(GB) Photometer Fluoride

● Operation

ON/OFF — Switch the unit on using the ON/OFF switch.

F — The display shows the following:

Fill a clean vial[1] with 10 ml of the water sample, replace the cap tightly and place the vial in the sample chamber making sure that the Δ-mark on the vial aligned with the ∇–mark on the instrument. Place the cover on the sample chamber.

Zero/Test — 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 solution; a colour will develop in the sample.
Replace the cap back tightly and place the vial in the sample chamber with the Δ and ∇ marks aligned. Place the cover on the sample chamber.

Zero/Test — 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

E0I	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: λ = 580 nm
Battery:	9 V-block battery (Life 600 tests).
Auto-OFF:	Automatic switch off 5 minutes after last keypress
Ambient conditions:	5-40°C 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

● Fluoride 0.05 - 2.0 mg/l F^-

Adjust sample temperature to that used for the calibration (±1°C).

0.0.0 — Perform zero calibration (see "Operation")

After zeroing remove the vial from the sample chamber. Pipet 2 ml of SPADNS-reagent[4].The SPADNS-reagent must be measured accurately. Replace the cap tightly. Invert the vial gently several times to mix the contents. Place the vial back in the sample chamber making sure the Δ and ∇ marks are aligned. Place the cover on the sample chamber.

Zero/Test — Press the ZERO/TEST key.

F — The method symbol flashes for approx. 3 seconds.

RESULT — The result is shown in the display in mg/l F^-.

Tolerance[2]: 5 % Full Scale[3]

● Notes

1) The vial is not graduated. Use a graduated pipet for sample and reagent measurement. Glassware must be very clean.

2) For proof of accuracy use a 1 mg/l Fluorid Standard in place of the sample for each batch of SPADNS-reagent (as recommended by Standard Methods 20th, 1998, APHA, AWWA, WEF 4500-F^- D. S.4.82). Refer to Calibration Mode.

3) The accuracy of the method decreases above 1.4 mg/l. Better accuracy may be obtained by diluting a fresh sample 1:1 with deionized water and retesting. Multiply the result by 2.

4) SPADNS-reagent is toxic and corrosive ; use care while measuring.

5) SPADNS-reagent contains arsenite to eliminate interference up to 5 mg/l chlorine.

● Method notes

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

MSD sheets on request.

Reagent solutions must be disposed properly.

● Troubleshooting: Guidelines for photometric measurements

1. Vials, caps and stirring rods should be cleaned thoroughly **after each analysis** to prevent errors being carried over. Even minor reagent residues can cause errors in the test results. Use the brush provided for cleaning.
2. The outside of the vial must be clean and dry before starting the analysis. Clean the outside of the vials with a towel. Fingerprints or other marks will be removed.
3. Zero calibration and test must be carried out with the same vial as there may be slight differences in optical performance between vials.
4. The vials must be positioned in the sample chamber for zero calibration and test with the Δ-mark on the vial aligned with the ∇–mark on the instrument.
5. Place the cover on the sample chamber for zero calibration and test.
6. Bubbles on the inside of the vial may also lead to errors. In this case, fit the vial with a clean stopper and remove bubbles by swirling the contents before starting test.
7. Avoid spillage of water or reagent solution in the sample chamber. If water should leak into the photometer housing, it can damage electronic components and cause corrosion.
8. Contamination of the windows over the light source and photo sensor in the sample chamber can result in errors. If this is suspected check the condition of the windows.
9. Large temperature differentials between the photometer and the operating environment can lead to incorrect measurement due to the formation of condensate in the area of the lens or on the vial (e.g).
10. To avoid errors caused by stray-light do not use the instrument in bright sunlight.

● **Calibration Mode (for supplied standards with defined values)**

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

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

CAL
F — The display will show alternately:

Perform zero calibration (see "Operation"). Instead of the sample use 10 ml of destilled water in a clean vial. Use a graduated pipet. Place the cover on the sample chamber.

Zero/Test — Press the ZERO/TEST key.

F — The method symbol flashes for approx. 3 seconds.

0.0.0 — The display shows:

After zeroing remove the vial from the sample chamber. Pipet 2 ml of SPADNS-reagent[4]. The SPADNS-reagent must be measured accurately. Replace the cap tightly. Invert the vial gently several times to mix the contents. Place the vial back in the sample chamber making sure the Δ and ∇ marks are aligned. Place the cover on the sample chamber.

Zero/Test — Press the ZERO/TEST key.

METHODE — The method symbol flashes for approx. 3 seconds.

FO — The display shows the following.

Empty the vial, rinse vial and cap several times with destilled water and dry. Measure 10 ml standard solution of 1 mg/l Fuoride accurately into the dry vial. Pipet 2 ml of SPADNS-reagent[4]. The SPADNS-reagent must be measured accurately. Replace the cap tightly. Invert the vial gently several times to mix the contents. Place the vial back in the sample chamber making sure the Δ and ∇ marks are aligned. Place the cover on the sample chamber.

Zero/Test — Press the ZERO/TEST key.

F — The method symbol flashes for approx. 3 seconds.

F1 — The display shows the following:
(confirmation of calibration (adjustment))

On/Off — Switch the unit off using the ON/OFF key. The new calibration is stored.

● **Note**

Calibration solutions and samples should be used at the same temperature (±1°C).

Technical changes without notice
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