

4.4 Zero adjustment

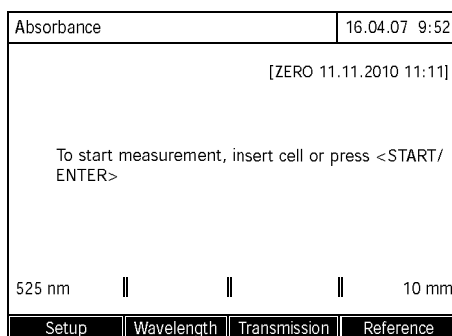
A valid zero adjustment is required for the calculation of measured values in the modes, *Concentration*, *Absorbance / % Transmission*, *Special / Multi wavelengths* and *Kinetics*. With a zero adjustment, the absorbance of a cell filled with distilled water ("zero cell") is measured and stored.

Factory zero adjustment for concentration measurements

For all measurements with Spectroquant® test sets (*Concentration* mode), a factory zero adjustment is available in the delivery condition. We recommend replacing it with a zero adjustment of your own.

Zero adjustment for absorbance measurements

In the *Absorbance* mode, the zero adjustment has to be carried out separately for each cell type and each used wavelength. If a zero adjustment exists already for the inserted cell type at the selected wavelength, the date and time of the last zero adjustment are displayed in the top right area of the display.



If no zero adjustment is available, the photometer will prompt you to carry out a zero adjustment.



Note

The cells must be absolutely clean and free of scratches.

Always use a cell of the same type for zero adjustment and measurement of the sample.

Notes on zero adjustment

Zero adjustment with round cells:

- Only use clean, scratch-free round cells with distilled water. The minimum filling level is 20 mm. A ready zero cell is included in the scope of delivery of the photometer and PhotoCheck (see chapter 8 ACCESSORIES AND OPTIONS).
- A ready zero cell can, in principle, be used any number of times. We recommend, however, to regularly check the zero cell for visible contamination and scratches and refill or exchange it if necessary (at least every 24 months).

Zero adjustment with rectangular cells:

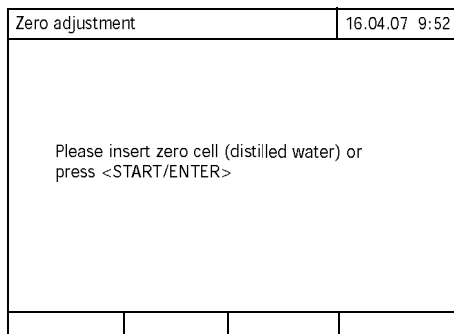
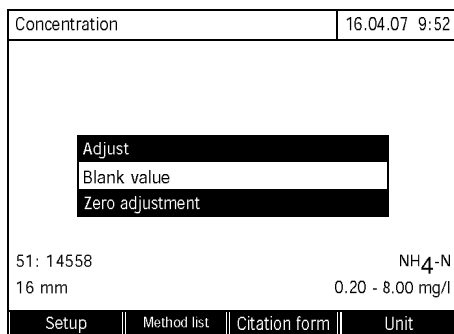
- For rectangular cells, the zero adjustment must be carried out with the same cell type (manufacturer and cell material [e.g. optical glass, quartz glass, plastic]) that is used for measurement. This is important because cells of different manufacturers have a different absorption behavior. When changing the cell type repeat the zero adjustment with the new type.
- Prior to zero adjustment, clean the rectangular cell and fill it with distilled water. The minimum filling level is 20 mm.
- Rectangular cells always have to be inserted in the cell shaft with the same orientation for measurement and zero adjustment (e.g. cell printing on the left side).

**Note**

Ordering information is given in chapter 8 ACCESSORIES AND OPTIONS. The cells listed in the chapter 8 ACCESSORIES AND OPTIONS are especially adapted to the Merck Spectroquant® test set program. General requirements of the cells are given in chapter 7 TECHNICAL DATA. Note that the spectral transparency of the cell must be suitable for the intended application (example, quartz cell for UV range).

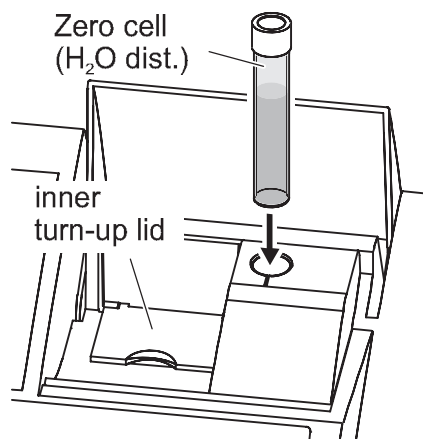
Carrying out a zero adjustment

The zero adjustment takes place similarly in the *Concentration*, *Absorbance / % Transmission*, *Special / Multi wavelengths* and *Kinetics* modes.



- 1 In the respective mode, press the **<BLANK ZERO>** key.
- 2 In *Concentration* mode only: Select and confirm *Zero adjustment*.

The zero adjustment window pops up.

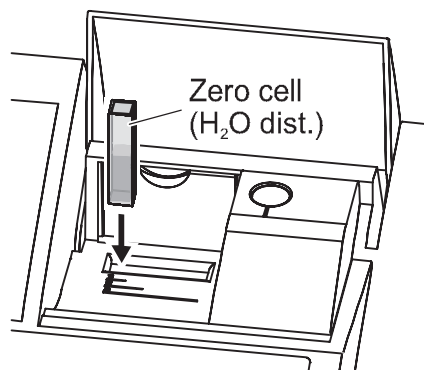


- 3 Close the inner turn-up lid.
- 4 Depending on the cell type, insert the zero cell as follows:

Round cell:

Insert the round cell in the round cell shaft so it touches the bottom.

If the inner turn-up lid is opened too wide, a message prompts you to close the inner turn-up lid.



Rectangular cell:

Open the inner turn-up lid.

Insert the rectangular cell vertically so it touches the bottom and left edge of the cell shaft. The opaque sides of the rectangular cell must point to the front and back.

The photometer has an external light recognition. If there is too much external light, a message prompts you to close the cell shaft cover.

The photometer automatically starts the zero adjustment and subsequently stores the value.

- 5 After a successful zero adjustment switch to measurement with [OK].

