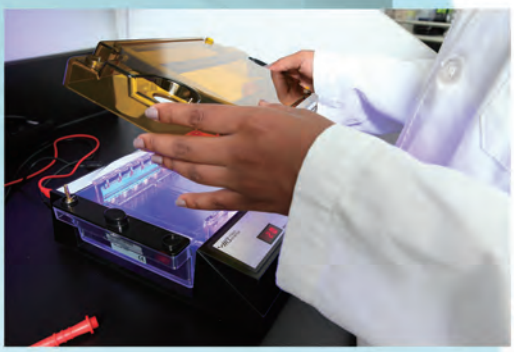
version 1.0

major science

2023-2024 BROCHURE



Innovative Life Sciences Tools

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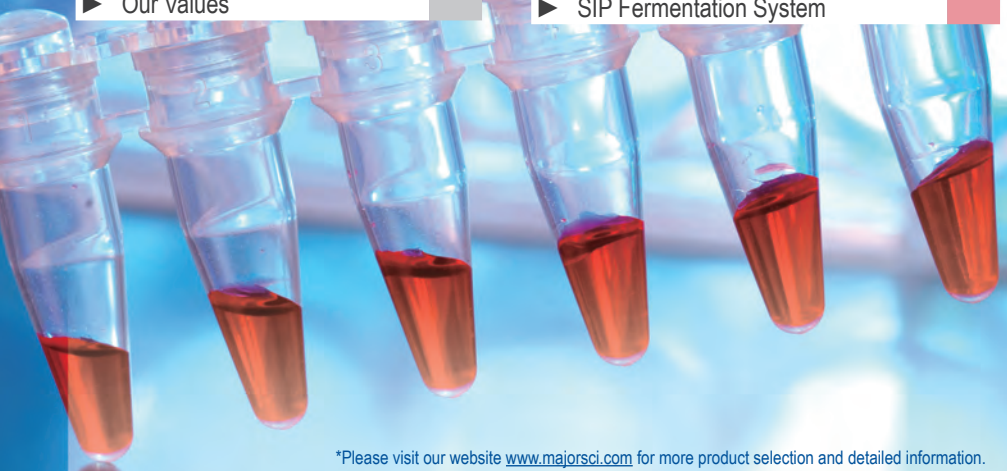


*Please visit our website www.majorsci.com for more product selection and detailed information.

About Major Science

Who We Are

Founded in 1994 by a team of experienced engineers as well as up-and-coming design specialists, Major Science designs, manufactures, and markets laboratory equipment that supports scientific research in life sciences laboratories. Headquartered in Taiwan, Major Science provides laboratory products and quality services to biotechnology companies, academic institutions and government research labs across the world.

Major Science is consistently delivering cutting-edge instruments for the bio-industry that cover nearly all of your laboratory needs. We provide the Winpact serials brand products which are the state-of-the-art fermentor and bioreactor for the fermentation and cell cultivation system. The Winpact serials brand products offer a wide range of fermentation systems and includes many of the most widely applied bench top-sized instruments for the life sciences field. In addition, we also offer innovative general instruments for all of your laboratory needs. Our general instrument product line includes Electrophoresis and Related Products, Gel Documentation System, Blue Light Technology, Mixer / Temperature Control and Peristaltic Pump.

Major Science conducts business via our global distribution partners who also serve as our main sales force. These strategically-located partners ensure that Major Science supplies top-quality products, services, and support to all of our customers in any region of the globe. Products from Major Science are produced under international quality standards and specifications that excel in performance.

For more information, please feel free to contact us.
www.majorsci.com
info@majorsci.com

Our History

1994 Major Science founded as a biotechnology instrument distributor and provide engineering service in life sciences field.
1996 Began to sell Major Science branded general instruments.
2000 Announced our Winpact fermentation and cell cultivation product lines.
2005 Built up global awareness.
2008 Founded branch offices overseas.
2013 Accredited to SGS ISO 9001:2008
2017 Accredited to SGS ISO 9001:2015
2018 Accredited to TQCSI ISO 9001:2015

TQCSI ISO 9001:2015 Quality Certified TA2504-QC

JAS-ANZ

Winpact

Fermentation and Cell Cultivation Technology

Winpact is a product brand under Major Science, which provides a comprehensive and innovative line of cultivation products designed for different cell culture experiments and applications. It comes at a benchtop scale and has a large, color touch-screen panel with a user-friendly interface. Its distinctive functions include various programming operations to control the pump speed, pH levels, temperature, and more. The Winpact Fermentation System comes equipped with a full connection device to connect to any PC for real-time recording and environment control within the vessel.

About Major Science

Our Mission

Major Science is devoted to create life sciences research instruments through quality and innovation. Our mission is to deliver integrated laboratory solutions to our customers and distribution partners through collaborative teamwork, thoughtful innovation, practical efficiency and outstanding service.

Our Vision

Major Science is devoted to serving customers in the scientific community across the globe, which means we are constantly progressing toward further innovation and working for wider applications for our products.

Creating innovative cell cultivation solutions is among one of our highest priorities. For the Winpact family product lines, we will be adding vessels that are bigger and smaller in size, as well as pilot and production scale vessels. Furthermore, we are developing the means to create connections from multiple cell culture vessels in different conditions to a single controller. In addition, Major Science is expanding on the cell cultivation line with more optional devices that can be integrated with our current systems. These expansion includes various vessel types, parts, accessories, and sub-systems. We will also embed the use of disposable systems that function with plastic instead of glass vessels.

Our Quality Policy

As of January, 2013. Major Science is accredited to the SGS ISO 9001:2008 compliance.

Major Science strives to achieve high standard for customer satisfaction, we promise to always improve our quality by means of research and development, as well as embrace any challenge come forth within.

Our Capabilities

- Innovative product design from our in-house R&D team
- Flexible production schedules
- ETL certified manufacturing facility
- CE and 3rd party certification
- OEM/ODM production experiences with leading companies
- Global marketing and product support
- Worldwide liability insurance across all product lines

Our Values

Serving our customers
Major Science cares about what you care and we are dedicated to gaining your confidence. Major Science dedicated in providing best efforts to all of our customers' needs whether they are customized products or technical supports or others.

Innovation
Major Science is determined to use not only our expertise in the laboratory, but also the prior experience of our users and employees to breakthrough with the future generations of our cultivation products along with the advancement of all our other products.

Professionalism
Major Science has its own professional Research & Development team of scientists and product specialists that are further supported by an outperforming sales team. We integrate laboratory experiences with customers' feedback in order to ensure the best quality of products and services from the placing of your order to its delivery.

User-friendly Instruments
Major Science offers easy-to-operate and convenient instruments in the world of biotechnology. We provide simple and intuitive methods such as touch-screen and keypads for different applications that are easy to navigate and operate.

Staying Green, protecting mankind
Major Sciences collaborate with our global distributors to distribute our products to every corner of the world, we take pride and corporate social responsibility of being a good global citizen in ensuring the protection of our environment.

Intertek

HOTAI INSURANCE

* All images are for reference only, actual products might differ from the pictures above.
* Technical specifications subject to change without notice.

Winpact serves as our major product brand under Major Science. We strive to create innovative fermentors and fermentation bioreactors for all your cell cultivation and fermentation needs.

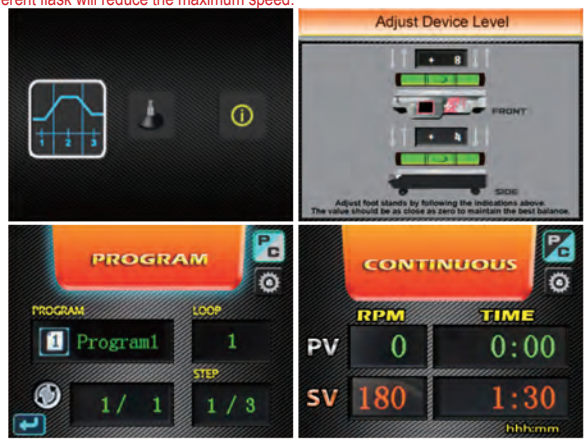
Winpact Shaker

- Various speed settings from 20-500 rpm
- Equipped with a robust brushless DC motor for economical and noiseless operation
- Two modes of operation available: programmable or continuous
- Versatile accessories available for advanced culturing solutions
- Auto detection and power shutdown to platform weight imbalance or belt breakage

WS-200 / WS-201

* Different flask will reduce the maximum speed.

Cat. No.	WS-200	WS-201
Description	Winpact Orbital Shaker (universal platform included)	Winpact Orbital Anti-moistured Shaker (universal platform included)
Platform size	460 x 460 mm	
Shaking orbit	19 mm	
Speed range	20-500 rpm	
Speed increment	1 rpm	
Timer	999 (hr): 59 (min) / Continuous	
Display	3.5" Color TFT LCD screen	
Dimension (WxLxH)	Approx. 520 x 620 x 210 mm	
Rated Voltage	100-240V~ , 50 / 60Hz, 2A	
Loading Capacity *	Approx. 500 rpm: 5 kg, 250 rpm: 30 kg	
Weight	Approx. 40kg	



Winpact Shaking Incubator

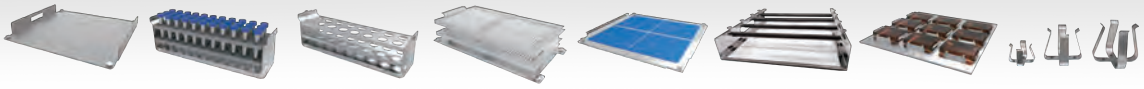
- Special designed drainage channel protects the motor and inner circuitry from accidental spills
- Multiple early error-detection mechanisms ensure operators' safety and completeness of experiment despite malfunction
- Lab-proven superior temperature uniformity
- A wide selection of racks, holders, sticky pads and accessories provides all-ranged compatibility to cell cultivation labwares
- Automatic system shutdown in the event of system over-heating
- Sensitivity adjustable G-sensor with warning embedded for imbalance weight detection
- Programmable or continuous mode for personnel operation
- Brushless DC motor provides long and quiet operation, durable and maintenance-free usage
- Hermetic chamber design significantly reduces operation noise and enhances precise temperature control
- 2-point temperature calibration ensures high temperature performance

SI-200

A spare air/ gas inlet to create particular environment for specific kinds of cell/ microbial

Cat. No.	SI-200 (universal platform included)
Platform size	460 x 460 mm
Shaking orbit	19 mm
Speed range	20-500 rpm
Speed increment	1 rpm
Communication port	RS-485
External temperature probe	PT-100
Heating temperature range	Ambient +5°C to 65°C
Power	600W
Temp accuracy and uniformity	± 0.25°C at 37°C
Timer	999 (hr) : 59 (min) / Continuous
Display	3.5" Color TFT LCD screen
Dimension (W x L x H)	Approx. 590 x 820 x 530 mm

Acrylic lid for clear viewing and easy access



Universal platform Cat. No.: SI-200-01

Adjustable angle tube rack (33 x 15 ml) Cat. No.: SI-200-02 *tube not included

Adjustable angle tube rack (16 x 50 ml) Cat. No.: SI-200-03

Universal spring rack Cat. No.: SI-200-04

Sticky pad platform Cat. No.: SI-200-05

Universal cushioned crossbar Cat. No.: SI-200-06

Microplate holders Cat. No.: SI-200-07 (platform not included)

Flask holder Cat. No.: SI-200-08~13

*Please visit our website at www.majorsci.com for more product selection and detailed information.

