

SOFTWARE UPDATE NOTIFICATION (SUN) – NANOSIGHT NTA 3.0 SOFTWARE



PARTICLE SIZE



ZETA POTENTIAL

Introduction

This document details the release of the NanoSight NTA software version 3.0. It covers the upgrade and installation instructions, as well as additions and improvements in this release of the software.

Overview of new features

Below is a summary of the new improvement and features of NTA 3.0 compared to previous software version. More details on the new features are given on page 5.

Improvements and Features

- Redesigned interface, focusing around repeat measurements
- Improved particle size distribution algorithm
- Automatic, integrated hardware detection and communication
- Increased compatibility with networked computers
- Easy setup with new installer package

Additional features

- New file system with less files per experiment
- Improved particle detection and tracking
- Improved vibration correction
- Settings stored in the registry rather than .ini file

Recommended System Requirements

Any computer currently running NTA 2.3 will be able to run NTA 3.0. 1GB of free space is required and a 1680 x 1050 or higher screen resolution is strongly recommended. Full computer specifications are available in a separate document.

Supported Languages

- English

Software Installation Procedure

This section will explain how to update your NTA 2.3 software to the latest version. If you are installing the software on a computer with no previous version of NTA installed, separate installation instructions are available.

If you are running a version of NTA earlier than 2.3, follow the instructions for upgrading from NTA 2.3. If you do encounter issues with camera drivers or software activation, please contact helpdesk for advice.

You should also contact the helpdesk for advice if you match any of the following criteria:

- You are running NTA 1.5 or earlier
- You have multiple laser modules

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.

It is not necessary to remove the previous version of software to install and run this software release.

Required or Supplementary Files

The software, manuals and related documentation are available from Malvern or your local distributor. Please contact helpdesk@malvern.com for information on how to obtain the software.

Technical Support

For questions regarding the operation of the software consult the latest software quick start guide (included with software).

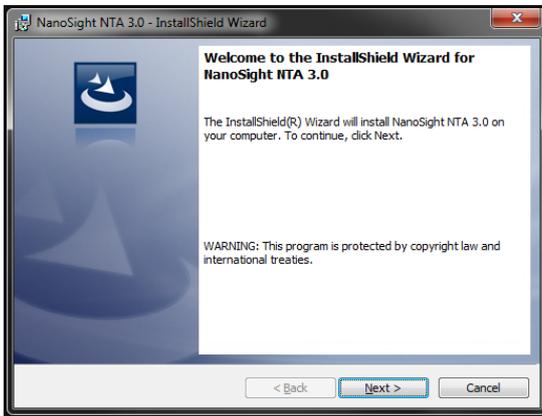
If you have any questions or problems with this installation, or if the software does not work as expected, please contact in the first instance your local distributor.

As a backup you may contact helpdesk@malvern.com or phone on +44 (0) 1684 892456 during UK office hours (9am to 5pm).

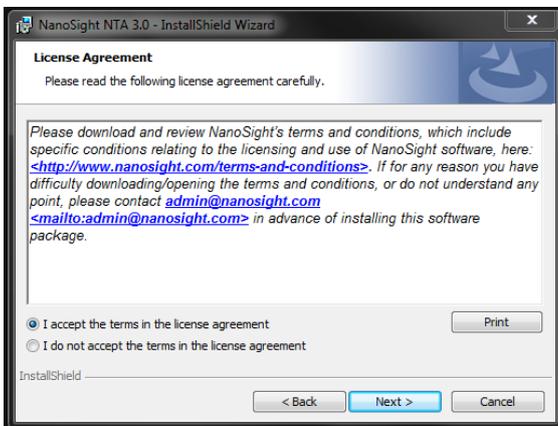
Installation Instructions

In order to install the software you will need the installer file called 'NanoSight NTA 3.0 Installer.exe'. NTA 2.3 software will not need to be removed during this process with both software versions able to run on the same computer. Ensure that sufficient space is available on the computer (approximately 1GB of space is recommended for installation).

If the installer is contained in a zipped file, extract to a convenient location and double click '**NanoSight NTA 3.0 Installer.exe**' to start. The installation Wizard will then run through initial installation of NTA 3.0 presenting the dialog window below.

