



## OsmoPRO<sup>®</sup>

### Multi-Sample Micro-Osmometer

Walkaway osmolality testing, designed to drive lab efficiency.

## Why osmolality determination matters.

Osmolality is a fundamental measurement of the total solute concentration of a liquid solution, and it is directly related to osmotic pressure. Osmotic pressure is of vital importance in biology as it relates to fluid balance, nutrient transfer, and waste removal processes in all cellular organisms. Because of this, there are limitless applications and uses for measuring concentration of liquid solutions.

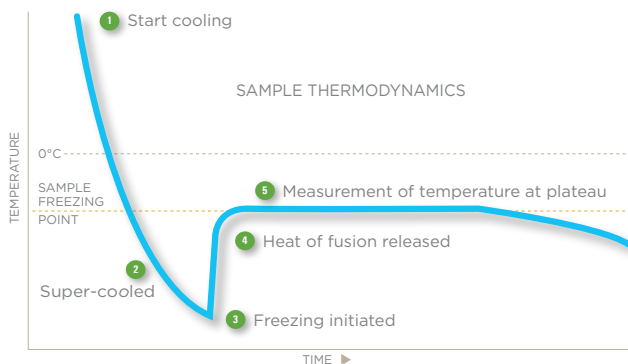


## Why freezing point depression is the preferred method.

There are many methods for measuring concentration of solutions including specific gravity, refractive index, and conductivity. Freezing point osmolality, however, is the only method which is truly independent from the size, shape, and other physical characteristics of the liquid solution. This is why freezing point depression is the industry-preferred solution and the gold standard in clinical chemistry labs, pharmaceutical research, and quality control labs around the world.

## Theory of freezing point depression for osmolality determination.

Advanced Instruments' osmometers utilize the freezing point depression method to determine the osmolality of aqueous solutions. When solutes (particles) are dissolved in a solvent (water), the freezing point of that solution is lowered compared to the solvent alone. As more solutes are added, the freezing point decreases further. Therefore, by precisely measuring the freezing point of the solution, the osmolality (i.e., concentration) can be determined.





## The OsmoPRO Advantage

### There is a lot to get excited about with the OsmoPRO Multi-Sample Micro-Osmometer from Advanced Instruments

OsmoPRO is ideally suited for mid- to high-volume laboratories that need to free up resources for other testing needs. It has the built-in flexibility, automation, and ease-of-use that allows users to simply load samples and walk away while the testing is completed.



### Easy to Use

With total touchscreen operation and an intuitive user interface, OsmoPRO provides world-class performance in a user-friendly package.

### Fast, Accurate Results

With a 2 minute test time and a small 20  $\mu$ L sample volume, OsmoPRO provides rapid and precise test results using the industry-preferred freezing point depression method.

### Improved Efficiency and Productivity

Compared to single sample instruments, OsmoPRO allows the user to load multiple samples or controls, start the testing, and walk away. This translates to labor savings by allowing users more time for other laboratory tasks.

### Versatile Sample Processing

OsmoPRO is ideally suited to analyze complex aqueous mixtures including blood, serum, plasma, urine, and many other body fluids.

### Proven Reliability

OsmoPRO incorporates more than 60 years of applied technology and expertise in the field of freezing point osmometry.

# Simple. Intuitive. Efficient.



## Onboard printer

For easy printing and archiving of test results

## Touchscreen user interface

With a menu-driven operating system, intuitive software control, and multi-language capability, OsmoPRO is a snap to operate

## 20-Position turntable

Makes sample loading easy, and provides the ability to process multiple batch samples unattended

