

Operation Manual

ProxiMate™ Essential



Imprint

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BÜCHI Labortechnik AG
Meierseggrasse 40
CH-9230 Flawil
E-Mail: quality@buchi.com

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1 About this document

This operation manual is applicable for all variants of the instrument. Read this operation manual before operating the instrument and follow the instructions to ensure safe and trouble-free operation.

Keep this operation manual for later use and pass it on to any subsequent user or owner.

BÜCHI Labortechnik AG accepts no liability for damage, faults and malfunctions resulting from not following this operation manual.

If you have any questions after reading this operation manual:

- ▶ Contact BÜCHI Labortechnik AG Customer Service.

<https://www.buchi.com/contact>

1.1 Warning notices in this document






Warning notices warn you of dangers that can occur when handling the instrument. There are four danger levels, each identifiable by the signal word used.

| Signal word | Meaning |
|-------------|---|
| DANGER | Indicates a danger with a high level of risk which could result in death or serious injury if not prevented. |
| WARNING | Indicates a danger with a medium level of risk which could result in death or serious injury if not prevented. |
| CAUTION | Indicates a danger with a low level of risk which could result in minor or medium-severity injury if not prevented. |
| NOTICE | Indicates a danger that could result in damage to property. |

1.2 Symbols

The following symbols are displayed in this operation manual or on the device:

1.2.1 Warning symbols

| Symbol | Meaning |
|---|------------------------------|
|  | General warning |
|  | Breakable items |
|  | Hot surface |
|  | Dangerous electrical voltage |
|  | Instrument damage |

1.2.2 Mark-ups and symbols



NOTE

This symbol draws attention to useful and important information.

- ☑ This character draws attention to a requirement that must be met before the instructions below are carried out.
- ▶ This character indicates an instruction that must be carried out by the user.
- ⇒ This character indicates the result of a correctly carried out instruction.

| Mark-up | Explanation |
|---------------------------|--|
| <i>Window</i> | Software Windows are marked-up like this. |
| <i>Tab</i> | Tabs are marked-up like this. |
| <i>Dialog</i> | Dialogs are marked-up like this. |
| <i>[Button]</i> | Buttons are marked-up like this. |
| <i>[Field names]</i> | Field names are marked-up like this. |
| <i>[Menu / Menu item]</i> | Menus or menu items are marked-up like this. |
| Status | Status is marked-up like this. |
| Signal | Signals are marked-up like this. |

1.3 Trademarks

Product names and registered or unregistered trademarks that are used in this document are used only for identification and remain the property of the owner in each case.

2 Safety

2.1 Proper use

The instrument is designed and built for laboratories and production environments. It serves to determine the concentration of selected constituents contained within a substance.

The instrument can be used for the following tasks:

- Determination of quantifiable product properties.

2.2 Use other than intended

Use of any kind other than that described in Proper use and any application that does not comply with the technical specifications (see Chapter 3.7 “Technical data”, page 17) constitutes use other than that intended.

In particular, the following applications are not permissible:

- Use of the instrument in rooms which require Ex-protected instruments.
- Use of samples, which can explode or inflame (example: explosives, etc.) due to shock, friction, heat or spark formation.
- Use of samples that are dangerous or harmful for the person operating the instrument.

The manufacturer assumes no liability for inaccurate measurements resulting from:

- Software or hardware malfunctions
- Incorrect usage or user error
- Unauthorized access by third parties

These types of misuse are not covered by warranty or liability.

2.3 Staff qualification

Unqualified persons are unable to identify risks and are therefore exposed to greater dangers.

The instrument must be operated by suitably qualified laboratory staff.

These operating instructions are aimed at the following target groups:

Users

The users are persons that meet the following criteria:

- They have been instructed in the use of the instrument.
- They are familiar with the contents of these operating instructions and the applicable safety regulations and apply them.
- They are able on the basis of their training or professional experience to assess the risks associated with the use of the instrument.

Operator

The operator (generally the laboratory manager) is responsible for the following aspects:

- The instrument must be correctly installed, commissioned, operated and serviced.
- Only suitably qualified staff must be assigned the task of performing the operations described in these operating instructions.
- The staff must comply with the local applicable requirements and regulations for safe and hazard-conscious working practices.
- Safety-related incidents that occur while using the instrument should be reported to the manufacturer (quality@buchi.com).

BUCHI service technicians

Service technicians authorized by BUCHI have attended special training courses and are authorized by BÜCHI Labortechnik AG to carry out special servicing and repair measures.

2.4 Residual risks

The instrument has been developed and manufactured using the latest technological advances. Nevertheless, risks to persons, property or the environment can arise if the instrument is used incorrectly.

Appropriate warnings in this manual serve to alert the user to these residual dangers.

2.4.1 Glass and acrylic breakage

Broken glass and acrylic can cause severe cuts.

Broken glass or acrylic can enter production.

- ▶ Handle the Petri Dishes and other glass and acrylic components carefully and do not drop them.
- ▶ Always visually inspect glass and acrylic components for damage every time they are to be used.
- ▶ Do not continue to use glass and acrylic components that are damaged.
- ▶ Always wear protective gloves when disposing of broken glass and acrylic.

2.4.2 Faults during operation

If a device is damaged, sharp edges or exposed electrical wires can cause injuries.

- ▶ Regularly check device for visible damage.
- ▶ If faults occur, switch off the device immediately and inform the operator.
- ▶ Do not continue to use devices that are damaged.

2.4.3 Malware infection due to connections with other devices or network

Connections with other devices or a network can cause a malware infection to the instrument.

- ▶ Install antivirus software and firewall before connecting to other devices or network.

2.4.4 Data loss

In the event of a power failure, e.g. due to lightning or interruption of power supply, measurement data may be lost.

- ▶ Carry out regular data backup.

2.5 Personal protective equipment

Depending on the application, hazards due to heat and/or corrosive chemicals may arise.

- ▶ Always wear appropriate personal protective equipment such as safety goggles, protective clothing and gloves.
- ▶ Make sure that the personal protective equipment meets the requirements of the safety data sheets for all chemicals used.

2.6 Modifications

Unauthorized modifications can affect safety and lead to accidents.

- ▶ Use only genuine BUCHI accessories, spare parts and consumables.
- ▶ Carry out technical changes only with prior written approval from BUCHI.
- ▶ Only allow changes to be made by BUCHI service technicians.

BUCHI accepts no liability for damage, faults and malfunctions resulting from unauthorized modifications.

3 Product description

3.1 Description of function

ProxiMate™ Essential is an NIR spectrometer that can be used to determine the concentration of different parameters in food and feed samples in a nondestructive way.

ProxiMate™ Essential is supplied in different versions. Dependent on the version specified, ProxiMate™ Essential is either an NIR or combined NIR and visible spectrometer.

The instrument generates a beam of NIR and visible light which is focused onto the sample under investigation. Light reflected from the sample is collected and spatially separated by a diffraction element. The diffracted light is directed onto a diode array detector. Signals from the detector are processed and a reflectance spectrum is constructed. This spectrum undergoes further processing to calculate the constituents required.

Data processing

The NIR light interacts with the sample material in different ways, leaving a characteristic fingerprint on the spectrum. Spectra from both liquids and solids can be measured with ProxiMate™ Essential. The spectra of solid samples are collected directly, liquid samples require the use of a transmittance adapter.

Application

The Application defines all of the parameters related to measurement of a particular sample type.

This includes:

- the properties to be measured
- the calibrations used
- the standard operating procedure

It is possible to Import or Export a file that contains all Application data to allow the same Application to be used on a second ProxiMate™ Essential (dependent on calibration license requirements).

3.2 Sample presentation option

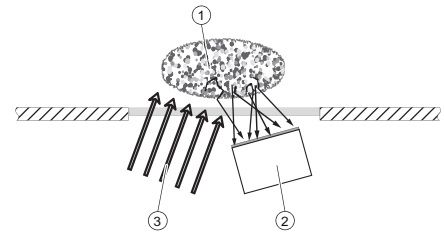
The up view option directs and collects light from the underside of the sample. The NIR light passes through the base of a glass petri dish before interacting with the sample under evaluation. Up view measurement has the advantage that a more consistent surface is presented to the instrument ensuring accurate measurement output. Glass petri dishes are recommended to enable best performance. Additionally, when used in conjunction with a transmittance adapter, it is also possible to measure liquids using the up view option.

3.3 Measurement modes

3.3.1 Diffuse reflection mode

Non-translucent materials can be analyzed via diffuse reflection.

NIR light penetration is limited by the sample material. It interacts with the sample, is refracted and diffusely reflected into the sensor. The reflected rays contain the spectral information of the sample.



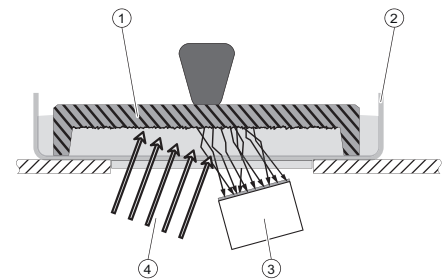
① Sample

② Sensor

③ Light

3.3.2 Transflectance mode

Translucent and opaque liquids can be analyzed via transflectance mode. The light penetrates the liquid, is diffusely reflected by the reference plate and passes through the sample a second time. The transflected rays contain the spectral information of the sample.



① Transflectance cover

② Sample cup

③ Sensor

④ Light

3.4 Configuration

3.4.1 Front view

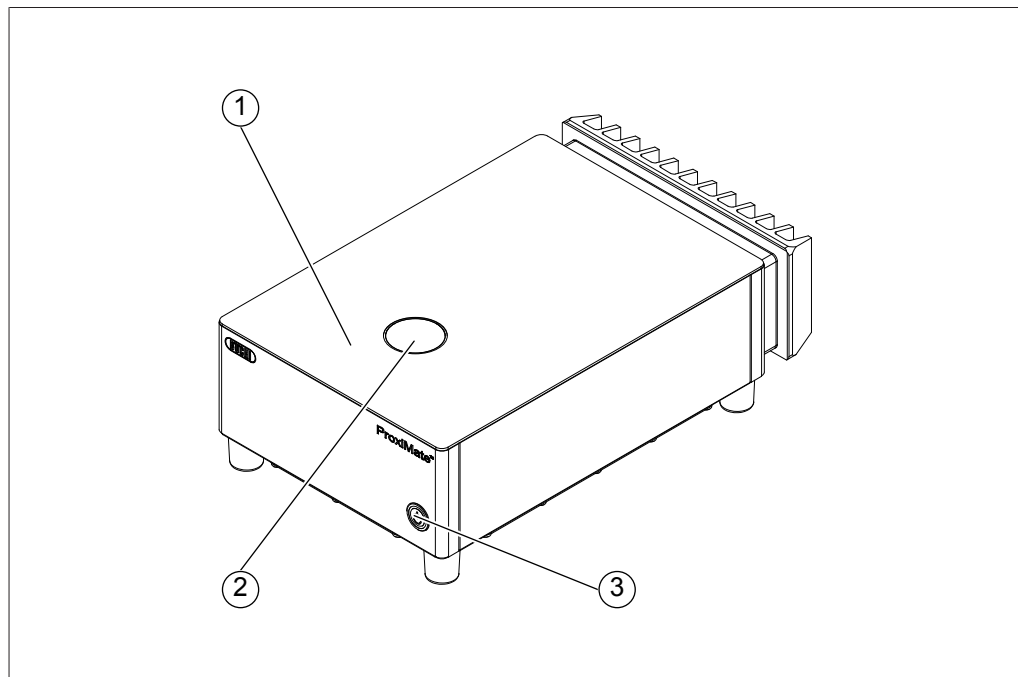


Fig. 1: Front view

- | | | | |
|---|--------------------------|---|----------------|
| 1 | Sample presentation area | 2 | Up view window |
| 3 | On/Off master switch | | |

The On/Off master switch does not interrupt the electric power supply.

Status On/Off master switch

| Status | Description |
|----------------|------------------------------------|
| No light | The instrument is not switched on. |
| Steady light | The instrument is on |
| Flashing light | The instrument shuts down |

3.4.2 Rear view

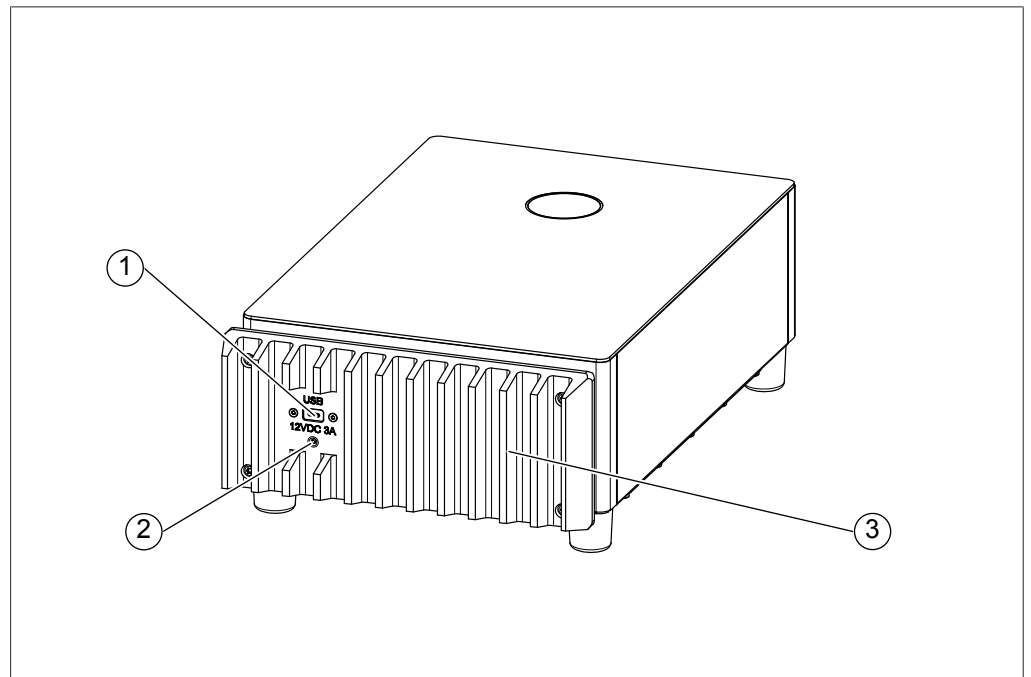


Fig. 2: Rear view

- 1 USB C socket for connection to operating PC (not powered)
- 2 Socket for external power supply
- 3 Cooler

3.4.3 Location of the type plate

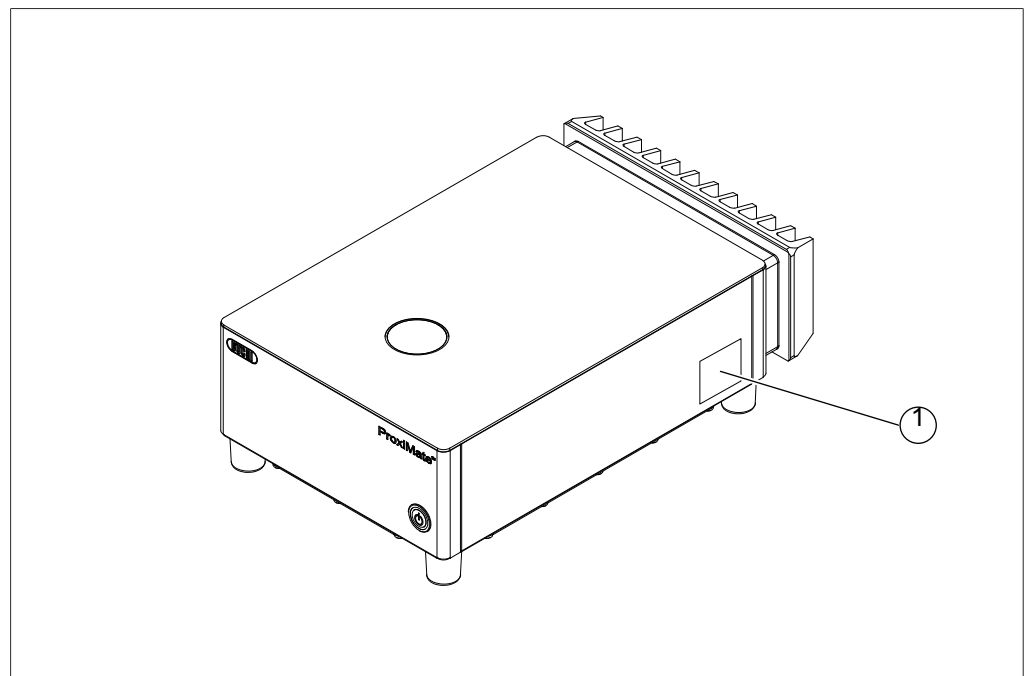


Fig. 3: Location of the type plate

- 1 Type plate

3.5 Scope of delivery



NOTE

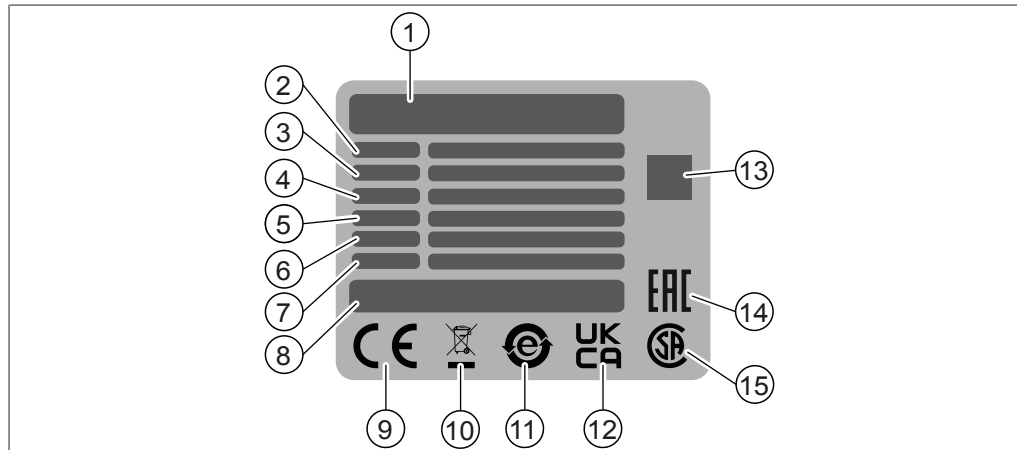
The scope of delivery depends on the configuration of the purchase order.

Accessories are delivered as per the purchase order, order confirmation, and delivery note.

3.6 Type plate

The type plate identifies the instrument. The following type plate is an example. For more details refer to the type plate on the instrument.

The type plate is located at the rear of the instrument.



