

Explore the future of osmometry.



## The OsmoPRO® advantage.

There is a lot to get excited about with OsmoPRO Multi-Sample Micro-Osmometer from Advanced Instruments. OsmoPRO brings osmometry to the next level by offering a perfect balance of analytical performance, ease of use, and walkaway operation. It is ideally suited for mid- to high-volume laboratories that prefer to automate osmolality batch testing while improving laboratory efficiency, throughput, and workflow.



**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 90 second 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.

**Improve efficiency and productivity** When compared to manual sample instruments, OsmoPRO provides a 75% increase in productivity for laboratories processing more than 15 samples per day.

**Versatile sample processing** OsmoPRO is ideally suited to analyze complex aqueous mixtures including blood, serum, plasma, urine, culture media, drug formulations, and many other sample types.

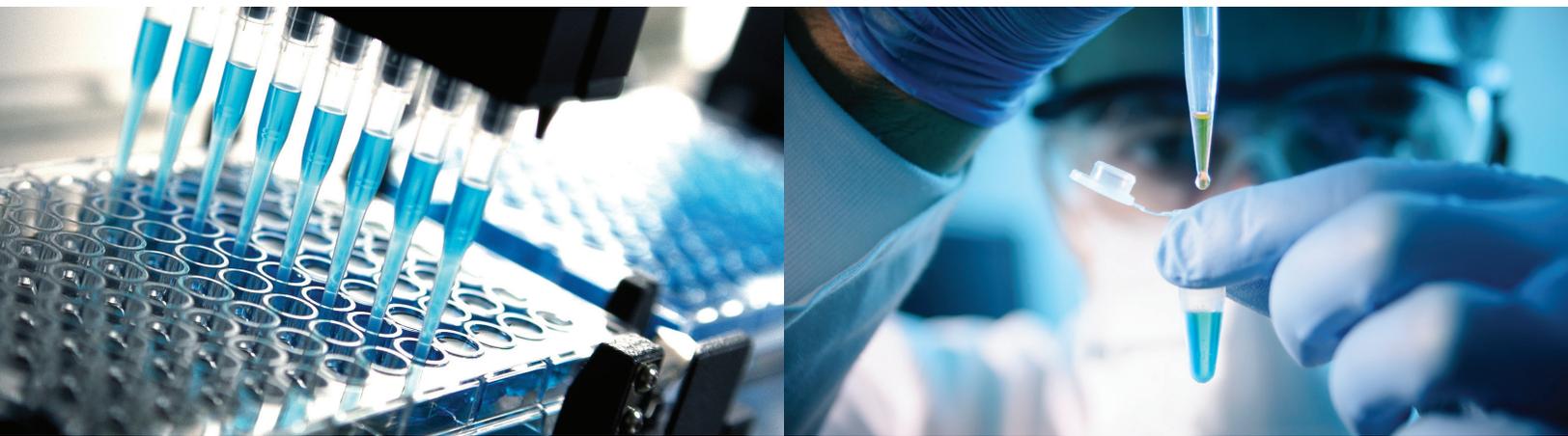
**Proven reliability** OsmoPRO incorporates more than 60 years of applied technology and expertise in the field of freezing point osmometry.

### 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.

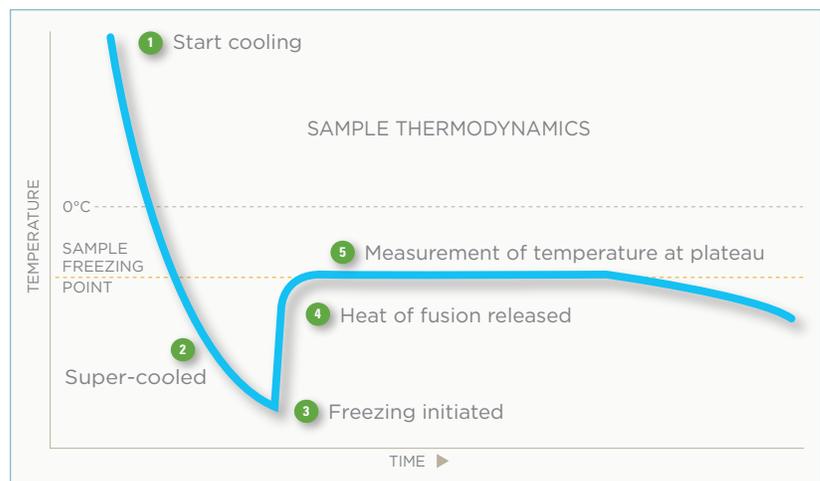
### Why freezing point depression is the preferred method.

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 a solute (particles) is dissolved in a solvent (water), the freezing point of that solution is lowered compared to that of the solvent alone. As more solute is 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 industry standard for osmometers. Worldwide.