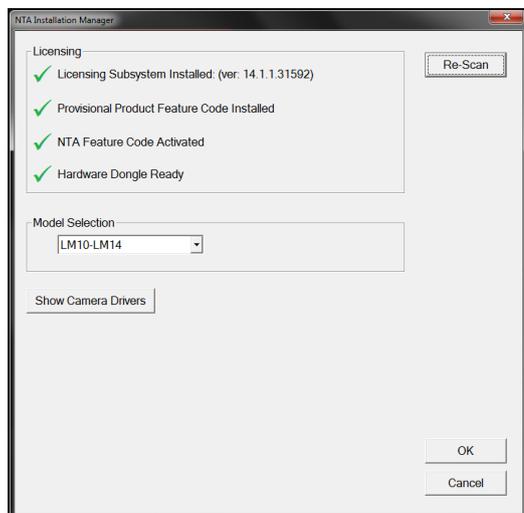


1. Select '**Next**', and accept the terms of the license agreement



2. Selecting '**Next**' in this window will install NTA 3.0. Administration rights may be required.
3. After installation is complete select '**Finish**'

The NTA 3.0 software has now been installed on the computer. This will open the NTA Installation Manager to check further details of your individual system.



The NTA Installation Manager controls security, model selection and camera drivers. When upgrading NTA 2.3 to NTA 3.0 all license features should show a green tick with the correct instrument model selected.

Some users may see a message instructing you to uninstall and reinstall the Scientific CMOS drivers. If so, click 'Show Camera Drivers' and click 'Install/Remove' next to Scientific CMOS, follow instructions on screen, restart the computer, and then open the installation manager from the start menu and install the Scientific CMOS drivers again.

Selecting '**OK**' will close the dialog box and complete the installation of NTA 3.0.

Uninstall Procedure

The software can be uninstalled using the standard Add/Remove feature in the Windows Control Panel.

New Features

Redesigned interface

NTA 3.0 has been rebuilt with a new interface focussing around taking full measurements using repeat captures. The standard method of measurement is via the SOP tab which builds up a script to control both capture and analysis on a chosen number of video files.

Video files are no longer loaded in individually; they are loaded in as part of an experiment (.nano file) which contains multiple video files.

The default layout for graph data display is similar to NTA 2.3, but is more flexible. Graphs can be dragged from the small 'viewport buttons' to the chosen graph region.

Graph options, such as; changing x-axis, weighting, displaying user-lines and exporting bitmaps are accessed by right-click on the chosen graph.

Hardware controls (NS500 pumps and stage, NS300 focus, syringe pump, temperature control etc...) are accessed via the Hardware tab rather than in floating windows.

Improved particle size distribution algorithm

NTA 3.0 employs a high resolution FTLA (Finite Track Length Adjustment) algorithm as default. This is similar to the algorithm used and tested in NTA2.3.5 with some improvements.

The new algorithm offers the following key improvements:

1. More accurate distribution profiles (i.e. width/SD of the distribution) on monodisperse samples
2. Higher resolution (i.e. separate bimodals of 1:1.33, previously ~1:2 size ratio)

As the algorithm is higher resolution, it needs more data to give repeatable results (consider as an extreme example a technique that is only required to find an average size, i.e. very low resolution. This will clearly require less data than trying to resolve e.g. 100 peaks).

Therefore it is recommended that multiple measurements, ideally of different parts of the sample be taken. As always, the more polydispersed and the lower the concentration the longer and greater sampling is required.

Automatic, integrated hardware detection and communication

In NTA 2.3 (and earlier), hardware communication was done via separate comms programs and required knowledge of the COM port number. This is no longer necessary in NTA 3.0 and the software will automatically connect to the appropriate hardware on start up. The status panel will show which connections have been attempted and whether they have connected successfully or failed.

Easy setup with new installer package

The NTA 3.0 installer contains an 'Installation Manager' intended to give a smoother installation of the software. The Installation Manager will walk you through the steps required to activate the software (if required) and give you options for installing camera drivers.

When upgrading from NTA 2.3, camera driver upgrade will not usually be necessary, unless indicated during by the Installation Manager.

If upgrading from an earlier build of NTA 3.0, the installer will now do a standard upgrade, rather than requiring that the earlier build is first removed from the system.

Configuration settings

Instead of using a configuration file per user (e.g. nano.ini); in NTA 3.0 settings are saved to the registry. This means all users have access to the same calibration settings. Configuration settings can be accessed via the 'preferences menu' under 'configuration settings...' or via program files->NanoSight NTA 3.0->NTA Admin Tool (you must have administrator privileges to open this).

Additional notable changes

- Right-click and drag on the image on NS300 systems is now left click
- F12 export has been replaced with right-click (on any of the three graphs) menu export

Known Issues

When aborting a script during a CAPTURE command, there is a small chance that unexpected behavior could occur, for example:

- Additional script runs may not record videos
- Clicking 'Start Camera' may start video recording

If this happens, the software needs to be restarted.

Malvern Instruments Ltd

Enigma Business Park • Grovewood Road
Malvern • Worcestershire • UK • WR14 1XZ

Tel: +44 (0)1684 892456

Fax: +44 (0)1684 892789

Malvern Instruments Worldwide

Sales and service centers in over 50 countries
for details visit www.malvern.com/contact

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