TEMPERATURE CONTROL PRODUCTS MADE BY IKA.

ACCURATE AND POWERFUL

Passionately enabling chemists to create a better world since 1910.
From A to Z.
All from one source: With our temperature control products we offer a wide range for all temperature control applications with the highest precision and with full power. We promise that you will not only be impressed by the above-average pressure and suction power of the pump. From -30 °C to +250 °C: The temperature range of our temperature control products is meeting all challenges. And also your budgets: We offer affordable entry level devices as well as high-end products for the most demanding requirements.

In addition to the above-average and industry-inspiring pressure and suction power, our devices are intent on sustainability. For example, our topseller RC 2 basic/control is equipped with a compressor, which only runs if cooling is necessary.

Another highlight, besides the outstanding compatibility to many applications, is our Wireless Controller: It enables safe and remote control. A safety factor, but at the same time a very convenient way to control the IKA tempering systems in any position.

Find out more about IKA and order our fascinating products online: www.ika.com.

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3-YEAR WARRANTY*  
* 2 years + 1 year after registering on www.ika.com/register, excludes wear parts
# The right temperature control product for every application

## Comparison of all temperature control products

<table>
<thead>
<tr>
<th>Application</th>
<th>IC basic</th>
<th>IC pro Package**</th>
<th>HBC 5 basic</th>
<th>HBC 10 basic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IC basic</strong></td>
<td>+ 10 °C to + 150 °C</td>
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<tr>
<td><strong>IC pro Package</strong>*</td>
<td>+ 200 °C</td>
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<tr>
<td><strong>HBC 5 basic</strong></td>
<td>+ 20 °C to + 100 °C</td>
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</tr>
<tr>
<td><strong>HBC 5 control</strong></td>
<td>+ 0.1 °C to + 150 °C</td>
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</tr>
</tbody>
</table>

## Humidity Control

- 30 °C to + 30 °C

## Temperature Range

- -30 °C to + 30 °C
- +5 °C to + 25 °C
- +10 °C to + 150 °C
- +20 °C to + 100 °C
- +25 °C to + 200 °C
- +100 °C to + 250 °C
- +150 °C to + 200 °C
- +200 °C to + 250 °C

## Pressure and Flow Rate

### RELATIVE PRESSURE AND VOLUME FLOW

- 0.6 bar
- 0.3 bar
- 0.2 bar
- 0.0 bar
- 0.1 bar
- 0.2 bar
- 0.3 bar
- 0.4 bar
- 0.5 bar

### USB

- 21 L/MIN
- 15 L/MIN
- 11 L/MIN
- 8 L/MIN
- 6 L/MIN

### RS 232

- 21 L/MIN
- 15 L/MIN
- 11 L/MIN
- 8 L/MIN
- 6 L/MIN

### PT 100

- 21 L/MIN
- 15 L/MIN
- 11 L/MIN
- 8 L/MIN
- 6 L/MIN

### MULTI-PORT

- 21 L/MIN
- 15 L/MIN
- 11 L/MIN
- 8 L/MIN
- 6 L/MIN

## Accessories

- RS 232
- USB
- PT 100
- MULTI-PORT

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*Plastic baths (eco packages) can be used at temperatures of up to + 100 °C (H2O only). Pump connection set required for external applications. For more information, visit our "Accessories" page.

° At 2,000 rpm up to -30 °C are possible.

* Stainless steel baths (pro packages) can be used at temperatures of up to + 200 °C.

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**IC basic and control**

- **Compact refrigerated circulator for internal and external applications.**
- Suitable for external applications, e.g. for tempering small analytical devices in research and food testing.
- Heating bath circulator for demanding internal applications, e.g. for tempering double-walled lab reactors or also suitable for tempering large, external, open baths.
- IKA accessories are also suitable for external, open baths.

---

**IC pro Package**

- **Compact refrigerated circulator for internal and external applications.**
- Suitable for external applications, e.g. for tempering small analytical devices in research and food testing.
- Heating bath circulator for demanding internal applications, e.g. for tempering double-walled lab reactors or also suitable for tempering large, external, open baths.
- IKA accessories are also suitable for external, open baths.
All IKA tempering products meet the highest safety standards

SAFETY FEATURES TO ENSURE PERSONAL AND MACHINES INTACT

- **Compliance**: All IKA products are standard safety regulations. IKA does not use lead, mercury, or other materials that are known to have a toxic effect. IKA products are made of premium grade stainless steel (V4A) and highly durable PEEK, FKM, and PTFE; meeting the basic requirements of EN 1090-2 and EN 1090-3.

SAFETY AND OPERATIONAL DESIGN

- **Safety and comfort design of the baths**
  - Safety handle
  - Armor handle
  - Knock-out buttons
  - Height-adjustable feet
  - **Drainage**
    - Physical separation of the drain valve and the opening screw ensures that the user does not come into contact with the fluid.
    - Opening screw ensures that the user does not come into contact with the fluid.

OPERATIONAL DESIGN TO ACHIEVE TYPICAL VALUES

- **Temperature constancy**
  - The strong heat output of the circulators ensures short heat-up times.
  - All IKA heating circulators have the option of adding a cooling coil with large cooling surfaces, in a simple and clean manner. The bath can be fully emptied of thermal fluids, in a simple and clean manner. The excellent insulation and the demand-driven output control ensure that IKA temperature control products are made of premium grade stainless steel (V4A) and highly durable PEEK, FKM, and PTFE; meeting the basic requirements of EN 1090-2 and EN 1090-3.

INTELLIGENCE

- **Intuitive operation and automatic tempering**
  - Labworldsoft® software can be used to precisely specify temperature ramps and process.
  - Energy efficiency: The high power output of the circulators provides a high flow rate for external pumps.
  - Pressure losses occur, for instance, from height differences, narrow and long hoses as well as the amount of the bath fluid. In addition, the automatic function prevents the temperature from being exceeded. There are four options after a restart or power failure – simply select the mode of operation.
  - Operating modes: There are four options after a restart or power failure – simply select the mode of operation.
  - Operating mode A: After switching on, the pump is activated automatically. The actual maximum flow rate can be determined under known pressure loss of the experiment based on a pump curve. Pressure loss is used, for instance, from height differences, narrow and long hoses as well as the amount of the bath fluid. The maximum velocity of the bath fluid is 3 cm/s.

Power

- **Superior power**
  - Temperature: The IKA heating and refrigerating circulators are designed for use in the food industry. In addition, the automatic function prevents the temperature from being exceeded. There are four options after a restart or power failure – simply select the mode of operation.
  - Pressure changes homogenous mixing inside the bath can be made even in extreme conditions.
  - Temperature constancy of up to ±0.01 K.
  - IKA heating circulators reach a temperature of up to 0.05 K.
  - All IKA heating circulating units are made of premium grade stainless steel (V4A) and highly durable PEEK, FKM, and PTFE; meeting the basic requirements of EN 1090-2 and EN 1090-3.

SAFETY

- **All IKA tempering products meet the highest safety standards**
  - Safety temperature
  - Critical minimum or maximum levels are recognized both mechanically (by the floater) and electronically (by a temperature sensor).
  - Pressure/suction pump
  - All IKA tempering products are standard temperature control products for any application. Smart technology as well as user-friendly menu navigation simplify temperature control for any application.
  - Operating modes: There are four options after a restart or power failure – simply select the mode of operation.
  - Operating mode A: After switching on, the pump is activated automatically. The actual maximum flow rate can be determined under known pressure loss of the experiment based on a pump curve. Pressure loss is used, for instance, from height differences, narrow and long hoses as well as the amount of the bath fluid. The maximum velocity of the bath fluid is 3 cm/s.
  - Calibration and adjustment
    - Pressure/suction pump

Visual and audible alarms

- **Valve attachments and temperature control**
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Fluid level detection

- **Indication of critical fluid level, critical temperature**
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Pour-in system

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IKA control models

/// The added value of the control models

**SAFETY**

- Monitoring the temperature
  - Additionally adjustable range for external temperature. Checking the gap between internal and external temperature (adjustable).
- Monitoring the pump pressure
  - Easy adjustment/selection of max. pressure.
- Wireless Controller (WiCo)
  - Safe remote control of the devices, e.g. inside the fume hood. Wireless Bluetooth control of the devices with a range of up to 10 meters (30 ft.) or via USB cable.
- Audible signals e.g. reaching set temperature
- Alarm-controlled shut-off (via multi-IO port)
- Stand-by operation (via multi-IO port)
  - By connecting current to switch input, the device can be turned off.