- | | | | |
|----|---|----|---|
| 1 | Company name and address | 2 | Instrument name |
| 3 | Serial number | 4 | Input voltage range |
| 5 | Frequency | 6 | Power consumption maximum |
| 7 | Year of manufacture | 8 | Product origin |
| 9 | Symbol for "CE conformity" | 10 | Symbol for "Do not dispose of as household waste" |
| 11 | Symbol for "electronics recycling" | 12 | Symbol for "UK Conformity Assessed" |
| 13 | QR-Code contains "Item number, Serial number" | 14 | Symbol for "Eurasian Conformity" (optional) |
| 15 | Symbol for "CSA certified" (optional) | | |

3.7 Technical data

3.7.1 ProxiMate™ Essential

| Specification | ProxiMate™ Essential |
|--------------------------------|-------------------------------------|
| Dimensions (W × D × H) | 260 × 433 × 142 |
| Weight | 13 kg |
| Power consumption | 36 W |
| Connection voltage | 12 VDC ± 10 % |
| Overvoltage category | I |
| Pollution degree | 2 |
| Appliance classes | III |
| EMC environment | Basic environment |
| EMC emission class | Class B |
| EMC standard | IEC 61326-2-3 |
| Detector NIR | Thermoelectrically cooled InGaAs |
| Detector VIS | Si |
| Wavelength range NIR | 900 - 1700 nm |
| Resolution NIR | 7.0 nm |
| NIR Data Resolution | 3.1 nm |
| Wavelength range VIS | 400 - 900 nm |
| Resolution VIS | Better than 15 nm |
| VIS Data Resolution | 2 nm |
| Up view illumination spot size | 8 mm |
| Approval | CE |
| Lamp type | Tungsten-halogen |

3.7.2 Ambient conditions

For indoor use only.

| | |
|-------------------------------|---|
| Max. altitude above sea level | 2000 m |
| Ambient temperature | 5 - 40 °C (25 °C) |
| Maximum relative humidity | 80% for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C |
| Storage temperature | max. 45 °C |

3.7.3 Materials

| Component | Material of construction |
|----------------------|---|
| Housing | Steel 1.4301 |
| Seals housing | EPDM |
| Glass up view | Sapphire Al ₂ O ₃ |
| Glue glasses | Epoxy |
| Cooler | Aluminum with black anodized coating |
| Sealing frame cooler | POM |
| Seals cooler | EPDM |
| Seals lamp module | EPDM 65 |
| Sealing motor cover | EPDM |

4 Transport and storage

4.1 Transport



NOTICE

Risk of breakage due to incorrect transportation

- ▶ Make sure that the instrument is fully dismantled.
 - ▶ Pack all instrument components properly to prevent breakage. Use the original packaging whenever possible.
 - ▶ Avoid sharp movements during transit.
-
- ▶ After transporting, check the instrument and all glass components for damage.
 - ▶ Damage that has occurred in transit should be reported to the carrier.
 - ▶ Keep packaging for future transportation.

4.2 Storage

- ▶ Make sure that the ambient conditions are complied with (see Chapter 3.7 “Technical data”, page 17).
- ▶ Wherever possible, store the device in its original packaging.
- ▶ After storage, check the device for damage and replace if necessary.

4.3 Lifting the instrument



WARNING

Danger due to incorrect transportation

The possible consequences are crushing injuries, cuts and breakages.

- ▶ The instrument should be transported by two persons at the same time.
- ▶ Lift the instrument at the points indicated.

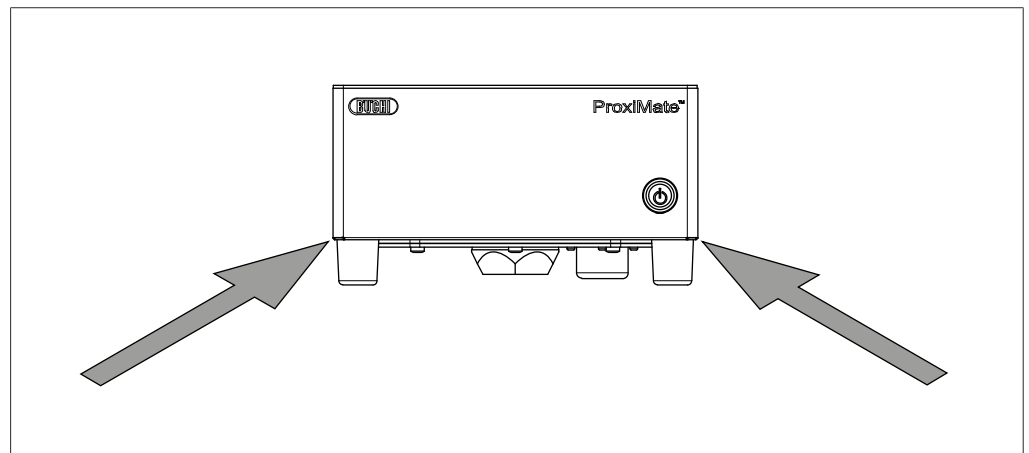


Fig. 4: Lifting the instrument

- ▶ Lift the instrument – this requires two persons lifting at the points indicated on the bottom of the instrument.

5 Installation

5.1 Before installation



NOTICE

Instrument damage due to switching it on too early.

Switching on the instrument too early after transportation can cause damage.

- ▶ Climatize the instrument after transportation.

5.2 Installation site



NOTICE

Risk of equipment damage or injuries due to falling objects.

The external screen and the computer should not be placed on top of the instrument, as they may fall down.

- ▶ Do not place any objects on top of the instrument.

The installation site must meet the following requirements:

- Firm, level and vibration-free surface.
- Minimum space requirement: 260 mm x 433 mm x 142 mm (W x D x H).
- Take into account the maximum product dimensions and weight.
- Do not expose the instrument to any external thermal loads, such as direct solar radiation.

5.3 Establishing electrical connections



NOTICE

Risk of instrument damage because of not suitable power supply cables.

Not suitable power supply cables can cause bad performance or an instrument damage

- ▶ Use only BUCHI power supply cables.



NOTICE

The power supply cable is for disconnecting the instrument.

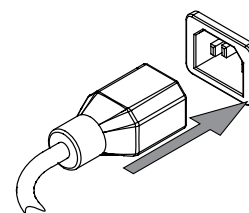
- ▶ Easy access must be guaranteed to the mains plug at all times.

Precondition:

- The electrical installation is as specified on the type plate.
- The electrical installation is equipped with a proper grounding system.
- The electrical installation is equipped with suitable fuses and electrical safety features.
- The installation site is as specified in the technical data. See Chapter 3.7 “Technical data”, page 17.

▶ Connect the power supply cable to the connection on the instrument. See Chapter 3.4 “Configuration”, page 14.

▶ Connect the mains plug to an own mains outlet socket.



5.4 Establishing a computer connection



NOTE

A physical connection between the instrument and the NIRWise software is required. Therefore, a connection via a virtual machine is not possible.

NIRWise 1.5 is validated for:

- Windows® 10 Enterprise LTSB 2016
- Windows® 11 IoT Enterprise LTSC 24H2
- Windows® 11 Pro 23H2 and 25H2

NIRWise software requirements:

- 1.20 GHz processor
- 4 GB RAM
- 50 GB free storage space

Precondition:

- The software requirements are met.
- ▶ Install all required software components and drivers on the computer.
- ▶ Use a USB-C cable to connect the instrument to the computer.

5.5 Software settings

5.5.1 Requesting a software or application license

The following data is necessary for the license request:

- Article Name
- Article Number (item number of the software or the application)
- Serial Number (software license serial number / sticker on the cover page of the quick guide or serial number of the instrument)
- Company Name
- First Name
- Last Name
- Serial Number
- Country
- E-Mail address

Navigation path

→  → [License Request]

Precondition:

- ☑ The software is in administrator mode.
- ▶ Tap the [License Request] button.
- ⇒ The screen shows a dialog box with the license request menu.

License Request

| | |
|----------------------|---|
| Article Name | Host ID |
| <input type="text"/> | <input type="text" value="4C52620FA588"/> |
| Article No. | Serial Number |
| <input type="text"/> | <input type="text"/> |
| Company Name | Country |
| <input type="text"/> | <input type="text"/> |
| First & Last Name | E-Mail |
| <input type="text"/> | <input type="text"/> |

Create

Cancel

- ▶ Tap the [Edit] button.
- ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Fill in the required information.
- ▶ Tap [Create] to save the license request file.
- ⇒ The screen shows a dialog box with a confirmation and the location of the license request file.
- ▶ Confirm with [OK].
- ▶ Open the location and save the license request file to a USB stick or something similar.
- ▶ Send the license request file and a short explanation to registration@buchi.com.
- ⇒ You will receive a license file in return.

5.5.2 Importing a license

Navigation path

→  → [Licence Import]

Precondition:

- ☑ The software is in administrator mode.
- ☑ A valid (correct serial number and date) license file is available.
- ▶ Tap the [License Import] button.
- ⇒ The screen shows a dialog box with folder locations.

- ▶ Navigate to the location of the license file that needs to be imported.
- ▶ Select the license file and confirm with **[OK]**.
 - ⇒ The screen shows a dialog box with a confirmation that the license file was successfully imported.
- ▶ Confirm with **[OK]**.
 - ⇒ Available licenses can be found in the *information* section.

Before importing the corresponding applications, the NIRWise software needs to be restarted.

5.5.3 Changing the permission to perform a BCV calibration

The permission to calibrate the BCV can be given to all users including the operator or only to the admin and service user.

Navigation path

→  → *[General]*

Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.
- ▶ Navigate to the view *[General]* via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
- ▶ Tap the action *[BCV permission]*.
 - ⇒ The screen shows a dialog box with selectable users.
- ▶ Select the user(s) who can perform the BCV calibration.
- ▶ Confirm with **[OK]**.

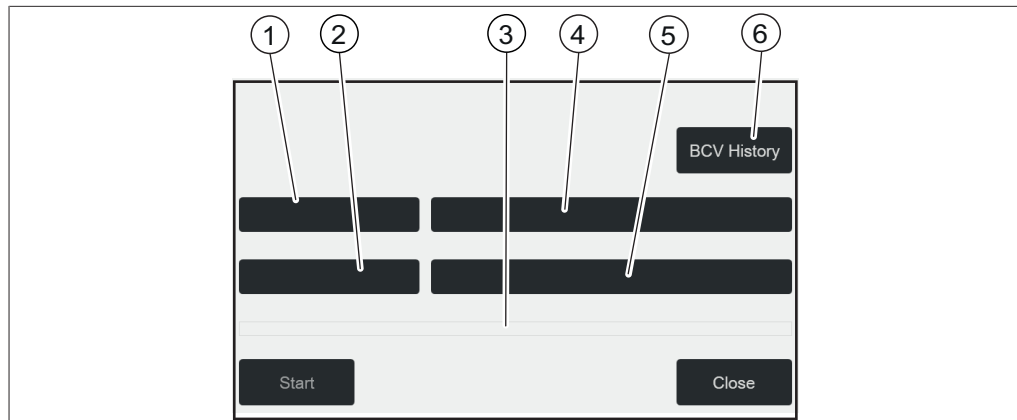
5.5.4 Calibrating a Baseline Correction Vector (BCV)

Navigation path

→  → *[Calibrate BCV]*

Precondition:

- The current user is permitted to perform a BCV calibration. See Chapter 5.5.3 “Changing the permission to perform a BCV calibration”, page 23.
- A sample presentation is defined.
- The instrument is stabilized with at least 2 hours continuous running.
- ▶ Navigate to the action *[Calibrate BCV]* via the navigation path.
 - ⇒ The software shows a dialog box.



- | | |
|--------------------------|----------------------|
| 1 Measurement view | 2 External reference |
| 3 Progress (view) | 4 Measurement mode |
| 5 Sample presentation ID | 6 BCV history |

Define calibration settings for solid samples

- ▶ Tap on *[Measurement View]*
 - ⇒ The screen shows the Measurement View menu.
- ▶ Select *[Up]* or *[Down]* depending on the view you would like to calibrate.
- ▶ Confirm with *[OK]*.
- ▶ Tap on *[Measurement Mode]*.
 - ⇒ The screen shows the Measurement Mode menu.
- ▶ Select *[Diffuse Reflection]*.
- ▶ Confirm with *[OK]*.
- ▶ Tap on *[External Reference]*.
 - ⇒ The screen shows the External Reference menu.
- ▶ Select the number corresponding to the sticker on the external white reference.
- ▶ Confirm with *[OK]*.
- ▶ Tap on *[Sample Presentation]*.
 - ⇒ The screen shows the Sample Presentation menu.
- ▶ Select *[Default]*.
- ▶ Confirm with *[OK]*.

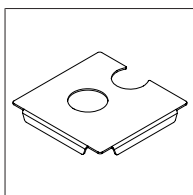


Fig. 5: Positioning plate with two openings for up and down view

Defining calibration settings for liquid samples

- ▶ Tap on *[Measurement View]*.
 - ⇒ The screen shows the Measurement View menu.
- ▶ Select *[Up]* for calibration for liquid measurements.
- ▶ Confirm with *[OK]*.
- ▶ Tap on *[Measurement Mode]*.
 - ⇒ The screen shows the Measurement Mode menu.
- ▶ Select *[Transflection]*.

- ▶ Confirm with *[OK]*.
- ▶ Tap on *[External Reference]*.
 - ⇒ The screen shows the External Reference menu.
- ▶ Select *[Transflection]*.
- ▶ Confirm with *[OK]*.
- ▶ Tap on *[Sample Presentation]*.
 - ⇒ The screen shows the Sample Present. menu.
- ▶ Select the sample presentation that you have created for the application in the Application menu.
- ▶ If the list only shows *[Default]*, select *[New]* and enter a name.
 - ⇒ A new Sample presentation ID is created. This needs to be done only once.
- ▶ Select your new Sample presentation ID. Make sure this Sample presentation ID is also used in the application settings.

Loading the BCV calibration settings using the BCV history

- ▶ Tap on *[BCV History]*.
 - ⇒ The screen shows a dialog box with configurations used in the past.
- ▶ Select the desired configuration.
- ▶ Confirm with *[Select]*.
 - ⇒ The BCV calibration settings are automatically filled in according to the selected history.

Measuring the external white reference in up view mode

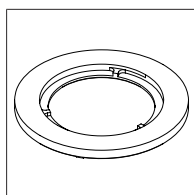


Fig. 6: Thin spacer ring for up view

Precondition:

- The settings have been correctly defined.
- The white reference is clean and undamaged.
- ▶ Place the positioning plate on the instrument.
- ▶ Place the thin spacer ring for the up view mode in the round cut-out of the positioning plate above the up view window.
- ▶ Open the white reference by unscrewing the lid.
- ▶ Place the white reference facing down on the thin spacer ring.
- ▶ Tap the button *[Start]*.
- ▶ Follow the instructions on the screen during the calibration.
- ▶ Confirm the instructions by tapping *[OK]*.
 - ⇒ The system will prompt you to rotate the external white reference 4 times.
- ▶ Rotate the external reference by turning the spacer ring.
 - ⇒ The screen shows a confirmation of the successful calibration.
 - ⇒ The lamp is pre-heated for 2 minutes after BCV calibration.
- ▶ Restart the NIRWise software after successful BCV calibration.
- ▶ In case of a dual view instrument, repeat the calibration for the down view mode.

Measuring the external white reference in down view mode

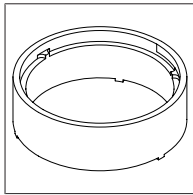


Fig. 7: Thick spacer ring for down view

Precondition:

- The settings have been correctly defined.
- The white reference is clean and undamaged.
- ▶ Place the positioning plate on the instrument.
- ▶ Place the thick spacer ring for the down view mode in the half-round cut-out of the positioning plate below the down view window.
- ▶ Open the white reference by unscrewing the lid.
- ▶ Place the white reference facing up on the thick spacer ring.
- ▶ Tap the button *[Start]*.
- ▶ Follow the instructions on the screen during the calibration.
- ▶ Confirm the instructions by tapping *[OK]*.
 - ⇒ The system will prompt you to rotate the external white reference 4 times.
- ▶ Rotate the external reference by turning the spacer ring.
- ⇒ The screen shows a confirmation of the successful calibration.
- ⇒ The lamp is pre-heated for 2 minutes after BCV calibration.
- ▶ Restart the NIRWise software after successful BCV calibration.
- ▶ In case of a dual view instrument, repeat the calibration for the up view mode.

Measuring the transfectance cover in up view mode

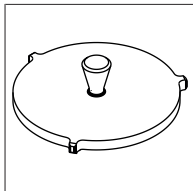


Fig. 8: Transfectance cover for the measurement of liquids in up view mode

Precondition:

- The settings have been correctly defined.
- The transfectance cover is clean and undamaged.
- The sample cup is clean and without scratches.
- ▶ Place an empty sample cup on the up view measurement position.
- ▶ Place the transfectance cover into the empty sample cup.
- ▶ Tap the *[Start]* button.
- ▶ Follow the instructions on the screen during the calibration.
- ▶ Confirm the instructions by tapping *[OK]*.
 - ⇒ The system will prompt you to rotate the external reference 4 times.
- ▶ Rotate the transfectance cover.
- ⇒ The screen shows a confirmation of the successful calibration.
- ⇒ The lamp is pre-heated for 2 minutes after BCV calibration.
- ▶ Restart the NIRWise software after successful BCV calibration.

5.5.5 Importing reference data



NOTE

The location of the destination folder is fixed. See Chapter 10.2 “File explanations and folder locations”, page 102

Navigation path


→  → [*Import External Reference Data*]

Precondition:

- ☑ The reference data file is saved on the computer.
- ▶ Navigate to the action [*Import External Reference Data*] via the navigation path.
 - ⇒ The screen shows the dialog box *Import External Reference Data*.
- ▶ Tap the button next to the input box file.
 - ⇒ The screen shows a dialog box with the selectable reference data.
- ▶ Select the import file.
- ▶ Tap the button [*OK*].
 - ⇒ The dialog box closes.
- ▶ Tap the button [*Import*].
 - ⇒ The external reference is imported.

5.5.6 Changing the language of the software

Navigation path

→  → [*General*]

Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the view *General* via the navigation path.
- ▶ Tap the function [*Edit*] on the function bar.
- ▶ Tap the action [*Selected Language*].
 - ⇒ The screen shows a dialog box with selectable languages.
- ▶ Select a language.
- ▶ Tap the button [*OK*].
 - ⇒ The dialog box closes.
 - ⇒ The screen shows a dialog box.
- ▶ Tap the button [*OK*] to confirm the dialog box.
- ▶ Restart the software.

