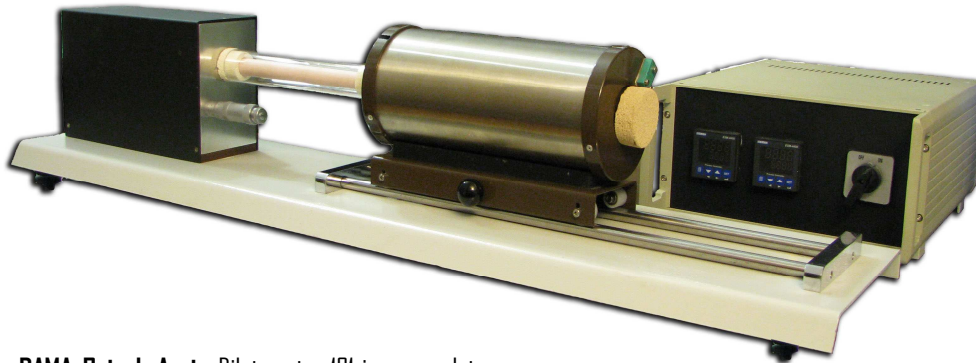


# DILATOMETER

## Horizontal Dil-101

Dilatometry is a technique which measures the dimensional change of a substance as a function of temperature while the substance is subjected to a controlled temperature program. Many international norms such as DIN 51045, ASTM E831, ASTM E228 and ASTM D 3386 describe this technique and the exact procedure in detail.



**DAMA Pajouh Arvin Dilatometer 101** is a complete, compact, easy to use, bench top system comprised of furnace (for variety of temperature range, including sub-ambient); a sample holder system fused silica or high alumina; a control / sample thermocouple; a sample displacement measuring system (probe rod and LVDT sensor); furnace controller data acquisition system (stores temperature and displacement data)

Dil 101 provide a powerful tool for determination of thermal expansion coefficient (CTE).

Further application examples are the evaluation of sintering processes of ceramics, metals, and powder metals, the dimensional changes during chemical reaction (Oxidation) and phase changes of solid materials.

Dilatometer are frequently used for R&D and Quality Control of solids, Liquids, Powder and pastes to determine their:

- Linear thermal expansion ( $\Delta L$ )
- Sinter-Temperature and sinter steps
- Determination of glass transition ( $T_g$ )
- Phase changes
- Optimization of burning processes
- Determination of thermal expansion coefficient
- Volume changes

### Dilatometers are typically used in:

- Glass industry
- Ceramics industry
- Sintering of high tech ceramics
- Aerospace industry
- Metal/Powder industry
- New material research
- Automotive industry
- Polymer industry

### Technical Specification:

- Furnaces: LT Version RT ... 1100°C  
HT Version RT ... 1500°C
- Measuring Range: 5000  $\mu\text{m}$
- Resolution: 30 nm/digit
- Sample Length: 0 ... 50 mm
- Sample Diameter: 1 ... 9 mm
- Sample Holder: Alumina
- Atmospheres: inert gas



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