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Laboratory Bioreactor / Fermentor

Winpact Mass Flow Controller

The composition of gas is important for microorganism/cell culture. To maintain different gases at a defined flow rate during bioprocesses, Winpact Mass Flow Controller can provide accurate and stable flow measurement and control. Mass flow controller (MFC) is a precise device which is used to control a specific type of liquid or gas at a particular range of flow rates. MFC is composed of block, flow-splitter or bypass, sensor, printed circuit board (PCB), and control valves.

When gas flows into MFC, the sensor will detect its real volume and compare with the setting value (standard value). If the detection value is lower than setting value, the inner control valve will open slightly for increasing the input flow. Conversely, if the detection value is higher than the setting value, the inner control valve will close slightly to reduce the input flow. Consequently, MFC is able to adjust the flow automatically and precisely.

Overlay (headspace aeration) control is crucial for some fermentation processes process. Winpact Mass Flow Controller also can sparge different gases into the vessel though the headspace and the sparger at the same time.

Now, Winpact Mass Flow Controller could be integrated into Winpact Fermentation system and improves operational efficiency and creates stable environment for different culture conditions.

Features
- Affordable price
- Self-made, high quality accurate gas control guarantee

FS-O-MF series

Winpact Parallel (FS-05 Series)

- Control up to 16 systems (total 32 vessels) from a single interface

1L Double Jacketed Vessel | FS-05 | 10L Single Wall Vessel with Heating base unit

Winpact One (FS-06 Series)

1L Double Jacketed Vessel | 1L Single Wall Vessel | FS-06

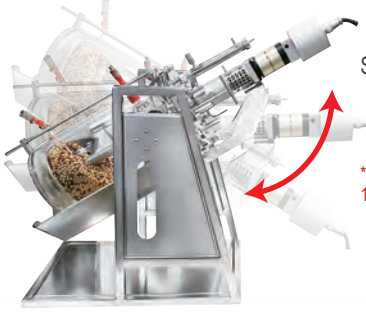
- Control up to 16 systems from a single interface

Winpact Evo (FS-07 Series)

FS-07 | 5L Air Lifter Vessel | 5L Single Wall Vessel with Heating blanket

- Fully integrated system specifically designed for solid-state fermentation research involving saccharification, hydrolysis and more.
- Programmable angle-adjustable (0-90° for culture control, 120°for harvest control) vessel tiling and stirring mechanism permits superior sample homogeneity
- Impellers are designed to reduce stickiness and it ensures sample integrity during the fermentation process.
- Integrated motor shaft & air sparger assembly creates precise, disturbance-free controls of aeration and mixing
- Chemically resistant double jacketed borosilicate glass vessel design
- Can be used with pH and DO probes to control culture conditions(anchor type impellers only)
- Customizable impellers and aeration controller available

*For more information, please contact your local distributors.
**The minimum speed varies from 1-5 rpm depending on the medium viscosity.



Solid State (FS-V-SA05P)

*0°- 90° rotation, 120° for harvest

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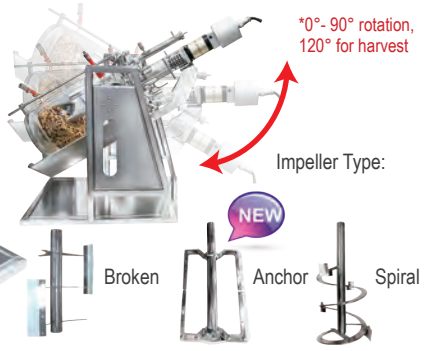
Winpact Solid State Fermentation System, FS-V-SA05P

Solid state fermentation (SSF) can be used for enzyme, antibiotics, biofuel, and organic acid production in the food, pharmaceutical, cosmetic, industries, etc. One of the features for Solid state fermentation is to create low water level cultivating conditions for fungus, mold, filamentous fungi, and some bacteria growth. Winpact Solid State Fermentation system is designed for the laboratory scale research to get excellent results. It is featured with a 10.4" color touch screen, user-friendly interface and 4 built-in peristaltic pumps on the Linux based operation system. An automatic vessel angle control mechanism provides an outstanding mixing efficiency for solid state material research. This system is suitable for both aerobic and anaerobic fermentation with three kinds of impellers available (Broken, Anchor and Spiral type).



Features

- Fully integrated system specifically designed for solid-state fermentation research involving saccharification, hydrolysis and more.
- Programmable angle-adjustable (0-90° for culture control, 120°for harvest control) vessel tiling and stirring mechanism permits superior sample homogeneity
- Impellers are designed to reduce stickiness and it ensures sample integrity during the fermentation process.
- Integrated motor shaft & air sparger assembly creates precise, disturbance-free controls of aeration and mixing
- Chemically resistant double jacketed borosilicate glass vessel design
- Can be used with pH and DO probes to control culture conditions (anchor type impellers only)
- Customizable impellers and aeration controller available

**The minimum speed varies from 1-5 rpm depending on the medium viscosity.

Control Unit	Control Panel	10.4" color touch-screen Interface, (Resolution: 800 x 600 pixels)
	Communication Port	Remote control through Ethernet, Analog AUX port for system extension
	Storage Program	Up to 59,994 programs for different kinds of condition.
	Data Internal Storage	Up to 100 data files.
	Data External Storage Interface	USB port
	Cabinet Material	Front panel: ABS / Housing: Painted iron
	Rated Voltage	110V~/ 220V~ ; 50/60 Hz
Aeration	Inlet Gas Flow-meter	0, 1-10LPM
Dimension	Overall Diameter 350mm; Overall Height with Condenser 683 mm; Overall Height without Condenser 448 mm Dimension (with vessel holder) 430mm (L) x 730mm (W) x 780 mm (H)	
Temperature	Heating	Thermostat system: Built-in heat exchanger, 550W heater/water circulation pump
	Cooling	Automatic cooling water valve
	Range	5°C (41°F) above coolant up to 60°C (140°F)
	Resolution	0.1°C
	Control Mode	Manual or programmable 15-step PID control.
Agitation	Drive	Removable top brushless motor
	Speed Range	0, 1 – 60 rpm
	Resolution	1rpm
	Control Mode	Manual or programmable 15-step PID control.
	Impeller	1. Broken type (FS-A-IM305) 2. Anchor type (FS-A-IM408) 3. Spiral type (FS-A-IM507) (Select one from the above type, and only anchor impeller can be used with pH and DO probes) *Note: Customized impellers are available. **In pH and DO measurement condition, the minimum medium volume is 4L and water content is more than 50%, tilting angle not over 30 degree. ***The measure value of pH and DO may not accurate when using in solid-state culture condition. ****pH and DO probe is not within the scope of warranty when using in solid-state vessel.
Vessel Swing	Angle Range	Normal operation: 0°~90°, adjustable time interval Harvest mode: 0°/ 120°
	Control Mode	Programmable control

Vessel Application

Application \ Vessel	FS-V-A series Double Jacketed Dish Bottom Vessel	FS-V-B series Single Wall Dish Bottom Vessel	FS-V-C series Air Lifter Vessel	FS-V-B series Single Wall Dish Bottom Vessel with Heating Blanket	FS-V-D series Single Wall Plain Bottom Vessel with Heating Base Unit	FS-V-SA05P Solid State
Mammalian cell culture	●●	●○	○○	●○	○○	○○
Aerobic microorganism culture (Note 1)	●●	●●	●●	●●	●●	○○
Micro-aerobic microorganism culture (Note 2)	●●	●●	○○	●●	●●	○○
Anaerobic microorganism culture (Note 3)	●●	●●	○○	●●	●●	○○
Fragile cell culture (Note 4)	●●	●○	●●	●○	○○	○○
Photosynthesis cell culture (Note 5)	●○	●●	●●	○○	●○	○○
Plant cell culture	●○	●○	●●	○○	○○	○○
Insect cell culture	●●	●○	○○	●○	○○	○○
Solid state / semi-solid state	○○	○○	○○	○○	○○	●●

●● Excellent ●○ Good ○○ Not recommended

Note:

1. Some bacteria; yeast; fungi
2. Facultative culture (i.e. some Lactobacillus; ethanol production)
3. Same as Note 2
4. This vessel is excellent for fragile cells, which easily sheared by any type of mechanical impeller
5. Plant; algae; cyanobacteria (blue-green algae)

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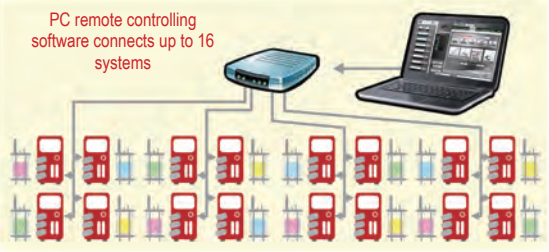


Duo Heating Control: FS-05 / FS-06 / FS-07 serie

- These Winpact controllers can operate with a variety of vessels
- Compatible with microbial and cell culture applications
- Intuitive user-interface for fast learning curve with multi-language support
- Ethernet communication with Winpact SCADA software, and IP addressing

Control multi-vessel systems on one page.

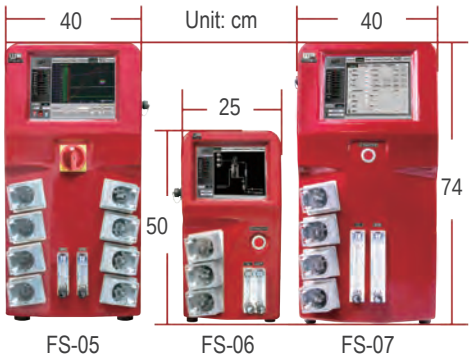
Controller Specification

Controller	Duo Heating Control (FS-05, FS-06, FS-07)					
Vessel	Double Jacketed (FS-V-A series)	Single Wall (FS-V-B series)	Air Lifter (FS-V-C series)	Single Wall with Heating Blanket (FS-V-B series)	Single Wall with Heating Base Unit (FS-V-D series)	Solid State (FS-V-SA05P)
Agitation Motor	Brushless motor	Brushless motor	N/A	Brushless motor	Brushless motor	Brushless motor
Impeller*	*Rushton-type; Pitched-blade	*Rushton-type; Pitched-blade	N/A	*Rushton-type; Pitched-blade	*Rushton-type; Pitched-blade	Broken type; Anchor type; Spiral type
Temp Range	5 °C above coolant to 60°C	5 °C above coolant to 60°C	Double Jacketed: 5°C above coolant to 60°C Single Wall: without temp control	5°C above coolant to 60°C	5°C above coolant to 90°C	5°C above coolant to 60°C
Vessel Size	500ml - 10L	1 - 10L	5L only, single wall or double jacketed	1 - 20L	3 - 10L	5L only
Speed Range	*Rushton type 30-1800 rpm(0.5, 1L); 30-1200 rpm(3, 5L); 30-1000 rpm(10L) Pitched blade 30-300 rpm	*Rushton type 30-1800 rpm(1L); 30-1200 rpm(3, 5L); 30-1000 rpm(10L) Pitched blade 30-300 rpm	N/A	*Rushton type 30-1800 rpm(1L); 30-1200 rpm(3, 5L); 30-1000 rpm(10L); 30-700 rpm(15, 20L) Pitched blade 30-300 rpm	*Rushton type 30-1200 rpm(3, 5L); 30-1000 rpm(10L) Pitched blade 30-300 rpm	1-60rpm *The minimum speed varies from 1-5 rpm depending on actual medium density.
Heating	Built-in heat exchanger			Heating blanket	Heating base unit	Built-in heat exchanger
Cooling	External chiller, automatic cooling water valve					
Aeration	L-shape or ring sparger	L-shape or ring sparger	Micro-sparger	L-shape or ring sparger	L-shape or ring sparger	Center-located sparger
Grounding Port	No need	No need	Yes	No need	No need	No need
Application	Excellent for temperature sensitive and shear-force sensitive cells such as mammalian and insect cell culture	Great for aerobic or anaerobic microbial culture; suitable for plant cell and photosynthesis cell culture	Excellent for shear-sensitive cells; ideal for plant cells, fungal cells, algae cell and photosynthesis cell culture	Ideal for rapid temperature change aerobic and anaerobic microbial (bacteria and yeast) fermentation	Excellent for aerobic and anaerobic microbial (bacteria, yeast) culture, such as E.coli	Special for the culture of microbial in substrates with low water levels condition , generally suitable for fungi, such as filamentous fungi

*For FS-V-A, FS-V-B and FS-V-D series, the standard impeller is Rushton type; Pitched blade is available for cell culture upon request.

