

ZS XPLOER SOFTWARE: v2.3 (PSS0048-13) SOFTWARE UPDATE NOTIFICATION

Introduction

This document details the release of **Zetasizer XPLOER software version 2.3 (PSS0048-13)** for the Zetasizer Advance range of instruments. Here forward referred to as ZS XPLOER.

This release supports the Zetasizer Advance range of instruments only (including Pro (ZSU5800) and Ultra (ZSU5700) models).

ZS XPLOER is not compatible with the Zetasizer Nano series of instruments (Nano S90, Nano ZS90, Nano S, Nano ZS, Nano ZSE, Nano ZSP, Zetasizer μ V and Zetasizer APS) nor can it read the *.dts file format from the Classic Zetasizer series software 8.01 or earlier. However, it is possible to have both the ZS XPLOER software and the Zetasizer software 7.02 or above installed on the same computer.

ZS Xplorer 2.2 offers additional renamable custom workspaces whilst also making it clearer which workspaces are default and a new manual pH measurement panel is available in the titrator tools page. The instrument communication has also been split out into a separate service which improves software stability. See the “New Features” section for more information.

For the latest version of this document please check our website at <https://www.malvernpanalytical.com/en/support/product-support/software/zetasizer-ultra-pro-zs-xplorer-software-update-v2-30>.

Installation

It is assumed that you have authority to install or update software within your company's SOPs. If you do not have this authority, please consult with your I.T. support department before proceeding.

It is assumed that you have Administrator rights for the computer. This is required by the installation process. For ZS XPLOER software, Windows 10 and later will not allow an installation if the user does not have administrator access. This is in line with Microsoft's Logo policy and is standard practice.



IMPORTANT:

Only Windows 10 64-bit Operating System is supported

Microsoft user accounts are not supported

Before installation of the software, the instrument should be switched off and disconnected.

Regulated Environment customers upgrading to ZS Xplorer V2.3 will need to also upgrade to OmniTrail and OmniAccess V1.4.

In some cases, the installer will require the user to restart the PC, in this case it is required that the Administrator logs in to the PC for the first time, following the restart. Failure to do so may cause the software to crash. In this case reinstalling the software on the Administrator account will fix the issue.

Recommended System Requirements

The recommended computer system requirements for running this software are highlighted in table 1 below.

Table 1 Recommended system requirements for ZS Xplorer software.

Feature	Specification
Processor Type	4th Gen+ Intel Core i7 Processor (or equivalent)
Memory	16 GB RAM
Hard Disk Storage	1 TB free hard disk space,
Display Resolution	1920 x 1080 full HD screen resolution
Connectivity	2 free USB2.0 or higher ports
Operating System *	Windows 10 64 bit. * The ZS XPLORER software is not compatible with 32-bit Operating Systems

Supported operating systems

ZS XPLORER is compatible with Windows 10 (tested on Windows 10 1909 version). Only 64-bit Professional versions are supported.

Supported Languages

- English

Installation Instructions

Installation process

The software suite is available as a web download. The downloaded extractor contains the ZS XPLORER Setup and License Manager Setup files. License Manager is a prerequisite of ZS XPLORER, even if you are not using OMNITRUST regulated environment software suite.

When the extractor is run (see Figure 1) it will extract the required installers to a folder named 'MPIInstallers' in the location the extractor is run, and the folder and a readme with important information will be opened (see Figure 2).

