Biomedical Systems

Distributed by

GONOTEC GmbH

AN ELITECHGROUP COMPANY

OSMOMAT® 3000 Series

Freezing Point Osmometer

ELITechGroup

EMPOWERING IVD

AREAS OF APPLICATION

Medical

- Clinical and diagnostic laboratories
- Neonatology and pediatrics
- Intensive care
- Urology and nephrology
- Transfusion medicine and dialysis
- Gynecology and IVF
- Medical research

Pharmacy and biotechnology

- Quality control of pharmaceutical formulations
- Bioprocess engineering
- Drug research
- Synthetic biology

Other areas of application

- Veterinary medicine
- Various research areas
- Food and beverage industry and analytics
- Agriculture
- Consumer goods industry
- Environmental analytics
- Chemical industry
- Forensic medicine

The perfect laboratory companions to determine the osmolality of aqueous solutions

Software for data transfer

For serial data transfer to a PC or information system (like LIS or HIS) a corresponding receiving software is needed on the target system. GONOTEC does not supply such software solutions and does not support software products from other manufacturers.

APPLICATION

Freezing point osmometers are used in numerous areas of application, such as medical, pharmaceutical, biotechnology, food and beverage, and chemical industries.

In the human body osmotic processes and osmoregulation play an important role: a disturbance of the osmotic equilibrium can lead to numerous health impairments. In many cases, osmometers are used in the medical and pharmaceutical industries to determine the osmolality of blood or urine samples or pharmaceutical formulations by freezing point osmometry.

The **Gonotec® OSMOMAT® 3000 series** have been specially designed for routine **measurements in the medical and pharmaceutical fields** but due to their robustness, precision and ease of use the devices are the perfect choice for many others areas as well.

The **OSMOMAT® 3000** determines the total osmolality of aqueous solutions, requires extremely small sample amounts, and allows serial measurements in the shortest possible time.

MEASUREMENT TECHNOLOGY

Osmometry is an analytical measuring method for determining the osmotic value / pressure (often referred to as simply the osmolality) of a sample.

The osmolality is defined as the concentration of all dissolved – and thus osmotically effective – particles in a solution based on 1 kilogram of solvent. **The unit of osmolality is Osm/kg or Osmol/kg.**

The freezing point of a sample changes depending on the concentration of dissolved substances.

Pure water has a freezing point of 0 °C. The solution of one or several substances in water leads to lowering of the freezing point. A solution with an osmotic value of 1 Osmol/kg has a freezing point of -1.858 °C.

Through the linear correlation between the freezing point of a sample and its osmolality, **freezing point osmometry provides high-precision analytics.**

SPECIFICATIONS OSMOMAT® 3000 Series

Models	**3000*basic*, 3000, 3000 M, 3000 D, 3000 D-M**
Display	5.7″ LCD touch screen
Weight	6.5 kg (14.3 lbs.)
Dimensions (WxHxD)	205 mm x 360 mm x 220 mm (8.1″ x 14.2″ x 8.7″)
Cooling	2 separate peltier elements / heat dissipation through active ventilation
Sample volume	50 µL / 15 µL for models 3000 M und D-M
Measurement	Measurement of single samples or batch processing (only single sample measurement for model 3000*basic*)
Measurement time	~ 60 seconds
Resolution	1 mOsmol/kg H_2O
Units	mOsmol/kg, Osmol/kg, °C
Measurement range	0 bis 3000 mOsmol/kg H_2O
Reproducibility Models 3000*basic*, 3000 und 3000 D	≤ 2 mOsmol/kg (SD) [0 bis 400] mOsmol/kg ≤ 0,5 % (CV) [400 bis 1500] mOsmol/kg ≤ 1 % (CV) [1500 bis 3000] mOsmol/kg
Reproducibility Models 3000 M und D-M	≤ 4 mOsmol/kg (SD) [0 bis 400] mOsmol/kg ≤ 1 % (CV) [400 bis 1500] mOsmol/kg ≤ 2 % (CV) [1500 bis 3000] mOsmol/kg
Calibration	2 point calibration, 3 point calibration
Linearity	Deviation less than ±1 % in the calibrated range
Ambient temperature	10 °C to 35 °C
Power supply	100 – 240VAC, 50 / 60 Hz, 80 VA
Interfaces	RS-232, USB (not for model 3000*basic*)
Output formats	CSV, XML (not for model 3000*basic*)
Printer (optional)	Graphical dot matrix printer for date, time and sample information for each measurement (for models 3000 D and 3000 D-M)
Printer paper	Plain paper, 43 mm (1.7″) wide
Ribbon	Endless ink ribbon cartridge, replaceable
Error messages	Printed in plain text
Software laguages	German, English, Spanish, French, Portuguese, Chinese

