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**JIKAN**  
2023

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Established in 2015, Jikan Surface Nano-Engineering Company is a dynamic player in surface science and lab equipment. We prioritize precision and customization, collaborating with renowned institutions and industries to simplify lab routines. This support aids global experts in surface science, propelling their endeavors. Our commitment to innovation cements our position as a leading force in the field, with a bright future ahead.

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**Surface Characterization Tools**  
Contact Angle Goniometer

Contact Angle Goniometer, a remarkable device designed to revolutionize surface analysis and enhance product performance. This sleek and compact instrument allows you to precisely measure the contact angle of a liquid droplet on a solid surface, providing invaluable insights into wettability, adhesion, and surface energy. Whether you're in research and development or quality control, this goniometer is an indispensable tool for optimizing surface properties and ensuring your products meet the highest standards.

Our Contact Angle Goniometer series offers unparalleled accuracy and repeatability, enabling you to make informed decisions that can transform your products' performance and market competitiveness. The user-friendly interface and intuitive software make operation a breeze, while its versatile design accommodates a wide range of sample types and sizes. With this essential tool in your arsenal, you can unlock a world of possibilities for surface modification, coating development, and material science applications, positioning your organization at the forefront of innovation.

In a world where surface characteristics play a pivotal role in numerous industries, our Surface Characterization Tools: Contact Angle Goniometer is a game-changer. Empower your team with this advanced device, and stay ahead in the quest for product excellence, quality control, and material innovation. Elevate your surface analysis capabilities and unlock the potential of your materials with this indispensable instrument.

Range of surface tension	1-1000 ± 0.1 mN/m
Measuring Range Inaccuracy	10°-180° ± 0.1°
Optics	fixed objective
Optical Distortion	<0.05%
Camera Positioning	Manual X & Z Direction Move
Sample Holder Positioning	Manual Z Direction Move
Dispenser	Automatic Dispenser (Nanoliter Resolution)
Jikan Assistant Software	Contact Angle & Surface Tension Measurement Module Included (Optional Surface Free Energy Measurement)
Dimensions	600 × 250 × 550 mm
weight	12.0 kg

**Note:** Additional software features are available upon request.

The Jikan CAG-10 is a highly advanced scientific tool that accurately measures static and dynamic contact angles, surface and interfacial tensions, roll-off, and hysteresis. It captures complex data sets to provide in-depth insights, making it a valuable tool in fields such as materials science, chemistry, and biotechnology. The semi-automatic system ensures consistently precise measurements, making it an essential instrument for any research team or laboratory.



## CAG-20 SE



Range of surface tension	1-1000 ± 0.1 mN/m
Measuring Range Inaccuracy	10°-180° ± 0.1°
Optics	fixed objective
Optical Distortion	<0.05%
Camera Positioning	Motorized X & Z Direction Move (Optional Y Direction)
Sample Holder Positioning	Motorized Y & Z Direction Move (Optional X Direction)
Dispenser	Automatic Dispenser (Nanoliter Resolution)
Jikan Assistant Software	Contact Angle & Surface Tension Measurement Module Included (Optional Surface Free Energy Measurement)
Dimensions	550 × 300 × 500 mm
weight	14.0 kg
<b>Note:</b> Thermocycle Test Chamber and Captive Bubble modules are available upon request.	

The Jikan CAG-20 SE measures contact angles, tensions, and surface energy automatically and precisely, making it ideal for laboratory and scientific settings. This device provides exact measurements of materials and substances that interact with surfaces and interfaces. It is reliable, offering meaningful data and results for scientific analysis and testing. Its automated functions and accurate measurements ensure researchers and scientists can obtain precise data.



Range of surface tension	1-1000 ± 0.1 mN/m
Measuring Range Inaccuracy	10°-180° ± 0.1°
Camera Back To Front Tilt	± 10°
Camera Positioning	Motorized X & Z Direction Move (Optional Y Direction)
Sample Holder Positioning	Motorized Y & Z Direction Move (Optional X Direction)
Hardware Control	PC via Jikan Assistant and 7 inch Touch Control Pad
Dispenser	Automatic Dispenser (Nanoliter Resolution)
Jikan Assistant Software	Contact Angle & Surface Tension Measurement Module Included (Optional Surface Free Energy Measurement)
Dimensions	550 × 300 × 500 mm
weight	15.0 kg
<b>Note:</b> Thermocycle Test Chamber and Captive Bubble modules are available upon request.	



The Jikan CAG-20 Premium Edition is a precise scientific instrument for assessing contact angles, surface tensions, and surface-free energy. It’s perfect for researchers in materials science, chemical engineering, and biotechnology. The Touch Control Pad helps with easy control over the device’s functionalities. This device can promote innovative solutions and enlighten researchers with new insights in various fields.

## CAG-100

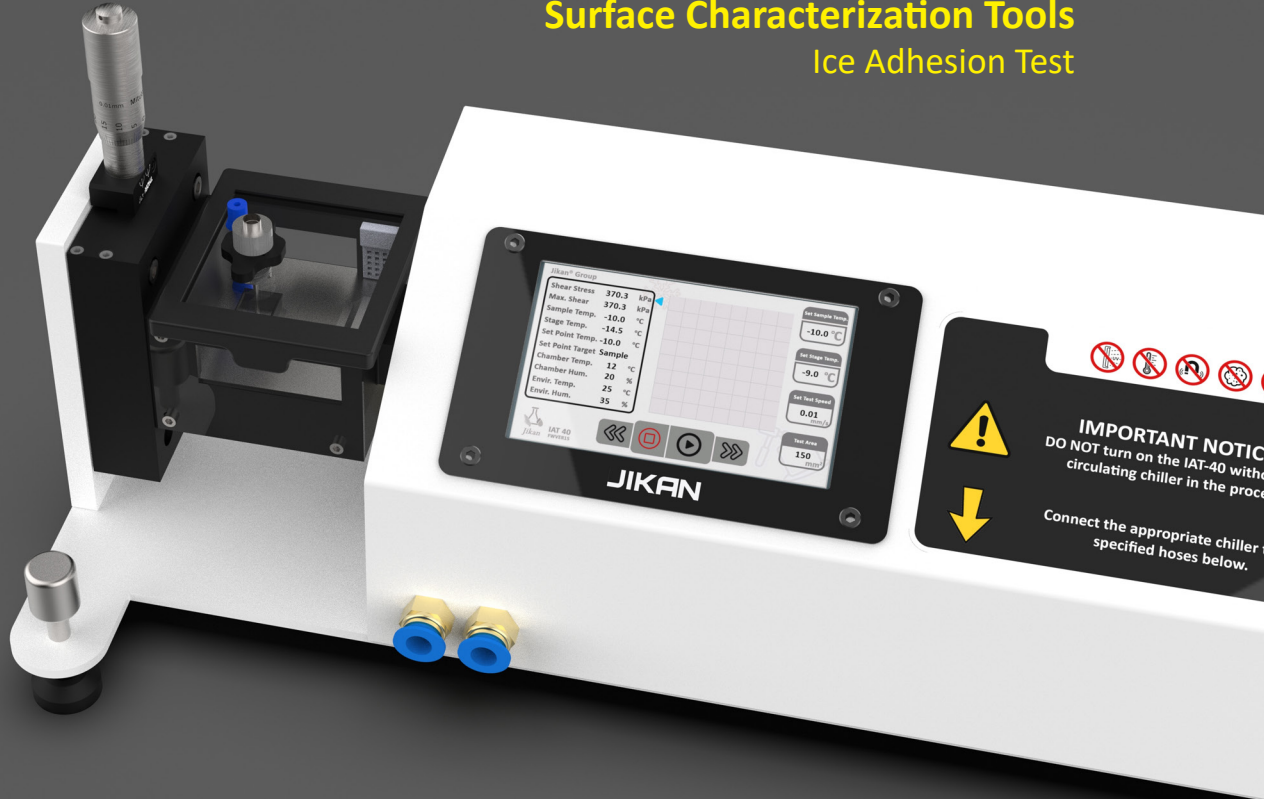


Range of surface tension	1-1000 ± 0.1 mN/m
Measuring Range Inaccuracy	10°-180° ± 0.1°
Optics	fixed objective
Optical Distortion	<0.05%
Camera Positioning	Motorized X & Z Direction Move (Optional Y Direction)
Sample Holder Positioning	Motorized Y & Z Direction Move (Optional X Direction)
Dispenser	Automatic Dispenser (Nanoliter Resolution)
Jikan Assistant Software	Contact Angle & Surface Tension Measurement Module Included (Optional Surface Free Energy Measurement)
Dimensions	550 × 300 × 500 mm
Weight	14.0 kg
<b>Note:</b> Thermocycle Test Chamber and Captive Bubble modules are available upon request.	

The Jikan CAG-100 is an upgraded version of the CAG-20, with technical enhancements that include automatic leveling, a triple injection system, a modular lighting and imaging system, and superior manufacturing quality. Its sleek body design offers users customization and flexibility in their work, while streamlining assembly for a better user experience.

# Surface Characterization Tools

## Ice Adhesion Test



Blank Group

Shear Stress	370.3	kPa
Max. Shear	370.3	kPa
Sample Temp.	-10.0	°C
Stage Temp.	-14.5	°C
Set Point Temp.	-10.0	°C
Set Point Target	Sample	
Chamber Temp.	12	°C
Chamber Hum.	20	%
Envir. Temp.	25	°C
Envir. Hum.	35	%

**IMPORTANT NOTICE**  
DO NOT turn on the IAT-40 with circulating chiller in the process.  
Connect the appropriate chiller specified hoses below.

Ice Adhesion Test Machine, a cutting-edge device engineered to address the challenges posed by ice buildup in various industries. This innovative machine is designed to evaluate and quantify the adhesion strength of ice on surfaces, providing critical data for applications ranging from aerospace and transportation to renewable energy. With its robust construction and advanced testing capabilities, our Ice Adhesion Test Machine is a key asset in ensuring the reliability and safety of your products and operations in icy conditions.

Designed with precision and flexibility in mind, our Ice Adhesion Test Machine offers customizable testing parameters and a user-friendly interface, making it a valuable tool for research, development, and quality assurance. By accurately assessing ice adhesion, you can optimize surface coatings, materials, and designs, ultimately reducing maintenance costs, improving performance, and enhancing safety in cold-weather environments. Make the smart choice by equipping your organization with the means to tackle ice-related challenges head-on and take your products to new heights of efficiency and resilience.

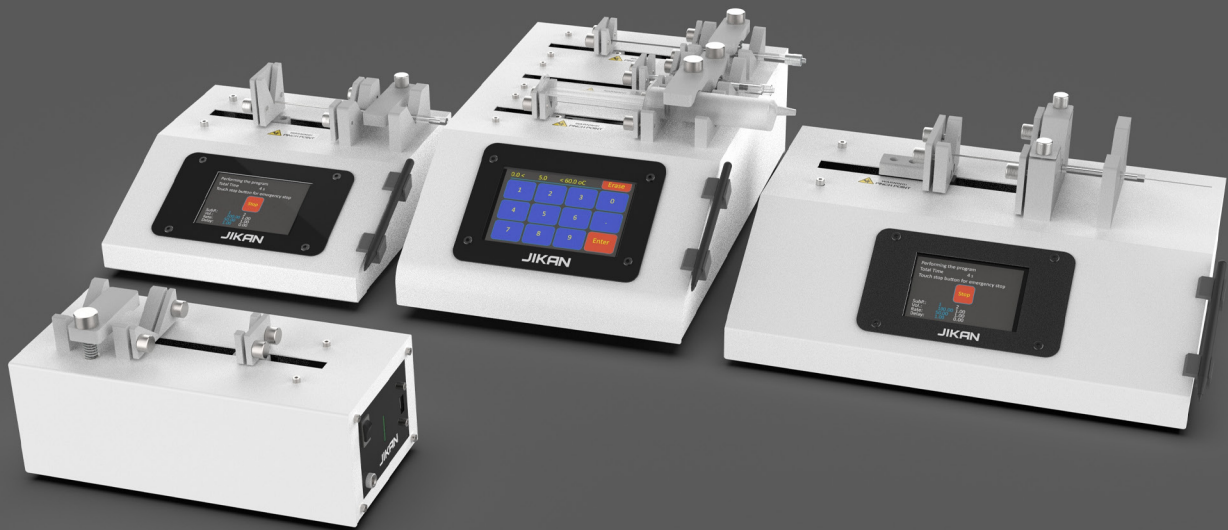
Measurement method	Load Cell
Chamber Temperature	-20 - 0°C ±0.1°C
Surface Temperature	-20 - 0°C ±0.1°C
Force Sensor Range	0.1 - 1000 kPa ±0.1 kPa
Force Probe Speed	0.1 - 500 mm/min ±1%
Thermoelectric Power	72 W
Maximum Sample Size	100 × 40 mm
Dimensions	410 × 180 × 160 mm
Weight	12.0 kg
<b>Note:</b> Custom test requirements are accessible according to the needs.	



Surface Characterization Tools  
Ice Adhesion Test

The Jikan IAT-40 is a precise tool for testing icephobicity. It measures the shear stress required to separate ice from a surface, allowing for evaluation of anti-icing coatings. Calibrated for consistent and reliable results, it has a wide range of applications in studying icephobicity.

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**Syringe Pumps**  
SPM Series

Our Syringe Pump Machines are vital components for precise and controlled fluid delivery in various scientific and medical applications. These reliable and versatile devices are designed to meet the demands of research laboratories, clinical settings, and industrial processes. With exceptional accuracy and a user-friendly interface, our Syringe Pump Machines provide an essential tool for scientists, healthcare professionals, and engineers to dispense fluids with utmost precision.

Our Syringe Pump Machines come in a range of configurations to cater to diverse needs, offering different syringe sizes, flow rates, and compatibility with various fluids. Whether you are conducting drug delivery studies, chemical reactions, or infusion therapies, these pumps can be seamlessly integrated into your workflows. Count on our Syringe Pump Machines to deliver consistent and reproducible results, ensuring that your experiments and processes are executed with the highest level of control and accuracy.



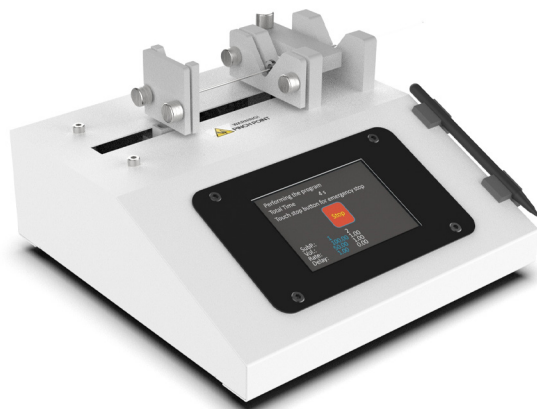
Type	Infuse/Withdraw
Accuracy	$\pm < 0.5\%$
Syringe Size (Min/Max)	10 $\mu$ l to 60 ml
Minimum Flow Rate	1 nl/s (with 10 $\mu$ l syringe)
Maximum Flow Rate	6 ml/s (with 60 ml syringe)
Linear Force	3.18 kg
Number of Pumps in Parallel	Up to 8
PC Software	User friendly software for controlling up to 8 pumps
Dimensions	230 $\times$ 80 $\times$ 100 mm
weight	2.5 kg

Note: Higher force ranges are available



The Jikan SPM-Lite syringe pump is an affordable, versatile and precise tool for scientific and medical applications. It can accommodate different syringe sizes and customized flow rates, making it suitable for various applications. Up to eight devices can be controlled concurrently with the Jikan syringe pump software controller.

