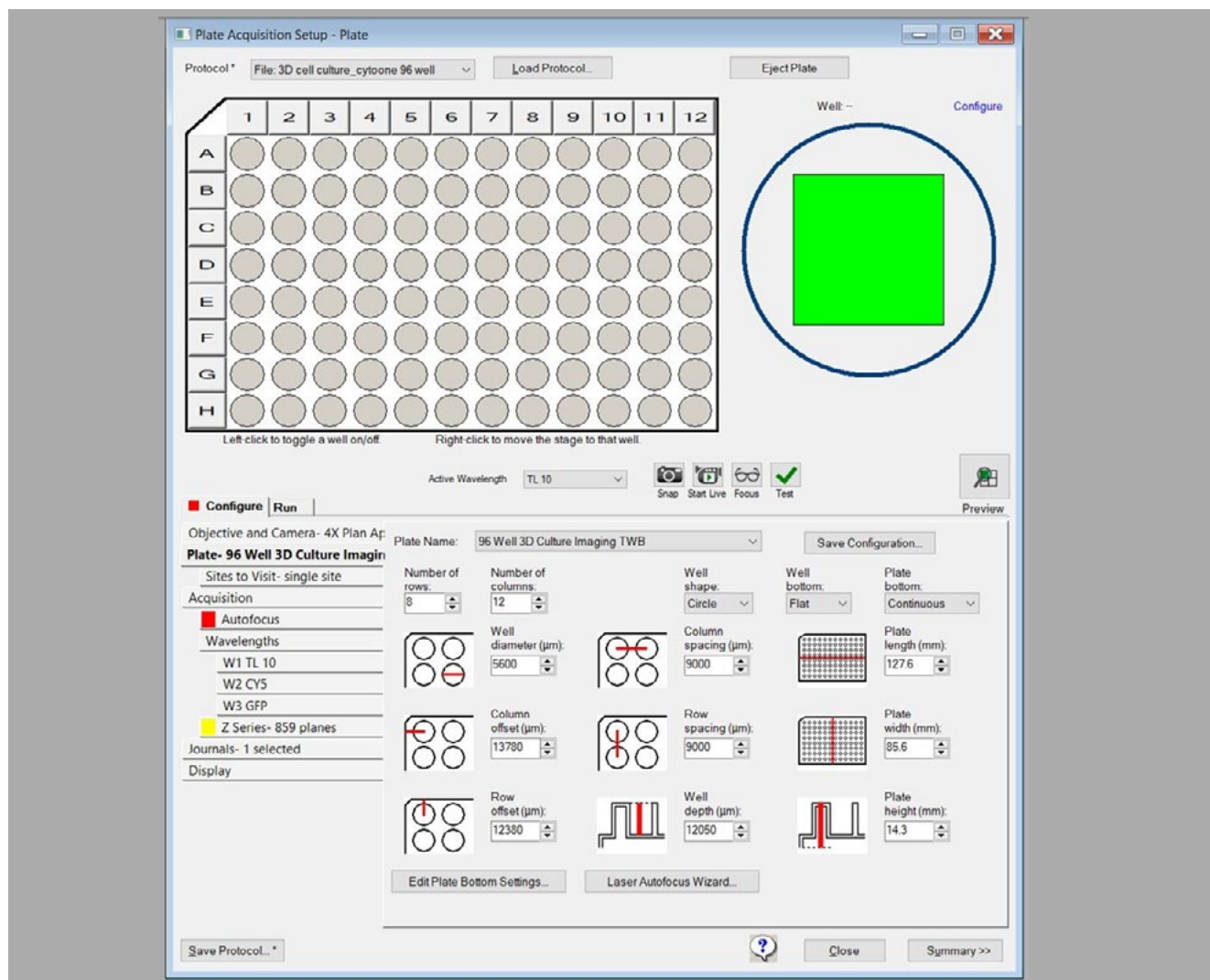
**Figure 1:** Software Setup – choose the “Acquisition Setup” on main menu by clicking on the “Screening” choice. This opens main landing page to configure or use new choices of plates.