5.5.7 Changing the label of the order and note fields

Navigation path

→  → [Measurement]

Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.
- ▶ Navigate to the view *Measurement* via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
- ▶ Tap the action *[Order-Custom Label]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter a name for the label.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes and the new label is displayed.
- ▶ Tap the action *[Note-Custom Label]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter a name for the label.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes and the new label is displayed.

5.5.8 Editing the number of measurement replicates

Samples can be measured as singles, duplicates, or triplicates. Duplicates or triplicates allow for repacking the sample in between the repetitions. Duplicate or triplicate measurements will result in one history entry with the average predictions and spectrum.

Navigation path

→  → [Measurement]

Precondition:


- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.
- ▶ Navigate to the view *Measurement* via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
- ▶ Tap the action *[Repeated Measurements]*.
 - ⇒ The screen shows a dialog with a numeric input box.
- ▶ Enter the number of required repetitions.
- ▶ Confirm with *[OK]*.

5.5.9 Changing the measurement workflow

There are two possibilities for the measurement workflow:

1. Every measurement is saved with the *[Save]* button. The meta data fields are editable before starting the measurement with the green control button.
2. A measurement is automatically saved, when the next measurement is started by pressing the green control button. The meta data is not editable before starting a new measurement.

Navigation path

→  → [Measurement]


Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.
- ▶ Navigate to the view *Measurement* via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
- ▶ Tap the action *[End measurement with Save]*.
 - ⇒ The screen shows a dialog box with the selectable values (*[Yes]* for option 1, *[No]* for option 2).
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
- ⇒ The dialog box closes.

5.5.10 Adjusting the settings for the order button

The order button can be cleared after each measurement or the value can be remembered. The value remains editable at all times.

Navigation path

→  → *[Measurement]*

Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.
- ▶ Navigate to the view *Measurement* via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
- ▶ Tap the action *[Clear Order]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
- ⇒ The dialog box closes.

5.5.11 Adjusting the time and date format for the history menu

Navigation path


→  → *[Measurement]*

Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.
- ▶ Navigate to the view *Measurement* via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
- ▶ Tap the action *[Sample Timestamp Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
- ⇒ The dialog box closes.

5.5.12 Editing the maximum number of samples to be displayed in the history menu

Navigation path

→  → [Measurement]

Precondition:

- ☑ The software is in administrator mode.
- ▶ Navigate to the view *Measurement* via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
- ▶ Tap the action *[Max measurements to display]*.
 - ⇒ The screen shows a dialog with a numeric input box.
- ▶ Enter a number between 100 and 15 000.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes and the new label is displayed.

5.5.13 Changing the csv formatting options

Navigation path

→  → [Reports]

Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.
- ▶ Navigate to the view *Reports* via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
- ▶ Tap the action *[CSV Formatting Options]*.
- ▶ Tap the action *[Measurements Sort Type]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the action *[Other Numbers Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the action *[Predicted Values Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the action *[Reference Values Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the action *[Spectra Values Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.

- ▶ Select an option.
- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.
- ▶ Tap the action **[Timestamps Format]**.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.
- ▶ Tap the action **[Wavelengths Format]**.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.

5.5.14 Changing the xml formatting options

Navigation path

→  → **[Reports]**

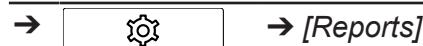
Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.
- ▶ Navigate to the view *Reports* via the navigation path.
- ▶ Tap the function **[Edit]** on the function bar.
- ▶ Tap the action **[XML Formatting Options]**.
- ▶ Tap the action **[Measurements Sort Type]**.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.
- ▶ Tap the action **[Other Numbers Format]**.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.
- ▶ Tap the action **[Predicted Values Format]**.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.
- ▶ Tap the action **[Reference Values Format]**.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.
- ▶ Tap the action **[Spectra Values Format]**.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.

- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the action *[Timestamps Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the action *[Wavelengths Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.

5.5.15 Changing the jcamp formatting options

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.
- ▶ Navigate to the view *Reports* via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
- ▶ Tap the action *[JCAMP Formatting Options]*.
- ▶ Tap the action *[Measurements Sort Type]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the action *[Other Numbers Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the action *[Predicted Values Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the action *[Reference Values Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the action *[Spectra Values Format]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.

- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.
- ▶ Tap the action **[Timestamps Format]**.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.
- ▶ Tap the action **[Wavelengths Format]**.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select an option.
- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.

5.5.16 Adjusting the number of deleted samples for log entry

Navigation path


→  → **[Measurement]**

Precondition:

- The software is in service mode.
- ▶ Navigate to the view *Measurement* via the navigation path.
- ▶ Navigate *Other Thresholds*.
- ▶ Tap the function **[Edit]** on the function bar.
- ▶ Tap the action **[Min measurements to delete for log view]**.
 - ⇒ The screen shows a dialog with a numeric input box.
- ▶ Insert a number.
- ▶ Confirm with **[OK]**.
 - ⇒ The dialog box closes.

5.5.17 Changing the basis for calibration comparison

Navigation path

→  → **[Calibration Settings]**

Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.
- ▶ Navigate to the view **[Calibration Settings]** via the navigation path.
- ▶ Tap the function **[Edit]** on the function bar.
- ▶ Tap the action **[Quality Criterion]**.
 - ⇒ The screen shows a dialog box with selectable options.
- ▶ Select the required option.
- ▶ Confirm with **[OK]**.

5.5.18 Setting up automated backups

Automated backups can be performed on a weekly or a monthly basis, as long as the instrument is switched on.

A maximum number of rolling backups can be defined. When this maximum number is reached, the oldest backup is removed upon saving a new backup.



NOTE

While the backup is being performed, the instrument cannot be used.

- ▶ Set up the automation according to the usage of the instrument.



NOTE

Make sure that the disk can support the number of rolling backups according to the settings.

- ▶ If the number is too high, reduce the number of rolling backups.



NOTE

The backup location can be configured in the Windows user environment variables.

Navigation path

→  → [General]

Precondition:

The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50

- ▶ Navigate to the view [General] via the navigation path.
- ▶ Tap the function [Edit] on the function bar.
- ▶ Tap the action [Automated Backup Settings].
- ▶ Tap the action [Backup Type].
- ▶ Select the desired backup option.
 - ⇒ The screen shows a dialog box with the selectable backup options.
- ▶ Confirm with [OK].
- ▶ Tap the action [Day].
 - ⇒ The screen shows a dialog box with the selectable weekdays.
- ▶ Select the desired weekday.
- ▶ Tap the action [Max Rolling Backups].
 - ⇒ The screen shows a dialog with a numeric input box.
- ▶ Enter the number of rolling backups to keep.
- ▶ Confirm with [OK].
- ▶ Tap the action [Time of Day].
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter the time for starting the backup in the format HH:mm:ss.
- ▶ Confirm with [OK].

5.5.19 Adjusting the settings for a QR code reader

If a QR code is used to read sample metadata, the communication format must be established. The following options for QR communication channels are available:

- Keyboard emulation
- Serial port/Bluetooth (also supports communication with Bluetooth QR scanner via Windows pairing)
- TCP/IP
- HTTP / REST API

The following options for data encoding are available:

- Key-value pairs (data organized in text lines with a key and value separated by a chosen character)
- Json
- Xml
- Csv/tsv (file with a header line composed of columns and a data row)
- Positional values (list of values without field names that are separated by a chosen character)
- PowerShell script (if none of the above options apply)

Navigation path

→  → [General]

Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50.

- ▶ Navigate to the view [General] via the navigation path.
- ▶ Tap the function [Edit] on the function bar.
- ▶ Tap the action [QR Reader].
- ▶ Tap the action [Enabled].
 - ⇒ The screen shows a dialog box with selectable users.
- ▶ Select the desired option.
- ▶ Confirm with [OK].
 - ⇒ The dialog box closes.
- ▶ Tap the action [QR Communication].
 - ⇒ The screen shows a dialog box with selectable communication channels.
- ▶ Select the desired option.
- ▶ Tap the action [Next].
 - ⇒ The screen shows a dialog box with settings for the selected communication channels.
- ▶ Edit the required settings.
- ▶ Tap the function [Save].
 - ⇒ The dialog box closes.
- ▶ Tap the action [QR Data Encoding].
 - ⇒ The screen shows a dialog box with selectable data encoding options.
- ▶ Select the desired option.
- ▶ Tap the function [Next].
 - ⇒ The screen shows a dialog box with settings for the selected data encoding format.
- ▶ Edit the required settings.

- ▶ Tap the function *[Save]*.
- ⇒ The dialog box closes.

6 Operation



CAUTION

Risk of injury from glass splinters

Sharp objects can damage the screen.

- ▶ Keep sharp objects away from the screen.

6.1 Layout of the software

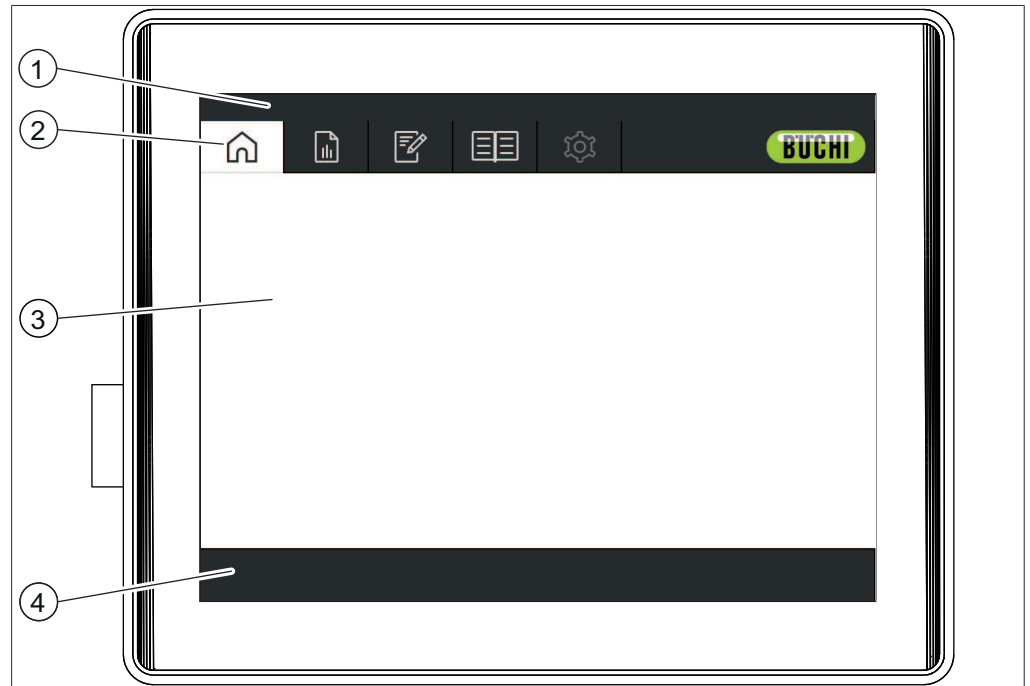








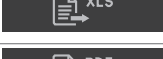
















Fig. 9: Control panel

| No. | Description | Function |
|-----|--------------|---|
| 1 | Status bar | Shows the current status of the instrument. See Chapter 6.4 “Status bar”, page 49. |
| 2 | Menu bar | Shows symbols representing the menus. See Chapter 6.3 “Menu bar”, page 39. |
| 3 | Content area | Shows current settings, submenus or actions depending on the current operation. |
| 4 | Function bar | Shows functions that can be performed according to current operation. See Chapter 6.2 “Function bar”, page 38. |

6.2 Function bar






The function bar shows available functions according to the current operation. The functions on the function bar are executed by tapping the relevant function buttons.

| Symbol | Description | Meaning |
|---|------------------------------------|---|
|  | [Back] | The display reverts to the previous view. |
|  | [Confirm] | Confirm a measurement result. |
|  | [Switch off] | The software shuts down. |
|  | [Select] | Selects the marked application. |
|  | [Login] | The display shows the dialog <i>Login</i> . |
|  | [Multiple selection] | Activates multiple selection of measurements. |
|  | [Select all] | Selects all measurements in the list. NOTICE! only available if multiple selection is activated |
|  | [Report] | Generates on-screen report |
|  | [Save Excel] | Saves the report as Excel file. |
|  | [Save PDF] | Saves the report as PDF file. |
|  | [Print] | Sends the report to the printer. |
|  | [Edit] | Allows the selected item to be edited. |
|  | [New] | Creates a new application or property. |
|  | [Delete] | Deletes the selected value. |
|  | [Copy] | Copies the marked application. |
|  | [Autocal] | Starts the auto calibration function. |
|  | [Import] | Data import. |
|  | [Export] | Exports the marked data. |
|  | [Import / Export measurement data] | Import or export data according to the function. |
|  | [Information] | Shows information about the instrument and the installed Licenses. |
|  | [Full page] | The report fits on full page. |
|  | [Width scrolling] | The report fits to width scrolling. |
|  | [Go to windows] | The view changes to the windows® surface. |

6.3 Menu bar

The menus are represented by symbols on the menu bar.

The following menus are available:

| Menu symbol | Meaning | Actions |
|---|-----------------------------|---|
|  | <i>[Start]</i> menu | <ul style="list-style-type: none"> Carrying out a measurement. See Chapter 6.3.1 “Start menu”, page 40. |
|  | <i>[History]</i> menu | <ul style="list-style-type: none"> Shows the results of completed measurements. Creating reports. Adding sample reference values. Adding samples to calibration set. Updating calibrations using the AutoCal function. Exporting Measurement Data. See Chapter 6.3.2 “History menu”, page 44. |
|  | <i>[Application]</i> menu | <ul style="list-style-type: none"> Creating, editing or selecting an application. See Chapter 6.3.3 “Application menu”, page 46. |
|  | <i>[Tools]</i> menu | <ul style="list-style-type: none"> Setting up configurations, maintenance and system tests. Viewing instrument log and other instrument counters. Licence requests and import functions. Setting up remote sessions. Changing Login credentials. See Chapter 6.3.4 “Tools menu”, page 47. |
|  | <i>[Configuration]</i> menu | <ul style="list-style-type: none"> Editing instrument settings. Available in administrator mode only. |

6.3.1 Start menu

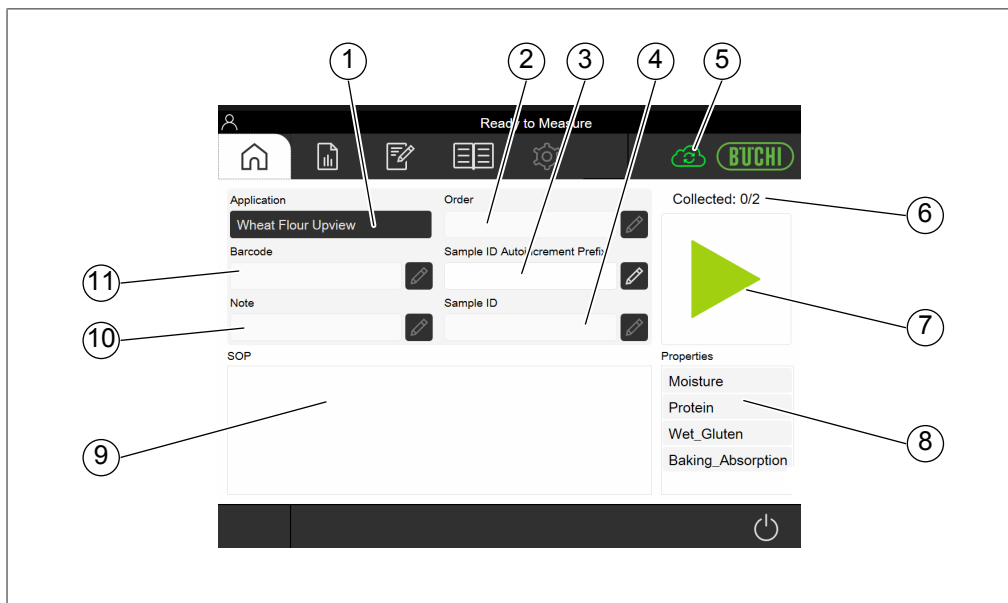











Fig. 10: Start menu

- | | | | |
|----|--|----|--|
| 1 | View selected application | 2 | Order See Chapter “Insert order”, page 43 |
| 3 | Sample ID Autoincrement Prefix, see Chapter “Insert Sample ID Autoincrement Prefix”, page 42 | 4 | Sample ID See Chapter “Insert sample ID”, page 41 |
| 5 | NIRWise REST API service status | 6 | Counter for replicate measurements (if active) |
| 7 | Control button | 8 | Shows the properties of the selected application |
| 9 | Shows the Standard Operation Procedure for the selected application | 10 | Note See Chapter “Insert note”, page 43 |
| 11 | Barcode See Chapter “Insert barcode”, page 43 | | |

Control button

The *[control]* button can show the following symbols:

| Symbol | Meaning |
|---|--|
|  | <ul style="list-style-type: none"> The measurement is finished. The tested sample is in the specifications. By tapping the symbol the instrument carries out a measurement. |
|  | Target value is the expected parameter for the product. The target value is defined in the Application. |


| Symbol | Meaning |
|---|---|
|  | <ul style="list-style-type: none"> • A replicate measurement is finished. • The instrument is ready to measure the next replicate. |
|  | <ul style="list-style-type: none"> • No application available. • Measurement not possible. |
|  | <ul style="list-style-type: none"> • The measurement is finished. • The predicted value is outside the tolerance. |
|  | <p>Tolerance is a difference from the target value. Tolerances are defined in the Application.</p> |
|  | <ul style="list-style-type: none"> • The measurement is finished. • A calibration model is missing. • Mahalanobis outlier • The predicted value is outside calibration range. • The predicted value is outside of the set limit. |
|  | <p>Limit is an absolute value. Limits are defined in the Application.</p> |
|  | <ul style="list-style-type: none"> • The measurement is in progress. • Cancel measurement. |

Insert sample ID

The Sample ID is a label to identify the sample under analysis.

Navigation path




- ▶ Tap the button  next to *[Sample ID]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter a sample number, name or code.
- ▶ Tap the button *[OK]*.
 - ⇒ The sample ID is saved.
 - ⇒ The dialog box closes.

Insert Sample ID Autoincrement Prefix

The Sample ID Autoincrement Prefix generates automatic sample ID increments based on the entered prefix. The prefix will be remembered as long as the application is not changed. If the application is changed, the Sample ID Autoincrement Prefix will be reset.

Navigation path



- ▶ Tap the button  next to *[Sample ID Autoincrement Prefix]*.
- ▶ Enter a Sample ID Autoincrement Prefix.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
- ▶ Tap the *[Control]* button.
 - ⇒ The sample ID field is automatically populated by the Sample ID Autoincrement Prefix followed by #001
 - ⇒ The instrument is carrying out the measurement.
 - ⇒ The status bar shows the status *[Measuring]*.
 - ⇒ The measurement finishes and the predicted values are displayed.
- ▶ Tap the *[Control]* button.
 - ⇒ The sample ID field is automatically populated by the Sample ID Autoincrement Prefix followed by #002
 - ⇒ The instrument is carrying out the measurement.
 - ⇒ The status bar shows the status *[Measuring]*.
 - ⇒ The measurement finishes and the predicted values are displayed.