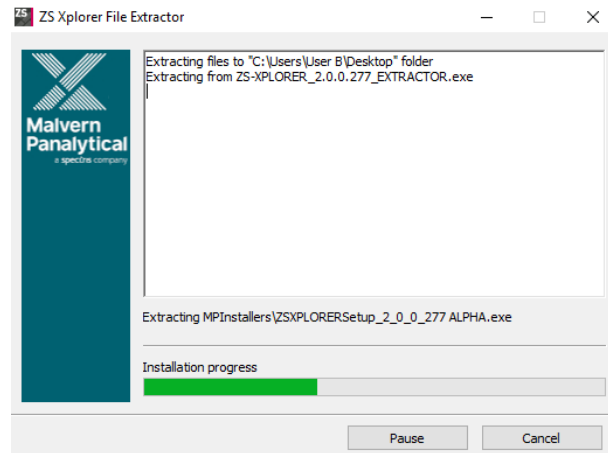


Figure 1 ZS Xplorer Self-Extracting Installation files

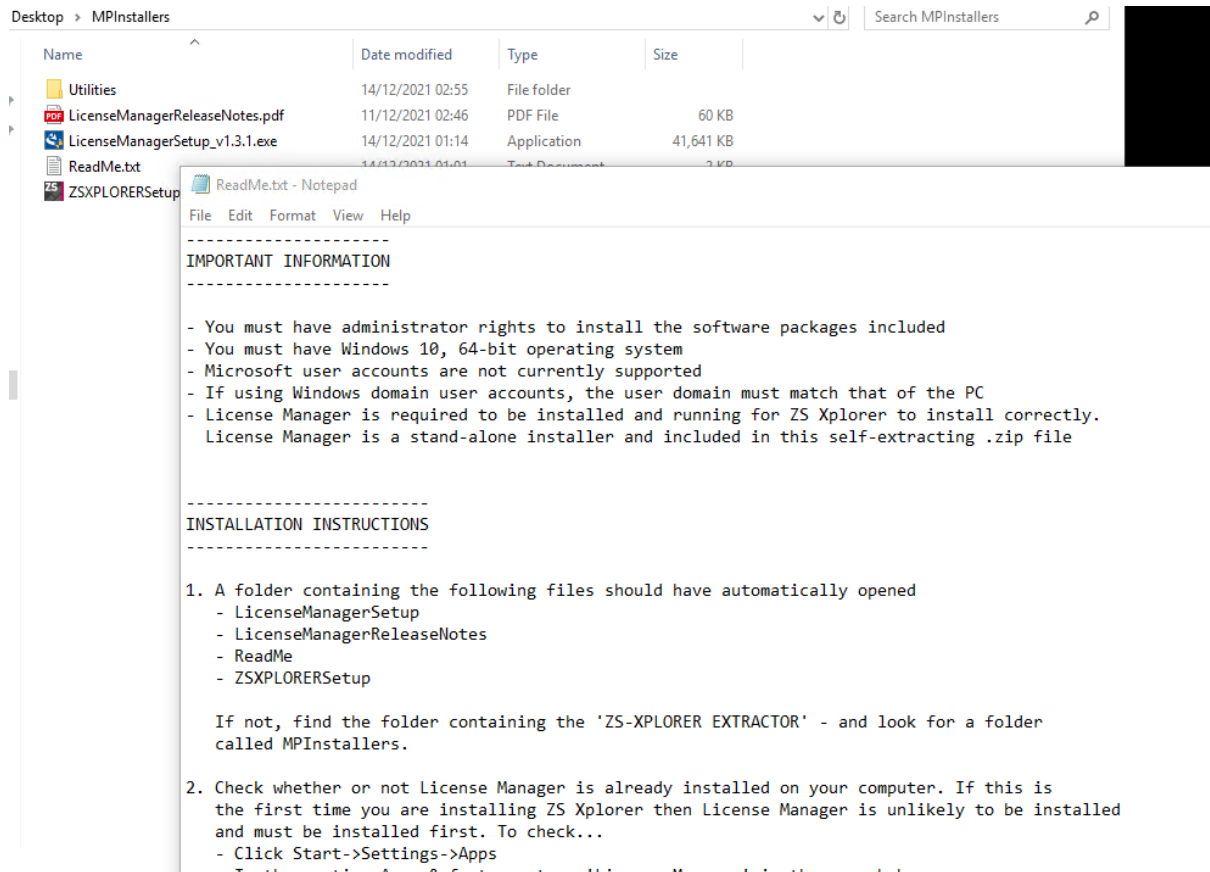


Figure 2 Extracted installation files and ReadMe file.

License manager Installation

The Malvern Panalytical license manager component is a requirement for the ZS XPLORER software to run correctly and must be installed prior to the installation of ZS XPLORER. Please note that users upgrading from 2.00 or later are not

required to re-install License Manager. Those upgrading from ZS Xplorer vers.1.50 or earlier must install License manager.

ZS XPLOER Installation

During the installation process, you will be prompted with the following message (Figure).

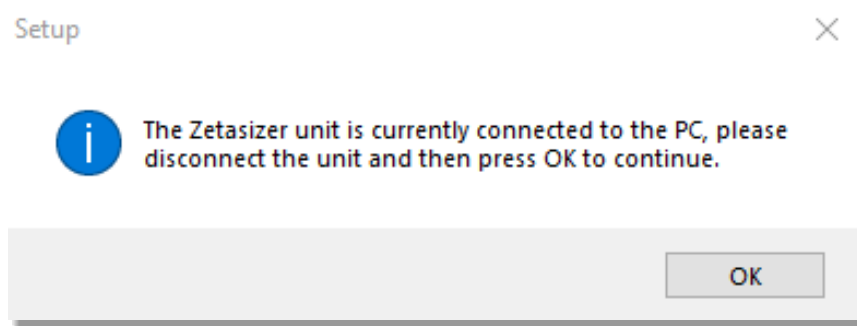


Figure 3 "Disconnect Zetasizer Unit" message



Note:

You must unplug the USB cable from the computer or Zetasizer and then press OK. If you press the OK button without performing these previous steps, then the installation will not continue.