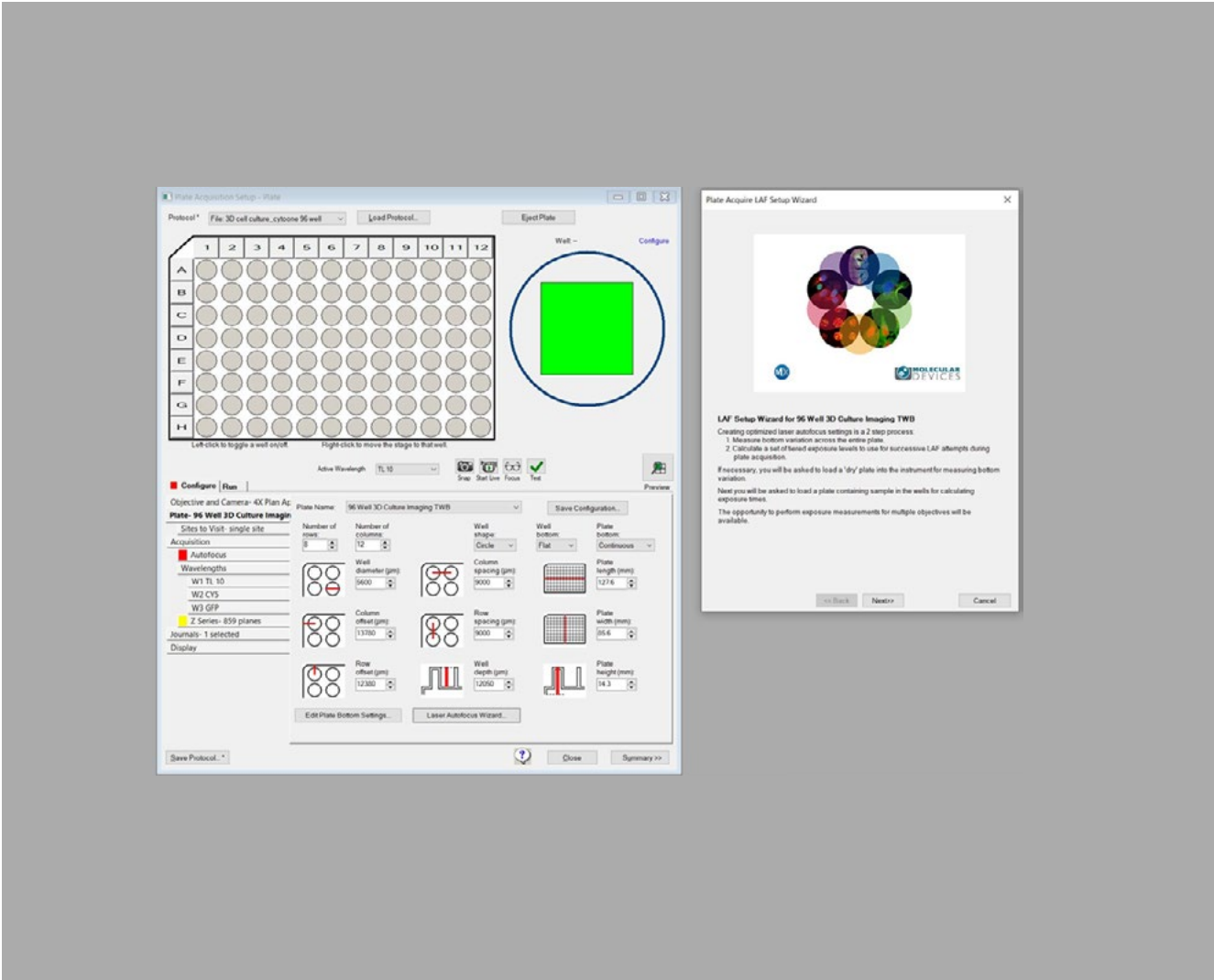
**Figure 2:** Landing page to configure settings for objectives, camera, and plates. Top choice right under the “Objective and Camera area on the “Configure” tab already appears as the 96 Well 3D Culture Imaging plate, however, we previously programmed this option. New users will see last used plate in that tab area. Select that area and it will open choices for dish/plate.



**Figure 3:** Tab to configure plate specifications – Choose any or a generic 96 well format as this will contain all the needed data entry choices for the 3D Culture and Imaging Plate. Replace the current values with new values seen on next page based on technical specifications for plate (see end of this document).



**Figure 4:** Updating fields for 96 Well 3D Culture and Imaging Plate: Once the generic data is replaced with current values, the click on “Save Configuration” and enter “96 Well 3D Culture Imaging TWB” or other name which will help you identify the plate. This step saves the configuration to your plate database and be available to other users.



**Figure 5:** Training Imaging system to use new dish: Molecular Devices technical support recommends to run through Laser Auto Focus Wizard to ensure system understand the plate and accommodates any nuances of the dish, such as bottom variation. Follow process and if you encounter any technical issues, please contact their technical support for further help. The remaining figures follow the process to the end of the LAF Wizard but the user must make relevant choices along the way that are unique to each system and choices of objectives, etc.

