LabX titration Software

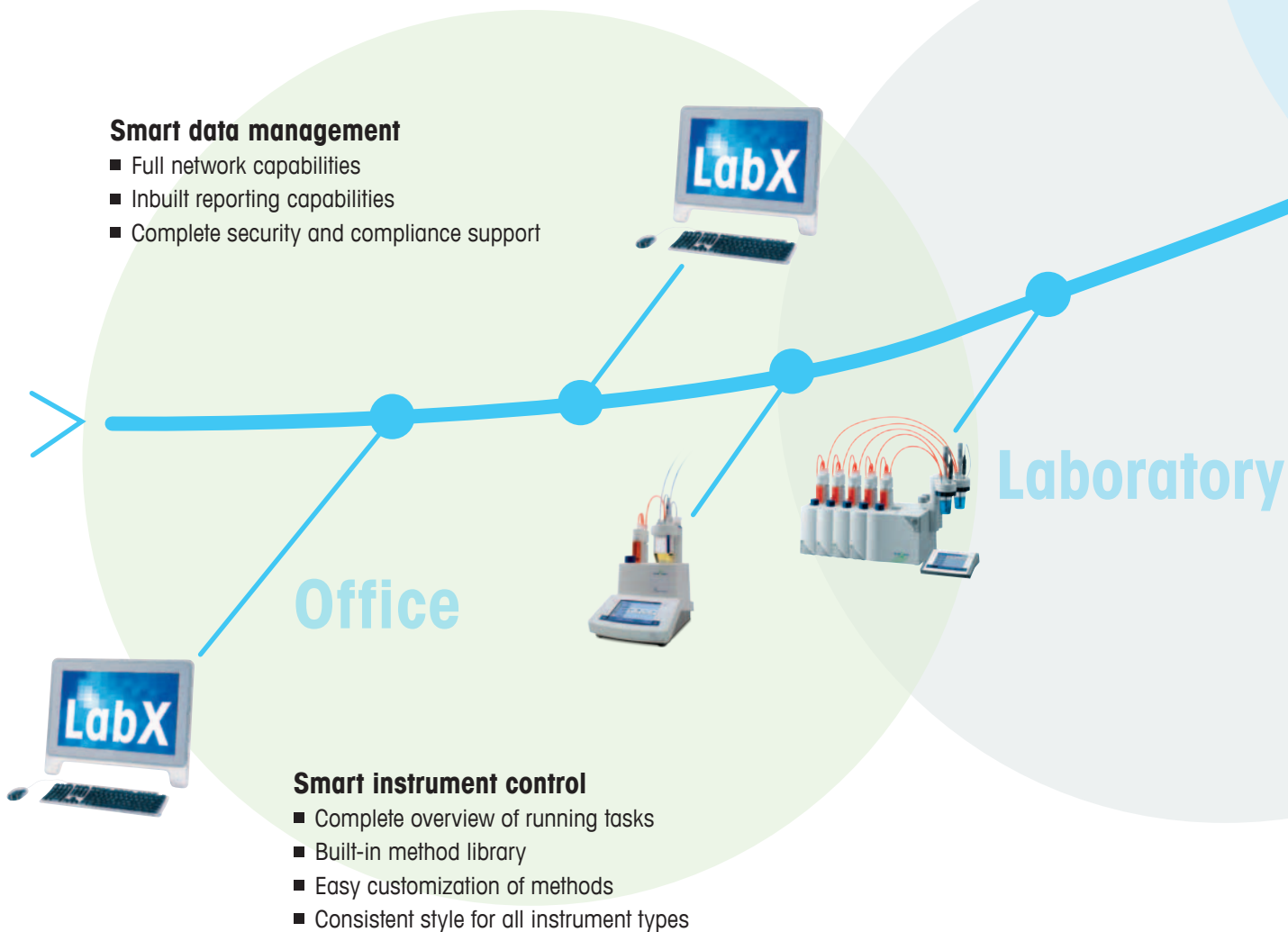## Complete Overview – Total Control
Smart Titration Software

METTLER TOLEDO

# The Smart Laboratory
Empowered by LabX®

LabX is a single software platform designed to manage all your METTLER TOLEDO titration instruments and the data they produce. With full on-screen user guidance, this easy-to-use software increases efficiency and productivity in the laboratory and allows you to achieve a higher level of regulatory compliance. Designed to meet the needs of the smallest company through to the largest global enterprise, LabX incorporates a wide range of features powerful enough for your most advanced applications.