Microsoft .Net Framework and Microsoft C++ Redistributable

The Microsoft .Net Framework 4 (version 4.6.2 or greater) and the Microsoft Visual C++ Redistributable must be installed for the ZS XPLOER software to run. This is installed during the ZS XPLOER software installation progress and under certain circumstances can involve the computer needing to restart. Completion of this stage of the installation can take a few minutes and can take over 10 minutes. Whilst these components are being installed a window such as below will be displayed, figure 4.

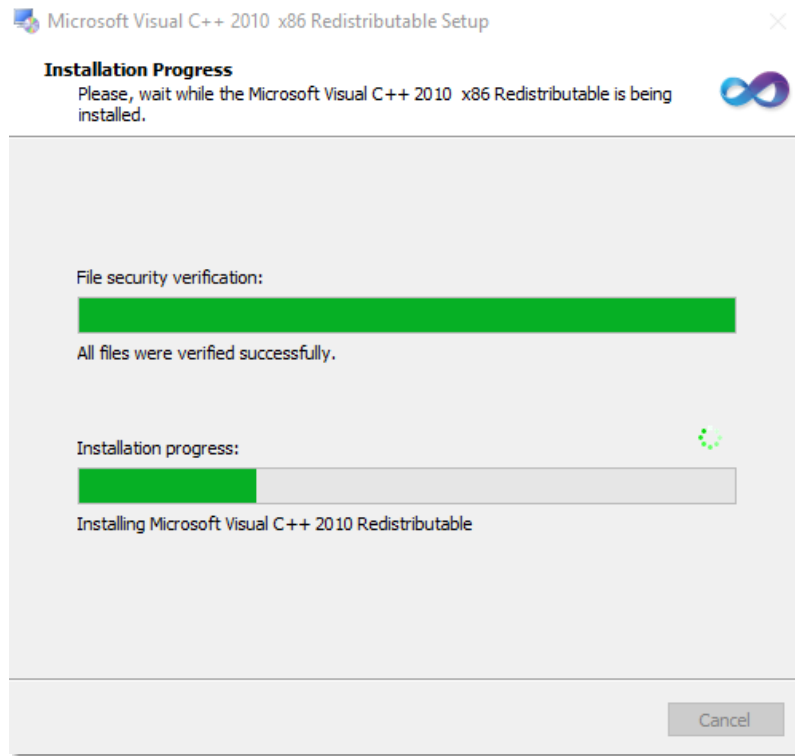


Figure 4 Microsoft Visual C++ Redistributable Installation Window

USB Driver Installation

During the installation of the USB drivers you may be prompted several times with a message as shown in *Figure 5*.

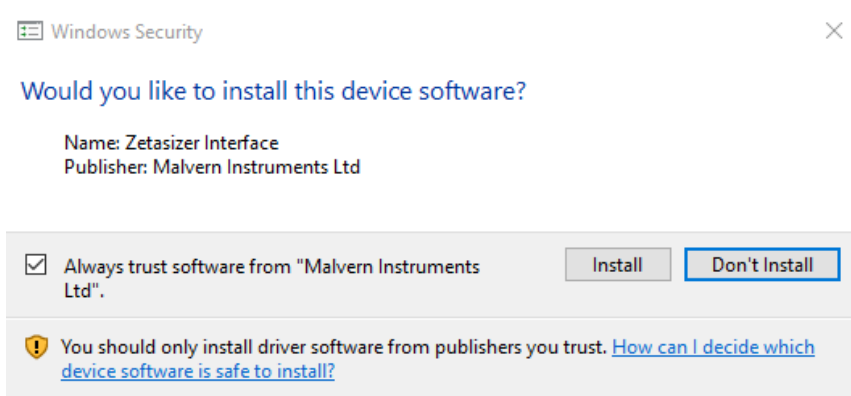


Figure 5 Install USB window

This warning can safely be ignored as the software installation has been fully tested on Windows 10. Press **Install** to continue installation of the USB drivers.

Connecting the Zetasizer to the computer

When the software has been installed and the instrument has been connected via the USB port, and switched on, the ZS XPLOER software may need to upgrade the firmware on the Zetasizer, in which case the status icon on the lower right of the software screen will indicate such (see *Figure 6*).



Figure 6 instrument firmware updating status icon

Users should not disconnect or power off their PC or instrument during normal firmware updating. In some rare occasions the firmware may fail to update correctly, in such circumstances a notification will be displayed indicating the issue – please restart the instrument and software to reset and repeat the firmware upgrade process.

With the correct firmware version installed the Zetasizer will connect to the instrument. A successful connection is indicated with an icon in the corner of the software (see *Figure 7*) showing green and with a tick.



