

gonotec



OSMOMAT[®] 050
AUTOMATIC COLLOID-OSMOMETER

THE COLLOID-OSMOMETER OSMOMAT® 050

FIELD OF APPLICATION:

The colloid osmometer OSMOMAT® 050 has been developed for use in the medical field for measurement of the oncotic, respectively colloid osmotic pressure (COP).

Handling of the instrument is extremely simple, and the measuring sequence is fast and reliable.

The OSMOMAT® 050 is therefore particularly suitable for routine use in intensive care units. Apart from the medical-diagnostic aspect, direct control of the infusion therapy is also particularly important from the economical point of view. The most important diagnostic characteristics for measurement of the "COP" are cases of blood loss, hypalbuminaemia, infusion therapy for the prevention of lung oedemas and for all diseases resulting in a change of the "COP".

THE SPECIAL ADVANTAGES OF THE OSMOMAT® 050:

- ✓ high performance measuring cell
- ✓ minimum sample volume
- ✓ problem-free injection of the sample solution
- ✓ measuring time < 1 minute
- ✓ automatic zero setting
- ✓ automatic digital display of the stored measuring result
- ✓ switchable display of the measuring value (mm Hg), (cm water column) or (k-Pascal), respectively
- ✓ the storage of a second measuring value serves as a control of the equilibration characteristic
- ✓ automatic rinsing of the measuring cell after each measurement
- ✓ problem-free calibration with hydrostatic pressure differential
- ✓ automatic stand-by function over longer periods of time
- ✓ favorable price

FUNCTION AND HANDLING OF THE OSMOMAT® 050

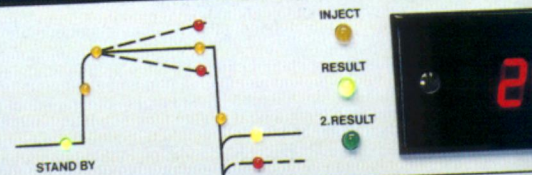
The design of the measuring cell and the use of microelectronics have largely automated the main measuring and control functions of the OSMOMAT® 050. By this means the instrument is ready for measurements for days and weeks. (The measuring cell is rinsed automatically at intervals of approx. 1 hour.)

Furthermore, very simple handling is guaranteed. Before each measurement the start button is pressed, whereupon a flashing indicator appears. The serum or plasma sample to be measured is then injected into the cell by means of a syringe through a rubber septum.

The cell is adequately rinsed with sample solution, if approx. 50 µl portions, from a syringe of 250 µl capacity, are injected in three separate steps at short intervals.

After a short time (< 1 minute) the measured result of the osmotic pressure appears on the digital display, optionally in [mm Hg], [cm water column] or [k-Pascal]. After the storage of a second measuring value, the measuring cell is automatically rinsed with Ringer solution, and is then ready for further measurements. The second measuring value can be displayed by pressing the button and, together with the first measuring value, gives qualitative information on the characteristic curve of the measurement. The measuring values remain stored until the start of a new measurement.

OSMOMAT 050 Colloid Osm



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Measurements are, of course, also possible to a limited extent without intermediate rinsing of the measuring cell.

THE MEASURING TECHNIQUE

The colloid-osmotic pressure is measured by means of an osmotic cell.

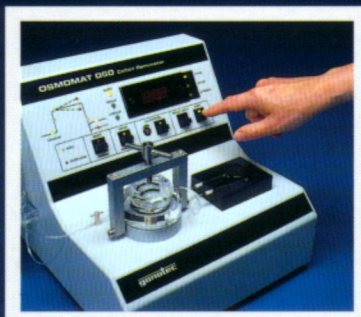
The lower half of the osmotic cell, which is closed off to the outside, is filled with electrolyte-containing Ringer's solution. The upper half of the cell, which is open to the outside, is filled with a colloid-containing solution. The two halves of the cell are separated from each other by a semi-permeable membrane.



This membrane possesses defined pores, through which only water and electrolyte molecules can permeate.

Due to the osmotic pressure differential of the two solutions, solvent permeates from the lower into the upper half of the measuring cell until an equilibrium is reached between the underpressure in the lower half of the cell and the osmolal concentration of the colloids.

