

Heat of Combustion by Calorimeter - Type C 5000 (automatic)

ASTM D 240, ASTM D 1989 (obs.), ASTM D 4809, ASTM D 5468, ISO 1928, DIN 51900-1, DIN 51900-2, DIN 51900-3, JIS K2279

Product group(s): Fuel

User group(s): Diesel, Distillate Fuel, Fuel, Gas Oil, Gasoline, Jet Fuel, Kerosene, Motor Fuel, Power Plant

Scope: The calorimeter system is characterized by an innovative, completely automatic operating and measurement procedure with precise results and a high level of reproducibility. An integrated computer controls the relevant processes and ensures constant test conditions to ensure reliable and precise measurement.

The user can choose between the adiabatic or the isoperibolic method. Both are in compliance with relevant, worldwide standards ASTM D 240, DIN 51 900, ISO 1928 and BSI.

Upon request, an additional time-reduced method is an option.

The controller with LCD display guides the operator additional through the program. The connection of instruments such as printer, external PC, LIMS-system, balance etc. is possible.

The measuring cell is very easy to handle and, together with the controller, the basic comprise calorimeter. A scanner recognizes the code of the vessel to be tested while the sample arm lowers it into the cell. The specific characteristics assigned to each vessel can be loaded into the memory and used for calculating the combustion heat and the calorific value. Standard deviations of <0.1% can be realized up to 40,000 J.

The decomposition vessel is thermo-dynamically optimized in a very lightweight design.

The advantages of this external vessel are in the increased number of tests (by using more than one vessel), the quantitative sample decompositions and their chemical identification.

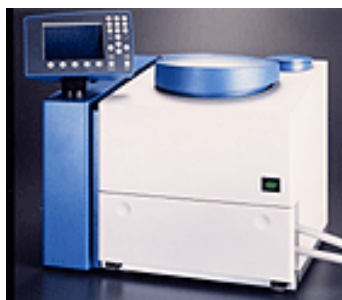
The vessel is automatically filled with oxygen to a pressure of 30 bars, which guarantees constant vessel-conditions and prevents sample displacement. Further, it can be automatically rinsed according to DIN 51 900.

Documentation:
graphic layout of combustion process by LC-display, internal storage of up to 1000 measuring values, optional printing and PC transfer.

Tests per hour:
4 x adiabatic
6 x time-reduced adiabatic
3 x isoperibolic

Sample preparation time:
1 minute per sample

Necessary supply:
water (4 liter), compressed gas (oxygen) and power



Automatic Calorimeter - Type C 5000

Consisting of:
- controller
- measuring cell
- decomposition vessel
- accessory kit

Circulation Cooler to replace tap-water cooling
Temperature Range: + 5 ... + 40°C, 200 W

Automatic Calorimeter - Type C 5000 with dry-cooling system

Consisting of:
same as above, but no external circulation cooler and water connection required

Main Unit

13-1860

Automatic Calorimeter - Type C 5000

ASTM D 240 - ASTM D 3286 - ASTM D 4809 - ASTM D 5468 -
ASTM E 711 - DIN 51 900 pt.1-3 - ISO 1928 - JIS K2279
(former ASTM D 2382, ASTM D 1989)

Power Supply: 230 V, 50/60 Hz

25-1206



Circulation Cooler (+5/+40)

For cooling of instruments without circulation pump (external tempering).
Economical solution for cooling without tap water.

Consisting of:

Cooler with tank and integrated pump.

Note: Insulated hose-set (25-0228) is recommended

Technical Data:

Working range: +5 to +40 °C (at +5 to +40 °C ambient temp.)

Display / Resolution: LED / 0.1°C

Cooling capacity: 250 W at +20 °C

Pump-Pressure capacity: 15 l/min, 0.35 bar (5.1 psi)

Volume: 1.7-2.6 l

Sockets for: hose (Ø 8 / 10 mm)

Dimensions / Weight: 24 x 40 x 52 cm (WxDxH), 27 kg

Power supply: 230 V, 50 Hz, 2 A, EU-plug

13-1862

Automatic Calorimeter - Type C 5000

with dry-cooling system

Power Supply: 230 V, 50/60 Hz

Options & Accessories

13-1870

PC-Software CalWin (Windows®)

to prepare, control, evaluate and manage measurements of

1 calorimeter (also usable with model C 5000), incl. PC connection equipment

13-1871

Pressure Gauge

to reduce the oxygen pressure from the bottle to 30 bar, 3/4 " right thread

13-1864

Decomposition Vessel (standard-type)

not halogen resistant

13-1865

Accessory-Kit

Consisting of:

- Quartz dish, pack of 3
- Ignition wire, cut to length, pack of 5
- Cotton thread, cut to length, pack of 500
- Benzoic acid pellets, pack of 50

13-1866

Aqua-Pro, 30 ml

for water stabilization to avoid algae contamination

Spare Parts

13-1867

Ignition Wire, 5 pieces

for approx. 200 tests

13-1868

Electrodes with deflector

Consisting of:

- 1x ignition probe
- 1x cup holder
- 4x o-ring (Viton)
- 3x hex nuts (M4)

13-1869

O-Ring Gasket Set

Consisting of:

- 2 gasket, 4 x 50
- 5 O-ring, 3.1 x 1.6
- 5 O-ring, 4 x 1.5

13-1608

Combustion Crucible, 38 ml, made of quartz

(not for ASTM D 4809)

13-0618 **Benzoic Acid Pellets, 50 pieces**
0.25 g each with certified calibration value

13-0614 **Cotton Thread, 500 pieces**
cut to approximately 80 mm

Order Guideline

Minimum equipment: 1x 13-1860, 1x 25-0369 or 1x 13-1862
Spares (approx. 1 year): 13-1867, 13-0618, 13-0614
Additional requirements: