

GB Photometer PHMB / pH

● Operation



Switch the unit on using the ON/OFF switch.

b1

The display shows the following:



Select the test required using the MODE key:
b1 → b2 → pH → b1 → (Scroll)

METHOD

The display shows the following:

Fill a clean vial with the water sample up to the 10 ml mark, screw the cap on and place in the sample chamber with the Δ -mark on the vial aligned with the ∇ -mark on the instrument.



Press the ZERO/TEST key.

METHOD

The method symbol flashes for approx. 3 seconds.

0.0.0

The display shows the following:

After zero calibration is completed, remove the vial from the sample chamber.

Add the appropriate reagent tablet; a colour will develop in the sample.

Screw the cap back on and place the vial in the sample chamber with the Δ and ∇ marks aligned.



Press the ZERO/TEST key.

METHOD

The method symbol flashes for approx. 3 seconds.

RESULT

The result appears in the display.

Repeating the analysis:

Press the ZERO/TEST key again.

New zero calibration:

Press the MODE key until the desired method symbol appears in the display again.

● User messages

EOI

Light absorption too great. Reasons: zero calibration not carried out or, possibly, dirty optics.

+Err

Measuring range exceeded or excessive turbidity.

-Err

Result below the lowest limit of the measuring range.

LO BAT

Replace 9 V battery, no further analysis possible.

● Technical data

Light source:	LED: $\lambda_1 = 580 \text{ nm}$; $\lambda_2 = 528 \text{ nm}$ (filter)
Battery:	9 V-block-battery (life = approx. 600 tests).
Auto-OFF:	Automatic switch off 10 minutes after last keypress
Ambient conditions:	5-40°C 30-90% rel. humidity (non-condensing).
CE:	DIN EN 55 022, 61 000-4-2, 61 000-4-8, 50 082-2, 50 081-1, DIN V ENV 50 140, 50 204

● PHMB 5-50 mg/l

0.0.0

Perform zero calibration (see "Operation").
Add one PHMB PHOTOMETER tablet straight from the foil to the 10 ml water sample, and crush using a clean stirring rod. Mix well with the stirring rod to dissolve the tablet. Screw the cap on and replace the vial in the sample chamber making sure the Δ and ∇ marks are aligned.



Press the ZERO/TEST key.

b1

The method symbol flashes for approx. 3 seconds.

RESULT

The result is shown in the display in mg/l PHMB.

Measuring tolerance: $\pm 5 \text{ mg/l}$

● PHMB 10-100 mg/l

b2

The display shows the following:

Pour 5 ml of the water sample into a clean vial and fill with deionised water to the 10 ml mark. Close the vial by screwing the cap on, and place in the sample chamber with the ∇ -mark on the vial aligned with the Δ -mark on the instrument.



Press the ZERO/TEST key.

b2

The method symbol flashes for approx. 3 seconds.

0.0.0

The display shows the following:

Add one PHMB PHOTOMETER tablet straight from the foil to the water sample, and crush using a clean stirring rod. Mix well with the stirring rod to dissolve the tablet. Screw the cap on and replace the vial in the sample chamber making sure the Δ and ∇ marks are aligned.



Press the ZERO/TEST key.

r.2

The method symbol flashes for approx. 3 seconds.

RESULT

The result is shown in the display in mg/l PHMB.

Measuring tolerance: $\pm 10 \text{ mg/l}$

● pH-value 6.5-8.4

0.0.0

Perform zero calibration (see "Operation").
Remove the vial from the sample chamber. Add a PHENOLRED/PHOTOMETER tablet and mix to dissolve using a clean stirring rod. Screw the cap on and replace the vial in the sample chamber making sure the Δ and ∇ marks are aligned.



Press the ZERO/TEST key.

pH

The method symbol flashes for approx. 3 seconds.

RESULT

The pH value is shown in the display.

Tolerance: $\pm 0.1 \text{ pH}$

● Chemical method notes

● pH

For photometric determination of pH values, only use PHENOLRED-tablets in black printed foil pack and marked PHOTOMETER.

pH values below 6.5 and above 8.4 can produce results inside the measuring range. A plausibility test (pH meter) is recommended. Water samples with low values of Total Alkalinity-m may give wrong pH readings.

