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## 1 General

Release date: March 2024

Minimum requirements for browser version:

- Microsoft Edge (Chromium): ≥ version 119
- Google Chrome: ≥ version 119

## 2 New Features and Improvements

### 2.1 User Interface

- **New Design**

The software has a new look and feel: We have implemented the Revvity design.

- **Improved Graph Results View**

New ability to select more than one well from a well scan view, and ability to zoom in to view details on full curves.

- **PDF Report & Export**

Select graphs and calculations to add to a PDF report of measurement results. This report cannot be edited after export.

## 2.2 Performance

- **Measurement Time Per Well**

See measurement times for each well in a plate kinetic assay. This data can also be exported.

- **Normalization Factor**

For users with multiple instruments, a normalization factor can now be set to better compare measurement results across multiple instruments. Instrument specific normalization factors can be defined for the following technologies:

- Fluorescence Intensity/Fluorescence Polarization
- Time-resolved Fluorescence
- Luminescence
- Alpha

- **Delay with Continue Option**

A new delay option has been added to allow for a pause in the measurement which can be resumed manually or after a fixed time. This can be selected in the protocol.

- **Tray Control**

New option to load/unload the plate via button on the instrument

- **Nivo Diagnostics**

The former “Run test plate diagnostics” feature has been completely revised. It offers easy tests to ensure the instrument remains in good working condition.

- Feature renamed to “Nivo Diagnostics”
- Improved user experience
- Additional tests
- Option to adjust the measurement positions

## 2.3 Security

- **Improved Security for Automatic Export**

The “Server Message Block” (SMB) protocol is a basic Windows feature and is used for file sharing. We now support SMB2 for the automatic export. SMB2 contains more fixes to vulnerabilities than SMB1, which was used in older versions of the software.

## 3 Bug Fixes

### 3.1 Results

- **Signal linearity notifications** now provide details on the affected well and kinetic cycle during measurements. In stacker kinetics, information on the affected plate is also displayed.
- If an **Automatic Export** fails, the notification window is now automatically closed and displays an "error indicator".

### 3.2 Enhanced Security

- The software now shows a message box if you select **Archive Audit** and there is no data present in the audit trail which can be archived.
- Copying a protocol now requires a **Reason for change** entry if Enhanced Security feature is activated.
- Each time you click **Unlock Account** in **User Account Management**, the list of locked accounts is now updated.
- After a software update, the initialization entries in the **Audit Trail** now display the accurate date.

### 3.3 Dispenser

- Changing the **dispenser speed** within a protocol that contains one dispenser operation outside and one inside a kinetic sequence is now supported. Applied dispensing speeds will be used.

### 3.4 Stacker

- **Stacker Improvements:** General improvements to stacker UI including clearer error messages and improved audit trail view.

### 3.5 Calculations

- If you save your recalculation including the update of your protocol, the protocol date (shown in the protocol list) is now also updated.

## 4 Known Issues

This list covers known issues with the VICTOR Nivo software version 5.1.0.

### 4.1 Limited Apple iOS compatibility

Controlling the VICTOR Nivo via Wi-Fi with an Apple iPad or iPhone is limited. The following limitations may occur:

| Known Issue   | Workaround   |
|---|--|
| During CSV export no file is downloaded, instead an additional browser is opened with the result content. The Excel export button creates an unknown .dms file. | Use the <b>Export CSV data</b> button to open a separate browser window, select all content and share it with the <b>Files</b> app on your iOS device. This will create a .txt file that can be used for further analysis. |
| Toggle full screen button is missing.   | Use the normal maximum window size.  |
| If Enhanced Security is activated, the audit trail cannot be viewed with iOS. <b>Archive audit</b> creates unknown .dms file.                                   | Use a Windows® system to view and archive the audit trail.   |

### 4.2 Kinetic Measurements

| Known Issue  | Workaround   |
|--|--|
| Timing issues can occur for the first few cycles in well kinetics. For a short interval time (< 2s) the first intervals could be shorter than set, however the interval time for subsequent timepoints is correct. | Instead of using defined cycle times please choose an appropriate measurement time and increase the number of measured cycles accordingly to cover the time period of your kinetic reaction by the product of the measurement time times the number of cycles.                                       |
| In kinetics measurements the initial temperature for the first cycle is shown for all cycles in the result file.   | Make sure the temperature is stable before starting the measurement. It is also possible to set up the protocol with consecutive end point operations with a "Delay" operation in between. If each repeat is defined as an operation, the temperature at the beginning of the operation is recorded. |
| If in a kinetics protocol the measurement time is longer than the cycle time no error message will be shown.   | Please test your protocol and the timings before using it with real samples.   |
| In the results of Well Kinetic measurements the parameter "Time (s)" refers exclusively to the first measured well. Other wells can have deviating time points.  | Due to the irregular timing in kinetic measurements, the true measurement time points for all measured wells is available in the export format "List - full data with times".  |