Smart data management
- Full network capabilities
- Inbuilt reporting capabilities
- Complete security and compliance support

Laboratory

Office

Smart instrument control
- Complete overview of running tasks
- Built-in method library
- Easy customization of methods
- Consistent style for all instrument types

LabX

Smart instrument management

- Keep track of your instruments and their status
- Enable total control of the instrument usage and their resources
- Makes maintenance easy – schedule adjustments and checks

IT

Quality Control
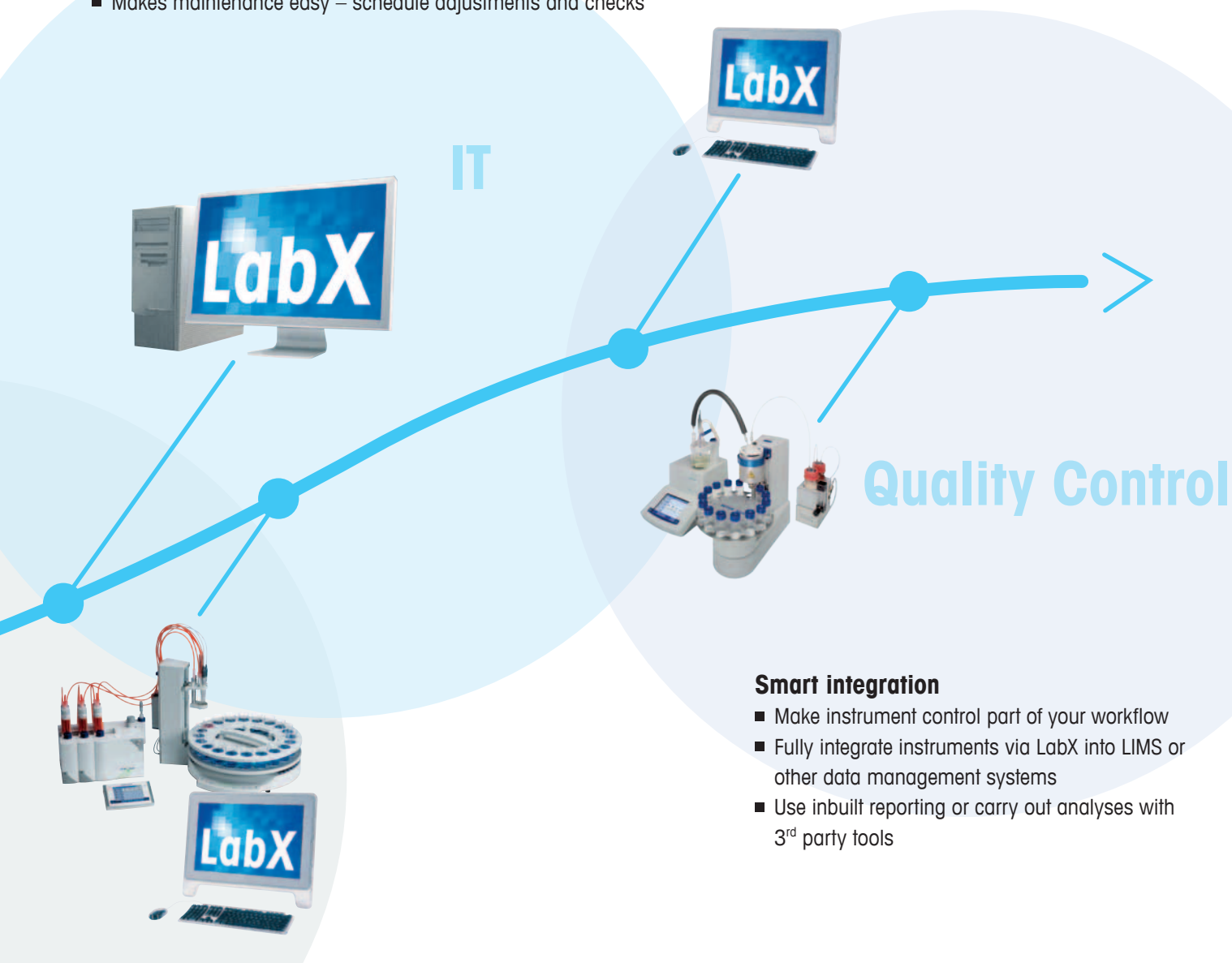
Smart integration

- Make instrument control part of your workflow
- Fully integrate instruments via LabX into LIMS or other data management systems
- Use inbuilt reporting or carry out analyses with 3rd party tools

The multi-tasking capabilities of LabX allow several METTLER TOLEDO titration instruments to be run simultaneously.

