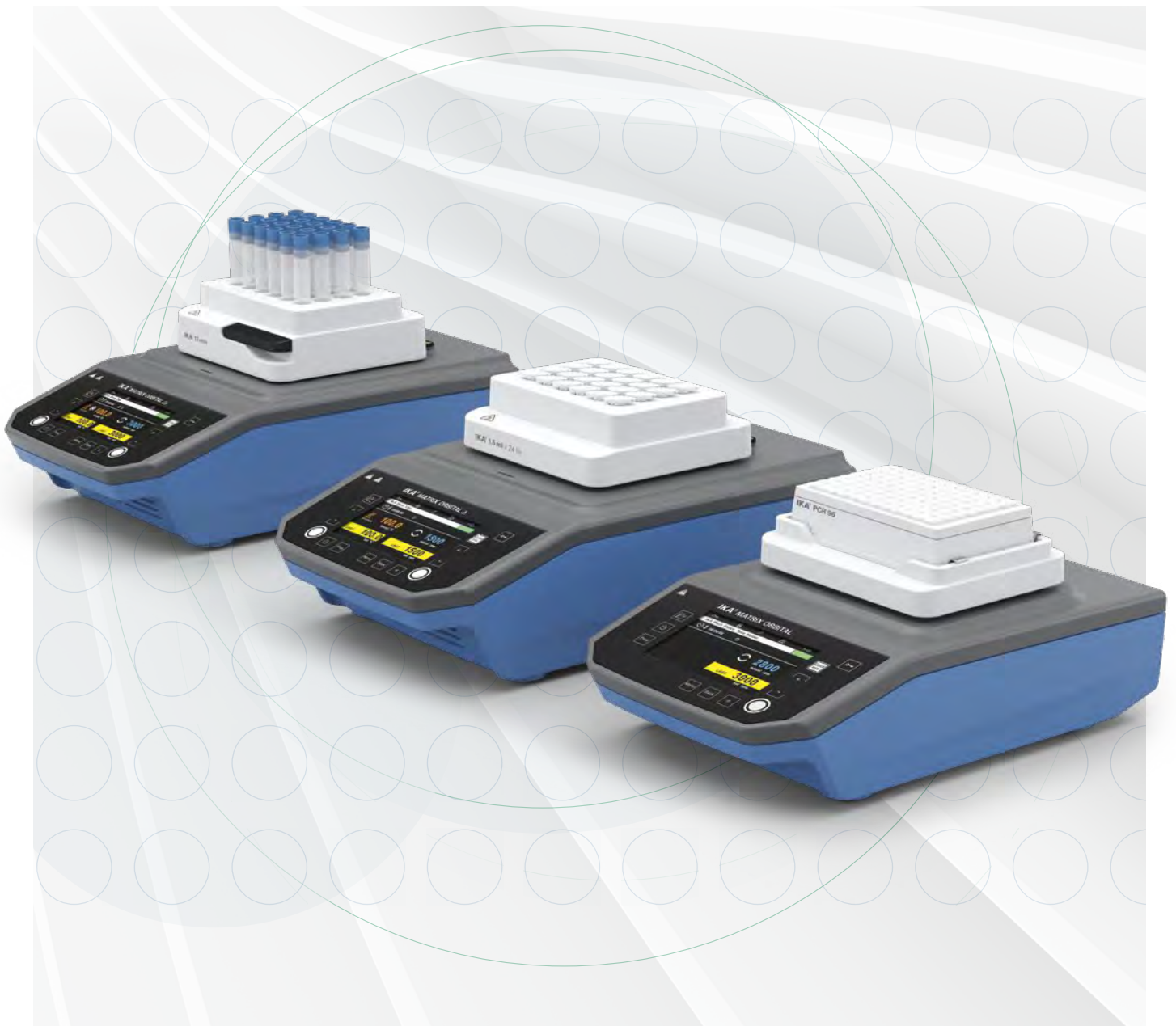


# IKA

designed for scientists

EN



MIXING, HEATING, COOLING |  
MATRIX THERMOSHAKERS

imLab



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# MATRIX

## /// THERMOSHAKERS

Mixing, heating, cooling, or all at once? MATRIX is a powerful thermoshaker family and your ideal companion for sample preparation in laboratories for molecular biology, pharmaceuticals or biochemistry. Regardless whether blood samples, pharmaceutical agents, DNA/RNA samples or ELISA assays – samples with even the smallest volumes are mixed reliably and completely in all laboratory applications.



## DIFFERENT MODELS

The models of the MATRIX thermoshaker family have different features, to provide you with a device fulfilling precisely the functions you need for your experiments.