Winpact Controller Selection Guide

Model	FS-05	FS-06	FS-06 + FS-06EPM*	FS-07
Product Name	Winpact Parallel	Winpact One	Winpact One	Winpact Evo
Heating System	Duo heating			
Working Volume Range	500ml - 20L	500ml - 10L	500ml - 10L	500ml - 20L
Autoclavable Glass Vessels	Yes			
Interchangeable Vessels	Compatible with all types of vessel, except for 5L solid state which is only usable with FS-05 and FS-07			
Number Of Vessels Controlled Per Controller	2	1	1	1
Number Of Vessels Controlled Via Remote Software	Max 32	Max 16	Max 16	Max 16
Touchscreen Controller	10.4"	8“	8"	10.4"
Number Of Peristaltic Pumps	8	3	3	4
Gas Mixing Options	Available	No	Available, *	Available
Oxygen Enrichment	Available	No	Available, *	Available
Mass Flow Controller	Available	No	No	Available
Off Gas Analyzer	Available	No	No	Available
ORP Probe	Available	No	Available, *	Available
Lighting Module	Available	No	Available, *	Available
External Pump	4 max.	1 max.	2 max.	2 max.
Solid State	Available	No	No	Available



* Optional expansion module (FS-06-EPM) needed.

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Vessel type	Double Jacketed Dish Bottom Vessel (FS-V-A series)				
Material	Borosilicate glass / 316L stainless steel for headplate and all fittings				
Working volume **	500ml	1L	3L	5L	10L
Total volume Δ	1L	1.5L	3.8L	6.8L	12.5L

Vessel type	Single Wall Dish Bottom Vessel (FS-V-B series)			
Material	Borosilicate glass / 316L stainless steel for headplate and all fittings			
Working volume **	1L	3L	5L	10L
Total volume Δ	1.5L	3.8L	6.8L	12.5L

Vessel type	Air Lifter Vessel (FS-V-C series)	
Material	Borosilicate glass / 316L stainless steel for headplate and all fittings	
Working volume **	5L single wall	5L double jacketed
Total volume Δ	7L	

Vessel type	Single Wall Dish Bottom Vessel With Heating Blanket (FS-V-B series)					
Material	Borosilicate glass / 316L stainless steel for headplate and all fittings					
Working volume **	1L	3L	5L	10L	15L	20L
Total volume Δ	1.5L	3.8L	6.8L	12.5L	18.7L	23.7L

Vessel type	Single Wall Plain Bottom Vessel With Heating Base Unit (FS-V-D series)		
Material	Borosilicate glass / 316L stainless steel for headplate and all fittings		
Working volume **	3L	5L	10L
Total volume Δ	3.7L	6.7L	13.1L

Vessel type	Solid State (FS-V-SA05P)
Material	Borosilicate glass / 316L stainless steel for headplate and all fittings
Working volume **	5L
Total volume Δ	6.8L

** Suggested Max.

Δ Total volumes are approximate and may vary slightly.

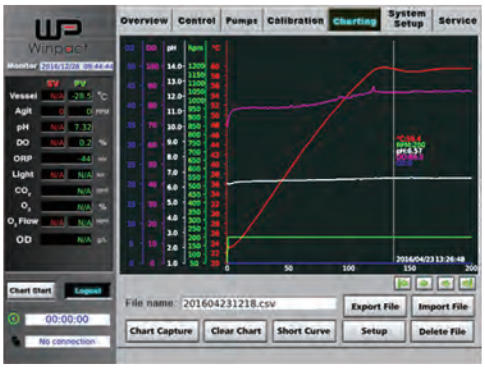
No software purchase necessary
Ethernet cable connection for remote control

*PC and switch hub are not included

Multi-language operation interface (Russian language)

• Winpact **EZScript software for advanced fermentation processes

** Winpact EZScript is a command software specifically designed with user-define programming capability to optimize and control of your process.



Charting
Real-time data recording and exporting

System Setup
Set up for optional devices

Calibration
Easy sensor calibration with assisted menu

Control / Manual
Manual operation, sequence or EZScript control (optional) of each parameter.

Control / Sequence

Pumps
Control speed, direction, total volume and flow rate

*Please visit our website at www.majorsci.com for more product selection and detailed information.

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Optional Devices and Accessories


pH Probe


DO Probe


Temperature Probe


ORP Probe


Gas Inlet Control Module


Mass Flow Controller


Winpact Humidifer
FS-O-HMD (solid state only)


CO_2 / O_2 Off Gas Analyzer


Gas Mixing Station


Gas Mixing Station with Mass Flow Controller


External Pump


Brushless Motor


Lighting Module


Composite Handle

Vessel Stand


Headplate Stand


Feeding Bottle Loading Port


Fermentation Bottle Holder


Motor Shaft Protection Cap


Stainless Steel Supporting Foot


Consumable Kit

Other Optional Devices:

- Antifoam Probe
- Impellers
  Rushton 6 Blade Impeller
  Pitched Blade Impeller
  Foam Breaker
  Broken Type Impeller (solid state only)
  Anchor Type Impeller (solid state only)
  Spiral Type Impeller (solid state only)
- Sampling Devices
  Triport Sampling Device
  Dual Ports Sampling Device
  Ball Valve Sampling Device
  Pneumatic Sampling Device
- EZScript Software
- Optical Density Sensor Modules
- Quad Loading Port
- Stainless Steel Condenser
- Protective Cover for Sterilization (solid state only)

*Please visit our website at www.majorsci.com for more product selection and detailed information.
*Please contact Major Science for more information on other optional devices.

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(Pilot Scale)
SIP Fermentation System / Bioreactor

* Customized vessel is available

30L / 50L System

FS-50L

Motor
Manual or automatic control of constant agitation speed

Peristaltic Pump
Uses four Watson Marlow built-in peristaltic pumps for all your feeding needs

Control Station
Large screen and graphical user interface

Stainless Steel Vessel
Special designed heating jacket provides better heating efficiency

FS-30L(130x95x275 cm)

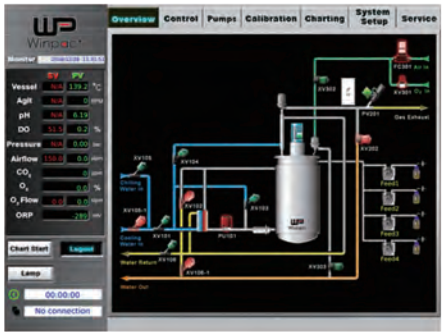
* ASME standard

FS-50L
(130x95x295 cm)

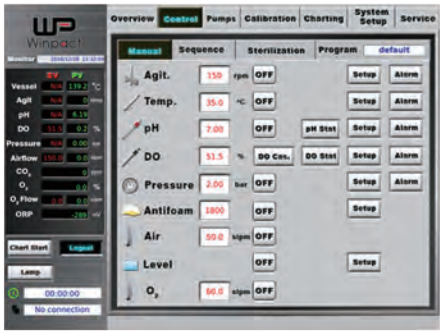
Features
- Wide range of vessel selection, from 30L to 50L working volume
- Colorful interface at 10.4" or above
- Fully automated process with remote monitoring
- 15-step automatic program setting
- Orbital welding ensures minimal residue buildup
- Highest grade construction with 316L stainless steel
- Jacket design provides astounding temperature control
- Exhaust pressure relief valve for maximum safety precaution
- Multiple safety design integration for peace of mind operation
- Remote monitoring & controlling software free from purchase
- Password protection for multiple users with special requirements
- Various optional devices for process optimization and needs
- Ethernet communication with Winpact SCADA software, and IP address

Four-staged DO cascade

15-Step programmable PID control



Immediate visualization on operation overview



Easy and intuitive operation for manual and sequence control

One-Touch automatic sterilization for vessel and system tubing

Online system calibration with system feedback

System expansion with various optional devices

* All images are for reference only, actual products might differ from the pictures above.
* Technical specifications subject to change without notice.

SIP Fermentation System / Bioreactor (Pilot Scale)

Mechanical seal with auto generated lubricant and automatic cooling device

(Approx. 170Wx130Dx245H cm, Open distance of headplate lift : 60 cm)

100L System

Harvest valve Sanitary level diaphragm type

Detachable aseptic feeding device

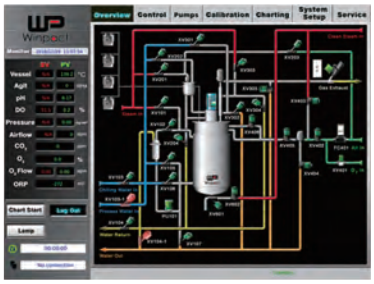
* Operating ladder is optional.

200L System

(Approx. 200Wx150Dx330H cm, Open distance of headplate lift : 40 cm)

Winpact offers pilot and production scale bioreactor/fermentation systems for all of your large scale fermentation needs. Our standard SIP Production Scale Fermentation System is constructed with BPE standard piping with orbital welding and top grade automatic valves to allow stable and repeatable result for every experiment. All of our features are designed to provide a high level of productivity and automation while maintaining a low operation cost. All other great features including total sterilization process, mechanical seal break indication, golden vessel ratio design and complete selection of optional devices for optimizing the fermentation process.

- Pneumatic valves for accurate and automatic control
- Orbital welding provides top quality



Monitor page for operation overview

Automatic and manual operation

Automatic sterilization process

Online system calibration

Features

- Wide range of vessel selection, from 100L to 1000L working volume
- Multi-lingual 12" colored graphical control interface
- Fully automated process with remote monitoring
- 15-step automatic program setting
- Orbital welding ensures minimal residue buildup
- Highest grade construction with Stainless Steel SUS316L
- Hive jacket design provides astounding temperature control
- Exhaust pressure relief valve for maximum safety precaution
- Multiple safety design integration for peace of mind operation
- Remote monitoring & controlling software free from purchase
- Password protection for multiple users with customized access levels
- Various optional devices for process optimization and needs
- Ethernet communication with Winpact SCADA software, and IP address

* All images are for reference only, actual products might differ from the pictures above.
* Technical specifications subject to change without notice.

(Production Scale)

*For system over 200L, please contact Major Science or authorized distributors for more information.

500L System

1000L System

5000L System

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* Technical specifications subject to change without notice.

