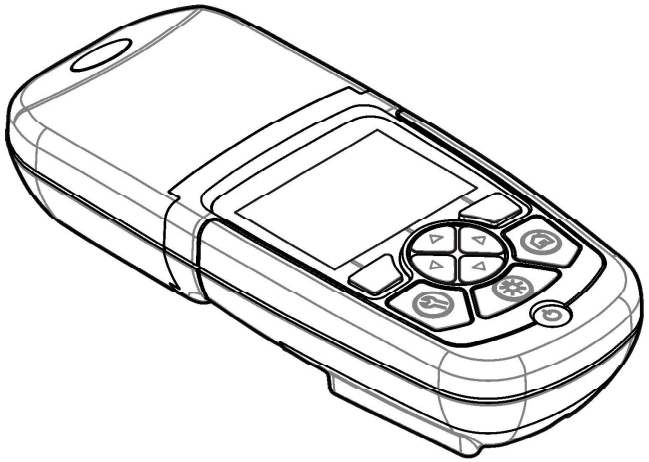
DOC022.97.80344

DR 900

07/2013, Edition 2



User Manual
Manuel d'utilisation
Manual del usuario
Manual do Usuário
用户手册
取扱説明書
사용 설명서
คู่มือผู้ใช้

English 3
Français 18
Español 34
Português 49
中文 65
日本語 78
한글 93
ไทย 107

Table of contents

Specifications on page 3

General information on page 3

Installation on page 6

User interface and navigation on page 8

Startup on page 9

Standard operation on page 10

Advanced operation on page 12

Maintenance on page 15

Troubleshooting on page 16

Replacement parts and accessories on page 16

Specifications

Specifications are subject to change without notice.

Specification	Details
Measurement mode	Transmittance (%), Absorbance (Abs) and Concentration (Conc)
Dimensions (W x D x H)	23.6 x 8.7 x 4.7 cm (9.3 x 3.4 x 1.9 in.)
Enclosure rating	IP67
Weight	0.6 kg (1.3 lb)
Power requirements (internal)	AA Alkaline batteries (4x)
Battery life	6 months (typical) at 5 readings a day/5 day week without the backlight
Interface	USB mini
Operating temperature	0 to 50 °C (32 to 122 °F), maximum 90% relative humidity non-condensing
Storage temperature	–30 to 60 °C (–22 to 140 °F), maximum 90% relative humidity non-condensing
Lamp source	Light emitting diode (LED)
Detector	Silicon photodiode
Wavelength range	420, 520, 560, 610 nm
Photometric measuring range	0–2 Abs
Wavelength accuracy	±1 nm
Photometric accuracy	±0.005 Abs at 1.0 Abs nominal
Photometric linearity	±0.002 Abs (0–1 Abs)
Wavelength selection	Automatic, based on the method selection
Photometric repeatability	±0.002 Abs (0–1 Abs)
Data readout	Graphical display, 240 x 160 pixel (backlit)
Sample cells	16 mm, 1 cm/10 mL, 1-inch (25 mm) round
Protection class	Class III
Certifications	CE certified
Warranty	1 year

General information

In no event will the manufacturer be liable for direct, indirect, special, incidental or consequential damages resulting from any defect or omission in this manual. The manufacturer reserves the right to make changes in this manual and the products it describes at any time, without notice or obligation. Revised editions are found on the manufacturer's website.

Safety information

NOTICE

The manufacturer is not responsible for any damages due to misapplication or misuse of this product including, without limitation, direct, incidental and consequential damages, and disclaims such damages to the full extent permitted under applicable law. The user is solely responsible to identify critical application risks and install appropriate mechanisms to protect processes during a possible equipment malfunction.

Please read this entire manual before unpacking, setting up or operating this equipment. Pay attention to all danger and caution statements. Failure to do so could result in serious injury to the operator or damage to the equipment.

Make sure that the protection provided by this equipment is not impaired. Do not use or install this equipment in any manner other than that specified in this manual.

Use of hazard information

⚠ DANGER

Indicates a potentially or imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

Indicates a potentially or imminently hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a potentially hazardous situation that may result in minor or moderate injury.

NOTICE

Indicates a situation which, if not avoided, may cause damage to the instrument. Information that requires special emphasis.

Precautionary labels

Read all labels and tags attached to the instrument. Personal injury or damage to the instrument could occur if not observed. A symbol on the instrument is referenced in the manual with a precautionary statement.

	This symbol, if noted on the instrument, references the instruction manual for operation and/or safety information.
	This symbol indicates that a risk of explosion is present.
	This symbol indicates that a risk of fire is present.
	This symbol identifies a risk of chemical harm and indicates that only individuals qualified and trained to work with chemicals should handle chemicals or perform maintenance on chemical delivery systems associated with the equipment.
	This symbol indicates the need for protective eye wear.
	Electrical equipment marked with this symbol may not be disposed of in European public disposal systems after 12 August of 2005. In conformity with European local and national regulations (EU Directive 2002/96/EC), European electrical equipment users must now return old or end-of-life equipment to the Producer for disposal at no charge to the user. ***Note:*** *For return for recycling, please contact the equipment producer or supplier for instructions on how to return end-of-life equipment, producer-supplied electrical accessories, and all auxiliary items for proper disposal.*

Certification

Canadian Radio Interference-Causing Equipment Regulation, IECS-003, Class A:

Supporting test records reside with the manufacturer.

