

Product Note N087-12/20

LSM II Liquid Sampling Module



The Liquid Sampling Module LSM II allows the automated sampling and homogenizing (if required) for analyzing raw milk and various liquid milk products with MPA II instrument, e.g. skim, processed, and condensed milk, whey and whey concentrates, cream, milk and whey protein concentrates, milk drinks, premixes and infant formula liquid.

The LSM II is dual use and software controlled. The sample can go either through

- the homogenizer pump and valve, e.g. for raw milk samples, or
- the peristaltic pump, bypassing the homogenizer for other samples.

Specifications:

- Heated low-OH flow cell with 1mm (1,000µm) pathlength
- Minimum sample volume: 25 ml
- Sample temperature: 10 – 40°C, heated to 40°C in flow cell
- Fat globule size after homogenization of raw milk: <= 0.5 µm
- Sample fat content range:
 - Homogenizer 0 – 30%
 - Peristaltic pump 0 – 60%
- Viscosity: all samples suitable for pumping with peristaltic pump
- Additives: inhomogeneous samples with particles up to 0.5 mm can be delivered by peristaltic pump to flow cell. Examples for particles: sugar, fibres etc.
- Cleaning: automated with 0.5% and 2% dilution of HELLMANEX concentrate in purified water

With this system any sample suitable for sipping and pumping can be analyzed, including viscous samples, due to the optimized rotary sample valve. Moreover, the cleaning and the background measurements are completely automated and can be defined for each product individually. In addition, automatic replicate measurements can be performed including the related statistics.

There are two LSM II versions available which are directly attached to the MPA II instrument with at least sample compartment:

- LSMII-H/C: LSM II with homogenizer and peristaltic pump
- LSMII-P/C: LSM II peristaltic pump only

Required accessories:

- IN601D/C: sample compartment with heating block, designed for milk and milk products for rectangular flow cell and an insert for 8mm vials
- 1012558: cleaning concentrate HELLMANEX, 1l PE bottle
- IN415QX-01: rectangular flow cell (HELLMA 170-QX) for transmission measurements, pathlength 1 mm

Spare parts:

- LSMII-H-SBT: basic tubing set for LSM II-H/C
- LSMII-H-STP: tubing set for peristaltic pump part of LSM II-H/C
- LSMII-H-SV: homogenizer valve for LSM II-H/C
- LSMII-P-SBT: basic tubing set for LSM II-P/C
- LSMII-P-STP: tubing set for peristaltic pump (LSM II-P/C)

Optional: LSMII-S: sipper with slits for LSM II