



Cole-Parmer®

IKA® C 5000 AUTOMATED BOMB CALORIMETER

ADIABATIC, ISOPERIBOLIC, AND
DYNAMIC MEASUREMENTS—
ALL IN ONE SYSTEM!



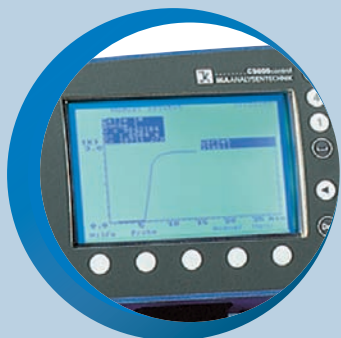
IKA® C 5000 Automated Bomb Calorimeter

Used to measure heat released or absorbed during a process, bomb calorimeters calculate the Gross Calorific Value (GCV) of a solid or liquid. The IKA C 5000 is the only bomb calorimeter to feature three separate GCV determination methods in one instrument: adiabatic, isoperibolic, and dynamic.

Generally, measurements are performed using adiabatic or isoperibolic methods. Adiabatic methods minimize heat loss by keeping the surrounding temperature the same as the sample temperature, making it the most accurate for measuring calorific values of solids or liquids. Isoperibolic methods allow the reaction within the vessel to take place, while the water temperature in the surrounding vessel is held constant. Any temperature differential is compensated for once the reaction is complete. The dynamic mode is a shorter version of the adiabatic and/or isoperibol measuring principles. Results still conform to the required precision of the official standards.

APPLICATIONS

User-friendly software and controls are ideal for GCV determination on solid and liquid fuels.



FEATURES

- Only system in the world to feature three working modes—adiabatic, isoperibolic, and dynamic
- Fully automated system makes it easy to determine the GCV of a solid or liquid
 - o Automated water handling system fills, tempers, and empties inner vessel
 - o Automated gas venting
 - o Automatic calculation of GCV
- Integrated cooling system
- LCD monitor with easy-to-use, intuitive software
- Optional halogen-resistant decomposition vessel for the quantitative determination of samples containing sulfur and halogen
- Validated in accordance with DIN 51900, ASTM D240, ISO 1928, and BSI standards



FULLY AUTOMATED SYSTEM

The IKA C 5000 bomb calorimeter includes CalWin software, allowing the user to program, control, and analyze data. Automated water handling, oxygen filling, degassing, and the identification of decomposition vessels require no monitoring by the end-user. Connect calorimeter to scale, printer, PC, or LIMS software via RS-232 ports. Large internal memory holds up to 1000 separate test methods.

WIDE VARIETY OF APPLICATIONS

Applications include fuels, foods, animal and plant products, and waste disposal. The IKA C 5000 allows you to test just about any product from paraffin to pellets of cellulose. The table below includes a brief overview of samples and their typical GCV.

Sample	State	GCV in Kcal/kg
Stone coal	Solid	7459
Brown coal	Solid	3876
Raw coal	Solid	6671
Sieve coal	Solid	3506
Heavy fuel oil	Liquid	10180
Fuel	Liquid	11023
Coke	Solid	7127
Paraffin	Liquid	11042
Sugar	Solid	3939
Noodles	Solid	5971
Red wine	Liquid	800
Butter	Solid	7762
Cheese	Solid	3146
Chocolate	Solid	5780
Rabbit fodder	Solid	4013
Dried fish	Solid	4872
Fish flour	Solid	4820
Animal flour	Solid	4216
Dispersion paste	Liquid	2806
Plastic fibers	Solid	7416
PVC powder	Solid	4963
Cellulose, pellets	Solid	375

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International customers

Call 847-549-7600 to reach our
International Sales Department
or contact your local dealer.



**FREE TECHNICAL
APPLICATIONS ASSISTANCE!**

IKA C 5000 Calorimeter available through Cole-Parmer in India only.

PERFORMANCE SPECIFICATIONS



Working principles: adiabatic, isoperibolic, and dynamic

Fundamental standards: DIN 51900, ISO 1928, ASTM D240

Temperature measurement: inner vessel

Analysis time

Adiabatic: 12 to 15 minutes
Isoperibolic: 18 to 22 minutes
Dynamic: 6 to 10 minutes

Bomb type: removable

Acceptable bombs: normal (included) and halogen-resistant

Number of allowable tests in memory: 1000

Calibration standard: benzoic acid pellets

Acceptable crucibles: quartz (included) and steel combustion

Measurement range: 375 to 12000 Kcal/Kg

Measurement accuracy: $\pm 0,1\%$

Reproducibility: 0,05% RSD

Temperature resolution: 0,0001°C

Permissible relative humidity: 80%

Permissible ambient temperature: 20 to 25°C

Working temperature: 25°C

Operating oxygen pressure: 30 bar (99,95% pure oxygen)

Maximum water pressure: 9 bar

Water flow rate: 70 to 140 liters/hour

Power input: 1300 W

Power: 230 VAC, 50/60 Hz

Dimensions (W x H x D): 560 x 400 x 380 mm

Catalogue number	Description
MK-50805-00	Complete calorimeter system

What's included:

Calorimeter, cooling system, preloaded CalWin software, measurement cell, decomposition vessel (C 5010), quartz crucible (C 4), aqua pro stabilizing agent, ignition wire, cotton thread, benzoic acid pellets for calibration, and spare O-rings.

Accessories and Replacement Items

Catalogue number	Description
MK-50805-70	Decomposition vessel
MK-50805-72	Halogen-resistant decomposition vessel for samples containing halogen and sulfur
MK-50805-82	Quartz crucible, each
MK-50805-80	Steel combustion crucibles, use a single crucible for up to 25 combustions; pack of 25
MK-50805-74	Aqua pro stabilizing agent, 20 mL
MK-50805-78	Ignition wire, 5 pieces
MK-50805-76	Cotton thread, 500 pieces
MK-50805-84	Benzoic acid pellets (0,5 g per pellet), blister pack of 50