



AI POWERED



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## 3000A series LIQUID GC AUTOSAMPLERS

Offering reliability and superior performance for all GC-GC/MS applications, meeting the requirements of both today and tomorrow.



**3100A**



**3000A**



**3200A**

## COMPARE MODELS

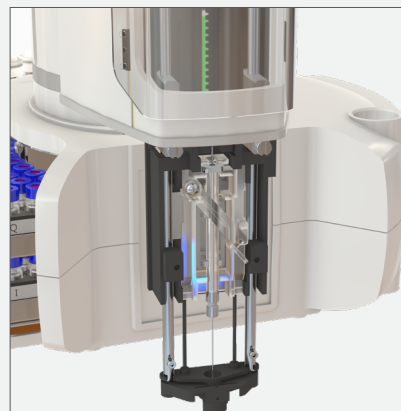
	3100A	3000A	3200A
Sample Capacity	15 samples	121 samples (1 removable rack)	209 samples (2 removable racks)
User Interface	Keypad	Touch Screen	Touch Screen
Easy fixing/ Repositioning system	✓	✓	✓
AI functionalities	✓	✓	✓
Virtual Touch Screen/ Screen Mirroring	✓	✓	✓
Syringe Housing Illumination	-	✓	✓
SyringeID <sup>2</sup>	-	-	✓
BCR (Bar Code Reader) <sup>1</sup>	-	-	Optional

## 3200A

Due to its 209 2mL sample vials, the **3200A** has set a new standard in the market. Samples are organised in two racks that can be easily removed for sample loading or preparation, or to be stored elsewhere.

An **integrated Bar Code Reader**<sup>1</sup> can be available with every **3200A** unit, offering full and detailed sample tracking.

The **3200A** features **SyringelD**<sup>2</sup>, a patented technology based on RFID tags. The SyringelD can **identify syringes** in a univocal way; thereby preventing errors when mounting a syringe, preventing syringe volume mismatching and keeps track of the syringe consumption (preventive maintenance counters). The SyringelD system can provide you with a level of confidence never previously achieved.



## KEY FEATURES:

- 60+ GC models supported
- Space-saving design
- Move freely between GCs - 1 turret serves 2 injectors
- Extraordinary performance: a perfect fit for your lab
- Empowered by AI



The **3000A series** has been engineered for **maximum performance and reliability**. It takes advantage of today's latest technology to deliver even greater reliability, performance and flexibility.

## SPACE-SAVING DESIGN

**3000A series** autosamplers are the **most compact** in the market, with a near-to-zero requirement for bench space, while offering a **top-class sample capacity**.

The **rotating tower** leaves the **injector port free for manual injection or maintenance**. In addition to avoiding any complicated sample vial transfer procedures, this approach keeps the **samples away from any heated source**. The sample rack is mounted away from the GC oven to prevent exposure to high temperatures, which could cause degradation or condensation in the sample vial.

The **system is fully self-contained and can be easily installed on all the GC and GC/MS systems** available in the market, because of its flexibility and modular configuration. It can be configured to **serve up to two injectors** in most supported GCs.

## EASY TO OPERATE

The self-aligning "plug and play" autosamplers of the **3000A series** mount in seconds and without the need for tools. It can be easily moved between GCs when workloads change, due to its easy positioning, repositioning and easy removal.

**Easy to use:** Just load the samples and run the analysis with no extra



downtime. **Run-all-samples mode** makes the operations of sample processing simple and transparent; the sample rack can be removed for sample loading or preparation or stored elsewhere.

The **high-quality touchscreen** provides easier system accessibility and usability: it eliminates drill down, simplifying instrument control for both novices and experienced users. Besides the touch screen, the **3000A series** can be also controlled by a PC using the HTA Autosampler Manager (please see the dedicated brochure), available in standard or CFR 21 Part 11 compliant version.

**Syringe illumination** simplifies method validation by allowing to keep the sample under control while a **quick-fix syringe bracket** allows easy replacement of the syringe. Prevention of errors through **vial detection: 3000A series** autosamplers can detect the presence or absence of vials for sample, solvent and waste, to notify the analyst or skip to the next sample if programmed so.

## A PERFECT FIT FOR YOUR LAB

With HTA, you have the flexibility to choose the automatic sampler that best suits the needs of your lab. The **3000A series** is available in the standard version with 121 positions for 2ml vials. The top version **3200A** has 209 positions, while the entry-level version **3100A** has a 15-position fixed rack.