Connect all your METTLER TOLEDO instruments directly to your network. The latest instrument models have an integrated Ethernet connection ready to use.

The Software Wizard
for Simple and Efficient Titration

Speed up your daily titration routines

One Click® operation of daily tasks
- Single-click start of manual tasks, Sample Series or Sample Series Sequences by Shortcuts.
- Flexible arrangement of all static windows according to your needs.
- Pop-up windows show information when required.
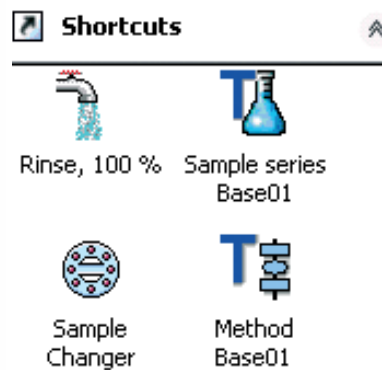
Efficient Sample Series management
- As soon as you drag and drop the Sample Series icon onto the desired titrator symbol, the titration starts immediately.
- With the sample series editor, you can easily edit your sample data, add samples to a Sample Series or delete them.

Simple and secure sample handling with LabX® Smartcodes™
- A titration method is automatically selected when a Smartcode is read in with a barcode scanner.
- Enhanced security is provided since each sample is analyzed with the correct method.
- Time-consuming manual ID assignments are reduced to One Click.
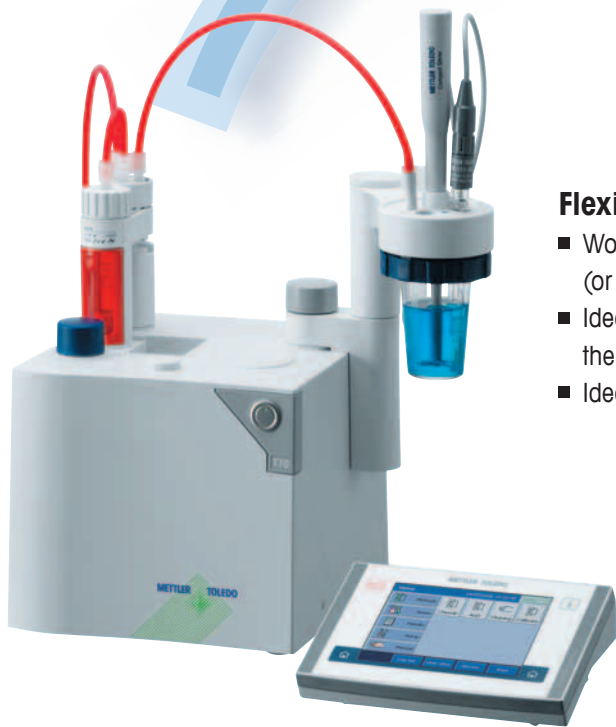
LabX

Flexibility in operation – the Dual Mode

- Work from the Excellence Terminal or from the LabX PC (or from both) depending on your environment and your needs.
- Ideal for environments where no PC is possible/desired near the titrator.
- Ideal for remote data collection via Ethernet.
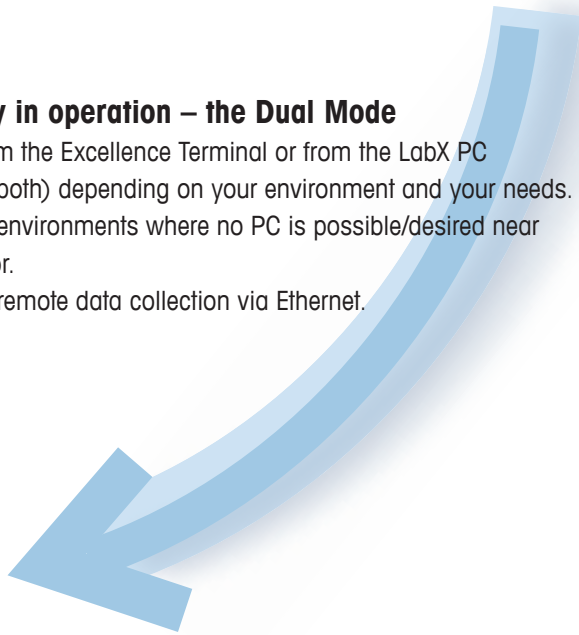
LabX pro titration controls the Compact Coulometric KF C30 – Stromboli oven sample changer system in a Quality Control lab for determination of the water content of lubricants.