Figure 7 Instrument connected icon

Uninstall Procedure

The software can be uninstalled using the standard Apps & Features panel in Windows Settings.

Running the installer with the ZS XPLOER software running

If the installer is run whilst the software is running, the window in *Figure 8* will display.

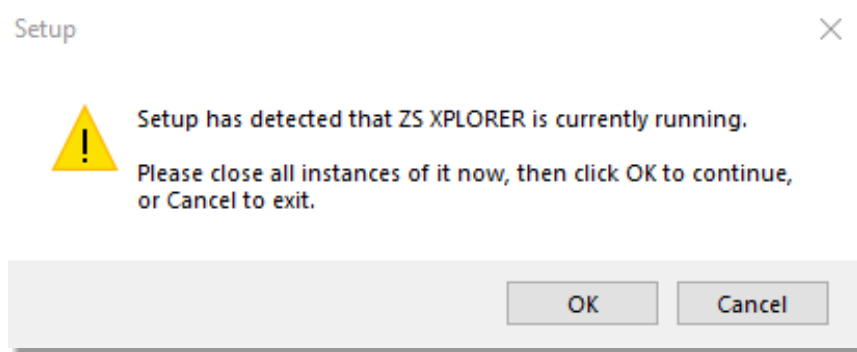


Figure 8 Running installer with software open

Connecting the MPT-3 Titrator to the PC

Ensure the computer is turned on and connected to a Zetasizer Advance system.

Connect the MPT-3 Autotitrator to the computer using the USB cable provided, ensuring that it is turned on. Click on the settings button in the top left corner of the ZS XPLOER software. See *Figure 9*.

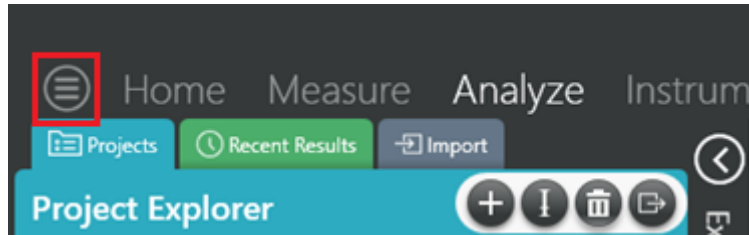


Figure 9 Software options

Click Options and navigate to the Titrator tab as seen in *Figure 10*.



Options

Folders **Titrator**

Connection settings

The titrator connection settings allow configuration of how the titrator connection is detected by the software.

Figure 10 Titrator options page

On the COM Port drop down menu, select USB Serial Port (COMXX) as shown in figure 11. (Note that the COM port number and description may vary). If the titrator has been detected on this port, then a green tick will be visible See *Figure 11*.

Folders **Titrator***

Connection settings

The titrator connection settings allow configuration of how the titrator connection is detected by the software.


COM Port: USB Serial Port (COM7)  **Titrator detected.**

Figure 11 Titrator successfully detected

If the titrator is not detected on the selected COM port, then a red exclamation icon will be displayed with a message. See *Figure 12*.

Connection settings

The titrator connection settings allow configuration of how the titrator connection is detected by the software.


COM Port: 

Figure 12 Unable to detect titrator

Once the titrator has been detected, click to save the settings.

Once the settings are saved an icon and a saved message will appear next to the saved COM port as shown in *Figure 13*.

Folders **Titrator**

Connection settings

The titrator connection settings allow configuration of how the titrator connection is detected by the software.


COM Port: 

Figure 13 COM port saved

The titrator icon at the bottom right of the screen should turn green indicating that the titrator is successfully connected as shown in *Figure 14*.

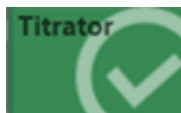


Figure 14 Titrator successfully connected

New Features

Count rate meter

A count rate meter has been added that allows the measuring of mean count rate and standard deviation as a stand-alone measurement without having to run a size measurement. This can be useful for measurement of the buffer count rate that is a required parameter for the measurement of MADLS Particle Concentration.

The count rate meter can be accessed from the button on the lower status bar (figure 15) and will open the count rate panel (figure 16). The user must select the cell type that is being used and the attenuator position. By default the attenuator is set at the highest attenuation factor (position 1) – this is in order to ensure the detector is not saturated. If low or near zero count rates are being shown move to higher attenuation positions (lower attenuation factors) to increase the count rate. We recommend keeping below 2000 kcps. Note that attenuator position 11 is unattenuated and typically would be used for obtaining the scattering count rate from water clear, clean, buffers.

