

Fluent[®] Gx

for regulated environments.

ADVANCED LIQUID HANDLING WORKSTATION FOR CLINICAL, GLP AND QC FACILITIES



Regulated environments.

Empowered.

AUTOMATION FOR CLINICAL AND REGULATED ENVIRONMENTS

Tecan has used its extensive knowledge of clinical and regulated environments – as well as years of expertise in the field of automation – to bring you the **Fluent Gx**, the fastest and most flexible, open platform we've ever made for these highly controlled applications.

SIMPLIFYING REGULATORY COMPLIANCE

The Fluent Gx Automation Workstation is designed specifically to meet the needs of regulated laboratories, with all the advanced process security features required for applications in clinical, GMP and QC facilities. It combines all the liquid handling and workflow benefits already familiar to Fluent users – high on-deck capacities, fast processing and intuitive operation – with the Fluent Gx Assurance Software, a suite of software features needed to comply with stringent regulatory requirements, including FDA 21 CFR Part 11.

Regulation and typical applications	GMP	Clinical
EN 62304 Medical device software (life cycle processes)		✓
ISO 13485 Medical Devices Quality Management System / 21 CFR 820 Quality System (US FDA)	✓	✓
Enabling 21 CFR Part 11 (Tecan software is developed under ISO 13485, and offers multi-level user management, supporting compliance to 21 CFR Part 11 electronic records/signatures)	✓	✓
EN 14971: Medical devices – application of risk management to medical devices		✓
EN 61010 applicable parts: safety requirements for electrical equipment for measurement, control and laboratory use	✓	✓
EN 61326 applicable parts: EMC requirements	✓	✓
EN 62366 usability engineering (human factors)		✓

Note: This is not a comprehensive list. For more information contact your local sales engineer.

Regulatory support.

Need help implementing Fluent Gx in your laboratory?

The Fluent Gx provides the tools you need to build success.

AUDIT TRAIL AND AUDIT TOOLS

FluentControl™ offers all the tools you need to prove your system was – and continues to be – used in a compliant fashion, should the need arise. Electronic signatures provide an audit trail that tracks all system and electronic record changes. The Data Audit Tool and File Version Checker prove that no external manipulations, additions or deletions to the system or record have occurred.

SAMPLE TRACKING LINKS SAMPLE IDS WITH RESULTS

Scanned primary tube barcodes can be linked with destination plate positions and pipetting results using a single command. Real-time pipetting information can be viewed, tracking samples as they are transferred from primary tubes to intermediate dilution plates, to quantification and final plates.

NEED TO PREVENT UNAUTHORIZED CHANGES?

User management offers three default user groups, and can be directly linked to your lab's Windows® Active Directory

- **Operators** can run the instrument, but cannot make changes to pipetting parameters, carriers or anything else that will have an impact on the defined protocol.
- **Key operators** can use the Method Approval feature to release new or edited methods. Once approved, FluentControl will watch for alterations, flagging if the method itself or any of its components have been changed.
- **Administrators** may add new users, assign access rights and enable or disable existing accounts.



Data Audit Tool gives automatic documentation of audit trail status



Automated barcode reading provide full sample tracking



Individual user management ensures adherence to SOP and prevents unauthorized changes to protocols

Fast, flexible, and designed to comply.

The Fluent Gx Automation Workstation is designed specifically to meet the needs of regulated laboratories, with all the advanced process security features required for applications in clinical, GMP and QC facilities.





1 MORE FUNCTIONALITY IN LESS SPACE

Fluent Gx's patented **Dynamic Deck™** allows the high capacity worktable to be freely configured and easily reconfigured. The cabinet-mounted option lets you take full advantage of the system's in-deck and below-deck access, expanding capacity and functionality without extending the instrument's footprint.

2 INTUITION BUILT RIGHT IN

Every Fluent Gx comes with a dedicated **touchscreen interface**, with a unique, run-only environment that can be individually tailored to specific applications and personalized for each user. Users require minimal training, as the interface clearly defines every action for more straightforward, consistent operation.

3 DEVICE INTEGRATION FOR FULLY AUTOMATED WORKFLOW

Enjoy true walkaway operation with Fluent Gx's seamless integration of complementary peripherals, all fully managed with FluentControl™ software for maximum throughput and minimum operator input.

