

# Palintest

Lumiso  
Pooltest 3  
Pooltest 6  
Pooltest 9

USER MANUAL



Made in UK



**Lumiso  
Pooltest 3  
Pooltest 6  
Pooltest 9**  
USER MANUAL

# Palintest

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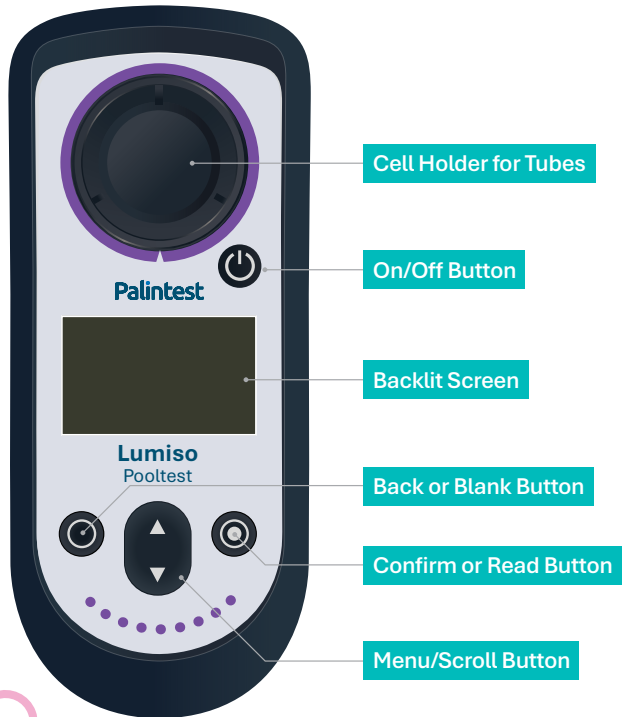
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## Contents

<b>Getting Started</b>	<b>4</b>
Instrument Layout	4
How to Select and Perform a Test	6
Information Messages	12
Keeping the Optics Clean	13
The Settings Menu	14
<b>Using Check Standards</b>	<b>16</b>
<b>Accessing the Results Log</b>	<b>22</b>
<b>Instrument Integration with Connect by Palintest</b>	<b>24</b>
Instrument Registration and Warranty	25
Tagging test results with GPS coordinates	27
Uploading Test Results to Connect	30
<b>Changing Lumiso Settings</b>	<b>32</b>
Setting Time and Date	32
Adjusting the Display Backlight	33
Using Sample Tags	34
<b>Procedures for Water Testing</b>	<b>35</b>
How to get Accurate Results	35
Blanking	37
Sample Dilution	37
<b>Test Instructions</b>	<b>38</b>
<b>Technical Specification</b>	<b>60</b>
<b>Changing the Batteries</b>	<b>61</b>

## Instrument layout

Thank you for choosing a Palintest Lumiso Photometer.  
Please take time to read and follow the advice in this manual.  
If this instrument is used in ways not specified, the protection it provides and its accuracy may be impaired.



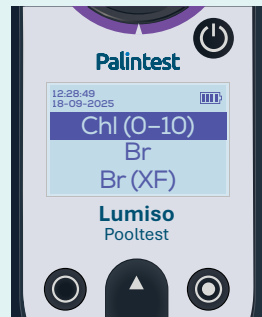
This is the basic procedure for all tests. For specific test details please refer to the Test Instructions.

1



The test selection menu appears when first starting up Lumiso.



From most other screens, pressing “back” ← once or twice, will take you back to the test selection menu.


Select a test, using the up and down keys ⬆ until the desired test is highlighted.

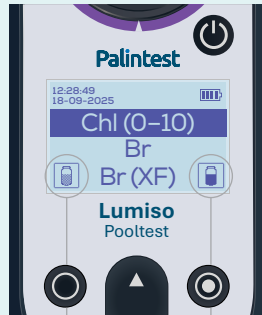


2

These tube icons   will usually appear.

These indicate that the left key  is for “blinking” and the right key  is for “reading”

**Please Note:** The read icon  only appears after the blanking stage has been completed. Lumiso will require blanking to be repeated after 50 minutes or if it registers a significant change in environmental temperature.



Blank

Read




3

To blank the instrument, place a test tube containing pool or spa water (without test tablets) in the cell holder.



Blanking enables the instrument to set the correct zero value. This ensures the final result will be accurate, even when testing water that is cloudy or coloured.

4

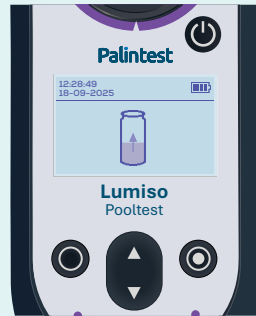
Press blank 





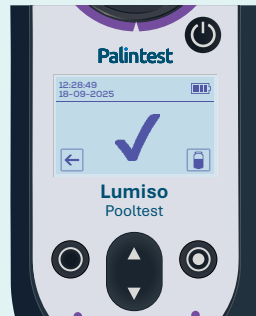
5


The screen will show that the blank is being measured.



6

This indicates that blanking was successful.



