

# IKA®

## Simple but ingenious

### C 2000 basic / control



Reg.Nr. 4343-01



## **IKA® Calorimetersystem C 2000 basic / control**

The **C 2000** basic / control calorimeter is the latest system from IKA® for determining gross calorific values of liquids and solid fuels.

During the development of this calorimeter, great importance was placed on user-friendliness and on simple and fast maintenance.

A higher level of automation with extremely simple handling characterizes this device. In addition to the isoperibolic measurement procedure, a dynamic (reduced-time) working method is also available for the user. Different working temperatures can be selected for both procedures based on the conditions of the experiment.

Both the device technology and the measurement procedure are approved by DIN 51900, ASTM 240D, ISO 1928 and BSI.

In combination with special halogen-resistant decomposition vessels of the C 5012 series, quantitative decompositions can be performed in parallel to the analysis of gross calorific value to determine halogen and sulfur content.

To provide a supply of cooling water, the **C 2000** calorimeter is connected with a standard commercially available thermostat or with an appropriate permanently installed water connection.

The **C 2000 basic** is equipped with a very convenient operating panel through which operation of the device takes place. The graphical display with active back lighting displays the appropriate status messages. The temporal course of a measurement that has been started and all current parameters of the weighed in sample can be constantly monitored and are arranged to be clearly visible.

The **C 2000 control** variant is delivered from the factory already complete with the well-known and proven **C 5040 Calwin** calorimeter software. Control of the system takes place via a PC or Notebook that is connected with the C 2000 calorimeter via a serial interface. The required interface cable is included with delivery (PC or notebook are not included in the delivery package).

Library functions and various correction modes make it possible to call up measurements that have already been performed at any time and to edit post-experiment parameters. The **C 2000** basic / control calorimeter is equipped with a separate service menu that allows for fast access to individual maintenance functions and testing of basic system data.

Connections for analysis scale, printer, sample rack for identifying and managing samples are already integrated into the basic device.

The network connection and the special configuration for data exchange can be implemented at any time with LIMS.

## *The individual functions:*

- Device approval according to DIN 51900, ASTM 240D, ISO 1928, BSI etc.
- Compact, integrated modular design
- Working method: isoperibolic, dynamic
- Working temperature 25 °C or 30 °C (adjustable)
- Automatic filling of decomposition vessel with oxygen
- Cooling water supply via water supply line / thermostat (thermostat see accessories)
- Interfaces for scale and printer
- Interfaces for PC keyboard and monitor
- Interface for connecting the C 5020 sample rack (sample management system)
- User-friendly and menu-driven software
- Special decomposition vessel for halogen and sulfur analysis is available
- Can be controlled via Calwin for Windows calorimeter software (accessory for Basic version and C 2000 extended device)
- If a multiple interface card is used, as many as eight measuring cells can be controlled by a single PC (Multical).

**System description IKA® C 2000 basic.....**

Description	ID No
<b>IKA® C 2000 basic calorimeter system Version 1</b>	<b>88 018 00</b> 230 V / 50 Hz
For determining gross calorific value of liquid and solid fuel samples.	<b>88 018 01</b> 100-115 V / 60 Hz

The following items are included with delivery:

- ❶ **C 2000 measuring cell with control / evaluation unit  
(with operating console)**
- ❷ **C 5010 Decomposition vessel, standard**

Consumables for installation and calibration are also included with delivery.

Recommended temperature control unit: **Cooling water supply KV 500 digital**  
(see accessories)

Description	Ident Nr.
<b>IKA® C 2000 basic calorimeter system Version 2</b>	<b>88 019 00</b> 230 V / 50 Hz
For determining gross calorific value of liquid and solid fuel samples.	<b>88 019 01</b> 100-115 V / 60 Hz

The following items are included with delivery:

- ❶ **C 2000 measuring cell with control / evaluation unit  
(with operating console)**
- ❷ **C 5012 Decomposition vessel, halogene resistant**

Consumables for installation and calibration are also included with delivery.

Recommended temperature control unit: **Cooling water supply KV 500 digital**  
(see accessories)

IKA® C 2000 basic...

