



# Multitron

UNRIVALED IN SIZE AND FLEXIBILITY.

INFORS **HT**



## This Is The Multitron

The Multitron is the number-one choice for reliable, convenient cultivation of microorganisms and cell cultures. The incubation shaker guarantees homogeneous conditions and delivers reproducible results, leaving nothing to be desired regarding its features and capacity.



### Intelligent use of space

Despite its modest footprint, a triple stacked Multitron can be used for over 60 L of culture or, with its 3 mm shaking throw option conducting 23,000 experiments in parallel. Regardless of the required capacity, the top level of the Multitron is at a comfortable working height of 1,40 m.

### The perfect conditions for cultivation

Offering homogeneous conditions for reproducible results, the Multitron has been setting standards for temperature uniformity for decades. Thanks to its ingenious design, its precise CO<sub>2</sub> control system is extremely efficient, and humidification produces no condensation. The practical door mechanism and the quick, automated start-stop feature keep interruptions in the cultivation process to a minimum.

### “No” is not in our vocabulary

The Multitron allows you to pursue all manner of applications, from standard experiments with microorganisms to complex animal- and plant-cell cultivation. Its modular concept allows you to configure the shaker to your needs and select from a wide range of options, such as the right cooling. You can even upgrade your system at a later time.

### Seamless monitoring and control

The eve® bioprocess platform software can easily communicate with the Multitron using Ethernet. Opening up new opportunities for controlling the device and monitoring cultures inside the incubation shaker from anywhere via a web interface. You can also create customized reports and GMP-compliant process documentation.



At the heart of our quality label is Switzerland – a center of research, development and manufacturing, where experts guarantee the top-notch quality of the materials, workmanship, safety and reliability that characterise our shakers and bioreactors.

# Sample Configurations



## Microorganisms

Maximum oxygen introduction, even when filled to maximum capacity in stacked units

- 25 or 50 mm shaking throw for optimal mixing from tubes to 5 L shake flasks
- High shaking frequencies for maximum oxygen transfer

## Cell culture

Optimum conditions for mammalian and insect cells

- Active CO<sub>2</sub> control
- Hygienic condensate-free humidity control designed to limit evaporation loss
- Housing with antimicrobial coating as an option
- Optimized for gentle mixing and good oxygen transfer

## Screening in 96-well plates

Conduct over 7,000 experiments in parallel

- Perfect conditions thanks to 3 mm shaking throw and 1000 min<sup>-1</sup>
- Hygienic, condensate-free humidity control designed to limit evaporation loss
- Technology proven to increase yields over traditional methods
- Active CO<sub>2</sub> control

## Phototrophic organisms

Sunlight in the shaker; excellent uniformity

- Energy-saving, warm-white LED lighting
- Light intensity up to 240  $\mu\text{mol m}^{-2}\text{s}^{-1}$
- Even distribution of light across the tray
- Day-night-cycle simulation or selective induction – easy to do with eve®

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## Features

The Multitron can be used for cultivating microorganisms and cell cultures alike, and is suitably equipped for the type of application at hand.

### Technical design makes your day-to-day lab work easier

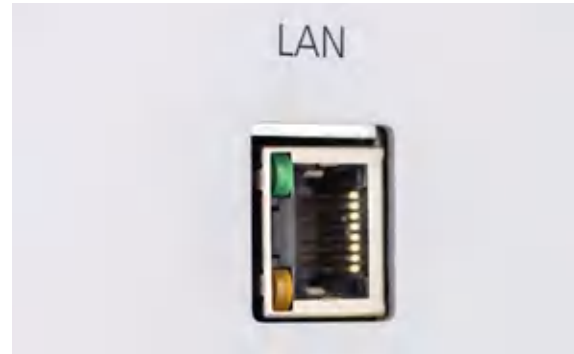
#### Drive unit

- Quiet, uniform and reliable every time you load it
- Dynamically balanced table eliminates the need for manual adjustments
- Eliminates handling errors
- Easy to clean



#### Connections and interfaces

- Ethernet interface for connecting to eve®
- Optional analog outputs for interface with building monitoring and alarm systems
- Cable pass through as a standard for external sensors



#### Hygiene

- Rounded corners make the interior easy to clean
- Optional antimicrobial coating
- Optional UV sterilization of the air flow
- Optional hygienic, condensate-free humidity control



#### Temperature control

- Tight control of temperature across the incubator shaker ensures identical conditions for every batch
- Can be connected to existing laboratory cooling system
- Optional cooling in base or on the top unit for optimum space utilization
- Excellent insulation and avoiding heat sources in the incubation chamber keep energy demand low



# Features



## Technical data

	One unit	Three units
Dimensions (W x D x H)	1070 mm x 880 mm x 695 mm	1070 mm x 880 mm x 1850 mm
Maximum load	55 kg, 21 L or 7680 parallel batches	165 kg, 63 L or 23,040 parallel batches
Maximum working height	565 mm	1400 mm
Shaking throw	3 mm / 25 mm / 50 mm / adjustable	
Rotation speed range	20 min <sup>-1</sup> to 400 min <sup>-1</sup> (3 mm: 1000 min <sup>-1</sup> )	
Temperature range	without cooling max. 10 °C above AT to 65 °C; Minimum temperature from 4 °C depending on cooling system	
Standard parameters	Temperature, rotation speed, timer	
Optional parameters	Humidity, CO <sub>2</sub> control, light intensity (version for phototrophic organisms)	
Interface	Ethernet	
Ambient humidity (rH)	Up to 85 % non-condensing	



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## Accessories

For automation, safety and flexibility – and for meeting GMP requirements

### eve®: The Bioprocess Platform Software

- An intuitive web interface for monitoring process parameters and door movements, regardless of location
- Easy-to-set alarm parameters
- Adaptable batch reports
- Configuration for automated batch strategies
- Security settings for data access
- Can be validated in compliance with FDA 21 CFR part 11

### LIS (Liquid Injection System)

- Automated liquid feeding with programmable control unit
- Suitable for a variety of media, such as sugar solutions, alcohols or suspensions
- Predefined or fully configurable feeding profiles

### CGQ (Cell Growth Quantifier)

- Sensor and corresponding software for non-invasive online biomass measurement
- Screening under optimum culture conditions in up to 16 shake flasks simultaneously

### Qualification and process validation

- Design qualification
- Installation qualification
- Operational qualification
- Factory acceptance test (FAT)
- Site acceptance test (SAT)
- Software validation for eve®

### Trays

- Corrosion-resistant, anodized aluminum
- Can be configured with a variety of flask clamps, adjustable tube racks or adhesive mats
- Autoclavable
- Special trays for 96-well plates

### “Sticky Stuff” adhesive matting

- Compatible with all vessels with a smooth bottom
- Reliable fixation even at high agitation speeds and temperatures
- Long lifespan
- Easily cleaned and regenerated with water

### Retaining clamps

- Stainless steel retaining clamps can be screwed onto universal trays
- For Erlenmeyer and Fernbach flasks
- Special mounting hardware upon request

### Test tube holders

- Perforated inserts made of foam rubber ensure a reliable hold and prevent rattling noises
- Test tubes can be incubated in a vertical position or at an adjustable angle
- Compatible with universal and “Sticky Stuff” trays