## Precision sample cups

Requires only a small 20  $\mu$ L sample volume for sample limited applications

## Ethernet and multiple USB ports

For enhanced data management, connectivity, and easy export of data

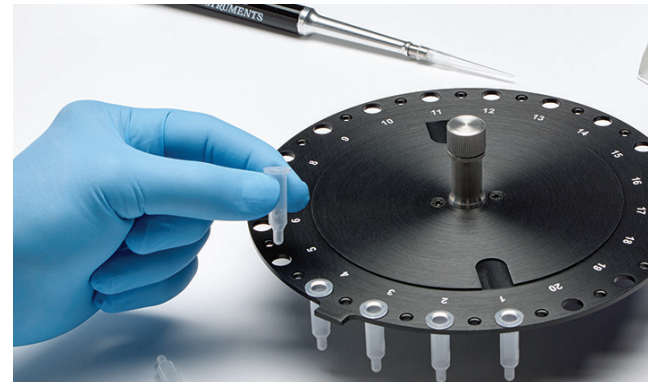
## Integrated 2-D barcode scanner

With proximity sensor, aids with positive sample identification and reduces transcription errors

# Precision. Reliability. Performance.

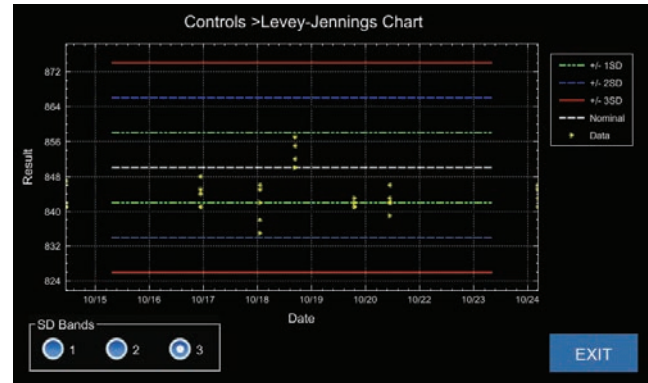
## Flexibility in Workflow

- Sample carousel can be removed to load your samples offline, or samples can be loaded directly onto the carousel mounted to the system
- Load More feature allows the user to add samples after testing has started
- Intuitive software control features adapt to the test workflow that best suits your laboratory



## Built-in Quality Control

- Onboard Levey-Jennings control charts for statistical monitoring of daily QC
- Ability to set custom range limits for QC samples
- System allows users to determine system action limits for out of range QC results



## Enhanced Data Management Capabilities

- Ability to link sample ID and operator with test results for traceability
- Supervisor mode with password protection and system lockout features
- Last 1,000 test records stored
- Easy export of data to USB device or Laboratory Information System (LIS)
- Ability to reprint or export selected test results in memory
- Onboard statistics (Mean, SD, CV) for selected test results
- Integrated search functionality provides easy retrieval of test results

Sample ID	mOsm	Date/Time	Position	Operator ID	Description	
36	3MA029	290	26 Feb 2016 9:31:15	4	John.A	Enclosure Temp: 25.C, Humid:15%
37	3MA029	290	26 Feb 2016 9:32:11	5	John.A	Enclosure Temp: 25.C, Humid:15%
38	3MA085	850	26 Feb 2016 9:33:09	6	John.A	Enclosure Temp: 25.C, Humid:15%
39	3MA085	850	26 Feb 2016 9:34:45	7	John.A	Enclosure Temp: 25.C, Humid:15%
40	3MA085	850	26 Feb 2016 9:35:23	8	John.A	Enclosure Temp: 25.C, Humid:15%
41	3MA085	850	26 Feb 2016 9:37:10	9	John.A	Enclosure Temp: 25.C, Humid:15%
42	3MA085	850	26 Feb 2016 9:39:21	10	John.A	Enclosure Temp: 25.C, Humid:15%
43	3MA005	50	26 Feb 2016 9:41:15	11	John.A	Enclosure Temp: 25.C, Humid:15%
44	3MA005	50	26 Feb 2016 9:42:36	12	John.A	Enclosure Temp: 25.C, Humid:15%
45	3MA005	50	26 Feb 2016 9:44:25	13	John.A	Enclosure Temp: 25.C, Humid:15%
46	3MA005	50	26 Feb 2016 9:46:18	14	John.A	Enclosure Temp: 25.C, Humid:15%