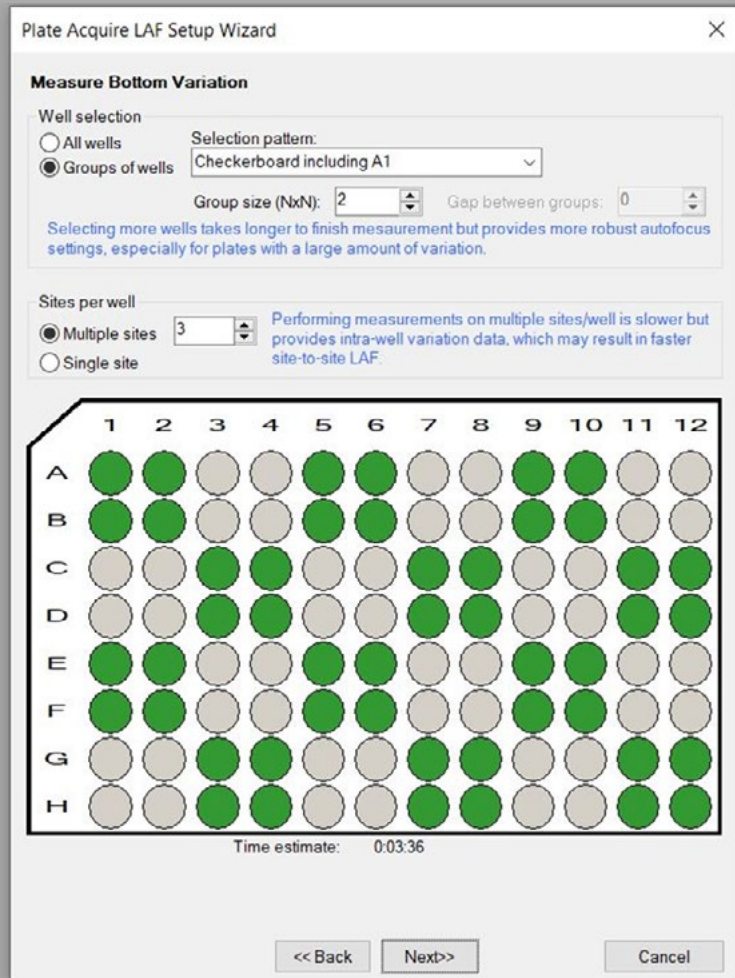


Figure 6: Continuation of the LAF Wizard.