If after blanking, you want to read a different parameter press the back key  to go to the test menu. A different test can then be "Read" without needing to blank again.




7

Prepare a 10mL sample by adding reagents according to the test instructions.

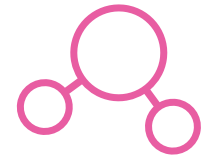
Place this sample tube in the cell holder.



8

Press read 

Depending upon test selected, Lumiso will either go to step 9, or show intermediate steps 8a or 8b.







## For Chlorine and Copper Tests Only

8a

A choice of free or total chlorine or copper is offered. See test instructions.

Highlight FChl / FCu and press read  to read and display free chlorine / copper result. (see step 10)

Highlight TChl / TCu and press read  to view the total chlorine / copper result.



## For Tests with a Wait Time Only

8b

For tests with a “wait time” (see test instructions), a preset timer will count down and then automatically commence reading.

Press read  to override.



9

The screen will show that the sample is being measured.




10

The result will be displayed with the following information:

Time and Date

The Test Name from the Menu

The Measured Result

Depending upon the test, pressing back  from this screen will either go back to the test selection menu or to the free / total chlorine / copper selection.



Lumiso will display these messages as M numbers, if it detects unexpected readings when making its optical measurements.

Message Number	Likely Cause	Suggested Action
M1 and M2	Blank is too dark	Check and clean all glass tubes used. Repeat blanking process
	Contamination obscuring optics	See “Keeping the Optics clean”
M3 and M4	Blank, sample tube, or NDF standard moved or removed too early	Carefully repeat blanking and reading procedure
M5	Light cap not fitted correctly	Check or change light cap on tube
	External light entering the optical cell	Move instrument away from external light

A common cause that can trigger any of these messages to be displayed is contamination of the optical windows or stained glassware. See sections **Keeping the Optics Clean** and **How to Get Accurate Results**. If messages continue to be displayed, please contact your local Palintest branch or distributor.

Contamination in the optical cell may effect the accuracy of readings and can trigger an information message to be displayed.

Clean optical windows gently with a soft, non-abrasive cloth dampened with water or anti-static foam cleaner. Do not use solvents.


*Instrument failure due to contamination is not covered by warranty.*



A number of additional functions and settings can be accessed from within the Settings Menu.


1

The Settings Menu is accessed from the opening Test Selection Menu.


Select  and confirm











2

Use the  key to scroll through the options.

Press confirm  to explore that option.

Press back  to go back to the Test Selection Menu.



	<b>Check Standard Mode:</b> Verify instrument performance using NDF check standards.
	<b>Label Mode:</b> Assign a label to your measurement.
	<b>Log Mode:</b> Access the last 50 measurement results.
	<b>QR Log Mode:</b> Access a QR code that contains the current log.
	<b>Date &amp; Time Mode:</b> Manually edit the date & time in the instrument. Date format can also be changed.
	<b>Brightness Control Mode:</b> Adjust the brightness of the screen backlight.
	<b>GPS:</b> Upload a single test result with GPS coordinates.
	<b>Device Registration:</b> Register device and activate warranty.



Check Standards can be purchased separately for your Lumiso instrument. These standards contain Neutral Density Filters (NDFs) and can be used to verify that the instrument is within calibration and performing correctly.



### Why is Percentage Transmission of Light being measured with Lumiso Check Standards?

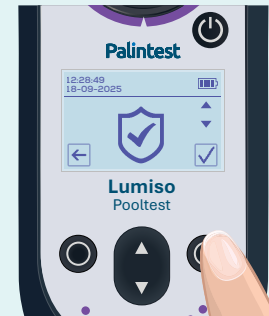
Lumiso works by measuring the amount of light that passes through the sample. This value is known as the “Percentage Transmission” or “%T”. Lumiso’s software then converts this %T value into a concentration, such as mg/L of chlorine.

So, to verify that the instrument is within calibration it is only necessary to check that the instrument correctly measures %T for each wavelength of light it uses. This simplifies the process for using check standards.

1

Check Standard Mode is accessed from the Settings Menu

Scroll to the Check Standard icon and confirm

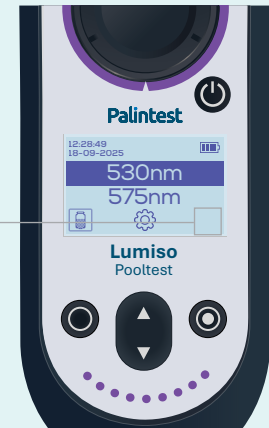


2

The wavelengths of light the instrument uses are shown in nanometres (nm).

To ensure that all the test parameters on Lumiso are being measured correctly, use the standards to verify both of these wavelengths.

If nothing is shown here, it is because Lumiso has not been “blanked” on the wavelength highlighted.



3

To set the blank (zero) value for the selected wavelength.

Insert the "Blank" from the set of standards.



5


The instrument will measure the blank and show when this has been successful.

A read icon now appears.



4

Ensure that the wavelength being checked is aligned with the mark on the Lumiso instrument.