## SPM-10



Type	Infuse/Withdraw
Accuracy	$\pm < 0.5\%$
Syringe Size (Min/Max)	10 $\mu$ l to 60 ml
Minimum Flow Rate	1 nl/s (with 10 $\mu$ l syringe)
Maximum Flow Rate	6 ml/s (with 60 ml syringe)
Linear Force	25.00 kg
Built-in Software Features	99 Cycles, 10 Saving Slots, Adjustable Injection/Suction Rate, Automatic Ranges
PC Software	Optional
Dimensions	260 x 120 x 200 mm
weight	5 kg
<b>Note:</b> Higher force ranges are available	

The Jikan SPM-10 is a precise instrument for fluid injection and suction, with a range of nanoliters to milliliters. It has an intuitive interface and can be programmed using a computer. It's reliable, safe, and useful in various scientific fields for accurate fluid delivery, making it a valuable tool for experimentation.

Type	Infuse/Withdraw
Accuracy	$\pm < 0.5\%$
Syringe Size (Min/Max)	10 $\mu$ l to 60 ml
Minimum Flow Rate	1 nl/s (with 10 $\mu$ l syringe)
Maximum Flow Rate	6 ml/s (with 60 ml syringe)
Linear Force	3.18 kg
Number of Channels	Three
Built-in Software Features	9 Cycles, 10 Saving Slots, Adjustable Injection/Suction Rate, Automatic Ranges, Control up to three channels simultaneously
PC Software	Optional
Dimensions	385 x 250 x 130 mm
weight	5.2 kg

**Note:** The number of channels can vary depending on needs.

The Jikan SPM-10 TC is a highly advanced and cutting-edge scientific instrument that expertly manages multiple syringe channels simultaneously. This sophisticated device allows selection of up to three completely independent dispensing channels. It offers an intuitive user interface with a large, vibrantly colored touch screen, that simplifies the syringe pump control process to a remarkable degree!



## SPM-20



Type	Infuse/Withdraw
Accuracy	$\pm < 0.5\%$
Syringe Size (Min/Max)	10 $\mu$ l to 60 ml
Minimum Flow Rate	1 nl/s (with 10 $\mu$ l syringe)
Maximum Flow Rate	6 ml/s (with 60 ml syringe)
Linear Force	25.00 kg
Built-in Software Features	99 Cycles, 10 Saving Slots, Adjustable Injection/Suction Rate, Automatic Ranges
PC Software	Optional
Dimensions	360 x 150 x 200 mm
weight	5 kg

**Note:** High Pressure Steel Syringes are available.

The Jikan SPM-20 is a high-tech syringe pump designed for accurate liquid and gas injection for static pressures up to 15 bar. It is compatible with syringes ranging from 1 micro-liter to 50 ml and has an intuitive interface. The device is safe and reliable, making it ideal for consistent experiments. Additionally, it can be programmed via PC for customization and controlled use, making it a perfect tool for laboratory technicians and researchers.



**Coating Machines**  
DCM & SCM Series

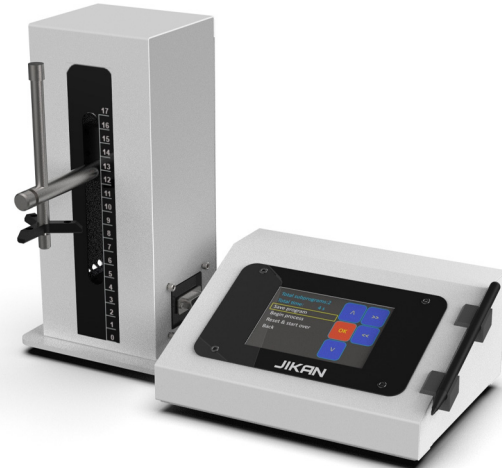
Explore our cutting-edge Coating Machines, including both dip coaters and spin coaters, designed to meet your precision coating needs across various industries. These versatile devices are engineered to provide seamless and uniform coatings for a wide range of applications, from research and development to manufacturing. With exceptional reliability and user-friendly operation, our Coating Machines ensure consistent results and superior quality.

Our dip coater is an indispensable tool for submersion-based coating applications, offering customizable immersion and withdrawal speeds to accommodate diverse coating processes. Whether you're working with substrates for solar cells, thin films, or protective coatings, our dip coater delivers impeccable uniformity and control, making it an essential asset for surface modification and material science.

For high-speed, rotational coating requirements, our spin coater offers precise control over rotation speed and coating time, enabling you to achieve consistent, even coatings on a wide variety of substrates. From photoresist application in semiconductor fabrication to the production of optical components, our spin coater is a reliable and adaptable solution for your coating needs.

With our Coating Machines, you can achieve the utmost in coating precision, ensuring your products and research meet the highest standards. From dip coating to spin coating, these instruments empower you to take your coating applications to the next level, fostering innovation and quality across your operations.

