



Human Milk Analyzer

- fat, protein, lactose, energy and dry matter



We make the invisible, visible!

A revolution in modern breast milk handling

- WITHOUT CHEMICAL ADDITIVES
- EASY HANDLING
- SMALL SIZE
- PORTABLE
- ROBUST



A new tool to be used for studies on nutrition for infants

Being able to easily perform direct analysis of breast milk makes it possible to give the infant milk with the right composition when it is needed at most. This can be especially important for pre mature babies. However, there might also be times when it is important to have knowledge about the nutritional value of the breast milk, for instance when the infant weight gain is too low and the milk need to be fortified. MIRIS Human Milk Analyzer gives a unique possibility for direct analysis of the nutritional content of breast milk.

A new instrument for breast milk analysis

With a small sample size of 1-3 ml it is now possible to analyze the composition of breast milk for the content of fat, protein, lactose, energy and dry matter. With the new instrument, MIRIS Human Milk Analyzer, the analyses are done without chemical additives. The analytical result is received within one minute. Features of the instrument are its small size, robustness and easy handling. The instrument is portable and developed to be used at hospitals, milk banks and child welfare centres.

MIRIS Human Milk Analyzer is based on approved IR-technology (infrared transmission spectroscopy) in combination with a new, unique patent pending technique. The accuracy is very high and several components are achieved in one single run. The results are presented on the display of the instrument and can easily be transferred to your PC. The instrument is evaluated for breast milk research at the University Hospital in Lund, Sweden. MIRIS Human Milk Analyzer is CE approved for In vitro diagnostics according to European Commission Directive 98/79/EC.

Features



Consumables

Start kit

Contains syringes, detergents, power cord (and AC/DC converter), USB cable for program updates and file transfer, CD with manual and software for data transfer to computer, quick guide, spare parts to in and outlet filters, robust carrying case.

Maintenance kit

Contains syringes, detergents and spare parts to in and outlet filters.

Options

Online data transfer

RS232 cable for transfer of the results on-line to a PC with a windows based terminal function.

Receipt printer

A portable thermal printer for direct print out of the results.

Battery

A portable, rechargeable battery for mobile use.

Milk preparation unit

MIRIS recommends preparing of frozen and/or deteriorated* milk samples with a milk preparation unit to get optimum results.

*Frozen milk, when thawed, can give aggregation of casein micelles and/or fat separation (oiling-off). This might occur when milk is slow-frozen or long storage time (age gelation). Such milks are inhomogeneous and must be treated with a milk preparation unit (homogeniser); otherwise the repeatability will be bad. This is independent of analytical methods. The aggregation of casein micelles can cause blockage or causing air in the measuring unit, giving wrong results. To reduce these negative effects a rapid freezing is recommended and avoiding repeated freezing and thawing of the milk samples.

TECHNICAL DATA

Dimensions (HxWxB)	98 x 267 x 236 mm
Weight	3000 g
Power supply	9V 3A DC
PC connections	USB for data transfer and program updates. Compatible with Windows XP and ActiveSync. Optional RS232 cable for direct transfer of data to Windows HyperTerminal
Display	TFT screen, 240 x 320 pixels
Environmental temperature	+15 °C (59°F) to +35 °C (95°F)
Sample temperature	+20 °C (68°F) to +40 °C (104°F) ¹
Storage capacity	2000 measurements (time stamped and numbered)
Backup of measurement data	~1 week without power supply attached
Operative system	Windows CE
Measurement performance	Repeatability (SD): < 0.05 % Accuracy (SD): < 0.1 %
Shown value	1 decimal
Time for analysis	60 seconds / measurement
Analytical method	Mid infrared transmission spectroscopy
Standards	CE approved for EMC, LVD and IVD

1) For optimum results preheating of the samples to 40°C (104°F) is recommended.

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Miris develops, produces and markets analytical instruments for analysing fluids