

## Suspended solids 50

M383

### 10 - 750 mg/L TSS

### Turbidity / Attenuated Radiation Method

## Instrument specific information

The test can be performed on the following devices. In addition, the required cuvette and the absorption range of the photometer are indicated.

Instrument Type	Cuvette	$\lambda$	Measuring Range
SpectroDirect, XD 7000, XD 7500	□ 50 mm	810 nm	10 - 750 mg/L TSS

## Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
no reagent required		

## Application List

- Drinking Water Treatment
- Waste Water Treatment
- Raw Water Treatment

## Sampling

1. Measure the water sample as soon as possible after sampling. It is possible to store the sample at 4 °C for 7 days s in plastic or glass containers. The measurement should be at the same temperature as the sample. Temperature differences between measurement and sampling can change the result of the measurement.

## Notes

1. The photometric determination of Suspended Solids is based on a gravimetric method. In a laboratory this is usually done by evaporation of the filter residue of a filtrated water sample in a furnace at 103 °C – 105 °C and weighing of the dried residue.
2. When higher accuracy is required perform a gravimetric determination of a water sample. The result can be used to calibrate the photometer with the same water sample.
3. The estimated detection limit is 20 mg/L TSS.



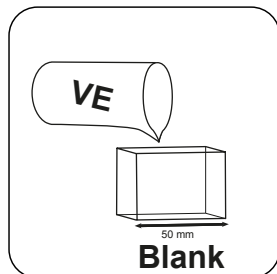


## Determination of Total suspended solids

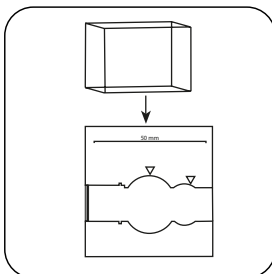
Select the method on the device.

For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500

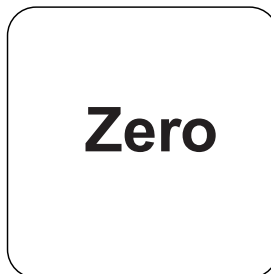
Homogenize 500 mL of the water sample in a blender on high speed for 2 minutes



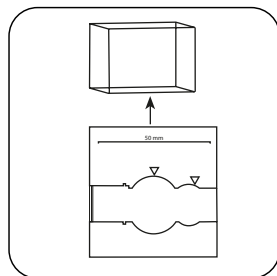
Fill **50 mm vial** with **deionised water** .



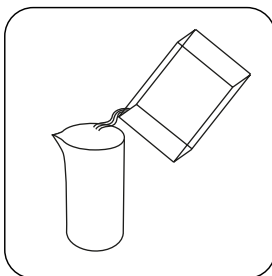
Place **blank** in the sample chamber. • Pay attention to the positioning.



Press the **ZERO** button.

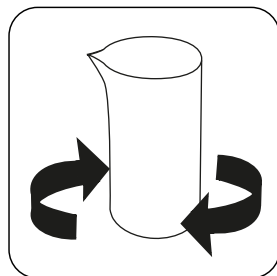


Remove **vial** from the sample chamber.

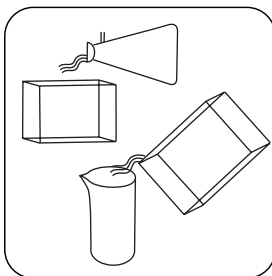


Empty vial.

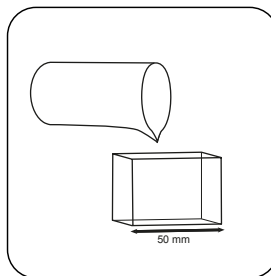
For devices that require **no ZERO measurement** , **start here**.



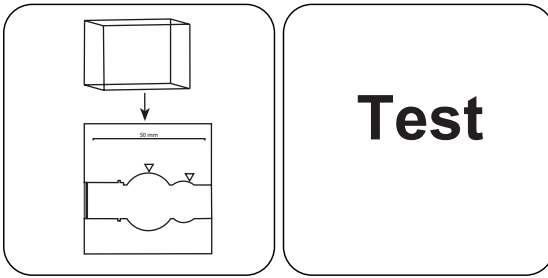
Mix homogenised water sample thoroughly.



Rinse out vial with prepared sample .



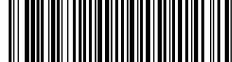
**Fill 50 mm vial with sample** .



Place **sample vial** in the sample chamber. • Pay attention to the positioning.

Press the **TEST** (XD: **START**) button.

The result in mg/L TSS (Total Suspended Solids) appears on the display.



## Chemical Method

Turbidity / Attenuated Radiation Method

## Appendix

### Calibration function for 3rd-party photometers

$$\text{Conc.} = a + b \cdot \text{Abs} + c \cdot \text{Abs}^2 + d \cdot \text{Abs}^3 + e \cdot \text{Abs}^4 + f \cdot \text{Abs}^5$$

	□ 50 mm
a	$8.02365 \cdot 10^{+0}$
b	$1.44739 \cdot 10^{+2}$
c	$7.70483 \cdot 10^{+1}$
d	$-3.84183 \cdot 10^{+1}$
e	$9.71408 \cdot 10^{+0}$
f	

## Interferences

### Removeable Interferences

- Air bubbles interfere and can be removed by swirling the vial gently.
- Colour interferes if light is absorbed at 660 nm.

## Method Validation

<b>Limit of Detection</b>	0.42 mg/L
<b>Limit of Quantification</b>	1.27 mg/L
<b>End of Measuring Range</b>	750 mg/L
<b>Sensitivity</b>	272.94 mg/L / Abs
<b>Confidence Intervall</b>	3.96 mg/L
<b>Standard Deviation</b>	2.06 mg/L
<b>Variation Coefficient</b>	0.54 %

Derived from

EN 872:2005