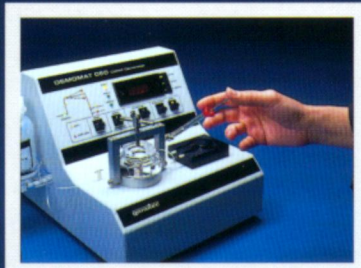
An electronic pressure measuring system, which is mounted into the lower half of the cell, transduces the underpressure into an electric signal, which is shown on a digital display.



MEASURING IS AS EASY AS THIS:

press the "start"-button

The OSMOMAT® 050 automatically checks the stability of the base line and sets it to zero. A flashing indicator then requests you to inject the plasma sample.



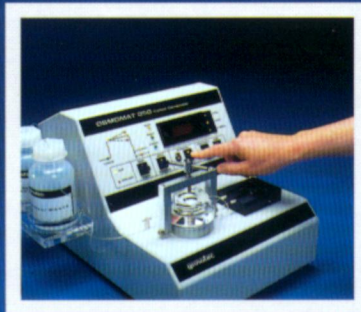
inject the prepared plasma sample

The OSMOMAT® 050 displays the osmotic pressure, as soon as pressure equilibrium has been reached and stores a second measuring value. The measuring cell is then automatically rinsed with solvent and is ready for a new measurement.



read the measuring result on the digital display

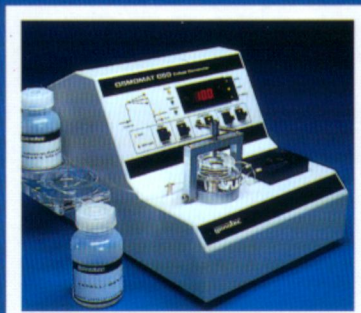
In addition to the measuring result, the OSMOMAT® 050 gives you further qualitative information on the presence of low molecular components and the setting characteristics of the measuring system. The stylized measuring curve on the front panel and the second measuring value are important aids for this purpose.



CALIBRATING IS AS EASY AS THIS:

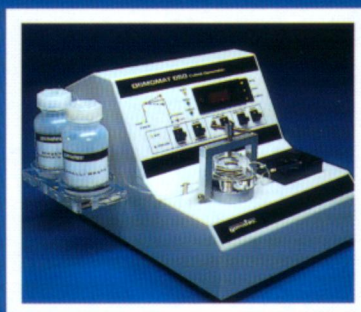
press the "calibration"-button

The OSMOMAT® 050 checks the measuring system and shows the measuring value of "00,0" on the digital display.