**POWER**

- Increased precision
  - IKA control devices reach a temperature constancy of up to ± 0.01 K. The power-regulated compressor of the circulating chiller allows for a constant temperature of up to 0.05 K.
- Output performance can be reduced
  - The option to reduce the heat performance down to 50 % of the rated output for moderate heating times in order to adjust to previous systems or as overload protection.
- Control of a cooling coil (via multi-IO port)
  - Using a cooling coil as an extension to the heating circulators for quick cooling, tempering at room temperature or to absorb moderate temperature increases (e.g. via exothermal reaction).
  - With a controlled solenoid valve, the tap or cooling water is purposefully regulated, thus reducing the water consumption to a minimum.

**DISCOVER THE BENEFITS OF THE CONTROL MODELS**

- Controlling solenoid valves
  - automatic refills
  - turning the cooling water circuit on/off
  - monitoring the fluid level
  - electronic shut-off valve
- Output for alarm signals
- Input for standby mode (for turning off the device)
INTELLIGENCE

- Clear and user-friendly display
  All important process parameters are clearly arranged and easy to read. Actual and set temperature, fill level and safety temperature readout (among other parameters). Quick access to all relevant control parameters.

- Programming function
  10 individual programs with 10 steps each can be operated via time, set temperature and/or a temperature gradient. Additional features such as integrating solenoid valves are possible.

- Measuring graph
  The main screen can display either the process parameters (standard) or a temperature/time graph. The user can switch between these options using a quick-access key.

- Timer/counter function

- Switch from external to internal temperature control at the press of a button
  All control units access one PT 100 interface for an external temperature sensor. Thus, the internal or external temperature can be regulated at any time.

- Degasging function
  For reducing air pockets in oils.

[Diagram of temperature control product with various features and parameters]

[Table of programming function:

<table>
<thead>
<tr>
<th>No.</th>
<th>Sensor</th>
<th>Temp.</th>
<th>Mode</th>
<th>Time</th>
<th>Steps</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Extem</td>
<td>30.10</td>
<td>Time</td>
<td>64.10</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Intern</td>
<td>30.02</td>
<td>Time</td>
<td>64.14</td>
<td></td>
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<tr>
<td>3</td>
<td>Intern</td>
<td>30.01</td>
<td>Time</td>
<td>64.84</td>
<td></td>
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<tr>
<td>4</td>
<td>Extem</td>
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<td>5.000</td>
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<tr>
<td>Edit</td>
<td>Delete</td>
<td>Insert</td>
<td>Save</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Heating

/// Optimal heat exchange within a temperature range of RT +10 °C to +250 °C.

Regardless of our circulators ICC and IC or our heating bath circulators HBC 5 & 10 – IKA temperature control products are reliable, safe and work under full pressure of the powerful pressure and suction pump. Large heating surfaces provide for optimal heat exchange of temperatures up to +250 °C.

RT + 10 °C

+ 100 °C  +150 °C  + 200 °C  + 250 °C

HBC 5 | 10 basic and control
Heating bath circulators

HBC 10
The colorful TFT graphic display of the HBC 10 control displays all relevant process data.

ICC basic and control
Compact immersion circulators

IC basic and control
Immersion circulators
The compact immersion circulator ICC basic and the ICC control are designed for tempering fluids up to +150 °C and thus provide an economic and attractive solution for standard applications, such as the tempering of samples. The ergonomic handle and the compact design allow for safe transport as well as convenient use. The integrated base provides a secure stand while protecting floaters and tubular heating elements. A bracket for mounting the bath vessel is included in the scope of delivery. The compact ICC immersion circulators allow for simple and flexible exchange of different baths.

The ICC circulators from IKA are ready to connect to a pump connection set (PCS.ICC) for external tempering as well as to a cooling coil (CC2) for operation at and below ambient temperature.

**ICC basic and control**

/// Compact immersion circulators

- **ICC control – graphic display**: showing parameters such as temperature, pump speed, etc.
- **ICC control – integrated PT 100 temperature probe interface**.
- **USB/RS 232 interfaces** for connecting a PC, using labworldsoft and enabling online updates of device software.
- **Integrated base** protects tubular heating elements and floaters.
APPLICATION EXAMPLE

As shown in the application, the ICC circulators from IKA can be mounted with a bath bridge or connected to various sized baths using the mounting bracket included in the scope of delivery.

An additional open bath can be tempered by connecting the pump connection set. The ICC is connected to the external plastic bath via a level controller.

These features show that the ICC circulators are very flexible and space-saving. One example is to use the test tube inserts, making the ICCs suitable for tempering large number of samples.

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TECHNICAL DATA

| ICC basic, Ident. No. 0004134400 | ICC control, Ident. No. 0004136600 |
---|---|
Heat output (230 V) | 2,000 W |
Working temperature range | RT +10 °C to +150 °C |
Max. flow rate (at 0 bar) | 18 l/m |
Pump power (pressure) | 0.3 bar |
Pump power (suction) | 0.2 bar |

---

Pump characteristic curves: ICC basic & control

Measurement in accordance with DIN 12876-2 with water at +20 °C, closed pump circuit.

Heating time curves: ICC basic & control

Heating time varies based on bath sizes.
The information is based on water volume in an open bath at room temperature.

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IC and HBC

/// Powerful heating circulators

The IKA IC and HBC circulators are following a modular design principle. The IC head is its core. When combined with a high-quality insulated bath, the IC turns into an HBC heating bath circulator. The high performance pump reaches a high flow rate and, together with the large heating body surface, provides for optimal heat exchange between the application and circulator.

NEW:

BASIC DEVICES WITH ADDED POWER.

The IC and HBC basic circulators were optimized and come with improved performance data: Tempering up to +250 °C with the same pump power and control units.

IC basic and control

The IC immersion circulators are designed for tempering liquids up to +250 °C.

HBC 5 basic and control

The excellent insulation of the heating bath circulators HBC offers short heat-up times.
**BASIC AND CONTROL INTERFACES**

- **RS 232/USB interfaces**
- **PT 100 external temperature probe**
- **Multi-IO port for external solenoid valves (control only)**
- **Pump input/output**
- **Cooling coil**

### Heating Curves: IC Basic & Control

The heating curves of the IC basic & control show the heating times dependent on different bath cases. The information is based on water volume in an open bath at room temperature.

### Heating Curves: HBC 5 | 10 Basic & Control

The heating curves show the heating times of the HBC 5 with 5.5 l water volume and the HBC 10 with 10 l water volume.

### Pump Curves: IC | HBC Basic & Control

Measurement in accordance with DIN 12876-2 with water at +20 °C, closed pump circuit.

### Technical Data

<table>
<thead>
<tr>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
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<td>Heat output (230 V)</td>
<td>2,500 W</td>
</tr>
<tr>
<td>Working temperature range</td>
<td>RT +10°C to +250°C</td>
</tr>
<tr>
<td>Max. flow rate (at 0 bar)</td>
<td>31 l/min</td>
</tr>
<tr>
<td>Pump power (pressure)</td>
<td>0.61 bar</td>
</tr>
<tr>
<td>Pump power (suction)</td>
<td>0.45 bar</td>
</tr>
</tbody>
</table>
IC basic and control
/// Universal immersion circulators

The IC immersion circulators are designed for tempering liquids up to +250 °C. Due to the flexible bath bridge, the device can be mounted on various size baths.

The control version features a removable WiCo (wireless controller), which allows for working in a fume hood, for example. The advanced features enable the device to be used in demanding internal and external applications, such as analysis and material testing.

APPLICATION EXAMPLE A
The IKA IC bridge circulator can be used for internal and external tempering applications.

APPLICATION EXAMPLE B
The IKA IC immersion circulators are exceptionally well suited for external applications. The setup shows the IC control with stainless steel bath, bath bridge and cover (IC control pro 20 c package) under the hood; all connected to a metal double-walled reactor. With the large stainless steel bath, the usable volume is approx. 5.5 l.

By connecting the PT 100 sensor, the temperature of the medium in the reactor can be measured and controlled.