Legend

SD: Standard deviation, CV: coefficient of variation (= relative SD)

	Item number
OSMOMAT® 3000*basic*	*# 32.B*
OSMOMAT® 3000	*# 32.00000*
OSMOMAT® 3000 M	*# 32.02000*
OSMOMAT® 3000 D	*# 32.10000*
OSMOMAT® 3000 D-M	*# 32.12000*

OPTIONAL ACCESSORIES

	Item number
Handheld barcode scanner with power supply, connection cable and manual	*35.9.2000*

ACCESSORIES AND SUPPLIES

Accessories

	Item number
250V Power Cord - Europe Plug Typ E+F (CEE 7/7)	*20.9.0100*
RS-232 data cable	*20.9.0165*
USB cable	*20.9.0166*
Adjustment tool	*30.2.0030*
Ampoule opener	*30.9.1050*
Bellow (pasteur pipette)	*30.9.0030*

Supplies

	Item number
Calibration Standard 100 mOsmol/kg $NaCl/H_2O$, 10 x 1 ml	*30.9.0100*
Calibration Standard 300 mOsmol/kg $NaCl/H_2O$, 10 x 1 ml	*30.9.0020*
Calibration Standard 500 mOsmol/kg $NaCl/H_2O$, 10 x 1 ml	*30.9.0500*
Calibration Standard 850 mOsmol/kg $NaCl/H_2O$, 10 x 1 ml	*30.9.0850*
Calibration Standard 2000 mOsmol/kg $NaCl/H_2O$, 10 x 1 ml	*30.9.2000*
Reference Solution OSMOREF® 290 mOsmol/kg $NaCl/H_2O$, 10 x 1 ml	*30.9.0290*
Printer paper, OSMOMAT® 3000 D und D-M / 8 rolls	*30.9.1010*
Endless ink ribbon cartridge, OSMOMAT® 3000 D and D-M	*30.9.1020*
Measuring vessels / 1,000 pcs.	*30.9.0010*

STANDARD ACCESSORIES, *included*

1 Power cord
2 RS-232 data cable (not for model 3000*basic*)
3 USB cable for connection to PC or Laptop (not for model 3000*basic*)
4 Measuring vessels, 100 pcs.
5 2 spare fuses T 1.6A (HBC 1500A)
6 Adjustment tool
7 Calibration Standard 300 mOsmol/kg, 10 x 1 ml
8 Calibration Standard 850 mOsmol/kg, 10 x 1 ml
9 Ampoule opener
10 Bellow (pasteur pipette)
11 User guide (on compact disc (CD)