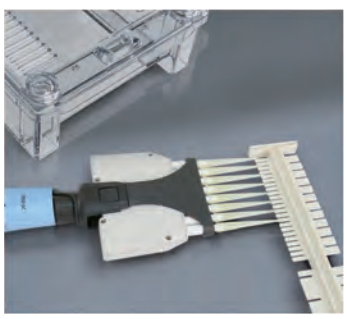
Power Supply

MP-310 / MP-320 / MP-510

Stackable case

Four pairs of outlet terminals

Cat. No.	MP-100	MINI-300	MINI-500	MP-310	MP-320	MP-510
		 FC CE ETL	 FC CE ETL	 FC CE ETL	 FC CE	 FC CE
Display	N/A	LED		2.4" TFT LCD		
Output voltage / Inc.	50V/100V	10-300V/1V	10-500V/1V	5-300V/1V		5-500V/1V
Output current / Inc.	400mA	10-400mA/1mA	1-400mA/1mA	1-700mA/1mA	10-3000mA/10mA	1-800mA/10mA
Output power / Inc.	40W	60W	120W	Output: 150W Input: 200W	300W	
Output type	Constant voltage	Constant voltage/Current		Constant voltage/Current /Power		
Timer	N/A	999 (min) with alarm/Continuous		Constant mode:9999 (min) with alarm/Continuous		
				Programmable mode: 999 (min) with alarm/Continuous		
Rated voltage	100V-120V~ Only	100V-240V~				
Program	N/A	2-steps (V, mA, ⏲)		Pre setting; Up to 6-steps (V, mA, W, ⏲), 30 programmed files		



*Please visit our website at www.majorsci.com for more product selection and detailed information.

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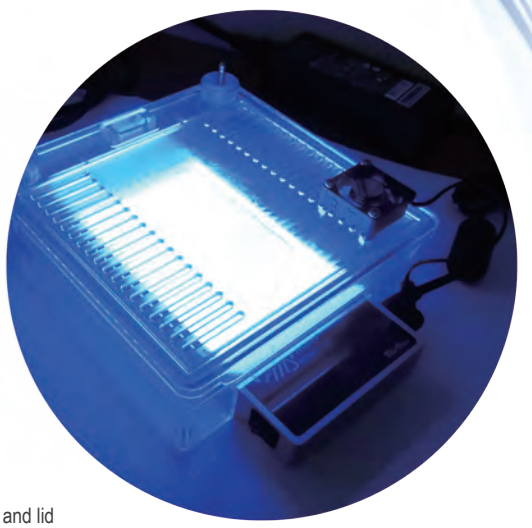
* Technical specifications subject to change without notice.

Nucleic Acid / Protein Electrophoresis and Blotting

Wide / Mini Horizontal Gel Electrophoresis System



Transparent tank and lid

The MJ-105A horizontal electrophoresis system offers many advantages for nucleic acid separation. Agarose gels are convenient to cast and samples are easy to load with this recognizable mini horizontal cell.

Mini Horizontal Gel
MJ-105A

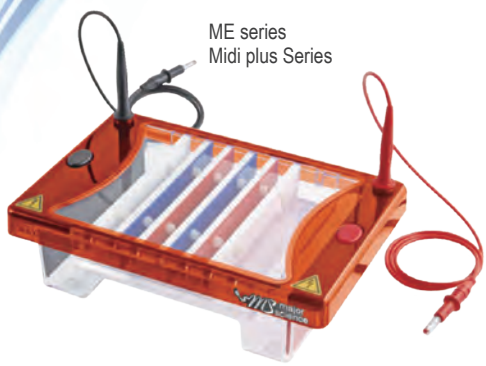
Cat. No	MJ-105A	MT-108
Dimension(mm)(WxLxH)	148.3x145.8x59.1	136x188x58
Gel dimension(mm)(WxL)	107x60	105x83
	52x60	50x83
Maximum sample	25 samples	
Rapid casting gel	Use gel maker stand	

Multichannel pipette compatible

Wide Mini Horizontal Gel
MT-108

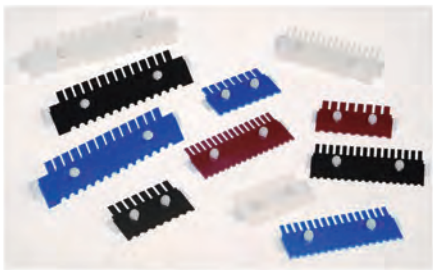
* All images are for reference only, actual products might differ from the pictures above.
* Technical specifications subject to change without notice.

Midi plus Gel Electrophoresis System



ME series
Midi plus Series

CE



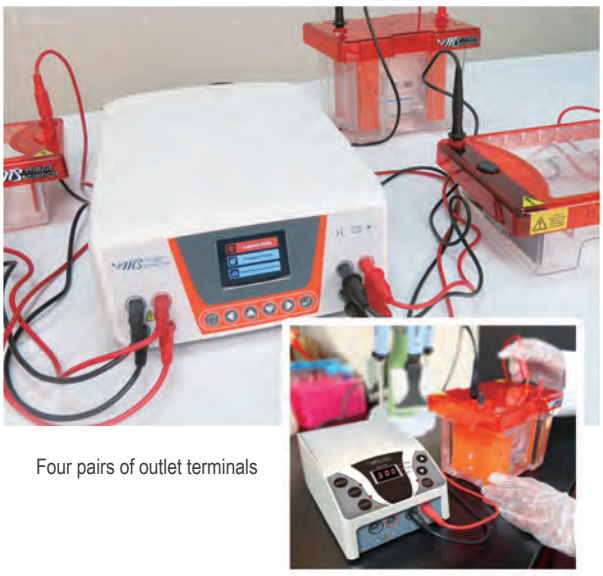
Cat. No.	ME7-7-10	ME10-7-10	ME15-7-10-15
Dimension(mm)(WxLxH)	210x90x90	220x125x90	265x175x90
Gel dimension(mm)(WxL)	70x70 70x100	100x70 100x100	150x70 150x100 150x150
Maximum sample each tray(mm)	32 for 70x70 64 for 70x100	50 for 100x70 100 for 100x100	70 for 150x70 140 for 150x100 210 for 150x150
Rapid casting gel	Use casting dams		

Cat. No.	ME20-10-20	ME26-16-24-32
Dimension(mm)(WxLxH)	395x230x90	500x280x90mm
Gel dimension(mm)(WxL)	200x100 200x200 200x250 (Optional)	10.2"x6.3" (260x160mm) 10.2"x9.5" (260x240mm) 10.2"x12.6" (260x320mm)
Maximum sample each tray(mm)	200 for 200x100 450 for 200x200 550 for 200x250 (Optional)	336 for 260x160mm 504 for 260x240mm 672 for 260x320mm
Rapid casting gel	Use casting dams	Use flexible caster

Vertical Gel Electrophoresis Apparatus

MV-10DSYS
Vertical Gel
Apparatus

CE

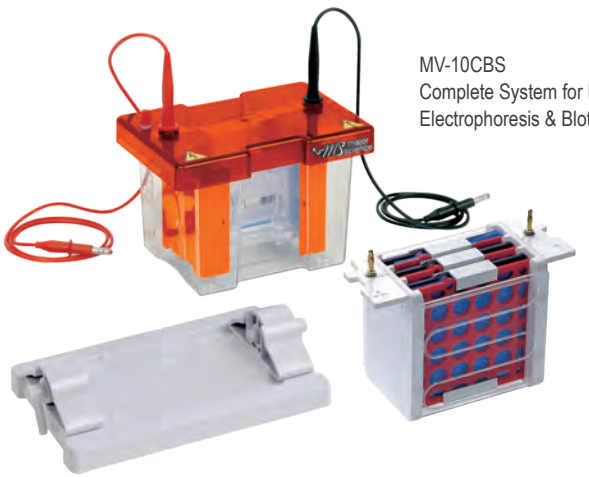


Four pairs of outlet terminals

Cat. No.	MV-10DSYS
Dimension(mm)(WxLxH)	190x130x150
Plate dimension(mm)(WxL)	100x100
Gel dimension(mm)(WxL)	85x80
Maximum sample	80 / 20 samples per gel
Rapid casting gel	Use gel maker stand

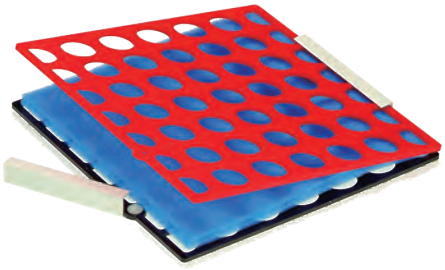
* All images are for reference only, actual products might differ from the pictures above.
* Technical specifications subject to change without notice.

Complete Mini Electro & Blot System / Mini Electro Blot System



MV-10CBS
Complete System for Mini Vertical Electrophoresis & Blotting

MEBM series
Mini / Mini Wide /
Maxi Electro Blot



Double hinged cassettes
for added convenience

Cat. No.	MV-10CBS	MEBM10
Dimension(mm)(WxLxH)	190x130x150	190x130x190
Plate dimension(mm)(WxL)	N/A	N/A
Gel dimension(mm)(WxL)	100x100	100x100
Maximum sample	4 blots, 100x100	5 Blots,100x100
Rapid casting gel	N/A	N/A

Semi Dry Mini and Semi Dry Midi

MSD series
Semi Dry Mini and Semi Dry Midi

Cat. No.	MSD10	MSD20
Dimension(mm)(WxLxH)	160x160x70	260x260x70
Gel dimension(mm)(WxL)	100x100	200x200
Maximum sample(mm)	1 Blot, 80x85	1 Blot,160x175
		2 Blots,160x85
		4 Blots, 80x85
Buffer volume	5ml	20ml
Accomodate gel thickness	0.25-10mm	
Economic transfer	Yes	

*Please visit our website at www.majorsci.com for more product selection and detailed information.

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* Technical specifications subject to change without notice.

MS Pipette

3-position tip ejector button (left/right handed users)

MSP-ST03

180° spray head

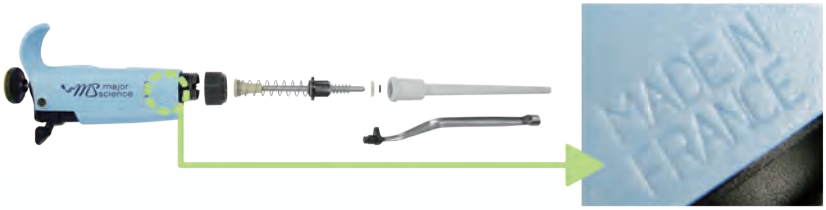
MSP Series

- Light weight
- Soft spring system for extremely low pipetting forces
- Controlled volume setting to prevent accidental volume changes
- Different color coded push button for different volume
- Contoured shape: fits either small or large hands
- Large pushbutton, rounded and freely rotating
- Finger hook: takes the weight, for a more relaxed grip
- Easy on site calibration (calibration key included)
- High accuracy and precision
- A unique serial number
- UV resistance even under prolonged exposure
- Fully autoclavable (121°C/0.1MPa/20 min)

Pipette Stand

Ordering Information

Cat. No	Description
MSP-2	MS pipette, variable volume 0.2~2µl
MSP-10	MS pipette, variable volume 1~10µl
MSP-20	MS pipette, variable volume 2~20µl
MSP-100	MS pipette, variable volume 10~100µl
MSP-200	MS pipette, variable volume 20~200µl
MSP-1000	MS pipette, variable volume 100~1000µl
MSP-5000	MS pipette, variable volume 500~5000µl
MSP-10000	MS pipette, variable volume 1000~10000µl
MSP-8X10	MS 8-ch pipette, variable volume 0.5~10µl
MSP-8X20	MS 8-ch pipette, variable volume 2~20µl
MSP-8X200	MS 8-ch pipette, variable volume 20~200µl
MSP-8X300	MS 8-ch pipette, variable volume 20~300µl
MSP-12X10	MS 12-ch pipette, variable volume 0.5~10µl
MSP-12X20	MS 12-ch pipette, variable volume 2~20µl
MSP-12X200	MS 12-ch pipette, variable volume 20~200µl
MSP-12X300	MS 12-ch pipette, variable volume 20~300µl
MSP-ST03	Pipette Stand



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* Technical specifications subject to change without notice.

