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SpeedCal

Testing unit for multi-channel pipettes

Do you need to calibrate the accuracy of your multi-channel piston-operated pipettes ...

... as a producer to certify conformity and to satisfy quality control requirements?

... to meet the demands for regular checking of equipment in certified laboratories?

... to meet the guidelines of the General Council for medical laboratories?

... to obtain certification as a repair and calibration service?

... for external inspection by metrology institutes of manufacturers' equipment?

Then you are informed that ...
... accuracy testing has to be carried out gravimetrically according to DIN EN ISO 8655.

... each channel of a pipette with an adjustable volume has to be tested ten times each for the smallest, the medium and the nominal volume.

... this test procedure requires 360 individual values for a 12-channel pipette.

Don't you agree that ...
... this time-consuming procedure should be shortened to save time for more useful activities?

... a new test should maintain or even increase the present level of quality for testing?

Detailed view: pipetting into the weighing tubes

The solution...

is SpeedCal, the testing unit for piston-operated pipettes with up to 12 channels.

With SpeedCal
... the test volumes of water are pipetted simultaneously into up to twelve weighing tubes located next to one other.

... the filled tubes are weighed automatically in parallel with a 12-channel balance.

... a comprehensive test report is generated automatically.

... the time required to test a 12-channel pipette (= 360 individual measurements) is reduced to about 10 minutes (operating time of the test unit and manual pipetting).

... even single-channel pipettes can be tested much faster using the optional LED unit that indicates when the next series of 12 weighing tubes are ready.

... the fast testing of 16 channel pipettes is realized in 2 cycles with 8 channels

ISC

Fraunhofer Institut Silicatforschung

SpeedCal was developed by the renowned Fraunhofer Institute for Silicate Research at the Bronnbach branch and uses the weighing technology provided by Sartorius AG.

This general technical description corresponds to the standard of January 2006. We make constant efforts to improve and adapt the SpeedCal testing units to reflect the latest in state-of-the-art technology. Therefore, the testing unit you receive may slightly differ from this general description.

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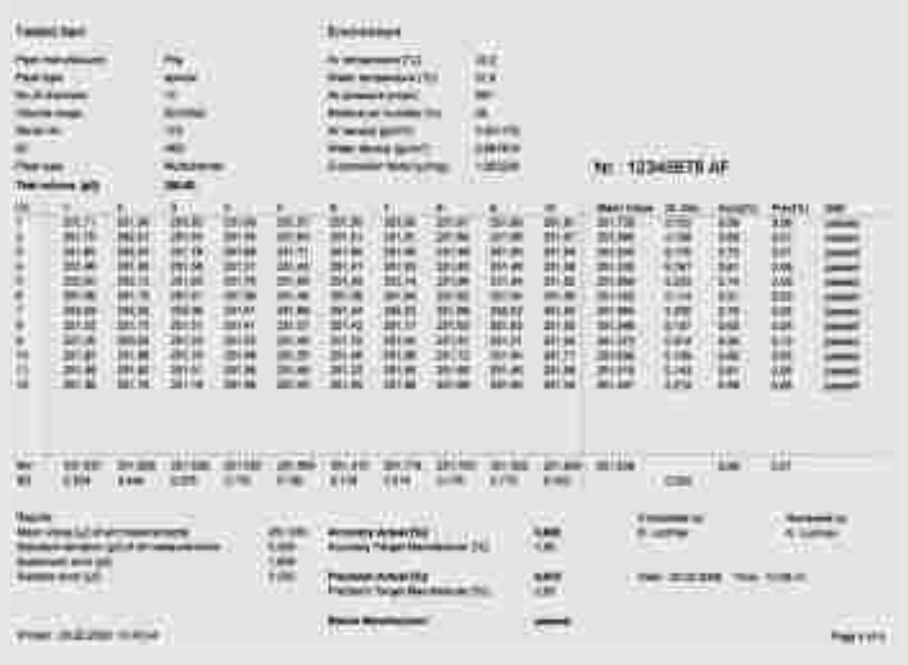
SpeedCal – user benefits at a glance

- The test is performed gravimetrically in compliance with DIN EN ISO 8655.
- The individual channels are tested simultaneously and not in succession.
- The complete testing process takes about 10 minutes for one 12-channel pipette (= 360 individual measurements).
- The measuring process take place automatically, except for pipetting.
- The integrated evaporation trap ensures values of the highest precision.
- The computer records the weight measurements, calculates the pipetted volumes and immediately generates a report containing individual and mean values as well as the standard deviation.
- The weigh cells are tared automatically after the measured values have been recorded.
- The integrated communications port is adjustable to specific customer needs.
- SpeedCal is designed for testing of multi-channel piston-operated pipettes with a nominal volume of 10 µl to 1.2 ml.
- Service is ensured by separate contract.

Patents

- Utility model application registered in Germany.
- European patents.

Example of a test protocol



Technical specifications of SpeedCal

Features	
SpeedCal with rack: (height × width × depth); weight	(1,780 × 846 × 900) mm; 120 kg

Electrical data	
Operating voltage	100–240 V | 50 Hz or 60 Hz
Type of protection	IP 54

Application	
Multi-channel piston-operated pipettes nominal volume: 10 µl – 1.2 ml	Optional: supplementary equipment for single-channel pipettes

Weigh cells	Sartorius type: XX 40-0002
Number	12
Measuring deviation (k=1)	≤ 0.02 mg (in the range of 0–1.2 g | 0 – 1,200 µl)
Resolution	0.01 mg
Tare range	12 g
Repeatability (i.e. standard deviation)	≤ 0.02 mg
Response time (average)	Approx. 10 s
Sensitivity to temperature drift	Between +10°C and 30°C ≤ ± 1 × 10^{-6} ppm/K
Warm-up time	At cold start approx. one hour (it is recommended to keep the unit in the standby mode)

Weighing tubes	Removable; can be disassembled
Spacing and volume	9 mm; volume: 12 ml
Tube drainage	By suction device (no need to remove the tubes)

Compliance with test requirement	According to DIN EN ISO 8655
Testing speed	10 minutes for the complete test of 3 adjusted volumes; i. e. 360 individual values (operating time of the unit, plus manual pipetting)

Requirements on location	Horizontal, even surface and free of mechanical vibrations; clean and free of dust; sources of high electromagnetic interference fields must be avoided
Allowable ambient temperature	Constant; ± 1°C between + 10°C and + 30°C; avoid exposure to drafts and direct sunlight

Recording of measured data	Standard computer (optional: laptop), monitor, printer Program: Delphi Operating system: Windows® XP

CE marking	According to Council Directive 73/23/EEC According to Council Directive 89/336/EEC Optional: According to Council Directive 90/384/EEC

Warranty	12 months

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