The **HTA GC autosamplers are the fastest liquid autosamplers available** on the market: injection is performed in less than 100ms. Fast-injection technology ensures the best possible peak shape, while maximising the accuracy of your results.

The **great solvent capacity** means longer unattended operations: six solvent vials of 10ml each, giving a total capacity of 60ml.

The ability to customise cleaning solvent types and sequences includes the **double wash step capability**: as pre- and post-wash solvent in addition to A, B... F solvents you can also choose a combination of A+B, A+C.... F+E solvents for superior analytical performance (carry-over adverse!).

The **3000A series autosamplers** manage the **most sophisticated sampling techniques**: internal standard technique (also known as sandwich injection), multiphase, ambient headspace, priority injection, nanoliter and large volume injection. Parameters are easily programmable to optimise both the most convenient sampling methods for both extremely volatile or viscous samples and the best injection technique. **Variable needle depths** allow samples to be taken from anywhere within the vial, thus performing extractions directly from the vial.

## EMPOWER YOUR MASS SPECTROMETER

Make the best choice to address evolving analytical needs: specific functionalities have been engineered to elevate MS potentialities and next-generation analysers.

Mass detectors and next-gen analysers are more sensitive than a normal GC to some phenomena: that's the reason the 3000A series **exact and highly reproducible position of the syringe needle in the injector port** makes the difference. Furthermore, **sampling and injection methods reducing stress to septa** have been implemented: this leads to minimising contamination of liner and analyser.

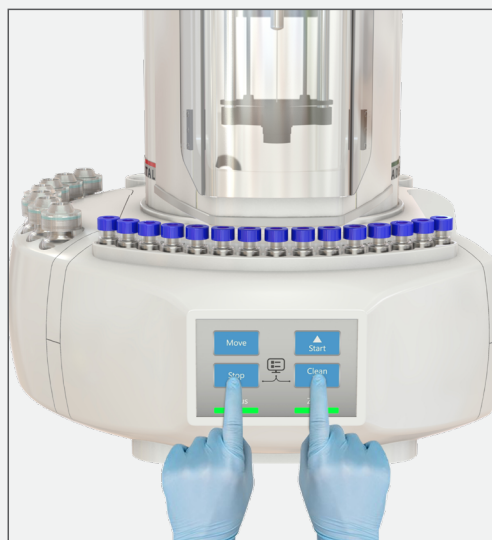
Special functionalities to support prep-run have been implemented to **reduce carrier gas consumption** on the analyser resulting in lower operations cost, increased analyser parts lifetime and a more environmentally-conscious behaviour.

## 3100A

Analysing fewer samples? Get precision and performance with a system that is perfectly sized for your needs. The **3100A** offers automation for processing up to 15 unattended samples.

Is limited interaction preferred? A **single button start-stop approach** is the best solution: quick sets of autosampler parameters can be done by PC, while all the routine operations such as analysis start, sample loading and extra wash can be managed by its dedicated keypad.

The **new led bar and PC quick link** makes everything **smooth**: color-coded status indicator provides at-a-glance autosampler status information that is easy to see; virtual screen on PC shows up automatically when an informative message is available; alternatively, it can be activated by double thumb pressure on keypad.



# ARTIFICIAL INTELLIGENCE

HTA Monitor – PC utility – is the engine at the foundation of our Artificial Intelligence (AI) capabilities<sup>3</sup>.  
Learn below how AI can boost your lab productivity!



## GC INLET SEPTUM TEST

Concerned about having an overtightened GC inlet septum nut after **septum replacement**? Don't worry: the **3000A series** provides the ability to **check whether the septum is overtightened** or correctly compressed. The excess of septum compression can result in fact in septum corning (reduced septum lifetime, fragments of septum introduced into the injection port) or – in extremely cases - to needle damage (bent needle or shorten needle life).



## AUTOMATED CONSUMABLES TRACKING

Automated consumables tracking with alert notifications **minimises unexpected downtime** and waste due to unnecessary replacement. Consumables consumption tracking goes far above preventive maintenance counters: **expiration dates and performance tests** are available. On each start-up, a **syringe plunger diagnostic test** is performed to check whether syringe plunger maintenance or syringe replacement is needed.