Imaging System

SmartView Pro Imager

- Standalone gel doc system with high-quality monochrome CCD
- Exchangeable emission filters provide for instant visualization
- Intuitive 10.4" interface with color touch-screen
- Zoom-able lens for proper picture size
- Movable platform for gel excision with UV-protection shield
- Automatic UV shut off mechanism
- Optional trans white light and blue light plates

System setup

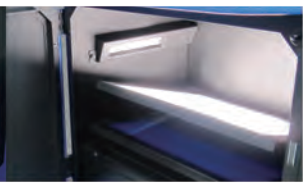
Default setting

UV light protection warning

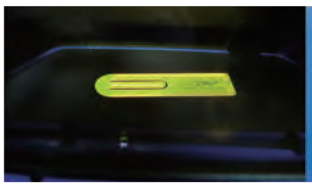
Batch file management

SmartView Pro 2300

Blue light plate (UVCI-2300)



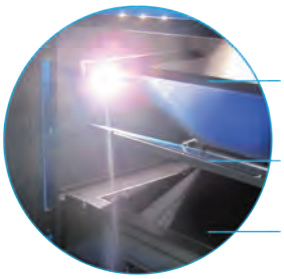
White light plate



Viewing via window

Viewing via screen

Viewing window



UVCI-2300

Flip-style:
A. White light plate
B. Blue light plate
C. Drawer-type UV transilluminator

Control Interface

*Please visit our website at www.majorsci.com for more product selection and detailed information.
*MS 1D Analysis Software (MBE-IMG-SW) is included in UVCI-2300 for image analysis only.
*Filters are necessary part for Gel Documentation System.
*All filters have to be ordered separately and discuss with local dealer before order.

Model	SmartView Pro 2300
Cat. No.	UVCI-2300
Camera	1/1.8" interline UXGA monochrome progressive 2.0MP CCD
Pixels Size	4.4μmx4.4μm
Lens (Camera)	F1.2, 12.5 – 75mm (with one +1 close-up lens), 6X zoom lens, manual
Camera Video Output	12bit
Filter (Camera) *Ordered Separately	Optical EtBr Filter / Optical SYBR Green Filter / Orange Amber Filter
Image Storage	Built-in 14GB Memory (3000 tiff images storage) and USB flash
Cabinet	Pull out, sliding transilluminator
Field Of View (WxL)	Maximum filed od view 10.2"x8.3" (260x210mm)
Dimension (WxLxH)	Approx. 16.1"x16.7"x35.8" (410x425x910mm)
Weight	Approx. 62.8lbs. (28.5kg)
Display	10.4" color touch screen, 800x600
Viewing Window	Built-in UV viewing window
Window Filter	Amber Filter embedded in viewing window (580nm)
Light Source	Built-in drawer type UV Transilluminator 312(302)nm
	build-in LED white light
Optional Accessory	White Light Plate (power built-in)
	Blue light plate (power built-in) 470nm
Saved Image	Max. 16bit
Grayscale	12bit, 0-4095 gray levels
Safety	CE
Rated Voltage	100-240V~, 50/60Hz

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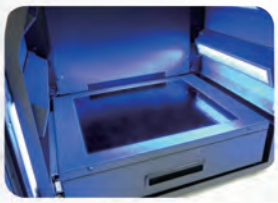
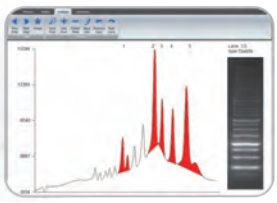
* Technical specifications subject to change without notice.

SmartView Pro Imager, CMOS



Epi-blue light for optional light source



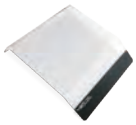
Gel image analysis software included for SmartView Pro

White light plate for protein analysis

- Ergonomic design for easy viewing and operating
- Built-in mechanism for easy gel cutting
- Multi-image file saving selection: BMP, TIFF, JPEG and PNG
- Blue light technology for operation and environment safe lab experiment
- White light plate installation integration available (optional accessory)

Cat. No.	UVCI-1100 (Standard version)
Camera	1/2.5" 5.0MP pixel monochrome sensor
Camera video output / Saved image	12bit
Max. aperture	f/1.2
Built-in UV transilluminator	Yes, 312nm (optional white or blue light available)
Image storage	PC only
Safety device	Safety door switch
Features	Image capture software included
	USB connects to a PC
	Connect to PC; PC required

* iPad and PC not included.
* MS 1D Analysis Software (MBE-IMG-SW) is included in UVCI-1100 for image capture and analysis.
*Filters are necessary part for Gel Documentation System.
*All filters have to be ordered separately and discuss with local dealer before order.



UVCI-1003
UV protection shield

MBE-G-Y1
Amber filter glasses

UVCI-1000-WL
White light plate

UVCI-1000-BL
Blue light module

UVCI-1100-EB
Optical EtBr filter 610nm

UVCI-1100-SG
Optical SYBR green filter 520nm

UVCI-1100-F3
SmartView amber filter 560nm

UVCI-1100-F4
SmartView amber filter 580nm

Easy gel cutting design with UV light

Pull out UV transilluminator

USB connection

Viewing window

* All images are for reference only, actual products might differ from the pictures above.
* Technical specifications subject to change without notice.

Digimage System, DI-01

- Effective Pixels Approx. 24.2 megapixels (Total Pixels Approx. 25.8 megapixels)
- High resolution 8" TFT screen
- Digital control panel
- Compact chamber and lightweight
- Can be operated PC free
- Inner white light LED at two sides
- Safety door switch
- Optional gel analysis software package available
- Universal rated voltage: 100-240V~

*Could be bundled with MBE-200A.

DI-HD

MBE-200A

SmartView Simple Imager System MUV-IMG series

White light plate
DI-WLA3 (297x400mm)
DI-WLA4 (210x297mm)
DI-WLA6 (105x150mm)

*PC / Tablet is not included.

Cat. No.	MUV-IMG-CA	DI-01	DI-HD
Camera / Lens	24.2MP digital camera, Wi-Fi function		N/A
Display / Control panel	Digital camera		
Max. aperture	f/3.5-6.3 (IS STM Lens)		N/A

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*Filters are necessary part for Gel Documentation System.
*All filters have to be ordered separately and discuss with local dealer before order.

Transilluminator

SmartView Transilluminator / UV Transilluminator

• 312nm UV for gel observation; 254nm UV for irradiate samples; 365nm UV for gel cutting/imaging and avoid photonicking

*High performance UV light model also available.

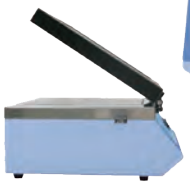
SmartView Transilluminator
MUVB-100 series

UV Light applied

Blue Light applied

Removable amber filter

UV Transilluminator
MUV series



MUVB series +
MUV-IMG-CM

MUV series +
MUV-IMG-CM

Cat. No.	MUVB-111	MUVB-121	MUVB-122	MUV26	MUV21
Wavelength	single 312nm	dual 254 / 312nm	dual 254 / 365nm	254 / 312 (302) / 365nm	
Filter size (mm) (WxL)	210x210			260x210	210x210
Light source	8W x 5 tubes, with built-in UV light and 470nm Epi blue light	8W x 9 tubes, with built-in UV light and 470nm Epi blue light		8W x 6 tubes	
Intensity switch	High (100%) / Low (70%) intensity switch for single wavelength mode				

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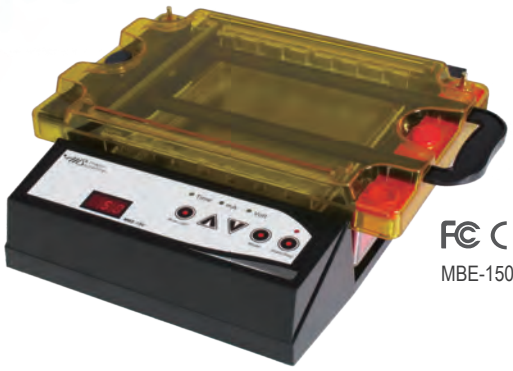
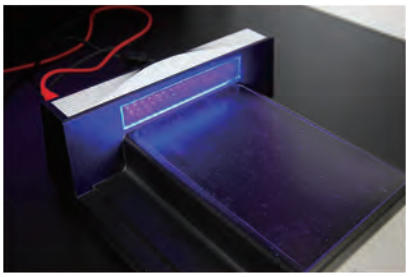
* Technical specifications subject to change without notice.

SafeBlue System

SafeBlue Electrophoresis System / SafeBlue Imager System

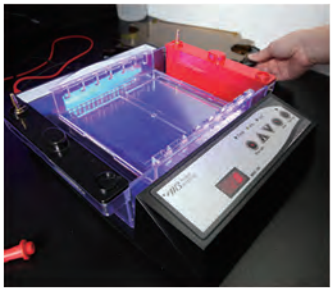


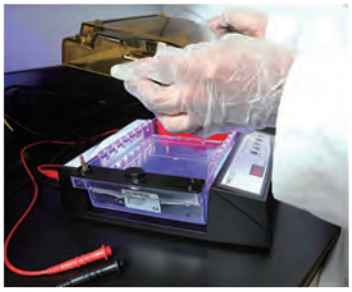
MBE-150-PLUS

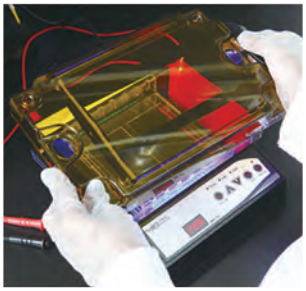


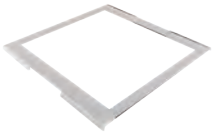
MBE-G-Y1

MBE-150-3

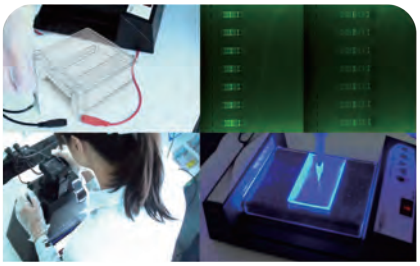




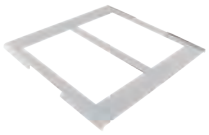




ME15-UV15-TH01



MBE-150



ME15-UV15-TH02

Cat. No.	MBE-150	MBE-150-PLUS
Light control	On / Off switch	
Output voltage	10-150V / 1V	
Output current	10-300mA / 1mA	
Output power	30W	
Output type	Constant voltage or constant current	
Timer	999 (min) with alarm / Continuous	
Operating temperature	Ambient to 40°C	
Electrophoresis tank& amber filter lid	N/A	Yes

Cat. No.	MBE-IMG-CA
Camera type	24.2MP digital camera, Wi-Fi function
Aperture	f/3.5-6.3(IS STM Lens)
Shutter speed	1/4000 - 30sec. (available range varies by shooting mode)
Storage media	SD memory card, Wi-Fi to PC, Smartphone or Tablet
Darkroom dimension	(WxLxH)340x195x400mm

SafeBlue System: SafeBlue Electrophoresis System + SafeBlue Imager System — **2 for all**

Gel and Sample Preparation → **Electrophoresis Running** → **Sample Observation Image Capture** — **5 for all**

Traditional Method: Gel Electrophoresis System + Power Supply + Shaker + UV Transilluminator + Gel Documentation System

4 in 1 feature allows you to run as you see in real-time motion (run, view, capture and cut gel) with simple and easy set up on the image capture/ analysis software

MBE-150-PLUS Innovative Electrophoresis System

1. Early detection of running error (run as you see)
2. Prevention for breaking gel- no more gel transferring (no more gloves!!)
3. Time saving gel staining & de-staining
4. Compact in size (no large lab area required)

* All images are for reference only, actual products might differ from the pictures above.
* Technical specifications subject to change without notice.