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de classe A répond à toutes les exigences de la réglementation canadienne sur les équipements provoquant des interférences.

FCC Part 15, Class "A" Limits

Supporting test records reside with the manufacturer. The device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

1. The equipment may not cause harmful interference.
2. The equipment must accept any interference received, including interference that may cause undesired operation.

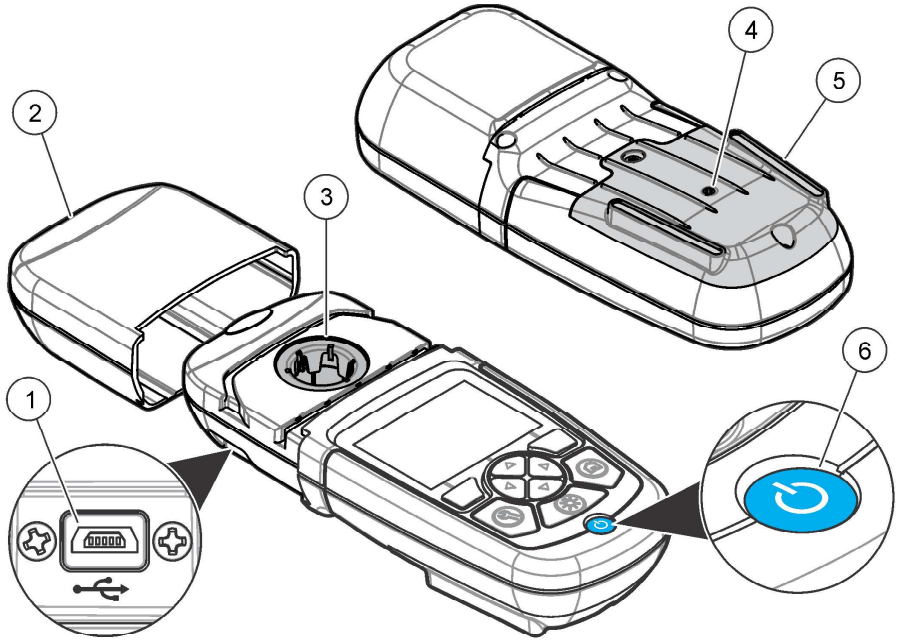
Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their expense. The following techniques can be used to reduce interference problems:

1. Disconnect the equipment from its power source to verify that it is or is not the source of the interference.
2. If the equipment is connected to the same outlet as the device experiencing interference, connect the equipment to a different outlet.
3. Move the equipment away from the device receiving the interference.
4. Reposition the receiving antenna for the device receiving the interference.
5. Try combinations of the above.

Product overview

The DR 900 is a portable, LED-sourced colorimeter that measures at wavelengths of 420, 520, 560 and 610 nm. The instrument is used to measure various parameters in drinking water, wastewater and industrial applications. The instrument comes with a complete set of stored programs (pre-installed methods) and the availability of user program storage and favorite program selection. Refer to Figure 1.

Figure 1 Instrument overview

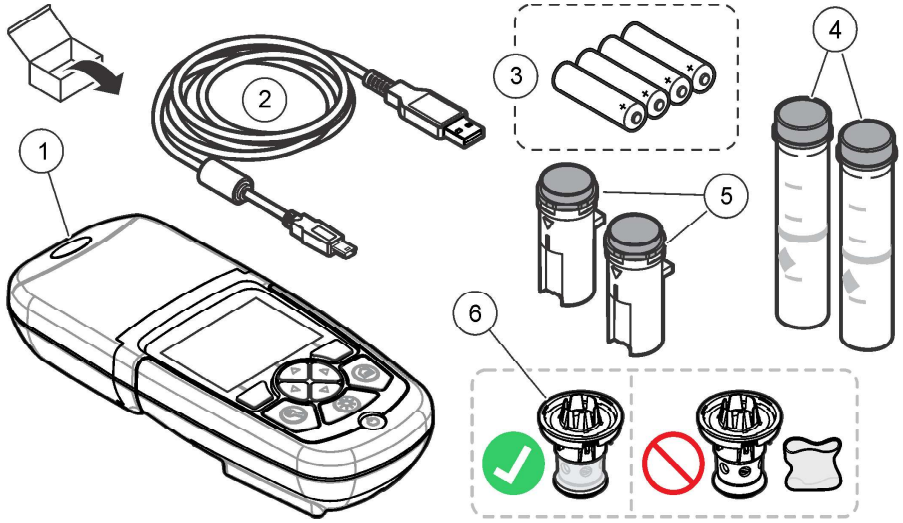


1 USB port	**4** Vent
2 Instrument cap	**5** Battery compartment
3 Cell compartment	**6** Power key

Product components

Make sure that all components have been received. Refer to Figure 2. If any items are missing or damaged, contact the instrument supplier or a sales representative immediately.