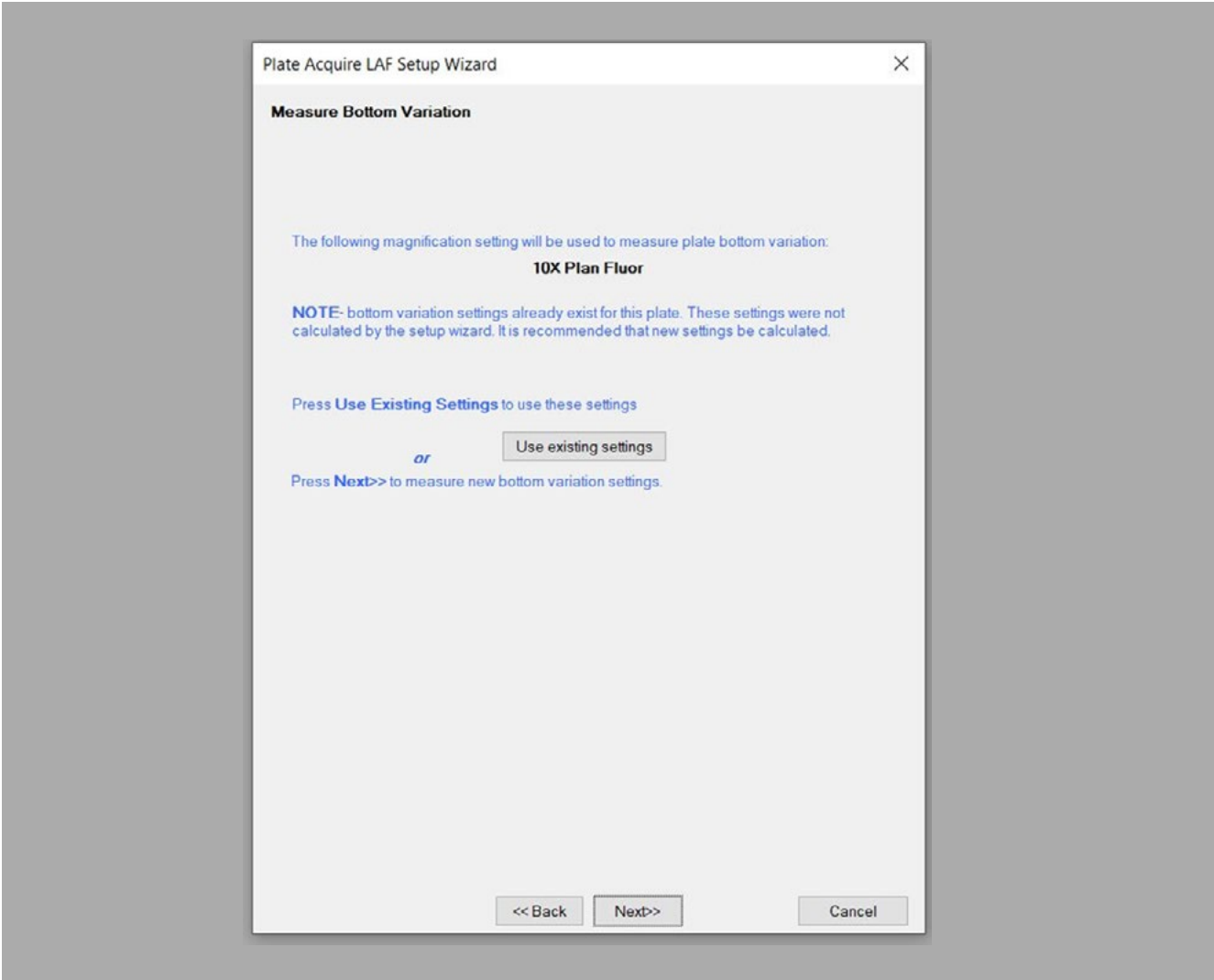


Figure 7: Continuation of the LAF Wizard.

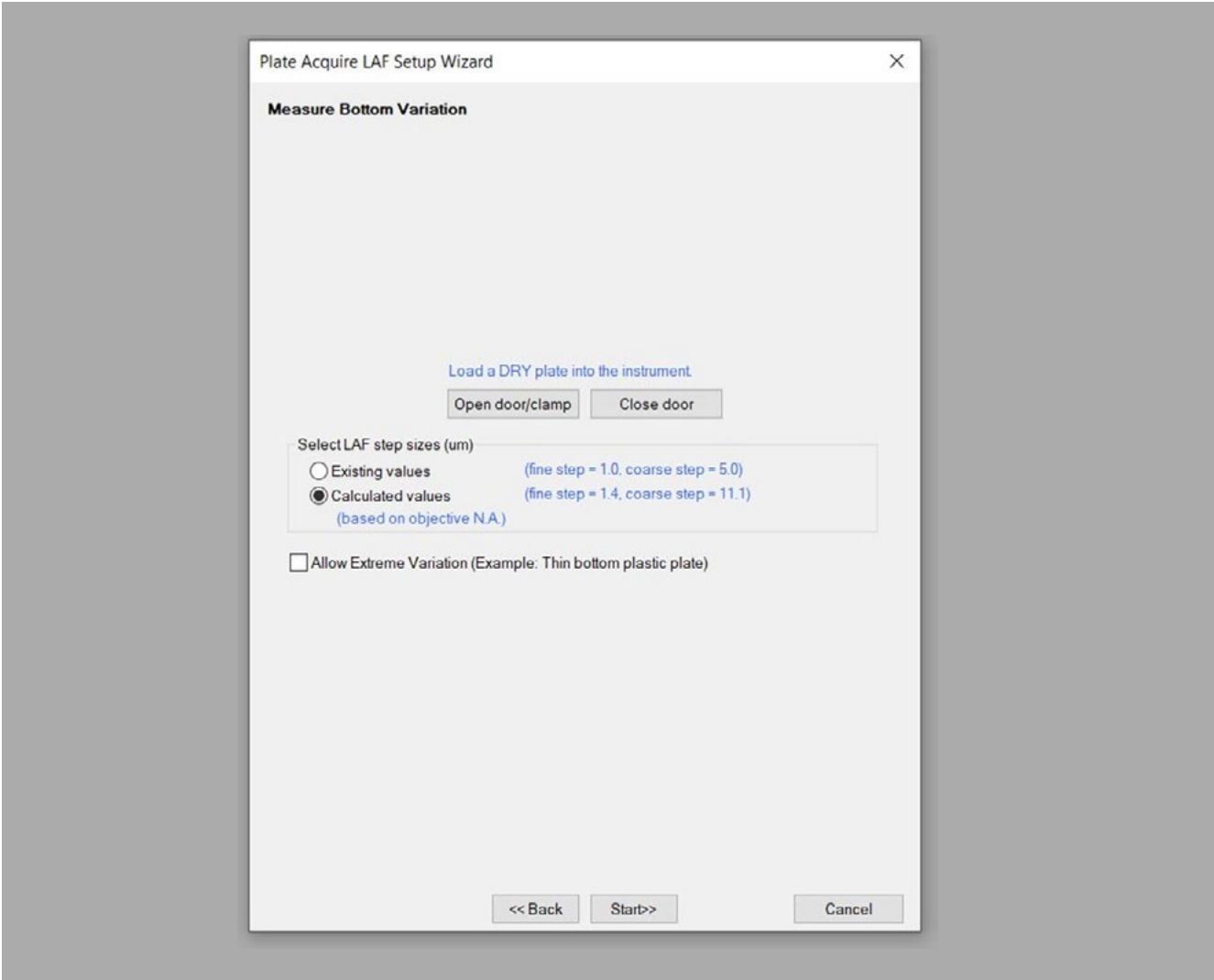


Figure 8: Continuation of the LAF Wizard.