Minimum Dipping/ Withdrawal Rate	0.1 mm/s
Maximum Dipping/ Withdrawal Rate	100 mm/s
Rate Reproducibility	±0.01% @ 1 mm/s
Maximum Travel Distance	100 mm
Maximum Carrying Weight	300 gr
Built-in Software Features	99 Cycles, 10 Saving Slots, Adjustable Dipping/Withdrawal Speed, Adjustable Up and Down Stop Times
Free Grippers Included	3-Sample Gripper, 4-Sample Extra Long Gripper, Extra Long Gripper
Dimensions	110 × 280 × 110 mm
weight	13.0 kg (28.7 lbs)
<b>Note:</b> Custom grippers can be supplied based on request.	



The Jikan DCM-10 is a laboratory dip-coater that effectively applies coatings to samples in a precise, rapid, dependable, and consistent manner. The device boasts a broad spectrum of speeds and stop times, enabling users to program it for specific cycles to achieve reproducible results.

## SCM-10

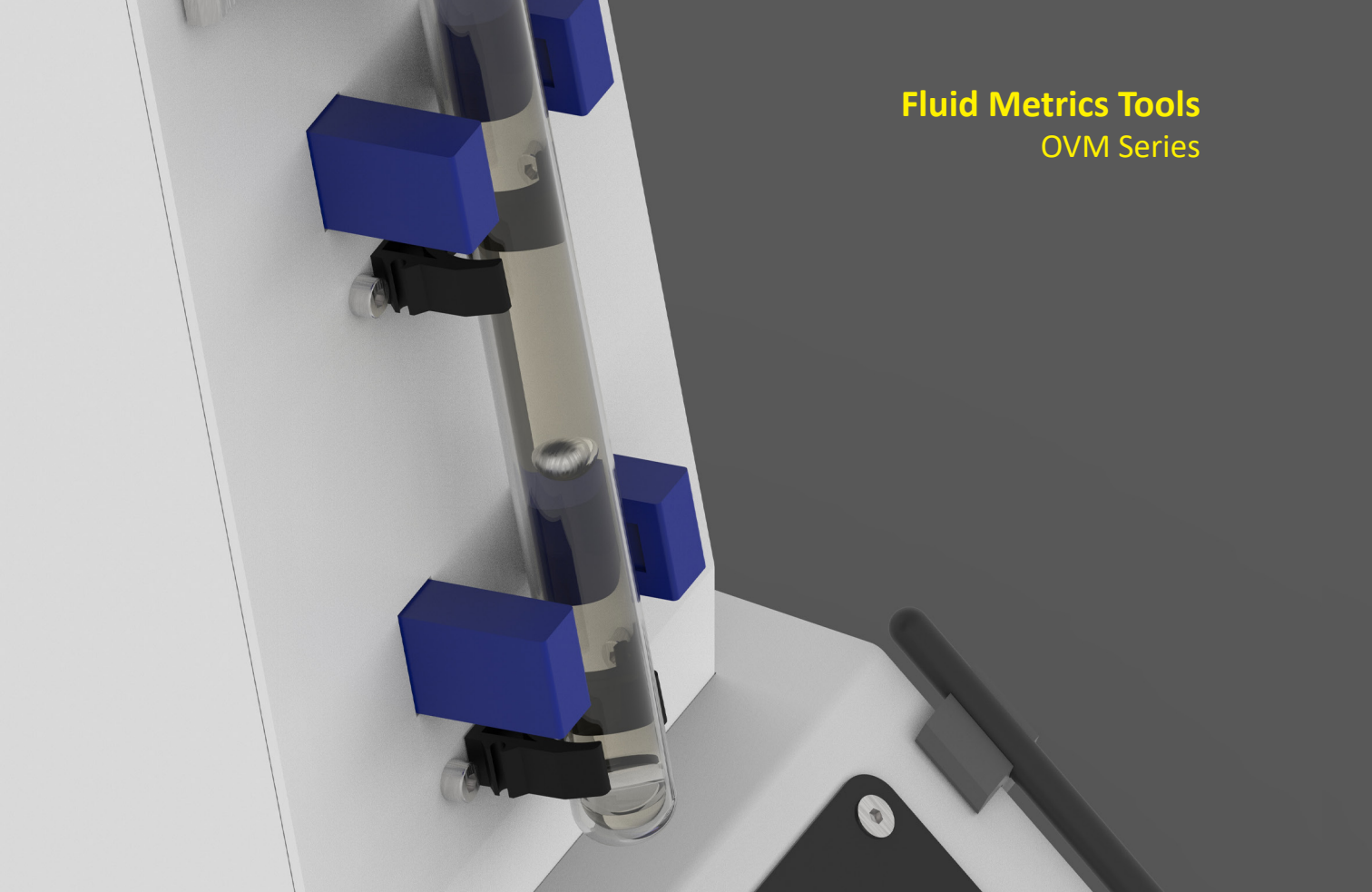


Available Number of Programs	More than 10
Steps per Program	Up to 5
Spin Speed	500- 10000 rpm
Spin Speed Accuracy	$\pm 1$ rpm
Max. Acceleration	3000 rpm/sec
Spin Time	Up to 59 minutes
Dimensions	250 × 250 × 130 mm
weight	5.2 kg
<b>Note:</b> Vacuum pump sold separately.	