### 4.3 Filter Warnings in Luminescence Protocols

| Known Issue  | Workaround    |
|--|---------------|
| <p><b>Misguiding filter warning for Luminescence assays:</b> Nivo warns about a "non-ideal filter selected for the application" though the filters are just perfect for the BRET experiment under consideration.</p> | No workaround |

### 4.4 Nivo Diagnostics

| Known Issue   | Notice   |
|---|--|
| <p><b>ABS wavelengths scan has new pass criterion (Nivo with Spectrometer only):</b> The pass criterion for ABS wavelength accuracy has been changed to +/- 3 nm (previously +/- 2 nm). These changes make the ABS wavelength scan more robust to potential outliers.</p> | <p>Please note that the Nivo Diagnostics measurements are not intended to be performance benchmarks, but rather proof the primary functionality of the measurement technologies. The performance of the instrument is not compromised.</p> |
| <p>In the diagnostic results, the <b>test plate version 1.1</b> is displayed for FI Top &amp; FI Bottom scans when you open the results recorded with an earlier software version (<b>Results from Nivo &lt; 5.1, Baseline from Nivo &lt; 5.1</b>).</p>                   | <p>In this context, the test plate version 1.1 indicates the version of the test that was performed, not the version of the test plate.</p>  |

### 4.5 Dispenser

| Known Issue   | Workaround   |
|---|--|
| <p>The dispenser initializes only with its first operation, not at the beginning of the protocol. This can lead to irregular timing during a kinetic measurement, because more time is needed for that well, which contains a dispenser operation for the first time. In addition, the warning window telling you that the dispenser tip is not in the reader only appears instantly when a dispenser operation occurs for the first time, not before starting a measurement.</p> | <p>Be aware that the time measurement in the new result format <b>List format - full data</b> with times for kinetic measurements is correct and only the dispenser initialization takes more time for its first operation. Furthermore, you should always check if the dispenser tip is not missing inside the reader before starting a measurement that contains dispenser operations.</p> |

| Known Issue   | Workaround   |
|---|--|
| Priming is needed for dispenser operations every time the connection to the user interface is interrupted. This happens e.g. if you sign out and then sign in again.                                | Make sure that the connection to the user interface is not interrupted after priming the dispenser.  |
| Well-Kinetic measurements with a set cycle time and dispensing steps show irregular timing in the form of shorter cycles.   | If you are recording kinetic assays that rely on an initial dispensing step, we recommend that you set the cycle time to "0.0 sec" and increase the number of measured cycles after the dispensing step accordingly to cover the time period of your kinetic reaction by the product of the measurement time times the number of cycles. |
| A well kinetic bottom measurement with a dispense step shows a short delay between the end of the dispensing step and the start of the measurement, even though no mechanical movement is required. | No workaround  |

#### 4.6 Automation Mode

| Known Issue   | Workaround   |
|---|--|
| Special characters (e.g. \$) in protocol names and barcodes are not supported by the Remote Control Interface (RCI) and can lead to error messages. | Avoid special characters in protocol names and barcodes, especially \$ since this is used in RCI commands. If the error message "Unhandled exception" occurs in the RCI, restart the reader after unplugging the power cord for at least 10 seconds. |

#### 4.7 Enhanced Security

| Known Issue   | Workaround   |
|---|--|
| A locked (inactive) user account is enabled again if a security admin does increase the account lockout threshold. The reason for this is that the software applies the increased logout threshold immediately. | The security admin must ensure that the chosen security settings are reasonable for his working environment and that they should not be frequently changed in short time intervals. Make sure that no locked account is present if the account lockout threshold is changed. |
| Saving the results of a recalculation will not require a <b>Reason for change</b> entry if the updated calculation parameter will not be added to the protocol.   | The security admin must be aware of this specific use case, if he activates the <b>Reason for change</b> function. Nevertheless, saving recalculated results is tracked in the audit trail which allows to retrace this step.  |

#### 4.8 Admin password reset by software update

This does not apply to Enhanced Security.

| Known Issue   | Workaround   |
|---|--|
| After the software update the <b>admin password</b> was reset to the default password ("Advanced"). | If required, please define a new admin password after the software update. |

