



Eppendorf®  
Positive Displacement Pipette  
Model 4830

Instruction Manual

**eppendorf**

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## 1 Design principle / 2 Technical data

### 1 Design principle

The Eppendorf® Positive Displacement Pipette Model 4830 is a variable pipette designed for very sensitive tests. It functions free of carryover in the volume range 1 to 20 µL, is UV-resistant and fully autoclavable.

The specially designed tip has an integrated piston which prevents the formation of aerosols and, in turn, sample contamination. The tips are easily mounted with one hand and are autoclavable.

### 2 Technical data

Volume	Systematic error (Inaccuracy)	Random error (Imprecision; CV)
2 µL	± 6.0 %	≤ 4.0 %
3 µL	± 5.0 %	≤ 3.0 %
5 µL	± 4.0 %	≤ 2.0 %
10 µL	± 3.0 %	≤ 1.5 %
20 µL	± 2.5 %	≤ 0.8 %

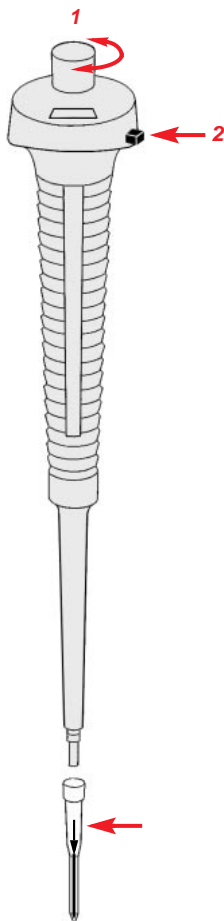
For volumes between two nominal volumes, the error limits applicable are those for the next-smallest nominal volume.

Liquid:	Bidistilled water
Reference temperature:	20 – 25 °C, constant to ± 0.5 °C
Number of determinations:	10, in accordance with DIN 12 650 and ISO 8655 with autoclaved Original Eppendorf Model 4830 Pipette Tips

Technical specifications subject to change!

With volumes < 2 µL, accuracy and precision depend greatly on the sample and the experience of the user, therefore, no limits are stated.

## 3 Mode of operation



### 3 Mode of operation

#### 3.1 Volume setting

- Press locking button (2) and hold down.
- Adjust volume by turning the control button (1).
- Release locking button. The set volume is now secured against inadvertent adjustment.

#### 3.2 Tip Attachment

- Holding the pipette vertically, attach a pipette tip by placing the end of the instrument into the top of a tip and press downward until the tip "clicks" securely onto the pipette. Keep the pipette in this position (tip in box).
- To engage the piston, press the control button down to the first stop then release. The piston should glide back up into the tip. The system is now ready for use.

#### 3.3 Filling

- Press control button down to first stop.
- Immerse the tip vertically approx. 3 mm into the liquid.
- Let control button glide back slowly.
- Slide the tip out of the liquid along the inside of the vessel.
- Wipe off any drops with lint-free tissue. Take care not to aspirate any liquid from the tip.

## 3 Mode of operation / 4 Performance Testing

### 3.4 Dispensing

- Hold the tip at an angle against the inside of the vessel.
- Press control button **down to first stop**.
- Hold down control button and slide the tip out against the inside of the vessel.

### 3.5 Tip ejection

- To eject a tip, press control button down to the second stop.

#### **Note:**

Slight liquid residue remaining in the tip does not belong to the dispensed volume and has no effect on precision and accuracy.

## 4 Performance Testing

The performance of the Model 4830 Pipette can be tested by weighing the pipetted volume of bidistilled water on a sufficiently sensitive analytical balance: bidistilled water, weighing vessel, pipette and pipette tips must have reached the same temperature.

The weighings should be performed at 20 – 25 °C.

The temperature must be constant to  $\pm 0.5$  °C.

To calculate the volume dispensed, divide the weight of the water by its density (at 20 °C: 0.9982).

This test is based on DIN 12 650 and ISO 8655.

## 5 Sterilization / 6 Cleaning / Maintenance

### 5 Sterilization

The entire **Model 4830 Pipette** can be autoclaved at 121 °C, for 20 min. Before autoclaving, loosen the upper part of the pipette from the lower part by rotating twice. After autoclaving and before reassembling, the pipette must be dry and completely cooled. The housing of the 4830 Pipette is made of special plastic which permits treatment with UV-light (up to 254 nm).

### 6 Cleaning / Maintenance

External contamination can be removed with soap solution or isopropanol. Otherwise, the Model 4830 Pipette is maintenance-free!

## 7 Service / 8 Ordering information

### 7 Service

If a problem cannot be solved with the aid of the suggestions mentioned in the Troubleshooting Guide, the Model 4830 Pipette should be returned to Brinkmann Instruments for repair or replacement at the following address:

Service Department  
Brinkmann Instruments, Inc.  
One Cantiague Road, P.O. Box 1019  
Westbury, New York 11590-0207 (USA)

Include the following information with each instrument:

- Complete name, shipping and billing address of your organization
- Full name, title, and telephone number of the appropriate contact person
- Letter briefly describing the problem
- Copy of invoice or purchase order for warranty claims
- Purchase order authorizing repairs not covered under warranty

#### **Note:**

All pipettes returned for service must be free of radioactive and biohazardous contaminants.

For other technical assistance, call the Brinkmann Customer Service Department: 800-645-3050.

### 8 Ordering information

Eppendorf® Positive Displacement Pipette Model 4830	22 44 050-1
Model 4830 Pipette Tips in 5 racks of 96 tips each	22 35 415-9
Carousel stand, incl. 6 pipette supports	22 44 490-5
Pipette holder	22 26 058-8
Pipette wall mount	22 44 491-3