

Better Pipetting: Better Data, Better Science.



Andrew Alliance

THE ANDREW ADVANTAGE

MEET ANDREW: The liquid handling robot that uses conventional pipettes. The Andrew family is a multi-awarded companion robot suite that provides a reliable and convenient alternative to manual pipetting and complex liquid handling workstations. The product line is comprised of hardware and software intended to make pipetting more reliable and productive.

With Andrew, the pipetting robot, your daily liquid handling tasks can be automated with flexibility and ease without altering your existing workflow or procedures.

Andrew Lab is a free software that allows you to create and document protocols, compute the amount of liquids required, and calculate concentrations for all reagents at any step of the process.

Andrew CaliBro is a suite of software, hardware, and convenient consumables that allow Andrew to validate and verify the calibration and performance of conventional pipettes. Andrew CaliBro is an unprecedented tool used to remove uncertainty from your data.

MORE ACCURATE DATA: With Andrew, you get the best possible science by having accurate and reproducible results. Andrew eliminates human variation and user fatigue which are both principal causes for experimental variations. Pipetting requires accuracy, diligence, concentration, proper technique and attention to detail. It can be tiring, is highly repetitive, causes discomfort and, as a result, it is quite common for human error to occur. Andrew has been designed to enhance the success of pipetting processes by delivering highly accurate results in a very effective and productive manner.

TIME AND MONEY SAVINGS: Andrew can run independently and for hours on end while providing reproducible and accurate execution of experiments. The ease of using the Andrew system for automating protocols allows for the incorporation of many experiments into an automated system without the need for lengthy set up times. Andrew enables lab personnel to use their time more efficiently resulting in increased productivity. Andrew uses your pipettor, your tips, your plates, etc. The result: immediate higher productivity and lab personnel are free to do important science while Andrew does the mundane pipetting. Depending on usage, the system can pay for itself in as quickly as 6 months.

PRESERVE WORKERS WELL BEING: Pipetting requires repetitive movement up to 500 times per day for the average user which, as many studies have shown, can lead to repetitive stress disorders of the hand, back, and/or shoulders. These health issues impede a workers' ability to perform necessary tasks to contribute to the success of the lab. By completely removing the pipette from the user's hand, the Andrew system can reduce the likelihood of lost time, reduced productivity and health risks associated with pipetting. In addition, Andrew can pipette in controlled environments such as a biological safety cabinet, fume hood, or cold room.





ANDREW PRODUCT FAMILY

The Andrew product family is unique in the liquid handling arena: it consists of portable, ready to use companion robots using conventional pipettes that can be used anywhere and with little to no training.

- Weighing only 10 kg and with a minimum footprint corresponding to a standard sheet of paper, Andrew can coexist and work in a standard laboratory environment without a complex installation: on your workbench, under a hood, and even in a refrigerator at 4°C.
- The working deck, known as DOMINO™, allows users to perform small to complex experiments in which the robot adapts itself to the experiment size. A simple experiment using a single microplate is possible, as is an experiment using 10 microplates (or 150 microtubes, or 100 tubes, or any mixture of different consumables).
- Andrew also adapts to the user's consumables including microplates, tips, and tubes. The system allows the user to control the consumables choice – instead of mandating certain brands or high priced products.

FOUR MODELS ARE CURRENTLY AVAILABLE:

ANDREW
1000G

USING

5 Gilson PipetMan
Classic pipettes,

COVERING A RANGE FROM
0.2 µL to 1000 µL

ANDREW
1000P

USING

5 Gilson Microman E
positive displacement
pipettes,

COVERING A RANGE FROM
0.1 µL to 1000 µL

ANDREW
1000R

USING

5 Rainin Pipet-Lite
pipettes,

COVERING A RANGE FROM
0.1 µL to 1000 µL

ANDREW
10KR

USING

3 Rainin Pipet-Lite
pipettes,

COVERING A RANGE FROM
10 µL to 10000 µL



ANDREW LAB

The complimentary software available for PC and MAC.

Andrew Lab is extraordinarily easy to learn and use. You can rapidly design a protocol by dragging and dropping plates, tubes, reagents, etc., onto the virtual lab bench. The software creates the protocol recipe for you, computes all the amounts of liquids required, and will calculate concentrations for all reagents at any step of the process. The software interface is highly intuitive and easy for lab personnel at all levels of experience to run expertly with little training. The software and system are also very flexible. Whether you have a simple task that needs to be repeated many times or a complex process that changes each time you run it, Andrew adapts to your needs.

- **Intuitive**, easy to use software so expertise is not needed. Anyone in the lab can use it.
- **Andrew Lab is designed to fit your needs**. Set up pipetting procedures in the way you think; you don't need to adapt to Andrew, it will adapt to you.
- **Andrew is always ready to handle** whatever procedure you wish to perform, from simple to complex.
- **Enhance Productivity**: Intuitive. Easy to Use. Flexible. Adaptable. Automated.

Once the protocol is designed, it can be distributed worldwide, read and interpreted in the local language (from Chinese to Russian), and executed by Andrew in any collaborator's lab.

CALIBRO

A unique tool that allows the validation of a set of pipettes unattended in your lab.

The impact of a pipette that doesn't work correctly can be dramatic: ISO8655 norms define the tolerances and the limits. Most labs perform Quality Control (QC) of their pipettors with a frequency between one month and one year, but nobody can guarantee that the day after calibration the pipettor is working correctly. In fact, most of the failures are "silent" and are not detected by the operator. Andrew Alliance has developed a revolutionary suite designed around Andrew, called Andrew CaliBro, that will allow any laboratory to check the calibration of a set of 5 pipettes with the simple click of a button. Totally unattended, the Andrew CaliBro system can even be run overnight and will deliver an individual report for each pipette validating its performances. Finally, an effective Operational Qualification (OQ) of pipettes (or Andrew itself) becomes possible at affordable cost, making Andrew CaliBro an indispensable tool in any lab.

