



## The HS 400 Pro™ and HS 4800 Pro™ Hybridization Stations

Ultimate quality and reproducibility for your microarrays

# The HS 400 Pro and HS 4800 Pro Hybridization Stations

## Delivering outstanding reproducibility, sensitivity and flexibility

Tecan's **HS 400 Pro** and **HS 4800 Pro** Hybridization Stations provide automated processing of microarrays on slides, from pre-hybridization and on-board denaturation, to automatic slide drying with Tecan's unique **OSND™** (On Slide Nitrogen Drying) technology. The systems have been designed to avoid hands-on operation and give researchers better reproducibility, sensitivity and reliability than they can expect from traditional procedures with even less labor involved. They offer standardization and strict control of the entire process that are key factors in enhancing data quality and consistency. Their performance maximizes the value of genomic and proteomic research, increasing productivity in the laboratory. Low chamber volumes also help to save precious samples and cost.



HS 400 Pro Hybridization Stations

## Outstanding benefits of Tecan's HS Pro series hybridization stations

### Flexibility

- One instrument for a range of applications
- Improved liquid agitation for viscous hybridization buffers, with six different modes of liquid agitation for optimal sensitivity, specificity and decreased hybridization times
- Complete range of options for low or high throughput hybridization
- Run up to four different protocols in parallel (HS 4800 Pro)

### Reliability

- Process performance tracked in log files
- Integrated reagent bubble sensors
- Optional barcode reader allows barcode to be linked to the program run

### Reproducibility and sensitivity

- Tecan's unique ABS system helps to eliminate artifacts and enhances consistency of results
- Precise incubation in the range 4–85 °C; on-board denaturation up to 99 °C
- Automatic OSND slide drying maximizing quality of results and walkaway time
- Heated reagents prevent buffer precipitation

### Ease-of-use

- Easy loading of four slides at a time on microplate format slide carrier (seamless connectivity with Tecan's LS series laser scanners)
- Self-rinsing, automated clean-up procedures
- Easy-to-use Windows®-based software on PC

## Tecan's automation solution

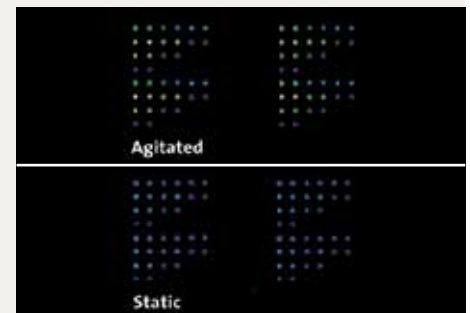
The **HS 400 Pro** and **HS 4800 Pro** Hybridization Stations are part of Tecan's Gene Expression Suite, a range of instruments and solutions offering new opportunities for genomics and proteomics

research – from sample preparation (**Freedom EVO®**), microarray processing (**HS Pro**), scanning and analysis (**LS Reloaded™**), to the validation of gene expression in tissue samples (**GenePaint™**).

## Powerful features to drive genomic and proteomic research

### Microarray hybridization with the ABS™ system

Tecan's unique **ABS™** patented (Active Bubble Suppression) system effectively minimizes the risk of bubble formation during hybridization. This helps to eliminate hybridization artifacts and enhances data quality even for sensitive microarray chemistries which could not previously be fully automated. Agitation during hybridization causes higher stringency and faster kinetics resulting higher sensitivity, specificity and a wider ratiometric range of signals compared to manual methods, and yields additional information from sensitive microarray experiments. Precise temperature control and highly uniform washing provide consistent and reproducible results between slides.

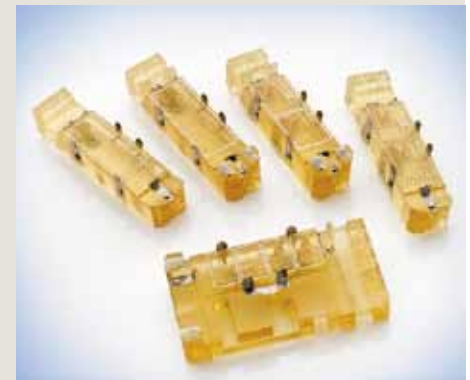


Agitation during hybridization increases sensitivity, specificity and assay kinetics.

