

# Laboratory Products



**2011**



- ⌘ Laboratory equipment
- ⌘ Analytical equipment
- ⌘ Incubators/ovens/furnaces
- ⌘ Microscopes
- ⌘ Balances
- ⌘ Measuring meters
- ⌘ Material testing
- ⌘ Medical Equipment

2011 Catalog is PARTIAL Only : expanded as needed  
see Chromalytic web page or TABLE of CONTENTS

## HA-17600, 2 Counting Channels Hematology Analyzer With Touch Screen



## Features:

- 20 parameters+3 histograms.
- 2 counting channels, 3-part differentiation of WBC.
- 2 Counting mode: whole blood and pre diluted.
- 60 samples per hour.
- Up to 50000 sample results (including histograms) can be stored
- 10.4" TFT color LCD with touch screen
- Built-in thermal printer, optional external printer
- External AC adapter avoids electronic noises, enhancing accuracy
- Multi-language software available on request.

Model	HA-17600
Parameters	WBC, LYM#, MID#, GRA#, LYM%, MID%, GRA%, RBC, HGB, MCHC, MCH, MCV, RDW-CV, RDW-SD, HCT, PLT, MPV, PDW, PCT, P-LCR and Histograms for WBC, RBC and PLT
Principles	Electrical resistance for counting WBC, RBC and PLT
Performance	Parameter Precision (CV %): WBC (109/L) 2.0(7.0-15.0) RBC (1012/L) 1.5(3.50-6.00), HGB (g/L) 1.5(110 – 180) MCV (fL) 0.4(80.0 – 110.0), PLT (109/L) 4(100 – 500)
Sample Volume	Prediluted: 20μL, Whole Blood: 9.8μL
Aperture Diameter	WBC 80μm; RBC 50μm
Throughput	60 samples per hour
Display	10.4" TFT Color LCD with touch screen, Resolution: 800×600
Alarms	Error messages
Carryover	WBC/RBC/HGB<0.5%, PLT<1.0%
Input/Output	RS-232, USB, LAN, keyboard and mouse interface
Printout	Thermal printer, 55mm width paper, various printout formats, external printer optional
Operating Environment	Temperature: 15°C~35°C; Humidity: 10%~90%
Power Requirement	AC 110-220V, 50/60Hz
Dimension(mm)	L436×W363×H367
Weight	18Kg

## SACA-11904C, High Quality Chemistry Analyzer With 7 Filters, Color LCD



## Features:

- Easy Windows operation system with mouse, large color LCD display.
- Reagent open system supports flow cell and cuvette mode, close system on request
- Analytical modes include kinetic, fixed time, bichromatic end point with/without reagent blank or sample blank, linear or

Model	SACA-11904C
Principle	Absorbance
Photometric range	-0.500~3.000Abs
Resolution	0.001Abs(displayed), 0.0001Abs(calculated)
Light Source	Halogen lamp
Wavelengths	340, 405, 500, 546, 578, 620, 670nm, 1 more filter optional
Wavelength Accuracy	±1nm
Band Width	8nm
Aspirate Volume	100~300μL
Carryover	<0.1%
Memory	160 test protocols, minimum 500 test result
Interface	RS-232, USB, SD card interface
Flow Cell	25μL Metal-quartz flow cell
Cuvette Mode	12.5mm*12.5mm cuvette optional
Temperature Control	25°C, 30°C, 37°C, ±0.1°C
Display	7" color LCD
Input	USB mouse and external keyboard
Output	Build-in printer or external printer (optional)
Net Weight	8KG
Dimensions(mm)	L460×W330×H140
Power supply	AC 110-220V±10%, 50~60Hz

non-linear calibration curves • Real-time curve monitoring enhances the reliability of result • Large memory, up to 160 test protocols can be programmed • Powerful QC function: Westgard Multi-rule, Levey Jennings plot, 2 controls per test • Auto self-check when power on • With lamp sleeping and wake-up function • Easy software upgrade by SD card, support USB mouse and keyboard • Multiform result output including patient comprehensive report • Compact design enables USER-DIY maintenance • Multi-language software available on request.