4 EXECUTE PROTOCOLS MORE QUICKLY, EFFICIENTLY AND RELIABLY

Perform multiple tasks simultaneously with fast, independent, task-specific arms that work in parallel. Tecan's patented **Path Finder™** technology automatically calculates the optimal route for each arm, every time, ensuring that runs are completed quickly and efficiently.

5 GREATER PEACE OF MIND

Ensure the integrity of your results with a broad array of fully integrated technologies and capabilities:

- 1D/2D barcode reading for efficient sample identification
- Liquid level detection for reliable pipetting performance
- Plate move confirmations
- User interaction logs

6 FLEXIBILITY TO DEAL WITH THE UNEXPECTED

Fluent Gx's **Active Stop and Resume** function enables the operator to instantly access the workdeck during a run – allowing set-up errors or omissions to be corrected – simply by opening the door. Once the action is finished simply close the door and resume the program, which will pick up where it left off.

7 SAVE REAGENTS AND SAMPLE

For optimal liquid handling performance, Fluent Gx is equipped with **Adaptive Signal Technology™**, a new generation of liquid level sensing. This technology provides real-time aspiration monitoring and liquid arrival checks, enabling the use of smaller sample volumes and reducing dead volumes, as well as providing exceptional automated error handling.

8 FAST AND EASY METHOD TRANSFER BETWEEN INSTRUMENTS

Fluent Gx's outstanding precision and unique Zero-G capability simplify the set-up of channel positions for 96, 384- and 1,536-well microplate formats. Methods can be easily transferred between platforms simply by exporting and importing scripts, without the need for time-consuming set-up of individual instruments.

Flexibility to suit your needs

Combine standard protocols with lab developed tests.

FluentControl provides a powerful set of tools to quickly and easily set up and run challenging assays, even in regulated laboratories.



Operation at a touch of your finger

A PERFECT FIT FOR OPERATORS AND PROGRAMMERS

FluentControl software meets the needs of both day-to-day operators and system programmers, without compromise. Assay development and configuration is quick and easy using a dedicated programming environment. A special run-time mode presents a clear and simple interface on the built-in touchscreen, which guides users through daily tasks for fast, consistent and efficient operation.



Use pictures or videos to support the operator preparing a run

CONSISTENT, REPRODUCIBLE AND RELIABLE OPERATION

Fluent Gx has a unique touchscreen interface that simplifies daily activities by guiding scientists through routine set-up and operation of the system for consistent, reproducible performance. It can provide graphical instructions and prompts for every step of the set-up process.

- Visual guides for complex tasks
- Easier compliance with standard operating procedures
- User-specific assay permissions
- Faster start-up for new operators
- Status and run-time progress indicators
- Method Recovery allows a process to be easily recovered, even after a fatal error such as a power outage

Tecan Consumables.

Performance assured.
Quality assured.
Application assured.

Tecan consumables are manufactured within a controlled environment, using state-of-the-art production processes and integrated quality control procedures. The Installation and Operational Qualifications of your Fluent Gx are executed together with your choice of Tecan disposable tips. The performance of the entire system is dependent on every aspect, right down to each individual tip, which is why every lot of Tecan Pure and Tecan Sterile tips is tested by an independent laboratory to guarantee the purity.

WHATEVER YOUR APPLICATION, WE HAVE A PURITY LEVEL TO SUIT

	Tecan Standard	Tecan Pure	Tecan Sterile
Application examples	ELISA Sample handling Biochemical screening	Genomics research Forensics Molecular diagnostics	Cell biology Microbiology Cell-based screening
Tecan Standard quality	✓	✓	✓
Human DNA free	-	✓	✓
PCR inhibitor free	-	✓	-
RNase/DNase free	-	✓	✓
Pyrogen/endotoxin free	-	-	✓
Sterile	-	-	✓

TECAN DISPOSABLE TIPS

Portfolio includes:

- Liquid Handling (LiHa) disposable tips in standard trays, ANSI/SLAS-format boxes and nested racks
- MCA 96 disposable tips in ANSI/SLAS-format boxes and nested racks
- MCA 384 disposable tips in ANSI/SLAS-format boxes

TECAN MICROPLATES

Tecan offers a selection of polystyrene, medium-binding ANSI/SLAS-format microplates compatible with Tecan Instruments.