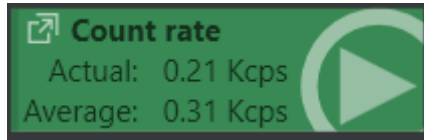


Figure 15 - button to access the count rate meter

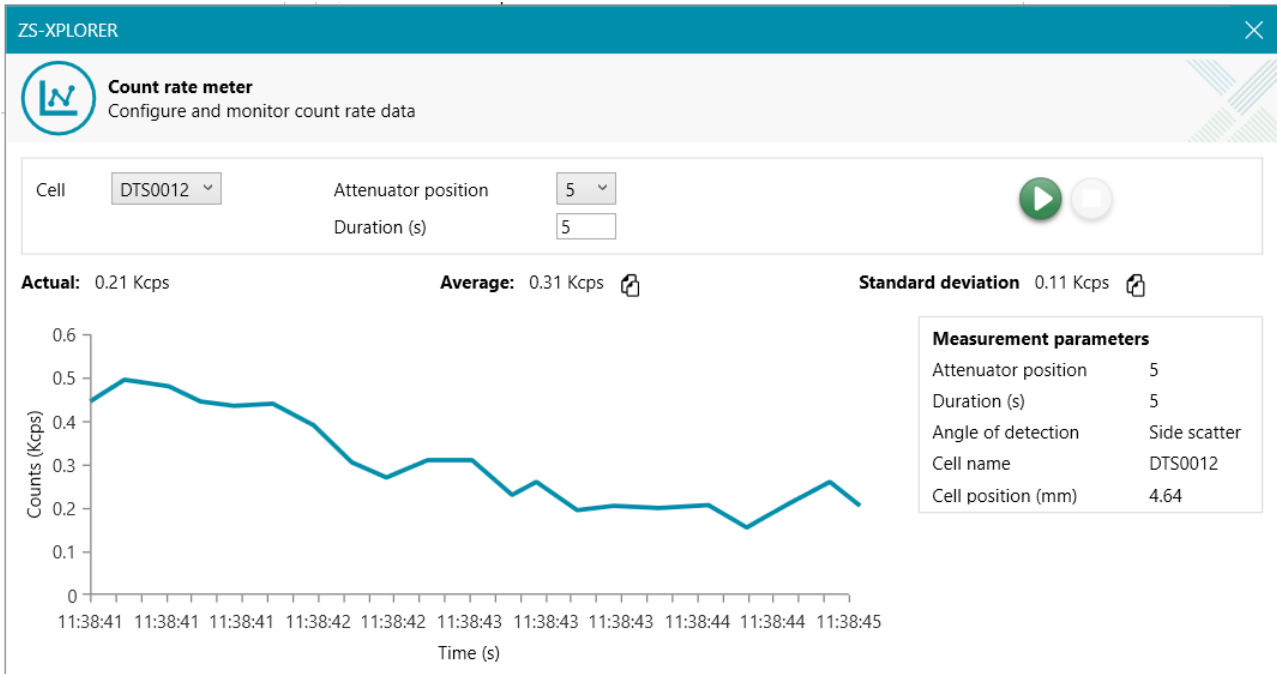


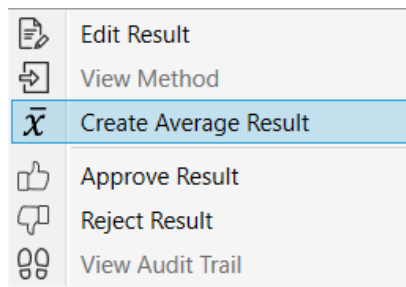
Figure 16 - count rate meter control panel

MADLS, Particle Concentration and Zeta averaging

Support has been added for manual averaging of MADLS, Particle Concentration and Zeta results.

The regulated environment permission to create average size results has been made a general create average results permission to support this change.

As per size averaging, averages for these latest result types are created by averaging the underlying raw data and subsequently re-analyzing this averaged raw data. Results selected for averaging must be similar and logic is applied to ensure that only valid sets of data are averaged.



Project 4 ⚙️ 🗨️

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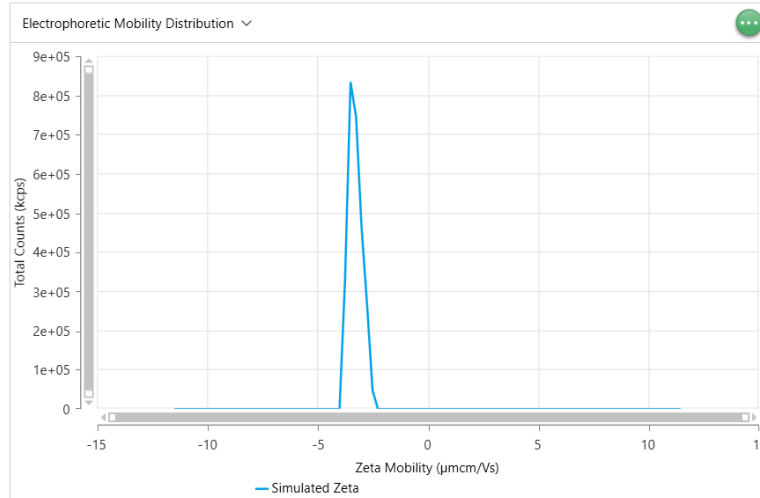
Drag a column header here Create Average Result by that column