## SACA-11904CV, Semi-Auto Chemistry, High Quality Analyzer Special For Veterinary Use



SACA-11904CV

**Features:**

- Easy Windows operation system with mouse, large color LCD display.
- Support up to 12 kinds of animal: 8 kinds fixed, 4 kinds open.
- 34 most common tests fixed, 20 more can be defined by user.
- Reagent open system supports flow cell and cuvette mode, close system on request.

Model	SACA-11904CV
Principle	Absorbance
Photometric range	-0.500~3.000Abs
Resolution	0.001Abs(displayed), 0.0001Abs(calculated)
Light Source	Halogen lamp
Wavelengths	340, 405, 500, 546, 578, 620, 670nm, 1 more filter optional
Wavelength Accuracy	±1nm
Band Width	8nm
Aspirate Volume	100~300μL
Carryover	<0.1%
Memory	54 test parameters, up to 500 sample results
Interface	RS-232, USB, SD card interface
Flow Cell	25μL Metal-quartz flow cell
Cuvette Mode	12.5mm*12.5mm cuvette optional
Temperature Control	25°C, 30°C, 37°C, ±0.1°C and ambient temperature
Display	7" color LCD(640 x240 discernibility, 256 colors)
Input	USB mouse and external keyboard
Output	Build-in printer or external printer (optional)
Net Weight	8KG
Dimensions(mm)	L460×W330×H140
Power supply	AC 110-220V±10%, 50~60Hz

- Analytical modes include kinetic, fixed time, bichromatic end point with or without reagent blank or sample blank, linear or non-linear calibration curves
- Real-time curve monitoring enhances the reliability of result
- Powerful QC function: Westguard Multi-rule, Levey Jennings plot, 2 controls per test
- Auto self-check when power on
- With lamp sleeping and wake-up function
- Easy software upgrade by SD card, support USB mouse and keyboard
- Compact design enables USER-DIY maintenance
- Multi-language software available on request

## SACA-19100, Semi-Auto Chemistry, Grating Inside, PC Controlled



SACA-19100

**Features:**

- PC controlled system, Windows XP, displays the reaction curve in real-time.
- Continuously adjustable grating, enhances the stability and reliability of result.

Model	SACA-19100
Principle	Absorbance
Absorbance Range	-0.500 ~ 3.500Abs
Resolution	0.001 Abs (displayed), 0.0001Abs (calculated)
Light Source	Halogen lamp
Wavelengths	Continuously adjusted grating, wavelength range is 330 - 800nm, 1nm by step adjustment
Wavelength Accuracy	± 1nm
Band Width	< 6nm
Flow cell	Metal - quartz flow cell
Temperature Control	25°C, 30°C, 37°C, ±0.1°C and ambient temperature
Carryover	< 1%
Memory	300 test protocols, up to 10000 test results, support SD to expand memory
Printer	All printers compatible with Windows
Interface	RS-232, USB
Power Supply	AC 100V - 240V ± 10%, 50-60Hz
Net Weight	9KG
Dimensions (mm)	L368xW192xH266

- Reagent-open system supports flow cell & cuvette mode, close system on request
- Analytical modes include kinetic, fixed time, bichromatic end point with or without reagent blank or sample blank, linear or non-linear calibration
- Powerful QC program: Westguard multi-rule, Levey-Jennings plots, 2 controls per test
- Large memory, up to 300 test protocols can be stored
- Multifunction result output including patient comprehensive report
- Compatible with all popular external printers connected to PC
- Easy communication with PC
- Powerful internet connection enables remote data sharing and OS update
- Compact design enables USER-DIY maintenance
- Multi-language software available on request.