Insert barcode


The barcode is a label to identify the sample under analysis.

A barcode reader can be connected. When the barcode reader is configured the user can use this label to identify the sample under analysis.

As an alternative insert a barcode manually

Navigation path




- ▶ Tap the button  next to the *[Barcode]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter the barcode for the sample.
- ▶ Tap the button *[OK]*.
 - ⇒ The barcode is saved.
 - ⇒ The dialog box closes.

Insert note

The Note is a label to identify the sample under analysis. With default settings the Note is not a mandatory field.

Navigation path




- ▶ Tap the button  next to the *[Note]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter a value.
- ▶ Tap the button *[OK]*.
 - ⇒ The note is saved.
 - ⇒ The dialog box closes.

Insert order

The Order is a label to identify the sample under analysis. With default settings the Order is not a mandatory field.

Navigation path



- ▶ Tap the button  next to the *[Order]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter a value.
- ▶ Tap the button *[OK]*.
 - ⇒ The order is saved.
 - ⇒ The dialog box closes.

6.3.2 History menu

The *[History]* menu lists past measurement data.

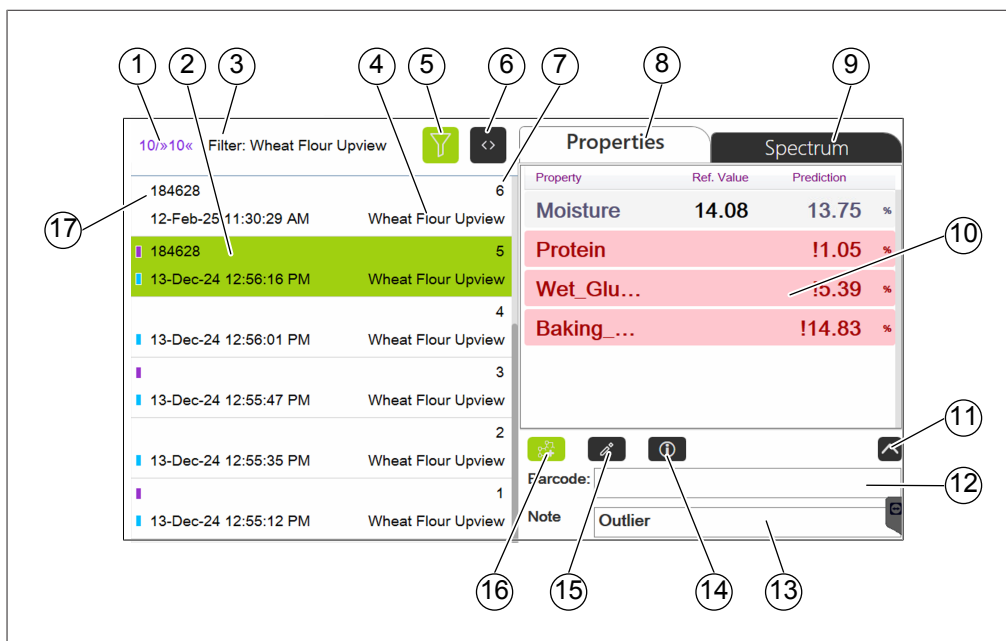


Fig. 11: Data menu

- | | | | |
|----|--|----|---|
| 1 | Displayed Samples/Total Samples (for applied filter) | 2 | Timestamp |
| 3 | Applied filter | 4 | Application name |
| 5 | Filter button | 6 | Extended view button |
| 7 | Sample ID | 8 | Sample properties |
| 9 | Displays spectra | 10 | Displays properties, predicted values, reference values |
| 11 | Enlarge note area | 12 | Barcode |
| 13 | Note | 14 | Measurement details button |
| 15 | Edit metadata button | 16 | Add to calibration dataset button |
| 17 | Order number | | |

Blue bar: Sample added to calibration data set

Purple bar: Sample has reference values indicator

See:

- Chapter 6.11 “Editing metadata (Sample ID, Order, Note)”, page 77
- Chapter 6.12 “Enter reference values”, page 78
- Chapter 6.13 “Run AutoCal to create or update calibrations”, page 80
- Chapter 6.14.1 “Exporting measurement data”, page 82
- Chapter 6.15 “Create reports”, page 86

Select filter

Filters allow the user to narrow the selection of sample to those that fulfill specific criteria.

Navigation path

→  → [History]

- ▶ Navigate to the [History] menu via the navigation path.
- ▶ Tap button filter.
 - ⇒ The screen shows a dialog box with the selectable filters.

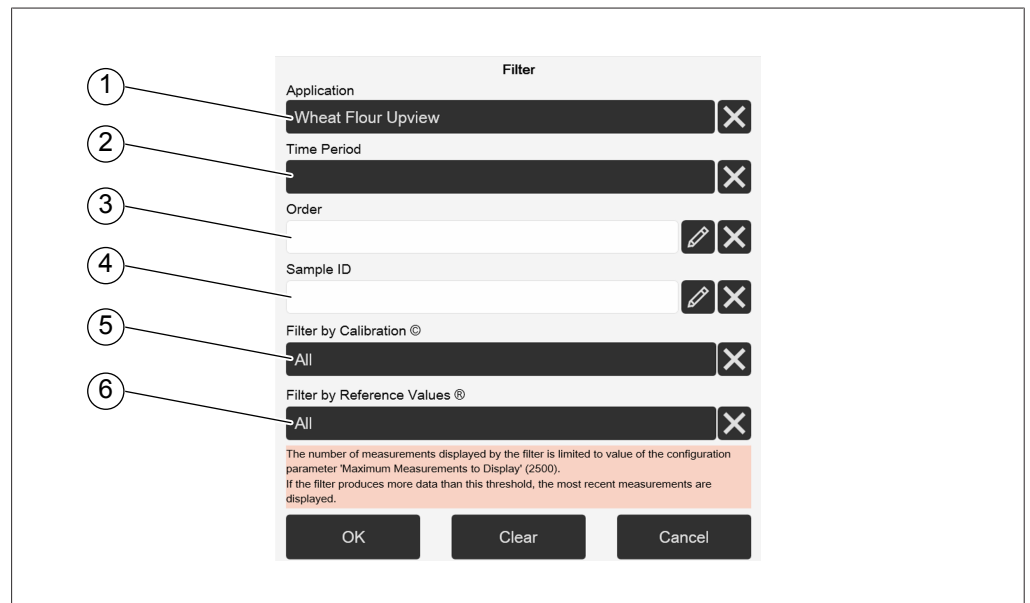


Fig. 12: Dialog box filter

- | | | | |
|---|--------------------------------------|---|---------------------------|
| 1 | Application | 2 | Time period (also custom) |
| 3 | Order | 4 | Sample ID |
| 5 | Added to calibration data set Yes/No | 6 | Reference values Yes/No |

- ▶ Select the filter settings according to the requirements.
- ▶ Tap the button [OK].
 - ⇒ The dialog box closes.
 - ⇒ The screen shows the filtered measurements.

Deselect filter

Navigation path

→  → [History]

- ▶ Navigate to the [History] menu via the navigation path.
- ▶ Tap the button filter.
 - ⇒ The screen shows a dialog box with the selectable filters.
- ▶ Tap the button [X] of a specific filter or the button [Clear] to remove all filters.
- ▶ Tap the button [OK].
 - ⇒ The dialog box closes.
 - ⇒ The screen shows all available measurements.

6.3.3 Application menu

In the *[Application]* menu applications can be created, edited and selected.

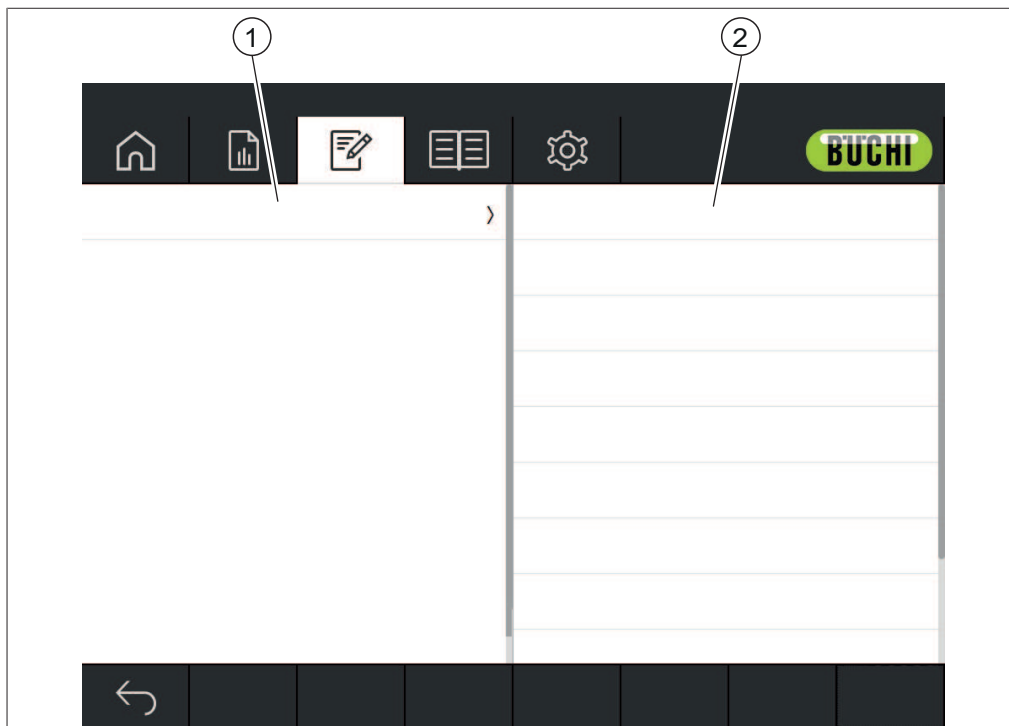


Fig. 13: Application menu

- 1 Shows a list of available applications 2 Shows a list of available settings.
or properties

See:

Editing an application

Chapter 6.7 “Deleting an application”, page 56

Editing a property

Chapter 6.9 “Deleting a property”, page 73

Chapter 6.14.2 “Importing application data”, page 85

Chapter 6.14.3 “Exporting application data”, page 85

6.3.4 Tools menu

The tools menu offers different tools for maintenance and application settings.

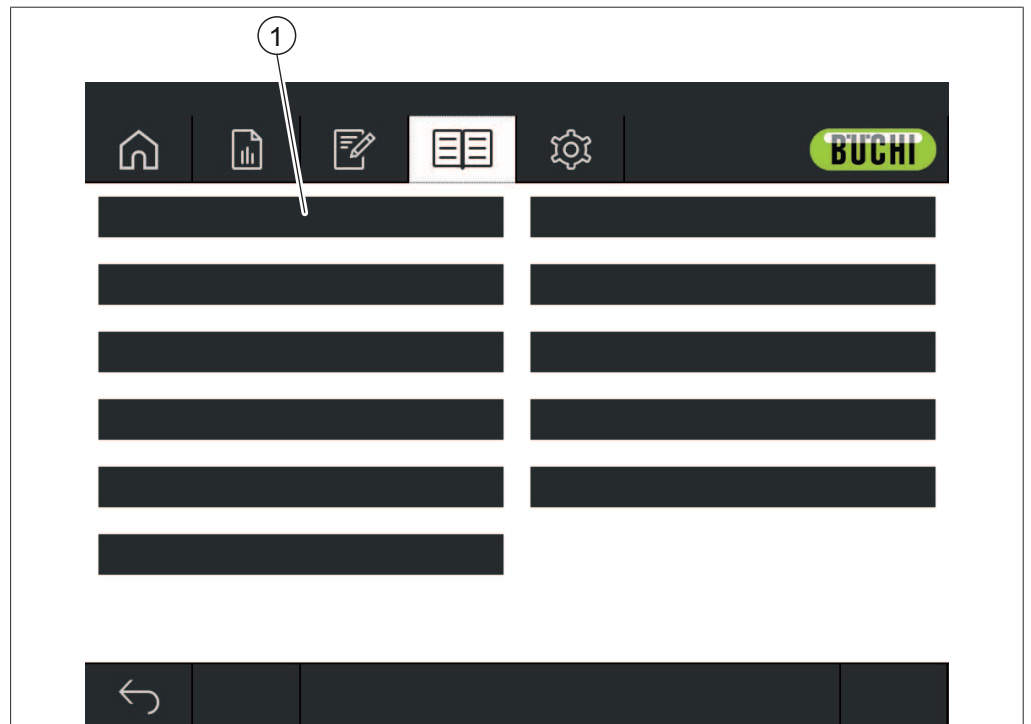


Fig. 14: Tools menu

1 Tools

The following tools are available:

| Action | Option | Explanation |
|--------------------------------|-----------|--|
| <i>[NIRWise Log]</i> | View | Shows a dialog with a list of messages that occurred during operation. (all users) |
| <i>[Backup NIRWise Data]</i> | Procedure | Carrying out a data backup. (administrator only) See Chapter 7.4 “Carrying out a data backup”, page 95 |
| <i>[Extended System Tests]</i> | Procedure | Carrying out different system tests. (administrator only) See Chapter 7.3.2 “Carrying out a Comprehensive System Test”, page 94 See Chapter 7.3.3 “Carrying out an Advanced System Test”, page 95 |
| <i>[Test BCV]</i> | Procedure | Carrying out a Baseline Correction Test. (administrator only) See Chapter 7.3.1 “Carrying out a Baseline Correction Vector test”, page 94 |

| Action | Option | Explanation |
|---|------------------|--|
| <i>[Confirm Lamp Replacement]</i> | Reset | See Chapter 7.2.2 “Confirming lamp replacement”, page 94 (administrator only) |
| <i>[License Request]</i> | Procedure | See Apply for a licence (administrator only) |
| <i>[TeamViewer Support]</i> | Open program | The Software <i>TeamViewer</i> opens for remote support. (administrator only) |
| <i>[Restore Backup]</i> | | ► Contact BUCHI Customer Service. |
| <i>[Database Cleanup]</i> | Procedure | See Chapter 7.6 “Cleaning up the database”, page 96 (administrator only) |
| <i>[Cleaning Mode]</i> | | Not applicable for ProxiMate™ Essential |
| <i>[Operational Counters]</i> | View / Procedure | The data is displayed depends on the system configuration: Total Operation time / NIR Operation Time / Lamp UP View / Reference Up View / System Temperature / Rotation Time / VIS Operation Time / Lamp Down View / References Down View / System Humidity (administrator only) |
| <i>[Extended System Test History]</i> | View | Shows a dialog with a further information about the tests carried out. (administrator only) |
| <i>[Calibrate BCV]</i> | Procedure | See Chapter 5.5.4 “Calibrating a Baseline Correction Vector (BCV)”, page 23 (administrator only) |
| <i>[Import External Reference Data]</i> | Procedure | See Chapter 5.5.5 “Importing reference data”, page 27 |
| <i>[License Import]</i> | Procedure | See Chapter 5.5.2 “Importing a license”, page 22 (administrator only) |
| <i>[Copy Data Files]</i> | | Copies all files under C:\ProgramData\Buchi\NIRWise to a selectable location. |
| <i>[Factory Settings]</i> | | ► Contact BUCHI Customer Service. |

6.4 Status bar



The status bar shows the status of the instrument.

The following statuses are possible:

Indications on the status bar

| View | Status |
|---|--|
| Stabilizing Spectrometer | Shows the remaining time. |
| Ready to Measure | The instrument is ready to measure. |
| Tempering to | The instrument is warming up. The Status bar shows the target and current instrument temperature. |
| Configuring... | The instrument is starting up. The instrument is loading an application. |
| Measuring... | The instrument is carrying out a measurement. |
| Adjusting Exposure Time... | Instrument initialization |
| Calibrating BCV... | The instrument calibrates the Baseline Correction Vector. |
| Initializing... | Instrument initialization |
| Measuring Dark Reference... | The instrument measures the internal dark reference. |
| Error | An error occurred. See Chapter 8 "Help with faults", page 98. |
| Extended System Tests | The action Extended System Test is activated. Instrument waits for action. |
| Preconditioning... | Instrument initialization |
| Standard System Test Running... | The instrument carries out a Standard System Test. |
| System Testing... | Instrument running internal tests |
| Ready for Configuration | <ul style="list-style-type: none"> • No application selected. • No Baseline Correction for Sample Presentation of current application defined. |
| Measuring White Reference... | Instrument initialization |
| Lamp Pre-Heating | The instrument is heating the lamp. The Status bar shows the remaining time. |
| View Configuration: Calibrate BCV Status | The BCV calibration for the selected measurement view and sample presentation is missing. See Chapter 5.5.4 "Calibrating a Baseline Correction Vector (BCV)", page 23. |

Symbols on the status bar

| Symbol | Status |
|---|--|
|  | The current user is logged on as administrator The software is in administrator mode. |
|  | The current user is logged on as operator. The software is in operator mode. |



A warning has occurred. Check the *[NIR-Wise log]*.

See Chapter 6.3.4 “Tools menu”, page 47.

6.5 Log in administrator mode

Navigation path



Precondition:

- ☑ The software is in operator mode.
- ▶ Navigate to the *[Tools]* menu via the navigation path.
- ▶ Tap the function *[Login]* in the function bar.
 - ⇒ The screen shows a dialog box with the available Users.
- ▶ Tap *[Administrator]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter the password.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The software is in administrator mode.
 - ⇒ The status bar shows the icon administrator.

6.6 Editing an application



NOTE

Applications can only be edited in Administrator mode.

6.6.1 Creating a new application

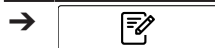
There are two ways to create an application:

- by copying an existing application
 - See Chapter “Creating a new application by copying an existing application”, page 51
- by creating a new application
 - See Chapter “Creating a new application”, page 50

Creating a new application

Proceedings:

Navigation path



Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the function *[Add]* on the function bar.
 - ⇒ The screen shows a dialog with an alphanumeric input box.

- ▶ Enter a name for the application.
- ▶ Tap the button *[OK]*.
- ⇒ The dialog box closes.
- ⇒ The new application is created.

Creating a new application by copying an existing application

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the application you wish to copy.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the function *[Copy]* on the function bar.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter a name for the application.
- ▶ Tap the button *[OK]*.
 - ⇒ The screen shows a dialog with the properties of the copied application highlighted in green.
- ▶ Tap the properties you do not want to copy.
 - ⇒ The disabled properties are highlighted in white.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The new application is created.