	Q	Measurement Type	Result State	Sample Name	Record Create
+	1	Particle Concentration	Completed	polystyrene toluene	07/10/2021 1
+	2	Particle Concentration	Completed	polystyrene toluene	07/10/2021 1
	3	Particle Concentration	Completed	polystyrene toluene (Avg) 6	29/10/2021 1

Figure 17 Averaging of particle concentration records

Electrophoretic Mobility Chart and peak summary data

An electrophoretic mobility chart has been added to the software along with additional values for mobility peaks and mobility peak summary data. To see the new data populated on old results you will need to edit the result to kick off a reanalysis. Examples are shown in figure 18.



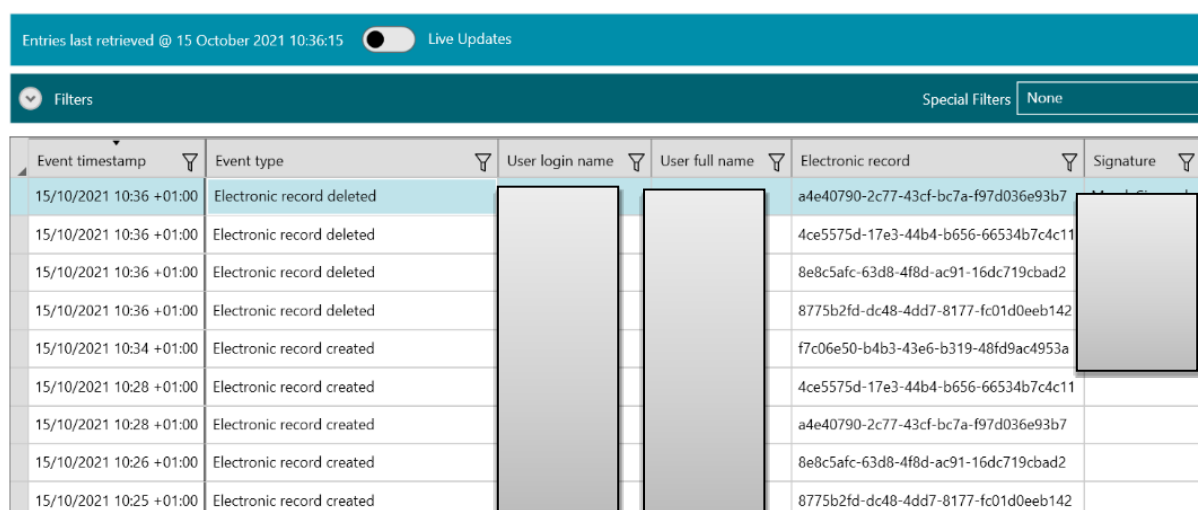
- Amplitudes
 - Conductivity (mS/cm)
 - Effective Voltage (V)
 - Measured Current (mA)
 - Measured Voltage (V)
 - Mobility (µmcm/Vs)
 - Mobility Deviation
 - Mobility Distribution Values (µmcm/Vs)
 - Mobility Peaks**
 - Phase Values (rad)
 - Quality Factor
 - SFR Spectral Quality Factor
 - Times
 - Total Count Rate
 - Voltage Values (V)
 - Wall Zeta Potential (mV)
 - White Mangelsdorf Conductivity Increment
 - White Mangelsdorf Diffusion Coefficient
 - White Mangelsdorf Mobility Values
 - White Mangelsdorf Particle Polarisability
 - White Mangelsdorf Peak Mean
 - White Mangelsdorf Surface Charge
 - White Mangelsdorf Zeta Values
 - Zeta Deviation (mV)
 - Zeta Peaks
 - Zeta Potential (mV)
 - Zeta Potential Distribution Intensities (kcps)
 - Zeta Potentials
 - Mobility Peak Summary Data**
 - Zeta Peak Summary Data
- Mobility Peak Summary Data
 - Mobility Peak 1 Area (%)
 - Mobility Peak 1 Mean (µmcm/Vs)
 - Mobility Peak 1 Mode (µmcm/Vs)
 - Mobility Peak 1 Width (µmcm/Vs)
 - Mobility Peak 2 Area (%)
 - Mobility Peak 2 Mean (µmcm/Vs)
 - Mobility Peak 2 Mode (µmcm/Vs)
 - Mobility Peak 2 Width (µmcm/Vs)
 - Mobility Peak 3 Area (%)
 - Mobility Peak 3 Mean (µmcm/Vs)
 - Mobility Peak 3 Mode (µmcm/Vs)
 - Mobility Peak 3 Width (µmcm/Vs)

Figure 18 Example of zeta mobility plot and associated zeta mobility parameters

Electronic Record Deleted event

When a project is deleted an Electronic Record Deleted event is now recorded in OmniTrail for each record within the project that has been deleted, figure 19. Please note we do not recommend deletion rights to be assigned to anyone but the most trusted roles within a regulated environment.