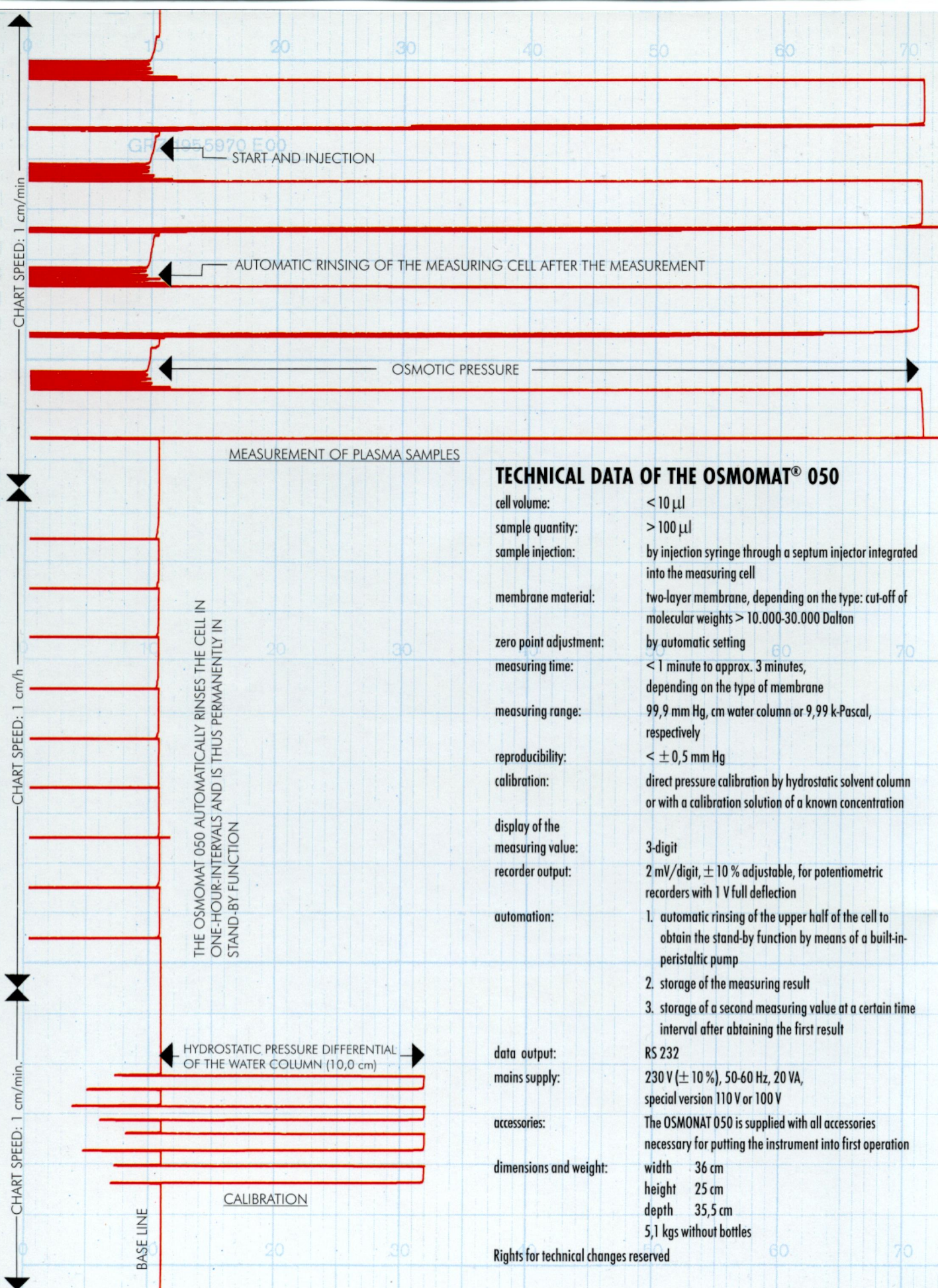
take the waste bottle off the console and place it on the table

Due to the changed hydrostatic pressure, the OSMOMAT® 050 shows the measuring value of "10,0 cm water column" on the digital display. (Any deviation can be corrected at the potentiometer beside.)



replace the waste bottle on the console and press the "reset"-button

The OSMOMAT® 050 is immediately in stand-by function again.



TECHNICAL DATA OF THE OSMOMAT® 050

cell volume:	< 10 µl
sample quantity:	> 100 µl
sample injection:	by injection syringe through a septum injector integrated into the measuring cell
membrane material:	two-layer membrane, depending on the type: cut-off of molecular weights > 10.000-30.000 Dalton
zero point adjustment:	by automatic setting
measuring time:	< 1 minute to approx. 3 minutes, depending on the type of membrane
measuring range:	99,9 mm Hg, cm water column or 9,99 k-Pascal, respectively
reproducibility:	< ± 0,5 mm Hg
calibration:	direct pressure calibration by hydrostatic solvent column or with a calibration solution of a known concentration
display of the measuring value:	3-digit
recorder output:	2 mV/digit, ± 10 % adjustable, for potentiometric recorders with 1 V full deflection
automation:	1. automatic rinsing of the upper half of the cell to obtain the stand-by function by means of a built-in peristaltic pump 2. storage of the measuring result 3. storage of a second measuring value at a certain time interval after obtaining the first result
data output:	RS 232
mains supply:	230 V (± 10 %), 50-60 Hz, 20 VA, special version 110 V or 100 V
accessories:	The OSMOMAT 050 is supplied with all accessories necessary for putting the instrument into first operation
dimensions and weight:	width 36 cm height 25 cm depth 35,5 cm 5,1 kgs without bottles
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Manufactured and sold by:

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