### SACA-19200, Semi-Auto Chemistry, Low Level Photometer Provides Basic Solution



**SACA-19200**

Model	SACA-19200
Principle	Absorbance
Absorbance Range	-0.500 ~ 3.500Abs
Resolution	0.001 Abs (displayed), 0.0001Abs (calculated)
Light Source	Halogen lamp
Wavelengths	340, 405, 500, 546, 620nm, 3 more filters optional
Wavelength Accuracy	± 1nm
Band Width	< 8nm
Flow cell	Metal - quartz flow cell
Temperature Control	25°C, 30°C, 37°C, ±0.1°C and ambient temperature
Carryover	< 1%
Display	LCD display
Interface	RS-232 serial cable
Output	Internal and external printer (optional)
Power Supply	AC 100V - 240V ± 10%, 50-60Hz
Net Weight	7KG
Dimensions (mm)	L370xW284xH318

#### Features:

- Easy keypad operation with LCD display.
- Wavelengths range is 330-800nm, 5 standard filters, 3 more filters optional.
- Reagent open system supports flow cell and cuvette mode, close system on request
- Analytical modes include kinetic, fixed time, bichromatic end point with or without reagent blank or sample blank, linear or non-linear calibration curves
- Up to 60 programs and 2200 test results can be stored
- Excellent QC function, 2 controls per test
- Internal thermal-sensitive printer
- Compact design enables USER-DIY maintenance
- Multi-language software available on request.

### SACA-19600, Semi-Auto Chemistry, Grating Inside, Touch Screen And USB



**SACA-19600**

Model	SACA-19600
Principle	Absorbance
Absorbance Range	-0.500 ~ 3.500Abs
Resolution	0.001 Abs (displayed), 0.0001Abs (calculated)
Light Source	Halogen lamp
Wavelengths	Continuously adjusted grating, wavelength range is 330 - 800nm, 1nm by step adjustment
Wavelength Accuracy	± 1nm
Band Width	< 6nm
Flow cell	Metal - quartz flow cell
Temperature Control	25°C, 30°C, 37°C, ±0.1°C and ambient temperature
Carryover	< 1%
Memory	200 test protocols, up to 10000 test results, support SD to expand memory
Display	6.4" color/mono LCD
Interface	RS-232, support VGA, 2 USB, SD, Ethernet
Output	Built-in printer, or external printer (optional)
Input	Touch screen, USB mouse and keyboard optional
Power Supply	AC 100V - 240V ± 10%, 50-60Hz
Net Weight	11KG
Dimensions (mm)	L370xW284xH318

#### Features:

- Easy Windows operation system with large touch-screen.
- Displays the reaction curve in real-time.
- Continuously adjustable grating, enhances the stability and reliability of result
- Reagent-open system supports flow cell and cuvette mode, close system on request
- Analytical modes include kinetic, fixed time, bichromatic end point with or without reagent blank or sample blank, linear or non-linear calibration
- Powerful QC program: Westguard multi-rule, Levey-Jennings plots, 2 controls per test
- Large memory, up to 200 test protocols and 10000 results can be stored, compatible with SD card
- Multiform result output including patient comprehensive report
- Multi-interface support RS-232, VGA, USB, SD and Ethernet
- Easy communication with PC
- Powerful internet connection enables remote data sharing and OS update
- Compact design enables USER-DIY maintenance
- Multi-language software available on request.

**SACA-19900, Semi-Auto Chemistry, Grating Inside, Easy Keypad Operation With LCD Display****SACA-19900****Features:**

- Easy keypad operation with LCD display
- Continuously adjustable grating, enhances the stability and reliability of result.
- Reagent open system supports flow cell and cuvette mode, close system on request.
- Analytical modes include kinetic, fixed time, bichromatic end point with or without reagent blank or sample blank, linear or non-linear calibration curves
- Powerful QC program: Westgard multi-rule, Levey-Jennings plots, 2 controls per test
- Large memory, up to 204 protocols and 5400 results can be stored
- Additional recloser design with lamp saving
- Powerful internet connection enables remote data sharing & OS update
- Compact design enables USER-DIY maintenance
- Multi-language software available on request.