### Format flexibility

Tecan's **HS Pro series** hybridization station is the perfect automated solution for different array and slide formats. One instrument for multiple chamber formats and sizes:

- choose between different sizes of low volume hybridization chambers;
- wide (21 mm) chambers for compatibility with common microarray formats;
- dual chambers allowing fully automated processing of two independent sub-arrays per slide;
- novel QuadChamber™ is the first fourfold segmented chamber for fully automated processing of microarrays. Guarantees no cross-contamination between the segments and fits perfectly on Agilent four pack arrays and other four-segment slides.
- All chambers are easily interchangeable.



Low 1x, 2x and 4x area hybridization chambers.

### Throughput flexibility

The **HS 400 Pro** is the ideal instrument for small-to-medium laboratories (1–4 slides per run), while the **HS 4800 Pro** offers higher capacity (1–12 or up to 48 slides per run) to meet even the most demanding throughput requirements.

Both the **HS 400 Pro** and **HS 4800 Pro** offer full protocol compatibility for a range of throughput options. Their identical process format makes it easy to scale up throughput once «proof of principle» has been established.



Loading 4 slides at a time on a Tecan slide holder.

### Application flexibility

The **HS 400 Pro** and **HS 4800 Pro** Hybridization Stations combine state-of-the-art technology with ease-of-use and advanced features, for outstanding quality and performance in a variety of microarray research applications:

**Genomics** – gene expression profiling, gene regulation and pharmacogenomic research, array-based comparative genomic hybridization (aCGH).

**Proteomics** – processing of protein-, peptide- and antibody-arrays.

**Other applications** – semi-automated in situ hybridization (ISH) and fluorescence in situ hybridization (FISH).



Sample injection using a positive displacement pipette.

# Specifications

## Temperature control

incubation/wash temperature range	4–85 °C (±1.0 °C)
denaturation temperature range	50–99 °C; max. 10 min
temperature precision	±0.5 °C
heat/cool rate	>6 °C/min
precipitation prevention	four reagent bottles pre-heated at 35–40 °C

## Chambers

hybridization area	single area: 51 x 20 mm, 57 x 21 mm or 63.5 x 21 mm dual area: 27.8 x 20 mm QuadChamber: 22 x 13 mm
volumes	single area: 110–130 µl dual area: 60 µl QuadChamber: 55 µl
flow rate (washing)	11 ml/min (per slide)
liquid agitation	six different modes, plus no agitation (including viscous buffers)
on slide nitrogen drying	2.7 bar N <sub>2</sub> (nitrogen supply not provided by Tecan)

## Slides per run

<b>HS 400 Pro</b>	1–4 slides; multiple instruments connected to one PC
<b>HS 4800 Pro</b>	1–12 slides; up to 48 slides with extension units
Slide formats	
slide dimensions	75.3–76.5 mm x 24.9–25.9 mm x 0.9–1.1 mm (H x W x D)

## Reagent bottles

volume	6 x 1.0 liter (HS 400 Pro), 6 x 2.0 liter (HS 4800 Pro) 10 liter or 20 liter waste (optional for HS 4800 Pro)
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## Options

barcode reader	
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## Dimensions

<b>HS 400 Pro</b>	280 mm x 430 mm x 550 mm (H x W x D)
<b>HS 4800 Pro</b>	
liquid unit (12 slides)	276 mm x 800 mm x 720 mm (H x W x D)
extension unit (12 slides)	276 mm x 800 mm x 350 mm (H x W x D)
maximum system (48 slides)	maximum system (48 slides)

## Weight

<b>HS 400 Pro</b>	25 kg
<b>HS 4800 Pro</b>	
liquid unit (12 slides)	58 kg
extension unit (12 slides)	38 kg
maximum system (48 slides)	172 kg

## Electrical

power supply	100–240 V; 50/60 Hz (auto sensing)
interface to PC	serial RS 232; USB V1.x

## Power consumption

<b>HS 400 Pro</b>	300 VA
<b>HS 4800 Pro</b>	
liquid unit (12 slides)	860 VA
extension unit (12 slides)	600 VA
maximum system (48 slides)	2660 VA

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