

# IKA

designed for scientists



THE ERGONOMIC BIOREACTOR | [HABITAT research](#)

Looking for new standards in mixing,  
temperature control, automation, safety  
and design?



## Here comes the perfect HABITAT

HABITAT research is the new smart laboratory bioreactor from IKA. As the first bioreactor with a lid stand, it ensures ergonomic working and a tidy laboratory. In combination with a circulator, it is also your fermenter. And if you connect light panels, your new photobioreactor.

## Unique features

HABITAT research creates optimal conditions for cell cultivation and microbial fermentation. Choose between single-walled and double-walled vessels and volumes from 0.5 to 10 liters.



### BIOREACTOR, FERMENTER OR PHOTOBIOREACTOR

Depending on the type of cells to be cultivated, you can use HABITAT as a bioreactor, fermenter or photobioreactor. It can be combined with our thermostats or with light panels. This guarantees a reliable and strong service from a single source.

### LID STAND

The lid stand makes test preparation easier as the lid does not have to be removed and put down. Motor and sensors are hooked onto the side of the stand. This means that the connections on the lid are easy to reach and the sensors are well protected. Handling during autoclaving is also much more convenient: Everything together fits perfectly in the autoclave.

### CHAOTIC MIXING

In addition to the familiar agitator control modes, there is a new mixing mode: In Chaotic Mode, mixing follows the mathematical principle of chaotic-dynamic systems. This ensures a more homogeneous mixture. You can also choose between 3 different stirrer geometries: 6-blade disc, 3-blades segment and paddle stirrer. Up to 3 stirrers can be mounted on the stirrer shaft.





## INDIVIDUAL PID HANDLING

With HABITAT research, you as an admin have PID handling in your own hands and thus more room to maneuver for scaling growth processes. If you change temperature values, the software simulates the consequences of the change for the processes. So you don't have to be a simulation expert yourself.

## HEATING SLEEVE OR CIRCULATOR

The temperature control of your bioprocess is carried out with a heating sleeve for single-walled glass vessels. The mantle of double-walled glass vessels can be precisely tempered by means of our proven circulators, for example with the HRC 2 combination circulators for heating and cooling tasks.

## 2 MOTOR SIZES

HABITAT research is the only bioreactor in its class with a motor size that matches the volume. With a working volume of up to 2 liters, a smaller motor is installed. This makes the bioreactor lighter and easier to handle.

## GAS MIXING SYSTEM

The supply of air, N<sub>2</sub>, O<sub>2</sub> and CO<sub>2</sub> is individually and variably adjustable with our Mass Flow Controller. This allows you to achieve continuous gas flow and high flow rates of 0 – 2000 cc/min for cell culture preparations and 0 – 20 000 cc/min for fermentations.

## MORE SENSORS

A wide range of commercially available sensors can be connected. In addition to temperature sensor, pH sensor, DO sensor, foam and level sensor, these include: CO<sub>2</sub> sensor, conductivity sensor and turbidity sensor. No separate hardware is required. You save costs and benefit from more functionality and more data security.



## CALIBRATION SUPPORT

The intelligent calibration management of HABITAT research makes the calibration of temperature, pH and DO sensors easy. Even inexperienced users can perform calibrations independently with the step-by-step instructions. Each calibration is automatically documented.

## 4 + 1 PUMPS

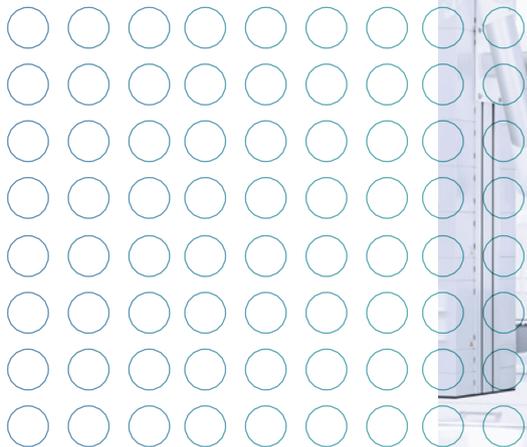
HABITAT research has 4 integrated peristaltic pumps – e.g. for acid, base, antifoam, nutrient. There are two running directions. The speed can be variably adjusted via the set flow rate, which improves dosing. Automatic tube filling adds convenience and increases reproducibility. All pumps fit tubing from 0.5 to 4.8 mm inner diameter and can achieve flow rates from 1 to 270 cc/min.

## INTUITIVE OPERATION

From the first handling, the detachable tablet and the intuitive operating software make work easier. Via tablet, smartphone, laptop or PC, test control and data monitoring can be performed from anywhere. Operation becomes simple, and the learning curve is short.

## MORE AUTOMATION

Central data acquisition takes place in the control unit tower. The hardware settings belonging to the experiment are also saved automatically. After a power failure, HABITAT research can restart automatically – if you want it to. You choose the maximum time without power supply yourself.



## 1 | CHOOSE CONTROL UNIT

For the operation of HABITAT research you only need one control unit package and one vessel package. For sensitive cell cultures such as mammalian cells, select the cell variant of the control unit, with gassing rates of 0 – 2000 cc/min. If you are using HABITAT as a fermenter, we recommend the ferment variant, with gassing rates of 0 – 20 000 cc/min. If you decide to use the photobioreactor, the photo version is perfect for you. The addition "cct" in each package indicates there are connection options for 3 additional sensors: turbidity, CO<sub>2</sub> and conductivity.



Application area	Package	Ident-No.
Cell culture	HABITAT cell	0010007533
	HABITAT photo cell	0010007553
	HABITAT cell cct	0010007573
	HABITAT photo cell cct	0010007595
Fermentation	HABITAT ferment	0010007543
	HABITAT photo ferment	0010007563
	HABITAT ferment cct	0010007585
	HABITAT photo ferment cct	0010007605

## 2 | ADD VESSELS

Now you can complete your control unit package with the matching vessels: In addition to the control unit package, you order the matching vessel package according to your application and your working volume. And you're ready to go.



For example HABITAT ferment dw 5 for 5 liters

### CELL VESSELS

Volume	Single-walled	Ident-No.	Double-walled	Ident-No.
0.5 l	HABITAT cell sw 0.5	0010007644	HABITAT cell dw 0.5	0010007645
1 l	HABITAT cell sw 1	0010007646	HABITAT cell dw 1	0010007647
2 l	HABITAT cell sw 2	0010007648	HABITAT cell dw 2	0010007649
5 l	HABITAT cell sw 5	0010007650	HABITAT cell dw 5	0010007651
10 l	—	—	HABITAT cell dw 10	0010007652

### FERMENT VESSELS

Volume	Single-walled	Ident-No.	Double-walled	Ident-No.
0.5 l	—	—	HABITAT ferment dw 0.5	0010007655
1 l	—	—	HABITAT ferment dw 1	0010007657
2 l	HABITAT ferment sw 2	0010007658	HABITAT ferment dw 2	0010007659
5 l	HABITAT ferment sw 5	0010007660	HABITAT ferment dw 5	0010007661
10 l	—	—	HABITAT ferment dw 10	0010007662