Using the detachable WiCo, the immersion circulator IC control can be safely operated from up to 10 meters (30 ft.) away.

USB/RS232 interfaces for connecting a PC, using labworldsoft and enabling online updates of device software.

Due to the flexible bath bridge, the IC immersion circulator can be mounted on baths of various sizes (245 – 480 mm).

Integrated pressure/suction pump for internal and external temperature control.

Connector for PT 100 temperature probe.

IC control – connection option of external solenoid valves over multi-I0 port.

Detachable WiCo (wireless controller) for simple and safe remote access from up to 10 m (30 ft.).

Detachable WiCo (wireless controller) for simple and safe remote access from up to 10 m (30 ft.).

SAFETY AND CONVENIENCE FEATURES
› Adjustable safety circuit for temperature
› Mechanical and electronic fluid level detection
› Visual and audible alarm
› Switch from external to internal temperature control at the push of a button (control model)
› Universal use for internal and external applications
› Cooling coil included in the scope of delivery (control model)
HBC 5 | 10 basic and control
/// Heated bath circulators for external tempering applications

The well-insulated stainless steel heating bath and powerful PEEK pressure and suction pump are two of the key features of HBC heated bath circulators. The maximum temperature of the HBC heating bath circulator is +250 °C. The large surface of the tubular heating elements provides for optimal heat exchange. The bath fluid is heated gently and promptly.

Due to its high temperature consistency of up to ±0.01 K, short heat-up times and advanced features of the high-tech TFT display with WiCo (wireless controller), the HBC control heating bath circulator is the ideal solution for demanding and complex tempering processes.

SAFETY AND CONVENIENCE FEATURES
- Ergonomic design
- Excellent insulation for short heat-up times and improved heat transfer
- Safety drain valve
- Adjustable safety circuit
- Switch from external to internal temperature control at the push of a button (control model)

APPLICATION EXAMPLE
The HBC heating bath circulator is ideal for external applications, for example the heating of double-walled laboratory reactors, such as the LR-2.ST from IKA.

HBC 10 basic and control
The HBC 10 has a bath capacity of 7.5 up to 10.5 liters. This adds up to a usable volume of 3 liters.

HBC 5 basic and control
The HBC 5 has a bath capacity of 5.5 up to 7.5 liters. This adds up to a usable volume of 2 liters.

Detachable WiCo (wireless controller) for simple and safe remote access from up to 10 m (30 ft.)

Visual and audible alarm.

USB/RS 232 for connecting a PC, using labworldsoft and enabling online updates of device software.

Integrated pressure/suction pump for internal and external temperature control.

Integrated transport handle on the back of the device, released handles for ergonomic transport.

HBC control – connection option of external solenoid valves over multi-IO port.

BIG EXPANSION VOLUME
The HBC 10 has a bath capacity of 7.5 up to 10.5 liters. This adds up to a usable volume of 3 liters.

Bath opening 160 × 90 mm
IKA has expanded its circulator portfolio by four new devices, adding the combined refrigerated and heating circulators CBC 5 and HRC 2 devices (each in basic and control variants). The temperature range is from -30 °C to +200 °C.
CBC 5 basic and control
/// Powerful refrigerated and heating circulators

The CBC 5 is a powerful refrigerated and heating circulator with 2,500 W heating power and 350 W cooling power. It is best suited for external applications as it uses the proven pressure and suction pump of the HBC and IC series. High-quality insulation of the device allows for fast heat-up times and reduces heat input at low temperatures.

The basic as well as the control models can temper the medium by using an external temperature sensor. All parameters can be read out, monitored and completely documented by software (e.g., labworldsoft® or NAMUR commands), using the RS 232 or USB interfaces.

SAFETY AND CONVENIENCE FEATURES

› Safety and convenience features
› Adjustable safety circuit
› Filling level detection
› Visual and audible alarm
› RS 232 and USB interfaces
› Multi IO-port (control version only)
› Switching from external to internal temperature control at the push of a button (control model)
› Excellent insulation
› Safety drain valve
APPLICATION EXAMPLE

A typical field of application of the combined heating and cooling circulators is tempering process systems on laboratory or pilot scales. In our example, the IKA magic PLANT is combined with the inline disperser, IKA magic LAB. First, the product is being heated by the CBC 5 using the double-walled IKA magic PLANT, then held at the set temperature in the subsequent disperser process with cooling function. The product is then cooled to room temperature. The external temperature sensor directly impacts the temperature of the final product.

TECHNICAL DATA

<table>
<thead>
<tr>
<th>CBC 5 basic, Ident. No. 0004165000</th>
<th>CBC 5 control, Ident. No. 0004167000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat output (230 V)</td>
<td>2,500 W</td>
</tr>
<tr>
<td>Working temperature range</td>
<td>-25 °C to +200 °C (-30 °C possible at 2,000 rpm)</td>
</tr>
<tr>
<td>Max. flow rate (at 0 bar)</td>
<td>31 l/m</td>
</tr>
<tr>
<td>Pump power (pressure)</td>
<td>0.63 bar</td>
</tr>
<tr>
<td>Pump power (suction)</td>
<td>0.45 bar</td>
</tr>
</tbody>
</table>

COOLING POWER

<table>
<thead>
<tr>
<th>CBC 5 basic, Ident. No. 0004165000</th>
<th>CBC 5 control, Ident. No. 0004167000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Cooling power at max. speed</td>
</tr>
<tr>
<td>+ 20 °C</td>
<td>350 W</td>
</tr>
<tr>
<td>+ 10 °C</td>
<td>320 W</td>
</tr>
<tr>
<td>0 °C</td>
<td>310 W</td>
</tr>
<tr>
<td>- 10 °C</td>
<td>310 W</td>
</tr>
<tr>
<td>- 20 °C</td>
<td>270 W</td>
</tr>
<tr>
<td>- 30 °C</td>
<td>190 W</td>
</tr>
<tr>
<td>- 40 °C</td>
<td>80 W</td>
</tr>
</tbody>
</table>

Pump curve CBC 5 control & basic. Measurement in accordance with DIN 12876-2 with water at +20 °C, closed pump circuit.

USB/RS 232 interfaces for connecting a PC, using labworldsoft and enabling online updates of device software.

CBC control – detachable WiCo (wireless controller) for simple and safe remote access from up to 10 m (30 ft.).

Silent mode – the fan only runs as needed.

CBC control – connection option of external solenoid valves via multi-I/O port.

CBC control – control accuracy. The speed-regulated compressor provides a temperature stability of up to ± 0.01 K.
Launching the HRC 2, IKA is offering a compact refrigerated and heating circulator with 400 W cooling power and 1,500 W heating power. It is best suited for tempering small, external applications. Applications with larger pressure losses, e.g. lab reactors or viscometers can be supplied with appropriate flow volume of bath fluid through the more powerful pressure and suction pump (0.5 bar). With a level controller, it is possible to temper samples in open baths.

The on-demand cooling unit runs quietly and with utmost efficiency. Maximum cooling performance is achieved if the easy-to-reach air filter is replaced routinely.

**HRC 2 basic and control**

/// Compact refrigerated and heating circulators

**SAFETY AND CONVENIENCE FEATURES**

- Adjustable safety circuit
- Filling level detection
- Visual and audible alarm
- USB and RS 232 interfaces
- Multi IO-port (control version only)
- Detachable WiCo (wireless controller) for simple and safe remote access from up to 10 m (30 ft.)
TECHNICAL DATA

HRC 2 basic, Ident. No. 0025003742
HRC 2 control, Ident. No. 0025004524

Heat output (230 V) 1,500 W
Working temperature range - 20 °C to +100 °C | -30 °C* to +100 °C
Max. flow rate (at 0 bar) 21 l/min
Pump power (pressure) 0.5 bar
Pump power (suction) 0.2 bar

APPLICATION EXAMPLE

The example shows a double-walled 10 l glass reactor for growing algae.

The HRC 2 is well suited for achieving constant temperature conditions inside the reactor in order to achieve a high-controlled growth rate of the algae formation. Applications requiring critical temperature control, the temperature can be directly controlled in the medium by using the HRC 2 control with an external temperature measurement sensor.