The Jikan SCM-10 is a compact laboratory tool designed to spin-coat various samples up to 5 inches in diameter. With a vacuum attachment and a fully programmable interface, users can take advantage of up to 10 steps and save up to 10 programs. This device even allows for the addition of materials during the process, making it a flexible tool for scientific experimentation.



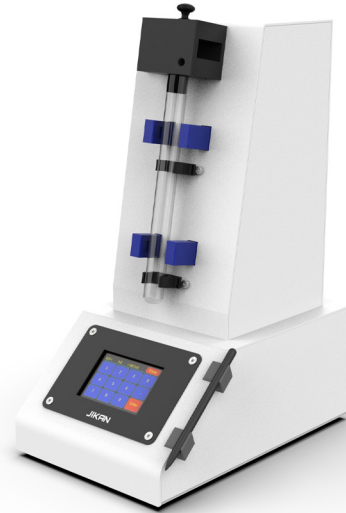
**Fluid Metrics Tools**  
OVM Series



Optical Viscometer, a revolutionary device that redefines the way we measure the viscosity of fluids. Designed for precision and ease of use, this viscometer harnesses the power of advanced optical technology to provide accurate viscosity data in real-time. Whether you're in pharmaceuticals, chemical manufacturing, or research and development, our Optical Viscometer is the ultimate solution for characterizing and optimizing fluid properties.

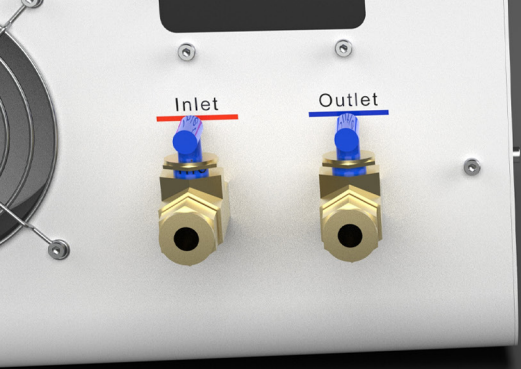
Our Optical Viscometer eliminates the need for conventional and time-consuming methods, such as manual viscosity measurements, offering a non-invasive and efficient approach to fluid characterization. With its ability to analyze a wide range of sample volumes and viscosities, this tool is an invaluable asset for quality control, process optimization, and product development. Embrace the future of fluid viscosity analysis with our Optical Viscometer and transform the way you ensure product consistency and performance.

Viscosity Range	0.6 mPa.s to 250 000 mPa.s
Viscosity Measurement Accuracy	± 1%
Temperature Range	-20 °C to 120 °C
Repeatability	< 1%
Dimensions	185 × 180 × 200 mm
weight	3.7 kg
<b>Note:</b> Temperature Control System is also available upon request.	



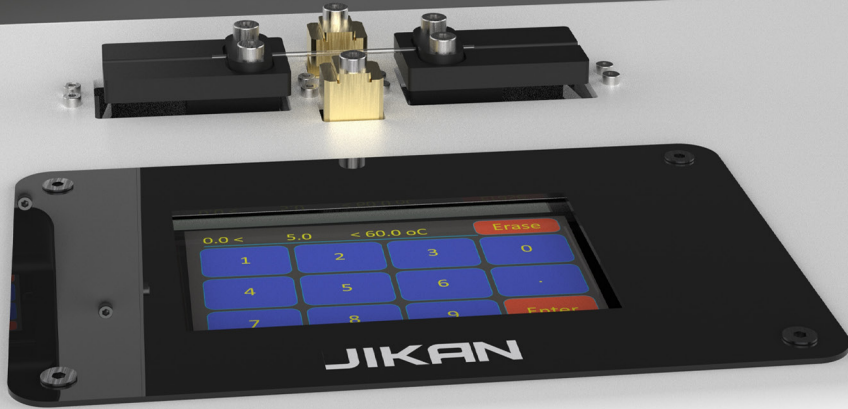
The Jikan OVM-10 is an affordable and accurate optical viscometer that measures the viscosity of transparent or semi-transparent liquids. It can measure viscosities ranging from 1 to 10000 cP using a cost-effective method and provides precision comparable to that of high-end viscometers, but is more accessible.

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## Miscellaneous Tools

CPM & RMC Tools



The Micropipette Puller is a sophisticated laboratory instrument designed for the precise and customized fabrication of micropipettes. Researchers and scientists across various disciplines rely on this device to create micropipettes tailored to their specific needs. Whether it's for delicate cellular microinjection, microfluidic experiments, or other intricate tasks, the Micropipette Puller provides the control and flexibility necessary to meet the demands of modern laboratory work.