System Audit Trail Entries



Event timestamp	Event type	User login name	User full name	Electronic record	Signature
15/10/2021 10:36 +01:00	Electronic record deleted			a4e40790-2c77-43cf-bc7a-f97d036e93b7	
15/10/2021 10:36 +01:00	Electronic record deleted			4ce5575d-17e3-44b4-b656-66534b7c4c11	
15/10/2021 10:36 +01:00	Electronic record deleted			8e8c5afc-63d8-4f8d-ac91-16dc719cbad2	
15/10/2021 10:36 +01:00	Electronic record deleted			8775b2fd-dc48-4dd7-8177-fc01d0eeb142	
15/10/2021 10:34 +01:00	Electronic record created			f7c06e50-b4b3-43e6-b319-48fd9ac4953a	
15/10/2021 10:28 +01:00	Electronic record created			4ce5575d-17e3-44b4-b656-66534b7c4c11	
15/10/2021 10:28 +01:00	Electronic record created			a4e40790-2c77-43cf-bc7a-f97d036e93b7	
15/10/2021 10:26 +01:00	Electronic record created			8e8c5afc-63d8-4f8d-ac91-16dc719cbad2	
15/10/2021 10:25 +01:00	Electronic record created			8775b2fd-dc48-4dd7-8177-fc01d0eeb142	

Figure 18 example of system audit trail entries on project deletion

Zeta peak data corrected

An issue with the Zeta peak data has been corrected. Before the fix the last run of a Zeta measurement was always ignored. Now the last run is also included. In most cases the change in data should be minimal.

GAMP 5 Software categorization

In its standard mode of operation, the Zetasizer Xplorer software provides users with a series of standard interfaces and functions that enable the software to be configured to meet specific user business requirements. These interfaces include the ability to define Standard Operating Procedures (SOPs) for sample measurement and create report definitions using pre-defined functions. If users apply these functions, then the software can be considered to be a Category 4 product.

Security Advisories

The following section and table 2 details any security updates that have been addressed in this release, including fixes for identified vulnerabilities.



Note:

We always recommend updating to the latest software version which will provide you with new features, bugfixes and most importantly, security updates.



Note:

Other products may also be affected by any issue described here. We recommend you regularly check the Software Updates Notifications (SUNs) for all your Malvern Panalytical products, and register on our website to receive updates.

Table 2 Security updates

Reference	Description	Recommendation
HEN-1042	Version 2.00 and earlier of the ZS XPLORER software contains a vulnerability which could allow an attacker to craft malicious measurement (.zmes) and schedule (.zskd) files. Loading one of these malicious files could result in arbitrary code execution. Version 2.10 introduces a fix to completely mitigate this vulnerability.	Upgrade to version 2.10 or later of the software. Never open files from an untrusted source, even if they appear to be non-executable.
HEN-572	Version 1.50 and earlier of the ZS XPLORER software contains a vulnerability in the reports feature which could allow an attacker to craft a malicious report file. Loading a malicious report file could result in arbitrary code execution. Version 2.00 introduces a fix to completely mitigate this vulnerability.	Upgrade to version 2.00 or greater of the software. Never open files from an untrusted source, even if they appear to be non-executable.

Changes and fixed issues

The main changes and issues fixed in this release of the software are listed in table 3.

Table 3 changes and fixed issues in version 2.3 ZS Xplorer software

Issue key	Summary	Issue Type
HEN-1330	Unable to import zmes files	Bug
HEN-1428	Translate Project Name Header	Story
HEN-1369	Statistics widget needs to use string from resources	Story
HEN-990	Crash - Measure - Run a measurement to a project which includes the hash symbol in the name	Bug
HEN-642	Make splash screen moveable	Story
HEN-1208	Measure - Incorrect dispersant scattering mean count when edited particle concentration method step is selected	Bug
HEN-1492	Size measurements stop because of an error with low conc samples	Bug
HEN-1513	Update the regulated environment component in ZSX	Story

HEN-748	Post analysis averaging for MADLS	Story
HEN-751	Post analysis averaging for Particle Concentration	Story
HEN-1350	Add Zeta Mobility widget	Story
HEN-1475	Analyze - Empty project isn't removed when clicking delete project	Bug
HEN-747	Post analysis averaging for Zeta	Story
HEN-1474	Zeta mobility peak data is incorrectly assigned	Bug

Known Issues

The following software bugs have been discovered within the software and will be investigated as part of a future release. Please follow the suggested work-around where they are provided.