### Intuitive use

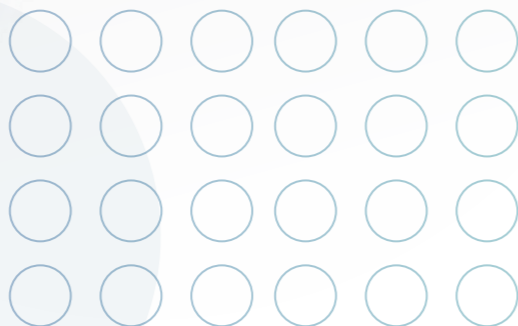
The large clear display allows an absolutely intuitive navigation with a user-friendly and self-explanatory menu structure.

### High speed

Speeds of up to 3000 rpm ensure that the liquid is mixed particularly quick and effective thanks to its orbital movement.

### Extra stable housing

Excellent stability and everyday robustness is achieved by the aluminum die cast housing. This ensures a secure positioning and strengthens the whole device.



#### MATRIX ORBITAL

/// Suitable for three different inserts.

Ident. No.: 0030000627



#### MATRIX ORBITAL DELTA

/// Available with different fixed attachments.

Model: FP | F0.5 | F1.5 | F2.0

Ident. No.: 0030000751 | 0030000747 | 0030000750 | 0030000753



#### MATRIX DELTA PLUS

/// Available with variable attachments.

Ident. No.: 0030000717



#### MATRIX ORBITAL DELTA PLUS

/// Available with variable attachments.

Ident. No.: 0030000731

## VARIETY OF ATTACHMENTS

A wide range of interchangeable attachments enables the thermoshakers to be flexibly adapted to different requirements and applications. Sample vessels with different volumes as well as microtiter plates and deep well plates can be mixed and tempered. A stable quick-release fastener makes it easier to exchange the attachments, and at the same time ensures they are optimally fixed for effective temperature transfer.

User safety is guaranteed, as high temperatures are not transferred to the frame. Also, the MATRIX unit automatically recognizes which attachment the user has chosen.

### Enzyme reactions

The model MATRIX Delta Plus allows incubation of the reaction mix at the enzyme specific temperature, without shaking.

The attachments are adapted to the shape of the tubes to ensure uniform conditions throughout the entire vessel.

### High-throughput PCR

High-throughput samples can be incubated with the attachments for 96 and 384 well PCR plates and tubes.

With the models MATRIX Delta Plus and MATRIX Orbital Delta Plus the plates can be heated, cooled and mixed as desired.

#### ATTACHMENTS

MX PCR96 / Ident. No.: 0030000853

MX PCR384 / Ident. No.: 0030000857

MATRIX ORBITAL DELTA PLUS  
Ident. No.: 0030000731



#### ATTACHMENTS

MX 0.5 ml / Ident. No.: 0030000840

MX 1.5 ml / Ident. No.: 0030000829

MX 2.0 ml / Ident. No.: 0030000834



MATRIX DELTA PLUS  
Ident. No.: 0030000717



## Cell culture

Media, components or cell cultures can be tempered and mixed with the 5 ml, 15 ml, 50 ml and the 12 mm attachments for the models MATRIX Delta Plus and MATRIX Orbital Delta Plus.



MX carrier / Ident. No.: 0030000849



For gentle thawing of frozen cells the attachment for 1.5 ml and 2 ml cryo vials is ideal. To ensure cell viability the slow tempering mode can be activated, which increases the temperature slowly and carefully.

The MX carrier attachment for cell culture plates allows tempering and mixing of various plates. The two inbuilt tempering modes adjust the heating or cooling as needed.

### ATTACHMENTS

- D MX 12.0 mm / Ident. No.: 0030000844
- E MX cryo / Ident. No.: 0030000848
- F MX 5.0 ml / Ident. No.: 0030000859
- G MX 15.0 ml / Ident. No.: 0030000821
- H MX 50.0 ml / Ident. No.: 0030000863



MATRIX ORBITAL DELTA PLUS  
Ident. No.: 0030000731

## AUTOMATED TEMPERATURE SHIFT

Through programmable temperature ramps the model MATRIX Orbital Delta Plus can perform mixing, cooling and heating steps automatically. A series of 5 steps can be programmed to perform an experiment independently and reliably.

## Restriction digestion

The digestion of DNA samples is performed automatically with no further supervision needed. The programs are set following the reaction protocol. In step 1 ideal reaction conditions for the enzyme are established to digest the DNA. The reaction is then stopped with step 2 by heating up and therefore denaturing the enzyme. To prevent DNA degradation the sample is cooled in step 3 until the sample is processed further.

### PROGRAMMED STEPS:

- Step 1: 37 °C for 1 h
- Step 2: 65 °C for 10 min
- Step 3: 4 °C



ATTACHMENT  
MX 1.5 ml / Ident. No.: 0030000829



MATRIX ORBITAL DELTA PLUS  
Ident. No.: 0030000731

## Incubation of Elisa plates

With MATRIX Orbital Delta FP the ELISA plates can be mixed at room temperature or heated during incubation.

If also cooling of the plates while mixing is required, the MX carrier attachment and model MATRIX Orbital Delta Plus can be used.



