



## The 3rd Gen TGrinder Set

—The lightest and most convenient experimental tissue grinder

### Product Description

1-100 mg tissue samples can be grinded in a 1.5 ml centrifuge tube by the 3rd Gen TGrinder Set, which is a perfect substitute of conventional liquid nitrogen grinding for RNA/DNA extraction. TGrinder Set can achieve full homogenization and less sample loss during operation. The TGrinder Set is small in size, light to carry and have low power consumption. It is widely applicable to grinding and homogenizing animal samples like brain, heart, lung, stomach, liver, thymus and kidney, intestines, lymph nodes, muscles and other animal tissue samples as well as plant tissue samples like roots, stems, leaves, flowers, fruits and seeds.

OSE-Y30/Y40 are equipped with two 2600 mAH rechargeable batteries, each of which can continuously operate for more than 10 hours.

OSE-Y50 is equipped with a grinding pestle driven by brushless motor, which has a speed regulating function and can handle multiple samples flexibly.



Display picture of Y30/Y40



15ml Metal TGrinder Pestle  
(only matching with Y50)

### Product Features

- Two options of pestles (plastic and metal) are available for various animal and plant materials
- Easy to use, equipped with an in-line package sterilization box for grinding pestle
- Convenient to operate and pollution can be avoided by cooperating with the pestle collecting box to realize one press pestle unloading.
- Ergonomic design, safe operation and easy control
- Light and flexible, small and labor-saving



Printed Plastic  
Grinding Pestle



Ergonomic Design  
Safe operation and  
easy control

### Parameters

Cat. no.	OSE-Y30	OSE-Y40	OSE-Y50
Product Name	High Speed TGrinder	Low Speed TGrinder	Variable Speed TGrinder
Speed	11000 rpm	4000 rpm	0-12000 rpm
Rated Voltage	3.7 V Battery	3.7 V Battery	Power adapter
Noise	<65 db	<70 db	<65 db
Matched with 15 ml Metal Grinding Pestle	No	No	Yes

Kit content	Cat. no.	No.
3rd Gen TGrinder		1
3rd Gen Metal TGrinding Pestle	OSE-Y002	2
Grinding Pestle Collecting Box	OSE-Y003	1
Grinding Pestle Box (40 plastic TGrinder pestles are included)	OSE-Y004	1

### Sterile design, convenient to use

Equipped with the sterilization box for TGrinder pestles

The whole box is sterilized with in-line package



### A wide selection of accessories

Equipped with plastic and metal TGrinder pestles, which can be applied to various animal and plant materials



### Portable toolbox

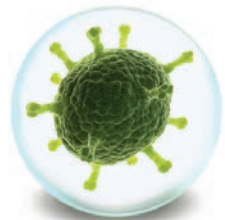
All accessories can be easily carried in the toolbox



### One-press pestle releasing to avoid pollution

Supplied with a matching collection box. Insert the pestle into the unloading hole, and the pestle will fall off automatically with a slight press.

Pollution can be avoided by collecting all the pestles in the box.



Animal tissues (muscle/viscera/tumor, etc.)

Microorganisms (fungi/bacteria)



Plant tissues (root/stem/leaf/flower/fruit/seed)



# TGrinder H24 Tissue Homogenizer

—Strong-power experimental grinder with high throughput and high efficiency

## Product Description

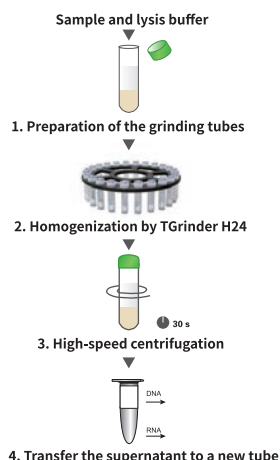
TGrinder H24 Tissue Homogenizer adopts the three-dimensional high-speed vibration mode to process 1-24 independent grinding tubes at the same time. TGrinder H24 can effectively grind, break and homogenize different types of biological samples (such as plant tissue, animal tissue, soil and feces, etc.) through grinding media (zirconia beads, stainless steel beads, ceramic beads and glass beads, etc.). By applying different reagents, DNA/RNA with good integrity can be extracted from samples quickly and stably.