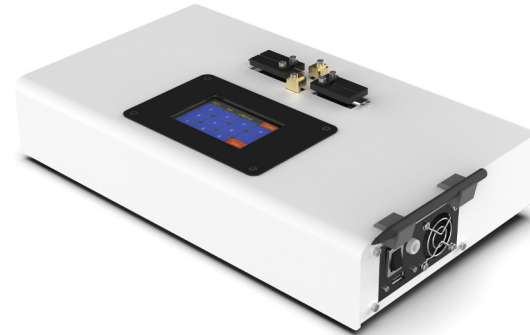
With an easy-to-use interface and advanced features, the Micropipette Puller allows users to craft micropipettes with consistent tip geometries and internal diameters, guaranteeing minimal sample wastage and accurate fluid handling. This versatile tool empowers scientists to enhance their research and experimentation by ensuring that their micropipettes are perfectly suited to the task at hand. Whether you're an experienced researcher or just starting your scientific journey, the Micropipette Puller is a valuable asset for achieving precision and reliability in your laboratory work.

Introducing our compact yet powerful Thermal Solutions Tools: Mini Chiller, a game-changing device that brings efficient temperature control to your laboratory or industrial processes. Designed with versatility and performance in mind, this Mini Chiller offers precise cooling capabilities in a small and portable package. Whether you're working in scientific research, electronics, or analytical chemistry, our Mini Chiller ensures that your equipment and processes maintain optimal temperatures, enhancing reliability and accuracy.

Our Mini Chiller is the ideal solution for applications where space is limited, but cooling efficiency is paramount. With its user-friendly interface and dependable cooling performance, it's an indispensable tool for maintaining stable temperatures in a wide range of settings. Say goodbye to the challenges of temperature fluctuations and overheating with our Mini Chiller, and welcome a new level of precision and consistency into your work environment.

Tip Size Range	0.06 $\mu\text{m}$ –3 $\mu\text{m}$
Taper Length Range	3 mm–15 mm
Heat Source	Platinum Filament
Glass Type	Borosilicate and Aluminosilicate
Max. Glass Size (OD)	4 mm
Number of Programs	100
Power Supply	AC 100-240 V, 50-60 Hz
Power Consumption	<300 W
Dimensions	350 × 280 × 230 mm
weight	13.0 kg (28.7 lbs)

[Note](#): Outer diameters <600  $\mu\text{m}$  requires P-2000/F



The Jikan CPM-10 micropipette puller is a highly adaptable and widely used device in scientific research. The device has advanced technology and mechanical strength when creating micropipettes with exceptional precision and flexibility. Researchers can easily adjust the pulling parameters for various glass compositions and sizes to create pipettes, patch pipettes, and microinjection needles.

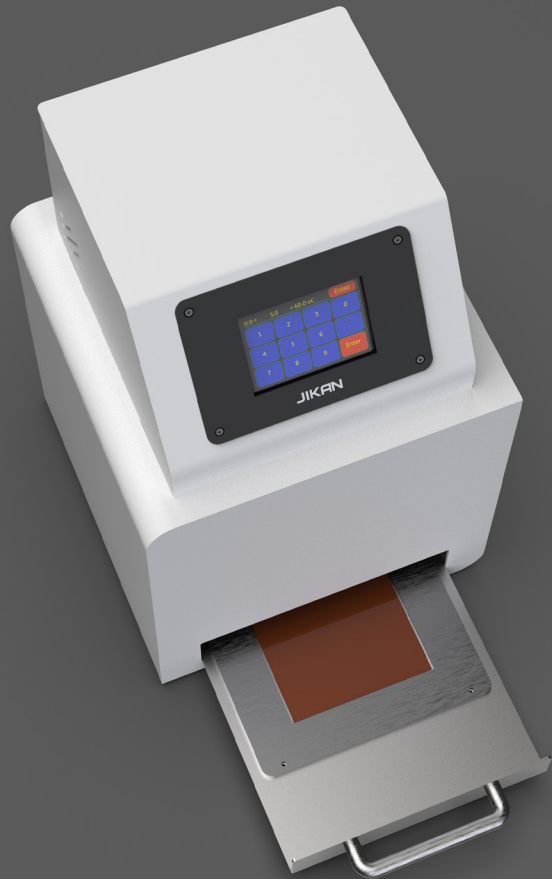
## RMC



Cooling capacity	260 W
Temperature Stability	+2/-1.5 K
Available Pressure Head	1.5 bar @1 lpm
Control Temperature Range	From Coolant Freezing Point Up to Ambient Temperature
Coolant	Water, Glycol, or Any Other Non Corrosive and Non Hazardous Liquids
Coolant Container Volume	200- 500 mL
Coolant Mass Flow Rate	3 – 9 L/min
Heating Unit	Optional (Up to 60°C)
Control	Local, USB/Serial
Dimensions	350 × 280 × 230 mm
weight	13.0 kg (28.7 lbs)
<b>Note:</b> Multiple chillers can be used for higher demands.	

The Jikan RMC is a mini chiller designed for laboratory cooling operations. Its durable design guarantees superior cooling performance and temperature stability, making it ideal for cooling liquids and other lab equipment. The device is easy to integrate and operate, making it an excellent investment for laboratory setups.