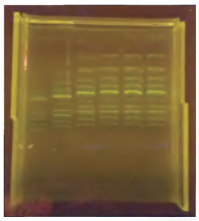
Blue Light Illuminator

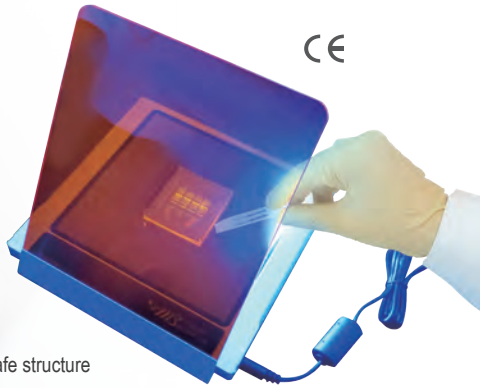
BluView Transilluminator, MBE-200A

- Thinner and more lightweight body
- Easy to carry
- Aluminum alloy casing design
- Low heat dispersion
- Energy saving product
- 470nm harmless blue light for direct human contact

Cat. No.	MBE-200A
Dimension(mm)(WxLxH)	Approx. 200x200x13.9
Viewing Area(mm)(WxL)	153x153
Blue Light Source	15W
Illuminator Base Design	Flat Bed
Blue Light Wavelength	470nm
Automatic Shutdown	Approx. 6 min
Material	Aluminum Alloy
Power	DC 12V, 2A
Weight	Approx. 760g

Major Science BluView Transilluminator uses the harmless blue LED lights to replace the aggressive UV lights, and allows you to directly view the experiment result without wearing any UV protection equipment.



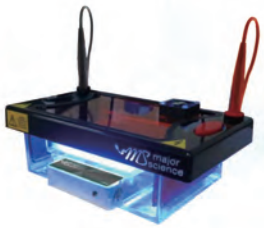


Aluminum alloy provides sturdy safe structure

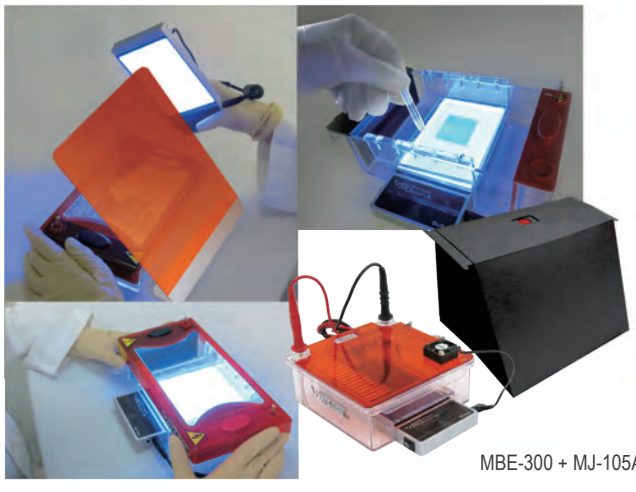
BluView Transilluminator, MBE-300

- Portable 470nm blue light
- Slim design fits in most of electrophoresis tanks
- Real time observation
- Efficient and early stage mistake detection
- Ultra high light uniformity
- Fit in a majority of different brands of mini and midi size...

Cat. No.	MBE-300
Dimension(mm)(WxLxH)	Approx. 86x170x25
Viewing Area(mm)(WxL)	Approx. 112x74.6
Blue Light Source	20W
Illuminator Base Design	Flat Bed
Blue Light Wavelength	470nm
Automatic Shutdown	Approx. 6 min
Material	Aluminum Alloy
Power	DC 12V, 2A
Weight	Approx. 338g



MBE-300 + ME 10 Tank horizontal electrophoresis system



MBE-300 + MJ-105A

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* Technical specifications subject to change without notice.

Dry Bath Incubator

Mini Cooler, MC-0203

MD-MINI-LID

MD-MINI-CAR-ADAPTER

- Molded aluminum alloy chamber with PTFE coating resists stains and water marks
- PID temp. control helps maintain temperature accuracy: no more temperature overshooting
- Safety device: over-heating protection & SSR failure detection (selected model only)
- Outstanding heating rate
- Temperature uniformity at ±0.2°C
- User temperature calibration available for all units

Mini Dry Bath, MD-MINI

Cat. No.	MD-MINI
Display	LED
Temperature control range	5°C above ambient to 100°C
Temperature increment	0.1°C
Temperature accuracy	± 0.25°C at 37°C
Timer	9999 (min) / Continuous
Dimension (mm)(WxLxH)	153x125x97 (Lid included)

Cat. No.	MC-0203
Display	LCD
Power	max. 60W
Dimension (mm)(WxLxH)	135x152x185 (excluding lid)
Controller	High performance 32 bits microprocessor
Heating /Cooling chamber	Molded waterproof aluminum alloy coated with PTFE
Temperature control range	30°C below ambient temperature (minimum -10°C) to 100°C
Temperature increment	0.1°C
Temperature calibration	Yes
Heating rate	Max. 5°C per min
Cooling rate	Max. 4°C per min
Programmable	Yes (Quick start, Constant, Programmable, Annealing program)
Timer	9999 (min)
Safety	Leak proof heating chamber
Block type	Standard and customized type are available
PC Connection	USB

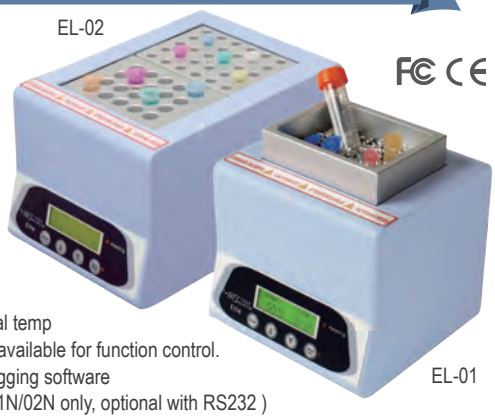
Ultimate Dry Bath Incubator, MC-01

MC-01N

Cat. No.	MC-01N
Chamber dimension (mm) (WxLxH)	130x90x50
Display	2.6" LCD
Dimension (mm)(WxLxH)	200x295x140
Temperature control range	30°C below ambient temperature (minimum -10°C) to 100°C
Temperature increment	0.1°C
Temperature accuracy at 37°C	± 0.2°C
Operation mode	Constant operation: constant temperature (-10°C to 100°C); Timer: 9999 (min)
	Program operation: 1-4 steps and up to 9 cycles; Timer: 9999 (min)
	Annealing program

Elite Dry Bath Incubator, EL series

EL-02



EL-01

- External temp probe available for function control.
- data logging software (MD-01N/02N only, optional with RS232)

Cat. No.	EL-01	EL-02	MD-01N	MD-02N
Display	LCD		LED	
Temperature control range	5°C above ambient to 150°C			
Temperature increment	0.1°C			
Temperature accuracy at 37°C	± 0.2°C			
Timer	99 (hr): 59 (min) / Continuous		999 (min) / Continuous	
Dimension (mm)(WxLxH)	152x150x135	152x230x135	200x298x88	

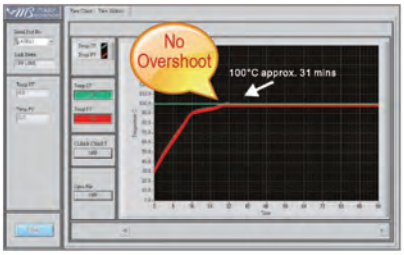
**For prevent temperature difference effect and keep temperature stable, PQ is required in high temperature control mode(>=140 °C) or contact the local dealer before ordering.

Genius Dry Bath Incubator, MD series

MD-01N

MD-02N

MD-01N / EL-01	MD-02N / EL-02
Temp. set value:100°C	Temp. set value:100°C
Initial temp. value:25°C	Initial temp. value:30°C
Block model: MD-B1.5	Block model: MD-B1.5
Process time: Approx. 25mins	Process time: Approx. 31mins



*Please visit our website at www.majorsci.com for more product selection and detailed information.

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Major Science thermostirrer series are equipped with built-in stirrers on the bottom of each well combined with excellent temperature control. Pre-configured long-durability motor for chemical compound synthesis, combinatorial chemistry, sample concentration, denaturation, derivatization, enzyme analysis and process optimization.

TS-8W

- Microprocessor control with digital performance
- Brushless motor for individual well agitation
- Outstanding temp. control performance up to 200°C
- Well-insulation around casework
- Over temp. protection
- LCD screen & timer (standalone model only)

Cooling System Connection Port

TS-8W

Cat. No.	TS-8W-110	TS-8W-220
Controller	Digital microprocessor controller	
Display	2.6" LCD monochrome display	
Motor	Brushless motor	
Number of position	8 wells (2x4) with individual magnetic stirrer **	
Well diameter	Ø29.5mm, 62mm depth **	
Stirring speed	500 - 3500rpm	
Temperature control range	5°C above ambient to 200°C	
Temperature increment	± 0.1°C	
Temperature uniformity	± 0.7°C @ 150°C	
Temperature accuracy	± 0.2°C @ 150°C	
Temperature calibration	Yes	
Operating temperature	Ambient to 40°C	
Timer	99 (hr): 59 (min) / Continuous	
Block material	PTFE coating with individual magnetic	
Data logging	RS 232 (Max. 2.5meter long)	
Safety	Insulated wells around casework	
	Leakage proof for heating chamber	
	Over temperature protection	
Rated voltage	110V~; 50/60Hz, 6.3A	220V~; 50/60Hz, 3.15A
Dimension (mm)(WxLxH)	230x300x160	
Weight	Approx. 8.5kg	
Power	600W	
Vessel diameter	Max. 28.5mm **	
Communication port	RS-232	

* Temperature uniformity would be dependent on the integration to your automation system.
** Customized Specification.

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Dry Bath Block / Beads

The precisely machined aluminum alloy blocks deliver efficient heat transfer and are suitable for microplate and various test tubes ranging from 0.2ml to 50ml centrifuge tubes.


Mini Dry Bath Block, MD-MINI series


Dry Bath Block, MD series

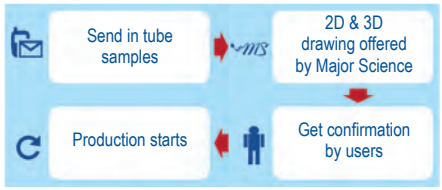

Ultimate Dry Bath Block, MC series

Dry Bath Block Specifications

*Customized blocks available.