Model	SACA-19900
Principle	Absorbance
Absorbance Range	-0.500 ~ 3.500Abs
Resolution	0.001 Abs (displayed), 0.0001Abs (calculated)
Light Source	Halogen lamp
Wavelengths	Continuously adjusted grating, wavelength range is 330 - 800nm, 1nm by step adjustment
Wavelength Accuracy	± 1nm
Band Width	< 6nm
Flow cell	Metal - quartz flow cell
Temperature Control	25°C, 30°C, 37°C, ±0.1°C and ambient temperature
Aspirate Volume	0~3000µl
Carryover	< 1%
Memory	Up to 204 protocols and 5400 results can be stored
Display	LCD display
Interface	RS-232
Output	Built-in printer, or external printer (optional)
Power Supply	AC 110V - 220V ± 10%, 50-60Hz
Net Weight	8KG
Dimensions (mm)	L360xW318xH185

**FACA-1240, Fully Automated Chemistry, Discrete, Constant Throughput 120 Test/Hours, Random Access****FACA-1240****System Function**

Automatic, Random Access, STAT sampling priority, Barcode-Reading support (optional)

Model	FACA-1240
Throughput	200 tests/hour, Constant throughput around 120 tests/hour
Contents of the testing	Clinical chemistry, Immunoturbidimetric
Analytical modes	End-point, Two-point, Kinetic
Programming	Open system with user defined programs and calculation

**Sample/Reagent Handling**

Sample/Reagent tray	40 positions for samples and 40 positions for reagents in refrigerated compartment
Refrigerated temp.	4 ~ 15°C
Reagent volume	R1: 180 ~ 450 µL, 1 µL adjustable R2: 30 ~ 250 µL, 1 µL adjustable
Sample volume	3 ~ 45 µL, 0.5 µL adjustable
Sample & Reagent probe	Collision protection, Liquid level detection & Inventory checking
Probe cleaning	Automatic washing both inside and outside, carry over <0.1%

Pre-heating for reagent

**Reaction System**

Reaction positions	81 cuvettes, 9 cuvettes/strip
Cuvette	Optical length 5mm
Reaction volume	180 ~ 500ul
Reaction temp.	37°C, fluctuation ±0.1°C

Independent mixing probe, Automatic washing system

**Measuring and Optic System**

Lamp	Halogen lamp
Absorbance range	0 ~ 3.500Abs±1%
Wavelengths	8 wavelengths, including 340nm, 405nm, 450nm, 510nm, 546nm, 578nm, 630nm, 670nm
Resolution	0.0001ABS

**Working Condition**

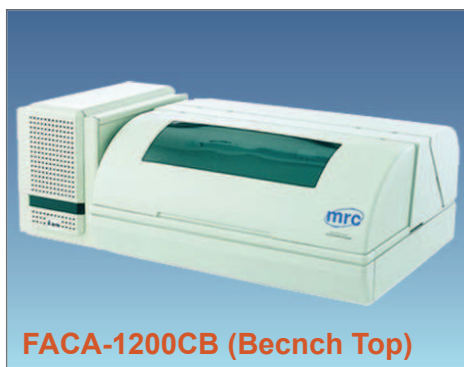
Power supply	AC 100/240V 50/60 Hz
Temperature	10 ~ 35°C
Humidity	35 ~ 80%
Water consumption	Max 2.5 L/hour
Dimension(cm)	L800xW600xH650
Gross weight	80KG

**Features:**

- Automatic, Random Access.
- Up to 240 tests per hour.
- Reagent pre-heating, liquid level detection.
- Automatic 10 steps washing system (optional), Low carry-over.
- Labor saving. Simple programming and real walk-away operation.
- 24 hours non-stop Reagent cooling compartment.
- Reagent open system, close system on request.
- Micro-volume for sample and reagent.
- User-friendly software based on Windows XP.