T90 – Rondo 20 - LabX pro titration system in production control for acid, base and saponification numbers for the analyses of a diverse range of lubricants.

Methods and Results Management
Access Data Easily

Create and manage methods quickly and easily

Method wizard for all applications
- Greatly simplified method creation facilitated by predefined method templates and the METTLER TOLEDO segment-specific application database.
- Easy management of methods in the user-specific method library.

Optimized method editing
- Optimum overview during method editing provided by the strict hierarchical structure of the method editor.
- Error-free working thanks to the full real-time method plausibility check.

|	
4 – Stir	
5 – Titration (EQP) [1]	
Titrant	
Titrant	AgNO₃
Concentration [mol/L]	0.1
Sensor	
Temperature acquisition	
Stir	
Predispense	
Mode	Volume
Volume [mL]	1.0
Wait time [s]	5
Control	
Control	User
Titrant addition	Dynamic
dE (set value) [mV]	9.0
dV(min) [mL]	0.008
dV(max) [mL]	0.4
Mode	Equilibrium controlled
dE [mV]	0.5
dt [s]	1
t(min) [s]	⊗ 40
t(max) [s]	⊗ above max 30
Evaluation and recognition	

Directly Access Audit Trails
- LabX Audit Trail, a feature of LabX pro, records every user action that creates, modifies or deletes data in order to fulfill regulatory compliance, such as FDA etc.
- Easily retrieve relevant data with the search wizard and filter options in the LabX Audit Trail.
- Export an audit trail as a text document or in HTML format in order to send to FDA, for example.

LabX

## Manage your results efficiently according to your needs

Efficient data management

- Control charts to display the history of sample results, sensor calibration or titer determination.
- Pre- or user-defined data filters enable quick access to specific results.

n = 6 Min = 2.108 Max = 2.177 Outside control limits: 0 Outside warning limits: 0 Excluded: 0
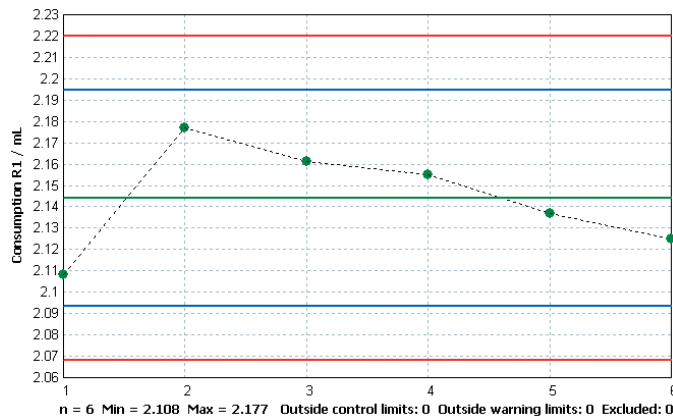
Define your specific documentation

- Comprehensive, GLP-compliant documentation of methods, results and analysis reports.
- Report layout editor to adapt the reports to your needs.
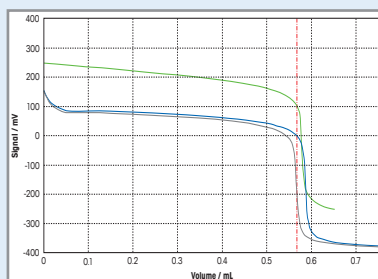
Overlaying titration curves enables the comparison of different reaction conditions. Sample: HF (hydrofluoric acid) solution under different reaction conditions. Titrant: 0.1 N NaOH (sodium hydroxide). Sensor: DGi111-SC.
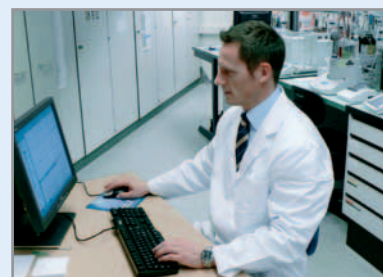
Dual Mode operation with LabX pro titration in pharmaceutical R&D. Manage your results from your office desk and control your titrations from either the PC or directly in front of the titrator.