MATRIX ORBITAL DELTA FP  
Ident. No.: 0030000751



### LIGHT PROTECTION

The cover can be used to shield light sensitive samples.

MX cover / Ident. No.: 0030001253



### THERMOCOVER

The heatable ThermoCover prevents condensation on the vial lid and wall. At the same time it enables constant reaction conditions.

MX thermocover / Ident. No.: 0030001244

## Mixing samples at room temperature

MATRIX Orbital can mix samples in various tubes or microplates with a speed range from 300 – 3000 rpm.

The shaking diameter of 3.0 mm generates effective mixing of the samples even in the microliter range.

With the "Quick mix"-button the samples are mixed fast for as long as the button is pressed (touch function).

## Why should the formation of condensate be avoided?

When the samples are heated, liquid evaporates from the tubes or wells and accumulates on the vessel lid. This shifts the concentrations in the reaction mix. For example, the decreased amount of substrate leads to a reduced enzyme activity.



### ATTACHMENTS

MX insert PCR96 / Ident. No.: 0030001159

MX insert 0.5 ml / Ident. No.: 0030001157

MX insert 1.5/2.0 ml / Ident. No.: 0030001158

### MATRIX ORBITAL

Ident. No.: 0030000627












## TECHNICAL DATA

| MODEL   | MATRIX ORBITAL   | MATRIX ORBITAL DELTA FP   F0.5   F1.5   F2.0             | MATRIX DELTA PLUS    | MATRIX ORBITAL DELTA PLUS          |
|---|------------------|--|----------------------|------------------------------------|
| Mixing  | Yes              | Yes  | –                    | Yes                                |
| Heating                                       | –                | Yes  | Yes                  | Yes                                |
| Cooling                                       | –                | –  | Yes                  | Yes                                |
| Type of movement                              | Orbital          | Orbital  | –                    | Orbital                            |
| Attachments                                   | Variable inserts | Fixed attachment for plates   0.5   1.5   2.0 ml         | Variable attachments | Variable attachments               |
| Shaker diameter                               | 3 mm             | 3 mm   | –                    | 3 mm                               |
| Permissible shaking weight (excl. attachment) | –                | 0.3 kg   | 0.3 kg               | 0.3 kg                             |
| Speed min (adjustable)                        | 300 rpm          | 300 rpm  | –                    | 300 rpm                            |
| Speed max.                                    | 3000 rpm         | FP   F0.5: 300 - 2000 rpm<br>F1.5   F2.0: 300 - 1500 rpm | –                    | 3000 rpm (depending on attachment) |
| Heating temperature min.                      | –                | Room temp. +4 °C   | Room temp. -30 °C    | Room temp. -15 °C                  |
| Heating temperature max.                      | –                | 100 °C   | 110 °C               | 100 °C                             |



## ACCESSORIES

### SHAPES OF THE HOLE

| ATTACHMENTS    | Diameter | Depth   | Bottom Shape  | Ident No.  |
|----------------|----------|---------|---|------------|
| (A) MX 0.5 ml  | 8.1 mm   | 28.0 mm | Conical    | 0030000840 |
| (B) MX 1.5 ml  | 11.1 mm  | 36.5 mm | Conical    | 0030000829 |
| (C) MX 2.0 ml  | 11.1 mm  | 36.7 mm | Conical    | 0030000834 |
| (D) MX 12.0 mm | 12.5 mm  | 33.5 mm | Flat       | 0030000844 |
| (E) MX cryo    | 12.5 mm  | 33.5 mm | Flat       | 0030000848 |
| (F) MX 5.0 ml  | 17.0 mm  | 54.5 mm | Conical    | 0030000859 |
| (G) MX 15.0 ml | 17.0 mm  | 105 mm  | Conical    | 0030000821 |
| (H) MX 50.0 ml | 30.0 mm  | 97.0 mm | Conical    | 0030000863 |
| (I) MX PCR96   | 6.44 mm  | 14.0 mm | Conical  | 0030000853 |
| (J) MX PCR384  | 4.0 mm   | 8.0 mm  | Conical  | 0030000857 |

| CARRIER AND INSERTS      | Usage  | Ident No.  |
|--------------------------|--|------------|
| (K) MX carrier           | Suitable for microtiter and deep-well plates | 0030000849 |
| (1) MX insert PCR96      | For PCR tubes                                | 0030001159 |
| (2) MX insert 1.5/2.0 ml | For 1.5 ml & 2.0 ml tubes                    | 0030001158 |
| (3) MX insert 0.5 ml     | For 0.5 ml reaction tubes                    | 0030001157 |

| COVER AND THERMOCOVER | Usage   | Ident No.  |
|-----------------------|---|------------|
| (L) MX cover          | For attachments PCR 96, 384; 0.5, 1.5, 2.0 ml | 0030001253 |
| (M) MX thermocover    | For attachments PCR 96, 384; 0.5, 1.5, 2.0 ml | 0030001244 |

