



FULL RANGE CALIBRATION

University Pipette Service is the only vendor that offers Full Range Pipette Assessment and Calibration. Full Range Calibration ("FRC") is recognized in accordance with Good Lab Practices ("GLP") by pipette manufacturers, ASTM, A2LA and ISO.

What is FRC?

Full range calibration of a pipette refers to the process of testing and adjusting the pipette's accuracy and precision across its entire volume range. This means that each volume setting on the pipette, from the minimum to the maximum volume it can measure or dispense, is tested to ensure that the pipette delivers accurate and consistent results at each setting.

During full range calibration, the pipette is typically tested using appropriate reference standards, such as calibrated weights or volumes of liquid, to verify its performance at different volume settings. Any deviations from the expected values are noted, and adjustments may be made to the pipette to correct any inaccuracies.

Full range calibration is important to ensure the reliability and accuracy of the pipette's measurements across its entire range of operation, as variations in performance can occur at different volume settings. This calibration process helps to maintain the quality of experimental results and ensure that the pipette is functioning correctly for its intended applications.

University Pipette measures your pipette at the low, midrange and high volume.

Example: P200 pipette is tested at

LOW » 10% of maximum volume
MID-Range » 50% of maximum volume
HIGH » 100 % of maximum volume

LOW » 20μ
MID-Range » 100μ
HIGH » 200μ

Hypotheses of FRC

The hypothesis of full range calibration for a pipette posits that the pipette will consistently and accurately perform across its entire volume range. It assumes that the pipette has been manufactured to meet set specifications, allowing it to deliver precise volumes of liquid at each volume setting. The hypothesis encompasses expectations regarding accuracy, precision, linearity, and the absence of systematic errors. During full range calibration, the pipette's performance is systematically evaluated at various volume settings, comparing measured values to known standards. Any disparities between expected and measured values may necessitate adjustments or recalibrations to ensure the pipette meets specified performance criteria. Ultimately, the hypothesis guides the calibration process, aiming to confirm the pipette's reliability and accuracy across its entire range of operation.

Observation of FRC

The hypothesis of full range calibration for a pipette posits that the pipette will consistently and accurately perform across its entire volume range. It assumes that the pipette has been manufactured to meet set specifications, allowing it to deliver precise volumes of liquid at each volume setting. The hypothesis encompasses expectations regarding accuracy, precision, linearity, and the absence of systematic errors. During full range calibration, the pipette's performance is systematically evaluated at various volume settings, comparing measured values to known standards. Any disparities between expected and measured values may necessitate adjustments or recalibrations to ensure the pipette meets specified performance criteria. Ultimately, the hypothesis guides the calibration process, aiming to confirm the pipette's reliability and accuracy across its entire range of operation.

Conclusion of FRC

In conclusion, FRC of a pipette is crucial for ensuring its accuracy and reliability across its entire volume range. Through systematic testing and observation, including assessments of accuracy, precision, linearity, and potential systematic errors, FRC aims to verify the pipette's performance against established standards. By addressing any discrepancies and making necessary adjustments, FRC enhances the pipette's usability and trustworthiness in various laboratory applications, ultimately contributing to the quality and integrity of experimental results.