Results : LIS 0

LIS PRINT STATISTICS CHART EXPORT EXIT

## Parts and supplies

Part number	Product description
<b>Osmometer Calibration Standards and Reference Solutions</b>	
3MA005	50 mOsm calibration standard, 10 × 2 mL
3MA085	850 mOsm calibration standard, 10 × 2 mL
3MA200	2000 mOsm calibration standard, 10 × 2 mL
3MA029	Clinitrol™ 290 reference solution, 10 × 2 mL
3LA028	Osmolality linearity set, 5 × 2 × 5 mL
<b>Osmometer Control Solutions</b>	
3MA028	Protinol™ Protein-Based Controls (3 levels, 3 mL vials)
3LA085	Renol™ Urine Osmolality Controls (2 levels, 3 mL vials)
<b>Osmometer Supplies and Accessories</b>	
202825	Disposable sample tubes, box 500
202840	Probe wiper disks, box 50
240820	20 µL fixed volume pipette
800097	Pipette tips (960 pieces)
FLA835	Thermal printer paper, 5/pkg



### Optimal performance requires quality test supplies.

Advanced Instruments supplies a full line of calibration standards and supplies to ensure optimal system performance and accurate test results.

## Specifications

Sample Volume	20 µL
Test Time	2 minutes
Sample Capacity	Up to 20 samples
Units	mOsm/kg H <sub>2</sub> O
Resolution	1 mOsm/kg H <sub>2</sub> O
Range	0 to 2000 mOsm/kg H <sub>2</sub> O
Accuracy <sup>2</sup>	0–400 mOsm: mean value ± 3 mOsm/kg H <sub>2</sub> O from nominal value 400–2000 mOsm: mean value ± 0.75% from nominal value
Precision <sup>2</sup>	(within run) 0–400 mOsm: standard deviation ≤ 3 mOsm/kg H <sub>2</sub> O 400–2000 mOsm: CV ≤ 0.75%
Temperature Effects <sup>3</sup>	Less than 1 mOsm/kg H <sub>2</sub> O per 5°C (9°F) ambient temperature change
Communications	Onboard printer, integrated 2D-barcode scanner, USB 2.0 Type A (3), USB 2.0 Type B (1), Ethernet Port (1)
Supported Languages	Simple Chinese, Czech, Danish, English, French, German, Greek, Italian, Japanese, Korean, Portuguese, Russian, Slovak, Spanish, Swedish, Turkish
Storage Temperature	-40°C to +45°C (-40°F to +113°F)
Electrical Voltage	100 to 240 VAC (50/60 Hz)
Power Consumption	60 Watts
Dimensions (D × W × H)	(37 cm × 25 cm × 44 cm) (14" × 10" × 17.5")
Net Weight	13.2 kg (29 lb.)
Shipping Weight	19.1 kg (42 lb.)
Warranty	One-year limited warranty on workmanship and parts

<sup>1</sup> Subject to change

<sup>2</sup> Performance at Reference Conditions: 20°C to 25°C (68°F to 77°F); 40 to 60% relative humidity

<sup>3</sup> Operating Conditions: Temperature 18°C to 35°C (64°F to 95°F); 30 to 80% relative humidity (non-condensing)

Advanced Instruments products are available from a worldwide distributor network. For more information on our products and services or to find your nearest distributor, visit us at [aicompanies.com](http://aicompanies.com) or e-mail us at [info@aicompanies.com](mailto:info@aicompanies.com).

**Technical Service:** Advanced Instruments provides comprehensive customer service and technical support.



The quality management system governing the manufacturing of this product is ISO 13485 registered.

Two Technology Way / Norwood, Massachusetts 02062, USA

800-225-4034 | 781-320-9000 | [www.aicompanies.com](http://www.aicompanies.com)

© 2024 Advanced Instruments, LLC. OsmoPRO, ControLine, Clinitrol, Protinol™ Protein-Based Controls (3 levels, 3 mL vials), and Renol™ Urine Osmolality Controls (2 levels, 3 mL vials) are trademarks of Advanced Instruments, LLC. All other trademarks are the property of their respective companies

MP21039 Rev 6

**ADVANCED**  
INSTRUMENTS