Validation of LabX®
Efficient Software Validation

Validation of software can be a challenge. However, the LabX Validation Manuals I & II make system validation straightforward and complete. The two manuals contain all the information, instructions and forms you need to satisfy any regulatory body.

METTLER TOLEDO LabX validation...
In most countries, METTLER TOLEDO offers a complete validation service: please contact your local vendor for further Information.

LabX Validation Manual I

This folder contains all information necessary for the qualification of METTLER TOLEDO as the software supplier (Vendor Qualification).

Contents are:
- Company Information and Structure
- Quality Management System: Infrastructure
- Quality Management System: Software Development
- LabX Development Process
- LabX Sales, Support and Training

LabX Validation Manual II

Contains all instructions and forms necessary for the validation of the software (IQ, OQ).

Contents are:
- LabX Validation Procedure
- System Overview
- Installation Qualification
- Operational Qualification
- System Security
- Backup
- Disaster Recovery

LabX

LabX® connect
# Integration into your System

LabX with the LabX connect Application Program Interface (API) offers a powerful and elegant solution for integration with 3rd-party lab data systems. Open the door to any system for easy bi-directional integration with your titrators.

Let LabX take care of the instrument management and instrument control and send tasks from your system (e.g. LIMS) to LabX to obtain the desired results.

LabX connect is built with two interface types:
Event interface: notifies a 3rd party system of instrument events. E.g. LabX receives a result from an instrument and informs the 3rd party system that a new result has been acquired.
Method interface: offers various methods that can be triggered from a 3rd party system. E.g. a LIMS creates a sample list within LabX, then assigns and starts an analysis method on a specific instrument.
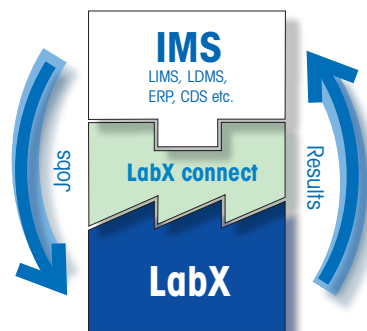
For detailed information please contact your local vendor for the LabX connect **«System Integration Guide»**.

IMS
LIMS, LDMS, ERP, CDS etc.

Jobs

LabX connect
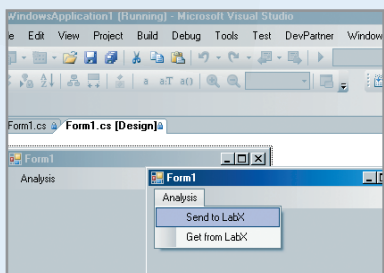
Results

LabX

Integrate your LIMS/CDS with LabX pro in order to send tasks from the system to the instrument and get results back from LabX.

Integrate LabX with standard Excel® spreadsheets for customized visualization of your data.

Use the freedom of LabX connect to design your own applications using nearly any programming language which supports the Microsoft interface technology COM (Component Object Model).

LabX® Common Specifications

General Features	LabX® light	LabX® pro
Editor to allow the user to create and edit methods	•	•
Easy to use Windows based user interface	•	•
Available languages: English, German, French, Spanish, Italian, Chinese and Russian	•	•
Wizard guided for easy setup	•	•
Titration Smartcodes: encoded methods are automatically selected when read in with a barcode scanner		•

Data Management	LabX® light	LabX® pro
Results stored in SQL-database	•	•
Powerful database filter function – user definable filters	•	•
Flexible statistical evaluation	•	•
Calculation with formula editor	•	•
GLP-compliant reports	•	•
Copy/paste of tables, lists and pictures into Microsoft Word, Excel® or other similar software packages supporting OLE	•	•
Database tool for maintenance and manual/automated backup	•	•
Bi-directional, fully configurable and automated communication with LIMS available as option (LabX connect)		•
Automatic or manual export to Excel® or LIMS		•

21CFR Part 11 Compliance Support	LabX® light	LabX® pro
User management		•
Account management functions		•
Electronic signature and approval/sign-off functionality		•
Audit trail with full filter and export functionality		•