Flow rate [l/min]
Pressure / suction [mbar]

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Cooling power HRC 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>+20 °C</td>
<td>400 W</td>
</tr>
<tr>
<td>+10 °C</td>
<td>370 W</td>
</tr>
<tr>
<td>0 °C</td>
<td>320 W</td>
</tr>
<tr>
<td>-10 °C</td>
<td>240 W</td>
</tr>
<tr>
<td>-20 °C</td>
<td>190 W</td>
</tr>
</tbody>
</table>

* -30 °C possible at 2,000 rpm.
Cooling
/// Compact cooling power of 1,400 watts

IKA is expanding its product offering of highly efficient recirculating chillers by two new devices. With the RC 5 basic and control, there are now two devices available with a cooling power of 1,400 W, complementing the line by extremely compact and powerful chillers.

Think smart – not only save valuable drinking water, but also energy and lower your operating costs.
**RC 2 | RC 5 basic and control**

/// Energy-efficient recirculating chillers

Due to the high energy efficiency of our R134a-based refrigeration machine, a significantly lower amount of greenhouse gases is emitted over the life span of the product compared to unregulated chillers using natural coolants.

Even in the worst-case scenario, IKA devices have the advantage of saving 500 g/kWh CO₂ in the current energy mix after just 1.5 years, compared to unregulated devices with natural coolants. (Assumptions: coolant has dissipated completely at the end of the product life cycle; GWP for R134a = 1,300, according to IPCC AR5 100 years, 250 work days/year; 2 kWh savings/day).

With the launch of the RC 5, IKA is offering, for the first time, a recirculating chiller with natural coolant R 290. Adding the innovative on-demand control, IKA is contributing to a green future.

**DURING THE DEVELOPMENT OF THE RC RECIRCULATING CHILLERS, IKA ENGINEERS STRONGLY FOCUSED ON ENERGY EFFICIENCY AND DEVELOPING UNIQUE SOLUTIONS.**

- The heart of the RC 2 and RC 5 is a speed-controlled compressor, which is used to respond to the actual cooling need. The energy consumption can be reduced significantly as well as the compressor service life increased.
- The high-quality foam insulation, surrounding the storage tank, minimizes the energy input and keeps the bath fluid cool.
- The air-cooled microchannel condenser ensures optimal heat dissipation. The air flow, required for the micro-channel condenser, is generated by a speed-controlled fan. It reduces the noise level and lowers energy consumption.
- The electronically controlled expansion valve contributes to achieving an excellent temperature stability of up to ± 0.05 K.
Economic features

/// Save money

SAVE WATER
- Calculated at an assumed average of six operating hours a day on 200 business days a year, a rotary evaporator (50 l/h) cooled with tap water consumes 60,000 liters of water per year. That amount can be saved by using a recirculating chiller, not only protecting the environment, but also reducing operating costs.

SAVE ENERGY
- IKA has succeeded in achieving energy savings of up to 60 % in comparison to competitors’ devices, simply by the afore-mentioned innovations of the recirculating chiller, particularly the speed-controlled compressor.

POWER CONSUMPTION – A COMPETITIVE ANALYSIS
- Example: Energy consumption of a chiller in a standard distillation of a rotary evaporator (500 ml water in an 1 lter evaporating flask). Water bath temperature +60 °C, pressure 70 mbar.

When comparing the average power consumption of the chiller in neutral/idle mode (rotary evaporator is turned off), the RC 2 from IKA clearly runs more efficiently in comparison to the competition (Figure 1).

When considering energy consumption over an entire day, the efficiency has an even greater impact. The on-demand circulation chiller from IKA reduces its power to a minimum, adapting to the actually required cooling performance. Figure 2 shows that the IKA RC 2 in comparison to competitor 1 consumes less than one-third of the energy.

Figure 3 shows the mechanism of our on-demand recirculating chiller (red) in comparison to an unregulated chiller (blue). Depicted is an 8-hour work day, with four 500 ml (H2O) distillation runs. It’s easy to recognize the overall lower power demand when in idle mode, as well as the adjustment of the cooling performance during the distillation process.
RC 2 | RC 5 basic and control
/// Energy-efficient recirculating chillers

The RC cooling circulators are designed for fast and efficient cooling of external devices. The chillers distinguish themselves by short cooling times with a temperature stability of up to ± 0.05 K. The operating temperature range is from room temperature down to -30 °C. The maximum recirculation temperature is +80 °C. You can adjust the pump performance as needed through the speed-controlled pressure and suction pump; hence exceeding the cooling power according to DIN.

The control devices are equipped with a connector for an external temperature sensor. Using the PT 100 temperature probe (within scope of delivery), you can control the temperature directly in your target medium.

The device can be operated conveniently via the RC 2 | 5 control WiCo (wireless controller). It makes the chiller space-saving and allowing for it to be placed in even hard-to-reach areas of the lab.

- **Energy efficiency** – up to 60 % lower energy consumption during standard operation (compared to devices of competitor).
- **Control accuracy** – the speed-regulated compressor provides a ten-times higher temperature stability of up to ± 0.05 K.
- **Silent mode** – the fan only runs as needed.
- **Handling** – safe and ergonomic handling due to a well thought-out design. Casters on the back of the device enable easy transport and set-up.

NEW!
THE IKA RECIRCULATING CHILLER HAS A BROADER OPERATING TEMPERATURE RANGE OF UP TO +80 °C
THE RC 2 CONTROL COOLS DOWN TO -30 °C (50 W COOLING POWER AT 3,200 RPM)
KLA: RECIRCULATING CHILLERS CAN ALSO COOL OPEN BATHS WITHOUT PROBLEMS DOWN TO LOW TEMPERATURES DUE TO A POWERFUL PRESSURE-SUCTION PUMP. THE EXAMPLE SHOWS A BATH THAT HAS BEEN COOLED TO -17 °C WITH THE RC 2.

TECHNICAL DATA

<table>
<thead>
<tr>
<th>Type</th>
<th>Ident. No.</th>
<th>RC 2 basic</th>
<th>RC 2 control</th>
<th>RC 5 basic</th>
<th>RC 5 control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ident. No.</td>
<td></td>
<td>0004171000</td>
<td>0004173000</td>
<td>0004181000</td>
<td>0004183000</td>
</tr>
</tbody>
</table>

COOLING POWER

<table>
<thead>
<tr>
<th>Temperature</th>
<th>RC 2 basic</th>
<th>RC 2 control</th>
<th>RC 5 basic</th>
<th>RC 5 control</th>
</tr>
</thead>
<tbody>
<tr>
<td>+40 °C</td>
<td>400 W</td>
<td>1,400 W</td>
<td>310 W</td>
<td>1,100 W</td>
</tr>
<tr>
<td>+20 °C</td>
<td>270 W</td>
<td>900 W</td>
<td>260 W</td>
<td>800 W</td>
</tr>
<tr>
<td>+10 °C</td>
<td>200 W</td>
<td>600 W</td>
<td>180 W</td>
<td>550 W</td>
</tr>
<tr>
<td>0 °C</td>
<td>150 W</td>
<td>350 W</td>
<td>120 W</td>
<td>250 W</td>
</tr>
<tr>
<td>-10 °C</td>
<td>130 W</td>
<td>250 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-20 °C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-30 °C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FLOW RATE

<table>
<thead>
<tr>
<th>Flow rate (l/min)</th>
<th>Pressure/suction (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>0.7</td>
</tr>
<tr>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>0.1</td>
<td>-0.1</td>
</tr>
</tbody>
</table>

Temperature control products

Temperature control products
EFFICIENT USE OF THE RECIRCULATING CHILLER FOR EVAPORATION AND EXTRACTION

Using rotary evaporators for distillation or e.g. conducting Soxhlet extractions, the required cooling power is contingent upon the flask size and the number of extraction units.

The following table shows how many rotary evaporators and extraction units can be cooled with an IKA recirculating chiller. It is also a guide to finding the ideal recirculating chiller for your specific application.

**COOLING POWER AT 20 °C COOLING TEMPERATURE DEPENDING ON THE FLASK SIZE**

<table>
<thead>
<tr>
<th>Flask size [ml]</th>
<th>Cooling power demand [W]</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 – 100 ml</td>
<td>200</td>
</tr>
<tr>
<td>150 – 500 ml</td>
<td>300</td>
</tr>
<tr>
<td>1000 ml</td>
<td>500</td>
</tr>
<tr>
<td>2000 ml</td>
<td>600</td>
</tr>
<tr>
<td>3000 ml</td>
<td>700</td>
</tr>
<tr>
<td>5000 ml</td>
<td>800</td>
</tr>
</tbody>
</table>

* Water was used as reference solvent. When using other solvents, the cooling power demand could be lower.