## Product Features

- Three-dimensional motion mode: The grinding homogenization force is 2-5 times that of the traditional instruments, and the grinding homogenization is with high speed and efficiency
- Circular sample holder design: Uniform grinding effect with no cross contamination
- Unique structure and noise reduction design: The instrument parts are not easy to wear off, and the running noise is reduced to ensure a better user experience
- Automatic protection device: When the protective cover is not closed, the instrument can not start or emergency brake, so as to protect the safety of laboratory personnel



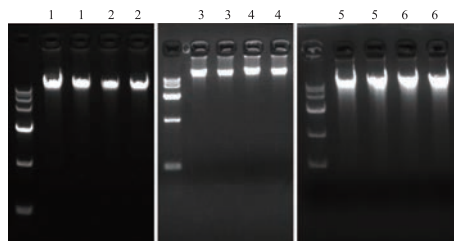
## Experimental Procedure Parameters



Cat. no.	OSE-TH-01
Motor Speed	2430-4260 rpm
Vibration Strength (linear speed)	4.00-7.00 m/s, 0.05 m/s setting adjustment
Time Setting	Running time: 1-90 s, pause time: 1-120 s, number of cycles: 10
Program Storage	50
Sample Flux and Holder	24 × 2 ml grinding tube holder (standard), 12 × 5 ml grinding tube holder (optional)
Sample Holder	Circular
Noise Level	<70 db
Dimension	280 mm × 360 mm × 385 mm
Weight	25 kg
Power Supply	AC 100-240 V, 50-60 Hz

## Grinding Homogenization Plan

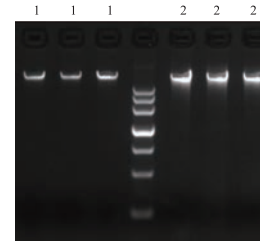
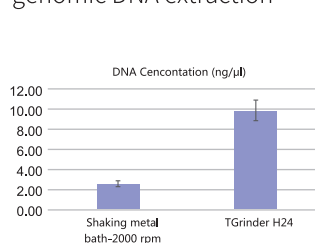
Grinding and homogenization of animal/plant tissue samples and genomic DNA extraction



- 1: Manual liquid nitrogen, sample: rat liver;
- 2: TGrinder H24, sample: rat liver;
- 3: Manual liquid nitrogen, sample: rat heart;
- 4: TGrinder H24, sample: rat heart;
- 5: Manual liquid nitrogen, sample: wheat leaf;
- 6: TGrinder H24, sample: wheat leaf.

The genomic DNA of 20 mg animal tissue and 10 mg plant tissue were extracted by liquid nitrogen and TGrinder H24 grinding and homogenizing respectively. The yield of genomic DNA of the samples was basically equal.

Grinding and homogenization of soil samples and genomic DNA extraction



- 1: Shaking metal bath; 2: TGrinder H24.

The genomic DNA of 0.25 g soil samples was extracted by shaking metal bath and TGrinder H24 respectively. The yield of genomic DNA by TGrinder H24 was significantly higher, and the pretreatment time of samples was significantly lower (shaking metal bath-2000 rpm 10 min, TGrinder H24-6m/s 30s 2cycles).



# TGet Electronic Pipette

—One hand operation, comfortable and convenient

## Product Description

TGet Electronic Pipette can automatically transfer liquid based on the principle of air piston replacement.

It can reduce the risk of manual pipetting error, and is capable of performing the functions which manual pipette can't achieve, such as multiple dispensation and measurement of liquid with unknown volume, making it an ideal pipette in the laboratory.

It is easy to operate, with the ergonomic design and a flexible knob to quickly set the pipetting parameters. The 1.44-inch color screen clearly displays all kinds of pipetting information. Various pipetting combination modes can be quickly changed by the simplified menu and the adjustment knob.



## Product Features

- **High accuracy:** The step motor accurately controls the piston stroke. The piston has passed the infrared inspection to ensure the consistent precision.
- **Stable and reliable:** Automatic calibration before pipetting to ensure the reproducibility of the experiments.
- **Powerful functions:** Four basic pipetting modes, with adjustment knob, to realize fast and flexible combination pipetting.
- **Comfortable to use:** Ergonomically designed handle and finger press, easy to hang on the hand and free from hand strain.
- **Simple operation:** Users can quickly master the pipetting skills without the need to select from multi-level menu.
- **Durable:** Stainless steel nozzle and other special materials ensure stable and reliable quality.