## FACA-1200CB, Fully Automated Chemistry, Flow Cell, Stable Throughput, Bench Top



FACA-1200CB (Bench Top)

## Features:

- Simplicity of operation and flexibility with user friendly software under Windows OS.
- Reagent open system, close system on request.
- Stable throughput with reliable results, cost effective.
- STAT sample priority enabled.
- Liquid level detection for sample and reagent probes.
- Dual reagent assay supported with mixer.
- Air/Water rinse flow cell, auto/manual rinse, low carryover.
- Analytical modes including Multi-stand, Fixed time, End-point and Kinetic.
- Built-in QC Management and Multi-form report output.
- Large memory, up to 1 million patients' data can be stored and unlimited programs defined.
- Compact design gives ease in maintenance.
- Slave analyzer available to get higher throughput.
- Multi-language software available on request.

Model	FACA-1200CB
General Descriptions	Automatic, STAT Available
Principle	Absorbance photometry
Programming	User defined
Throughput	Up to 80 tests/hour
Method	End-point, Kinetic, Fixed time, Single/Dual Reagent, Monochromatic, Bichromatic, Linear / non-linear multipoint calibration
Quality control	QC calculation monthly
Calibration mode	One point/ multi-point, log, exponential, polynomial, parabola
Memory	80G
Report	Multi-forms in result output including patient comprehensive report automatically

## Optical Assembly

Light Source	Halogen lamp
Wavelength	8 filters including 340nm,405nm,492nm,510nm,535nm,546nm,578nm,620nm
Measuring Range	0-3.000Abs $\pm$ 1%
Sensitivity	0.0005Abs

## Operation Overview

Operation system	Windows
Display	15" color LCD or CRT
Interface	RS-232

## Sample &amp; Reagent Handling

Sample position	60 positions
Sample volume	3-500 $\mu$ l (>5 $\mu$ l is recommended), 1 $\mu$ l increment
Sample probe	Liquid level detection
Reagent position	36 positions, refrigerated
Reagent volume	200-500 $\mu$ l, 1 $\mu$ l increment
Reagent probe	liquid level detection
Reaction position	120 positions
Reaction volume	300-500 $\mu$ l
Operation temperature	25°C,30°C,37°C, Room temperature
Temperature regulation	$\pm$ 0.1°C
Rinse	Auto/manual rinse, air/water rinse

Power Supply	AC 200V - 240V $\pm$ 10%,50-60Hz
Working Temperature	$\pm$ 0.1°C
Working Humidity	40-80%
Analytical unit Dimension	1177mm x 1025mm x 638mm
Control unit Dimension	1125mm x 731mm x 710mm
Net Weight	90KG



**FACA-1200CF  
(Floor Standing)**

### FACA-1200CF, Fully Automated Chemistry

#### Features:

- Simplicity of operation and flexibility with user friendly software under Windows OS.
- Reagent open system, close system on request.
- Stable throughput with reliable results, cost effective.
- STAT sample priority enabled.
- Liquid level detection for sample and reagent probes.
- Dual reagent assay supported with mixer.
- Air/Water rinse flow cell, auto/manual rinse, low carryover.
- Analytical modes including Multi-stand, Fixed time, End-point and Kinetic.
- Built-in QC Management and Multi-form report output.
- Large memory, up to 1 million patients' data can be stored and unlimited programs defined.
- Compact design gives ease in maintenance.
- Slave analyzer available to get higher throughput.
- Multi-language software available on request.

Model	FACA-1200CF
General Descriptions	Automatic, STAT Available
Principle	Absorbance photometry
Programming	User defined
Throughput	Up to 80 tests/hour
Method	End-point, Kinetic, Fixed time, Single/Dual Reagent, Monochromatic, Bichromatic, Linear / non-linear multipoint calibration
Quality control	QC calculation monthly
Calibration mode	One point/ multi-point, log, exponential, polynomial, parabola
Memory	80G
Report	Multi-forms in result output including patient comprehensive report automatically

#### Optical Assembly

Light Source	Halogen lamp
Wavelength	8 filters including 340nm,405nm,492nm,510nm,535nm,546nm,578nm,620nm
Measuring Range	0-3.000Abs ± 1%
Sensitivity	0.0005Abs

