



iControl LabMax™ 5.3

Release Notes

Dear Customer,

Thank you for purchasing iControl LabMax 5.3, the simply powerful software package for the METTLER TOLEDO Automated Lab Reactor LabMax. Everything you need to install and run iControl LabMax 5.3 is stored on the installation media (DVD-ROM or downloaded zip file).

Contents of the Installation Media

- iControl LabMax 5.3 Software Installer (AutoRun.exe)
- iControl LabMax 5.3 Release Notes (this file)
- iControl LabMax 5.3 Quick Start Guide
- iControl LabMax 5.3 Installation Guide for Administrators
- iControl Data Conversion Utility for WinRC experiments
- iControl Mixing Guidelines
- iC Data Share Microsoft® Excel Add-in
- UCB Firmware 3.4.2 for UCB

Installation Guide and System Requirements

Please install iControl LabMax 5.3 according to the Quick Start Guide which can be found on the installation media. This also describes the minimum PC specifications needed to install and run iControl LabMax 5.3.

Tutorial Videos and Help File

We highly recommend watching the Tutorial Videos accessible from the iControl LabMax 5.3 Start Page. These brief videos provide an excellent overview of the software and allow new users to familiarize themselves with iControl in minutes. For more in depth help, a comprehensive Help File is available. To access the context-sensitive Help from a specific place in the software, click in the software window and then press F1 on the keyboard.

Customer Support

If you have any questions or encounter any issues with iControl LabMax 5.3, please contact your local Account Manager or Service Engineer, or contact us at:

Support.RXE@mt.com for General Support on Reaction Engineering

iC@mt.com for Software Support

METTLER

TOLEDO

Feature Comparison Table

Key features of iControl LabMax 5.3 compared with earlier versions of iControl and WinRC:

| Feature | WinRC 7.5/7.6 | iControl LabMax 4.0 | iControl LabMax 5.0 | iControl LabMax 5.3 |
|---|------------------|---------------------------|---------------------------|---------------------------|
| Easy Data Collection and Instrument Control | | | | |
| Create your recipe automatically | X | ✓ | ✓ | ✓ |
| One click on the reactor to change any setpoint | X | ✓ | ✓ | ✓ |
| iC-iControl: Automatically synchronized reactor data, ReactIR™ data, Raman data, FBRM® data in one experiment, drag and drop of trends | X | ✓ | ✓ | ✓ |
| Add Equipment during experiment (with UCB) | X | ✓ | ✓ | ✓ |
| Chemistry Table for easy illustration of chemical reaction and chemical amounts in design and analyze mode of experiments | X | X | ✓ | ✓ |
| Various optimizations for User Defined Trends (UDT): - New math functions → First derivative, averaging, logarithms, n th root - Option to switch off unit check | X | X | ✓ | ✓ |
| Global settings for trends and y-axis. Allows setting defaults for trend view such as displayed trends, color of trends etc. | X | X | ✓ | ✓ |
| Temperature control parameter (P&I) is visible in the start operation and the reactor tooltip. | X | X | ✓ | ✓ |
| Change RD10 dosing rate during a running dosing operation | X | X | ✓ | ✓ |
| New 'Setpoint by expression mode' for UCB dosing allows dosing profiles that follow an IR/FBRM signal | X | X | ✓ | ✓ |
| Various extensions for manual dosing such as starting /stopping the operation without user interaction. | X | X | ✓ | ✓ |
| Audible alert for operator message | ✓ | X | ✓ | ✓ |
| New thermostat mode: Hold actual value (T_r or T_j) | X | X | ✓ | ✓ |
| New 'Setpoint by expression' mode for UCB PID controller | X | X | X | ✓ |

| Intuitive Data Analysis and Visualization | | | | |
|---|---|---|----|----|
| Start Page: One click access to experiments, help file, all hardware manuals, application notes, | X | ✓ | ✓ | ✓ |
| Compare trends of different experiments in one graph | X | ✓ | ✓ | ✓ |
| Mixing guidelines | X | ✓ | ✓ | ✓ |
| Chemical Database | X | ✓ | ✓+ | ✓+ |
| Various extensions for chemical database: <ul style="list-style-type: none"> grouping of chemicals new "Comments" field More straight-forward import/export Chemical database shared between all iControl™ versions and iC Kinetics™ on the same PC | X | X | ✓ | ✓ |
| Linked View of Procedure, Trends, Timeline, and Events | X | ✓ | ✓ | ✓ |
| 'Save as' menu item added allowing to store a copy of the current experiment | X | X | X | ✓ |
| Customize tab locations allowing users to see up to 3 different views on one screen. | X | X | X | ✓ |
| Short and easy to understand Tutorial Videos explaining how to use advanced features of iControl | X | X | X | ✓ |
| Tr, Tj, R, Vr and Mr values for every executed operation or added annotation available | X | X | X | ✓ |
| Quick Reporting and Data Exchange | | | | |
| One-click Reporting of Results | X | ✓ | ✓ | ✓+ |
| Easy and flexible WYSIWYG Report Designer including export to Microsoft® Word® | X | X | X | ✓ |
| Multiple Trend Snapshots in Report | X | X | X | ✓ |
| Drag and Drop trends from and to Microsoft® Excel® into iControl LabMax | X | ✓ | ✓ | ✓ |
| Print feature added to more screens to allow printing of individual screen views into an ELNB | X | X | ✓ | ✓ |
| Sensor history report contains adjustment values of all available sensors (Thermostat, RD10, UCB) | X | X | ✓ | ✓ |
| Integration with iC Data Share™ for real-time sharing of trends with Microsoft® Excel® and 3 rd party applications | X | X | X | ✓ |
| Support for iC Data Center to automatically capture, prepare and share experiments | X | X | X | ✓ |