Then press blank 

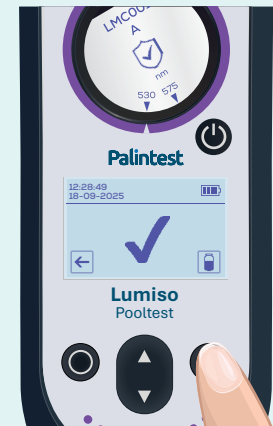


6

Insert Standard A from the set of standards.

Ensure that the correct wavelength is aligned.

Then press read 



7

The measurement of %T (Percentage Transmission) is shown on screen.

This value needs to be compared with that on the certificate for the correct wavelength and standard.

**Please note:** The certificate shown here is for illustration only. Please refer to the certificate supplied with the set of standards.



## Palintest

### Lumiso Check Standard Certificate

Wavelength	Standard A	Standard B
530 nm	12.5 ± 2 %T	81.2 ± 2 %T
575 nm	8.3 ± 2 %T	79.2 ± 2 %T

8

Continue, by inserting Standard B, pressing read, and comparing the result with certificate.

Then repeat the entire process (blank, read A, read B) from step 2 onwards for the second wavelength.





Should any standards read outside the values shown on your certificate, the most likely cause is contamination on the optical windows in the cell holder. Please clean the cell holder carefully and remeasure the standards. (See 'Keeping the Optics Clean')

If this does not resolve the issue, please contact your local Palintest branch or distributor.

Lumiso stores the most recent 50 test results along with the test time, date and and sample label. The oldest test result will be automatically overwritten once this capacity is reached.

1


The Results Log is accessed from the Settings Menu 

Select the "Results Log" icon  and confirm



2

The screen will show the most recent result with its time and date.

Use the up and down keys  to scroll through up to 50 results.

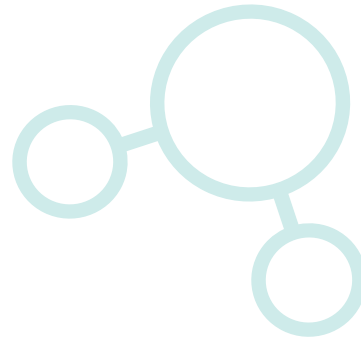
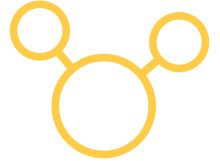
This is a reminder that you are looking at a stored result in the log.



3

The log of results can be downloaded as a text file via the USB port.

Alternatively, use the QR code function (see Instrument Integration with Connect by Palintest section).





Connect by Palintest is a **cloud-based platform** for managing water quality data and instruments. It allows you to register devices, upload results, and maintain calibration records.

Your instrument uses **three QR code icons**:



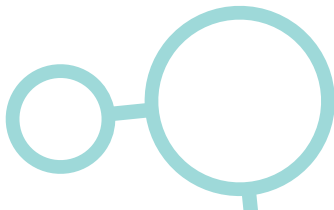
**Icon 1:**  
Register device and activate warranty.



**Icon 2:**  
Upload a single test result with GPS coordinates.



**Icon 3:**  
Upload the last 25 test results.



Register your instrument to activate the first-year warranty. Warranty extends to two years after annual service.

The instrument records the date of the first test as the warranty start date.

**Tip:** Registration ensures access to calibration certificates and service reminders.

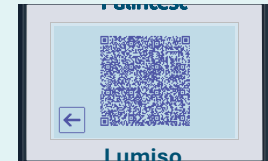
1

From the Settings Menu, scroll to the Device Registration icon.



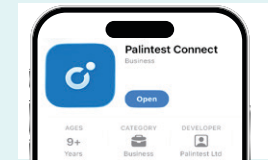
2

Press confirm   
A QR code will appear on screen.



3

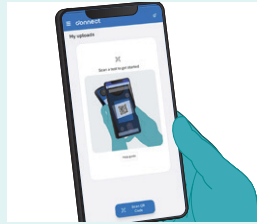
Open the **Connect by Palintest** app on your phone (available on Android and iOS).





4

Log in or create an account.  
Select **Scan QR Code** in the app.



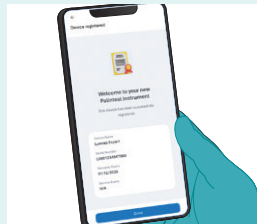
5

Hold the instrument QR code in front of your phone camera and scan.



6

A success message will display with your instrument service number and warranty date.



Visit [www.palintestconnect.com](http://www.palintestconnect.com) to view your calibration certificate and manage service schedules.

Individual test results can be uploaded to Connect along with GPS coordinates.

The GPS location is captured by your phone when scanning the QR code. This ensures accurate geotagging for compliance and traceability.

**Important:** This uses a **time-limited QR code**, valid for 60 seconds. After this time, the test must be repeated. This ensures data integrity, so the GPS coordinates match the actual test location.

**Tip:** Have the Connect app ready before starting the test to avoid QR code expiry.

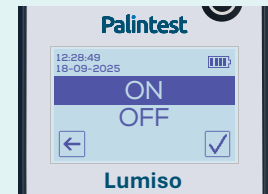
1

From the Settings Menu, scroll to Geotagging Results icon.