#### On-board printer

For easy printout 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 carousel

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

#### Integrated 2-D barcode scanner

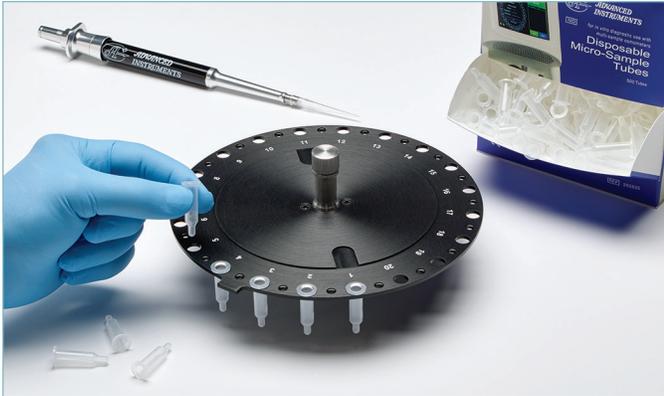
With proximity sensor, aids with positive sample identification and reduces transcription errors

#### Ethernet and multiple USB ports

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

Simple. Intuitive. Efficient.

# Precision. Reliability. Performance.



## Flexibility in workflow.

The sample carousel can be removed to load your samples offline, or samples can be loaded directly onto the carousel mounted to the system. OsmoPRO also provides open access sampling for any operator to login and run tests. The intuitive software control features adapt to the test workflow that best suits your laboratory.

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%

LIS PRINT STATISTICS CHART EXPORT EXIT

## Enhanced data management capabilities.

OsmoPRO provides your laboratory with many convenient data management features including:

- Storage of up to 1000 test records in system memory
- Integrated search functionality provides easy retrieval of test results
- Ability to reprint or export selected test results in memory
- Easy export of data to USB device or Laboratory Information System (LIS)
- Calculate statistics (Mean, SD, CV) of selected test result



## Built-in quality control.

The OsmoPRO software provides a suite of QC features to ensure the integrity of your test results including:

- Statistical monitoring of daily QC
- Ability to set custom range limits for QC samples
- Construct Levey-Jennings control charts
- Ability to set system action limits for out of range QC results
- Supervisor mode with password protection and system lockout features

## Parts and supplies

Part number	Description
<b>Osmometer calibration standards and reference solutions</b>	
3MA005	50 mOsm calibration standard, 10x2 mL
3MA085	850 mOsm calibration standard, 10x2 mL
3MA200	2000 mOsm calibration standard, 10x2 mL
3LA028	Osmolality linearity set, 5x2x5 mL
3MA029	Clinitrol™ 290 reference solution, 10x2 mL
<b>Osmometer control solutions</b>	
200213	Protinol™ 3-Level osmometer serum control kit, 2 mL vials 4x3 levels 12-pack
200214	Protinol 240 mOsm serum control, 2 mL vials 8-pack
200215	Protinol 280 mOsm serum control, 2 mL vials 8-pack
200216	Protinol 320 mOsm serum control, 2 mL vials 8-pack
200217	Renol™ 2 level urine control kit, 2 mL vials 2x8-pack
200218	Renol 300 mOsm urine control, 2 mL vials 8-pack
200219	Renol 800 mOsm urine control, 2 mL vials 8-pack
<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

## OsmoPRO Multi-Sample Micro-Osmometer specifications<sup>1</sup>

<b>Sample volume</b>	20 µL
<b>Test time</b>	90 seconds
<b>Sample capacity</b>	Up to 20 samples
<b>Units</b>	mOsm/kg H <sub>2</sub> O
<b>Resolution</b>	1 mOsm/kg H <sub>2</sub> O
<b>Range</b>	0 to 2000 mOsm/kg H <sub>2</sub> O
<b>Accuracy<sup>2</sup></b>	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
<b>Precision<sup>2</sup></b>	(within run) 0-400 mOsm: standard deviation ≤ 3 mOsm/kg H <sub>2</sub> O 400-2000 mOsm: CV≤0.75%
<b>Temperature effects<sup>3</sup></b>	Less than 1 mOsm/kg H <sub>2</sub> O per 5°C (9°F) ambient temperature change
<b>Communications</b>	On-board printer, integrated 2D-barcode scanner, USB 2.0 Type A (3), USB 2.0 Type B (1), Ethernet Port (1)
<b>Supported languages</b>	Simple Chinese, Czech, Danish, English, French, German, Greek, Italian, Japanese, Korean, Portuguese, Russian, Slovak, Spanish, Swedish, Turkish
<b>Storage temperature</b>	-40°C to +45°C (-40°F to +113°F)
<b>Electrical voltage</b>	100 to 240 VAC (50/60 Hz)
<b>Power consumption</b>	60 Watts
<b>Dimensions (D x W x H)</b>	(37 cm x 25 cm x 44 cm) (14" x 10" x 17.5")
<b>Net weight</b>	13.2 kg (29 lbs.)
<b>Shipping weight</b>	19.1 kg (42 lbs.)
<b>Warranty</b>	One-year limited warranty on workmanship and parts



The management system governing the manufacturing of this product is ISO 9001 and ISO 13485 registered.

<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; tolerances of reference or calibration solutions excluded

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



### Optimal performance requires quality test supplies.

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



Two Technology Way | Norwood, MA 02062  
For more information | 800-225-4034 | 781-320-9000  
aicompanies.com | info@aicompanies.com

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).

**Hot-Line™ Technical Service** Advanced Instruments provides 24/7 comprehensive customer service and technical support.