#### 4.9 Internal memory limit & data management

| Known Issue  | Workaround  |
|--|---|
| When installing the VICTOR Nivo software, the data from the previous versions is only hidden on the internal memory, but no space is freed up. After installation, this old data can no longer be accessed or deleted and reduces the free space on the internal memory. | We recommend deleting old data <b>before</b> updating the software. See also VICTOR Nivo Software Manual, section "Freeing up internal memory". |

#### 4.10 Stacker

| Known Issue  | Workaround  |
|--|---|
| If a stacker measurement with z-focus or well scans has been measured, the results will have the barcode and plate info on a different sheet than the result data (Excel) or collected in a block above the result data (csv). | The result data has the same order as the plate and barcode info. By knowing that the result data is at the e.g. second position, you know that this result data belongs to the second plate and barcode.   |
| The plastic cap of the magazine sensors at the back of the magazine platform may break off if the magazines are used incorrectly.  | Always lower the magazines on the platform first and then carefully slide them horizontally backwards. Do not try to load the magazines from top to bottom. Furthermore, safety metal pins next to the sensor are located on the magazine platform to avoid damage to the sensors. The sensors are also fully functional without plastic cap.   |
| After long use, small amounts of abrasive plate material, dust or dirt may collect on the pointed pins on the inside of the gripper.   | The gripper arm and gripper must be kept clean and dust free to avoid contamination of probes. Keep these parts clean by using canned air intended for optics cleaning, very clean compressed air or clean the area carefully with a brush. Do not touch the pins and be very careful when working near the gripper, since the pointed pins on the inside of the gripper pose a risk of scratching. Please also read the user manual before performing any maintenance tasks. |

| Known Issue   | Workaround  |
|---|---|
| If the environment is too dark, the barcode reader may not be able to read the barcode.                                   | Make sure that the ambient light is on if using barcode reading during stacker measurements.  |
| Exporting the results from a single plate right after a stacker measurement is only possible for the last measured plate. | Go to the <b>RESULTS</b> page, select the measurement and click <b>Export</b> . From there you can export the results from any single plate or from all plates. |

#### 4.11 (Re-)Calculations

| Known Issue  | Workaround |
|--|------------|
| The fitting parameters are not shown for cubic spline in standard curve calculation in the UI. | n.a.       |



## 5 Software Update

### Important before updating the software

- Check the software version that is currently installed on your instrument (see the bottom of the browser window). If it is lower than **version 5.0.1**, please reach out to your local Revvity service engineer for support in upgrading the software to 5.1.
- The user interface is optimized for Google Chrome™ and Microsoft Edge™ (Chromium). Microsoft Internet Explorer™ and Microsoft Edge™ (Legacy) are explicitly no longer supported. Please make sure you are using the latest version of your browser.
- The **Automatic Export Settings** are reset during a software update. Therefore, make a note of the settings before updating the software and restore the settings manually afterwards.
- The **admin password** will be reset during the update (not in Enhanced Security mode). Please set the desired password again after the update.

1. Delete any no longer required data to free up internal memory. It is important to do this **before** installing the update. See also section “Free Up Internal Memory”, page 1. See also VICTOR Nivo Software Manual, section “Freeing up internal memory”.

2. Download and unzip the setup package **SetupVICTORNivo\_5.1.0.X.zip**.

3. Copy the setup file **SetupVICTORNivo\_5.1.0.X.exe** to the PC connected to the VICTOR Nivo.

4. Make sure that the VICTOR Nivo is switched on and connected to the PC (via LAN or WiFi).

5. Close the user interface (web browser).

6. Double-click the setup file and follow the VICTOR Nivo Setup Wizard.

The update process is started.

**Do not switch off or disconnect the VICTOR Nivo while the update is running.**

Wait until the update is complete before proceeding.

7. Clear the cache of your web browser:

- a. While in your browser, press **Ctrl + Shift + Delete** simultaneously to open the appropriate window.
- b. Select the check boxes **Cookies and other site data** and **Cached images and files** and click the **Clear Data** button.

8. Restart the VICTOR Nivo:

- a. Press and hold down the power button on the reader for at least 3 seconds until the light of the button goes out.
- b. Unplug the power cord until the blue LED light of the power supply turns off.
- c. Reconnect the power supply and switch on the reader.

9. Return to the PC and complete the VICTOR Nivo Setup Wizard.

- a. Confirm that you have cleared the browser cache and restarted the reader (select check boxes).
- b. Complete and finish the wizard.

10. Open the VICTOR Nivo software in your browser and sign in. In order to ensure data security the VICTOR Nivo has to be initialized after each software update. This is especially important if several updates are performed in succession (e.g. from 2.5 to the latest version).

**Notice**

Please check regularly for software updates on our website:

<https://www.revivity.com/multimode-plate-reader-software-downloads>