Cat. No.	Mini Dry Bath Blocks	Dry Bath Blocks	Ultimate Dry Bath Blocks
Block material	Aluminum alloy		
Dimension (mm)(WxLxH)	47x71x32 (MD-MINI-B01/02/05/06/07) 47x71x75(MD-MINI-B03/04)	87x128x62.3(MD-MP01-S) 104x158x50 (MD-MP01-D/ MD-MP02-D) 87x128x69.5(MD-MP02-S) 79x104x50(standard blocks)	89x129x46(standard blocks) 64.5x89x46 (MC-B0.2H/0.5H/1.5H) 89x129x30 (MC-BS0.2+0.5/0.5+1.5)

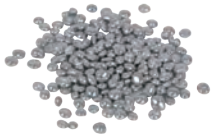
Flow chart for customization process:

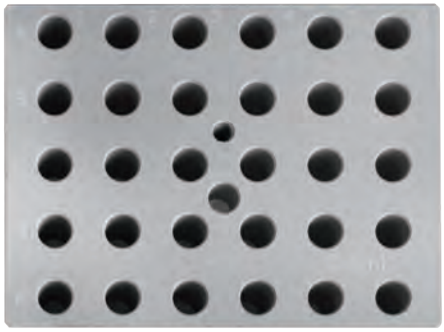


Metallic Thermal Beads Specifications

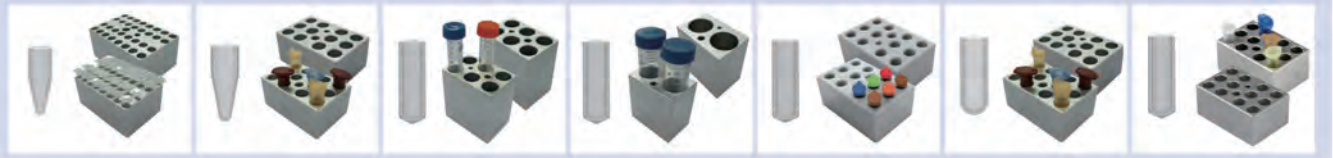
Cat. No.	Metallic Thermal Beads
Properties	Metal composition
	Moisture and gas impermeable
	High thermal conductivity
	Smooth, rounded surface
Working temperature range	-80°C to 180°C
Size	Diameter 5-8mm, Height 1-2mm

Metallic thermal beads as an alternative to the dry bath aluminum blocks. The beads are dry metallic thermal alloy designed to replace water in a water bath and ice in an ice bucket.




Laser marked on the selected blocks

Mini Dry Bath Blocks

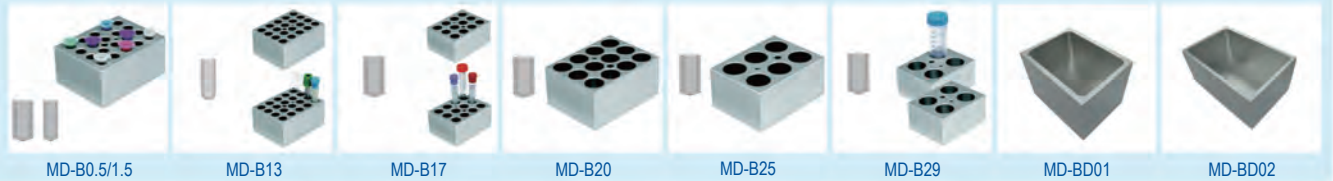

MD-MINI-B01 MD-MINI-B02 MD-MINI-B03 MD-MINI-B04 MD-MINI-B05 MD-MINI-B06 MD-MINI-B07

MD-MINI-B01	For 0.2ml tube (PCR strip tube), 32 wells, Ø6.35mm, depth 17mm, (WxLxH) 47x71x32mm
MD-MINI-B02	For 1.5ml tube, 12 wells, Ø10.88mm, depth 30mm, (WxLxH) 47x71x32mm
MD-MINI-B03	For 15ml tube, 6 wells, Ø17.3mm, depth 70mm, (WxLxH) 47x71x75mm
MD-MINI-B04	For 50ml tube, 2 wells, Ø29.0mm, depth 70mm, (WxLxH) 47x71x75mm
MD-MINI-B05	For 0.5ml tube, 12 wells, Ø7.9mm, depth 25mm,(WxLxH) 47x71x32mm
MD-MINI-B06	For 2.0ml or 1.5ml tube, 12 wells, Ø11.0mm, depth 30mm, (WxLxH) 47x71x32mm
MD-MINI-B07	For 2.0ml or 1.5ml tube, 12 wells, Ø11.0mm, depth 30mm, (WxLxH) 47x71x32mm
MS-BL95-E	Block Lifter, 95mm length with E-type retaining rings


MS-BL95-E

Dry Bath Blocks


MD-MP01-S MD-MP01-D MD-MP02-S MD-MP02-D MD-B0.2 MD-B0.5 MD-B1.5 / MD-B1.5V MD-B0.5+1.5


MD-B0.5/1.5 MD-B13 MD-B17 MD-B20 MD-B25 MD-B29 MD-BD01 MD-BD02

MD-MP01-S	For microplate; titerplate (Plain Block for Single Block unit only)
MD-MP01-D	For microplate; titerplate (Dual Block unit only)
MD-MP02-S	For 96 wells deep microplate or PCR plate (for Single Block unit only)
MD-MP02-D	For 96 wells deep microplate or PCR plate (for Dual Block unit only)
MD-B0.2	For 0.2ml tube, 64 wells (or 0.2ml PCR strip tube for 8 wells x 8)
MD-B0.5	For 0.5ml tube, 20 wells
MD-B1.5	For 1.5ml or 2.0ml tube, 20 wells
MD-B1.5V	For 1.5ml or 2.0ml V-shaped tube, 20 wells
MD-B0.5+1.5	Combination: for 0.5ml tube, 12 wells; and for 1.5ml tube, 12 wells (on the same side)

*Please visit our website at www.majorsci.com for more product selection and detailed information.

MD-B0.5/1.5	One side for 1.5 or 2.0ml tube, 20 wells and another side for 0.5ml tube, 30 wells (on the opposite side)
MD-B13	Well size 13mm, 20 wells
MD-B17	For 15ml centrifuge tube, 12 wells
MD-B20	Well size 20mm, 12 wells
MD-B25	Well size 25mm, 6 wells
MD-B29	For 50ml centrifuge tube, 4 wells
MD-BD01	Single bead MD dry bath block, (WxLxH) 79 x104x76mm
MD-BD02	Dual bead MD dry bath block, (WxLxH) 104 x158x76mm
MS-BL95-E	Block Lifter, 95mm length with E-type retaining rings
MD-MINI-BD000	Metallic thermal beads for Mini dry bath incubator, for MD-MINI & MC-0203, 170g (Beads only)

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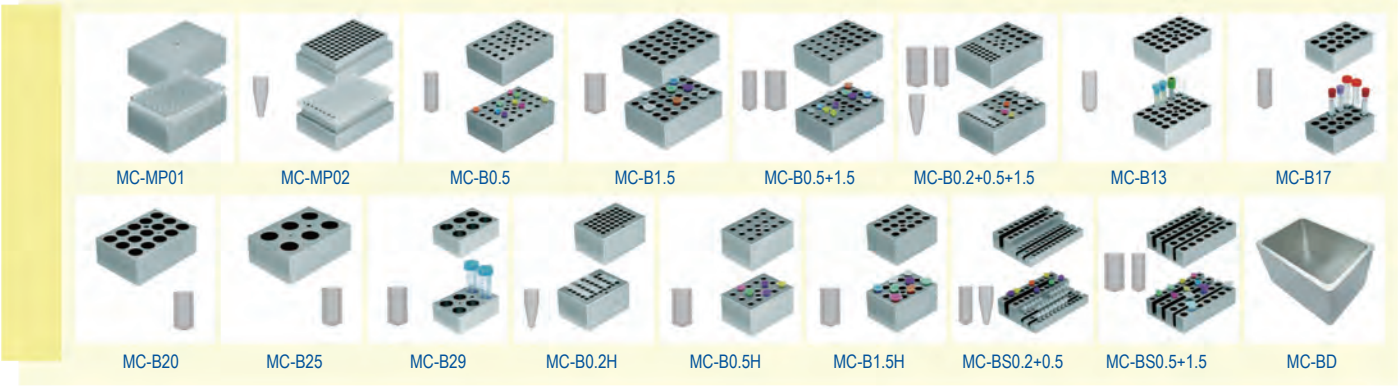


MC-MP01	For Microplate; titerplate (Plain Block)
MC-MP02	For 96 wells deep microplate or PCR plate
MC-B0.5	For 0.5ml, 30 wells
MC-B1.5	For 1.5 or 2.0ml, 30 wells
MC-B0.5+1.5	Combination: for 1.5ml or 2.0ml tube, 15 wells and 0.5ml tube, 15 wells (on the same side)
MC-B0.2+0.5+1.5	Combination: 0.2ml tube (or strip tube for 8 wells), 24 wells; 1.5ml or 2.0ml tube, 10 wells and 0.5ml tube, 10 wells (on the same side)
MC-B13	Well size 13mm, 30 wells
MC-B17	For 15ml centrifuge tube, 15 wells
MC-B20	Well size 20mm, 15 wells
MC-B25	Well size 25mm, 6 wells

MC-B29	For 50ml centrifuge tube, 6 wells
MC-B0.2H	(1/2) half block for 0.2ml tube, 40 wells (or 0.2ml PCR strip tube for 8 wells x 5)
	One Ultimate Dry Bath Incubator can insert 2ea of half block
MC-B0.5H	(1/2) half block for 0.5ml tube, 15 wells
	One Ultimate Dry Bath Incubator can insert 2ea of half block
MC-B1.5H	(1/2) half block for 1.5 or 2ml tube, 15 wells
	One Ultimate Dry Bath Incubator can insert 2ea of half block
MC-BS0.2+0.5	Combination: 0.2ml tube, 36 wells; 0.5ml, 20 wells
MC-BS0.5+1.5	Combination: 0.5ml tube, 18 wells; 1.5ml, 14 wells
MC-BD	Ultimate bead bath block, (WxLxH) 90 x127x76mm
MS-BL95-E	Block Lifter, 95mm length with E-type retaining rings

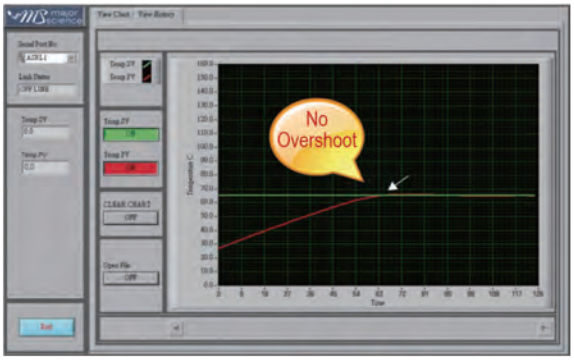
Stirring Water Bath

SWB series

Cat. No.	SWB-10L-1	SWB-10L-2	SWB-20L-1	SWB-20L-3
Number of stirring mechanisms	1	2	1	3
Stirring speed	400-1500rpm (measured by percentage)			
Bath capacity	Approx. 10L		Approx. 20L	
Water circulation function	Yes			
Display	LCD			
Heating power	600W		800W	
Controller	Digital microprocessor controller			
Bath temperature	5 °C above ambient to 99 °C			
Temperature increment	0.1°C			
Temperature accuracy	± 0.2 °C at 37 °C			
Timer	99 (hr): 59 (min) / Continuous			
Safety device	Warning indication on screen with alarm and automatic shut down			
Bath Inner dimension (mm)(WxLxH)	240x300x150		300x500x150	
Dimension (mm)(WxLxH)	255x355x240 (without lid)		330x540x240 (without lid)	

*Using as a water bath and the picture is only for reference.