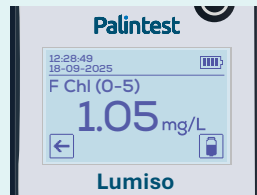
2

Press confirm  and toggle to select ON.



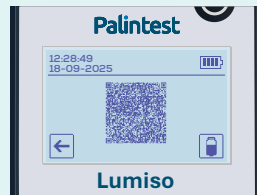
3

Perform the test and take the photometer reading.



4

The display alternates between the numeric result and a time-limited QR code.



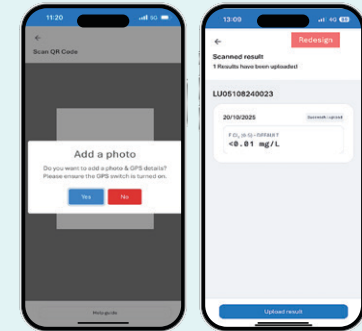
5

Log in to the mobile app and scan the QR code.



6

Add optional site photos for better traceability.



**Note:** Add a data tag for automatic data hierarchy on Connect; otherwise, results go to DEFAULT.

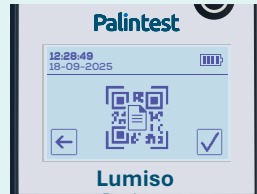
Visit [www.palintestconnect.com](http://www.palintestconnect.com) for instant access to your water quality data.



Bulk upload the most recent 25 results via a QR code scan. Useful for batch reporting and compliance documentation.

1

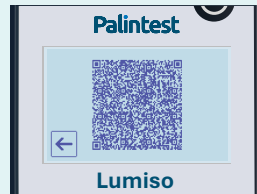
From the Settings Menu, scroll to the QR log mode icon.



2

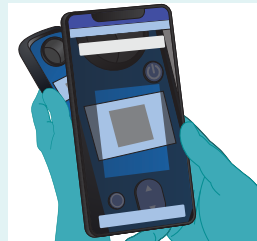
Press confirm

A QR code will appear on screen.



3

Log in to the mobile app and scan the QR code.



4

Uploaded results will display in the app and sync to Connect for secure storage.



### Note:




- Hold the phone and instrument steady for 3 seconds while scanning.
- GPS coordinates are only sent via the time-limited QR code after each test.
- Ensure good lighting and avoid glares for accurate QR capture.

Visit [www.palintestconnect.com](http://www.palintestconnect.com) for full data access and reporting.

## Setting Time and Date

Changes to the instrument settings are accessed through the Settings Menu.

1


From the Settings Menu   
Scroll to the Time and Date  
icon  and confirm 





2


Three items are adjustable:

- Date Format
- Time (24 hour clock)
- Date

To make changes to the highlighted item, use the up and down key 



 Advances to the next item


 Goes back to previous item

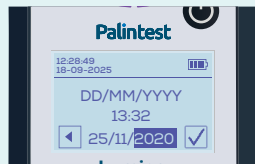
To exit without saving any changes press back  from this first screen.



3

To save changes, advance   
until the tick  shows to confirm.




To exit without saving any changes keep pressing back 



## Adjusting the Display Backlight


Lumiso's screen brightness is adjustable and there are five levels to choose from.


1


From the Settings Menu   
Select the light bulb icon   
and confirm 



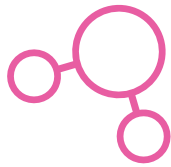
2

Use the up and down keys   
to adjust the brightness of the  
screen as required.

Confirm  to save the new  
setting.

Press back  to exit without  
making any changes.







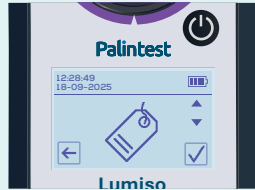
## Using Sample Tags

Changes to the instrument settings are accessed through the Settings Menu.


1

Sample readings can be tagged to indicate a sample name, project or sampling location.


In the settings menu  scroll to the tag icon  and confirm

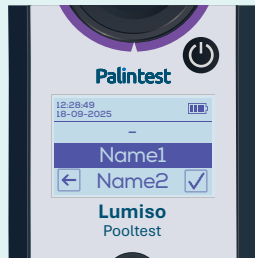


2

Use the up and down keys  to highlight a name.

Select confirm  and that name will then be used to tag all future measurements until it is changed.

Press back  to leave the current tag name unchanged.



3



To set up a list of names, use the USB port to connect Lumiso to a PC and visit: [www.palintest.com/palintestconnect](http://www.palintest.com/palintestconnect)

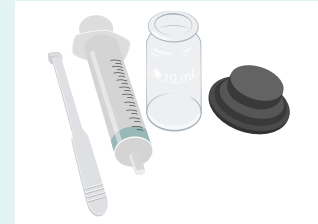


## Procedures for Water Testing

### How to Get Accurate Results

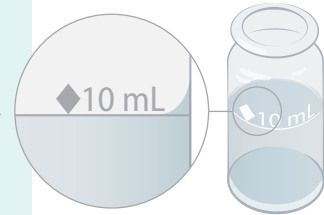
1

Rinse all equipment thoroughly with the water that is being tested.



2

When filling tubes to the 10 mL line ensure the level is as shown.



