

	BIO-PM 4.11 Pipette Calibration Checking Procedure	
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	<i>Document Manager: Kristin Schelling</i>	<i>Approved By: Jeffrey Nye</i>

4.11 Pipette Calibration Checking Procedure

4.11.1 Scope

Pipettes are checked for accuracy and precision to assure proper dispensing of sample preparations.

4.11.2 Background Information

Refer to appropriate Instruction Manuals.

4.11.3 Operation

4.11.3.1

Choose the appropriate pipettor for the volume range aspirated and/or dispensed.

4.11.3.2

Set pipettor to desired volume.

4.11.3.3

Choose corresponding pipette tip and seat firmly on the pipettor shaft.

4.11.3.4

Aspirate the desired sample and dispense.

4.11.3.5

Eject the pipette tip into a biohazardous waste disposal container.

4.11.4 Maintenance

4.11.4.1

Pipettors may be decontaminated by wiping the outside surfaces with an EPA registered sanitizer and allowed to air dry.

4.11.4.2

Pipettors must be sent to an accredited calibration laboratory or serviced in-house by an accredited service provider for annual calibration to maintain traceable laboratory standards. Annual is defined as once per calendar year. Follow the decontamination steps (4.11.4.1) prior to shipping to an accredited calibration laboratory.

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4.11.5 Performance Check

4.11.5.1

Draw enough MQ water into a beaker to cover the pipette volume evaluated. Equilibrate the water to room temperature.

4.11.5.2

Place a weighing vial on the scale and tare to zero.

4.11.5.3

Record the weights of 10 successive MQ water aliquots into the vial. Use the same pipette tip for all aliquots. Rinse the tip once before the first aliquot.

4.11.5.3.1

Evaporation is significant with larger volumes of water. Weigh 7 aliquots when checking pipettors that deliver 1000ul or more.

4.11.5.3.2

Variable range pipettors should be checked at both the high and low ends of the volume range.

4.11.5.4

The density of water at room temperature (200C) is 0.99823 g/ml.

4.11.5.5

Calculate the average weight of the water aliquots. Convert to average volume using the density of water.

4.11.5.6

Check the average volume against the set volume for the pipettor.

The average volume should be within +/- 2% for 1-49uL and within +/- 1% for 50-1000uL pipettors.

4.11.5.7

Deviations outside this range will require the pipettor to be serviced by an accredited service provider prior to being used in the laboratory.