6.6.2 Changing the alias of an application

The alias function allows to give a previously defined application a local name.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the action *[Alias]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter an alias for the application.

- ▶ Tap the button *[OK]*.
- ⇒ The dialog box closes.
- ⇒ The alias is saved.

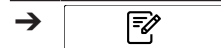
6.6.3 Changing the Measurement mode of an application

Choose the measurement mode according to the setting for the sample presentation. See Chapter 6.6.4 “Changing the Sample presentation of an application”, page 52. The following measurement modes are available:

| Mode | Explanation |
|--------------------|--|
| Diffuse reflection | The application runs the measurement in the reflection mode. Diffuse reflectance measurement mode is used to measure solid and powdered samples. |
| Transflection | The application runs the measurement in the transflection mode. Transflectance mode is used to measure liquids and gels. Transflectance mode require the use of a transflection cover. |

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The display highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The display highlights the application in green.
- ▶ Tap the action *[Measurement mode]*.
 - ⇒ The display shows a dialog box with the selectable values.
- ▶ Select a value.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.

6.6.4 Changing the Sample presentation of an application

With Baseline Correction Vector (BCV) Different Sample Presentation modes can be defined to correct, for example, the effect of sample container on the spectral measurement.

The following presentation modes are available:

| Modes | Explanation |
|---------|---|
| Default | Apply the default settings for baseline correction. |
| New | Calibrate an individual Baseline correction. See Chapter 5.5.4 “Calibrating a Baseline Correction Vector (BCV)”, page 23. |

Proceedings:

Navigation path



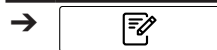
Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The display highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The display highlights the application in green.
- ▶ Tap the action *[Sample presentation]*.
 - ⇒ The display shows a dialog box with the selectable values.
- ▶ Select a value.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.

6.6.5 Enter a description for an application

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the action *[Description]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter a description for the application.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The description is saved.

6.6.6 Changing the Rotation of an application

The Application has the option to select whether the sample is rotated during measurement.

The following settings are available:

| Mode | Explanation |
|------|--|
| Yes | The sample carrier rotates during the measurement. |
| No | The sample carrier does not rotate during the measurement. |

Proceedings:

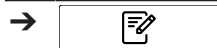
Navigation path

Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the action *[Rotation]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select a value.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.

6.6.7 Changing the Measurement duration of an application

The default measurement time (15 seconds) allows the sample to complete one rotation. Shorter measurement time does not allow a complete rotation of the sample. Proceedings:

Navigation path

Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the action *[Measurement duration]*.
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The value for the duration is saved.

6.6.8 Enter a Standard Operating Procedure (SOP) for an application

Each Application has an optional Standard Operating Procedure (SOP) associated with it. A Standard Operating Procedure SOP shows instructions for the user to follow during measurement.

Proceedings:

Navigation path



Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the action *[SOP]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter the steps which the operator has to carry for the application.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The description is saved.

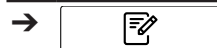
6.6.9 Changing the selection ability of an application

Change whether an Application can be selected by the user during operation. The following modes are available:

| Mode | Explanation |
|------|------------------------------------|
| Yes | The application is selectable. |
| No | The application is not selectable. |

Proceedings:

Navigation path



Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the action *[Selectable]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select a value.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.

6.7 Deleting an application



NOTE

The following procedure fully deletes the application. It is not possible to restore the application after it has been deleted.

There are two deleting options for an application:

| Option on the dia-log | Explanation |
|-----------------------|-------------|
|-----------------------|-------------|

[Yes]

- Deletes the application and all related data.
 - Deletes the calibration and data files.
 - The application is not longer selectable.
 - Deletes the measurement data.
 - Deletes the recorded usage.
 - Deletes all sample data recorded with the application.

[No]

- Deletes the application and keeps the related data.
 - Deletes the calibration and data files.
 - The application is not longer selectable.
 - The measurement data is available and can be exported.
 - The recorded usage remains.
 - All sample data recorded with the application remains available.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application you wish to remove.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the function *[Remove]* on the function bar.
- ▶ Confirm the secure question.
 - ⇒ The screen shows a dialog with the two deleting modes.
- ▶ Select the deleting mode.

6.8 Editing a property



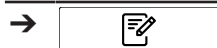
NOTE

Properties can only be edited in Administrator mode.

6.8.1 Creating a new Property

Proceedings:

Navigation path



Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap one of the available properties.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the function *[Add]* on the function bar.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter a name for the property.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The new property is created.

6.8.2 Changing the name of a property



NOTE

It is not possible to rename a property after it was used once.

Proceedings:

Navigation path



Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Name]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter a name for the property.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The new name is saved.

6.8.3 Changing the alias of a property

The alias function allows to give a previously defined property a local name.

Proceedings:

Navigation path



Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Alias]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter an alias for the property.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The alias is saved.

6.8.4 Changing the Sort order of a property

The sort order defines the position in which the property will be displayed within an Application when there are multiple properties.

Proceedings:

Navigation path



Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Sort order]*.
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The value for the Sort order is saved.

6.8.5 Changing the Prediction type of a property

The setting of the prediction type influences the further setting possibilities of the property.

The following settings are available:

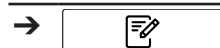
| Prediction type | Explanation | Available predictions settings |
|---------------------|--|---|
| [Calibration model] | Uses assigned calibration model to predict parameter value from spectrum. The calibration model uses a chemometric model. | Decimal Places see Chapter 6.8.15 "Changing the Decimal places of a property", page 68 <hr/> Unit see Chapter 6.8.16 "Changing the Unit of a property", page 68 <hr/> Initial Wavelength Range see Chapter 6.8.6 "Changing the Initial Wavelength Range (Calibration model only)", page 62 <hr/> Postpredicted Value see Chapter 6.8.7 "Changing the Postpredicted Value (Calibration model only)", page 63 <hr/> Slope see Chapter 6.8.18 "Changing the Slope of a property", page 69 <hr/> Bias see Chapter 6.8.17 "Changing the Bias of a property", page 69 <hr/> Mahalanobis see Chapter 6.8.19 "Changing the Mahalanobis of a property (Calibration model only)", page 70 <hr/> Target see Chapter 6.8.20 "Changing the Target of a property", page 70 <hr/> Tolerance Min. see Chapter 6.8.24 "Changing the Tolerance minimum of a property", page 72 <hr/> Tolerance Max. see Chapter 6.8.23 "Changing the Tolerance maximum of a property", page 72 <hr/> Limit Min. see Chapter 6.8.22 "Changing the Limit minimum of a property", page 71 <hr/> Limit Max. see Chapter 6.8.21 "Changing the Limit maximum of a property", page 71 |

| Prediction type | Explanation | Available predictions settings |
|------------------------------|---|--|
| <i>[Calculated Property]</i> | Uses define properties that are mathematical calculated from other properties. e.g. Dry Matter = 100 - Moisture | <p>Decimal Places see Chapter 6.8.15 “Changing the Decimal places of a property”, page 68</p> <hr/> <p>Unit see Chapter 6.8.16 “Changing the Unit of a property”, page 68</p> <hr/> <p>Formula see Chapter 6.8.10 “Changing the Formula (Calculated Property only)”, page 65</p> <hr/> <p>Slope see Chapter 6.8.18 “Changing the Slope of a property”, page 69</p> <hr/> <p>Bias see Chapter 6.8.17 “Changing the Bias of a property”, page 69</p> <hr/> <p>Target see Chapter 6.8.20 “Changing the Target of a property”, page 70</p> <hr/> <p>Tolerance Min. see Chapter 6.8.24 “Changing the Tolerance minimum of a property”, page 72</p> <hr/> <p>Tolerance Max. see Chapter 6.8.23 “Changing the Tolerance maximum of a property”, page 72</p> <hr/> <p>Limit Min. see Chapter 6.8.22 “Changing the Limit minimum of a property”, page 71</p> <hr/> <p>Limit Max. see Chapter 6.8.21 “Changing the Limit maximum of a property”, page 71</p> |

| Prediction type | Explanation | Available predictions settings |
|-----------------|--|--|
| [Color] | Only for models with a visible detector. Measures the sample color. | Decimal Places see Chapter 6.8.15 “Changing the Decimal places of a property”, page 68 Observer see Chapter 6.8.11 “Changing the Observer (Color only)”, page 66 Illuminate see Chapter 6.8.12 “Changing the Illuminant (Color only)”, page 66 Metric see Chapter 6.8.13 “Changing the Metric (Color only)”, page 67 Metric Element see Chapter 6.8.14 “Changing the Metric Element (Color only)”, page 67 Slope see Chapter 6.8.18 “Changing the Slope of a property”, page 69 Bias see Chapter 6.8.17 “Changing the Bias of a property”, page 69 Target see Chapter 6.8.20 “Changing the Target of a property”, page 70 Tolerance Min. see Chapter 6.8.24 “Changing the Tolerance minimum of a property”, page 72 Tolerance Max. see Chapter 6.8.23 “Changing the Tolerance maximum of a property”, page 72 Limit Min. see Chapter 6.8.22 “Changing the Limit minimum of a property”, page 71 Limit Max. see Chapter 6.8.21 “Changing the Limit maximum of a property”, page 71 |

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the [Application] menu via the navigation path.

- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Prediction type]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select a value.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.
- ▶ Editing the available prediction settings according to your needs.

6.8.6 Changing the Initial Wavelength Range (Calibration model only)

Select the wavelength range for initial calibration.



NOTE

Changes in the project file replace the selection made here.

The following settings are available:

| Wavelength type | Explanation |
|-------------------|--|
| <i>[NIR only]</i> | NIR wavelength range only (900 - 1700 nm) |
| <i>[VIS only]</i> | VIS wavelength range only (400 - 900 nm) |
| <i>[VIS NIR]</i> | NIR and VIS wavelength range (400 - 1700 nm) |

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Initial Wavelength Range]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select a value.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.
 - ⇒ The value for the Initial Wavelength Range is saved.

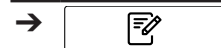
6.8.7 Changing the Postpredicted Value (Calibration model only)

The following settings are available:

| Postprediction type | Explanation |
|------------------------------------|--|
| <i>[Predicted Value]</i> | Calculates the values as predicted by the chemometric model. |
| <i>[Residuum]</i> | Is an indication of the applicability of the model. The Residuum is the RMS value of the difference between pre-treated sample and model reconstructed spectra. |
| <i>[Mahalanobis Distance]</i> | Calculates the value on basis of a mahalanobis calculation |
| <i>[Calibration Base Standard]</i> | Converts the parameter value of the calibration to the value obtained at a different moisture content. A property moisture is necessary for carrying out this postprediction type. See: Chapter 6.8.8 "Changing the Calibration Base (Calibration model only)", page 64 Chapter 6.8.9 "Changing the Display Basis (Calibration model only)", page 64 |

Proceedings:

Navigation path



Precondition:

The software is in administrator mode. See Chapter 6.5 "Log in administrator mode", page 50

- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Postpredicted Value]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select a value.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.
 - ⇒ The value is saved.

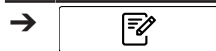
6.8.8 Changing the Calibration Base (Calibration model only)

The following settings are available:

| Type | Explanation |
|-----------------|---|
| [Dry Basis] | The property value is expressed neglecting the presence of water in the sample. The water contribution is subtracted from the calculation. |
| [Moisture xx %] | The property value is expressed assuming xx % water content. The amount of water is expressed as a percentage of the total weight. |
| [As Is] | The property value is expressed including the presence of water in the sample. The water contribution is included in the calculation. |

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- The post prediction type *[Calibration Base Standard]* is selected.
 - ▶ Navigate to the *[Application]* menu via the navigation path.
 - ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
 - ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
 - ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
 - ▶ Tap the action *[Calibration Base]*.
 - ⇒ The screen a dialog box with the selectable values.
 - ▶ Select a value.
 - ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.
 - ⇒ The value for the calibration base is saved.

6.8.9 Changing the Display Basis (Calibration model only)

The following settings are available:

| Type | Explanation |
|-----------------|---|
| [Dry Basis] | The property value is expressed neglecting the presence of water in the sample. The water contribution is subtracted from the calculation. |
| [Moisture xx %] | The property value is expressed assuming xx % water content. The amount of water is expressed as a percentage of the total weight. |

| Type | Explanation |
|---------|--|
| [As Is] | The property value is expressed including the presence of water in the sample. The water contribution is included in the calculation. |

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- The post prediction type [*Calibration Base Standard*] is selected.
- ▶ Navigate to the [*Application*] menu via the navigation path.
- ▶ Tap the function [*Edit*] on the function bar.
 - ⇒ The screen highlights the function [*Edit*] in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action [*Display basis*].
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select a value.
- ▶ Tap the button [*OK*].
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.
 - ⇒ The value for the Display basis is saved.

6.8.10 Changing the Formula (Calculated Property only)

Calculation formula for the prediction.

Rules how to enter a formula see Chapter 10.3 “Rules entering a formula”, page 103

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the [*Application*] menu via the navigation path.
- ▶ Tap the function [*Edit*] on the function bar.
 - ⇒ The screen highlights the function [*Edit*] in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action [*Formula*].
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter the formula.

- ▶ Tap the button *[OK]*.
- ⇒ The dialog box closes.
- ⇒ The formula is saved.

6.8.11 Changing the Observer (Color only)

The settings available corresponding to the international standard CIE 1931 / CIE 1964.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Observer]*.
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select a value.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.
 - ⇒ The value for the Observer type is saved.

6.8.12 Changing the Illuminant (Color only)

The settings available corresponding to the international standard ISO 11664-2:2007 / CIE S 014-2:2006.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Illuminant]*.
 - ⇒ The screen shows a dialog box with a numeric input box.

- ▶ Enter the value in the numeric input box.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The value for the Illuminant is saved.

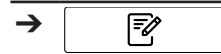
6.8.13 Changing the Metric (Color only)

The following settings are available:

| Type | Explanation |
|--------------|--|
| <i>[Lab]</i> | Calculates the metrics in the L*a*b color space. |
| <i>[LCh]</i> | Calculates the metrics in the L*C*h color space. |
| <i>[XYZ]</i> | Calculates the values in XYZ color space. |

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Metric]*.
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The value for the Metric is saved.

6.8.14 Changing the Metric Element (Color only)

Available options depend on the metric selected in Chapter 6.8.13 “Changing the Metric (Color only)”, page 67

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.

- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action [*Metric Element*].
 - ⇒ The screen shows a dialog box with the selectable values.
- ▶ Select a value.
- ▶ Tap the button [*OK*].
 - ⇒ The dialog box closes.
 - ⇒ The setting is saved.
 - ⇒ The value for the Metric Element is saved.

6.8.15 Changing the Decimal places of a property

Number of decimal places displayed by a property.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the [*Application*] menu via the navigation path.
- ▶ Tap the function [*Edit*] on the function bar.
 - ⇒ The screen highlights the function [*Edit*] in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action [*Decimal places*].
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button [*OK*].
 - ⇒ The dialog box closes.
 - ⇒ The value for the Decimal places is saved.

6.8.16 Changing the Unit of a property



NOTE

Special characters

- ▶ Tap the button [*Shift*] on the alphanumeric input box.
 - ⇒ The alphanumeric input box shows the available special characters.

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the [*Application*] menu via the navigation path.
- ▶ Tap the function [*Edit*] on the function bar.
 - ⇒ The screen highlights the function [*Edit*] in green.

- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Unit]*.
 - ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter a unit for the property.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The Unit is saved.

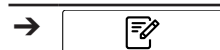
6.8.17 Changing the Bias of a property

A bias is a constant value.

This value is added to the result of a prediction to correct a constant deviation between predicted values and reference values.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Bias]*.
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The value for the Bias is saved.

6.8.18 Changing the Slope of a property

The slope is a factor that is used to correct proportional systematic differences between the result of a measurement and the reference value.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.

- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Slope]*.
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The value for the Slope is saved.

6.8.19 Changing the Mahalanobis of a property (Calibration model only)

The Mahalanobis distance is a measure of spectral similarity between the measured spectrum and the Dataset used in the calibration.

Proceedings:

Navigation path



Precondition:

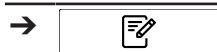
- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Mahalanobis]*.
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The value for the Mahalanobis is saved.

6.8.20 Changing the Target of a property

Sets the target value, relative to which the tolerances are considered.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.

- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Target]*.
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The value for the Target is saved.

6.8.21 Changing the Limit maximum of a property

Sets the upper limit for the property.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action *[Limit Max.]*.
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The value for the Limit is saved.

6.8.22 Changing the Limit minimum of a property

Sets the lower limit for the property.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
 - ⇒ The screen highlights the function *[Edit]* in green.

- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action [*Limit Min.*].
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button [*OK*].
 - ⇒ The dialog box closes.
 - ⇒ The value for the Limit is saved.

6.8.23 Changing the Tolerance maximum of a property

Tolerance is a difference from the target value.
Sets the upper tolerance relative to the target.
Proceedings:

Navigation path



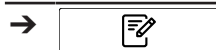
Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the [*Application*] menu via the navigation path.
- ▶ Tap the function [*Edit*] on the function bar.
 - ⇒ The screen highlights the function [*Edit*] in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action [*Tolerance Max.*].
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button [*OK*].
 - ⇒ The dialog box closes.
 - ⇒ The value for the Tolerance is saved.

6.8.24 Changing the Tolerance minimum of a property

Tolerance is a difference from the target value.
Sets the lower tolerance relative to the target.
Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the [*Application*] menu via the navigation path.
- ▶ Tap the function [*Edit*] on the function bar.
 - ⇒ The screen highlights the function [*Edit*] in green.

- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property that you wish to edit.
 - ⇒ The screen shows the view *Property*.
- ▶ Tap the action [*Tolerance Min.*].
 - ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the value in the numeric input box.
- ▶ Tap the button [*OK*].
 - ⇒ The dialog box closes.
 - ⇒ The value for the Tolerance is saved.

6.9 Deleting a property

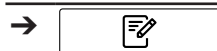


NOTE

It is not possible to delete a property after it has been used for measurement.

Proceedings:

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the [*Application*] menu via the navigation path.
- ▶ Tap the function [*Edit*] on the function bar.
 - ⇒ The screen highlights the function [*Edit*] in green.
- ▶ Tap the name of the application that you wish to edit.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the name of the property you wish to remove.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the function [*Remove*] on the function bar.
- ▶ Select [*Yes*] to confirm the action in response to the confirmation question.
 - ⇒ The property is deleted.

6.10 Carrying out a measurement



NOTE

Barcode / Sample ID / Order / Note

Barcode, Sample ID, Order and Note for a sample can be edited during the measurement process at any time.