3

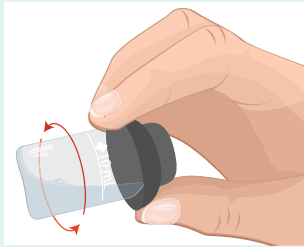
**Use Palintest Photometer tablets.**

Rapid dissolving and Comparator tablets are not suitable.



4

During sample testing or blanking, remove any attached bubbles by capping the tube and rotating as shown.



5

Ensure tubes are dry on the outside before placing them in the instrument.



6

Ensure that your Lumiso Instrument is clean and dry.

Place tubes in the instrument with white diamond aligned to the mark on the instrument.



## Blanking

The blank is a sample of the water to be tested that sets the zero value on the instrument. This ensures that any colour or cloudiness in the sample does not affect the final result.

Blanking is required whenever a different pool or spa is being tested or if significant time has elapsed since the pool or spa was last tested.

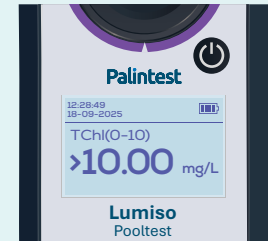
In the test instructions, blanking is not described specifically. However, it is important that the photometer is blanked using the water that is being tested.

## Sample Dilution

1

If a result is above the range of the test a '>' symbol will appear in front of the result. In this case it will be necessary to dilute the sample with deionised water and repeat the test.

**Important:** It is not valid to test pH on diluted samples.



2

A dilution tube is available from Palintest to simplify this.

**Example for a x2 dilution:**

Fill with sample to x2 line and top up to 100 mL with deionised water. Mix and use this as the new blank and sample for the test. Multiply result by x2.



Depending upon model, any of the following tests may be present in the menu.

Test Parameter	Menu Abbreviation	Range	Pooltest 3	Pooltest 6	Pooltest 9	Page
Chlorine (Free & Total)	Chl (0-5)	0.01 – 5 mg/L	● <sup>1</sup>	● <sup>2</sup>	●	39
Chlorine (Free & Total)	Chl (0-10)	0.01 – 10 mg/L	●	●	●	39
pH (Phenol Red)	pH	6.5 – 8.4 pH	●	●	●	43
Cyanuric Acid	CyA	2 – 150 mg/L	●	●	●	45
Total Alkalinity	TA	10 – 500 mg/L		●	●	47
Calcium Hardness	CaH	10 – 500 mg/L		●	●	49
Calcium Hardness for Salt Pools	CaH Salt	10 – 500 mg/L		●	●	49
Bromine	Br	0.04 – 10 mg/L		●	●	51
Bromine	Br (XF)	0.04 – 20 mg/L		● <sup>3</sup>	●	51
Phosphate LR	PO <sub>4</sub> (0-4)	0.05 – 4 mg/L			●	54
Iron MR	Fe (0-5)	0.03 – 5 mg/L			●	56
Copper (Free and Chelated)	Cu (0-5)	0.7 – 5 mg/L			●	58

●<sup>1</sup> LR003 only.

●<sup>2</sup> LR006 only.

●<sup>3</sup> LR106 only.

### Free and Total Chlorine – Chl (0 – 5) and Chl (0 – 10)

Colour Change	Colourless to Pink
Two Ranges	0.01 – 5 mg/L use DPD 1 and DPD 3 Tablet 0.01 – 10 mg/L use DPD XF and DPD XT Tablet

1

Rinse tube with sample leaving **a few drops**.



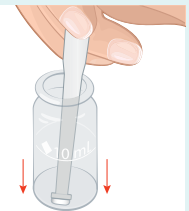
2

Add **one DPD 1** or **one DPD XF** tablet.



3

**Crush** tablet to form a paste.



4

Fill with further sample to the **10mL** line.



5

Stir.



6

Cap the tube.



7

Take the **Photometer Reading**.  
Result = Free Chlorine



8

Keep tube and contents to measure Total Chlorine.  
If no MPS based shock treatment has been used, continue to step 12.



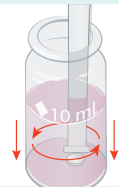
9

Add one **Oxystop** tablet.



10

Crush and stir.



11

Replace cap and wait **1 minute**.



12

Add **one DPD 3** or **one DPD XT** tablet.

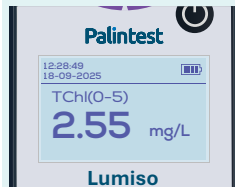


Crush and stir.

13

14

Replace cap and wait **2 minutes**.



Take the **Photometer Reading**.  
**Result** = Total Chlorine.

15

**NB:** Combined Chlorine =  
Total Chlorine – Free Chlorine

pH (Phenol Red)

Colour Change	Yellow to Red
Range	6.5 – 8.4 pH

1

Fill tube with sample precisely to **10 mL**.



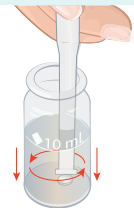
2



Add one **Phenol Red** tablet.

3

Crush and stir.



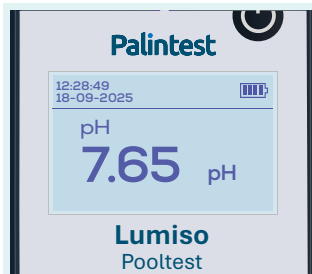
4

Replace cap.