MEASUREMENT METHOD: Freezing Point Osmometer

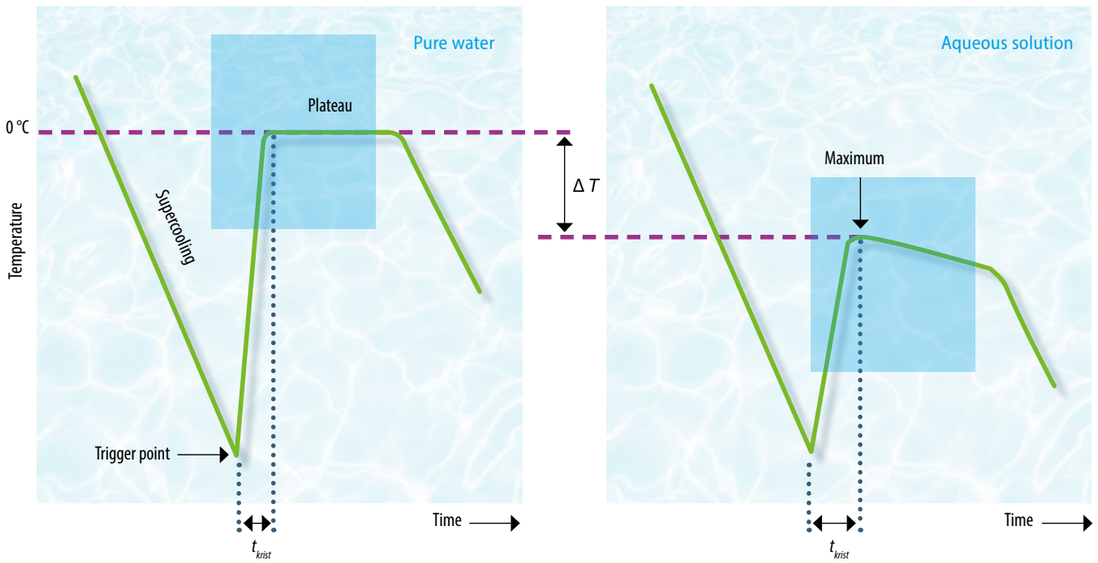
Position measuring vessel on the thermistor probe.

Sample is moved into the lower cooling system and cooled to less than 0 °C by a microprocessor-controlled peltier element.

Injection of an ice crystal by cooled triggering needle (cryst-needle).

Crystallization of the sample material.

At the beginning of the measurement, the sample is supercooled in the lower cooling system. The freezing process of the sample material is released in a controlled manner by injecting an ice crystal using the release/triggering needle.
The crystallization process leads to the release of thermal energy and the temperature of the sample increases until a plateau phase or a maximum is reached, which depicts the actual freezing point of the sample. At this point, the temperature is measured with an accuracy of 0.001 °C using a high-precision temperature sensor.



OSMOMAT® 3000*basic*

The Minimalist Model

- Sample volume: 50 µL
- Easy handling and maintenance
- Comfortable calibration routine
- No connectivity
- Delivery including standard accessories

OSMOMAT® 3000 / 3000 M

The Standard Models

- Sample volume: 50 µL (optional 15 µL / for model 3000 M)
- Easy handling and maintenance
- Comfortable calibration routine
- Connectivity for data transfer to PC or laptop
- Optional barcode reader
- Delivery including standard accessories and qualification document (IQ/OQ/PQ)

OSMOMAT® 3000 D / 3000 D-M

The Premium Models with Printer

- Sample volume: 50 µL (optional 15 µL / for model 3000 D-M)
- Integrated printer (delivery includes 1 ink ribbon cartridge and 1 printer paper roll)
- Easy handling and maintenance / comfortable calibration routine
- Connectivity for data transfer to PC or laptop
- Optional barcode reader
- Delivery including standard accessories and qualification document (IQ/OQ/PQ)

Your advantages at GONOTEC – AN ELITECHGROUP COMPANY

OSMOMAT® 3000 Product Series

- Robust, precise, reliable, fast
- Small sample volume
- Easy control via the integrated touch screen display
- Step-by-step guidance through all measuring functions and setting options
- 2 or 3 point calibration
- Automatic and safe calibration with the Gonotec Calibration Standards
- Data transfer to PC or laptop via RS-232 or USB (not for model 3000*basic*)
- Quality made in Germany
- Over 40 years of experience in precision measurement technology and osmometry
- Comprehensive advice and reliable service from our experts

50 YRS + ELITechGroup Biomedical Systems

"Proven Performance, Time After Time."

ELITechGroup is an integrated in-vitro diagnostics company that serves hospitals and diagnostic laboratories in more than 100 countries. The company develops, manufactures and markets a wide range of diagnostic products and solutions – instruments, reagents and software.

To optimally serve its customers ELITechGroup is organized in four business units dedicated to specific IVD technologies and market segments: Molecular Diagnostics (MDx), Clinical Chemistry (CC) and Biomedical Systems (EBS) and Microbiology (EM).

ELITech has made it to its mission to support healthcare systems worldwide and contribute to improved patient care.

CE IVD

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EMPOWERING IVD

BROCHURE_OSMOMETER 3000-Serie-E_2023-10-V01

WolfLabs

Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct.
If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.