**APPLICATION EXAMPLE A**

The IKA RC 5 is ideal for the cooling of multiple rotary evaporators, e.g. the IKA rotary evaporators RV 10 and RV 8. When using a 1 liter evaporation flask (depending on the solvent to be distilled), it is possible to cool up to four rotary evaporators at the same time. This results in essential space, energy and cost savings.

**APPLICATION EXAMPLE B**

The RC 2 recirculating chillers are suitable for cooling external analytical equipment such as laboratory reactors, calorimeters, incubating shakers or rotary evaporators. The set up below shows the RC 2 basic recirculating chiller connected to the IKA C 1 calorimeter.
## Technical data

### Temperature control instruments

<table>
<thead>
<tr>
<th>Instrument type</th>
<th>ICC basic</th>
<th>IC basic</th>
<th>HBC 5 basic</th>
<th>HBC 10 basic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety class</td>
<td>III (FL)</td>
<td>III (FL)</td>
<td>III (FL)</td>
<td>III (FL)</td>
</tr>
<tr>
<td>Heat output (230 V)</td>
<td>2000 W</td>
<td>2500 W</td>
<td>2500 W</td>
<td>2500 W</td>
</tr>
<tr>
<td>Working temperature range</td>
<td>RT + 10 °C to +150 °C</td>
<td>RT + 10 °C to +250 °C</td>
<td>RT + 10 °C to +250 °C</td>
<td>RT + 10 °C to +250 °C</td>
</tr>
<tr>
<td>Temperature display</td>
<td>0,1 °C</td>
<td>0,01 °C</td>
<td>0,1 °C</td>
<td>0,01 °C</td>
</tr>
<tr>
<td>Display resolution</td>
<td>± 0,02 K</td>
<td>± 0,01 K</td>
<td>± 0,02 K</td>
<td>± 0,01 K</td>
</tr>
<tr>
<td>Bath capacity (liters)</td>
<td>dependent on the bath used</td>
<td>dependent on the bath used</td>
<td>5,5 – 7,5 l</td>
<td>7,5 – 10,5 l</td>
</tr>
<tr>
<td>Max. flow rate (l/min)</td>
<td>18 l/min</td>
<td>31 l/min</td>
<td>31 l/min</td>
<td>31 l/min</td>
</tr>
<tr>
<td>Dimensions (W × H × D)</td>
<td>145 × 340 × 200 mm</td>
<td>285 × 313 × 261 mm</td>
<td>275 × 406 × 500 mm</td>
<td>275 × 456 × 506 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>3,75 kg</td>
<td>6,5 kg</td>
<td>17,0 kg</td>
<td>17,8 kg</td>
</tr>
<tr>
<td>Permissible ambient temperature</td>
<td>5 – 40 °C</td>
<td>5 – 40 °C</td>
<td>15 – 40 °C</td>
<td>15 – 40 °C</td>
</tr>
<tr>
<td>Permissible relative humidity</td>
<td>80 %</td>
<td>80 %</td>
<td>60 %</td>
<td>60 %</td>
</tr>
<tr>
<td>USB/RS 232 interface</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Connection for external PT 100 probe</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Threaded connection</td>
<td>no</td>
<td>no</td>
<td>M 16 x 1</td>
<td>M 16 x 1</td>
</tr>
<tr>
<td>Cooling coil included</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Multi IO port included</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

| Price (€)                | € 910,00 | € 2.299,00 | € 2.899,00 | € 3.099,00 |

---
## CBC 5 basic | control
- **Ident. No.:** 0004165000 / 0004167000
- **Heat output (230 V):** 2500 W / 1500 W
- **Working temperature range:** -25 °C to 200 °C
- **Operating temperature range (with outside coolant):** -30 °C** to +200 °C
- **Display resolution:** 0.1 °C
- **Setting resolution:** 0.1 °C
- **Bath capacity (liters):** 5 – 7 l
- **Useable volume (liters):** 2 l
- **Pump power (pressure):** 0.61 bar
- **Max. flow rate:** 31 l/min
- **Dimensions (W × H × D):** 275 × 490 × 690 mm
- **Weight:** 39.5 kg

## HRC 2 basic | control
- **Ident. No.:** 0025003742 / 0025004524
- **Heat output (230 V):** 2500 W / 1500 W
- **Working temperature range:** -20 °C to 100 °C
- **Operating temperature range (with outside heating):** -30 °C to 100 °C
- **Display resolution:** 0.01 °C
- **Setting resolution:** 0.1 °C
- **Bath capacity (liters):** 1.5 – 4 l
- **Useable volume (liters):** 2.5 l
- **Pump power (pressure):** 0.3 bar
- **Max. flow rate:** 18 l/min
- **Dimensions (W × H × D):** 220 × 475 × 525 mm
- **Weight:** 28.0 kg

---

## RC 2 basic | control
- **Ident. No.:** 0004171000 / 0004173000
- **Cooling capacity:** 400 W
- **Cooling coil included:** no
- **Connection for external PT 100 probe:** yes
- **Threaded connection:** M 16 × 1

## RC 5 basic | control
- **Ident. No.:** 0004181000 / 0004183000
- **Cooling capacity:** 1400 W
- **Cooling coil included:** no
- **Connection for external PT 100 probe:** yes
- **Threaded connection:** M 16 × 1

---

**Technische Daten**

<table>
<thead>
<tr>
<th>CBC 5 basic</th>
<th>control</th>
<th>HRC 2 basic</th>
<th>control</th>
<th>RC 2 basic</th>
<th>control</th>
<th>RC 5 basic</th>
<th>control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ident. No.:</strong></td>
<td>0004165000 / 0004167000</td>
<td>0025003742 / 0025004524</td>
<td>0004171000 / 0004173000</td>
<td>0004181000 / 0004183000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Heat output (230 V):</strong></td>
<td>2500 W / 1500 W</td>
<td>2500 W / 1500 W</td>
<td>400 W</td>
<td>1400 W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Working temperature range:</strong></td>
<td>-25 °C to 200 °C</td>
<td>-20 °C to 100 °C</td>
<td>-20 °C to 80 °C</td>
<td>-30 °C to 80 °C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating temperature range (with outside coolant):</strong></td>
<td>-30 °C** to +200 °C</td>
<td>-30 °C to 100 °C</td>
<td>-30 °C to 80 °C</td>
<td>-30 °C to 80 °C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Display resolution:</strong></td>
<td>0.1 °C</td>
<td>0.01 °C</td>
<td>0.01 °C</td>
<td>0.01 °C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Setting resolution:</strong></td>
<td>0.1 °C</td>
<td>0.01 °C</td>
<td>0.1 °C</td>
<td>0.05 °C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bath capacity (liters):</strong></td>
<td>5 – 7 l</td>
<td>1.5 – 4 l</td>
<td>5,2 – 8 l</td>
<td>10,0 l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Useable volume (liters):</strong></td>
<td>2 l</td>
<td>7,5 l</td>
<td>2,8 l</td>
<td>2,0 l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pump power (pressure):</strong></td>
<td>0.61 bar</td>
<td>0.3 bar</td>
<td>0.61 bar</td>
<td>0.45 bar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions (W × H × D):</strong></td>
<td>275 × 490 × 690 mm</td>
<td>220 × 315 × 475 mm</td>
<td>220 × 475 × 525 mm</td>
<td>310 × 490 × 546 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight:</strong></td>
<td>39.5 kg</td>
<td>28.0 kg</td>
<td>28.5 kg</td>
<td>37.5 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* PT 100 temperature probe included.

