

# BioShake series | Ultra-fast mixer and thermal mixer for multiple applications

- Exceptionally high-speed
- Excellent temperature accuracy
- Smallest footprint



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The **BioShake series** turns the traditional way of thinking upside down in the laboratories and defines the requirements to a lab mixer completely new. Due to a permanently increase of demand now the common thermal mixer has to face high expectations, regarding the reduction of sample amounts and a growing number of wells inside the microplates.

The BioShake series meets exactly the pulse of the time: the devices are mixing within shortest time, offer simple handling, impressive comfort and maximal safety – amenities, which were so far unknown. In contrast, their space requirements and price are minimal.

The integrated 3D-Shake-Control and Anti-Vibration-Technology allow a very precise and efficient mixing on even the smallest lab bench. Time-consuming centrifugation steps after mixing can be avoided. Disturbing factors, like vibrations and loud noises are problems of the past.

## Features

- Mixing speed up to 3,000 rpm
- For microplates, PCR plates, deep well plates, tubes and glass vials
- Integrated vortex and short mix function
- 3D-Shake-Control
- Anti-Spill and Anti-Vibrations technology
- Economization of time-consuming centrifugation steps after mixing
- Compact lightweight mode of construction with minimal footprint
- High-born aluminium design
- Customized adapters for optimal mixing results

## 3D-Shake-Control

This allows fast and sample-saving mixing on an orbital circuit up to 3,000 rpm to obtain an optimal result. This technology is also suitable for sensible samples and liquids.

## Anti-Spill-Technology

The controlled planar movements of mixing avoid moistening of the lid and blending or loss of samples into neighbouring wells.

## Anti-Vibration-Technology

This technique offers enormous quiet running without vibrations and disturbing noises

The **BioShake XP** allows for the first time very precise and efficient mixing on a microliter scale for a large range of applications. Assays in microplates or reaction tubes can be realized fast, save and automatically. Additionally the mixing speed can be adjusted from 200 up to 3,000 rpm. BioShake mixing technology is dedicated more robust, shows less vibrations and needs less maintenance in comparison to classical known mixer.

The handling of the BioShake XP is performed by using direct control keys. Due to two selectable program buttons a specific period of time and the motion of mixing can be activated, saved and therefore allow complex applications. This establishes a completely new perception on daily laboratory work and optimizes previous standard routines significantly. The short mix function enables short-term and fast mixing. Furthermore the 2-line LCD display shows all set and measured parameters, like time and mixing frequency.

The **BioShake iQ** is the high end thermal mixer of the BioShake series. In addition to the specifications of the BioShake XP the BioShake iQ convinces by the assignment of a high precise tempering technology. This guarantees constant results with minimal variations. Whereby the temperatures are selectable from ambient to 99 °C in steps of 0.1 °C. The temperature regulation accuracy is  $\pm 0.1$  °C and the homogenous temperature distribution over all tubes is always better than  $\pm 1.0$  °C. Furthermore the BioShake iQ is characterized through its place-saving footprint: the brand mark of the BioShake series.

Moreover a multiplicity of standardized and specific adapter plates and interchangeable blocks are available for the BioShake series. These adapters assure the optimal adaptation onto standard tubes, microplates, glass vials and other reaction vessels. The excellent precision of the temperature and the homogeneity for all samples is guaranteed.

## Effective mixing without sample loss

The adjustment of the optimal mixing frequency for microplates or tubes should always be made in dependence on the size of the well and the filling volume. Only in this way optimal results without loss of samples can be achieved in shortest time with a high reproducibility.



▲ Selection of available adapters

### Customized adapters for BioShake 3000-T elm!

You need an adapter plate for specially shaped microplates, tubes or vials? Please send us a sample and detailed informa-

tion about manufacturer, description and article number. You will receive your special formed adapter plate!

### Recommended mixing frequency for tubes

Recommended mixing frequency (rpm) for tubes depending on the filling capacity (%) for diluted fluids

| Filling Volume | 0.2 ml tube | 0.5 ml tube | 1.5 ml tube | 2.0 ml tube |
|----------------|-------------|-------------|-------------|-------------|
| 25%            | 1400 – 1800 | 1200 – 1600 | 1000 – 1300 | 1000 – 1300 |
| 50%            | 1200 – 1500 | 1100 – 1300 | 1000 – 1200 | 900 – 1200  |
| 75%            | 1000 – 1300 | 1000 – 1200 | 900 – 1100  | 900 – 1100  |