Figure 2 Product components



1 DR 900	**4** Glass sample cell, 1-inch (25 mm) round, 10, 20, 25-mL marks (2x)
2 USB cable with mini-USB connector	**5** Sample cell, 1 cm/10 mL (2x)
3 AA alkaline batteries (4x)	**6** Sample cell adapter

Installation

⚠WARNING

Multiple hazards. Only qualified personnel must conduct the tasks described in this section of the document.

NOTICE

Make sure not to cause a blockage of the instrument battery vent during use or storage.

Install the batteries

⚠WARNING

Explosion hazard. Incorrect battery installation can cause the release of explosive gases. Be sure that the batteries are of the same approved chemical type and are inserted in the correct orientation. Do not mix new and used batteries.

⚠WARNING

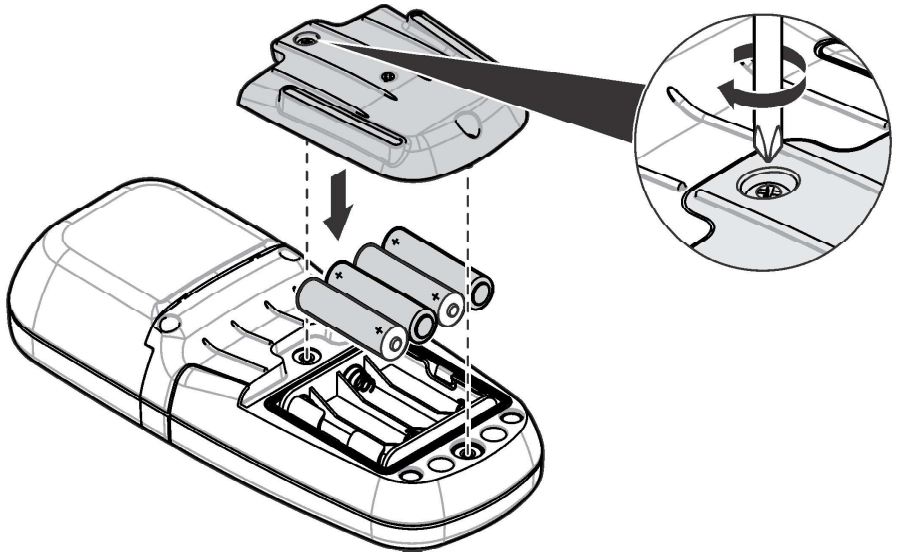
Fire hazard. Battery substitution is not permitted. Use only alkaline batteries.

NOTICE

Make sure to tighten the screws to 1–1.4 N·m (9–12 in.·lb) for a correct seal fit and to maintain the enclosure environmental rating.

The instrument is powered with four AA alkaline batteries. Make sure that the batteries are installed in the correct orientation. Refer to Figure 3 for the battery installation.

