CellReporterXpress

Image Acquisition and Analysis Software

Version 2.8.2

Release Notes

CellReporterXpress Software Version 2.8.2
July 2021

MOLECULAR DEVICES

Patents: www.moleculardevices.com/patents

Product manufactured by Molecular Devices, LLC.
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Molecular Devices, LLC is ISO 9001 registered.

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Chapter 1: CellReporterXpress Image Acquisition and Analysis Software

The CellReporterXpress® Image Acquisition and Analysis Software is the user interface for the Molecular Devices® ImageXpress® Pico Automated Cell Imaging System.

The CellReporterXpress software integrates image acquisition and analysis into a unified workflow. Along with the ImageXpress Pico system, the CellReporterXpress software streamlines automated imaging to offer a simplified solution for scaling up microscopy. Its features include:

- A web-based interface that runs on many browsers, including those found on iPads and Android tablets.
- Over 25 available predefined experimental protocols.
- High-powered analysis tools equivalent to those found in desktop applications.
- Easy-to-manage data with no requirement to configure a database.
- A simplified user interface that is easy to learn and easy to use.

Obtaining Support

Molecular Devices is a leading worldwide manufacturer and distributor of analytical instrumentation, software, and reagents. We are committed to the quality of our products and to fully supporting our customers with the highest level of technical service.

Our Support website—www.moleculardevices.com/service-support—describes the support options offered by Molecular Devices, including service plans and professional services. It also has a link to the Molecular Devices Knowledge Base, which contains documentation, technical notes, software upgrades, safety data sheets, and other resources. If you still need assistance, you can submit a request to Molecular Devices Technical Support.

Technical Support

To contact Molecular Devices Technical Support, submit a support request through the Molecular Devices Knowledge Base at support.moleculardevices.com.

You can also submit a support request by phone. For regional support contact information, go to www.moleculardevices.com/contact.

To expedite support, please be prepared to provide the instrument serial number. The serial number is located on the back panel of the instrument.

Documentation

Review the product documentation on the Molecular Devices Knowledge Base at support.moleculardevices.com, including installation guides and user guides. In addition, online Help is available within the CellReporterXpress software. Press **F1** to access Help for the current page.

Additional Resources

Web-based microscopy courses:

- www.leica-microsystems.com/science-lab
- www.ibiology.org/ibioeducation/taking-courses/ibiology-microscopy-short-course.html

The Molecular Probes Handbook offers advice on fluorescent probes and can help you determine if there are better stains available for your analysis:

- www.thermofisher.com/us/en/home/references/molecular-probes-the-handbook.html

Product Documentation

The following guides are available on the Molecular Devices Knowledge Base at support.moleculardevices.com:

- *CellReporterXpress Installation & IT Guide*
- *CellReporterXpress User Guide*
- *CellReporterXpress Release Notes*
- *ImageXpress Pico Pre-Installation Guide*
- *ImageXpress Pico EC Gas Requirements Pre-Installation Guide*
- *ImageXpress Pico Product Safety Sheet*
- *ImageXpress Pico Installation Guide*
- *ImageXpress Pico User Guide*
- *ImageXpress Pico Calibration Kit Guide*

In addition, the CellReporterXpress software includes context-sensitive Help that you can access from within the software. Just press the **F1** key from within the software to view Help for the current page.

Tip: We recommend that you review the documentation before installing or using the ImageXpress Pico system or the CellReporterXpress software.

About This Guide

This guide is intended for the scientist or IT professional who will be installing and configuring the CellReporterXpress software. This guide describes the notable changes in this release of the CellReporterXpress software.

The information in this guide is subject to change without notice. We recommend that you review the guide on the Molecular Devices Knowledge Base at support.moleculardevices.com for the most up-to-date information.

Chapter 2: CellReporterXpress Version 2.8.2

Version 2.8.2 of the CellReporterXpress Image Acquisition and Analysis software is a minor release. This section summarizes the changes incorporated since the last release of the software.

New Features in CellReporterXpress Version 2.8.2

CellReporterXpress version 2.8.2 includes the following new features:

Focus Improvements

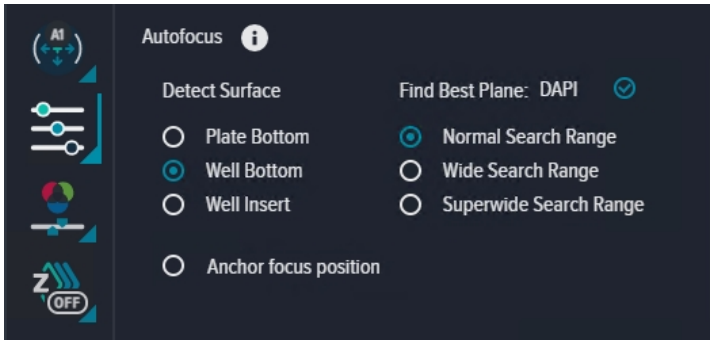
Many of the updates in this release are improvements to instrument focus. These updates include the following:

New Autofocus Workflow and Controls

The autofocus workflow and controls on the **Focus/Exposure Settings** tab of the **Acquisition Settings** page have been improved. You now have more control over how the software uses hardware autofocus and image-based autofocus (also known as software autofocus) to find the best focus plane.