## Parameters

Cat. no.	Volume range (µl)	Plunger bottom color	Increment (µl)
OSE-EP-01	0.5-20	Green	0.1
OSE-EP-02	5-200	Blue	0.5
OSE-EP-03	50-1000	Purple	1
OSE-EP-04	100-5000	Red	10

## Introduction of the Basic Functions

Basic mode	Optimized function
Manual Pipetting	Continuously perform aspiration and dispensation, and the pipetting volume can be easily measured.
Automated Pipetting	Automatically control the volume of aspiration and dispensation.
Multiple Aspiration	Perform rapid aspiration and dispensation of equal or unequal aliquots.
Multiple Dispensation	One-time aspiration and mix of equal or unequal aliquots.
	Dispense a solution in a sequence of multiple equal or unequal aliquots. The dispensing times can be recorded automatically.

# TGreen Blue Light Monitor

—Small real-time gel observation/cutting instrument

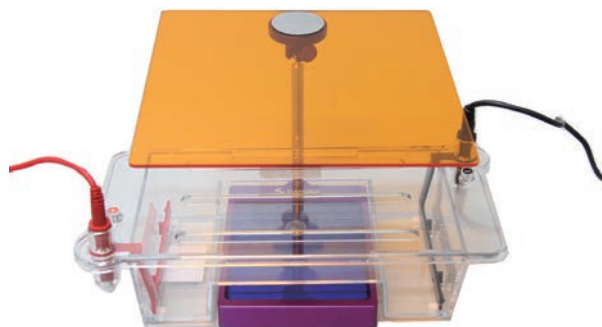
## Product Description

TGreen Blue Light Monitor is a real-time gel observation instrument used in combination with electrophoresis tank to observe fluorescence staining of nucleic acid gel electrophoresis.

LED blue light source is adopted to observe nucleic acid dyed with various safety dyes/EB dye. Combined with fluorescent dyes such as GeneGreen, the resolution can be as low as 2 ng.

The filter of the instrument can avoid the cross contamination of traditional filter glasses. The filter can be turned and fixed 360 degree according to your needs, making it more convenient to use.

Compatible fluorescent dyes: EB, GeneGreen, GeneRed, GelGreen, GelRed, Goldview, etc.

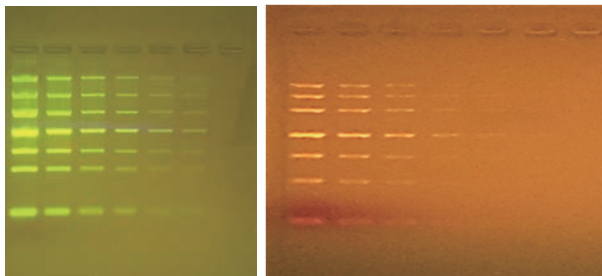


## Product Features

- Wide range of application: Match with 80% of electrophoresis tanks on the market (except for opaque bottom and grooveless electrophoresis tanks)
- Safety: Blue light source is adopted to avoid cross-contamination of traditional filter glasses
- High resolution: As low as 2 ng nucleic acid dyed with GeneGreen can be observed
- Good compatibility: Compatible with all kinds of fluorescent dyes
- Convenient: The filter can be fixed 360 degrees freely
- Multi applications: It can not only realize real-time monitoring, but also be used for gel cutting with gel cutting frame

## Parameters

Cat. no.	OSE-470M	OSE-470ML
Accessories	No	Including electrophoresis tank and gel cutting frame
Dimension	192 mm×70 mm×23 mm	155 mm×115 mm×24 mm
Light Cover Area	150 mm×58 mm	113 mm×100 mm
Amber Filter Size	210 mm×210 mm	210 mm×210 mm
LED Light Wavelength	470 nm	470 nm
LED Arrangement	Matrix bottom lighting	Matrix bottom lighting
LED Light Lifetime	50,000 h	50,000 h
Power Adapter	DC 12 V, 2 A, 50/60 Hz	DC 12 V, 2 A, 50 /60 Hz
Weight	0.32 kg	0.6 kg