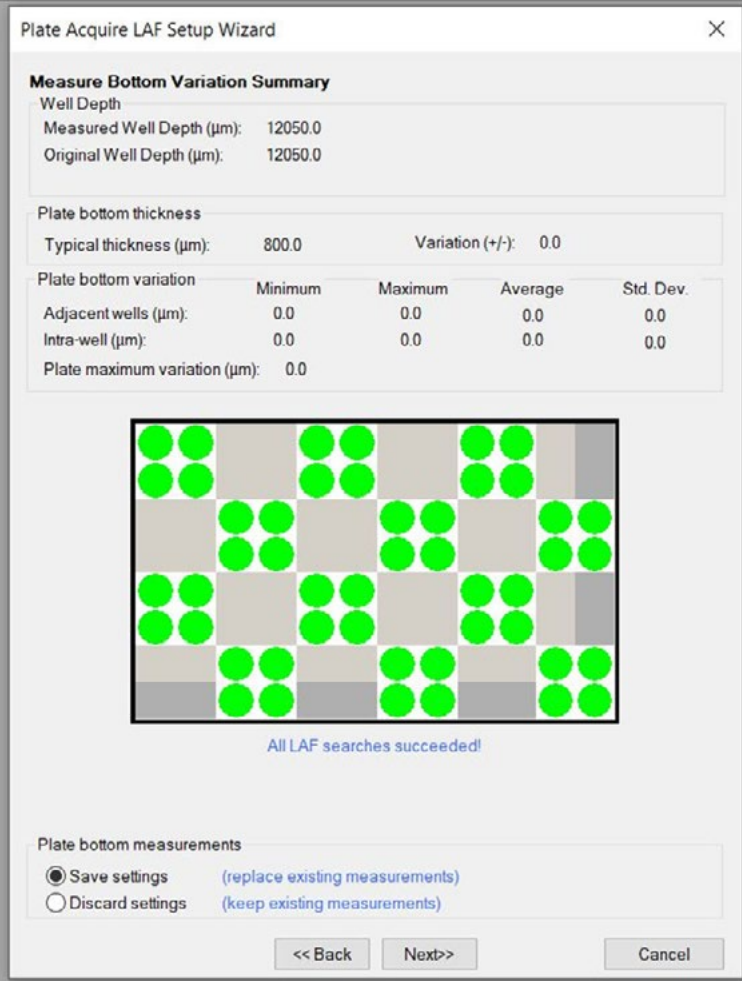


Figure 9: Continuation of the LAF Wizard.