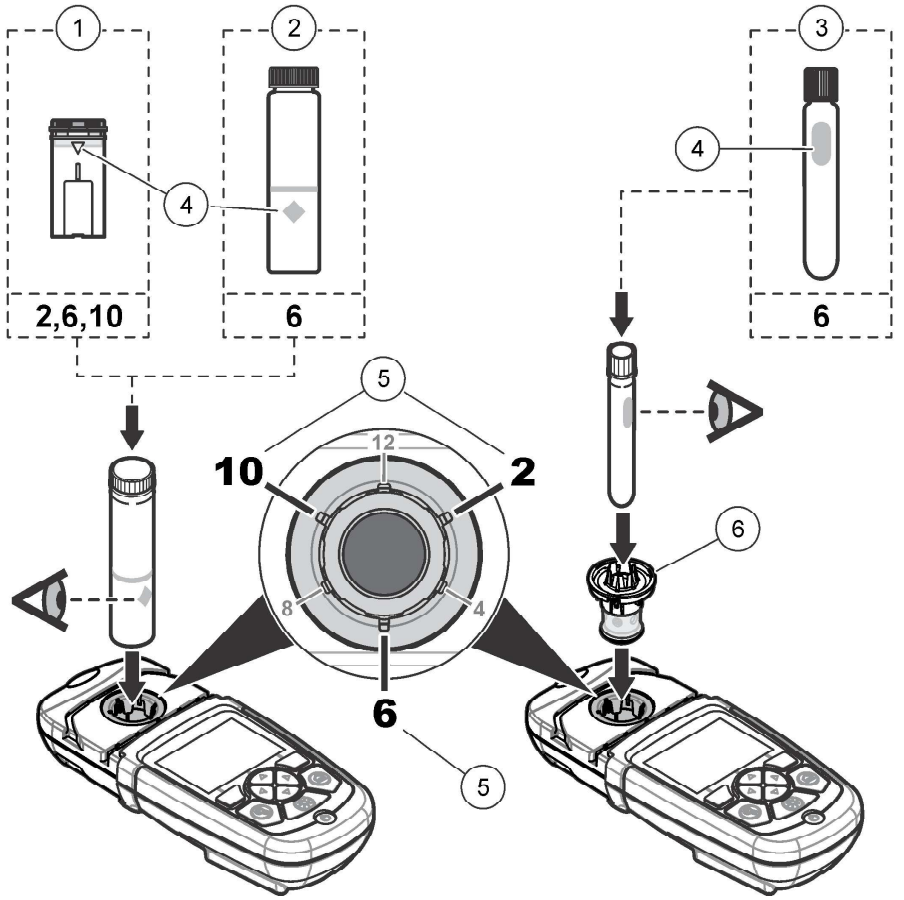
Figure 3 Battery installation



Install the sample cell and cell adapter

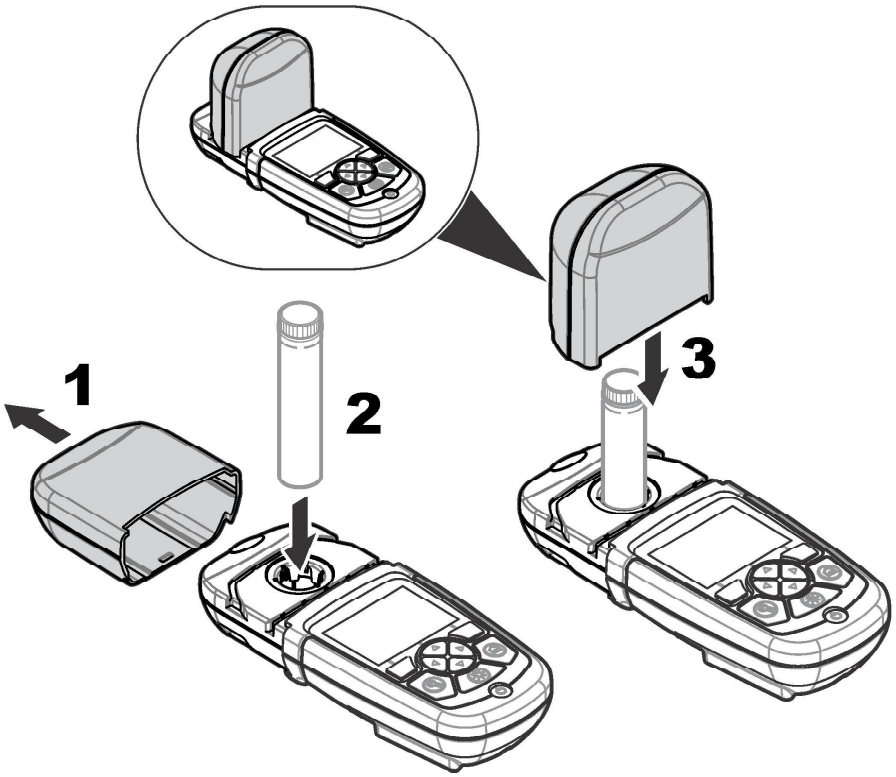
The instrument has one cell compartment which can use one adapter for different sample cell types. Make sure to install the sample cell in the correct orientation and in a consistent orientation so that the results are more repeatable and precise. Refer to Figure 4. Close the instrument cap before the instrument zero is set or a measurement is made to prevent light interferences. Refer to Figure 5.

Figure 4 Sample cell orientation



1	1-cm/10-mL plastic sample cell	**4**	Orientation mark
2	1-inch (25 mm) glass sample cell	**5**	Orientation position (clockwise)
3	16-mm glass test vial	**6**	Sample cell adapter

Figure 5 Sample cell and instrument cap installation

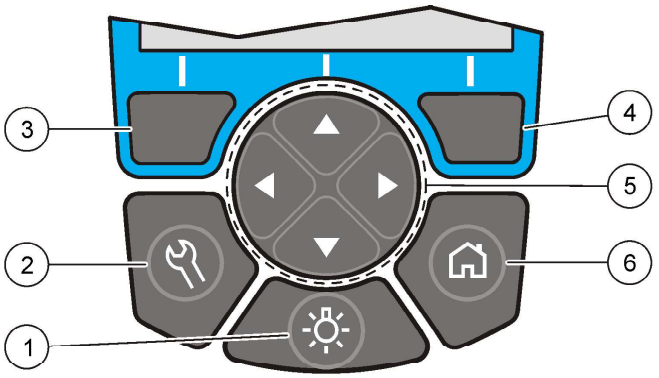


User interface and navigation

Keypad description

Refer to Figure 6 for the keypad description and navigation information.

