



## Automatic Freezing Point Osmometer

The Osmo810 is an upgraded freezing point osmometer based on the Osmo210, representing the latest fully automatic micro-sample freezing point osmometer. It features software functions compliant with 21CFR Part 11. With a sample volume of 30-50  $\mu$ l, Osmo 810 can be widely used in various fields such as pharmaceuticals, research, and beverages.

## Hardware Features

### Freezing technology

- Advanced low-pressure freezing technology in conjunction with vibration principles to rapidly and accurately test samples.

### Operation panel

- 7-inch high-resolution LCD touchscreen, which provides clear digital and textual displays of measurement outcomes, device status, and process guidance information.
- User-friendly user interface. Minimal training is required to become proficient in operating it. There is no need for complex cleaning or maintenance, resulting in reduced manpower and maintenance costs.

### Measurement probe

- The probe is made of stainless steel, which is very durable and less likely to break, thereby reducing operating costs.
- The high-precision sample probe accurately controls the ultracold temperature and freezing process, enabling precise sample measurements and yielding reliable measurement results.
- The probe is designed for easy cleaning, thereby significantly reducing the risk of cross-contamination from sample residues and enhancing repeatability.

### Semiconductor cooling technology

- The utilization of semiconductor refrigeration eliminates the need for thermocouples, cooling liquid, and minimizing daily maintenance.

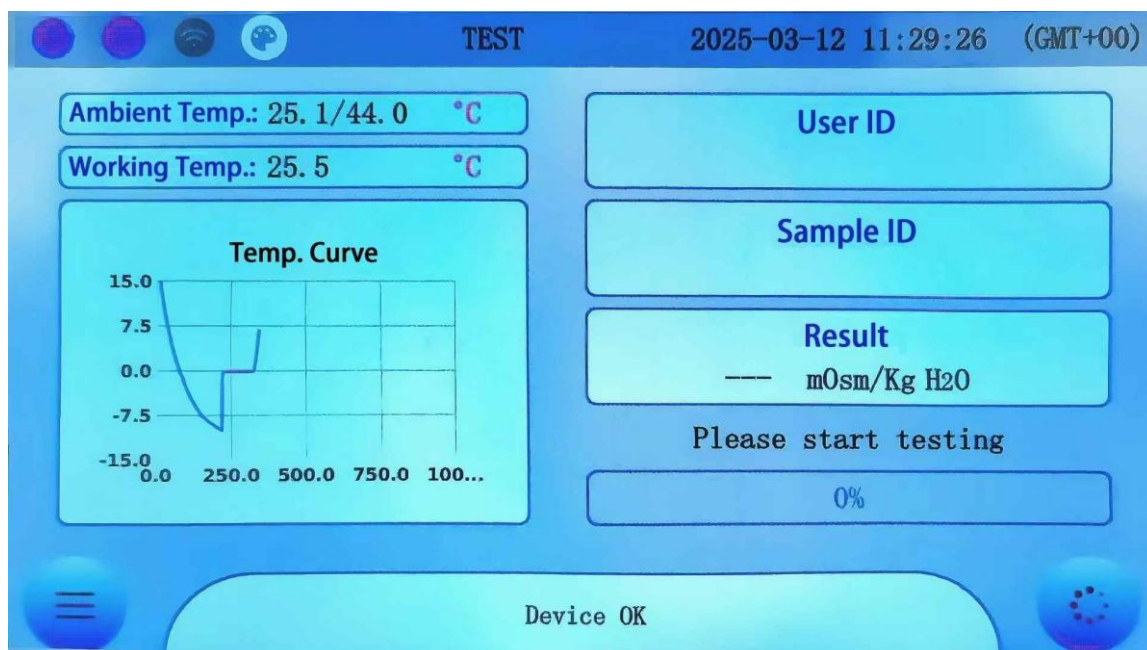
### Storage capacity

- Large memory, unlimited data storage.

### Multiple user Interface

can easily connect the osmometer to barcode scanner, printer, USB flash drive, PC and local area network.

- 1 RS 232 port,
- 2 USB ports,
- 1 LAN port



# Software Feature

## 21 CFR part 11 / EU Annex 11

- o e-Signature
- o Five level user access
- o Password protection
- GMP environment
- Pharmacopeia osmolality testing guidelines

## Audit Trail

- Osmo 810 can connect barcode scanner for sample identification and reduced transcription errors
- Manual back up. Automatic and synchronous back up will be available before the end of 2025.
- Complete time-stamped record of usage, role, and actions requiring reason for settings changes
- Ability to annotate test results via the handy comments field

## Data Management

- Open communication protocol (OPC-UA, available in 2026),
- USB data download,
- Network sharing,
- TCP/IP communication, LIS (available in 2026)
- Optional printer.
- Data filter & statistics: data filter and statistical function is capable of calculating the linearity, standard deviation, average value and other statistical results.
- Data Analysis