The instrument uses two autofocus mechanisms:

- **Detect Surface**, which is hardware autofocus. Hardware autofocus uses an LED beam to find reflective surfaces and is designed for speed. It works well for adherent samples in plates or chamber slides.
- **Find Best Plane**, which is image-based autofocus. When enabled, image-based autofocus searches a range for the best focus plane based on image contrast. It works well for slides with a coverslip or for samples in a plate that are not flat, such as suspension cells or spheroids.



Note: The Well Insert option is not available in the slide acquisition workflow.

In many cases, the hardware autofocus provided by the **Detect Surface** options may be sufficient to find focus. Each option has different strengths:

- The **Plate Bottom** option is designed for samples in 3D matrices or clear mounted coverslips, where the second surface appears "invisible" to the autofocus. It is also suitable for imaging thin-bottom plates with a low-magnification objective.
- The **Well Bottom** option is designed for samples in a liquid medium, such as well plates or chamber slides. It is not recommended for samples in 3D matrices, thin-bottom plates with a low-magnification objective, or clear mounted coverslips.
- The **Well Insert** option is designed for well inserts in well plates or any labware design that has a distinct third surface.

If the **Detect Surface** options do not provide satisfactory focus, select the **Find Best Plane** option to add image-based autofocus for the first channel within the selected search range. Each searches with a specific range around the surface found by the hardware autofocus. Adding image-based autofocus is useful for thicker samples, samples with variable best focus planes, or labware with variable thickness.

The CellReporterXpress Help was updated to explain the new autofocus workflow and controls. This can help you understand how autofocus works and how to get good autofocus results. When you set up image acquisition on the Acquisition Settings page, click the icon on the **Focus/Exposure Settings** tab to open the updated content in the Help.

The section describes the following:

- How each focus option works.
- Autofocus strategies to find the best focus.
- Autofocus considerations for various types of labware and when using the optional environmental control cassette.
- How to use the Autofocus Info tool to diagnose autofocus issues.

This information also appears in the *CellReporterXpress User Guide*.

Anchor Focus Position

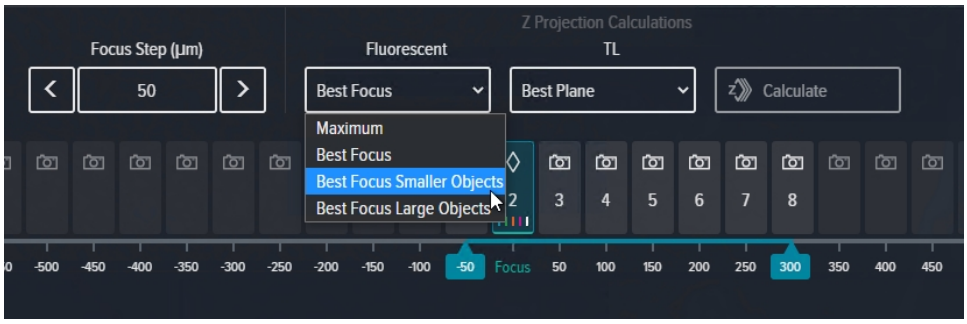
Typically, the instrument runs autofocus each time you snap a preview image or acquire an image. A new control was added to the **Focus/Exposure Settings** tab that enables you to anchor the focus position, which can speed up acquisition with low-magnification objectives.

Select the **Anchor Focus Position** check box to save current focus position and disable the autofocus controls. The instrument will no longer run autofocus each time you snap a preview image or acquire an image. Instead, the software will use the saved focus position across all sites. An anchor icon indicates the snapped image previews in the **History** pane that are using the anchored focus position.

Clear the check box to remove the saved anchored focus position setting, and the instrument will resume autofocus the next time you snap an image preview or run an acquisition.

New Best Focus Options for Z Stack Projection Images

Two new best focus options were added for Z stack projection images for both fluorescent and transmitted light acquisitions.