### Recommended mixing frequency for microplates

Recommended mixing frequency (rpm) for microtiter plates depending on the filling capacity/well (%) for diluted fluids

| Filling Volume | 96 well (standard) | 384 well (standard) | 384 well (small volumes) | 1536 well (standard) |
|----------------|--------------------|---------------------|--------------------------|----------------------|
| 10%            | 1800 – 2200        | 2200 – 2600         | 2800 – 3000              | 2800 – 3000          |
| 25%            | 1600 – 2000        | 2000 – 2400         | 2400 – 3000              | 2600 – 3000          |
| 50%            | 1400 – 1800        | 1800 – 2200         | 2200 – 2600              | 2400 – 2600          |
| 75%            | 1200 – 1600        | 1600 – 2000         | 2000 – 2400              | 2200 – 2600          |

**BioShake XP****BioShake iQ**

| <b>Removable Adapter Plates</b> |  |  |
|---------------------------------|--|--|
| Microplates                     | 96, 384 and 1536 well microplates, deep well plates and PCR plates | 96, 384 and 1536 well microplates, deep well plates and PCR plates   |
| Tubes                           | 0.2 up to 2.0 ml standard and lysis tubes (with skirt)             | 0.2 up to 2.0 ml standard and lysis tubes (with skirt)   |
| Glass vials                     | 2.0 and 4.0 ml glass vials   | 2.0 and 4.0 ml glass vials   |
| Others                          | On request   | On request   |
| <b>Tempering function</b>       |  |  |
| Temperature regulation range    | –  | Ambient to 99 °C   |
| Temperature setting             | –  | 0,1 °C increments, adjustable from 0 °C to 99 °C   |
| Temperature regulation accuracy | –  | ±0.1 °C  |
| Temperature uniformity          | –  | <ul style="list-style-type: none"> <li>▪ ±0.5 °C at 45 °C</li> <li>▪ ±0.7 °C at 75 °C</li> <li>▪ ±1.0 °C at 95 °C</li> </ul> |
| Heat-up time                    | –  | <ul style="list-style-type: none"> <li>▪ Approx. 7 °C/min</li> <li>▪ Approx. 10 min from ambient to 95 °C</li> </ul>         |
| <b>Mixing function</b>          |  |  |
| Microplates                     | 200 up to 3,000 rpm  | 200 up to 3,000 rpm  |
| Reaction tubes, glass vials     | 200 up to 1,800 rpm  | 200 up to 1,800 rpm  |
| Mixing orbit                    | Constant 2 mm  | Constant 2 mm  |
| Speed setting resolution        | 50 rpm increments  | 50 rpm increments  |
| Mixing regulation accuracy      | ±25 rpm  | ±25 rpm  |
| Short-mix function              | Yes  | Yes  |
| <b>Timer function</b>           |  |  |
| Timer setting                   | 1 min to 99 h with automatic switch to stand-by                    | 1 min to 99 h with automatic switch to stand-by  |
| Timer setting resolution        | 1 minute steps   | 1 minute steps   |
| Readability                     | Minutes, seconds   | Minutes, seconds   |
| Continuous working              | Yes  | Yes  |
| Audible alarm                   | Yes, when program finished   | Yes, when program finished   |
| <b>Programming</b>              |  |  |
| Programs stored                 | 2  | 2  |
| Definable buttons               | P1, P2   | P1, P2   |
| Individual program capacity     | 3 steps  | 3 steps  |
| <b>Display</b>                  |  |  |
| Display                         | 2-line LCD   | 2-line LCD   |
| Set values and present values   | Time and mixing frequency  | Time, mixing frequency and temperature   |
| <b>Electrical parameters</b>    |  |  |
| Controller                      | Micro controller   | Micro controller   |
| Power switch                    | Yes  | Yes  |
| Operating voltages              | 24 V DC input, 100 Watt  | 24 V DC input, 100 Watt  |
| Power supply                    | External, 100–240 V AC (input), 50–60 Hz, 24 V DC (output)         | External, 100–240 V AC (input), 50–60 Hz, 24 V DC (output)   |
| <b>Properties</b>               |  |  |
| Housing material                | Aluminum (anodized)  | Aluminum (anodized)  |
| Environment operating range     | +5 °C to 45 °C<br>(80% max. relative humidity)                     | +5 °C to 45 °C<br>(80% max. relative humidity)   |
| Dimensions (W × D × H)          | 142 × 170 × 80 mm  | 142 × 170 × 80 mm  |
| Weight                          | 2.7 kg   | 2.7 kg   |