**UV Machines**  
UVM Series



Irradiation Source	UVLED (340nm-2W) (life time>100000hr)
Irradiance on Specimens	By default, according to the standard, 0.78 w/m <sup>2</sup> (optional)
Temperature Range	Ambient ± 0°C
Testing Time	0~1000hr, adjustable
Heating Unit	Optional (Up to 60°C)
Control	Programmable controller, LCD touch screen
Chamber Dimensions	230 × 230 × 340 mm
Dimensions	234 × 232 × 350 mm
Weight	3.5 kg



The Jikan UVM-10 evaluates the durability of various materials, including plastics and coatings, under outdoor sunlight conditions. This device accurately replicates the damaging effects of sunlight, particularly through UV light exposure, causing color change, gloss loss, chalking, cracking, crazing, hazing, blistering, embrittlement, strength loss and oxidation. The UVM-10 is the pioneering device worldwide to employ UV LED technology instead of UV lamps for these particular applications.

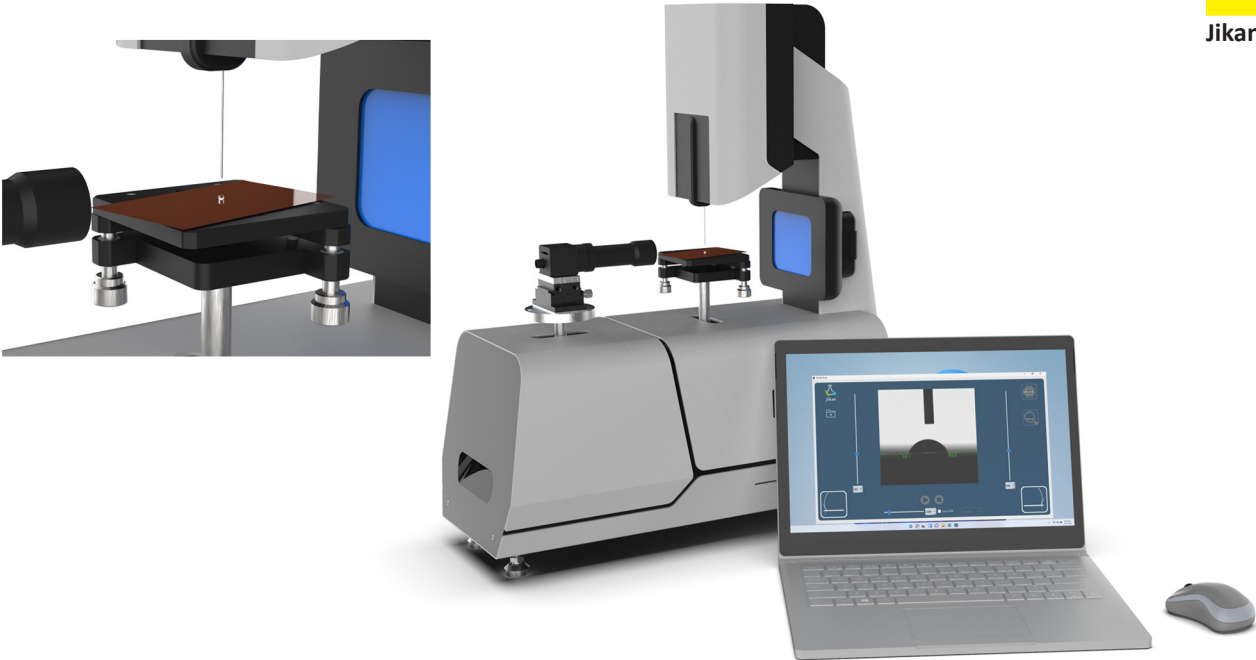
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**Software Tools**  
Jikan Assistance & FlowControl

Our range of Software Tools encompasses a suite of specialized solutions to complement and enhance the functionality of your scientific instruments. For contact angle measurement devices, our software provides an intuitive and comprehensive platform for the analysis of surface wettability. With user-friendly interfaces and advanced algorithms, you can precisely determine contact angles, assess surface energies, and gain invaluable insights into the properties of solid-liquid interfaces. This software streamlines data collection and analysis, making it an indispensable tool for researchers and quality control professionals working with contact angle measurement devices.

For those operating syringe pumps, our software for controlling these devices is a seamless and efficient solution to manage fluid dispensing and infusion processes. This user-friendly software allows for precise control of flow rates, volume delivery, and program sequences, ensuring consistency and reliability in a wide range of applications, from drug delivery research to chemical synthesis. Our software for syringe pumps simplifies complex fluid handling tasks, offering precise control at your fingertips and facilitating accurate and repeatable results, making it a crucial companion to your syringe pump operations.



The Jikan Assistant is proprietary software that controls hardware, captures images and videos, and measures properties such as contact angles and tensions during experiments. It assists researchers in obtaining reliable and accurate data by regulating inputs and parameters.

## Jikan FlowControl



The Jikan FlowControl software offers the chance to connect eight pumps to a computer and regulate them independently and collectively. The program provides the capability to monitor all pump parameters automatically, resulting in efficient data collection and automation. With these features, the Jikan FlowControl software offers the opportunity to streamline the research process and speed up access to results.



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Distributor



**JIKAN**  
2023

Jikan Surface Nano Engineering  
Science & Technology Park, University of Tehran,  
Tehran, Iran



Tel. +98-21 91690802  
E-mail: [info@jikan-scientific.com](mailto:info@jikan-scientific.com)