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QCM based physical property and molecular interaction Analyzer

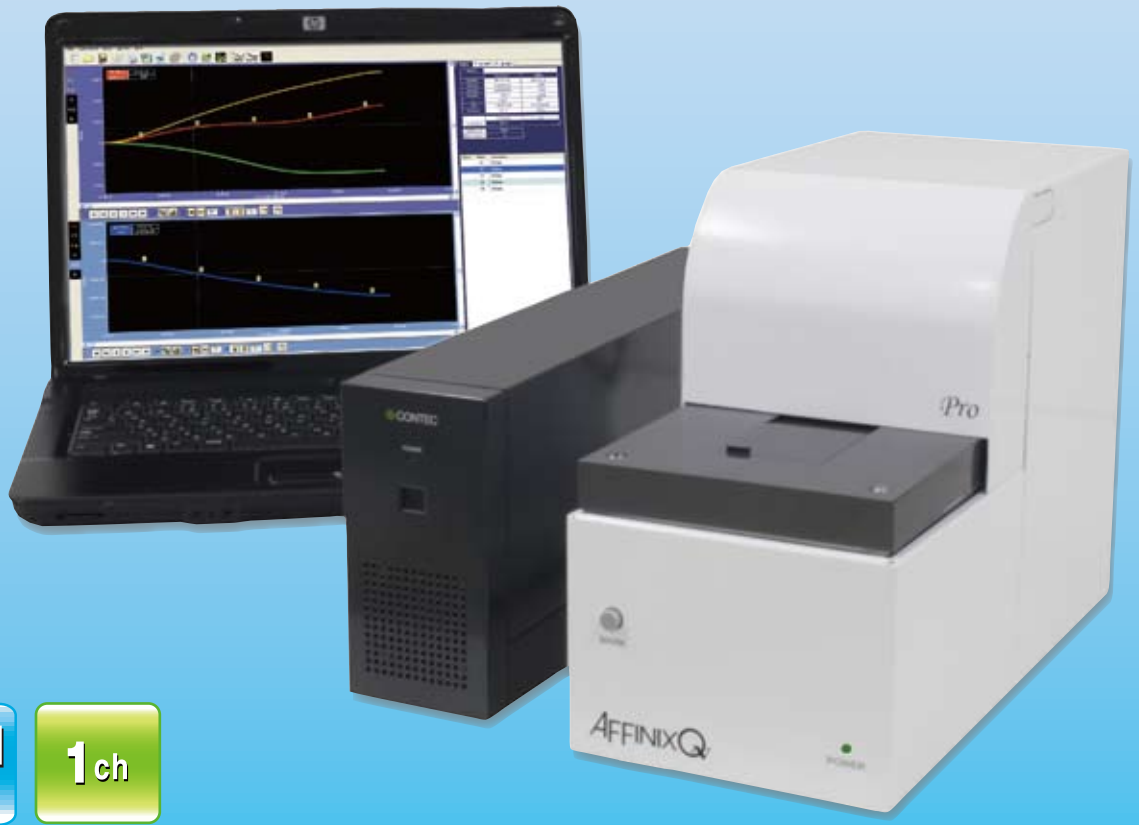
AFFINIX® QN Pro

In addition to measurement of the conventional molecular interaction, physical property evaluation is also possible !!

NEW!

Newly introduced "AFFINIX QN Pro" with the feature which is not oscillating system but QCM based admittance method(QCM-A)

1. Separate measurement between mass change and viscosity change is available.
2. Nine parameters are available.
3. Frequency F2 is unaffected by the viscosity of a liquid.
4. Three kinds of parameters in energy loss are available.
   (Frequency: Fw, Dissipation factor: D, and Resistance: R)
5. Viscoelastic factor is available.
6. Replaceable alternatively with AFFINIX QN or QN μ.
7. Sensor surface coating service is available.



27/81 MHz

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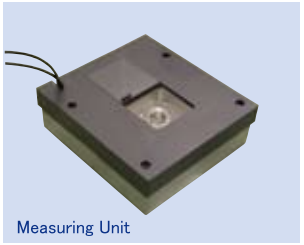
Specifications/Accessories/Consumables