**- 30 °C possible at 2000 rpm**
# Scope of delivery

/// Temperature control instruments

## SCOPE OF DELIVERY

<table>
<thead>
<tr>
<th></th>
<th>ICC basic</th>
<th>ICC control</th>
<th>IC basic</th>
<th>IC control</th>
<th>HBC 5</th>
<th>10 basic</th>
<th>HBC 5</th>
<th>10 control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump connection set</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling coil CC 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PT 100 sensor</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td>USB interface</td>
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<td>Barb fittings for DN 12 hoses (2 x)</td>
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<tr>
<td>WiCo wall mount</td>
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### Heating

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<tr>
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<th>CBC 5 basic</th>
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<th>HRC 2 basic</th>
<th>HRC 2 control</th>
<th>RC 2</th>
<th>5 basic</th>
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<th>RC 5 control</th>
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<td>Pump connection set</td>
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<td>1 x USB cable (station)</td>
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<td>1 x USB cable (WiCo)</td>
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<td>Charger for WiCo</td>
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<td>Barb fittings for DN 8 hoses (2 x)</td>
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<tr>
<td>WiCo wall mount</td>
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### Cooling

Heating and Cooling

- x = included with delivery
Accessories

/// Baths and covers

<table>
<thead>
<tr>
<th>Bath type</th>
<th>Outer dimensions [mm]</th>
<th>Inner dimensions [mm]</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>IB 18 eco, Steel bath, 18 l</td>
<td>584 × 338 × 195</td>
<td>460 × 286 × 190</td>
<td>€ 460,00</td>
</tr>
<tr>
<td>IB 24 HF eco, Plastic bath, tall form, 24 l</td>
<td>584 × 338 × 280</td>
<td>460 × 286 × 280</td>
<td>€ 520,00</td>
</tr>
<tr>
<td>IB 9 pro, Stainless steel bath, 9 l</td>
<td>552 × 365 × 167</td>
<td>504 × 317 × 101</td>
<td>€ 460,00</td>
</tr>
<tr>
<td>IB R RO 15 eco, Plastic bath, for magnetic stirrer RO 15</td>
<td>648 × 365 × 316</td>
<td>600 × 317 × 300</td>
<td>€ 650,00</td>
</tr>
<tr>
<td>IB 25 pro, Stainless steel bath, 20 l</td>
<td>722 × 365 × 185</td>
<td>674 × 317 × 98</td>
<td>€ 790,00</td>
</tr>
</tbody>
</table>

Information: eco - water, +100 °C | pro - water, oil, +200 °C

Suitable for the following sizes |

<table>
<thead>
<tr>
<th>Bridge BS.ICC,</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>€ 120,00</td>
</tr>
<tr>
<td>Bridge BL.ICC,</td>
<td>€ 125,00</td>
</tr>
<tr>
<td>M, L</td>
<td>€ 150,00</td>
</tr>
<tr>
<td>Cover CS.ICC,</td>
<td>€ 150,00</td>
</tr>
<tr>
<td>M</td>
<td>€ 170,00</td>
</tr>
<tr>
<td>Cover CM.ICC,</td>
<td>€ 123,00</td>
</tr>
<tr>
<td>L</td>
<td>€ 123,00</td>
</tr>
<tr>
<td>Cover CL.ICC,</td>
<td>€ 164,00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bridge BS.IC,</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>M, L</td>
<td>€ 123,00</td>
</tr>
<tr>
<td>Cover CM.IC,</td>
<td>€ 123,00</td>
</tr>
<tr>
<td>M</td>
<td>€ 164,00</td>
</tr>
</tbody>
</table>

Ident. No. 0020003666 | € 105,00

Floating globes, PP
- out of Polypropylene
- for covering open water baths
- only for water
- ø 20 mm
- 500 pcs.
## Accessories

### Immersion racks

<table>
<thead>
<tr>
<th>IMMERSION RACKS</th>
<th><a href="#">Comparison</a></th>
<th># Tubes (mm)</th>
<th>Depth (mm)</th>
<th>Immersion depth (mm)</th>
<th>Number of tubes</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube rack, 13 mm, stainless&lt;br&gt;(Ident. No. 0020004026)</td>
<td>13</td>
<td>100</td>
<td>70</td>
<td>57</td>
<td>57</td>
<td>€ 80,00</td>
</tr>
<tr>
<td>Tube rack, 17 mm, stainless&lt;br&gt;(Ident. No. 0020004027)</td>
<td>17</td>
<td>100</td>
<td>100</td>
<td>37</td>
<td>37</td>
<td>€ 80,00</td>
</tr>
<tr>
<td>Tube rack, 22 mm, stainless&lt;br&gt;(Ident. No. 0020004028)</td>
<td>22</td>
<td>100</td>
<td>50</td>
<td>22</td>
<td>22</td>
<td>€ 80,00</td>
</tr>
</tbody>
</table>

| Tube rack, 13 mm, stainless<br>(Ident. No. 0020004029) | 13 | 100 | 70 | 73 | 73 | € 135,00 |
| Tube rack, 17 mm, stainless<br>(Ident. No. 0020004030) | 17 | 100 | 100 | 47 | 47 | € 135,00 |
| Tube rack, 22 mm, stainless<br>(Ident. No. 0020004031) | 22 | 100 | 50 | 30 | 30 | € 135,00 |

| Variable rack for bath sizes M/L | Number of racks with ICC: 1/2 | Number of racks with IC: 1 (only L) | | | | |
| Variable rack, ICC, M, stainless<br>(Ident. No. 0020004032) | 132 | – | – | – | – | € 179,00 |
| Inlay 1, variable rack, ICC, 2 pcs.<br>(Ident. No. 0020004033) | – | – | – | – | – | € 55,00 |
| Inlay 2, variable rack, ICC, 2 pcs.<br>(Ident. No. 0020004034) | – | – | – | – | – | € 55,00 |
| Inlay 3, variable rack, ICC, 2 pcs.<br>(Ident. No. 0020004035) | – | – | – | – | – | € 55,00 |

| Bottom plates size L | Number of racks with ICC: 1 (except for bottom plate L: G) | Number of racks with IC: with variable bottom: 1; else: 0 | | | | |
| Variable bottom, ICC, stainless<br>(Ident. No. 0020004016) | 240 | 0 – 115 | – | – | – | € 385,00 |
| Bottom plate L<br>(Ident. No. 0020004012) | 460 | 50 – 110 | – | – | – | € 420,00 |
| Bottom plate L ICC<br>(Ident. No. 0020004013) | – | – | – | – | – | € 350,00 |

* in 15 mm increments

---

## Floating racks

### Floating racks

<table>
<thead>
<tr>
<th>FLOATING RACKS</th>
<th><a href="#">Comparison</a></th>
<th>Suitable vessels</th>
<th>Max. number of samples</th>
<th>Unit of measure</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floating tube rack 1&lt;br&gt;(Ident. No. 0020004027)</td>
<td>50/2.0 ml</td>
<td>24</td>
<td>pcs.</td>
<td>–</td>
<td>€ 31,00</td>
</tr>
<tr>
<td>Floating tube rack 2&lt;br&gt;(Ident. No. 0020004068)</td>
<td>15 ml</td>
<td>8</td>
<td>pcs.</td>
<td>–</td>
<td>€ 31,00</td>
</tr>
<tr>
<td>Floating tube rack 3&lt;br&gt;(Ident. No. 0020004069)</td>
<td>50 ml</td>
<td>4</td>
<td>pcs.</td>
<td>–</td>
<td>€ 31,00</td>
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</table>

## Fixing clips

<table>
<thead>
<tr>
<th>FIXING CLIPS</th>
<th><a href="#">Comparison</a></th>
<th>Suitable sample vessels</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS 2.1 Fixing clips&lt;br&gt;(Ident. No. 0001234300)</td>
<td>25 ml</td>
<td>–</td>
<td>€ 22,50</td>
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<tr>
<td>AS 2.2 Fixing clips&lt;br&gt;(Ident. No. 0001234400)</td>
<td>50 ml</td>
<td>–</td>
<td>€ 22,50</td>
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<tr>
<td>AS 2.3 Fixing clips&lt;br&gt;(Ident. No. 0001234500)</td>
<td>100 ml</td>
<td>–</td>
<td>€ 22,50</td>
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<tr>
<td>AS 2.4 Fixing clips&lt;br&gt;(Ident. No. 0001234600)</td>
<td>250/250 ml</td>
<td>–</td>
<td>€ 44,00</td>
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<tr>
<td>AS 2.5 Fixing clips&lt;br&gt;(Ident. No. 0001234700)</td>
<td>500 ml</td>
<td>–</td>
<td>€ 44,00</td>
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## Temperature control products