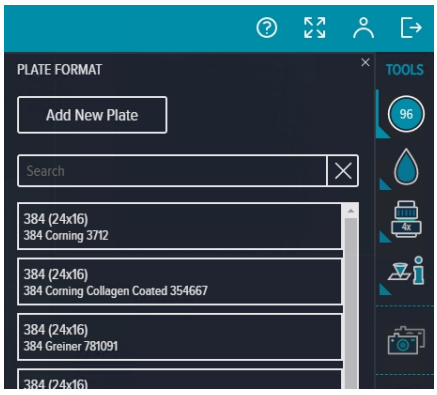


Use the **Best Focus Smaller Objects** option to break up images into very small zones to find the best focus across all Z planes for each zone, which brings fine details and smaller objects into focus. This option is very computationally demanding and may run slower than the Best Focus option or Best Focus Larger Objects option.

Use the **Best Focus Larger Objects** option to break up images into small zones to find the best focus across all Z planes for each zone, which brings greater detail of larger objects into focus. This option is computationally demanding and may run slower compared to the Best Focus option.

Add Labware Format During Acquisition

To achieve good autofocus results, it is very important to specify an appropriate and accurate plate or slide format for the labware you are using. A new button has been added on the **Acquisition Settings** page to help you easily create a new format when setting up an acquisition.



If an appropriate plate format does not exist, click **Add New Plate** on the **Plate Format** pane to define a new labware specification. Similarly, you can click **Add New Slide** on the **Slide Format** pane.

Improved Autofocus at Well Edges

In previous versions of the software, out-of-focus sites could sometimes appear along the edges of wells. A new, hard-coded parameter has been added that improves autofocus at well edges.

Improved Image Autofocus in Atypical Conditions

Autofocus has been improved in several atypical conditions, including the following:

- Low media volume in the well causes the meniscus to be positioned close to the well bottom.
- You are using a specialized well insert.
- You are using a gel medium in the well.

General Improvements

Along with focus improvements, several other improvements were made in CellReporterXpress version 2.8.2:

- In **Configuration** mode, on the **Data Storage** page, mapped folders for registered storage computers now display more quickly.
- The generic "Internal Server Error (MD-124)" message has been clarified. If an error occurs, a more specific, meaningful message now appears. This improvement will help you and Molecular Devices Technical Support quickly determine the root cause of any issue.
- Shading has been improved for transmitted light acquisitions with clear plates.
- During Live Preview, offset value calculations have been improved. When you move the stage to a new position where autofocus has not been run, and you click **Set Offset**, the instrument now runs autofocus at the new position and calculates the focus offsets from that position. After autofocus completes, Live Preview resumes.
- The zoom level of plate and slide images now persists when viewing different time points.
- The software now calculates the estimated acquisition time, which appears on the **Run Protocol** page and the **Monitor** page.
- The preview image thumbnails in the **History** pane of the **Acquisition Settings** page are larger. In addition, you can use your mouse wheel to scroll through a list of thumbnails.
- The heatmap color options in the **Color Scheme Configuration Settings** have been improved. With more distinguishable color gradients, heatmaps are now easier to view.
- Two new protocol templates have been added to the **Template** library for stitched and unstitched colorimetric plate acquisitions.
- Experiment names are now used for the folder names in the file system. With this improvement, experiment folder names are now "human-readable" in Windows File Explorer.
- The **Experiments** library now shows all stored experiments.
- The maximum number of time points for an acquisition is now set at 500. The Reached Max. Time Points setting has been removed from the **Miscellaneous Configuration Settings** page.
- The **Random** icon has been removed from the **Region Selection to Acquire** page.

Two new documents have been added to the product documentation set:

- The *ImageXpress Pico EC Gas Requirements Pre-Installation Guide* provides the information you need to prepare for the Environmental Control (EC) System. It describes the regulators and connections required to connect the instrument to a compressed gas cylinder, a lab gas line, or an air compressor.
- The *ImageXpress Pico Product Safety Sheet* document describes the safe use of the ImageXpress Pico system.

Issues Addressed in CellReporterXpress Version 2.8.2

The following focus-related issues were addressed in CellReporterXpress version 2.8.2:

- (CRX-3107) The **Measure Plate Dimensions** tool on the **Labware Library** page is now more accurate.
- (CRX-3351) The software now calculates plate clearance more accurately.

