

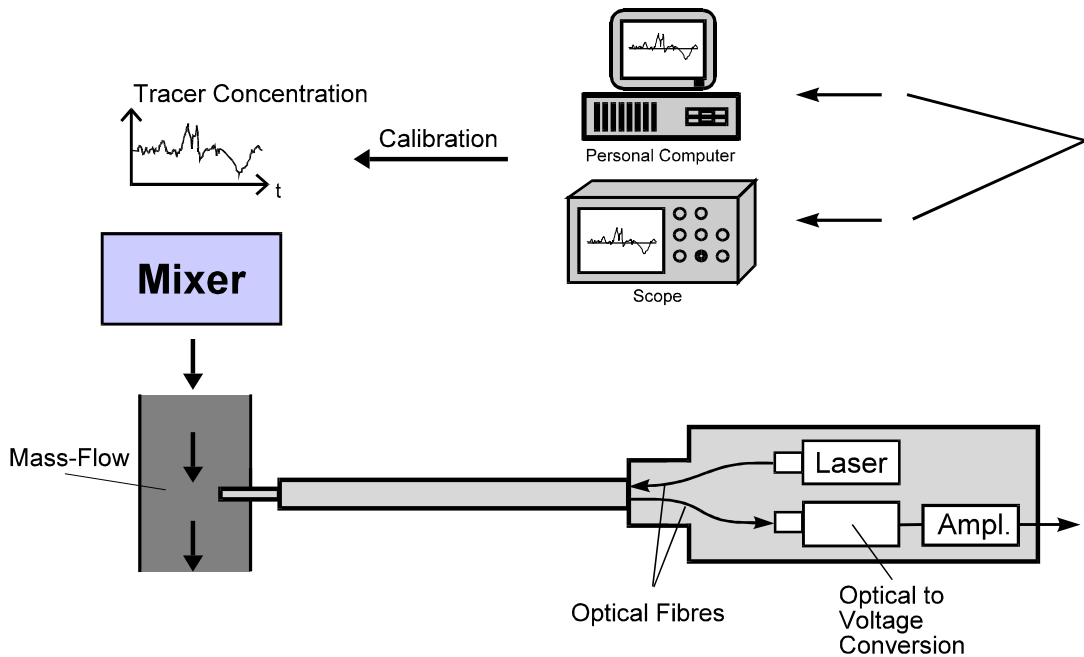
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LABASYS 100-M

Optical Probe for On-Line Tracer Concentration Determination



Measuring Principle

Light guided through an optical fibre illuminates the solids mixture of two optically differential particle fractions passing the probe optics preferentially in mass-flow. The **light quantity backscattered** by the solids depends on the **tracer concentration**. A second optical fibre receives this backscattered light and guides it to a photometer, which converts the light into voltage proportional to the detected light intensity.

For quantitative concentration measurements **calibration** with several sample mixtures covering the concentration range is necessary. Depending on the optical properties of the two solids fractions the wave length of the applied light for optimum results may vary.

Features

'LABASYS 100-M' an instrument for laser backscatter measurements integrates all optical and electronical components in an easy to operate and robust case.

- **In-line** tracer concentration & flow structure determination.
- **modular design** allows an easy change of components such as laser diode, photodiode or probe tip with optics in order to **adapt the instrument optically** for each measuring task.

- specially designed photometer modul ensures **high precision and reliable measurements**.

Suited for **in-line process & quality control!**

Specifications

- **Tracer concentration:** Depending on the optical properties of the solids and the light wave length.
- **Laser:** $\lambda = 650 \text{ nm}$, $P = 3 \text{ mW}$
(standard light source, others upon request)
- **Stability of optical components:**
 $\pm 1.0\% \text{ typ. } \pm 3\% \text{ max } (25 \pm 10 \text{ }^\circ\text{C})$
- **Output Signal:** Voltage 0 - 1 (3) V
- **Sampling Rate:** up to 100 kHz.
- **Probe tip:**
 - parallel or crossed fibres
 - shaft O.D.: 16.0 mm
 - length: 100 - ?? mm (customer specification)
 - material: stainless steel (1.4301)
- **Temperature:** $\leq 110 \text{ }^\circ\text{C}$ (probe tip)

Upon request special models with other geometries, for temperatures up to 400 °C or corrosive media are available.

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