... the perfect introduction

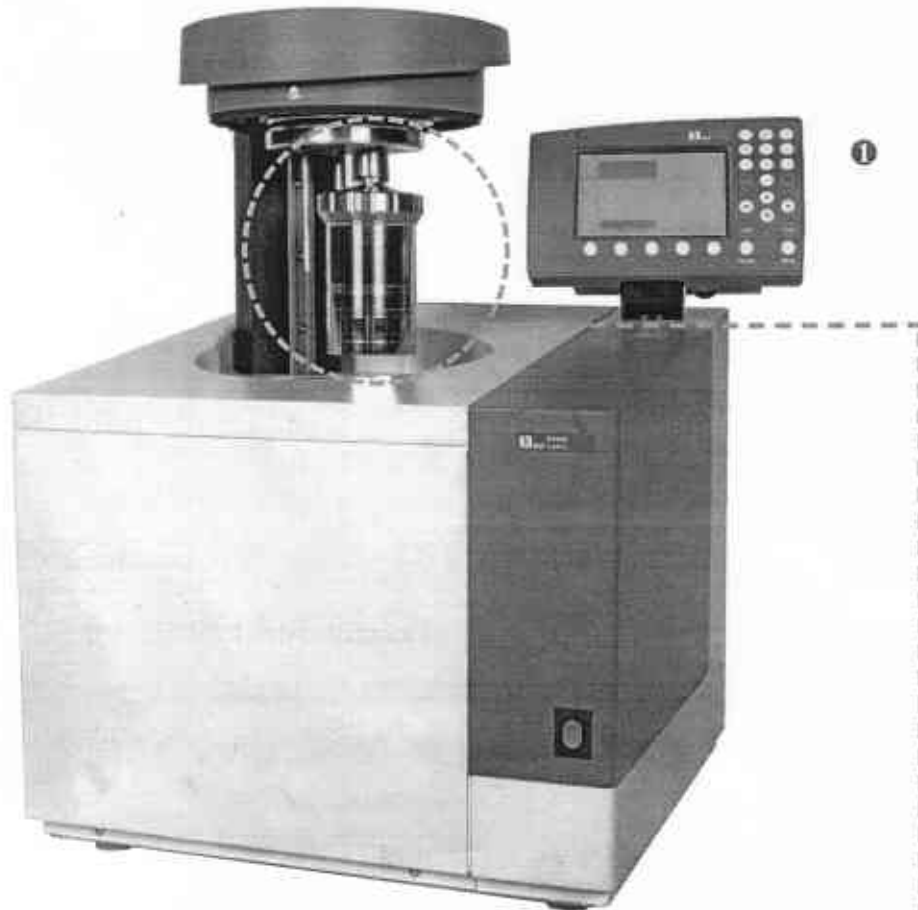


Fig. 1: IKA® Calorimeter C 2000 basic



Fig. 2: C 5010 / C 5012 IKA® Decomposition vessel (see accessories)

## Technical data for the C 2000 *basic / control* :

Measurement voltage:	115 / 230 V
<b>Measurement frequency</b>	<b>60 / 50 Hz</b>
Power consumption	1.8 kW
<b>Device fuses:</b>	<b>2 x 6.25 AT; 230 V</b>
	2 x 15 AT; 115 V
<b>Duty cycle</b>	<b>Continuous operation</b>
<b>Protection class</b>	<b>1 (protective grounding)</b>
Contamination level	II
Ambient temperature	20 - 25 °C (constant)
<b>Ambient relative humidity</b>	<b>80 %</b>
Usage above sea level	2000 meters above sea level
<b>Dimensions</b>	<b>440 x 450 x 500 (WxDxH)</b>
Weight	30 kg
<b>Measurement range</b>	<b>40,000 J</b>
Measuring mode:	Isoperibolic 25°C
	Isoperibolic 30°C
	Dynamic 25°C
	Dynamic 30°C
Isoperibolic measuring time	About 22 min
Dynamic measuring time	About 7 min
Oxygen operating pressure	30 bar
Oxygen test pressure	40 bar
Cooling medium	Water via line
Flowthrough quantity	60 + 10 liters / hour
Water operating pressure:	
Operation with KV 500	0.3 bar
Operation on the water faucet / C 25 pressure reducer	1 – 1.5 bar max.
Water test pressure	10 bar
Interfaces:	2 x serial (RS232)
	1 x parallel (Centronics)
	1 x keyboard (DIN socket)
	1 x sample rack
	1 x external monitor
Connection for external monitor:	
Image frequency	115.74 Hz
<b>Line frequency</b>	<b>33.333 KHz</b>

## Accessories

### IKA® C 2000 basic / control

Description	Part No.
• KV 500 Cooling water supply	31 431 00
• C 25 pressure regulation valve essential by coding with water pipe and a waterpressure higher then 1.5 bar	31 972 00
• C 5010 Decomposition vessel, standard	71 140 00
• C 5012 Decomposition vessel, halogen resistant	72 150 00
• C 5010.4 Crucible pan for combustible crucible	30 169 00
• C 5010.5 Crucible pan, big	30 559 00
• C 5020 Sample rack	71 450 00
• C 5030 Venting station	71 980 00
• C 5040 Calwin, PC-Software for calorimeters	30 450 00
• C 5041 Calwin <i>plus</i> , PC-Software for calorimeters	31 660 00
Consisting of :     Software C 5040 PC board, internal Interface box ( 8-way )	
• C 5041.10 Connection cable Calorimeter – PC	30 380 00
• C 21 Pelleting press	16 053 00
• C 29 Reduction valve	07 502 00

Standard lenght for connection cable 2m.  
Special length (5m and 10m) are available on request.

## Consumables

### IKA® C 2000 *basic / control*

Description	Part No.
• C 5003.1 Aqua Pro, Stabilizing agent	72 077 00
• C 710.4 Cotton thread, cut to length	14 837 00
• C 5010.3 Ignition wire, replacement ( 5 pcs )	71 228 00
• C 5012.3 Ignition wire, Platinum ( 2 pcs )	29 949 00
• C 4 Quarz dishes	16 955 00
• C 5 Set of VA-Combustion crucibles ( 25 pcs )	17 495 00
• C 6 Quarz dish, big	03 551 00
• C 710.2 VA-Combustion crucible, big	17 495 00
• C 9 Gelatine capsules ( 100 pcs )	07 499 00
• C 10 Acetobutyrate capsules ( 100 pcs )	07 500 00
• C 12 Combustion bags 40 x 35 mm ( 100 Stck )	22 014 00
• C 12 A Combustion bags 70 x 40 mm ( 100 Stck )	22 015 00
• C 14 Combustible crucible ( 100 pcs )	72 245 00
• C 15 Paraffin strips ( 600 pcs )	31 311 00
• C 723 Benzoic acid , pelleted in blister packaging ( 50 Stck à 0,5g )	32 430 00
• C 43 Benzoic acid ( NBS 39 j , 30 gr. )	07 506 00
• C 43 A Benzoic acid, powder, 100 gr. )	07 507 00
• AOD 1.11 Control standard, f. Sulphur / Chlorine ( 50 mL )	30 440 00
• AOD 1.12 Control standard, f. Fluorine / Bromine ( 50 mL )	30 802 00

## Introduction / Training

- Training at the user's site on request.

We reserve the right to make technical changes.  
Delivery information is not binding.