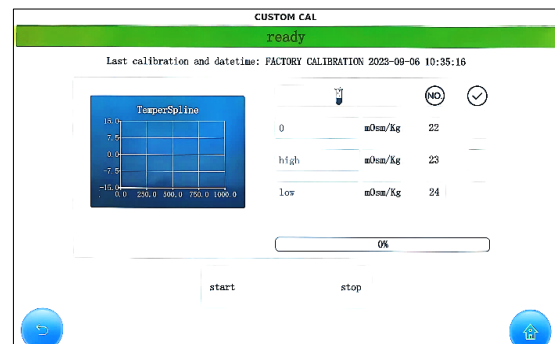
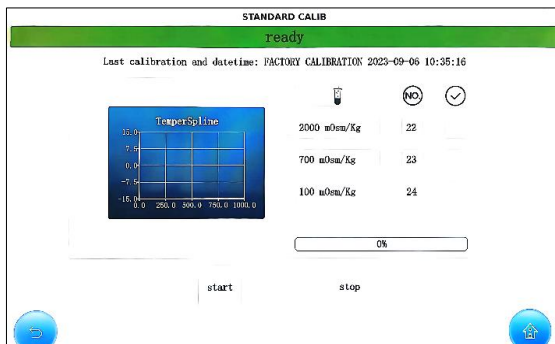
The measurement data report is categorized into three formats: data tables, statistics, and data charts. Users have the flexibility to select the appropriate report format based on their workflow and architecture. Regardless of the chosen format, it will facilitate users in gaining a more intuitive understanding of the data and enable them to provide enhanced services.

Time	Action	User	Date/Time	Details
1298	WARNING	Testing	2019-09-20 10:02:09	Test tube14 empty
1299	WARNING	Testing	2019-09-20 10:02:09	Test tube15 empty
1300	WARNING	Testing	2019-09-20 10:02:10	Test tube16 empty
1301	WARNING	Testing	2019-09-20 10:02:10	Test tube17 empty
1302	WARNING	Testing	2019-09-20 10:02:11	Test tube18 empty
1303	WARNING	Testing	2019-09-20 10:02:11	Test tube19 empty
1304	WARNING	Testing	2019-09-20 10:02:11	Test tube20 empty
1305	WARNING	Testing	2019-09-20 10:02:12	Test tube21 empty
1306	WARNING	Testing	2019-09-20 10:02:12	Test tube22 empty
1307	WARNING	Testing	2019-09-20 10:02:13	Test tube23 empty
1308	ERROR	Testing	2019-09-20 10:02:31	Power up level
1309	ERROR	Testing	2019-09-20 10:02:31	Test tube24 error: E0000:EXP_LOAD_POWER
1310	INFO	Power Up	2019-09-20 10:09:21	set start statistics
1311	INFO	Power Up	2019-09-20 10:09:21	software version: 0.0.3.4, firmware version: 3.0.8.1
1312	CRITICAL	System error	2019-09-20 10:00:23	Abnormal top cover.
1313	CRITICAL	System error	2019-09-20 10:00:23	Abnormal front cover.
1314	INFO	Power Up	2019-09-20 10:01:37	Preheat error.
1315	WARNING	Testing	2019-09-20 10:01:37	Test tube1 empty

# Calibration

Free calibration (essential for pharmaceutical companies):

- Unknown samples (Standard Cal): 3-points calibration (100 mosm/700 mosm/2000 mosm);
- Known samples (Custom Cal): User definable 2-points calibration: Use 2 calibration solutions of known concentration (low/high value). The smaller the range, the more accurate the measurement.



# Technical Specification

## General Specification

Sample Type:	aqueous based solution
Sample Volume	30-50 $\mu$ l
Measuring Time	about 90 seconds
Measurement Unit	mOsm/kg H <sub>2</sub> O Measurement Range
	0-3000 mOsm/kg H <sub>2</sub> O
Resolution	1 mOsm/kg H <sub>2</sub> O
Accuracy	$\leq \pm 3$ mOsm/kg H <sub>2</sub> O (0-400 mOsm/kg H <sub>2</sub> O) $\leq \pm 1.0\%$ (400-1500 mOsm/kg H <sub>2</sub> O) $\leq \pm 1.5\% \leq \pm 1.5\%$ (1500-3000 mOsm/kg H <sub>2</sub> O)
Language	English
User Interface	
	1xRS-232, 2xUSB ports, 1xLAN port
Power Supply	230V ~ 45VA, 50/60Hz

## Working Conditions

Temperature	+5 ~ +33°C 5- 80% Relative humidity (no condense)
Power	230V~45VAC (50/60Hz)

## Transportation

Dimension:	30x30x28 cm
Net Weight:	approx. 8kg

# Standard Configuration

1x	Osmo 810 freezing point osmometer
1x	Calibration solution: 100 mosm 10 $\times$ 2ml
1x	Calibration solution: 700 mosm 10 $\times$ 2ml
1x	Calibration solution: 2000 mosm 10 $\times$ 2ml
1x	Reference solution: 290 mosm 10 $\times$ 2ml
1x	Disposable sample tubes, 200 pcs.
1x	English operation manual
1x	Power cable

### Authorized Distributor in India:

Martand Medical Services  
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