System	LabX® light	LabX® pro
Central SQL-database	•	•
Installation checker to prove proper installation	•	•
Integrated online help system	•	•
Full networking capability		•
Multiple instruments connected directly via network		•
Multiple number of clients		•
Client/server architecture		•

Services	LabX® light	LabX® pro
Installation service	•	•
Maintenance contract	•	•
Validation service		•
Revalidation service		•

LabX® titration Specifications

Supported METTLER TOLEDO titrators

General purpose titrators:

Titration Excellence T50, T70, T90; Compact G20; DL50 Graphix/Rondolino, DL53, DL55, DL58, DL70ES, DL77

Karl Fischer Volumetric titrators:

V20, V30, DL31, DL38

Karl Fischer Coulometers:

C20, C30, DL32, DL39

| Features	Benefits
• Unlimited number of titrators per PC (recommended 1-3, LabX light can only control one titrator) • Dual mode: work with LabX and Excellence titrator Touchscreen at the same time • Remote control of manual titrator/sample changer functions • Instrument resource/settings backup and transfer	• Comprehensive instrument control, efficient and secure operation
• User defined Shortcuts for Titration Excellence titrators • Online titration curves with derivatives, table of measured values, job queue status • Sample/batch editor	• Quick access to daily tasks
• Method editor with integrated database of 500+ general purpose and Karl Fischer titration methods including full descriptions • Import and export of methods	• Easy method creation and editing
• Control charts for displaying of history of sample results, sensor calibration and titer determination • User definable report and data structure • Graphical re-evaluation of titration curves (tubbs, tangents, segmented, extrapolation and manual) • Instrument documentation management and DataX support	• Efficient data management

LabX pro provides all the tools needed for your data management and storage according to FDA regulations (21CFR Part 11)


Audit Trail

The audit trail records every relevant action taken in the LabX system like logon, editing a method or data imports according to GLP/GMP. Export an audit trail as a text document or in HTML format in order to send to FDA, for example.
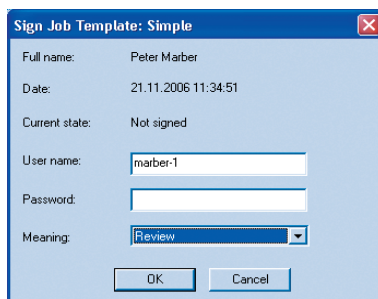
Electronic signature

Each LabX document has a footer with approval and review information. Documents can be signed with an electronic signature.
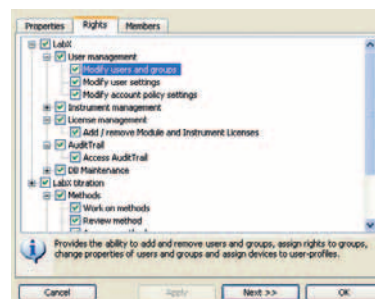
User manager

Use this tool to create new users and assign rights to user groups. LabX also allows you to define your own password policies to enforce company guidelines.

For Fast Data Transfer

For quick and easy data transfer from your instrument to your data handling application (e.g. Excel®), METTLER TOLEDO presents the LabX® direct product line.

LabX® direct balance transfers data from any METTLER TOLEDO balance equipped with an RS232 port into your chosen application. Can be used in conjunction with a barcode reader. User defined information can be automatically added to the data.

LabX® direct moisture is designed for the collection and visualization of the data from any METTLER TOLEDO moisture analyzer. The drying curve is displayed on-line as the data is generated.

LabX® direct DE/RE collects and evaluates the data from bench-top and portable density meters and refractometers. Users of portable equipment will appreciate being able to collect data in the field and download results on return to base.

LabX® direct pH supports the METTLER TOLEDO Seven series of bench-top and portable pH meters for collection and visualization of your data. Data of different measurement modes (pH, conductivity, DO, etc.) can be automatically separated into different files.

LabX® direct quantos automatically exports all re-quired data from the METTLER TOLEDO Quantos powder dosing instrument into Excel® or any other Microsoft Office application. An additional data file is created to support the data transfer to connected LIMS systems.

www.mt.com/labxtitration

For more information

ISO 9001 registered

Quality Certificate. Development, production and testing according to ISO9001.

ISO 14001 registered

Environmental management system according to ISO14001.

CE

"European conformity". The CE conformity mark provides you with the assurance that our products comply with the EU directives.