5

Take the **Photometer** reading.



### Cyanuric Acid – CyA

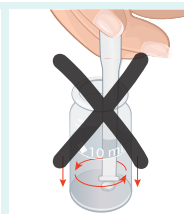
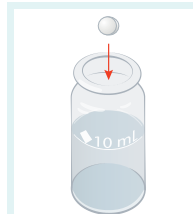
Colour Change	Clear to Cloudy
Range	2 – 150 mg/L CyA

1

Fill tube with sample to the **10 mL** line.



2



Add one **Cyanuric Acid** tablet.

**DO NOT CRUSH.**

3

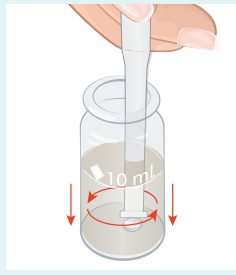
**Wait 2 minutes**  
(to let tablet disintegrate).

**Please Note:** Lumiso provides a timer for this which will not automatically read. This allows step 4 to be carried out before reading.



4

Crush any remaining tablet and **mix**.



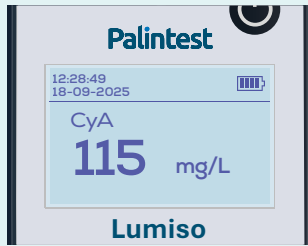
5

Replace cap.



6

Take the **Photometer** reading.



### Total Alkalinity – TA

**Colour Change** Yellow to Green to Blue

**Range** 10 – 500 mg/L CaCO<sub>3</sub>

1

Fill tube with sample to the **10 mL** line.



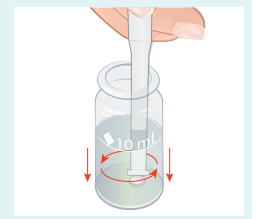
2

Add one **Alkaphot** tablet.



3

**Crush thoroughly** and mix.  
Ensure all particles have completely dissolved.



4

Replace cap and wait 1 minute.



5

Take the **Photometer Reading**.

**Please Note:** Not crushing the tablet completely in step 3 will produce a layering of the colour in the tube. If this is observed re-mix the tube and read again.

### Calcium Hardness – CaH & CaH Salt

Colour Change	Violet to Orange
Range	10 – 500 mg/L CaCO <sub>3</sub>

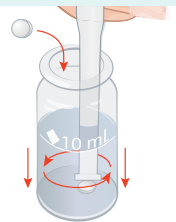
1

Fill tube with sample to the 10 mL line.



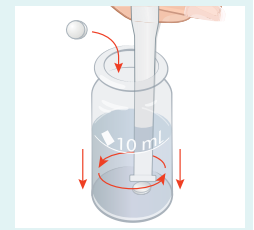
2

Add **one Calcicol No 1** tablet, crush and mix.



3

Add **one Calcicol No 2** tablet, crush and mix.



4

Replace cap.



02:00

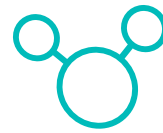


Wait 2 minutes.

5

6

Take the **Photometer** reading.



### Bromine – Br

<b>Colour Change</b>	Colourless to Pink
<b>Two Ranges</b>	0.04 – 10 mg/L Br <sub>2</sub> use DPD 1
	0.04 – 20 mg/L Br <sub>2</sub> use DPD XF

1

Rinse tube with sample leaving **a few drops**.



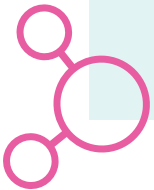
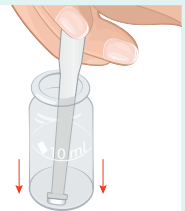
2

Add **one DPD 1** or **one DPD XF** tablet.



3

**Crush** tablet to form a paste.





4

Fill with further sample to the **10mL** line.



5

Stir.



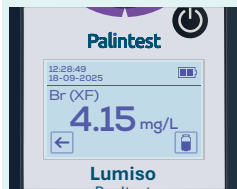
6

Cap the tube.



7

Take the **Photometer Reading**.  
**Result** = mg/L Total Bromine.

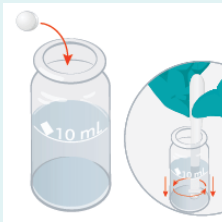


#### P (0 – 4): Phosphate LR

<b>Colour Change</b>	Colourless to Blue
<b>Range</b>	0.05 – 4 mg/L PO <sub>4</sub>

1

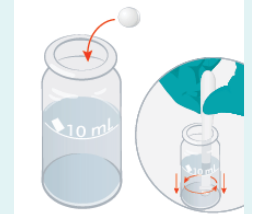
Fill tube with sample to the **10 mL** line.