Figure 6 Keypad description



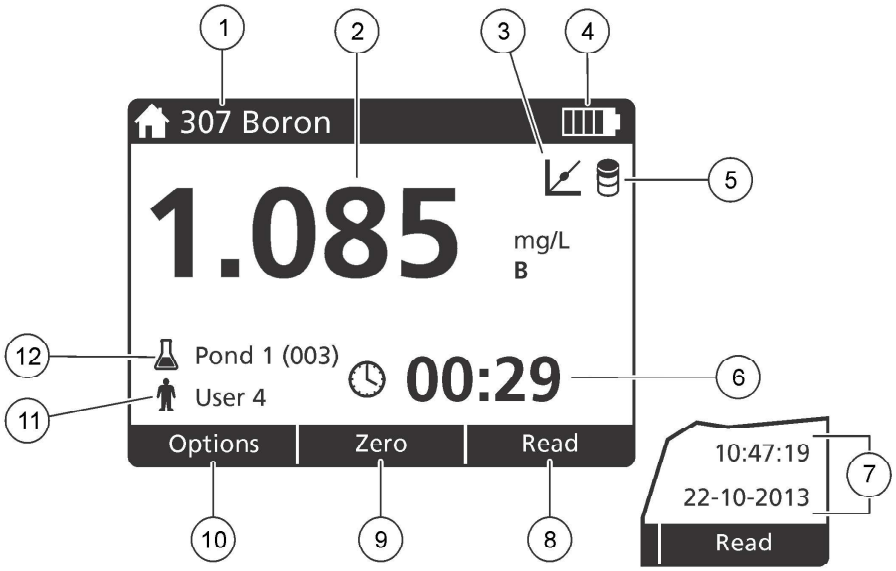
1	BACKLIGHT: set the display illumination to on or off	**4**	RIGHT selection key (contextual): read sample, selects or confirms options, opens sub-menus
2	SETTINGS: setup options[1]	**5**	Navigation keys UP, DOWN, RIGHT, LEFT: scroll through menus, enter numbers and letters[2]
3	LEFT selection key (contextual): access for options, cancels or exits the current menu screen to the previous one	**6**	HOME/Options: go to the main reading screen[1], select program, data management

1 While in an edit mode, the key does not operate.
2 When an UP or DOWN key is held, it scrolls fast. When a LEFT or RIGHT key is pushed, it scrolls by page.

Display description

The reading screen shows the selected mode, unit, date and time, operator ID and sample ID. Refer to Figure 7.

Figure 7 Single screen display



1	Program name and number	**7**	Time and date
2	Reading value, unit, chemical form, under "---" or over measuring range "+++"	**8**	Read (contextual: done, select, start, ok)
3	Standard adjust icon	**9**	Zero (contextual: navigation key UP arrow)
4	Battery status	**10**	Options (contextual: back, cancel)
5	Reagent blank icon	**11**	Operator identification
6	Timer	**12**	Sample identification

Navigation

The instrument contains menus to change various options. Use the navigation keys (**UP**, **DOWN**, **RIGHT** and **LEFT** arrows) to highlight different options. Push the **RIGHT** selection key to select an option. Enter an option value with the navigation keys. Push the navigation keys (**UP**, **DOWN**, **RIGHT** and **LEFT** arrows) to enter or change a value. Push the **RIGHT** arrow to advance to the next space. Push the **RIGHT** selection key under **Done** to accept the value. Push the **LEFT** selection key to exit the current menu screen to the previous one.

Startup

Set the instrument to on or off

Push the **POWER** key to set the instrument to on or off. If the instrument does not power on, make sure that the batteries are correctly installed.

Set the language

There are two options to set the language:

- Set the display language when the instrument is set to on for the first time.
- Set the language from the SETTINGS menu.

1. Push **SETTINGS>Setup>Language**.
2. Select a language from the list.

Set the date and time

There are two options to set the date and time:

- Set the date and time when the instrument is set to on for the first time.
- Set the date and time from the Date & Time menu.

1. Push **SETTINGS>Setup>Date & Time**.
2. Push **Date Format** and select a format for the date and time.
3. Push **Date & Time**.
4. Use the navigation keys to enter the current date and time, then push **Done**.

Standard operation

Program list

The instrument is delivered with a complete series of application programs. Refer to Table 1 for the program descriptions.

Table 1 Program options

Program option	Description
Stored programs	Stored programs are factory-installed, pre-programmed methods. Refer to Select a stored program on page 10.
User programs	Methods can be developed and can be saved as a user program.[1] Refer to User programs on page 12.
Favorites	Methods which are often used can be saved in the favorite list.[1]

[1] A maximum of ten methods (user programs and/or favorites) can be saved.

Select a stored program

1. Push **HOME>Options>All Programs**.
2. Select the applicable method and push **Start**.
3. Select **Options>Add to Favorites** to add the selected method to favorites for faster access.

Select basic program options

When a program is selected, additional parameter options are available.