Temperature control products

---

**Tube rack**<br>13 mm, 5, stainless<br><br>**Variable rack ICC**<br>M/L, stainless in combination with inlay 1<br><br>**Variable bottom ICC**<br>L, stainless<br><br>**Bottom plate L**
# Temperature Control Fluids

### Accessories

/// Bath fluids

---

**UF. Si. N20.150.20 LV**

- **Bath fluid type**: Heating fluid (HF)
- **Chemical basis**: Silicon (Si)
- **Bath fluid type**: Universal fluid (UF)
- **Viscosity**: Minimum/maximum temperature
- **Additional information**: Low viscosity (LV), Contains additives (A)

### Comparison

- **UF. Si. N20.150.20 LV**
  - Minimum temperature: -30°C
  - Maximum temperature: 150°C
  - Viscosity: 10 mm²/s
  - Color: Clear
  - Quantity: 9 kg
  - Price: €450.00

- **HF. Si. 20.200.50**
  - Minimum temperature: 20°C
  - Maximum temperature: 200°C
  - Viscosity: 50 mm²/s
  - Color: Clear
  - Quantity: 10 kg
  - Price: €430.00

- **HF. Si. 20.250.50A**
  - Minimum temperature: 20°C
  - Maximum temperature: 250°C (only in enclosed baths)
  - Viscosity: 50 mm²/s
  - Color: Reddish-translucent
  - Quantity: 10 kg
  - Price: €480.00

### Technical Data

<table>
<thead>
<tr>
<th>Temperature [°C]</th>
<th>Viscosity [mm²/s]</th>
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</thead>
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<tr>
<td>60</td>
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<tr>
<td>50</td>
<td>60</td>
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<tr>
<td>40</td>
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<td>30</td>
<td>60</td>
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<tr>
<td>20</td>
<td>60</td>
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<tr>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>-30</td>
<td>60</td>
</tr>
</tbody>
</table>

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| **UF. Si. N20.150.10 LV**
  - Temperature: -30°C
  - Maximum temperature: 150°C
  - Viscosity: 10 mm²/s
  - Color: Clear
  - Quantity: 9 kg
  - Price: €450.00

| **HF. Si. 20.200.50**
  - Temperature: 20°C
  - Maximum temperature: 200°C
  - Viscosity: 50 mm²/s
  - Color: Clear
  - Quantity: 10 kg
  - Price: €430.00

| **HF. Si. 20.250.50A**
  - Temperature: 20°C
  - Maximum temperature: 250°C (only in enclosed baths)
  - Viscosity: 50 mm²/s
  - Color: Reddish-translucent
  - Quantity: 10 kg
  - Price: €480.00

---

* +250°C only in enclosed baths (HBC), otherwise +200°C
** +250°C only for a short time in enclosed baths
*** +130°C in open baths

---

*Low viscosity (LV)*

*Contains additives (A)*
### Accessories

/// Temperature control hoses

#### TECHNICAL DATA

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<td>0004569100</td>
<td>0020004612</td>
<td>0020004613</td>
<td>0004569200</td>
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<tr>
<td>Units of measure</td>
<td>2</td>
<td>2</td>
<td>1.5 m</td>
<td>1.5 m</td>
<td>3 incl.</td>
<td>2 hose clamps</td>
<td>4 hose clamps</td>
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<tr>
<td>Length</td>
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<td>12</td>
<td>8</td>
<td>12</td>
<td>8</td>
<td>12</td>
<td>8</td>
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<td>Material</td>
<td>PVC</td>
<td>Silicon</td>
<td>Silicone reinforced</td>
<td>Silicone reinforced</td>
<td>PUR clear</td>
<td>PUR clear</td>
<td>Viton (FKM/FPM)</td>
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<tr>
<td>Ø internal [mm]</td>
<td>8</td>
<td>12</td>
<td>8</td>
<td>12</td>
<td>8</td>
<td>12</td>
<td>10</td>
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<tr>
<td>Ø external [mm]</td>
<td>12</td>
<td>16</td>
<td>12</td>
<td>16</td>
<td>12</td>
<td>16</td>
<td>45</td>
</tr>
<tr>
<td>Connection</td>
<td>Hose barb fitting</td>
<td>Hose barb fitting</td>
<td>Hose barb fitting</td>
<td>Hose barb fitting</td>
<td>Hose barb fitting</td>
<td>Hose barb fitting</td>
<td>Hose barb fitting</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-20 °C to + 180 °C</td>
<td>-30 °C to + 90 °C</td>
<td>-30 °C to + 180 °C</td>
<td>-30 °C to + 90 °C</td>
<td>-30 °C to + 180 °C</td>
<td>-30 °C to + 180 °C</td>
<td>-30 °C to + 260 °C</td>
</tr>
<tr>
<td>Max. operating pressure (+ 20 °C)</td>
<td>8 bar</td>
<td>3 bar</td>
<td>6 bar</td>
<td>3 bar</td>
<td>6 bar</td>
<td>1 bar</td>
<td>6 bar</td>
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<tr>
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<td>Black additional</td>
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<tr>
<td>Price</td>
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<td>€ 36.00</td>
<td>€ 55.00</td>
<td>€ 68.00</td>
<td>€ 280.00</td>
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</tbody>
</table>

#### ISO.8

- Hose insulation for DN 8 hoses
- 1.5 m
- 2 pcs.

**Ident. No.** 0004569400

**Price** € 25.00

#### ISO.12

- Hose insulation for DN 12 hoses
- 1.5 m
- 2 pcs.

**Ident. No.** 0004569500

**Price** € 32.00

---

**Resistance**

- Water: very good resistance at + 80 °C
- Silicone oil: resistant
- Ethylene glycol: do not operate at > 30 °C
- Diesel oil: do not operate at > 30 °C
Accessories

/// Temperature control instruments

### SOLENOID VALVES

<table>
<thead>
<tr>
<th>Description</th>
<th>Connection</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV 1</td>
<td>Solenoid valve for cooling water regulation, 0°C to +90°C, max. 10 bar 2 hoseolen DN8 included</td>
<td>€ 380.00</td>
</tr>
<tr>
<td>CO V 1</td>
<td>Shut-off valve for external tempering, -80°C to -180°C, max. 3 bar</td>
<td>€ 500.00</td>
</tr>
<tr>
<td>Ball valve M 16 x 1</td>
<td>Manually operated ball valve</td>
<td>€ 80.00</td>
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### FURTHER ACCESSORIES

<table>
<thead>
<tr>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>PCS ICC</td>
<td>Pump connection set for ICC € 140.00</td>
</tr>
<tr>
<td>PT 150.30</td>
<td>Temperature probe, stainless steel, 250 mm € 205.00</td>
</tr>
<tr>
<td>PT 150 extensio (Lemo)</td>
<td>Extension cable PT 100, lemo connector, 3 m € 175.00</td>
</tr>
<tr>
<td>WH 10</td>
<td>WiCo (wireless controller) wall mount € 20.00</td>
</tr>
<tr>
<td>PT 1</td>
<td>RS 232 cable, 3 m (10 ft) € 33.50</td>
</tr>
<tr>
<td>Labworldsoft 6 Pro</td>
<td>Laboratory software € 167.00</td>
</tr>
<tr>
<td>Labworldsoft 6 Starter</td>
<td>Laboratory software € 617.00</td>
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### HOSE BARB FITTINGS AND ADAPTERS