As little as 34/60 mins required to reach 65°C in 10L/20L bathes.



SWB-20L Series
- Temp. set value:65°C
- Initial temp. value:27°C
- Water volume : 12 liters
- Process time: Approx. 60mins

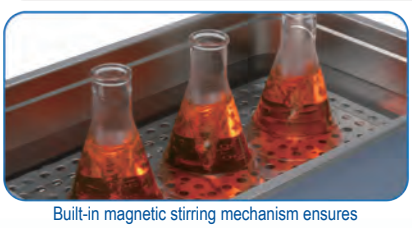
SWB-10L Series
- Temp. set value:65°C
- Initial temp. value:17°C
- Water volume : 5 liters
- Process time: Approx. 34mins

- Built-in magnetic stirring mechanism ensures outstanding temperature uniformity
- Polycarbonate lid for better observation
- User temperature calibration
- Data logging software available upon ordering

Max. capacity:
15 sets of 250ml flasks
8 sets of 500ml flasks

Illustrates max. chamber capacity only.

Max. capacity:
6 sets of 250ml flasks
4 sets of 500ml flasks

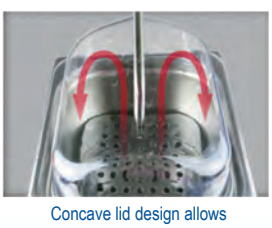


Built-in magnetic stirring mechanism ensures outstanding temperature uniformity

Water circulation function

Magnetic agitator
Stir bar

Side opening of the lid to allow minimum evaporation while maintaining water bath temperature.



Concave lid design allows condensation flow back to the tank.

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Incubator

MS Mini Incubator

Major Science's Mini Incubator is designed for personal use and small laboratories, saving much of space. The unit features a broad temperature range to meet a variety of microbiology or hematology applications.

- Ideal for microbiology or hematology applications
- Corrosion resistant metal chamber
- Door with large viewing area
- Backlit colored touched panel
- One stainless steel shelf is included

Cat. No.	MO-MINI
Display	LCD
Temperature Range	Ambient +5° to 70°C
Temperature Accuracy	± 0.2°C @ 37°C in center point
Capacity	17L
Exterior Dimension (WxLxH)	310x306x380mm
Interior Dimension (WxLxH)	261x255x255mm
Weight	Approx. 13kg
Power	100-240V~, 50/60 Hz, 2A
Material	Metal
PC Connection	USB

MO-SH2524 Stainless steel shelf for MS Mini Incubator

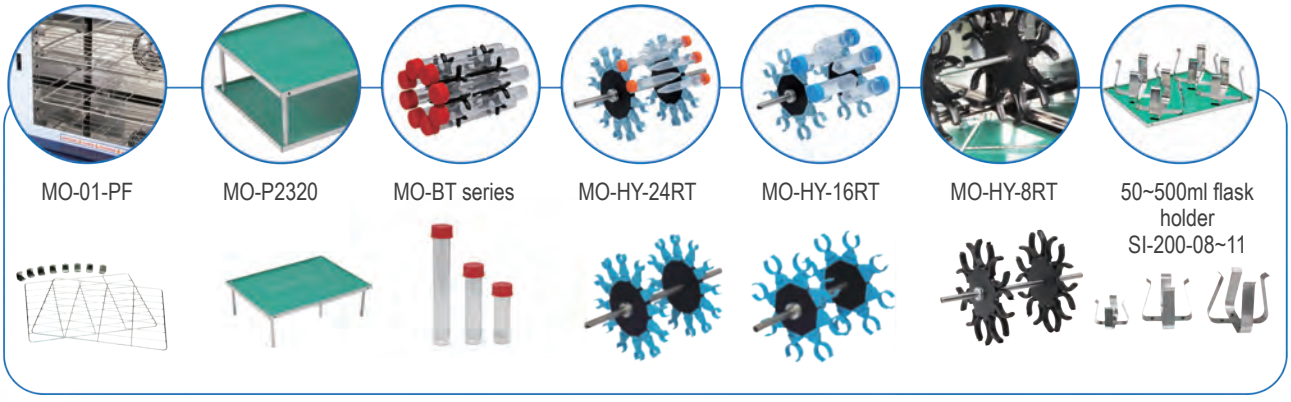
MS Oven / MS Hybridization Oven

Cat. No.	MO-A01	MO-AOR
		
Display	Touch screen & graphical interface, 3.5" 64 K color TFT display	
Rotisserie / Speed	N/A	Yes (optional) 5-100rpm
Shaker motion	N/A	Orbital clockwise / counterclockwise
Shaker speed	N/A	0-200rpm
Temperature control range	Ambient +5°C to 85°C	
Temperature uniformity	± 0.2°C at 37°C	
Temperature accuracy	± 0.2°C at 37°C	
Inner chamber dimensions	(WxLxH) 340x225x260 (mm)	
Data logging	RS-232	

*To perform rocking motion on optional accessories, MO-SEESAW is required.

- User temperature calibration available
- Timer with alarm function
- Safety door switch device
- Large color touch screen and graphical control interface for easy access and operation
- Data logging software for monitoring and recording purposes (optional)

heating rotation Orbital



MO-01-PF | MO-P2320 | MO-BT series | MO-HY-24RT | MO-HY-16RT | MO-HY-8RT | 50~500ml flask holder SI-200-08~11

- Various accessories available

*Note each accessory do not apply to all the models of MS oven. Please visit our website at www.majorsci.com for more details.
*Please visit our website at www.majorsci.com for more product selection and detailed information.

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* Technical specifications subject to change without notice.

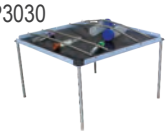
Shaker

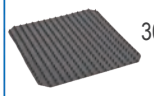
MS Orbital Shaker

- Heavy loading capacity (up to 10kg)
- Up to 200rpm for extreme performance
- Max. of 9999 minutes timer with alarm warning
- Interchangeable / stacking platforms and accessories for different applications
- 30x30cm shaking platform for standard laboratory practice

50~2000ml flask holder
SI-200-08~13

Platform with non-slip rubber mat
MS-P3030

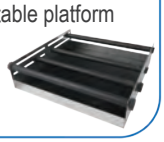


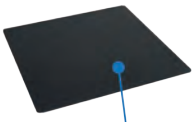


30x30cm dimpled mat
MS-DIMPLED-30

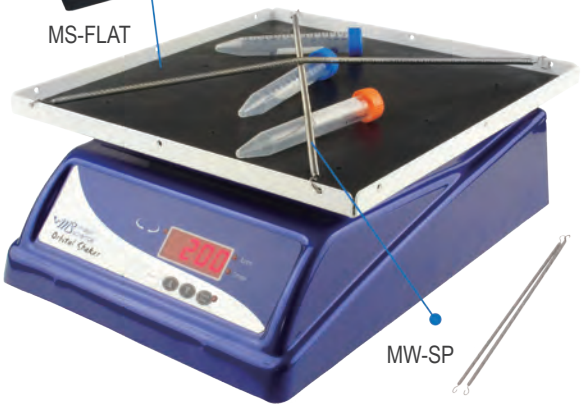
20x20cm sticky pad
PPL-04-SI-SI-200-3

Universal adjustable platform
MS-UP-30

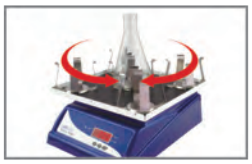




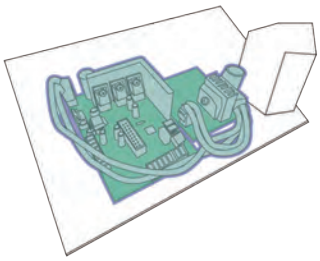
MS-FLAT



MW-SP



MS Orbital
MS-NOR-30



*Anti-moisture shakers (MS-NOR-3001) are also available for cold room and CO_2 incubation operation.
Please contact your regional manager for detail information.

Cat. No.		MS-NOR-30	MS-NOR-3001
Shaking motion		Orbital action in one direction or two directions	
Speed/Inc.		0 ~ 200rpm / 1rpm	
Timer		9999 (min) with alarm / Continuous	
Platform dimension (cm) (WxL)		30x30	
Loading capacity		10kg	
Stacking platform		Yes	
Anti-moistured		N/A	Yes
Platform capability of flask holders	50ml	13	
	125ml	12	
	250ml	9	
	500ml	5	
	1000ml	4	
	2000ml	1	

♦ Customized specification

* All images are for reference only, actual products might differ from the pictures above.
* Technical specifications subject to change without notice.

Digital Peristaltic Pump

MU-D series

Easy load pump head with reversible flow for purging purposes

Second expandable pump head is optional
(MU-D01 & MU-D02 only)

Cat. No	MU-D01 CE ETL	MU-D02 CE	MU-D03 CE
Controller	Digital microprocessor controller		
Motor	Brushless motor		
Power	50W	100W	
Pump speed / increment	20 - 300rpm / 1rpm	5 - 600rpm / 1rpm	20 - 300rpm /1rpm
Max. pump speed	300rpm	600rpm	300rpm
Flow range **	1.2 - 1,140ml/min	0.3 - 2,280ml/min	8 - 3,272ml/min
Number of rollers	4		2
Number of peristaltic Pumps	1(Max is 2, the second pump head is optional and need the confirm before order.)		1
Operating temperature	Ambient to 40 °C		
Dimension (mm)(WxLxH)	200x340x130		240x338x167
Material	Painted iron metal		
Weight	Approx. 5.7kg		Approx. 6.2kg
Rated voltage	110V/220V, Selectable	100V-240V	100V-240V
Program	2-step Program (running & ceasing); Max. of timer: 99 (hr) : 59 (min) : 59 (sec)		

**The flow range is subject to the silicone tube that used. Please see Silicon tubing specifications table for reference.

Tubing Information

Silicon tubing specifications						
Cat. No.	MU-S13	MU-S14	MU-S16	MU-S25	MU-S17	MU-S18
Inner diameter inches. (mm)	0.03(0.8)	0.06(1.6)	0.12(3.1)	0.19(4.8)	0.25(6.4)	0.31(7.9)
Hose barb size inches. (mm)	1/16(1.6)	1/16(1.6)	1/8(3.2)	3/16(4.8)	1/4(6.4)	3/8(9.5)
Flow range with 6 to 600rpm drive (ml/min)	0.36 to 36	1.3 to 130	4.8 to 480	10 to 1000	17 to 1700	23 to 2300
*The flow range is subject to the silicone tube that used. Please see Silicon tubing specifications table for reference.						
Maximum pressure, continuous	25psig			20psig	15psig	10psig
	(1.7bar)			(1.4bar)	(1.0bar)	(0.7bar)
Maximum pressure, intermittent	40psig			35psig	20psig	15psig
	(2.7bar)			(2.4bar)	(1.4bar)	(1.0bar)
Maximum vacuum	26" Hg (660mm Hg)				20" Hg (510mm Hg)	
Suction lift	29ft H_2O (8.8m H_2O)				22ft H_2O (6.7m H_2O)	

* MU-S18 is not compatible with MFU series.

*Please visit our website at www.majorsci.com for more product selection and detailed information.

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* Technical specifications subject to change without notice.

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