1. Push **Options** to access the option menu.
2. Select the applicable options.

Option	Description
Start Timer	Select a pre-set timer or set a manual timer to make sure that the steps of an analysis are correctly timed (e.g., reaction times or wait times can be exactly specified). When the timer is on, the timer icon is shown on the display. The instrument makes an audible sound when the time is over. **Pre-set timer—**Select the applicable pre-set timer for one or more stored procedure steps and push **Start**. **Timer Manual—**Enter the applicable time with the navigation keys and push **Done**. Default = 00:00
Favorites/User Programs	Select from the stored favorites or user programs list. Refer to Select a favorite or a user program on page 12 for more information.
All Programs	Select a pre-programmed method from the list.
Data Log	Show all saved readings. Refer to Data log on page 12 for more information.
Add to Favorites	Save stored programs and user programs methods which are often used in the favorites list. Refer to Add a program to favorites on page 12.
%T/Abs/Conc	Switch to % transmittance, absorbance or concentration readings. **Transmittance reading (%)—**Reads the percent of the original light that passes through the sample and reaches the detector. **Absorbance readings—**The light absorbed by the sample is read in absorbance units. **Concentration readings—**The measured absorbance values are converted into concentration values with the program-specific stored equation.
Advanced Options	Use the advanced options to specify more parameters. Refer to Select advanced program options on page 11.
Save	Save the last reading manually when the auto save option is set to Off.

Select advanced program options

Every program has various additional advanced options from which to select.

1. Push **Options** to access **Options>Advanced Options**.
2. Use the advanced options to specify more parameters.

Option	Description
Auto Save	Toggle between On and Off. Every reading is automatically saved when the option is set to On. The reading can be saved manually when the option is set to Off.
Chemical Form	Select the alternate chemical form and the associated measuring range on some factory-installed methods.
Reagent Blank	The Reagent Blank correction can be used with some of the factory-installed methods. Enter the result of a completed test using deionized water as the sample. The blank value is subtracted from every result to correct for any background color due to reagents. Enter the blank correction before the Standard Adjust option is used. Complete this correction for each new lot of test reagents.
Standard Adjust	Change stored calibration. Complete a test on a known standard at a concentration near the top of the test range. Use this function to adjust the result to align the standard concentration.
Sort Program	Select an alphabetical or numerical program order for the stored program list.

Use an operator ID

The operator ID tag associates readings with an individual operator. All stored data will include this ID.

1. Push **SETTINGS>Operator ID** in the reading screen.
2. Select, create or delete an operator ID:

Option	Description
Current ID	Select an ID from a list. The current ID will be associated with the sample data until a different ID is selected.
Create New ID	Enter a name for a new operator ID. A maximum of 10 names can be entered.
Delete ID	Erase an existing operator ID.

Use a sample ID

The sample ID tag is used to associate readings with a particular sample or with a location. If assigned, stored data will include this ID.

1. Push **SETTINGS>Sample ID** in the reading screen.
2. Select, create or delete an operator ID:

Option	Description
Current ID	Select an ID from a list. The current ID will be associated with the sample data until a different ID is selected.
Create New ID	Enter a name for a new sample ID. A maximum of 10 names can be entered. The samples are numbered in sequence for each measurement until a different ID is selected (e.g., Pond 1, Pond 2).
Delete ID	Erase an existing sample ID.

How to do a measurement

Basic measurement steps are necessary to complete a measurement. Every method has a step-by-step procedure. Refer to the applicable method to run a specific test. The example that follows is a basic procedure to complete a measurement.

1. Select the applicable program from the programs menu (e.g., Stored Programs, User Programs, Favorites).
2. Install the cell adapter, if necessary.
3. Push **Start** to start the program.
4. Prepare the blank according to the method document. Close the sample cell and clean the optical faces of the sample cell with a lint-free cloth.

5. Insert the blank sample cell into the cell compartment. Make sure to install the blank sample cell in the correct and in a consistent orientation so that the results are more repeatable and precise. Refer to Figure 4 on page 7.
6. Close the instrument cap to prevent light interferences. Refer to Figure 5 on page 8.
7. Push **Zero**. The display shows a concentration of zero (e.g., mg/L, ABS, µg/L).
8. Prepare the sample. Add reagents as specified by the method document.
9. Select **Options>Start Timer** to use the stored timers within the program.
10. Close the sample cell and clean the optical surfaces of the cell with a lint-free cloth
11. Insert the sample into the cell compartment. Make sure to install the sample cell in the correct and in a consistent orientation so that the results are more repeatable and precise. Refer to Figure 4 on page 7.
12. Close the instrument cap to prevent light interferences. Refer to Figure 5 on page 8.
13. Push **Read**. The display shows the results in the selected units.
    Note: *The display shows "+++" or "---" if the measured absorbance is less or more than the calibration range of the test.*

Data log

The data log shows all saved readings. Push **HOME>Options>Data Log** to see the readings. Refer to Export the data log on page 15 for information about the data log export.

Advanced operation

Select a favorite or a user program

The favorite and user programs database is empty when the instrument is started for the first time. A method can be saved in the favorites for faster access. A user program can be programmed for specific needs.