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit of measure</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barb fitting for DN 6 hoses</td>
<td>Barb fitting adapter for DN 6 hoses</td>
<td>2 € 26.00</td>
</tr>
<tr>
<td>Barb fitting for DN 8 hoses</td>
<td>Barb fitting adapter for DN 8 hoses</td>
<td>2 € 26.00</td>
</tr>
<tr>
<td>Barb fitting for DN 10 hoses</td>
<td>Barb fitting adapter for DN 10 hose</td>
<td>2 € 26.00</td>
</tr>
<tr>
<td>Barb fitting for DN 12 hoses</td>
<td>Barb fitting adapter for DN 12 hose</td>
<td>2 € 26.00</td>
</tr>
<tr>
<td>Adapter NPT 1/4</td>
<td>Adapter M 16 x 1 to NPT 1/4 (male)</td>
<td>2 € 40.00</td>
</tr>
<tr>
<td>Adapter NPT 1/2</td>
<td>Adapter M 16 x 1 to NPT 1/2 (male)</td>
<td>2 € 125.00</td>
</tr>
<tr>
<td>Adapter NPT 3/4</td>
<td>Adapter M 16 x 1 to NPT 3/4</td>
<td>2 € 150.00</td>
</tr>
<tr>
<td>Lock nut M 16 x 1</td>
<td>Lock nut M 16 x 1</td>
<td>2 € 30.00</td>
</tr>
<tr>
<td>Stopper</td>
<td>Stopper</td>
<td>2 € 30.00</td>
</tr>
<tr>
<td>Elbow tube 90°</td>
<td>90° tube adapter, e.g. used for connecting hoses without creating a bend</td>
<td>1 € 74.00</td>
</tr>
</tbody>
</table>

### Mechanic Fluid level controller

- Fluid level monitor for operating heating bath circulation or coolers on open baths.
ICC Packages
/// Heating bath circulators and combined heating bath circulators

ECO BATHS MADE OF PLASTIC CAN BE USED AT TEMPERATURES OF UP TO + 100 °C (H2O ONLY). PRO BATHS MADE OF STAINLESS STEEL CAN BE USED AT TEMPERATURES OF UP TO +200 °C.

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Bath size</th>
<th>Dimensions (W × D × H)*</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICC basic eco 8</td>
<td>total: 320 × 335 × 349 mm</td>
<td>€ 1,299,00</td>
</tr>
<tr>
<td>ICC control eco 8</td>
<td>bath-opening: 186 × 165 mm* max. bath opening: 227 × 110 mm**</td>
<td>€ 1,899,00</td>
</tr>
<tr>
<td>ICC basic pro 9</td>
<td>total: 374 × 377 × 388 mm</td>
<td>€ 1,439,00</td>
</tr>
<tr>
<td>ICC control pro 9</td>
<td>bath-opening: 195 × 160 mm* max. bath opening: 230 × 121 mm**</td>
<td>€ 1,999,00</td>
</tr>
<tr>
<td>ICC basic eco 18</td>
<td>total: 338 × 584 × 349 mm</td>
<td>€ 1,449,00</td>
</tr>
<tr>
<td>ICC control eco 18</td>
<td>bath-opening: 245 × 305 mm* max. bath opening: 286 × 325 mm**</td>
<td>€ 2,029,00</td>
</tr>
<tr>
<td>ICC basic pro 20</td>
<td>total: 354 × 641 × 388 mm</td>
<td>€ 1,599,00</td>
</tr>
<tr>
<td>ICC control pro 20</td>
<td>bath-opening: 255 × 309 mm* max. bath opening: 292 × 325 mm**</td>
<td>€ 2,019,00</td>
</tr>
</tbody>
</table>

**ICCC Package 2** - Combined heating bath circulators | includes ICC basic/control head, bath bridge, bath vessel, cover, cooling coil, pump connection set, PT 100 temperature probe (control version only)

<table>
<thead>
<tr>
<th>Bath size</th>
<th>Dimensions (W × D × H)*</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICC basic eco 8 c</td>
<td>total: 320 × 335 × 349 mm</td>
<td>€ 1,699,00</td>
</tr>
<tr>
<td>ICC control eco 8 c</td>
<td>bath-opening: 186 × 165 mm* max. bath opening: 227 × 110 mm**</td>
<td>€ 2,499,00</td>
</tr>
<tr>
<td>ICC basic pro 9 c</td>
<td>total: 374 × 377 × 388 mm</td>
<td>€ 1,799,00</td>
</tr>
<tr>
<td>ICC control pro 9 c</td>
<td>bath-opening: 195 × 160 mm* max. bath opening: 230 × 121 mm**</td>
<td>€ 2,649,00</td>
</tr>
<tr>
<td>ICC basic eco 18 c</td>
<td>total: 338 × 584 × 349 mm</td>
<td>€ 1,859,00</td>
</tr>
<tr>
<td>ICC control eco 18 c</td>
<td>bath-opening: 245 × 305 mm* max. bath opening: 286 × 325 mm**</td>
<td>€ 2,749,00</td>
</tr>
<tr>
<td>ICC basic pro 20 c</td>
<td>total: 354 × 641 × 388 mm</td>
<td>€ 2,849,00</td>
</tr>
<tr>
<td>ICC control pro 20 c</td>
<td>bath-opening: 255 × 309 mm* max. bath opening: 292 × 325 mm**</td>
<td>€ 2,849,00</td>
</tr>
</tbody>
</table>

* Prices valid until further notice.

**TECHNICAL DATA**

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</tr>
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<td>total: 374 × 377 × 388 mm</td>
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<tr>
<td>ICC control pro 9</td>
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<tr>
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<td>ICC control eco 18</td>
<td>bath-opening: 245 × 305 mm* max. bath opening: 286 × 325 mm**</td>
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<tr>
<td>ICC basic pro 20</td>
<td>total: 354 × 641 × 388 mm</td>
<td>€ 1,599,00</td>
</tr>
<tr>
<td>ICC control pro 20</td>
<td>bath-opening: 255 × 309 mm* max. bath opening: 292 × 325 mm**</td>
<td>€ 2,019,00</td>
</tr>
</tbody>
</table>

* Dimensions to set plate at the bottom of bath.
** Immersion depth for all baths with ICC basic or control head.

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67
### IC Packages

/// Combined heating bath circulators

<table>
<thead>
<tr>
<th>Bath size</th>
<th>Dimensions (W × D × H)</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC basic pro 12 c</td>
<td>total: 354 × 359 mm</td>
<td>€ 3.349,00</td>
</tr>
<tr>
<td>Ident. No: 0000000000</td>
<td>bath-opening: 255 × 80 mm*</td>
<td></td>
</tr>
<tr>
<td>IC control pro 12 c</td>
<td>total: 354 × 359 mm</td>
<td>€ 3.949,00</td>
</tr>
<tr>
<td>Ident. No: 0000000000</td>
<td>bath-opening: 255 × 80 mm*</td>
<td></td>
</tr>
</tbody>
</table>

Immersion depth for all baths with IC: 95 mm to 135 mm.

**Maximum bath opening dimension at the upper edge of the bath.**

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### ICC RO 15 Package

- ICC basic/control head
- Magnetic stirrer RO 15
- Bath vessel IB RO 15 eco
- Bath bridge BL ICC
- Cover
- PT 100 temperature probe
- Cooling coil**

**Includes: ICC circulator, bath bridge BL ICC, bath vessel IB R RO 15 eco, multiposition magnetic stirrer RO 15.

**Already included in scope of delivery for ICC control device.

<table>
<thead>
<tr>
<th>Bath size</th>
<th>Dimensions (W × D × H)</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICC RO 15 Package</td>
<td>total: 365 × 722 × 388 mm</td>
<td>€ 3.399,00</td>
</tr>
<tr>
<td>Ident. No: 0010002471</td>
<td>bath opening: 317 × 492 mm</td>
<td></td>
</tr>
<tr>
<td>ICC control RO 15</td>
<td>total: 354 × 359 mm</td>
<td>€ 3.999,00</td>
</tr>
<tr>
<td>Ident. No: 0010002474</td>
<td>bath-opening: 255 × 80 mm*</td>
<td></td>
</tr>
</tbody>
</table>

---

* Dimensions to set plate at the bottom of bath.

---

Temperature control products

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Temperature control products
labworldsoft® software
/// Advanced software with an innovative visual approach to lab automation

IKA's software labworldsoft® enables the networking of up to 64 laboratory devices which can be controlled simultaneously via one PC. Not only IKA products, but also other manufacturers laboratory devices can be integrated using labworldsoft®.

This makes the automation of your laboratory experiments and processes much more easy and efficient.

---

Calibration and adjustment
/// Two-point or three-point calibration

The internal (and external, if used) temperature sensor can be adjusted via either a two-point or three-point calibration process. On request, calibration can also be performed in the plant by the IKA service team or by an external, ISO- and DAkkS certified service provider.

If you would like to request this service, please contact our service department by telephone at 00 8000 4524357 (00 8000 IKAHELP) or by email service@ika.de.

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/// Direct contacts in your region

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