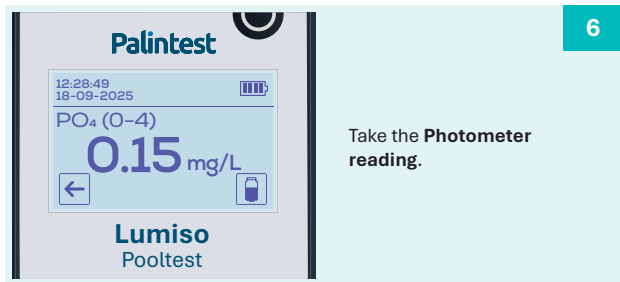
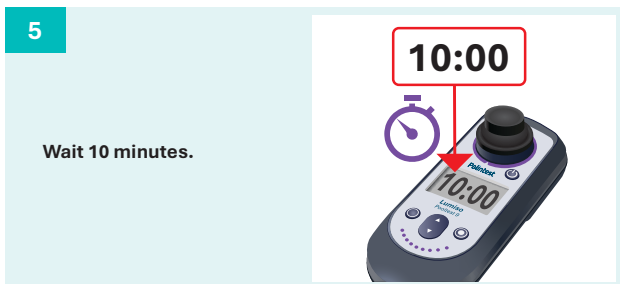


Add **one Phosphate Lr No 1** tablet, crush and mix.

3

Add **one Phosphate Lr No 2** tablet, crush and mix.

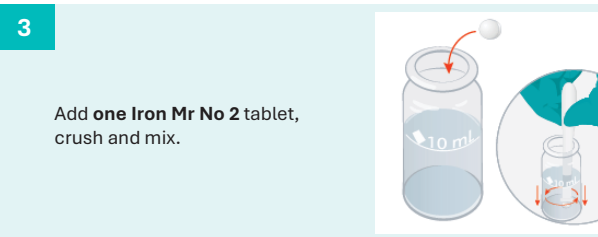
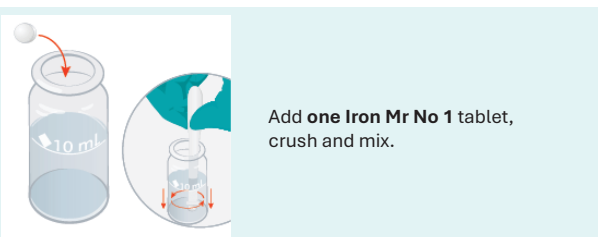
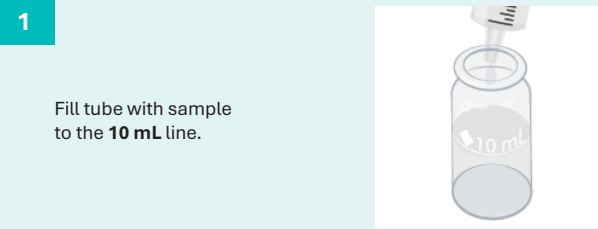




### Fe (0 – 5): Iron MR

**Colour Change** Colourless to Orange

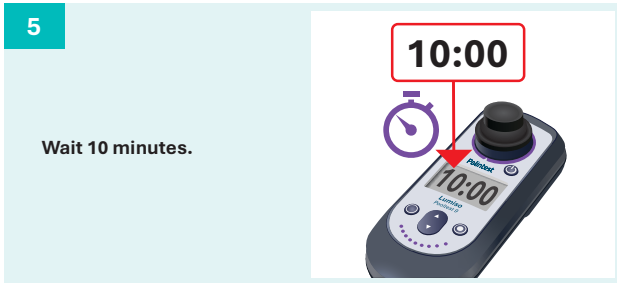
**Range** 0.03 – 5 mg/L Fe





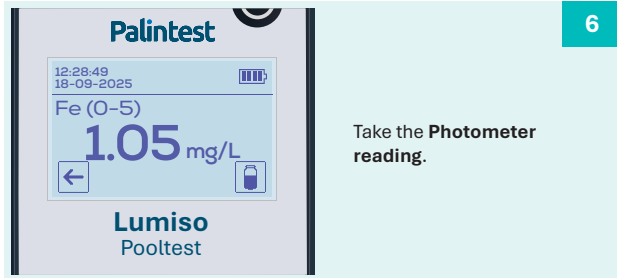
4

Replace cap.



5

Wait 10 minutes.

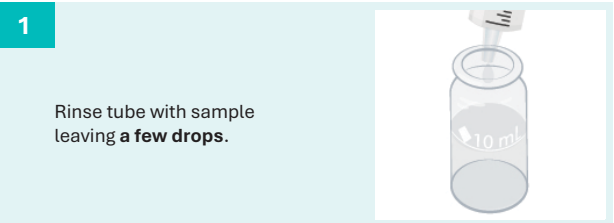


6

Take the **Photometer** reading.