- ▶ See Chapter “Insert sample ID”, page 41
- ▶ See Chapter “Insert barcode”, page 43
- ▶ See Chapter “Insert note”, page 43
- ▶ See Chapter “Insert order”, page 43
- ▶ See Chapter “Insert Sample ID Autoincrement Prefix”, page 42



NOTE

Returning the test sample in the production can cause contamination.

- ▶ Do not return test sample in the production.



NOTE

Contaminated or defective sample carrier

A contaminated or defective sample carrier causes measuring errors.

- ▶ Do not use defective sample carriers.
- ▶ Make sure that the sample carrier is clean.



NOTE

Wrong measurement results due to overfilled petri dishes.

The sample material can fall out from overfilled Petri dishes. This sample material can lead to an accumulation of material on the measurement window leading to incorrect measurement results.

- ▶ Do not overfill petri dishes.

6.10.1 Preparing the instrument

Time required: up to 30 min

Precondition:

- All commissioning operations have been completed. See Chapter 5 “Installation”, page 20.
- All commissioning operations have been completed.
- ▶ Tap the **On/Off** master switch.
 - ⇒ The system starts up.
 - ⇒ The screen highlights the status bar yellow.
 - ⇒ Once the startup phase is complete the status bar changes from yellow to black.

6.10.2 Starting a single measurement

Navigation path



Precondition:

- The instrument is prepared. See Chapter 6.10.1 “Preparing the instrument”, page 74
- ▶ Navigate to the *[Application]* menu via the navigation path.

- ▶ Tap the application you wish to use.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the function *[Select]* on the function bar.
 - ⇒ The screen changes to the *[Start]* menu.
- ▶ According to the application requirements put the sample in the sample presentation area.
- ▶ Tap the *[Control]* button.
 - ⇒ The instrument is carrying out the measurement.
 - ⇒ The status bar shows the status **Measuring**.

6.10.3 Starting replicate measurements

Navigation path



Precondition:

- The instrument is prepared. See Chapter 6.10.1 “Preparing the instrument”, page 74.
- Replicate measurements are defined. See Chapter 5.5.8 “Editing the number of measurement replicates”, page 28.
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the application you wish to use.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the function *[Select]* on the function bar.
 - ⇒ The screen changes to the *[Start]* menu.
 - ⇒ The counter above the *[Control]* button shows 0/X (X being the number of replicates defined in the configurations).
- ▶ According to the application requirements, put the sample in the sample presentation area.
- ▶ Tap the *[Control]* button.
 - ⇒ The instrument is carrying out the first replicate measurement.
 - ⇒ The status bar shows the status **Measuring**.
 - ⇒ After the first replicate measurement is completed, the counter shows the 1/X and the *[Control]* button is blue.
 - ⇒ The home screen shows a message to prepare the sample for the next repetition.
- ▶ Prepare the sample according to the replicate requirements.
- ▶ Tap the *[Control]* button.
- ▶ Repeat until all replicates are measured.

6.10.4 Ending measurement

Precondition:

- ☑ The control button shows one of the status measurement finished.
- ▶ The symbol of the control button shows in which specifications category the sample fits.

The following specifications categories are possible:

| Specifications categories | Explanation see Chapter “Control button”, page 40 | Explanation see Chapter 6.10.5 “Measurement result details and spectra”, page 76 |
|---------------------------|---|--|
| Within specification | x | x |
| Tolerance | x | x |
| Limit | x | x |

- ▶ Continue according to the specification the sample is in.

| Within specification | Tolerance | Limit |
|--|--|--|
| ▶ Tap the function <i>[Save]</i> on the function bar. ⇒ The measurement is saved. | ▶ Tap the control button ▶ Tap the function <i>[Save]</i> on the function bar. ⇒ The measurement is saved. | ▶ Tap the control button ▶ Tap the function <i>[Save]</i> on the function bar. ⇒ The measurement is saved. |

6.10.5 Measurement result details and spectra



NOTE

The measurement result buttons indicate if a sample is in or out of specifications, an outlier, or if there is no prediction available.

| Measurement result | Explanation |
|--------------------|---|
| xx.x % | • The tested sample is in the specifications. |
| N/A | • The calibration model is missing. |
| Outlier | • Mahalanobis outlier |
| ! xx % | • The predicted value is outside calibration range. |
| xx.x % | • The predicted value is outside of the set limit. |
| xx.x % | • The predicted value is outside the tolerance. |

Navigation path



Precondition:

- ☑ A measurement is completed and the predictions are shown on the *Home* screen.

- ▶ Tap on one of the *[Results]* buttons.
 - ⇒ The screen shows detailed information about the current measurement and the predictions of the last seven samples measured with the same application.
- ▶ Select the *[Spectra]* tab.
 - ⇒ The screen shows the corresponding spectra of the current measurement and the last seven samples measured with the same application.
- ▶ Tap the function *[Close]*.
 - ⇒ The dialog box closes.
- ▶ Tap the function *[Spectra]* on the *Home* screen.
 - ⇒ The *Home* screen shows the spectrum of the current measurement. In case of replicate measurements, the spectra of each replicate and the average are displayed.

**NOTE**

Use the *[Expand/Collapse]* button to adjust the window size.

**NOTE**

If a measurement is saved with the *Spectra* view open, the next measurement will show the same view instead of the *Results* view.

- ▶ To switch back to the *Results* view, tap on *Results* .

6.10.6 Shutting down the software

Navigation path



- ▶ Navigate to the *[Start]* menu via the navigation path.
- ▶ Tap the function *[Switch off]* on the function bar.
- ▶ Answer *YES* to the confirmation question.
 - ⇒ The software is shutting down.

6.11 Editing metadata (Sample ID, Order, Note)

**NOTE**

The labels of the order and the note fields can be different depending on the settings according to Chapter 5.5.7 “Changing the label of the order and note fields”, page 28.

Performing this action will change the values in the database and in the history menu.


**NOTE**

The new values will be applied for reports and exports created after the change. Reports and exports created before the change will not be recreated.

Navigation path



Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Select a sample.
- ▶ Tap the function *[Edit]* on the function bar.
- ▶ Tap the button .



- ▶ Select the metadata field for which you would like to change the value and tap the button.
- ⇒ The screen shows a dialog with an alphanumeric input box.
- ▶ Enter the new value.
- ▶ Tap the button *[OK]*.
- ▶ If necessary, repeat this for other meta data fields.
- ▶ Tap the button *[Save]*.

6.12 Enter reference values

Navigation path

→  → *[History]*

Function bar symbols used in this section:

| | | |
|---|-------------------------------------|--|
|  | <i>[Edit]</i> | Allows the selected item to be edited. |
|  | <i>[Add to Calibration Dataset]</i> | Adds the selected item to the calibration dataset. |

Precondition:

- The software is in administrator mode.
- Samples have been measured with the instrument and are properly and uniquely labeled.
- The reference values of the samples have been determined by a primary method.
- ▶ Navigate to the *[History]* menu via the navigation path.
- ▶ Tap the function *[Edit]* on the function bar.
- ⇒ The screen highlights the function *[Edit]* in green.
- ▶ Tap on the name of the measurement you wish to edit.
- ⇒ The sample is highlighted green and the measurement details with the properties appear on the right side of the screen.
- ▶ Tap on the property you wish to edit.
- ⇒ The screen shows a dialog box with a numeric input box.
- ▶ Enter the reference value.
- ▶ Tap the button *[OK]*.
- ⇒ The reference value is set.
- ▶ Enter the reference values for other parameters if required.
- ▶ Tap the button *[Add to Calibration Dataset]*.
- ⇒ The button will be highlighted in green and the measurement is activated for AutoCal.
- ▶ Repeat these steps for all samples you wish to add to the calibration.

6.12.1 Import reference values via an Excel template

Navigation path

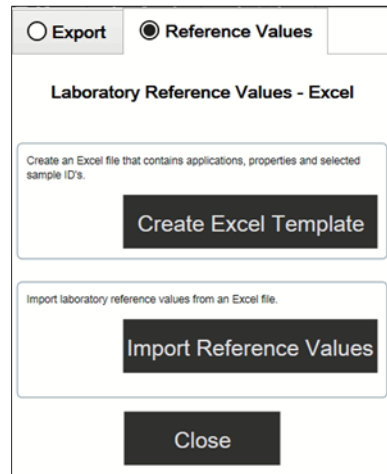
→  → *[History]*

Function bar symbols used in this section:

| | | |
|---|-----------------|--------------------------|
|  | <i>[Export]</i> | Exports the marked data. |
|---|-----------------|--------------------------|

Precondition:

- ☑ The software is in administrator mode.
- ☑ Samples have been measured with the instrument and have been properly and uniquely labeled .
- ☑ The reference values of the samples have been determined by a primary method.
- ▶ Navigate to the *[History]* menu via the navigation path.
- ▶ Select relevant measurements (those for which new reference values are available). See *Quick Guide ProxiMate™ – Exports and reports* on how to select multiple samples
- ▶ Tap the *[Export]* function on the function bar.
- ⇒ The screen shows a dialog.



- ▶ Select the *Reference Values* tab.
- ▶ Select the *[Create Excel Template]* button.
- ⇒ The screen shows a windows menu.
- ▶ Select a location according to your needs. Do not rename the template file.
- ▶ Tap the *[Save]* button.
- ⇒ The screen shows a confirmation that the template was created and saved.
- ▶ Tap the button *[OK]*.
- ⇒ The template is exported.
- ▶ Transfer the template to a trusted location on a PC, otherwise it will be opened in protected mode.
- ▶ Open the template with Excel, enter the reference values.
- ▶ Save the template with the reference values.
- ▶ Copy the template to a USB or to the instrument.
- ▶ Navigate to the *History* menu via the navigation path.
- ▶ Tap the function *[Import]* on the function bar.
- ⇒ The screen shows a dialog.
- ▶ Select the *Reference Values* tab.
- ▶ Select the *[Import Reference Values]* action.
- ⇒ The screen shows the *Open files* dialog.
- ▶ Select the file you want to import.
- ▶ Tap the button *[OK]*.
- ⇒ The screen shows a confirmation stating how many reference values were imported.
- ⇒ The reference values are imported and are displayed in the measurement details of the related samples.

6.13 Run AutoCal to create or update calibrations

Navigation path

→  → [History]

Function bar symbols used in this section:

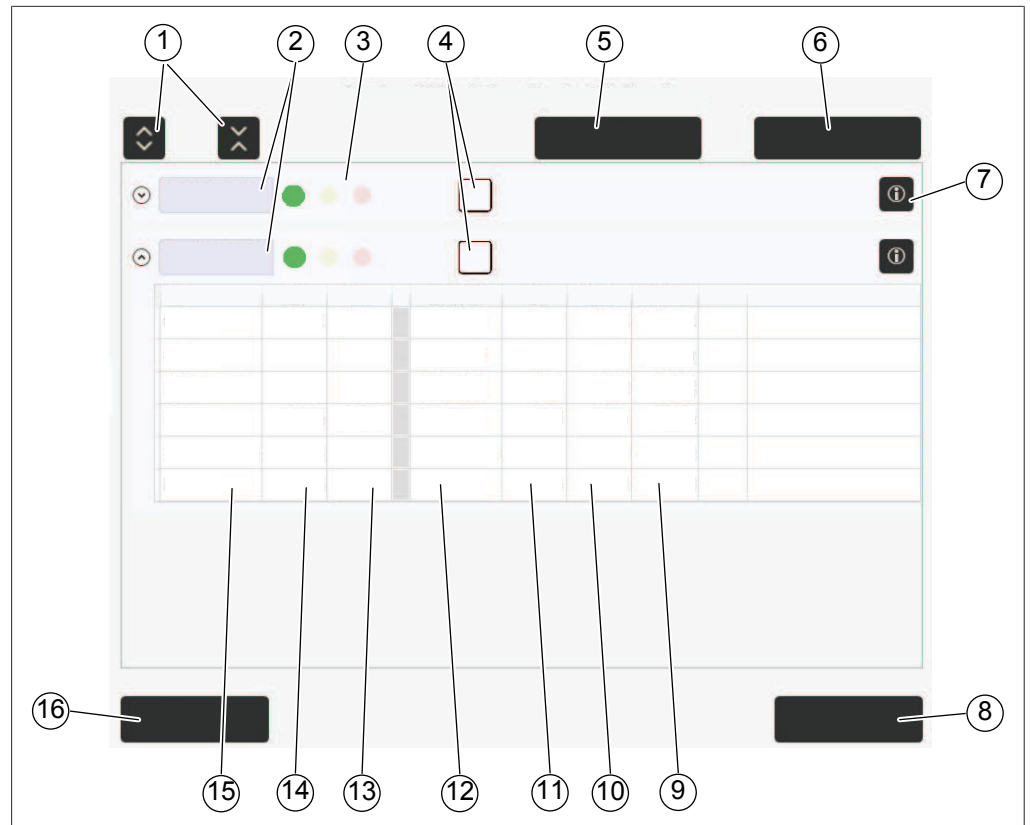


[AutoCal]

Starts the auto calibration function.

Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ☑ Reference values of at least three samples are set in the [History] menu for the chosen application and parameter, and at least three of these reference values are different.
 - ▶ Navigate to the [History] menu via the navigation path.
 - ▶ Navigate to one of the measurements you wish to add to the calibration.
 - ▶ Tap on the measurement.
 - ⇒ The sample is highlighted in green and the measurement details with the properties appear on the right.
 - ▶ Tap [AutoCal] on the function bar.
 - ⇒ The screen shows a dialog box with a list of all properties of the selected application.
 - ▶ Deselect all properties you do not want to update.
 - ▶ Confirm with [OK].
 - ⇒ The screen shows the *Updating Calibration* dialog.
 - ⇒ When the calibration process is finished, the *Confirm Calibrations* dialog appears.
 - ⇒ The traffic light indicates if the new calibration model is improved, stable or less good (based on the quality criterion defined in the configuration, see Chapter 5.5.17 “Changing the basis for calibration comparison”, page 33).
 - ▶ Tap the [Information] button.
 - ⇒ The screen shows a dialog box with the comparison details.
 - ▶ Tap [OK] to close the comparison details.
 - ▶ Tap the [Expand] button in *Confirm Calibrations*.
 - ⇒ The screen shows a comparison table of the old and new calibration model.
 - ▶ Select the properties for which the calibration model should be updated.
 - ▶ Either [Accept] or [Discard] the new calibration model.
 - ⇒ If the new calibration model is accepted, the old calibration model will be replaced and stored in the history folder of the calibration folder.
 - ⇒ If the new calibration model is rejected, the old calibration model will remain.



- | | | | |
|----|---|----|--|
| 1 | Expand/collapse all tables | 2 | Property |
| 3 | Traffic lights | 4 | Select an individual calibration |
| 5 | Select all calibrations with a green traffic light | 6 | Select all calibrations |
| 7 | Calibration comparison details | 8 | <i>[Discard]</i> button |
| 9 | Reference value (if available) | 10 | Predictions based on new calibration |
| 11 | Predictions based on current calibration (if available) | 12 | IDs of last n (default = 6) measurements |
| 13 | Statistic parameters of new calibration model | 14 | Statistic parameters of current calibration model (if available) |
| 15 | Statistic parameter type | 16 | <i>[Accept]</i> button |

6.13.1 Open the calibration summary to find statistical information

Navigation path

→  → [Start]

Function bar symbols used in this section:

 [Select] Selects the marked application.

Precondition:

- ☑ At least one application is uploaded to NIRWise.
- ▶ Navigate to the [Start] menu via the navigation path.
- ▶ Tap on the [Application] button.
 - ⇒ The [Application] menu is opened.
- ▶ Tap on the application of interest.
 - ⇒ The application is highlighted green.
- ▶ Confirm with the [Select] button on the function bar.
 - ⇒ The menu returns to the [Start] menu and the properties of the selected application are displayed on the right bottom side.
- ▶ Tap on the property of interest.
 - ⇒ The screen shows a dialog box with the calibration summary of this property.
- ▶ Confirm with [OK] to close the dialog box.

6.14 Importing and Exporting

6.14.1 Exporting measurement data


Create exports

Types of exports in NIRWise:

- tsv: Format used in the chemometrics software NIRWise Plus. Contains measured values, reference values and spectral data.
- jdx: General export format.
- csv: Contains measured values and optionally meta data and reference values and/or spectral data.

Create an export of a single sample

Navigation path

→  → [History]

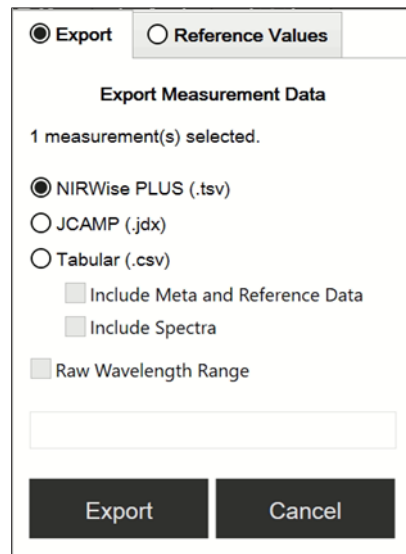
Function bar symbols used in this section:

 [Export] Exports the marked data.

Precondition:

- ☑ The software is in administrator mode.
- ☑ At least one measurement is available in the *History* menu.
- ▶ Navigate to the *History* menu via the navigation path.
- ▶ Navigate to the measurement you wish to export and tap it.
 - ⇒ The display highlights the measurement in green.

- ▶ Tap the function *[Export]* on the function bar.
- ⇒ The display shows the *Export* menu.





- ▶ Select the file format which you wish to export.
- ▶ Tap the *[Export]* button.
- ⇒ The display shows a dialog box confirming the successful export.

Create an export of multiple samples of the same application

Navigation path



Function bar symbols used in this section:

| | | |
|---|-----------------------------|---|
|  | <i>[Export]</i> | Exports the marked data. |
|  | <i>[Multiple selection]</i> | Activates multiple selection of measurements. |

Precondition:

- The software is in administrator mode.
- At least two measurements from the same application are available in the *History* menu.
- ▶ Navigate to the *History* menu via the navigation path.
- ▶ Navigate one of to the measurements you wish to export and tap it.
- ⇒ The display highlights the measurement in green.
- ▶ Tap on the *[Multiple Selection]* button on the function bar.
- ⇒ The sample view shows only the measurements of the selected application and the *[Multiple Selection]* button is highlighted in green.
- ▶ Tap on all other samples that you wish to export.
- ⇒ All selected samples are highlighted in green.
- ▶ Tap the function *[Export]* on the function bar.
- ⇒ The display shows the *Export* menu.
- ▶ Select the file format which you wish to export.
- ▶ Tap the *[Export]* button.
- ⇒ The display shows a dialog box confirming the successful export.