TIANGEN Marker III was diluted to 6 gradient concentrations with a 2 times gradient. The concentration of the brightest bands (1200 bp) were 100 ng, 50 ng, 25 ng, 12.5 ng, 6.25 ng and 3.125 ng. GeneGreen and EB were used as nucleic acid dyes respectively. Samples were run on 1.5% agarose gels, at 120 V for 40 min. Transfer the gel onto the gel tray and place it on the TGreen Blue Light Monitor, observe and take photos. (Left: GeneGreen, right: EB)

## Gel Cutting Frame (OSE-470M-A001)



Acrylic cutting frame can be use with TIANGEN TGreen Blue Light Monitor for convenient gel cutting.

# TGreen Transilluminator

—Safe and convenient gel observation/cutting assistant

## Product Description

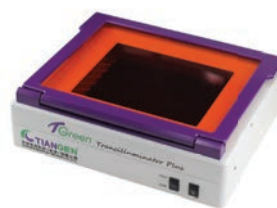
TGreen Transilluminator adopts LED blue light source, amber filter and 470-520 nm excitation light material, which can be used for observation and cutting of gels loaded with GFP protein, or nucleic acid stained with a variety of safety dyes/EB. With fluorescent dyes such as GeneGreen, dsDNA can be detected as low as 0.5 ng (1000 bp).

TGreen Transilluminator can keep you safe away from UV radiation, with no damage to human eyes/skin/nucleic acid. The filter can rotate at multiple angles, which is convenient for gel-cutting. The life-time for LED cold light source is up to 50,000 h.

Compatible fluorescent dyes: EB, GeneGreen, GelRed, GelGreen, SYBR Green, SYBR Safe, Goldview, SYBR Gold, SYPRO Ruby, SYPRO Orange, SYPRO, Tangerine, eGFP, Cy2, FITC, etc.



OSE-470



OSE-470L

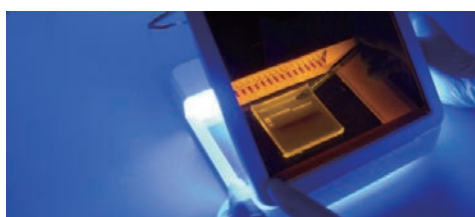
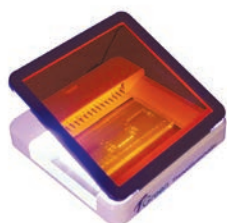
## Parameters

Cat. no.	OSE-470	OSE-470L
Dimension	210 mm x 210 mm x 30 mm	280 mm x 340 mm x 80 mm
Observation Area	120 mm x 70 mm	160 mm x 200 mm
Adjustable Light Intensity	No	Strong/Weak
Power Adapter	DC 12 V, 2.5 A	DC 24 V, 1.67 A

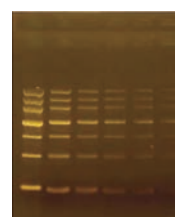
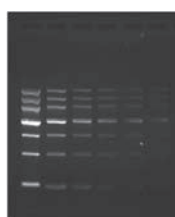
## GeneGreen Nucleic Acid Dye (RT210)

GeneGreen is a kind of oily macromolecule of cyanine, which can be added directly in gels to make nucleic acid showing green fluorescence under the excitation of blue visible light (254-470 nm), which can be directly observed by naked eyes and gel-cutting can be performed.

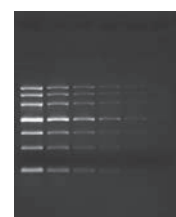
The safety test proves that the dye can not penetrate the cell membrane to enter the living cells. It is not volatile to be inhaled into the human body. It doesn't contain the high mutagenicity as EB dye, therefore safe for the operators and environmental friendly .



The effects of GeneGreen staining on ultraviolet and blue light imaging device



The effects of EB staining on ultraviolet imaging device



TIANGEN Marker III was diluted to 6 gradient concentrations with a 2 times gradient. The concentration for the brightest bands (1200 bp) are: 100 ng, 50 ng, 25 ng, 12.5 ng, 6.25 ng, 3.125 ng. DNA input: 6 µl.