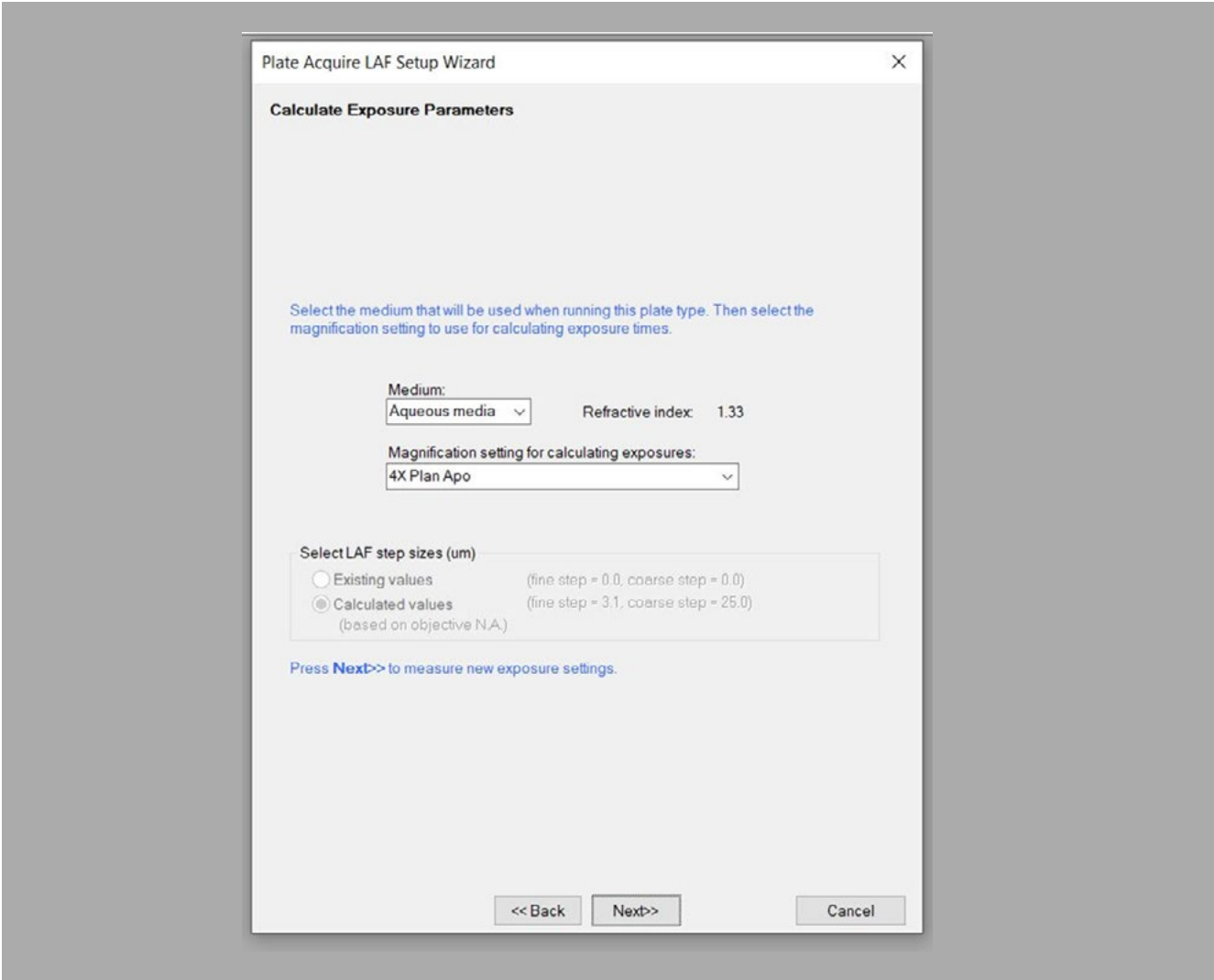


Figure 10: Continuation of the LAF Wizard.