Create an export of all samples of the same application

Navigation path

→  → [History]

Function bar symbols used in this section:



[Export]

Exports the marked data.



[Multiple selection]

Activates multiple selection of measurements.



[Select all]

Selects all measurements in the list.

NOTICE! only available if multiple selection is activated

Precondition:

- ☑ The software is in administrator mode.
- ☑ At least two measurements from the same application are available in the *History* menu.
 - ▶ Navigate to the *History* menu via the navigation path.
 - ▶ Navigate one of to the measurements you wish to export and tap it.
 - ⇒ The display highlights the measurement in green.
 - ▶ Tap on the [Multiple Selection] button on the function bar.
 - ⇒ The sample view shows only the measurements of the selected application and the [Multiple Selection] button is highlighted in green.
 - ▶ Tap on the [Select All] button .
 - ⇒ All samples of the application are highlighted in green.
 - ▶ Tap the function [Export] on the function bar.
 - ⇒ The display shows the *Export* menu.
 - ▶ Select the file format which you wish to export.
 - ▶ Tap the [Export] button.
 - ⇒ The display shows a dialog box confirming the successful export.

Access created data files

Navigation path

→  → [Tools]

Function bar symbols used in this section:



[Go to windows]

The view changes to the windows® surface.

- ▶ Navigate to the [Tools] menu via the navigation path.
- ▶ Tap the [Go To Windows] button.
 - ⇒ The display switches to the desktop of the in-built computer.
- ▶ Open the *NirWiseData* folder on the desktop.
- ▶ Navigate to the subfolders *Exports* and then *Data*.
- ▶ Find the exported file labelled with the application name and the date and time stamp of the export.

6.14.2 Importing application data

Navigation path



Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the function *[Import]* on the function bar.
 - ⇒ The screen shows a dialog for choosing the folders.
- ▶ Navigate to the saving folder of the application you wish to import.
- ▶ Select the application.
 - ⇒ The screen shows a dialog with the properties of the application you wish to import. All properties are highlighted in green.
- ▶ Tap the properties you do not want to import.
 - ⇒ The disabled properties are highlighted in white.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The application is imported.

6.14.3 Exporting application data

This export function allows the use of (unlicensed) applications onto another instrument.



NOTE

The location of the destination folder is fixed. See Chapter 10.2 “File explanations and folder locations”, page 102

Navigation path



Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the *[Application]* menu via the navigation path.
- ▶ Tap the application you wish to export.
 - ⇒ The screen highlights the application in green.
- ▶ Tap the function *[Export]* on the function bar.
 - ⇒ The screen shows a dialog with the properties of the application you wish to export. All properties are highlighted in green.
- ▶ Tap the properties you do not want to export.
 - ⇒ The disabled properties are highlighted in white.
- ▶ Tap the button *[OK]*.
 - ⇒ The dialog box closes.
 - ⇒ The application is exported.

6.15 Create reports

Reports contain the following information:




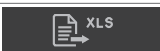
- Company information
- Instrument details
- Measurement summary (for multiple samples)
- Measurement details
- Measurement results
- Sample spectrum

6.15.1 Create a report of a single sample

Navigation path

→  → [History]

Function bar symbols used in this section:

| | | |
|--|--------------|----------------------------------|
|  | [Report] | Generates on-screen report |
|  | [Print] | Sends the report to the printer. |
|  | [Save PDF] | Saves the report as PDF file. |
|  | [Save Excel] | Saves the report as Excel file. |

Precondition:



- At least one measurement is available in the *History* menu.
- A printer has been set up.
- ▶ Navigate to the *History* menu via the navigation path.
- ▶ Navigate to one of the measurements you wish to export and tap it.
 - ⇒ The screen highlights the measurement in green.
- ▶ Tap the function [Report] on the function bar.
 - ⇒ The screen shows the pdf report.
- ▶ To print the report, tap the [Print] button.
 - ⇒ The screen shows a dialog with the printing progress.
- ▶ To export the report as pdf file, tap the [Save pdf] button.
 - ⇒ The screen shows a dialog box confirming the successful export.
- ▶ To export the report as excel file, tap the [Save excel] button.
 - ⇒ The screen shows a dialog box confirming the successful export.




6.15.2 Create a report of multiple samples of the same application

Navigation path

→  → [History]

Function bar symbols used in this section:

| | | |
|---|----------------------|---|
|  | [Report] | Generates on-screen report |
|  | [Multiple selection] | Activates multiple selection of measurements. |

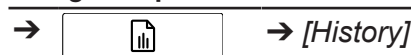
| | | |
|---|---------------------|----------------------------------|
|  | <i>[Print]</i> | Sends the report to the printer. |
|  | <i>[Save PDF]</i> | Saves the report as PDF file. |
|  | <i>[Save Excel]</i> | Saves the report as Excel file. |

Precondition:







- ☑ The software is in operator mode for report viewing and exporting.
- ☑ The software is in administrator mode for report printing.
- ☑ At least two measurements from the same application are available in the *History* menu.
 - ▶ Navigate to the *History* menu via the navigation path.
 - ▶ Navigate to one of the measurements you wish to export and tap it.
 - ⇒ The screen highlights the measurement in green.
 - ▶ Tap on the *[Multiple Selection]* button on the function bar.
 - ⇒ The sample view shows only the measurements of the selected application and the *[Multiple Selection]* button is highlighted in green.
 - ▶ Tap on all other samples that you wish to export.
 - ⇒ All selected samples are highlighted in green.
 - ▶ Tap the function *[Report]* on the function bar.
 - ⇒ The screen shows the pdf report.
 - ▶ To print the report, tap the *[Print]* button.
 - ⇒ The screen shows a dialog with the printing progress.
 - ▶ To export the report as pdf file, tap the *[Save pdf]* button.
 - ⇒ The screen shows a dialog box confirming the successful export.
 - ▶ To export the report as excel file, tap the *[Save excel]* button.
 - ⇒ The screen shows a dialog box confirming the successful export.

6.15.3 Create a report of all samples of the same application

Navigation path



Function bar symbols used in this section:

| | | |
|---|-----------------------------|---|
|  | <i>[Report]</i> | Generates on-screen report |
|  | <i>[Multiple selection]</i> | Activates multiple selection of measurements. |
|  | <i>[Select all]</i> | Selects all measurements in the list. NOTICE! only available if multiple selection is activated |
|  | <i>[Print]</i> | Sends the report to the printer. |
|  | <i>[Save PDF]</i> | Saves the report as PDF file. |
|  | <i>[Save Excel]</i> | Saves the report as Excel file. |

Precondition:

- ☑ The software is in operator mode for report viewing and exporting.
- ☑ The software is in administrator mode for report printing.
- ☑ At least two measurements from the same application are available in the *History* menu.
 - ▶ Navigate to the *History* menu via the navigation path.
 - ▶ Navigate to one of the measurements you wish to export and tap it.
 - ⇒ The screen highlights the measurement in green.
 - ▶ Tap on the *[Multiple Selection]* button on the function bar.
 - ⇒ The sample view shows only the measurements of the selected application and the *[Multiple Selection]* button is highlighted in green.
 - ▶ Tap on the *[Select All]* button.
 - ⇒ All samples of the same application are highlighted in green.
 - ▶ Tap the function *[Report]* on the function bar.
 - ⇒ The screen shows the pdf report.
 - ▶ To print the report, tap the *[Print]* button.
 - ⇒ The screen shows a dialog with the printing progress.
 - ▶ To export the report as pdf file, tap the *[Save pdf]* button.
 - ⇒ The screen shows a dialog box confirming the successful export.
 - ▶ To export the report as excel file, tap the *[Save excel]* button.
 - ⇒ The screen shows a dialog box confirming the successful export.

6.15.4 Access created data files

Navigation path

→  → *[Tools]*

Function bar symbols used in this section:



[Go to windows]

The view changes to the windows® surface.

- ▶ Navigate to the *[Tools]* menu via the navigation path.
- ▶ Tap the *[Go To Windows]* button.
 - ⇒ The screen switches to the desktop of the in-built computer.
- ▶ Open the *NirWiseData* folder on the desktop.
- ▶ Navigate to the subfolders *Exports* and then *Data*.
- ▶ Find the exported file labeled with the application name and the date and time stamp of the export.

7 Cleaning and servicing



NOTE

- ▶ Carry out only the service and cleaning operations described in this section.
- ▶ Do not carry out any servicing and cleaning operations that involve opening the housing.
- ▶ Use only genuine BUCHI spare parts in order to ensure correct operation and preserve the warranty.
- ▶ Carry out the service and cleaning operations described in this section to extend the lifetime of the instrument.

7.1 Regular maintenance work



NOTE

If special cleaning processes are necessary contact BUCHI Customer Service.

www.buchi.com/contact

| Component | Action | Frequency |
|------------------------|---|-----------|
| Sample vessel | <ul style="list-style-type: none"> ▶ Wipe down the sample containers with a damp cloth. ▶ If heavily soiled: <ul style="list-style-type: none"> • use mild detergent • rinse with clean water • wipe dry with a lint free cloth | Daily |
| Glass up view | <ul style="list-style-type: none"> ▶ Wipe down the glass window with a damp cloth. ▶ If heavily soiled, use ethanol or a mild detergent. | Daily |
| Sample presentation | <ul style="list-style-type: none"> ▶ Wipe down the sample presentation area with a damp cloth. ▶ If heavily soiled, use ethanol or a mild detergent. | Daily |
| Data | <ul style="list-style-type: none"> ▶ Perform a data backup. See Chapter 7.4 “Carrying out a data backup”, page 95 | Weekly |
| Casing | <ul style="list-style-type: none"> ▶ Wipe down the casing with a damp cloth. ▶ If heavily soiled, use ethanol or a mild detergent. | Weekly |
| Cooling fins | <ul style="list-style-type: none"> ▶ Remove dust and foreign objects from the cooling fins using compressed air or a vacuum cleaner. | Weekly |
| Measurements | <ul style="list-style-type: none"> ▶ Carry out an Baseline Correction Vector test. See Chapter 7.3.1 “Carrying out a Baseline Correction Vector test”, page 94 | Weekly |
| Sample carrier sliders | <ul style="list-style-type: none"> ▶ Check that the sample carrier sliders do not show excessive wear. | Monthly |
| Instrument | <ul style="list-style-type: none"> ▶ Carry out an Advanced System Test. See Chapter 7.3.3 “Carrying out an Advanced System Test”, page 95 | Monthly |

| Component | Action | Frequency |
|---------------------|--|-----------|
| Desiccant cartridge | <ul style="list-style-type: none"> ▶ Check function of the desiccant cartridge. Checking the desiccant cartridge ▶ If necessary change the desiccant cartridge. See Changing the desiccant cartridge | Yearly |
| Instrument | <ul style="list-style-type: none"> ▶ Carry out a Comprehensive System Test. See Chapter 7.3.2 “Carrying out a Comprehensive System Test”, page 94 | Yearly |

7.2 Changing the lamps

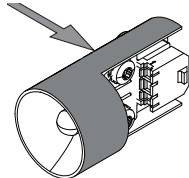


NOTICE

Risk of broken lamp

Touching the bulb or the reflector with hands can cause lamp damage.

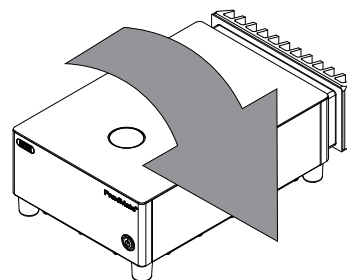
- ▶ Do not touch the bulb with fingers.



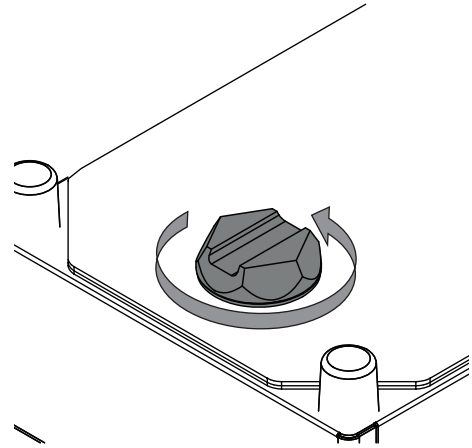
- ▶ Touch the lamp on the indicated areas.

7.2.1 Changing the up view lamp

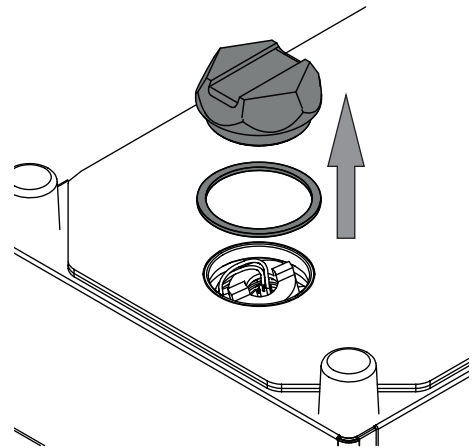
- ▶ Disconnect the power supply to the instrument.
- ▶ Wait 15 min. for lamp to cool.
- ▶ Turn the instrument around.
- ▶ Make sure that the instrument cannot tip over during the lamp replacement procedure.



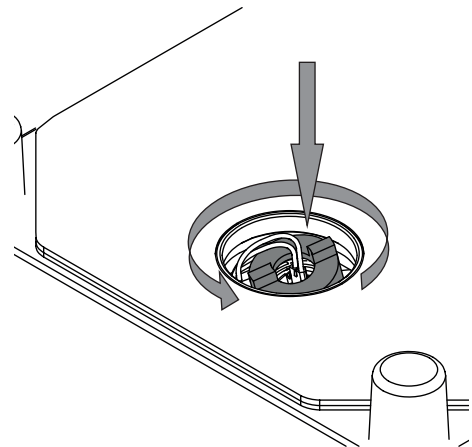
- ▶ Open the cover lid on the bottom of the instrument.



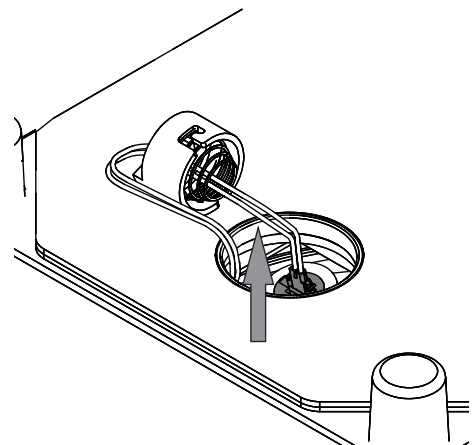
- ▶ Remove the seal and the cover lid.



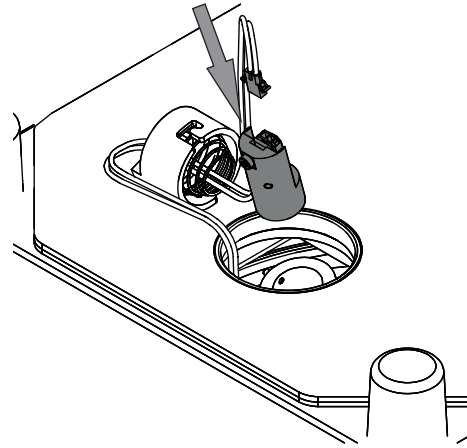
- ▶ Press the ferrule.
- ▶ Turn the ferrule 1/4 turn counterclockwise.



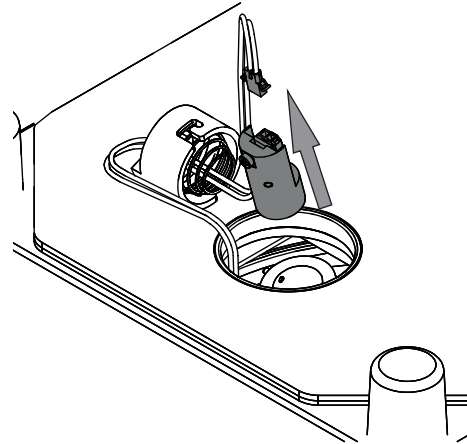
- ▶ Remove the defective lamp from the lamp socket.



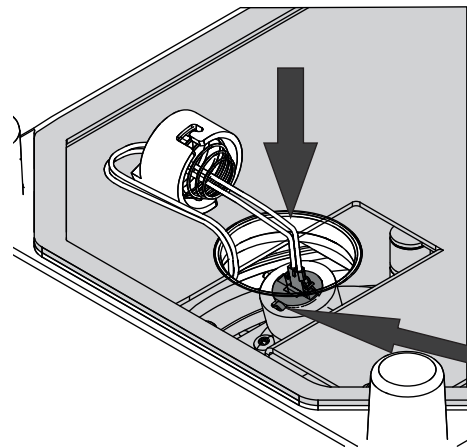
- ▶ Disconnect the defective lamp.



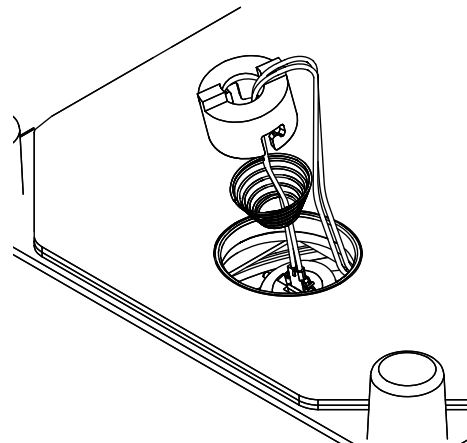
- ▶ Connect the new lamp.



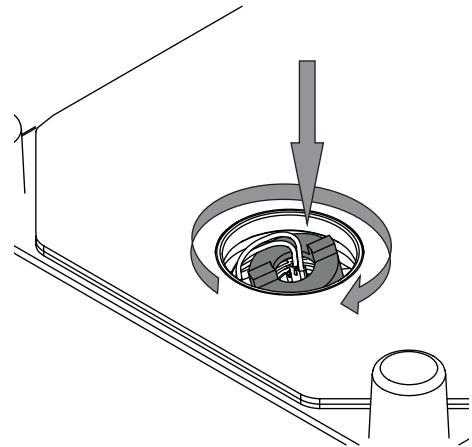
- ▶ Put the connected replacement lamp in the lamp socket.
- ▶ Make sure that the indicated screw is in the groove of the lamp socket.