1. Push **HOME>Options>Favorites/User Programs>Select**.
2. Push **New Program** to make a new user program. Refer to User programs on page 12.

Add a program to favorites

Stored programs and user programs methods which are often used can be saved in the favorites list.

1. Select **HOME>Options>All Programs**.
2. Select the applicable method and push **Start**.
3. Select **Options>Add to Favorites** to add the selected method to favorites.

User programs

The user programs database is empty when the instrument is started for the first time. Use **New Program** to make new programs for specific needs. To make a new user program, do the steps that follow.

1. Push **HOME>Options>Favorites/User Programs>Select>New Program**.
2. Select an available program number from 1001 to 1010.
   Note: *A maximum of ten programs (user programs and/or favorites) can be saved.*
3. Enter a method name (up to 12 characters).
4. Select the wavelength: 420, 520, 560 or 610 nm.
5. Select the unit: None, µg/L, mg/L or g/L.

6. Select the resolution: 0000, 000.0, 00.00 or 0.000.
7. Add the calibration points: a minimum of 2 and a maximum of 12 calibration points.* Select Edit Std 1 and enter the first standard concentration value. Push **Done**.
   Note: *A beep means that the concentration is a duplicate of a previously entered standard or the concentration is too high for the selected resolution. Enter a different value and continue.*
8. Enter the absorbance value:

Option	Description
Edit ABS Manual	Use the navigation keys to enter the absorbance value manually.
Edit ABS Auto	1. Put the blank into the cell holder and push **Zero**. 2. Put the prepared sample into the cell holder and push **Read**. 3. Push **Done**.

   Note: *A beep means that the absorbance is a duplicate of a previously entered standard or that it falls between two previous standards. Enter a different value and continue.*
9. Push **Done**.
10. Select Add Cal Point.
11. Enter additional calibration points as described in steps 7–9.
12. Select **Save User Program**.

Edit a user program

To edit a stored user program:

1. Select **HOME>Favorites/User Programs.**
2. Select the applicable program and push **Options**.
3. Push **Edit**.
4. Obey the screen prompts to edit the procedure.

Delete a user or a favorite program

Delete a stored user or favorite program if the program is not used anymore.

1. Select **HOME>Options>Favorites/User Programs**.
2. Highlight the applicable program and push **Options>Delete** and obey the screen prompts.

Instrument information

The instrument information menu shows specific information such as the instrument name, serial number, software version, database version, memory used and program availability. Push **SETTINGS>Setup>Instrument Information**.

Set the password

The password settings options are used to prevent access to restricted menus.
Note: *If the specified password is forgotten and Security Options is set to on, the operator is locked out of the restricted menus. Contact technical support if the password is forgotten.*

1. Push **SETTINGS>Setup>Password Settings**.
2. Select an option.

Option	Description
Password Settings	Select On or Off to set the password protection to on or off.
Protected Items	Shows the list of protected items: edit operator ID, edit sample ID, edit user programs, date & time, upgrade firmware, upgrade methods, language and edit favorites list.

* If the curve is known to be linear, only two concentration data points (e.g., a standard with zero absorbance and another known standard) are necessary. Use additional data points to confirm linearity or define a nonlinear curve.

Set the display and sound

Use the display options to change the display contrast, the battery auto-shutoff options or the backlight option. Use the sound options for an audible sound when a key is pushed or a reading is complete.

1. Push **SETTINGS>Setup>Display & Sound>Display Options**.
2. Select an option.

Option	Description
Contrast	Adjust the display contrast. The lightest setting is 0 and the darkest setting is 9. Default: 5
Auto-Shutoff	To maximize battery life, set a time period after which the instrument will automatically set the power to off if no key is pushed (5, 10, 15, 20, 30 minutes, 1 hour, 2 hours or Disable). Default: 10 minutes
Backlight	The display backlight is set to on when **BACKLIGHT** is pushed. Set a time period after which the backlight will automatically power off if no key is pushed (10, 20, 30 seconds, 1, 2, 5, 10 minutes or Disable). Default: 1 minute

3. Push **SETTINGS>Setup>Display & Sound>Sounds**.
4. Select an option.

Option	Description
Keystroke	The instrument will make an audible sound whenever a key is pushed. Default: off
Reading Complete	The instrument will make an audible sound whenever a reading is complete. Default: on

USB main menu

When the instrument is connected with a USB cable to a computer, the USB Main Menu opens. Update the software, export or import programs or export the data log and event log from the USB Main Menu.

Update the firmware

Find the firmware upgrade file on the product website or contact the instrument supplier. Save the file from the website to the computer.

1. Set the instrument to on and connect the USB cable to the instrument and to the computer.
   The USB Main Menu prompts.
2. Select **Update DR900**.
   The instrument shows as a USB drive on the computer. Open the folder.
3. Copy the file DR900.bin to the open folder.
4. Push **Ok**.
5. When the update is done, push **Ok**.
6. Select **Disconnect USB**, push **Ok** and disconnect the USB cable.
7. Push **Ok**.
8. Restart the instrument.