## SUPPORT FLEXIBLE WORKING STYLES

**Virtual screen (3100A)** and **screen mirroring (3000A and 3200A)** enable you to control the autosampler from your PC without the need to stand in front of the autosampler. A replica of your autosampler touch screen is made available to you so that you can perform every task from the same familiar user interface.



## EASY CONNECT WITH SERVICE

By **scanning a QR code**, you can **contact tech support** and pass all relevant information about your instrument details, instrument configuration and the issue you may have faced. In most cases, before you even ask a question, we will have given you the answer!



## PREDICTIVE MAINTENANCE

**Self-diagnostic tests** are automatically performed when the autosampler is not running or when a request is made to diagnose instrument status. The **HTA AI engine** detects the need to **schedule maintenance in advance** to offer extended uptime and lower operating cost. While preventive maintenance achieves robustness by over-maintaining your instrument, **predictive maintenance** allows performing maintenance to your valuable equipment only when needed in the amount that is needed. In short, predictive maintenance offers the same benefit as preventive maintenance at a fraction of the cost.



## CONTINUOUSLY IMPROVING

**The AI engine regularly receives software updates** via the internet. These updates add new functionalities and improve existing ones: enable the automatic update function to always stay up to date. AI engine updates do not affect the operations of the autosamplers and this is why they are safe and well-accepted even in highly regulated contexts.

## TECHNICAL SPECIFICATIONS

### General features

Syringe volume <sup>1</sup> :	0.5, 1, 5, 10, 25, 50 and 100µl
Maintenance:	preventive maintenance capabilities
Electrical control:	LAN and TTL; optional: RS232
Syringe area illumination:	yes (programmable) for 3000A/3200A

### Tray capacity<sup>4</sup>

3000A:	121 vials, 2ml (1 removable rack)
3200A:	209 vials, 2ml (2 removable racks)
3100A:	15 vials, 2ml

### Filling

Sample volume:	as low as step of 0.1µl
Air volume:	as low as step of 0.1µl
Filling speed:	1-100µl/sec
Viscosity delay:	0-15s
Bubble elimination:	up to 15 pull up strokes

### Injection

Injection speed:	1-100µl/sec
Injection depth:	programmable
Pre and post inj delay:	0-99s

### Washing

Type:	pre-injection, sample, post-injection
Solvent capacity:	6x10ml vials
Mode:	single or double wash

### Internal standard technique

IS volume:	as low as step of 0.1µl
Air gap volume:	as low as step of 0.1µl
Mode:	1 or 2 air gaps

### Physical features

Dimensions (WxHxD) <sup>5</sup> :	280x570x320mm
Weight (3000A):	8.0kg
Weight (3200A):	9.2kg
Weight (3100A):	6.4kg
Power supply:	100-240±10%Vac; 50-60Hz; 55W

### Software

HTA Monitor:	included for free Virtual Touch Screen and AI functionalities
HTA Autosampler Manager:	60-days free trial Full autosampler PC programming

### HTA Monitor PC requirements

Software:	<ul style="list-style-type: none"><li>• Microsoft® Windows 7®, Windows 8®, Windows 10® PC Edition only (excluding mobile devices and appliances)</li><li>• Additional required software: Microsoft .NET Framework 4.5.2</li><li>• PC are expected to run Windows OS with the latest update installed (unless differently specified)</li></ul>
Hardware:	<ul style="list-style-type: none"><li>• RAM: 1GB</li><li>• Disk space (for installation): 100MB</li><li>• LAN port</li><li>• 1024x768 Minimum SVGA</li></ul>

<sup>1</sup> Not compatible with Serial Port (RS232)

<sup>2</sup> Patented technology

<sup>3</sup> Patent pending

<sup>4</sup> OEM and Custom versions with extended syringe range and custom trays are available

<sup>5</sup> Tray in closed position for 3000A and 3200A

Some AI functionalities are only available when using HTA Monitor. It is not required to have HTA Monitor and CDS on the same PC. PC is required for setup, service and programming 3100A.

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When it comes to designing and manufacturing robotics solutions, there's no company more dedicated, experienced and knowledgeable about the scientific industry than HTA. We offer an extensive collection of analyser front-ends and sample preparation workstations designed to fit applications in analytical chemistry, life sciences and clinical laboratories. This even includes GC, LC and ICP autosamplers. HTA manufactures in Italy under a certified UNI EN ISO 9001:2015 and 13485:2016 quality management systems.

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