The following general issues were addressed in CellReporterXpress version 2.8.2:

- (CRX-3264) Forgetting to click **Finish Adjustment of Objective Collar** at the end of the correction collar adjustment procedure no longer locks up the instrument. A message now displays with a reminder to properly complete the procedure.
- (CRX-3779) The host computer name is no longer limited to 14 characters.
- (CRX-3720) The host computer no longer has issues when the instrument is powered off or disconnected while the software is still running.
- (CRX-3558) The Analysis Service no longer incorrectly appears as stopped.
- (CRX-3349) Channel icons with indicator badges are no longer shifted in the user interface.
- (CRX-3310) The tool tips for the action buttons on the **Labware Library** page now appear as expected.
- (CRX-2862) Clicking on a well image in the **Plate Thumbnail View** now opens the expected plate image.
- (CRX-2914) Acquisition setting metadata is now included when exporting a TIFF image of an image preview.
- (CRX-2984) The **Slide Thumbnail View** now displays as expected.
- (CRX-3089) The **Focus Offset** values on the **Acquisition Settings** page now display accurately.
- (CRX-3247) When setting up a time-series acquisition with Z stacking on, the **Interval** value on the Time Series page is now calculated accurately.
- (CRX-2222) When using the Translocation analysis, the segmentation mask colors now appear as expected. The positive inner mask is light green and the positive outer mask is dark green.
- (CRX-1450) The **Exposure** controls on the **Acquisition Settings** page now allows you to set the exposure from 1 ms to 10 s.
- (CRX-1448) When using a duplicated protocol, the acquisition region on the **Region Selection to Acquire** page is no longer shifted.
- (CRX-3850) When adding an analysis to an existing experiment, analysis regions are now saved as expected.

Chapter 3: CellReporterXpress Version 2.7.2

Version 2.7.2 of the CellReporterXpress Image Acquisition and Analysis software is a hotfix release. This section summarizes the changes incorporated since the last release of the software.

New Features in CellReporterXpress Version 2.7.2

There are no new features included in CellReporterXpress version 2.7.2.

This release uses a new version numbering style, which adds a third part to the version number. With this change, the initial version for a release will be in the format x.x.1. Any hotfixes will increment that number: x.x.2, then x.x.3, and so on. Since this is the first hotfix for this release, it is version 2.7.2.

Issues Addressed in CellReporterXpress Version 2.7.2

Along with general stability improvements, the following issues were addressed in CellReporterXpress version 2.7.2:

- (CRX-3279) A memory leak no longer occurs when using the Cell Scoring: 3 Channels analysis or the Cell Scoring: 4 Channels analysis.
- (CRX-3322) With Live Preview on, an error no longer occurs when you click and drag the  selection tool in a single well map or single slide map.
- (CRX-2908) An error no longer occurs when exporting experiment images from a slide.
- (ITSP-527) Images from experiments with multiple time points where some time points are missing now export as expected.
- (CRX-3363) An error no longer occurs when you click Save Position on the Acquisition Settings page.

Chapter 4: CellReporterXpress Version 2.7

Version 2.7 of the CellReporterXpress Image Acquisition and Analysis software is a minor release. This section summarizes the changes incorporated since the last release of the software.

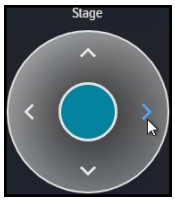
New Features in CellReporterXpress Version 2.7

CellReporterXpress version 2.7 includes the following new features:

Joystick Improvements in Live Preview

When viewing a live preview, you can use the virtual joysticks to make large and small adjustments to the stage position and focus. Now, you can make very fine adjustments by clicking the arrows on the joysticks.

Stage Joystick



For very small stage movements to fine-tune the stage position, click one of the arrows on the stage joystick arrows. Each time you click an arrow, the stage moves one step.

Focus Joystick

For fine focus adjustments, click one of the arrows on the focus joystick. Each time you click an arrow, the focus adjusts one step. The step size corresponds to half of the depth of field for the selected objective.

Autofocus Help Improvements

The CellReporterXpress Help was updated to help you understand how autofocus works and get good autofocus results. When you set up image acquisition on the Acquisition Settings page, click the icon on the Focus/Exposure Settings tab to get Help on autofocus.

The new section describes the following:

- How each focus mode works.
- Autofocus strategies to find the best focus.
- Autofocus considerations for various types of labware and when using the optional environmental control cassette.
- How to use the focus assist tool to diagnose autofocus issues.