● Method notes

Observe application options, analysis regulations and matrix effects of methods. Reagent tablets are designed for use in chemical analysis only and should be kept well out of the reach of children.

Material Safety Data Sheets: www.tintometer.de

Ensure proper disposal of reagent solutions.

● Troubleshooting: Guidelines for photometric measurements

1. Thoroughly clean vials, lid and stirring rod **after each analysis** in order to prevent carry-over errors. Even minute reagent residues lead to incorrect measurements. Use the supplied brush for cleaning.
2. Ensure that the outer walls of the vials are dry and clean before performing the analysis. Fingerprints or water droplets on the light entry surfaces of the vials lead to incorrect measurements.
3. "Zero calibration" and "Test" must be performed using the same vial, as different vials can possess slightly different tolerances.
4. For "Zero calibration" and "Test", ensure that the vial is always positioned in the sample chamber in such a way that the graduation with the white triangle points toward the marking on the housing.
5. Always perform "Zero calibration" and "Test" with closed vial lid.
6. Bubbles on the inside walls of the vial lead to incorrect measurements.
7. You must prevent water from penetrating into the sample chamber. The entry of water into the housing of the photometer can destroy electronic components and lead to corrosion damage.

To prevent this, close the vial using the vial lid and remove the bubbles by swirling the vial before performing the test.

Check - and if necessary clean - the light entry surfaces of the sample chamber at regular intervals. Clean using a moist cloth and cotton buds.

9. Always add the reagent tablets to the water sample straight from the foil without touching them with your fingers.
10. Major temperature differentials between the photometer and the environment can lead to incorrect measurements - e.g. due to the formation of condensation water in the area of the lens or on the vial.
11. To avoid errors caused by stray-light do not use the instrument in bright sunlight.

● Calibration mode



Press MODE key and **keep it depressed**.



Switch unit on using ON/OFF key.
Release MODE key after approx. 1 second.

CAL

Select the test required using the MODE key:
CAL b1 → CAL b2 → CAL b1 → (Scroll)



Perform zero calibration (see "Operation").
Press the ZERO/TEST key.

≧ **METHOD** ≦

The method symbol flashes for approx. 3 seconds.

0.0.0

The display shows the following in alternating mode:

CAL



Place the calibration standard to be used in the sample chamber with the Δ and ▽ marks aligned.
Press the ZERO/TEST key.

≧ **METHOD** ≦

The method symbol flashes for approx. 3 seconds.

RESULT

The result is shown in the display, alternating with CAL.

CAL

If the result displayed corresponds with the value of the calibration standard (within the tolerance quoted), exit calibration mode by pressing the ON/OFF key.



Otherwise, pressing the MODE key once increases the displayed value by 1 digit.



Pressing the ZERO/TEST key once decreases the displayed value by 1 digit.

CAL

Pressing the relevant key until the displayed value equals the value of the calibration standard.

RESULT + x



By pressing the ON/OFF key, the new correction factor is calculated and stored in the user calibration software.

: : Confirmation of calibration (3 seconds).

● Note

It is not necessary to make a calibration of the b2-range as the software refer to the calibration of the b1-range.

CAL

Factory calibration active.

cAL

Calibration has been set by the user.

● Recommended calibration value

PHMB: between 15 and 30 mg/l PHMB

pH: between 7.6 and 8.0 mg/l*

* or rather values mentioned in the reference standard kits

● User calibration : cAL

Manufacturing calibration : CAL

To reset the calibration to the factory setting:



Press both the MODE and ZERO/TEST and **keep them depressed**.



Switch the unit on using the ON/OFF key. Release the MODE and ZERO/TEST keys after approx. 1 second.

The following messages will appear in turn on the display:

SEL

The calibration is reset to the factory setting.

CAL

(SEL stands for Select)

or:

SEL

Calibration has been set by the user. (If the user calibration is to be retained, switch the unit off using the ON/OFF key.)

cAL



Calibration is reset to the factory setting by pressing the MODE key. The following messages will appear in turn on the display:

SEL

CAL



Switch the unit off using the ON/OFF key.

● User notes

E 10 Calibration factor "out of range"

E 70 PHMB: Manufacturing calibration incorrect / erase

E 74 pH: Manufacturing calibration incorrect / erase

E 71 PHMB: User calibration incorrect / erase

E 75 pH: User calibration incorrect / erase

Technical changes without notice

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