- **Ensure pipette performance** by removing the pipette uncertainty from your data
- **The only automated pipette validation on the market**, additionally allowing short turn-around time
- **Affordable and effective**, it can do liquid handling during daytime, and pipette validation overnight.



The Andrew CaliBro Suite is comprised of:

- **Andrew**, for the unattended manipulation of up to five pipettes
- **The CaliBro Reader**, an accessory for the photometric validation of the liquid handling performances
- **CaliBro Packs**, consumables providing the reagents for the verification of pipette performance
- **The CaliBro Software**, delivering execution of proprietary methods for pipette validation allowing the calibration process for a set of pipettes
- **Microplates**: For use with the Calibro Reader

TECHNICAL SPECIFICATIONS

Specifications subject to change without notice.

Andrew

Vision-assisted companion robot capable of manipulating, unattended, standard single-channel adjustable volume pipettes.

Pipette type

- 1000G
 - | Gilson PIPETMAN® Classic
 - | P2, P20, P100, P200, P1000
- 1000P
 - | M10E, M25E, M100E,
 - | M250E, M1000E
- 1000R
 - | Rainin Pipet-Lite XLS+
 - | L2, L20, L100, L200, L1000
- 10KR
 - | Rainin Pipet-Lite XLS+
 - | L100, L1000, L10M

Consumables

Standard user-supplied consumables chosen among 6,12,24,48,96,384 microplates (including deep well microplates and any well shape), microtubes (0.5 –0.6, 1.5, 2.0, 5 mL), 15 and 50 mL centrifuge tubes, PCR plates and PCR strips. Other formats possible on request.

Tip types

Most brands of tips compatible with the above mentioned pipettes – list available.

Tip racks

Any type, even when partially filled, provided that tips are formatted in an 8x12 array like the 96 wells microplate format (list available).

Dimensions & weight

53.5 cm (H) x 29 cm (W) x25 cm (L) – 10 kg
Andrew 10KR = 61 cm (H) x 29 cm (W) x 25 cm (L) – 11.2 kg

Bench space required during operations

Minimum: 45 cm x 70 cm (3 Dominos™)
Maximum: 67 cm x 85 cm (13 Dominos™)

Operating temperature

4°C–40°C with maximum relative humidity of 80% below T=31° C, decreasing linearly to 50% relative humidity at 40°C

Computer connection

USB 2.0, via USB Type A female connector (USB/USB male cable supplied)

Minimum Personal Computer Requirements

Windows 7 or above, INTEL processor, 1X USB 2.0 port, 2Gb RAM, screen resolution of 1280x768.

DOMINOS™ (Basic Set, included)

- 1X Microplate Domino™ (one microplate)
- 1X Microtube Domino™ (15x microtubes)
- 1X Tube Domino™ (10x 15 mL + 2x 50 mL tubes)
- 2X Tip Domino™ (one tip rack)
- 1X Waste Domino™

Other DOMINOS™ (not included)

List available under
www.andrewalliance.com/available-dominos/

EXPERIMENT REPEATABILITY (SAME ANDREW, SAME PIPETTES)

| | Experiment repeatability (%) | Experiment repeatability (µL) |
|-----------|------------------------------|-------------------------------|
| P2-0.5 | 6.80% | 0.03 |
| P2-1 | 2.08% | 0.02 |
| P2-2 | 2.07% | 0.04 |
| P20-2 | 0.72% | 0.02 |
| P20-5 | 0.70% | 0.04 |
| P20-10 | 0.53% | 0.05 |
| P20-20 | 0.38% | 0.08 |
| P100-20 | 0.45% | 0.09 |
| P100-50 | 0.41% | 0.20 |
| P100-100 | 0.77% | 0.77 |
| P200-100 | 0.62% | 0.63 |
| P200-150 | 0.60% | 0.90 |
| P200-200 | 0.22% | 0.44 |
| P1000-200 | 0.83% | 1.66 |
| P1000-300 | 0.42% | 1.24 |

EXAMPLE OF PIPETTING PERFORMANCES BY ANDREW

| | Expected Volume(µL) | Relative Inaccuracy (%) | CV (%) | Systematic Error (µL) | Random Error (µL) |
|------------|---------------------|-------------------------|--------|-----------------------|-------------------|
| P2-0.5 | 0.50 | -16.0% | 8% | -0.08 | 0.04 |
| P2-1 | 1.00 | -4.0% | 3% | -0.04 | 0.03 |
| P2-2 | 2.00 | -3.5% | 3% | -0.07 | 0.07 |
| P20-2 | 2.00 | -1.0% | 5% | -0.02 | 0.10 |
| P20-10 | 10.00 | -2.0% | 1% | -0.20 | 0.09 |
| P20-20 | 20.00 | -0.9% | 1% | -0.17 | 0.15 |
| P100-20 | 20.00 | 1.2% | 1% | 0.24 | 0.17 |
| P100-50 | 50.00 | 0.2% | 0% | 0.08 | 0.06 |
| P100-100 | 100.00 | 0.1% | 0% | 0.09 | 0.12 |
| P200-100 | 100.00 | 0.2% | 0% | 0.19 | 0.10 |
| P200-150 | 200.00 | 0.2% | 0% | 0.41 | 0.12 |
| P200-200 | 200.00 | -0.2% | 0% | -0.43 | 0.24 |
| P1000-500 | 500.00 | 0.2% | 0% | 1.05 | 0.57 |
| P1000-1000 | 1000.00 | 0.1% | 0% | 0.63 | 0.38 |



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