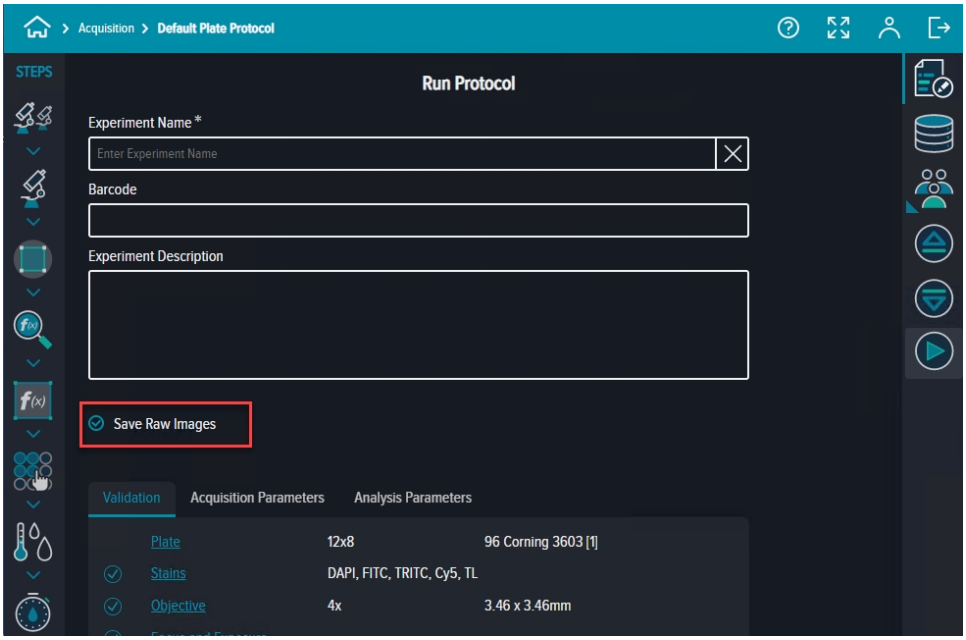
The new information also appears in the *CellReporterXpress User Guide*.

Increased Security

The MDUpdate Firmware for CellReporterXpress version 2.7 includes security updates for the ImageXpress Pico system. For details on this required firmware update, log in to the Molecular Devices Knowledge Base at support.moleculardevices.com and search for article number **20356**.

Rename and Move the Preserve Raw Images Check Box

Previously, the Preserve Raw Images check box—which enables you to save TIFF images of the acquisition—was on the Storage pane of the Run Protocol page. In CellReporterXpress version 2.7, this function is relabeled as the Save Raw Images check box. In addition, the relabeled check box is now on the Experiment Details pane of the Run Protocol page.



Issues Addressed in CellReporterXpress Version 2.7

Along with general stability improvements, the following issues were addressed in CellReporterXpress version 2.7:

- (CRX-2643) The Stitched / Not Stitched filter on the Add Protocol tab now behaves as expected.
- (CRX-2356) On the Acquisition Settings page, clicking Cancel Image Capturing and Cancel Z Snap Capturing now stops the snap as expected.
- (CRX-2472) The Save Raw Images check box (previously known as the Preserve Raw Images check box) now saves images from stitched acquisitions.
- (ITSP-572) In a downloaded MP4 movie, images are no longer cropped and shifted.
- (ITSP-460) When switching between a Cell Level Table and a Cell Level Image, the image no longer zooms out.

Chapter 5: CellReporterXpress Version 2.6

Version 2.6 of the CellReporterXpress Image Acquisition and Analysis software is a minor release. This section summarizes the changes incorporated since the last release of the software.

New Features in CellReporterXpress Version 2.6

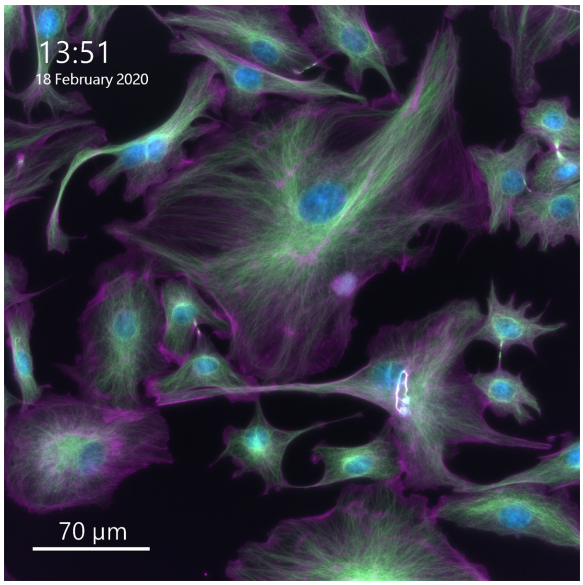
CellReporterXpress version 2.6 includes the following new features.

Full-Resolution TIFF Image Exported as Tiles

Due to the 2 GB file size limit for a TIFF file, the software scales any full-size image larger than 2 GB. If your image is over 2 GB and you want to export it at full resolution, you can now export the image as tiles. The image tiles can be joined together using a TIFF image processing program to achieve a full-resolution image.

Scale Bar and Time Stamp in Exported Full-Size Images

You can now include a scale bar and a time stamp in an exported full-size image. The time stamp can show the date and time of the acquisition or the elapsed time from the earliest time point in the export.