Item	AFFINIX QN *Pro*	
Model	**QCM2008-PRKIT**	
Measurement Principle	Quartz Crystal Microbalance (QCM)	
Measurement System	Admittance Analysis Methods	
Measurement Frequency	27 MHz (Fundamental)	81 MHz (Overtone)
Sensitivity	30 pg / Hz	10 pg / Hz
Dynamic Range	100 pg～10 μg	
Oscillation Stability	Noise ≦ 2 Hz (27MHz, Distilled water, 25℃)	
Average Drift	≦ 1 Hz/min (27MHz, Distilled water, 25℃, at stable state)	
Injection System	Manual, Multiple injection is possible)	
Min. Injection Volume	0.1μL～ (dependent on micropipette to be used)	
Channel Number	1ch	
Cup Volume	400～550 μL	
Sensor Type	Sensor Cup (specific for QN Pro)	
Stir Method	Magnetic Stirrer	
Temp. Control System	Peltier	
Setting Temperature	10.0～60.0℃	
System Software	•**Measuring software: 『AFFINIXQN Pro』** (Since it is pre-installed in an attached PC, there is no installer disc) •**Data viewer software: 『AFFINIXQN Pro Viewer』** (The installation system in saved at PC and additional disc)	
Data Processing Part	Windows Laptop PC OS:Windows Vista Business or XP Professional, Ethernet interface devices, PC Card Standard CardBus	
Communication System	Ethernet Virtual serial PCI card	
Output parameters	Fs, F2, Fw, Q, D, R, (C0, C1, L1)	
Operating Environment	20～30 ℃(Recomended)	
Body Size	140W×300D×220H (mm) (AFFINIX QN main body except for analyzing unit)	
Analyzing Unit size	71W×360D×144H (mm)	
Weight	9.0 kg	
Power Supply	AC 100～240 V, 3A (Body:1A, Analyzing Unit:2A)	
Optional accessory	**Data Analysis Software: 『AQUA』**	
STD accessories (Quantity)	◆AFFINIX QN Pro Base Equipment(1) ◆Communication/Measurement Kit(1) Measurement Control Software included PC(1), PC accessories (with LAN Cable)(1) Instruction Manual(1), Sensor Cover with Stirring Bar(1), USB memory stick(1), Sensor cups(4 pieces/case(1)), Calibration Set(1), Data Viewer(1)	

Consumables	Sensor Cup(4 pieses / case) Sensor Cover with Stirring Bar

QN Series Lineup

Pro Unit


Measuring Unit


Analyzing Unit

ST Unit

◆Sensor structure
Separated with Cup
◆Measureing Volume
1.6 mL , 5～11 mL
◆Sensor Material
Chip: Ceramic. Cuvette: Glass
◆Main Use
Polymer and Large molecule
◆Others
Applicable to Special Sensors

μ Unit

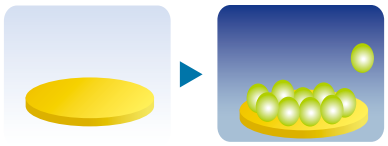
◆Sensor structure
Fusion with Cup
◆Measureing Volume
400 uL～550uL
◆Sensor Material
Cup: Acryl
◆Main Use
Proteins, DNA
◆Others
Applicable to Special Sensors

Features of AFFINIX QN Pro and Application Example

- In addition to the conventional molecular interaction, viscous change of a liquid and physical property are available.
- By employing QCM based admittance method(QCM-A), 9 kinds of parameters are available.
- Frequency F2※1 is unaffected by the viscosity of liquid (our original parameter, patented technology)
- Three kinds parameters in energy loss are avaulable.
- The sensor is same as AFFINIX QNμ's.
  Measurement frequency 27MHz(fundamental) and 81MHz(3rd overtone).
- Measuring unit is replaceable with AFFINIX QN or AFFINIX QNμ.
- To operate the software is easy for everyone.

※1 It restricts to a newtonian fluid solution

Mass & viscosity measurement

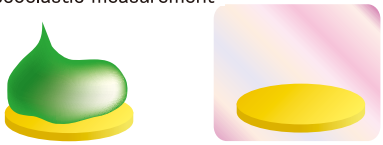


Evaluation of medicine which is dissolving in organic solvent.
Molecular interaction in viscous fluids.

Trace sample measurement

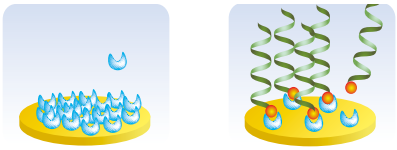
Requirement volume =10ul
Viscosity of protein solution

Viscoelastic measurement



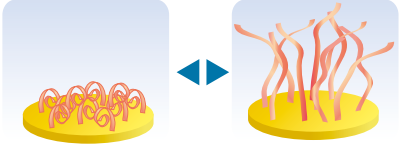
Viscoelastic factor of gel and polymer solution

Observation of absorbed film's condition



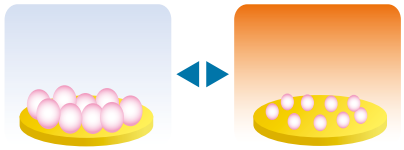
Hardness and softness

Observation of structure change



Molecular structure change

Temperature measurement



Temp. dependent structure change
(Estimation of Cloud Point)

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