| Compatibility | | | | |
|--|---|---|---|---|
| Convertibility of WinRC data into iControl (trends and eval) | – | ✓ | ✓ | ✓ |
| Microsoft® Windows® XP compatibility | ✓ | ✓ | ✓ | ✗ |
| Microsoft® Windows® Vista compatibility | ✗ | ✓ | ✓ | ✗ |
| Microsoft® Windows® 7 compatibility | ✗ | ✗ | ✓ | ✓ |
| Microsoft® Windows® 8 compatibility | ✗ | ✗ | ✗ | ✓ |
| 64bit Support for Office version | ✗ | ✗ | ✓ | ✓ |
| 64bit Support for Office and Instrument version | ✗ | ✗ | ✗ | ✓ |
| Connectivity to iC 4.0 applications or higher | ✗ | ✓ | ✓ | ✓ |

✓ = Supported feature

✓+ = Supported feature with enhancements

✗ = Not supported

These release notes summarize incremental changes in iControl LabMax.

Enhancements for Version 5.3

Intuitive Data Analysis and Visualization

'Save as' Menu Item Added

Under the 'File' menu, a new item 'Save as' has been added allowing the user to store a copy of the current experiment, including all of its data, at any time.

Tr, Tj, R, Vr and Mr Values for Every Operation and Annotation Available

In the recipe contained in the new report designer, you may show Tr, Tj, R, Vr or Mr values for every operation or annotation. Use the 'Select Columns' icon on the Recipe item to choose which columns to display.

Moving Tabs into Different Screen Areas

In previous versions of iControl, the tabs available for each viewer pane were fixed. For example, it was not possible to see the 'Trends' at the top and the 'Procedure' at the bottom. iControl 5.3 gives you unlimited freedom to move tabs into different screen areas and customize the screen as you prefer it. Simply grab the tab and drag it to the new pane that you wish it to be displayed in. The system will remember the tab locations for each experiment mode (Design, Run, Analyze).

Quick Reporting and Data Exchange

Report Designer Available as Part of Experiment

iControl 5.3 features an easy to use WYSIWYG (what you see is what you get) Report Designer allowing users to create experiment reports that fit company's standards. A new 'Report' tab is included as part of every iControl 5.3 experiment which by default includes all the significant data from an experiment. The user can easily customize this report from within iControl by simply dragging & dropping items such as Trend Graphs or the Experiment Recipe. Users can also add experiment specific text or images from other sources to the report before, during, or after the experiment completes. The resulting report can then be exported to Microsoft® Word® so it can be easily shared with others.

Support for iC Data Center

This version of iControl LabMax supports iC Data Center 5.2. With iC Data Center, all data generated on any supported instrument or software (EasyMax, OptiMax, iC IR, iC FBRM or iControl) is automatically captured and stored in a central file share. A Microsoft® Word® report and Excel® file are then prepared automatically and stored in the same location. The data is shared by sending an email to the user containing a link to the files.

For more information about iC Data Center, visit www.mt.com/icdatacenter.

Integration with iC Data Share Microsoft® Excel® Add-in

The iC Data Share software application is an add-in module for Microsoft® Excel® that allows real-time sharing of data. iC Data Share can pull data from a running iC or iControl experiment into Microsoft® Excel® so that it can be used in calculations, and any resulting values can be sent back to iControl and trended. This provides an easy way to integrate live data from other third party applications that support Microsoft® Excel® interfaces.

The installer for the iC Data Share add-in is provided in a separate folder on the iControl 5.3 Installation CD or downloaded zip file. iC Data Share can be installed on the same computer as iControl 5.3 or on a different computer as long as it has network access to the iControl system.

Compatibility

Support of Windows 8 and 64-bit Operating Systems Added

iControl LabMax now fully supports Microsoft® Windows® 8/8.1 and all 64-bit versions of the Microsoft® Windows® 7 and 8 Operating Systems.