Time Stamp in Downloaded Movies

You can now include a time stamp in a downloaded movie. The time stamp can show the date and time of the acquisition or the elapsed time from the earliest time point in the movie.

Issues Addressed in CellReporterXpress Version 2.6

The following issues were addressed in CellReporterXpress version 2.6:

- (ITSP-224) When an experiment is running, clicking Cancel on the In Progress tab of the Monitor page now stops acquisition as expected.
- (ITSP-378) A timeout error no longer occurs when using a stitched protocol to run an experiment.
- (ITSP-522) Image analysis segmentation is now displayed correctly in the software user interface.
- (ITSP-528) An error no longer occurs when exporting image by time point.
- (CRX-1602) On the Configuration Settings page, clicking Back now displays the previous page as expected.
- (CRX-2043) Analysis summary data is now correctly calculated for a slide acquisition with multiple regions of interest.
- (CRX-2084) Exported images from an experiment that uses a stitched, colorimetric protocol are now scaled correctly and display as expected.
- (CRX-2092) An error no longer occurs when you snap a Z stack image with digital confocal on and then change the projection calculation type.
- (CRX-2093) You can now select a well as expected on the Choose Position to Acquire tab of the Acquisition Settings page or Analysis Settings page.
- (CRX-2168) The software no longer freezes when you select a row on the cell level table and then view a cell level image.

Chapter 6: CellReporterXpress Version 2.5

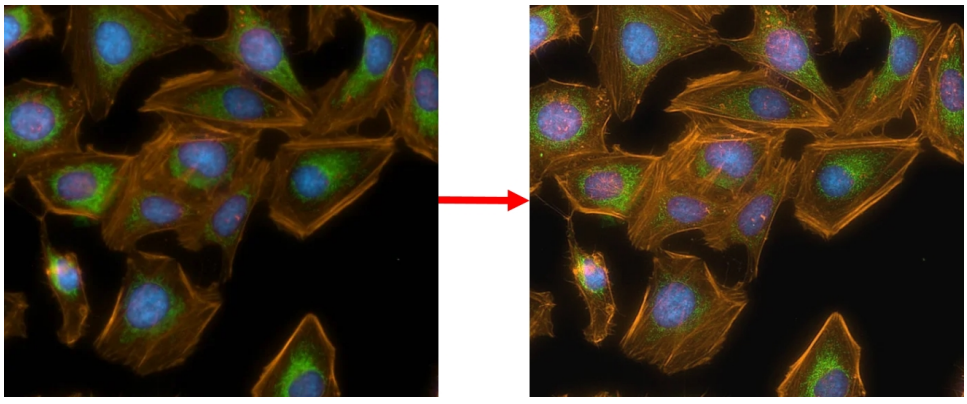
Version 2.5 of the CellReporterXpress Image Acquisition and Analysis software is a minor release. This section summarizes the changes incorporated since the last release of the software.

New Features in CellReporterXpress Version 2.5

CellReporterXpress version 2.5 includes the following new features:

Digital Confocal

Digital confocal is a new optional (licensed) feature that uses 2D on-the-fly deconvolution to enhance contrast, improve resolution, and sharpen images, significantly increasing assay quality. By restoring light to its original point of origin, digital confocal allows you to decrease exposure time and improve the statistical significance of your observations. Digital confocal is seamlessly integrated into the fluorescent image acquisition workflow.



AutoQuant integrated innovation Digital confocal uses the AutoQuant 2D RealTime Deconvolution algorithm.

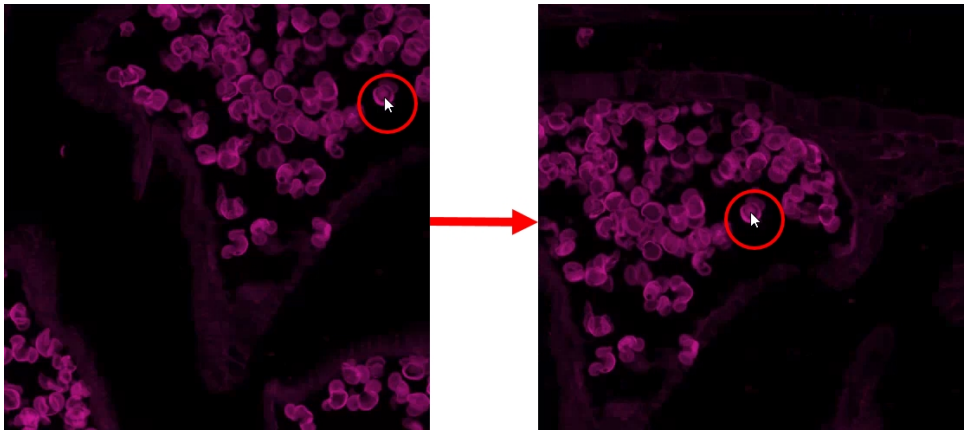
Live Preview

With the new live preview feature, you can move the sample (X-Y) stage to explore a continually updated, dynamic image of your sample. The two virtual joysticks allow you to visualize your experiment before acquisition, which helps you quickly and easily find a region of interest and focus in on what is important to your research.