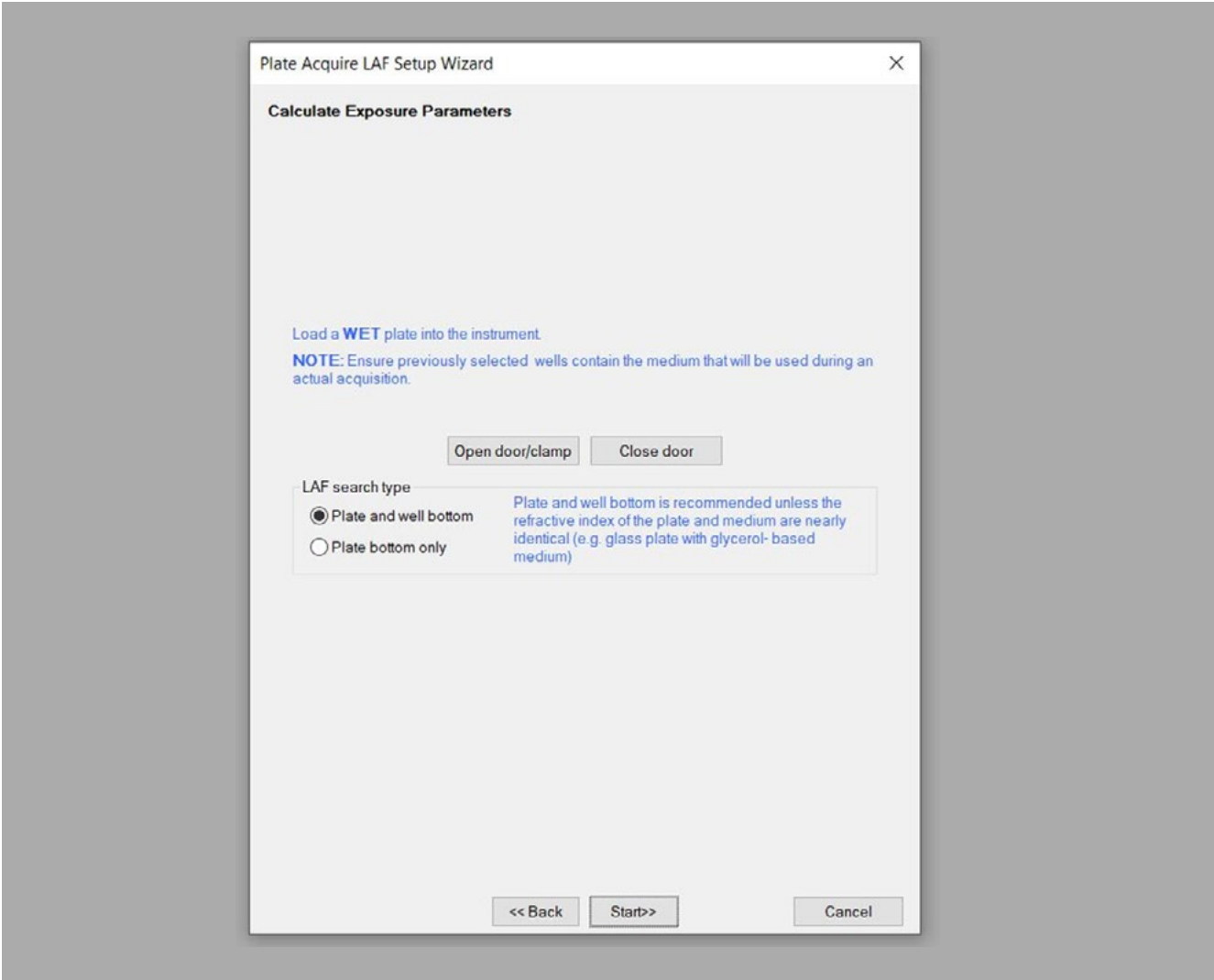


Figure 11: Continuation of the LAF Wizard.

Plate Acquire LAF Setup Wizard

**Calculate Exposure Parameters**

Well selection

All wells      Selection pattern: Checkerboard including A1

Groups of wells

Group size (NxN): 2      Gap between groups: 0

Selecting more wells takes longer to finish measurement but provides more robust autofocus settings, especially for plates with a large amount of variation.

Sites per well

Multiple sites      3      Performing measurements on multiple sites/well is slower but provides intra-well variation data, which may result in faster site-to-site LAF.

Single site

	1	2	3	4	5	6	7	8	9	10	11	12
A	●	●	●	●	●	●	●	●	●	●	●	●
B	●	●	●	●	●	●	●	●	●	●	●	●
C	●	●	●	●	●	●	●	●	●	●	●	●
D	●	●	●	●	●	●	●	●	●	●	●	●
E	●	●	●	●	●	●	●	●	●	●	●	●
F	●	●	●	●	●	●	●	●	●	●	●	●
G	●	●	●	●	●	●	●	●	●	●	●	●
H	●	●	●	●	●	●	●	●	●	●	●	●

Time estimate: 0:07:12

**NOTE**- due to the working distance of the selected objective, wells at the edge of the plate have been excluded from this search to prevent collisions with the edge.

<< Back      Next >>      Cancel

Figure 12: Continuation of the LAF Wizard.

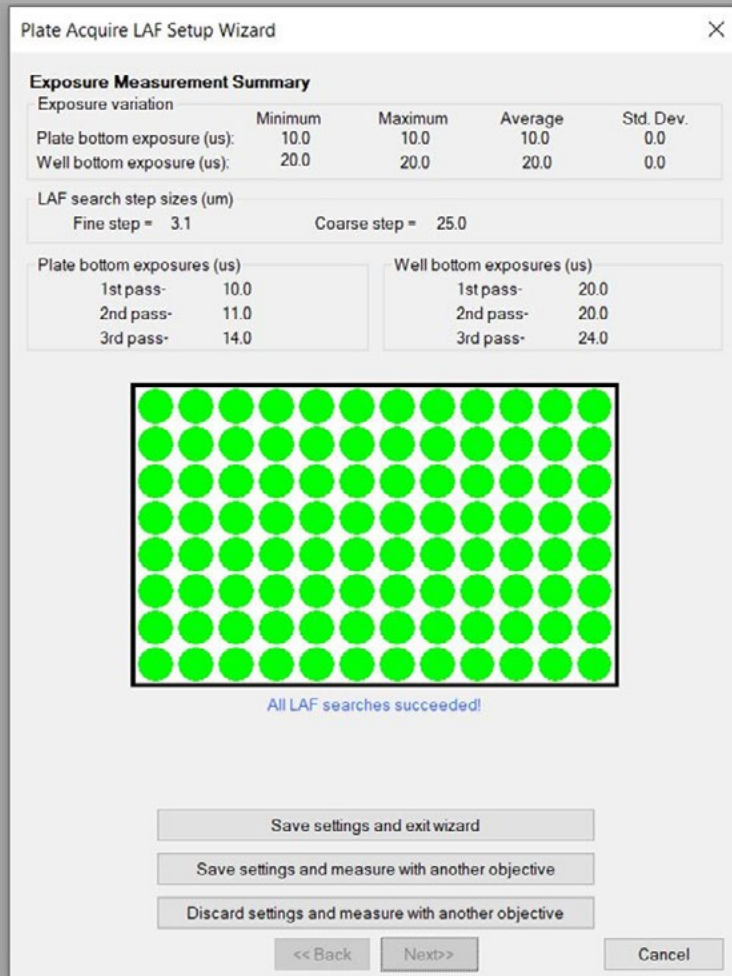


Figure 13: Conclusion of the LAF Wizard.