Manage programs

With the Manage Programs function, user programs can be exported and/or imported and new factory programs can be imported.

1. Set the instrument to on and connect the USB cable to the instrument and to the computer.
   The USB Main Menu prompts.
2. Select **Manage Programs** and select an option:

Option	Description
Export User Programs	Export all user programs to the computer for storage or to move the user programs to another DR 900.
Import User Programs	Replace all user programs with the user programs from another DR 900 via computer.
Import Factory Programs	Import new factory programs from the manufacturer website.

   The instrument shows as a USB drive on the computer. Open the folder.
3. Copy the export file from drive to the computer or copy the import file from the computer to the drive.
4. Push **Ok**.

5. When the transfer is done, select **Disconnect USB** and disconnect the USB cable.
6. Push **Ok**.

Export the data log

The event log and the data log can be exported to the computer. The event log contains the date, time, event number, parameter and the description of a configuration related action. Sample measurements are stored manually or automatically in the data log. Refer to Select advanced program options on page 11.

1. Set the instrument to on and connect the USB cable to the instrument and to the computer.
   The USB Main Menu prompts.
2. Select **Export Datalog**.
   The instrument shows as a USB drive on the computer. Open the folder.
3. Copy and save the export files (DR900_DataLog.csv and DR900_EventLog.csv) to the computer.
4. Push **Ok**.
5. When the files are copied to the computer, select **Disconnect USB** and disconnect the USB cable.
6. Push **Ok**.

Maintenance

⚠ WARNING

Multiple hazards. Only qualified personnel must conduct the tasks described in this section of the document.

Clean the instrument

Clean the exterior of the instrument with a moist cloth and a mild soap solution and then wipe the instrument dry.

Clean the sample cells

⚠ CAUTION

Chemical exposure hazard. Obey laboratory safety procedures and wear all of the personal protective equipment appropriate to the chemicals that are handled. Refer to the current safety data sheets (MSDS/SDS) for safety protocols.

⚠ CAUTION

Chemical exposure hazard. Dispose of chemicals and wastes in accordance with local, regional and national regulations.

Most laboratory detergents are used at recommended concentrations. Neutral detergents, such as Liquinox, are safer to use when regular cleaning is necessary. To decrease the cleaning times, increase the temperature or use an ultrasonic bath. To complete the cleaning, rinse a few times with deionized water and then let the sample cell air dry. Sample cells may also be cleaned with acid, followed by a thorough rinse with deionized water.

Note: *Always use acid to clean sample cells that were used for low-level metal tests.*

Special cleaning methods are necessary for individual procedures. When a brush is used to clean sample cells, take extra care to avoid scratches on the interior surfaces of the sample cells.

Replace the batteries

⚠ WARNING

Explosion hazard. Expired batteries can cause hydrogen gas buildup inside the instrument. Replace the batteries before they expire and do not store the instrument for long periods with the batteries installed.

⚠ WARNING

Fire hazard. Battery substitution is not permitted. Use only alkaline batteries.

NOTICE

Make sure to tighten the screws to 1–1.4 N·m (9–12 in.·lb) for a correct seal fit and to maintain the enclosure environmental rating.

Refer to Install the batteries on page 6 for battery replacement.

Troubleshooting

Error code	Possible cause	Solution
1	Instrument is not configured.	Contact technical support.
2	Could not read program data	
3	Could not write program data	
4	Battery error	Replace the batteries.
5	A/D error during a measurement	Contact technical support.
6	Offset error during a measurement	Make sure that the instrument cap is correctly installed.
7	Low light error during a measurement	• Make sure that there is no light path blockage. • Zero is out of instrument range • Contact technical support.
8	Over range error during a measurement, a potential light blockage or the concentration is too high	• Make sure that there is no light path blockage and that the concentration is not too high for the program. • Make sure that the instrument cap is correctly installed. • Contact technical support.

Replacement parts and accessories

⚠ WARNING

Personal injury hazard. Use of non-approved parts may cause personal injury, damage to the instrument or equipment malfunction. The replacement parts in this section are approved by the manufacturer.

Note: *Product and Article numbers may vary for some selling regions. Contact the appropriate distributor or refer to the company website for contact information.*

Replacement parts

Description	Item no.
Adapter assembly, COD	4846400
Battery set, AA alkaline batteries (4x)	1938004
Sample cell with cap, 25 x 95 mm, 10-20-25 mL (6x)	2401906
Sample cell with cap, 1 cm/10 mL (2x)	4864302
USB cable	LZV818

Accessories

Description	Item no.
Cap, sample cell, for 25 x 95 mL cell	2401812
Carrying case, hard-sided	4942500
Carrying case, soft-sided with shoulder strap	2722000
Carrying case, portable laboratory	4943000
DR/Check™ absorbance standards	2763900
Instrument cap, DR 900	9390500