One joystick controls stage movement, allowing you to pan around the sample.

A second joystick allows you to interactively adjust focus. Once you achieve the right focus, you can set the focus offset for the acquisition.

The "click to center" function centers the image based on the spot that you click. When you locate a region of interest, you can save the current field of view for the acquisition.



ImageXpress Pico System Improvements

Along with the release of version 2.5 of the CellReporterXpress software, the following improvements were made to the ImageXpress Pico system:

Dish Holder

The new, optional dish holder (part number 5077007) is designed for imaging up to six standard culture dishes of 35 mm (1.38 in.) in diameter.

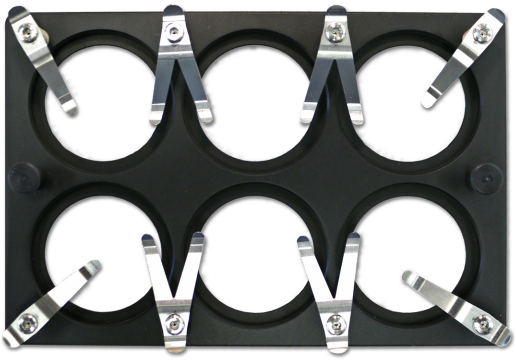
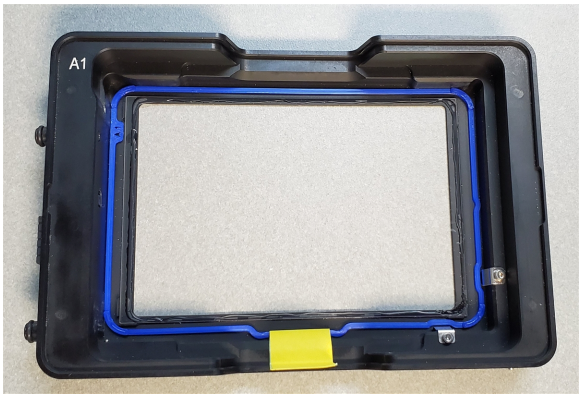


Plate Skirt Height Adapter

The optional environmental control system now includes three plate skirt height adapters (part number 5077006).



Under certain magnifications, a plate with a low skirt height may cause autofocus issues inside the environmental control cassette. The plate skirt height adapter sits inside the environmental control cassette to raise the plate, which can help autofocus succeed.

Push-to-Connect Fittings

The optional environmental control system now includes three ¼" NPT male to 6mm O.D. push-to-connect fittings (part number 5075610).

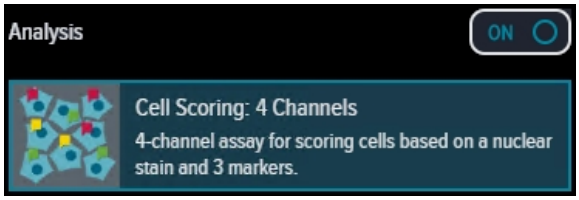
These push-to-connect fittings help you easily connect the regulator of your gas supply to the instrument.

Support for Microsoft Windows Server 2016

Microsoft Windows Server 2016 Standard Edition is now a supported operating system for the CellReporterXpress software.

Four-Channel Multi-Wavelength Cell Scoring

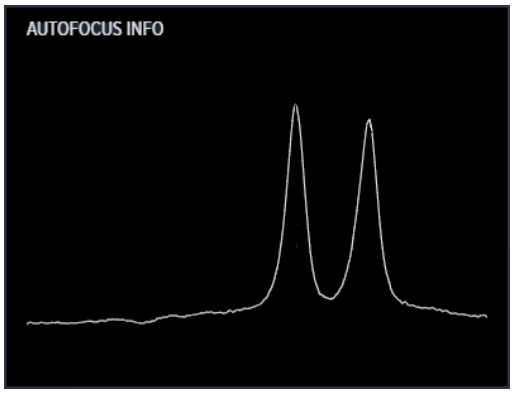
A new, optional analysis (Cell Scoring: 4 Channels) provides the ability to perform analysis with up to four fluorescent stains, furthering enhancing the ability to perform multi-wavelength cell scoring.