Table 4 Known issues in ZS Xplorer version 2.3.

Reference	Severity	Issue	Workaround
NA	Normal	Regulated Environment customers upgrading to ZS Xplorer V2.3 will need to also upgrade to OmniTrail and OmniAccess V1.4.	Install Omnitrail V1.4 and OmniAccess V1.4 when using ZS Xplorer V2.3 in a regulated environment.
BLE-3353	Normal	A client with ZS Xplorer V2.0 installed cannot sync entries to a central management server using V4.0 of the regulated environment (shipped with ZS Xplorer V2.2)	Install ZS Xplorer V2.1 or higher on client PC.
HEN-945	Normal	Edited records display the original record created date – this is a display issue and underlying data is correct	Changing projects or re-starting the software will cause the display to be refreshed and display correctly
HEN-386	Normal	Run button disabled when connecting an instrument during measurement creation	Disconnect and reconnect the instrument or add another measurement step
HEN-377	Normal	Software locks-up if you cancel a measurement during the enable for size step	None- force close the application

Error Reporting

Should persistent problems occur contact the local Malvern Panalytical Helpdesk. To speed up response time include all the following.

A full-screen screen shot of any error message and everything behind it.

Full description of what was happening at time of issue and ideally leading up to it.

Instrument serial number (e.g. MAL1060289), instrument serial number can be found inside the sample cell basin and on the instrument back panel.

The software version, which can be found as described in a section below.

The log information described below.

And, if relevant and possible, export the relevant measurement data as described in the last section below.

Extracting log information

If an error occurs, further information about the error can be found from the Windows Event Viewer.

Click the Windows Start Button.

Type Event Viewer and press enter.

Navigate to Applications and Service Logs/Zetasizer All Events.

The window will display the most recent errors that have occurred with the ZS XPLOER software.

Error information can be selected and then exported with the Save selected Events button allowing this information to be passed to the Malvern Panalytical team for troubleshooting.

The contents of the measurement log window are logged to file at *Documents\Malvern Instruments\ZS XPLOER\logs*

Software version

The Software Version is vital to determining the cause of problems. To retrieve the version number:

Click on **Application Menu** button (*Figure 19*)

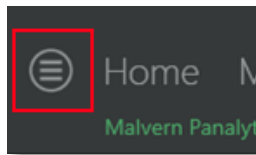


Figure 19 Application Menu button

Click on the **About** button

Read version number (Figure 20)

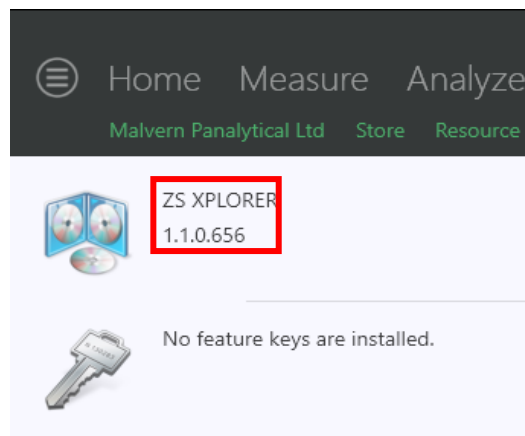


Figure 20 Software Version Number

Extracting measurement data to send

In situations where the errors appear to be related to a specific record or records, the affected records can be exported from the software by selecting them and pressing the export icon, *see Figure 21*, and send the *.zmes file to the Malvern Panalytical team for investigation.

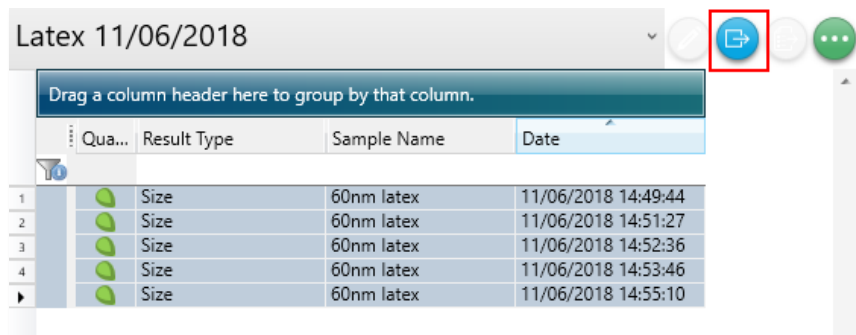


Figure 21 Exporting selected record

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