



Laboratory Equipment

Materials Testing & Laboratory Equipment



Automatic	test procedure runs automatically
Dry	the operator get not in contact with the water
Reliable	even low energy materials measurable
Precise	reproducibility better than 0.05%
Quick	8 tests per hour can achieved





Application

Calorific or combustion values are used for determining the energy content of solid and liquid fuels.

The MS10A combustion calorimeter is useful for both routine and occasional determinations of calorific values and can be used in the following sectors:

- ✗ energy and fuel industry
- ✗ waste disposal and recycling industry
- ✗ food industry
- ✗ animal feed industry, used for determining energy balances
- ✗ educational institutions.

Measuring Procedure

complies with DIN 51900 and ASTM D240 (method isothermic jacket). The MS10A is easy to handle and gives excellent results even with low energy samples or at small temperature increase.

The inner vessel is built-in and is automatically and reproducibly filled with water and after the test emptied. The measuring process begins automatically right after the combustion vessel has been fitted into the MS10A and operates then completely by itself.

Two valves serve as water inlet and outlet and thus allows automatic water filling by a circulator in a closed loop.

Calculator

for the data and control processing is an integral part of the MS10A. It is programmed to completely calculate the net and gross calorific value along with all necessary calorific corrections to be made (e.g. ignition wire, cotton thread, sulphur, nitrogen etc.)

Up to 99 test results can be stored in memory.



Heat Exchange

The MS10A measures the temperature differences between inner vessel and outer jacket constantly, and the included ADIACALC software corrects the temperature difference. The temperature drift of the corrected values are thus extremely low (<0.0004 K).

Calculations in accordance to Regnault-Pfaundler can also be chosen.

Combustion Vessel

The combustion vessel is made of acid resistant steel. It is newly designed whereby the closure and all valves are placed beneath. The advantage is a faster heat transfer into the surrounding water and a better protection of the sealing rings against fire.

Dynamic Mode

gives in a very short time, of 5 or 8 minutes, test results with sufficient accuracy.

Oxygen Filling Station

allows a comfortable and secure preparation of the combustion vessel. It features adjustable flow rates and allows a quantitative collection of combustion gases.

Water Supply

can be chosen amongst three variations:

- A Manual filling of supply container (Standard Accessory);
- B Automatic supply by thermostat MS 30, connected to tap water;
- C Automatic supply and temperature control through refrigerated circulator F6C35 by closed

Technical Specifications

Volume of combustion vessel	300 ml
Temperature resolution	0.00001 K
Accuracy (benzoic acid)	better than 0.05%
Temperature drift (corrected) within 32 minutes	< 0.0004 K
Measuring range (1 g sample)	50 to 70.000 J
Adjustable measuring time	5, 8, 16, 24, 32 min
Serial port	RS232C
Standard Accessories:	water container with holder, hoses, spare fuse
Calorimeter MS 10A	Dimensions 25 x 32 x 40 cm
	Weight 24 Kg
	Power Consumption 55 VA
Thermostat MS 30	Dimensions 10 x 10 x 22 cm
	Weight 3 Kg
	Power Consumption 1600 VA
Circulator F6C35	Dimension 38 x 46 x 68 cm
	Weight 39 Kg
	Power Consumption 2500 VA

loop.