This portfolio includes sterile cell culture plates (tissue culture treated and each supplied with a lid) that are suitable for cell-based applications, and non-sterile biochemical assay plates (black and white, 96-well and 384-well formats).

www.tecan.com/consumables



MCA 384 with disposable tips pipetting to 1,536-well microplate

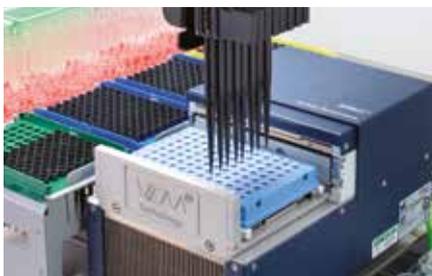


Tecan Microplates ensure high performance and seamless processing

A world of automation possibilities.

Exceptional versatility for regulated environments

Fluent Gx's flexible worktable and configurable options provide the tools needed to address a vast array of assays. Tecan's application experts can help you optimize your workflow, freeing up staff time and maximizing your productivity.



Pipetting directly into thermocycler*

NEXT GENERATION SEQUENCING

Rapid technology advances have made NGS a cost-effective alternative to PCR or array-based techniques for many applications, allowing pooling of hundreds of samples in one sequencing run. The speed, accuracy and precision of Fluent Gx make the system ideally suited to preparing NGS libraries from multiple 96- or 384-well plates.



A view from below, a reader integrated under the worktable

FASTER NUCLEIC ACID PURIFICATION; INTEGRATED QUANTIFICATION AND NORMALIZATION

Fluent Gx provides scalable solutions to match your throughput needs, with the flexibility to switch between random access samples, 96- and 384-well formats as required. FluentControl makes easy work of fully automated quantification and normalization, whether you use fluorometric or bead-based technics. Integrated readers and software wizards enable virtually any genomics application.



A view from the top, through fast and light arms onto impressive deck capacity

SAMPLE ALIQUOTING AND ASSAY PREPARATION

Even common laboratory routines benefit from Fluent Gx's amazing speed, phenomenal deck capacity and process security features. Fluent Gx is Tecan's fastest, highest capacity, open platform for regulated environments. It enables more tubes per run in less time, together with full tracking of sample IDs, real-time liquid level detection, in-process viability checking and comprehensive reporting of all pipetting activities.

* On Deck Thermal Cycler is a product of Inheco GmbH, Martinsried Germany

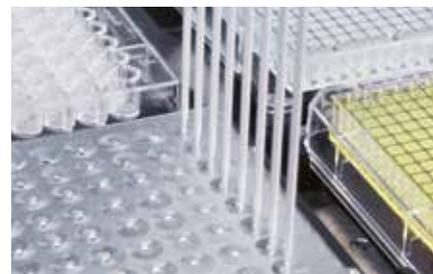
FLEXIBLE CHANNEL ARM™ – AIR OR LIQUID DISPLACEMENT

Configure to your application's demands:

- Disposable tips to eliminate cross-contamination concerns
- Fixed, washable tips to pierce seals and septa
- Adjustable tip spacing to suit tubes and plates
- Minimize dead volumes, with liquid level detection down to 2 μl in PCR plates
- Individual channel movements for varying, unknown liquid levels
- Huge dynamic ranges from 200 nl to 5 ml
- Fluent Gx can be configured according to your assay needs, and is not limited to one pipetting technology



Pipetting tube to plate with disposable tips and air displacement



Piercing with fixed washable tips and liquid displacement Flexible Channel Arm



Multiple Channel Arm picking up 96 500 μl disposable tips



Multiple Channel Arm picking up one row of 24 50 μl tips

MULTIPLE CHANNEL ARM – A DYNAMIC WONDER

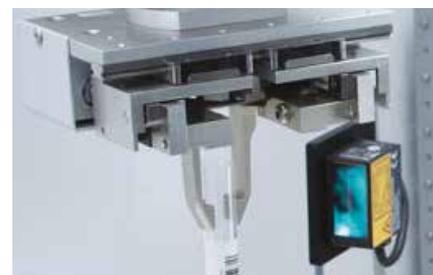
High flexibility, high productivity plate pipetting:

- Swap head adapters in seconds to switch from fixed to disposable tips or from 96- to 384-channel formats
- Pick up rows or columns to pipette serial dilutions, titrations, standard curves, controls, and more!
- Pipette into 96-, 384- or even 1,536-well plates
- Volume ranges from 200 nl to 500 μl

ROBOTIC GRIPPER ARM – LOGISTICS WITH SPEED AND REFINEMENT

One arm, two fingers and amazing possibilities:

- Move tubes and plates to and from readers, washers, incubators, magnets, vacuums, balances or other modules integrated onto your Fluent Gx
- Use an optional arm-mounted barcode scanner for high speed labware identification
- Optional Finger Exchange System offers the unique ability to handle tubes or plates with one arm in a single run – switching on the fly



Tube handling with Robotic Gripper Arm



Plate handling with barcode reading



Fluent 780 with carousel (right side) and stacker (left side) maximizes walkaway time

Fluent Gx is designed to simplify your daily tasks by bringing together all the modules and devices required for complete workflow automation.



Exchange deck segments for flexible assay set-up, device integration and reconfiguration

DEVICE INTEGRATION FOR FULLY AUTOMATED WORKFLOWS

Fluent Gx's patented Dynamic Deck ensures exceptional capacity in a compact footprint. This allows integration of peripheral devices on, around or below the workdeck without compromising on instrument throughput – making it easier to get more done, more quickly.

Incubators

The compact Monitored Incubator Option (MIO™) holds up to six microplates. Several Incubators, with individual temperature and shaking settings, can be accommodated on the deck periphery – enhancing overall system capacity.



Robotic Gripper Arm with Infinite® plate reader, HydroFlex™ washer and Te-Shake™

Magnetic and vacuum separation

Fluent Gx supports both magnetic bead-based and vacuum separation workflows. These devices, ideally suited to nucleic acid extraction and genomic sample clean-up activities, offer fully-automated separation for multi-well formats. Several separation modules can be placed on the high capacity deck to enable parallel processing of multiple plates.

Readers and washers

Tecan offers a range of multimode readers and washers designed specifically with complete automation in mind. From rapid absorbance measurements for DNA quantification to advanced cell-based and biochemical assays, there is a Tecan reader or washer to suit almost any assay requirements.

Do more in less time and less space.



Fluent Gx 480 with integrated laminar flow hood

Laminar flow hood*

An integrated laminar flow HEPA hood with UVC light maintains a clean environment throughout the workdeck, ensuring environmental protection for cell biology applications. The integrated UVC lamp can be used to ensure the cleanliness of deck area is maintained.

Fluent ID

Scan tube barcodes while loading the worktable. Get instant LED feedback and straightforward touchscreen guidance. Handle errors and start your run the moment all tubes are loaded onto the deck. No waiting for error handling or mechanical manipulation, just load and go. This innovative module complements an array of other barcode reading options - including arm-mounted and 2D flatbed scanners - to maximize process security.

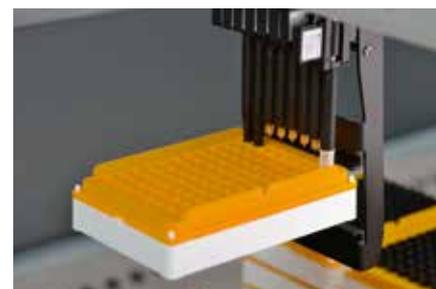
Third-party devices

FluentControl offers straightforward integration of third-party devices, with an ever-increasing library of drivers - including support of SiLA devices. The implementation of these devices can be simplified with Fluent Gx's Zero-G one-touch protocol set-up.

[**Note:** Integration of some third-party devices can affect the system's intended use.]



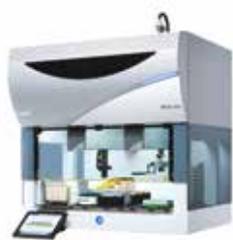
Fluent ID offers rapid sample identification and error handling



Maximize your deck capacity with the Tecan nested tips and unique transfer tool for the tip racks

It's fast. It's flexible. It's Fluent Gx.

FLUENT Gx 480



30 plate positions

FLUENT Gx 780



48 plate positions

FLUENT Gx 1080



72 plate positions

DISCOVER THE FLUENT Gx AUTOMATION SOLUTION

To see Fluent Gx in action and learn how it can improve the productivity of your laboratory, contact your nearest Tecan office or visit www.tecan.com/fluentgx

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The FLUENT Gx is an open automation platform product for general laboratory use. It is intended for routine laboratory tasks, such as general purpose pipetting and general purpose liquid handling and robotic processes. Configuration of options may impact intended use - please consult your local Tecan office.

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