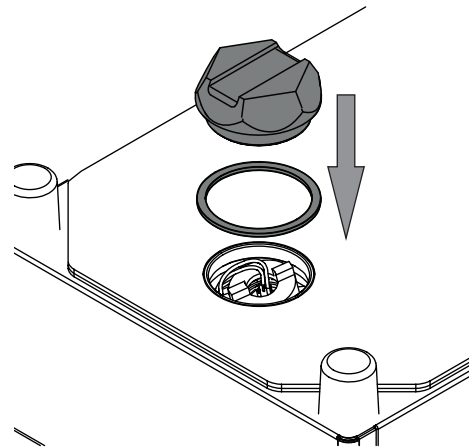
- ▶ Put ferrule and spring on the lamp socket.



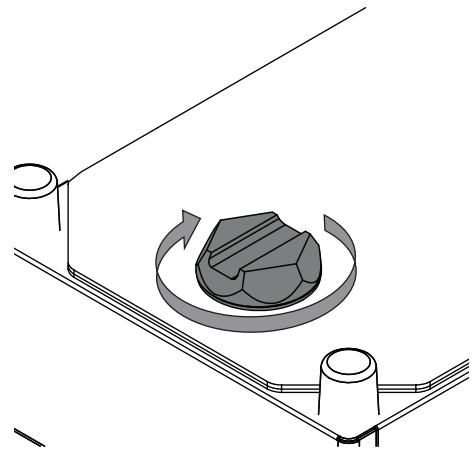
- ▶ Press the ferrule.
- ▶ Turn the ferrule 1/4 turn clockwise.



- ▶ Put the seal and the cover lid on the instrument.



- ▶ Attach the cover lid with the tool provided.



- ▶ Change the desiccant cartridge. See Changing the desiccant cartridge
- ▶ Confirm the lamp replacement. See Chapter 7.2.2 “Confirming lamp replacement”, page 94.
- ▶ Carry out a baseline correction vector calibration. See Chapter 5.5.4 “Calibrating a Baseline Correction Vector (BCV)”, page 23.

7.2.2 Confirming lamp replacement

Navigation path

→  → [Confirm Lamp Replacement]

Precondition:

- ☑ The lamp has been changed.
- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Tap the **On/Off** master switch.
 - ⇒ The system starts up.
 - ⇒ The screen highlights the status bar yellow.
 - ⇒ After completion the startup phase the display highlights the status bar black.
- ▶ Navigate to the action [Confirm Lamp Replacement] via the navigation path.
- ▶ Confirm the secure question with **OK**.

7.3 Carrying out system tests

7.3.1 Carrying out a Baseline Correction Vector test

Navigation path

→  → [Test BCV]

Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the action [Test BCV] via the navigation path.
 - ⇒ The screen shows the dialog *Test BCV*.
- ▶ Select the name of the sample presentation you wish to test.
- ▶ Tap the button [Start].
- ▶ Follow instructions on the screen during the test.
- ▶ Confirm the instructions by tapping the [OK] button.
- ▶ Once the test is complete, the software records the results in a report.
 - ⇒ The screen shows Baseline Correction Tests is completed.

7.3.2 Carrying out a Comprehensive System Test

Navigation path

→  → [Extended System Test]

Precondition:

- ☑ The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ☑ External reference data for all standards are loaded.
- ☑ Performance Test Standards Kit is available.
- ▶ Navigate to the action [Extended System Test] via the navigation path.
 - ⇒ The screen shows the dialog *Extended System Test*.
- ▶ Select check box [Comprehensive System Test]
- ▶ Tap the button [Start].
- ▶ Follow instructions on the screen during the test.
- ▶ Confirm the instructions by tapping the [OK] button.

- ▶ Once the test is complete, the software records the results in a report.
- ⇒ The screen shows Comprehensive System Tests is completed.

7.3.3 Carrying out an Advanced System Test

Navigation path

→  → [Extended System Test]

Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the action [Extended System Test] via the navigation path.
 - ⇒ The screen shows the dialog *Extended System Test*.
- ▶ Select check box [Advanced System Test]
- ▶ Tap the button [Start].
 - ⇒ The instrument starts the test.
- ▶ Once the test is complete, the software records the results in a report.
 - ⇒ The screen shows Advanced System Tests is completed.

7.4 Carrying out a data backup



NOTE

The location of the destination folder is fixed. See Chapter 10.2 “File explanations and folder locations”, page 102

Navigation path

→  → [Backup NIRWise Data]


Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the action [Backup NIRWise Data] via the navigation path.
 - ⇒ The screen shows a dialog with values that can be saved.
- ▶ Select the values according to your needs.
- ▶ Tap the button [Start].
 - ⇒ The software creates a .zip file with the selected data.
- ▶ Save the data to an external data store.

7.5 Restoring a data backup

7.5.1 Via the Tools Menu

Navigation path

→  → [Restore Backup]

Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the action [Restore Backup] menu via the navigation path.
 - ⇒ The screen shows a dialog box.
- ▶ Tap the button [Yes] if you want to continue with the restore process.
 - ⇒ NIRWise closes and the [Proximate Data Backup Restore] dialog opens.

- ▶ Select a backup file by clicking on the *[Open Directory]* button.
- ▶ Choose the correct backup file
- ▶ Press *[Restore]*.
- ▶ Wait until the process is finished and open NIRWise.

7.5.2 Via the short cut

Precondition:

- The NIRWise application is closed.
- ▶ Navigate to the short cut *[BackupRestore]* on the desktop of the computer.
- ▶ Double-click to open.
 - ⇒ The *[Proximate Data Backup Restore]* dialog opens.
- ▶ Select a backup file by clicking on the *[Open Directory]* button.
- ▶ Choose the correct backup file.
- ▶ Press *[Restore]*.
- ▶ Wait until the process is finished and open NIRWise.

7.6 Cleaning up the database



NOTE

Before using the database cleanup, create a backup of the current database, see Chapter 7.4 “Carrying out a data backup”, page 95 and store it in a safe location.



NOTE

Samples that contain reference values will not be deleted by this operation.



NOTE

Operation of the instrument will be limited once the disk is full =90% of the available disk space if used.

- ▶ Use the feature *[Database Cleanup]* from the *[Tools View]* to clean up the old data.

NIRWise will show consecutive warnings when 90% (45000 - 48999 samples), 98% (49000 – 49899 samples), and 99.8% (49900 – 49999 samples) of the available disk space are used.

Once the database reaches 50000 samples, the following warning is displayed: The disk is full.

The system may become slow.

- ▶ Use the feature *[Database Cleanup]* from the *[Tools View]* to clean up the old data.

Navigation path

→  → *[Database Cleanup]*

Precondition:

- The software is in administrator mode. See Chapter 6.5 “Log in administrator mode”, page 50
- ▶ Navigate to the action *[Database Cleanup]* menu via the navigation path.
- ▶ The screen shows a dialog box with two options.

7.6.1 By percentage

- ▶ Select how much of the database in percent you would like to delete.
- ▶ Tap the button *[Delete]*.
- ⇒ The chosen amount of data is deleted from the database starting with the oldest entry.

7.6.2 By time period

- ▶ Choose the *[By period]* tab.
- ⇒ The screen shows a dialog box with start and end date. The start date is automatically the date of the oldest entry in the database.
- ▶ Tap the button to adjust the time stamps.
- ▶ Tap the button *[Delete]*.
- ⇒ The data for the chosen time frame is deleted from the database.

8 Help with faults

8.1 Troubleshooting

| Problem | Possible cause | Action |
|---|---|---|
| The sample carrier does not rotate smoothly | Sample presentation area is dirty | <ul style="list-style-type: none"> ▶ Wipe down the sample presentation area with mild detergent. ▶ Rinse the sample presentation area with clean water. ▶ Dry the sample presentation area with a lint free cloth. |
| Inaccurate Results | Direct solar radiation | ▶ Make sure, that there is no direct solar radiation. |
| | Sample cup not correctly positioned in sample carrier | ▶ Check that the sample cup sits correctly in the sample carrier. |
| | Sample cup not filled | ▶ Fill the sample cup prior to measurement. |

8.2 Error messages

| Error code | Error message | Solution |
|------------|--|--|
| 1000 | Unspecified error. | <ul style="list-style-type: none"> ▶ Restart the instrument. ▶ Contact BUCHI Customer Service. |
| 1001 | The communication with the instrument could not be established. The configured serial port is {0}. | <ul style="list-style-type: none"> ▶ Restart the instrument. ▶ Contact BUCHI Customer Service. |
| 1003 | Instrument data is not available or is not valid. Check if serial number and instrument options are set. | <ul style="list-style-type: none"> ▶ Restart the instrument. ▶ Contact BUCHI Customer Service. |
| 1004 | The '{0}' view dark reference max value ({1} cnt) is out of the expected range ({2}..{3} cnt). | ▶ Contact BUCHI Customer Service. |
| 1005 | Lamp has failed | ▶ Replace the lamp. See Chapter 7.2 "Changing the lamps", page 90 |
| 1006 | The internal reference '{0}' might not be moving properly. | ▶ Contact BUCHI Customer Service. |
| 1007 | The current system temperature ({0} °C) is outside the expected range ({1}..{2} °C). | ▶ Move the Instrument to a location where the ambient temperature meets specification. |

| Error code | Error message | Solution |
|-------------------|--|---|
| 1008 | Adjusting the IWR level failed for view '{0}' (NirTargetSaturation = {1}, NirTargetExposureTime = {2} µs). | <ul style="list-style-type: none"> ▶ Check operation of source lamp. ▶ Contact BUCHI Customer Service. |
| 1009 | The Peltier temperature ({0} °C) is out of the expected range ({1}..{2} °C). | <ul style="list-style-type: none"> ▶ Contact BUCHI Customer Service. |
| 1010 | The device did not respond within given timeout of {0} ms for command '{1}'. | <ul style="list-style-type: none"> ▶ Restart the instrument. ▶ Contact BUCHI Customer Service. |
| 1011 | The internal white reference signal is not valid. For more details see log files. | <ul style="list-style-type: none"> ▶ Restart the instrument. ▶ Contact BUCHI Customer Service. |
| 1500 | Unknown error occurred while generating report '{0}': {1} | <ul style="list-style-type: none"> ▶ Restart the instrument. ▶ Reattempt creating a report. ▶ Contact BUCHI Customer Service. |
| 1501 | Unknown error occurred while exporting report '{0}': {1} | <ul style="list-style-type: none"> ▶ Restart the instrument. ▶ Reattempt exporting a report. ▶ Contact BUCHI Customer Service. |
| 2500 | Failed to create NIRWise data backup. Error: '{0}'. | <ul style="list-style-type: none"> ▶ Restart the instrument. ▶ Reattempt data backup. ▶ Contact BUCHI Customer Service. |
| 2502 | A critical error occurred during test run. Test run has been canceled. For more details see log file. | <ul style="list-style-type: none"> ▶ Restart the instrument. ▶ Reattempt test. ▶ Contact BUCHI Customer Service. |

9 Taking out of service and disposal

9.1 Taking out of service

- ▶ Switch off the instrument and disconnect it from the mains power supply.
- ▶ Remove all cables from the device.

9.2 Disposal

The operator is responsible for proper disposal of the instrument.

- ▶ When disposing the equipment observe the local regulations and statutory requirements regarding waste disposal.
- ▶ When disposing, observe the disposal regulations of the materials used. For the used materials see Chapter 3.7 “Technical data”, page 17 or the material labeling on the parts.

9.3 Returning the instrument

Before returning the instrument, contact the BÜCHI Labortechnik AG Service Department.

<https://www.buchi.com/support/contact>

10 Appendix

10.1 Measurement result details and spectra



NOTE

The measurement result buttons indicate if a sample is in or out of specifications, an outlier, or if there is no prediction available.

| Measurement result | Explanation |
|--------------------|---|
| xx.x % | <ul style="list-style-type: none"> The tested sample is in the specifications. |
| N/A | <ul style="list-style-type: none"> The calibration model is missing. |
| Outlier | <ul style="list-style-type: none"> Mahalanobis outlier |
| ! xx % | <ul style="list-style-type: none"> The predicted value is outside calibration range. |
| xx.x % | <ul style="list-style-type: none"> The predicted value is outside of the set limit. |
| xx.x % | <ul style="list-style-type: none"> The predicted value is outside the tolerance. |

Navigation path

→ → [Start]

Precondition:

A measurement is completed and the predictions are shown on the *Home* screen.

▶ Tap on one of the [Results] buttons.

⇒ The screen shows detailed information about the current measurement and the predictions of the last seven samples measured with the same application.

▶ Select the [Spectra] tab.

⇒ The screen shows the corresponding spectra of the current measurement and the last seven samples measured with the same application.

▶ Tap the function [Close].

⇒ The dialog box closes.

▶ Tap the function [Spectra] on the *Home* screen.

⇒ The *Home* screen shows the spectrum of the current measurement. In case of replicate measurements, the spectra of each replicate and the average are displayed.



NOTE

Use the [Expand/Collapse] button to adjust the window size.



NOTE

If a measurement is saved with the *Spectra* view open, the next measurement will show the same view instead of the *Results* view.

▶ To switch back to the *Results* view, tap on *Results*.

10.2 File explanations and folder locations



NOTE

The default locations for the export, report, and NIRWiseBackup folders can be changed in the Windows User Variables.



NOTE

Hidden folders

By default settings the following folder locations are hidden.

- ▶ Start the software [*Windows Explorer*].
- ▶ Navigate to folder options via the following navigation path: View → Folder Options → View
- ▶ Activate the function [*Show hidden files, folders and drives*].

| Explanation | Type | Folder |
|---|--------------|---|
| Backup files (default location) | .zip | C:\NIRWiseBackup |
| Calibration files | .cal | C:\ProgramData\BUCHI\NIRWise\Calibrations |
| Data files for calibration | .tsv | C:\ProgramData\BUCHI\NIRWise\Calibrations\Data |
| Device specific data files for calibration | .tsv | C:\ProgramData\BUCHI\NIRWise\Calibrations\Local |
| Manually exported files with different content (default location) | diverse | C:\ProgramData\BUCHI\NIRWise\Export\Data |
| LIMS system files (default location) | .xml .csv | C:\ProgramData\BUCHI\NIRWise\Export\LIMS |
| License request file (default location) | .xml | C:\ProgramData\BUCHI\NIRWise\Export\LicenseRequests |
| External References | .brf | C:\ProgramData\BUCHI\NIRWise\References |
| Measurement Reports (default location) | .xls / .pdf | C:\ProgramData\BUCHI\NIRWise\Reports |
| System Test Reports (default location) | .pdf | C:\ProgramData\BUCHI\NIRWise\Reports\SystemTests |
| Measurement report templates | .xls | C:\ProgramData\BUCHI\NIRWise\Templates |
| Licenses | .xml | C:\ProgramData\BUCHI\LicenseManager\License |

| Explanation | Type | Folder |
|---|---------|---|
| History files for NIRWise Plus | diverse | C: \ProgramData\BUCHI\NIRWise\Calibrations\Local\History |
| Report from latest calibration | .rtf | C: \ProgramData\BUCHI\NIRWise\Calibrations |
| NIRWise Plus project file, containing all .tsv files and the settings for the calibration | .prj | C: \ProgramData\BUCHI\NIRWise\Calibrations |

10.3 Rules entering a formula

Naming conventions for variables

- ASCII characters only
- Use Underlines between words
- No numbers at the beginning of a name
- No C# keywords
- No math functions

Calculation conventions

| | | Symbol |
|----------------|--|------------------|
| Operators | Addition | + |
| | Subtraction | - |
| | Multiplication | * |
| | Division | / |
| Math functions | Logarithm of x | Log(x) |
| | Logarithm of x to a specified base | Log(x,base) |
| | Log base 10 of x | Log10(x) |
| | X raised to the specified power | Pow(x,power) |
| | The square root of x | Sqrt(x) |
| | Sine of x | Sin(x) |
| | Cosine of x | Cos(x) |
| | Absolute value of a double-precision floating-point number x | Abs(x) |
| | Rounds double-precision floating-point value x to the nearest integer value | Round(x) |
| | Rounds double-precision floating-point value x to a specified number of decimal places | Round(x,decimal) |

10.4 Spare parts and accessories


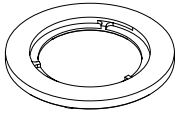
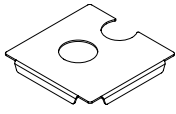
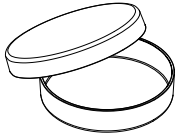
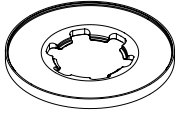
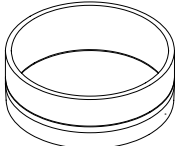
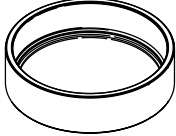
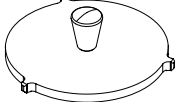
Use only genuine BUCHI consumables and spare parts in order to ensure correct, safe and reliable operation of the system.

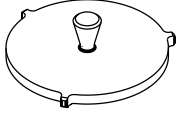
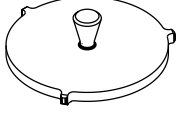
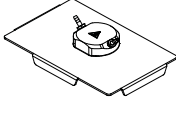
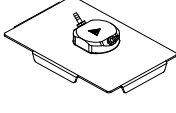
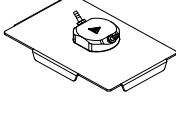

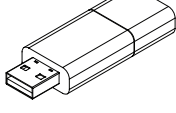


NOTE

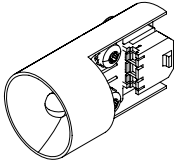

Any modifications of spare parts or assemblies are only allowed with the prior written permission of BUCHI.

10.4.1 Accessories

| | Order no. | Image |
|--|-----------|---|
| External White Reference | 11067547 |  |
| White reference spacer for up view | 11067377 |  |
| White reference locating plate | 11067391 |  |
| Glass petri dishes 10 pcs. (up view) Not suitable for use with Transflectance Cover | 11072073 |  |
| Large sample carrier | 11067691 |  |
| High Performance Sample Cup | 11067399 |  |
| Robust cup | 11055058 |  |
| Transflectance cover 0.3 mm Not suitable for use with robust cup | 041636 |  |

| | Order no. | Image |
|---|-----------|---|
| Transflectance cover 2.0 mm For measurement of crude palm oil. Not suitable for use with robust cup. | 11067919 |  |
| Transflectance cover for robust cup | 11055998 |  |
| FlowCell, 0.3 mm For measuring liquid samples under flow conditions | 11084993 |  |
| FlowCell, 1 mm For measuring liquid samples under flow conditions | 11084990 |  |
| FlowCell, 2 mm For measuring liquid samples under flow conditions | 11084992 |  |
| Performance test standards kit (7 pcs.) | 11067545 |  |
| NIRWise PLUS Chemometrics suite | 11068025 |  |

10.4.2 Spare parts

| | Order no. | Image |
|-------------------------|------------------|---|
| Spare lamp | 11065441 |  |
| Replacement Window HPSC | 046246 |  |



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