# TGrade Dry Bath Incubator

—New upgrade, better experience

## Product Description

OSE-DB-01 heating type TGrade Dry Bath Incubator is a dry constant temperature metal bath. When 24 V DC is connected, the temperature can be maintained at the specified temperature from room temperature to 105 °C. Five time and temperature periods can be set.

OSE-DB-02 cooling type TGrade Dry Bath Incubator can maintain temperature within -10 °C~100 °C (to reach -10 °C, the environment temperature needs to be at 15 °C or below).

## Product Features

- Five stage program control, providing more choices and is compatible with more complex experiments.
- Motor upgrade, more accurate temperature control, faster temperature change
- Free module combination, different centrifugal tubes are insulated at the same time
- Stylish design, refined experience

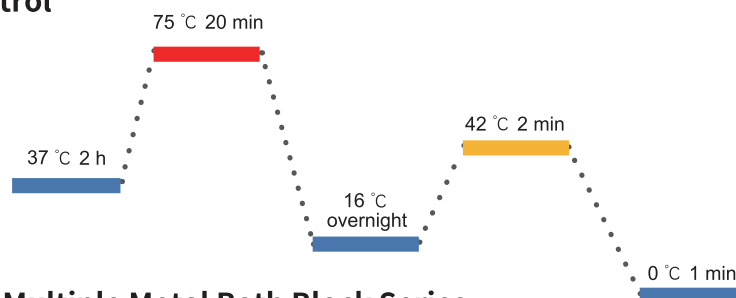


## Parameters

Cat. no.	OSE-DB-01	OSE-DB-02
Temperature Setting Range	5°C–105°C	-10°C–105°C
Temperature Control Range	Room temperature*+5°C–105°C	Room temperature*-25°C–105°C
Heating Time	≤4 min (Increase from room temperature to 105°C)	
Cooling Time	≤15 min (Decrease from 105°C to room temperature)	≤10 min (Decrease from 105°C to room temperature)
Temperature Stability at 105 °C	≤±0.5°C	
Maximum Temperature Difference at 40 °C	0.3°C	
Timing Range	1 min–99 h 59 min	
Weight	1.1 kg	1.9 kg
Power Adapter	DC 24 V, 5 A	

\* the room temperature here is 25°C

## Five Stage Program Control

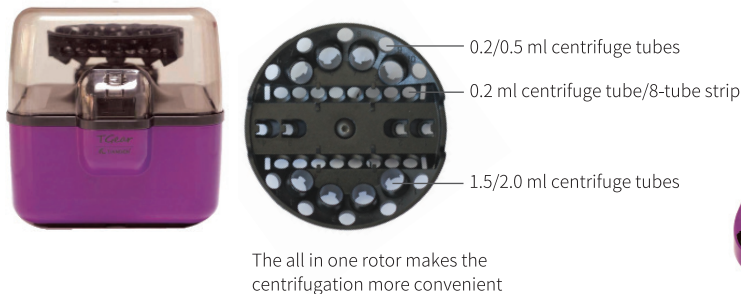


## Flexible Combination of Multiple Metal Bath Block Series

Aluminum block type	24-well 0.2 ml	12-well 0.5 ml	6-well 1.5 ml	6-well 2.0 ml	6-well 15 ml	3-well 50 ml	96-well 0.2 ml
							
Model no.	OSE-Q0.2	OSE-Q0.5	OSE-Q1.5	OSE-Q2.0	OSE-Q15	OSE-Q50	OSE-P96

## TGear Mini Centrifuge

—High-efficient experimental assistant with all in one rotor design



## TGear Plate Centrifuge

—Mini short-spin centrifuge specific for microplates/8-tube strips



### Product Description

TGear Mini Centrifuge is a mini short-spin centrifuge suitable for various types of centrifuge tubes. It is suitable for the centrifugation before PCR experiment, and molecular biological experiments such as rapid sample precipitation, separation of supernatant from various samples, separation of serum from whole blood as well as the separation of blood cells with trace amount.