Known Issues

| No. | Issue | Description and Workaround |
|---------------|---|--|
| 1 TFS13502 | Pasting Images into Reports Report not stored when pasting image into text item | When pasting an image into a text item in the report designer, the report content is deleted when saving the file. This issue does not become immediately visible but next time the report gets opened. Workaround: Use the image item to add images to the report. |
| 2 TFS11876 | Chemistry Tab Notes not saved in run mode | Content entered into the notes area on the Chemistry tab are not saved and disappear when: <ul style="list-style-type: none"> Ending the experiment Changing the view layout, e.g. from single tab view to split tab view. This issue only happens during running experiments. Workaround: Use the text item on the Report tab to capture notes during a running experiment. |
| 3 TFS11913 | UCB Pressure Controller Mass value may not get reported | Under certain circumstances, the mass value (balance signal) of a UCB Pressure Controller may get reported as 0 instead of the actual value. |
| 4 FB576 | Firewall Warning Appears when starting iControl | On most PCs you will see a firewall warning that iControl is trying to access the network and that this is blocked and needs to be opened by a network administrator. iControl only uses network access for communicating to other iC applications if they are installed on a different PC. For more information on this, please refer to the iControl Installation Guide. If you are not planning to communicate with iC applications over the network, you can simply ignore this firewall warning. |

| No. | Issue | Description and Workaround |
|----------------|---|---|
| 5 FB20844 | Error Loading an Experiment Conflict due to different LabMax/ RD10 equipment database with different contents | If an experiment in design mode is copied to another computer that has a different equipment database with different content, error messages may appear during the loading of the experiment. These error messages occur because the equipment name and/or respective ID are different. Workaround: The experiment can still be loaded, however, the equipment which is missing will not be displayed correctly, and in order to run this experiment, you will need to configure the missing equipment in the experiment equipment setup again. |
| 6 TFS16509 | Manual Dosing Aborts unexpectedly in rare cases | In rare cases, manual dosings get aborted unexpectedly. Workaround: Add dosing manually in the Dosings tab. |
| 7 TFS16183 | 2 FBRM Probes in Experiment Files may get lost in iC Data Center | This version of iControl allows adding multiple probes of the same type, e.g. from 2 separate FBRM instruments, to the same experiment. If both iC FBRM instances are connected to iC Data Center, one file may get lost (overwritten) on the server because the 2 iC FBRM file names will be the same. Workaround: Disconnect one iC instance from iC Data Center or do not end all experiments at exactly the same time. |
| 10 TFS16877 | Crash of iControl Client Application closes unexpectedly after Out of Memory message | In rare cases, iControl suddenly slows down and finally crashes after an Out of Memory error message. Workaround: iControl consists of a User Interface (client) and a backend process (server). The client is only needed to submit changes to the recipe of a running experiment. The server is needed to run the actual experiment. In case of an Out of Memory error, only the client has crashed and can be restarted by simply double-clicking the iControl icon on the desktop or start menu. You can proceed with your experiment without losing any data. However, after a crash it is recommended to stop the experiment and restart iControl. |

| No. | Issue | Description and Workaround |
|----------------------------|---|--|
| 11 TFS17901 | Nested User Defined Trends No recalculation when reopening experiment | User Defined Trends with nested math operations are not calculated when reopening the experiment, e.g. $Average(f('trend'), 10)$ Workaround: Only use one complex math operation per user defined trend, e.g. for the example mentioned above, the following User Defined Trends would need to be created: <ul style="list-style-type: none"> Trend 1: $f('trend')$ Trend 2: $Average(f('trend 1'), 10)$ |
| 12 TFS17920 TFS17851 | Migrating Configuration Some items not migrated from version 4.0/5.0 to version 5.3 | The following equipment from older versions is not migrated when installing version 5.3: <ul style="list-style-type: none"> Custom insert types Equipment Setup Templates Workaround: Add the equipment manually. |
| 13 TFS17850 | Older iControl 4.0/5.0 Not Working After Installing 5.3 Corrupt 4.0/5.0 equipment database after installing 5.3 | After installing version 5.3, the equipment database in older versions needs to be manually upgraded if you still want to work with the older version. The EqDB update can be done as follows: <ul style="list-style-type: none"> Go to the Start Page of iControl 4.0/5.0 and click on "Manage Equipment" Then click on "Update Database" |
| 14 TFS18086 | Using Special Characters for Chemicals May lead to issues in the reporting tool | Using special characters for chemicals may lead to issues in the report (certain items not populated with content). Special characters are for example contained in the Chinese or Japanese alphabet. Workaround: Only use characters from the English alphabet. |

Enhancements for Version 5.0

Easy Data Collection and Instrument Control

Chemistry Table

The chemistry table is a completely new integrated feature module that allows the user to easily define the chemical reaction and calculate the amounts required. The chemistry table contains an intelligent calculation engine that is directly linked to the chemical database and that determines the required amounts based on the given stoichiometric factors and ratios. The calculated amounts are directly linked to the dosing table of the experiment

New Mathematical Functions for User Defined Trends (UDTs)

Besides the four arithmetic functions (+ - * /), an additional six mathematical operations have been added to UDTs: first derivative, averaging, natural logarithm, logarithm, n^{th} root, and exponentiation.