The four-channel multi-wavelength cell scoring analysis is ideal for counting and logging measurements of cells in multiple wavelength experiments. Using a fluorescent marker for the nucleus and additional markers for the cytoplasm, each wavelength is analyzed, and cells are assigned multiparametric phenotypic profiles.

Autofocus Info

The CellReporterXpress software uses hardware and software autofocus to determine the best focus for the sample. When autofocus issues occur, they are typically caused by an incorrect configuration in the Labware Library. In many cases, the issue can be addressed by remeasuring plate dimensions and adjusting the labware configuration.



The new Autofocus Info graph on the Acquisition Settings page shows the focus peaks for the most recent autofocus to help you understand how it was determined. You can use the graph along with the information in the *CellReporterXpress Help* and *CellReporterXpress User Guide* to troubleshoot autofocus issues.

Mimetas Protocol Templates

The Template Library includes two new protocol templates that have been designed for the 384 Mimetas OrganoPlate. Use these templates to configure the acquisition of images using these plates.

CellReporterXpress Installation Utility Improvements

The CellReporterXpress Installation Utility has been redesigned to streamline the software installation process.

Increased Security

The CellReporterXpress software uses HTTP for communication. It is important to note that these HTTP connections are not secured or encrypted. You may want to avoid using insecure protocols (such as HTTP) outside of your organization's secured network in favor of using an HTTPS proxy server, which uses SSL/TLS to encrypt communications.

When configuring installations that might be exposed to outside parties, consider securing your CellReporterXpress communications. You can now secure CellReporterXpress data transfers with encryption by installing the software with a security certificate. This type of installation uses a PFX file, which is provided by your IT professional. The PFX file is a password-protected certificate archive that contains the entire certificate chain along with the matching private key.

See the *CellReporterXpress Installation Guide* for details on these increased security options.

Export Stitched TIFF Images from Experiments

You can now easily export stitched TIFF images from a CellReporterXpress experiment for further processing and analysis. Exported images can be scaled to meet the 32K x 32K pixel size required by Molecular Devices® MetaXpress® High-Content Image Acquisition and Analysis Software.

As part of this new feature, the MD Import/Export Service is no longer required by the software. For upgrading users, this service will be removed when you install CellReporterXpress version 2.5.

Documentation Changes

The CellReporterXpress Help and CellReporterXpress User Guide now contain detailed descriptions of each analysis included in the software, including explanations of the input parameters, summary measurements, and cell measurements.

Issues Addressed in CellReporterXpress Version 2.5

The following issues were addressed in CellReporterXpress version 2.5:

- (CRX-1061) The object segmentation overlay is now visible at full zoom.
- (CRX-1201) For an acquisition that includes both Z stacking and a time series, the recommended interval for the time series now includes the time required to acquire each Z stack plane.
- (ITSP-436) An error no longer results when the Snap Image Size configuration setting is set to Maximum.
- (CRX-1448) When you duplicate a protocol, the selected acquisition region is now identical to the acquisition region the same as the original protocol.
- (CRX-1458) When you reboot the host computer, configuration settings are maintained as expected.
- (CRX-1459) When you select cells in the Cell Zoom Level Scatter Plot, data displays as expected on the Cell Zoom Level Table.
- (CRX-1594) When you automatically calculate the exposure time for a wavelength (by clicking Auto on the Focus/Exposure Settings tab of the Acquisition Settings page), the histogram on the Image Intensity Settings tab updates as expected.
- (CRX-1622) When you acquire a transmitted light image with Z stacking, the first z stack plane is no longer dark.
- (CRX-1640) When you acquire fluorescent or colorimetric images with Z stacking, projection images using the Best Focus setting no longer have a blurred edge artifact.
- (CRX-1808) When exporting a stitched image for which scaling is required, the pixel scaling data in the image metadata is updated as expected.

  Note: If you are using an automated script to import images to another software, you no longer need to add the scaling to the images.

- (CRX-1827) When the instrument is powered off and then powered on again, the software detects the slide holder as expected.
- (CRX-1941) When you acquire a transmitted light image with Z stacking, the projection image is no longer black.
- (CRX-1943) With the environmental control cassette and a 4x objective, the software no longer excludes the following wells from acquisition:
  - With a 12-well plate, the top row of wells can now be selected for acquisition.
  - With a 24-well plate, the top row and both the first and last columns cannot be selected for acquisition.
- (CRX-1947) When using environmental control, and you open the top door of the instrument, gas flow and humidity continue for ten minutes. After ten minutes, gas flow and humidity are shut off and must be restarted manually.

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CellReporterXpress Software Version 2.8.2