### Product Features

- Patent design: Equipped with the patented all in one rotor, capable of centrifuging 0.2/0.5/1.5/2.0 ml centrifuge tubes and 8-tube strips at the same time.
- Powerful high speed: The 8000 rpm high speed motor and larger centrifugal angle speed can achieve fast centrifugation.
- Stable with low noise: Mute technology combined with bottom weighting design, low noise and no displacement.
- Safe and durable: The cover control switch and unique inlay design ensures better durability.

### Parameters

Cat. no.	OSE-MC8
Machine Weight	1.8 kg
Dimension	183 mm × 151 mm × 153 mm
No-Load Speed	8000 rpm
Input Power	100-240 V, 50-60 Hz, 2 A

### Product Description

TGear Plate Centrifuge is a mini short-spin centrifuge specially designed for 8-tube strip/96-well plate/384-well plate. The liquid drops hanging on the side wall of the micro-well plates can be centrifuged instantly and the liquid can be mixed evenly.

The product design is depended on the principle that small amount of liquid can remain on the of the bottom of the micro-well plate by surface tense, so as to avoid the leakage of liquid from the plate after centrifugation. TGear Plate Centrifuge can be widely used for the pulse-spin of the PCR/qPCR samples.

### Product Features

- Strong power: The brushless motor can accelerate to 2800 rpm instantaneously to ensure effective centrifuging and mixing of the wall hanging droplets to the bottom of the tube.
- User friendly: Applicable for the pulse-spin of 96-well plate/384-well plate/8-tube strip without the need to replace the rotor.
- Small volume: Only 1/8 the size of the traditional all-in-one centrifuge, convenient to move.
- Simple to use: Configured with two operation modes: instantaneous/timing, easy and safe to operate with low noise.

### Parameters

Cat. no.	OSE-MP25
Machine Weight	2.1 kg
Dimension	219 mm × 190 mm × 186 mm
No-Load Speed	2800 rpm
Input Power	DC 24 V, 3 A
Instrument Capacity	2 pieces of PCR microplates
Max RCF (PCR)	627 × g

# TGem plus Spectrophotometer

—A new generation of intelligent user friendly nucleic acid detector

## Product Description

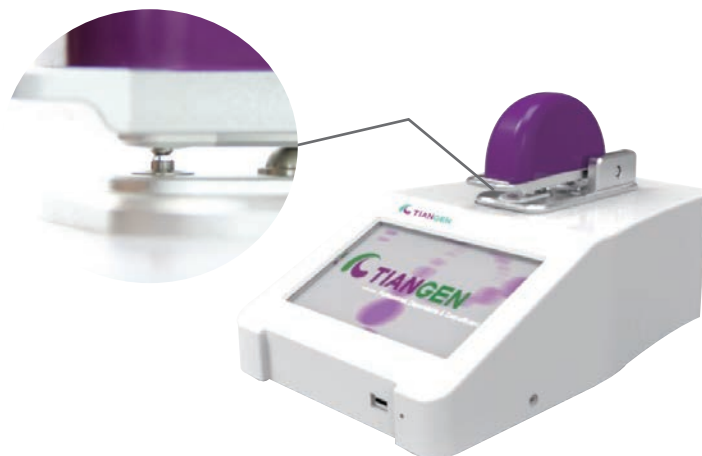
TGem plus Spectrophotometer is an integrated full wavelength UV/Vis micro spectrophotometer with high performance tablet and 7-inch high-resolution touch screen, Win7 operating system and related application software. TGem Plus can measure 1  $\mu$ l sample in 2 s with high accuracy and repeatability. The TGem Plus flagship version (OSE-260-02) is also equipped with a cuvette measuring module block for enzyme kinetic analysis and low concentration sample measurement.

## Product Features

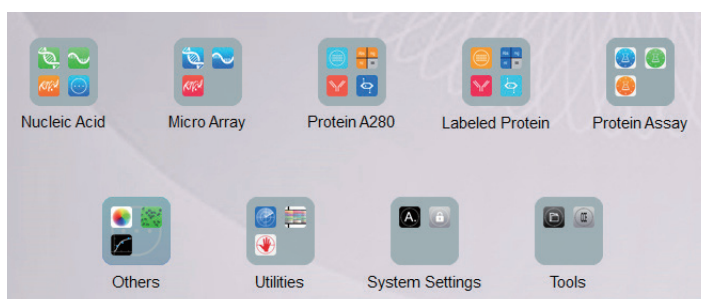
- Automatic detection, accurate measurement, and easy to get data
- Built in high-speed CPU, 2G memory, fast response with no need to wait
- Integrated tablet, user-friendly interface, measurement with a simple touch
- All-in-one design to make one device to meet all requirements
- Extreme industrial design, precision workmanship, more stable and reliable
- Simple operation and comprehensive care for user experience