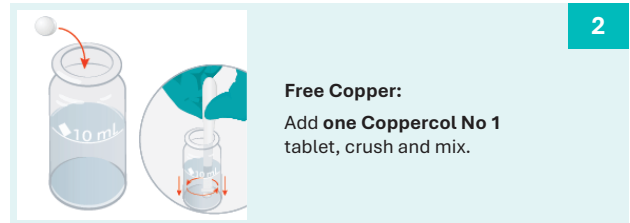
### Free and Chleated Copper – F Cu (0 – 5) and T Cu (0 – 5)

<b>Colour Change</b>	Colourless to Purple
<b>Two Ranges</b>	Free: 0.7 – 5 mg/L Cu use Coppercol No 1 Chleated: 0.7 – 5 mg/L Cu use Coppercol No 2



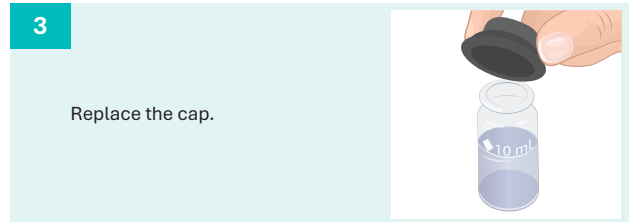
1

Rinse tube with sample leaving a **few drops**.



2

**Free Copper:**  
Add **one Coppercol No 1** tablet, crush and mix.

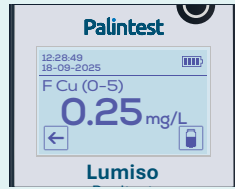


3

Replace the cap.

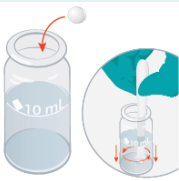
4

Take the **Photometer** reading.



5

**Chleated Copper:**  
Add **one Coppercol No 2**  
tablet, crush and mix.



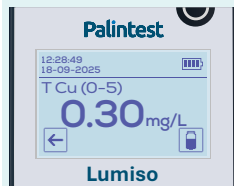
6

Cap the tube.



7

Take the **Photometer** reading.



<b>Instrument</b>	Dual wavelength, direct-reading colorimeter
<b>Optics</b>	Palintest dual LED light source optical system with narrow band wavelength filters and photodetectors
<b>Wavelengths</b>	Automatic wavelength selection of 530 nm or 575nm
<b>Wavelength Tolerance</b>	± 2 nm
<b>Filter Bandwidth</b>	5 nm
<b>LCD Display</b>	226 x 138 pixel with adjustable backlight
<b>Results Log</b>	50 results, with date, time and label
<b>Operating Conditions</b>	0 – 50°C 90% Relative Humidity (non-condensing)
<b>Waterproof Rating</b>	IP67 (Waterproof)
<b>Test Cells</b>	25 mm diameter tubes
<b>Blank/Zero setting</b>	Held in memory, but to maintain test accuracy, instrument will prompt for re-blanking after 50 minutes or if environmental temperature has changed.
<b>Power Supply</b>	3 x 1.5V AA batteries USB Port 6V max, 200mA max (DC)
<b>USB Port</b>	USB Type C
<b>Size</b>	163 x 70 x 45 mm
<b>Weight</b>	275g (including batteries)



Please take care when changing the three AA/LR6 batteries in order to maintain the waterproof rating of the instrument.

1

To change the batteries, first disconnect the USB lead.

Then use a suitable screwdriver to loosen the captive screw



2

The watertight seal built into the battery cover means that a firm pulling force needs to be applied to remove it.

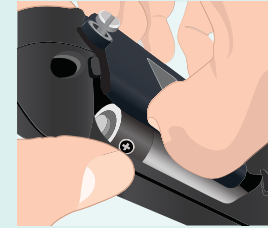
This is best done by gripping the sides of the cover, as shown, as close as possible to the end with the captive screw.

**Please note:** Levering the cover off with a screwdriver or sharp implement risks damaging the cover and seal.



3

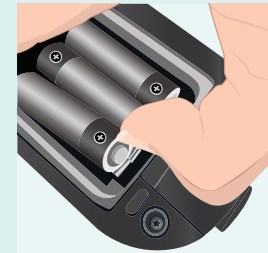
The cover will lift and, if necessary, the captive screw can be further loosened so the cover can be removed completely.



4

The batteries are held firmly in place by the clips to enhance Lumiso's resilience to physical shock.

To remove the batteries, push them towards the negative contact and lift the positive end.



5

Insert new batteries in the same way, pushing towards the negative contact, but this time, down at the positive end.

Note the polarity guidance in the compartment.

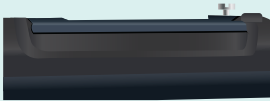




6

Replace the cover, hinge end first.

Then firmly push the cover down until it is parallel to the case as below. This ensures that the waterproof seal is complete.



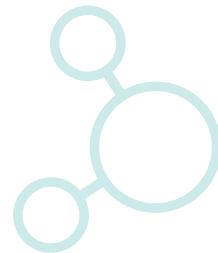
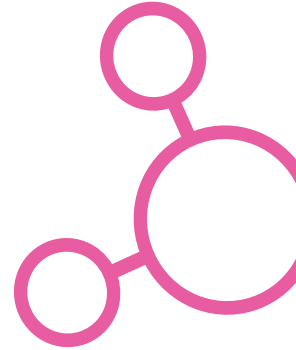
7

Secure the captive screw so that it gently holds the cover in place.

**Please note:** Do not tighten the screw excessively. The level of torque applied to this screw has no effect on the performance of the waterproof seal.



Thank you for choosing your Palintest Lumiso Photometer.  
For any further questions or information on Lumiso consumables and accessories please visit [www.palintest.com](http://www.palintest.com)



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