New Trend for Elapsed Time to Be Shown

A new Elapsed Time trend reflects the time passed since the start of the experiment.

Global Settings for Trends and Y-Axis

The "Save current settings" functionality for the trends tab has been enhanced.

It is now possible to define global trend view settings that are applied to every new experiment. The user can define the trends to be shown including the name, color, line width, line style and the settings for the y-axis like the minimum and maximum value, auto scaling, logarithmic and show grid properties etc. These settings are kept persistent and valid for every system user.

Copying User Defined Trend (UDT) During Run-Time

In the previous software version, when copying and pasting a UDT into a running experiment, the UDT immediately becomes read-only. With the current release the user has the ability to edit a user defined trend when pasting it into a running experiment.

Selectable Unit Check for User Defined Trend

By default the option "Enforce units compatibility" is selected. This means, the editor checks that all terms of the expression have compatible units.

If you select "Ignore units", this check is omitted and the resulting units can be defined manually:

Visibility of Set Value for Mass During Dosing with UCB Equipment

Beneath the end value, the actual mass and the dosing rate, now the set mass is displayed so it is available at first glance on the live equipment picture of the dosing controller.

Visibility of Temperature Control Parameters (P&I)

The T_r control parameters P (Amplification) and I (Reset Time) are now visible during runtime in the tooltip for the reactor. Within the start operation of an experiment the setting of the P parameter can be viewed during runtime and can be adapted to either an organic or an aqueous reaction mass during the design phase of an experiment.

Change of RD10 Dosing Rate During Running Dosing Operation

The dosing rate of a running RD10 dosing loop can be changed on the fly by entering a new value in the equipment overview (same behavior as for UCB dosing controller).

Dosing Profile Based on Arbitrary Expression

It is now possible to perform a dosing task against any available trend or against a User Defined Trend.

Completion of Manual Dosing without User Interaction

The user can now decide within the manual add task whether or not a user interaction or acknowledgement is required to complete the operation.

Play an Audible Alert during Acknowledge Message

It is now possible to insert an operator message at any point of the procedure that will play an audible alert. This alert can be a custom wave or mp3 file and can be configured to be repeated until the user acknowledges the message.

New Thermostat Mode to Hold Actual T_r or T_j Value

This useful option for the "Heat/Cool" operation will keep the actual temperature value (T_r or T_j mode) constant. This new set temperature value is visible in the experiment event log.

Option to Switch Off Overfill Warnings during Whole Experiment

During the setup of the reactor (double-click on the reactor in the equipment setup) a new option "Warn if reactor contents exceeds maximal volume" has been added. This option is by default switched on – but can be deactivated by the user.

Quick Reporting and Data Exchange

Print Functionality Added to Many Screens

The Option to send a screenshot directly to a printer has been added to many of the displays within iControl. This functionality can be used to print a screenshot on paper or to transfer a screenshot to an ELNB (electronic laboratory note book) provided this is installed on your system as a printer.

Printable Sensor History Report

Within iControl LabMax[®] 5.0 it is now possible to print a detailed sensor history report, regardless of whether the sensor is connected to the LabMax[®] itself or to a RD10 or UCB box. The report contains offset and slope data and the date and type of the last adjustment for each sensor.

New Functionality for the Chemical Database

The chemical database has been enhanced with some new functionality to improve its usability:

- Chemicals can now be assigned to groups – for example, chemicals can be structured into acids, bases, solvents, catalysts, etc.
- Using the new “Comments” field, specific data in relation to a chemical (or a specific batch of this chemical) like the purity or the source of supply, can be stored together with the physical or chemical properties.
- The import and export behavior for chemicals has been improved and is now easier and more intuitive.

Chemical Database Is Shared between All iControl Versions and iC Kinetics

There is no need to manage more than one version of the chemical database on one computer if working with different versions of iControl or in combination with iC Kinetics. All applications share the same chemical database and access the same physical and chemical data.

Compatibility and Data Exchange

Support of Windows Vista 64-bit and Windows 7 added

iControl now fully supports the 32-bit versions of Windows Vista and Windows 7 as well as Windows XP SP3. Additionally, iControl Office provides support for 64-bit systems.

Updated Equipment Database

The equipment database that the user specifies and selects his METTLER TOLEDO equipment from, like reactors, covers and stirrers, has been updated and now contains the latest equipment offered by METTLER TOLEDO.