## Parameters

Cat. no.	OSE-260-01/OSE-260-02 with a cuvette
Built-in Computer	Built-in industrial main board MIO2261N, CPU intel Atom N2600/N2800 16G solid Hard driver 2G Memory 2×USB 2.0 RJ45 Ethernet Windows 7 7-inch touch screen
Light Path	0.25 mm and 0.05 mm
Wavelength Range	200-900 nm
Loading Volume	1-3 $\mu$ l
Detection Range	2 -15,000 ng/ $\mu$ l (dsDNA)
Detection Time	~2s
Dimension	200 mm × 320 mm × 100 mm
Weight	2.8 kg
Working Voltage	DC 12V, 5A
Dimension of Cuvette	12.5 mm×12.5 mm×45 mm (Exclusive for the flagship version)
WIFI	Optional



**Friendly interface More intuitive**  
**Faster hotkeys More convenient**



Nucleic Acid-dsDNA



Protein Assay-BCA



Cell Cultures



UV-Vis

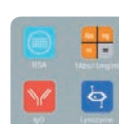


View History Data

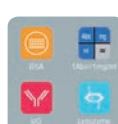


All-in-one

Protein A280



Labeled Protein



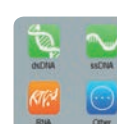
Protein Assay



Others



Nucleic Acid





## 15 ml Tube Magnetic Stand

—Light, handy 15 ml magnetic stand

### Product Description

This product is suitable for the magnetic beads separation experiment of 15 ml centrifuge tube. The powerful magnet can quickly separate the magnetic beads. Combined with the magnetic beads extraction kits, it can quickly separate nucleic acids, proteins, cells and other substances.

### Product Features

- High efficiency: High magnetic field strength, which can effectively separate all kinds of magnetic beads.
- Small and durable: Made of "super steel" POM material, light and wear-resistant.

### Parameters

Cat. no.	OSE-MF-02
Specification	2×6 holes
Specification of Consumables	15 ml centrifuge tube
Dimension	145 mm×50 mm×88 mm
Weight	600 g



## 200 µl PCR Plate Magnetic Stand

—Magnetic stand specially designed for PCR plates

### Product Description

This product is suitable for 200 µl tube/strip tube/plate magnetic beads separation experiments. The powerful magnet can quickly separate magnetic beads. With the magnetic beads extraction kit, it can quickly separate nucleic acids, proteins, cells and other substances.

### Product Features

- Convenient: Designed with 13 rows, and fast magnetic beads adsorption, separation and sample rinsing can be achieved
- Small and durable: The base of the stand is made of acrylic material, light and wear-resistant, easy to observe
- High efficiency: High magnetic field strength, high efficiency in separating all kinds of magnetic beads



## 200 µl 8-Strip Tube Magnetic Stand

—Magnetic stand specially designed for 8-strip tubes

### Product Description

This product is suitable for 200 µl tube/strip tube magnetic beads separation experiments. The powerful magnet can quickly separate magnetic beads. With the magnetic beads extraction kit, it can quickly separate nucleic acids, proteins, cells and other substances.

### Product Features

- Small and beautiful: The base is made of 6061 aluminum, light and wear-resistant
- High efficiency: High magnetic field strength, high efficiency in separating all kinds of magnetic beads



# Overall Solution of TIANGEN Instruments

TIANGEN BioTech (Beijing) Co., Ltd. is a biotechnology company specializing in R&D, manufacturing, sales and customer service. For nearly two decades, we are committed to providing high cost performance, stable and reliable molecular biological reagents, instrument products and professional technical services for our users.

TIANGEN adheres to the concept of convenient, efficient and user-friendly instrument development, and relies on the global advanced instrument production platform to develop a series of fast and automatic experimental instrument products, focusing in sample treatment, reaction system preparation, nucleic acid extraction, sample analysis and detection.



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