## VitroPrime™ 3D Culture and Imaging Plate, 96-Well

Catalog Numbers: VP-3D96W5

Revision 1.0

### Product Description

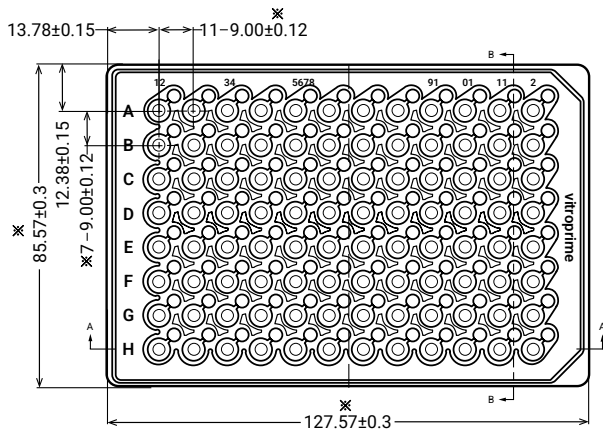
VitroPrime™ 3D Culture and Imaging Plates are specifically designed to address common challenges in 3D hydrogel culture. Engineered with a built-in retention compartment that keeps the gel firmly in place, preventing floating and rotation for stable imaging and accurate tracking. By allowing culture, media changes, washing, staining, and imaging to be performed in a single vessel, VitroPrime™ 3D Culture and Imaging Plate reduces sample loss, protects delicate 3D structures, simplifies handling, and supports automation-friendly workflows.

### Specifications

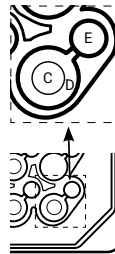
Plate Format	96-well
Material	Polystyrene molding and #1.5 (0.17 mm) Ultra-clear glass bottom
Well Profile	<ul style="list-style-type: none"> <li>• Flat bottom</li> <li>• Optimized compartment for hydrogel retention</li> <li>• Dedicated lateral medium-exchange channel</li> </ul>
Sterilization	Gamma Radiation
Other Data	DNase/RNase-free, non-pyrogenic
Shelf Life	15 months

### Product Dimensions

#### Top View



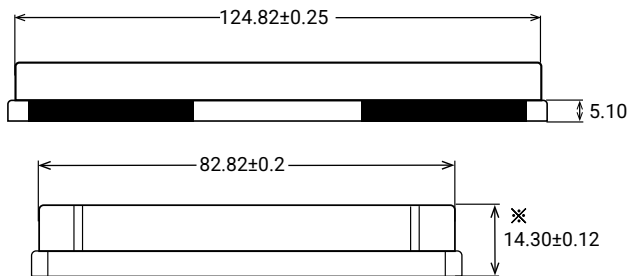
C: Sample Well  
D: Medium Well  
E: Side Well



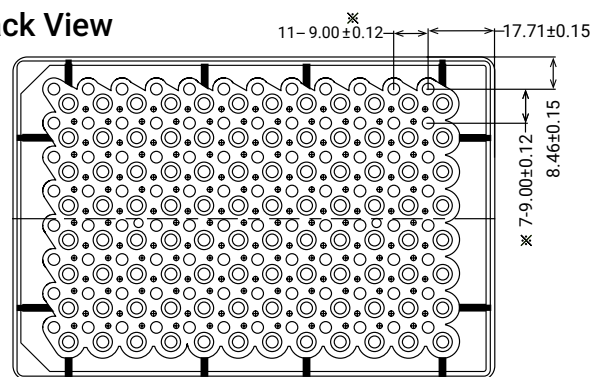
#### Dimensions of VitroPrime™ 3D Culture and Imaging Plate (96-Well)

Total Plate Height (No Lid)	14.30 ± 0.12 mm
Depth of Side Well E (From Top of the Well)	12.05 ± 0.12 mm
Depth of Medium Well D (From Top of the Well)	10.55 ± 0.12 mm
Depth of Sample Well C (From the Surface of the Bottom Glass to the Top of Well C)	1.5 ± 0.05 mm
Thickness of the Bottom Glass	0.17 mm
Skirt Height	2.08 mm
Distance Between the Center of All Types of Wells	X= 9.00 ± 0.12 mm Y= 9.00 ± 0.12 mm

#### Side View



#### Back View



Unit of measurement is in millimeters (mm).



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TheWell Bioscience Inc.,  
1 Deerpark Dr, Ste C Monmouth Junction, NJ 08852

[www.thewellbio.com](https://www.thewellbio.com)  
[support@thewellbio.com](mailto:support@thewellbio.com)

US TF: +1 866.3D. CELLS  
TEL: +1 973.855.4955

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