#### Operation Overview

Operation system	Windows
Display	15" color LCD or CRT
Interface	RS-232

#### Sample & Reagent Handling

Sample position	60 positions
Sample volume	3-500µl (>5 µl is recommended), 1µl increment
Sample probe	Liquid level detection
Reagent position	36 positions, refrigerated
Reagent volume	200-500µl, 1µl increment
Reagent probe	liquid level detection
Reaction position	120 positions
Reaction volume	300-500µl
Operation temperature	25°C,30°C,37°C, Room temperature
Temperature regulation	±0.1°C
Rinse	Auto/manual rinse, air/water rinse

Power Supply	AC 200V - 240V ± 10%,50-60Hz
Temperature Regulation	±0.1°C
Humidity	40-80%
Dimensions(Floor standing) (mm)	L872×W720×H1069
Gross Weight	180KG
Net Weight	90KG



STE-TEN

**STE-TEN, 1 Liter Autoclave**

It adopts B-wclass (prED-13060), with 3-times pre-vacuum preceding vacuum drying. Residual humidity is <0.2, vacuum measurement reaches -0.7bar.

It sterilizes and sanitizes miscellaneous packed or unpacked medical instruments, whether solid or A-type hollow, whether with multi-apertures or inset pipes. It efficiently rid air from every hollow area of any hollow instrument, such as hand-piece, making sure that water steam reaches every corner. It is installed with BOWIC & DICK which measures the penetration of water steam. Mini printer can be attached to record the process of sterilization.



Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber size	Outside size(mm)	Weight (kg)
STE-TEN	220/50	1100	1	Ø90x160mm	W200xH385xD450	30 (Net:28)



STE-TAN-8L

**STE-TAN-8L, 8 Liter Autoclave**

Adopting European N standard, with thermal vacuuming and drying function, it can be used for A type hollow instruments and solid instruments

**Technical feature:**

- Sterilization temperature: 121, 134 Cent degrees
- Drying Program: Thermal Vacuum drying
- Digital display
- Sterilization record: mini external printer is available
- Safety: safety valve, temperature control, pressure protection system, temperature protector of chamber wall
- Sterilization and drying time adjustable help you to get the best sterilization effect
- Open type water storage tank
- Quick drain connector
- Optional type B: STE-8L(B).



Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber Size (mm)	Outside size (mm)	Weight (kg)
STE-8LN	AC220V/50Hz	1100W	8L	Φ170x320mm	W345xH530xD340	34 (Net:29)
STE-8LB		1300W				37 (Net:32)



STE-TAN

**STE-TAN, 16 Liter Autoclave**

Adopting N-wclass (prED-13060), with thermal vacuumizing & drying function, it can be used for A-type hollow instruments & solid instruments. Thermodynamic vacuum guarantees elimination of cold air from the cavity and makes sure of perfect saturation of water steam. Three sterilizing water quantity selections are respectively for different material, which embodies the individualized service. Automatic malfunction detecting system makes easy maintaining.

- \* Liquid Sterilizing option
- \* Optional Printer



Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber size	Outside size (mm)	Weight (kg)
STE-TAN	220/50	1800	16	Ø230x360mm	W440xH400xD560	64 (Net:52)





STE-TIN

### STE-TIN, 16 Liter Vacuum Autoclave

It adopts B-wclass (prED-13060), with 3-times pre-vacuum preceding vacuum drying. Residual humidity is  $<0.2$ ; vacuum measurement reaches  $-0.7\text{bar}$ . It sterilizes and sanitizes miscellaneous packed or unpacked medical instruments, whether solid or A-type hollow, whether with multi-apertures or inset pipes. It efficiently rid air from every hollow area of any hollow instrument, such as hand-piece, making sure that water steam reaches every corner. It is installed with BOWIC & DICK which measures the penetration of water steam. Mini printer can be attached to record the process of sterilization.

Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber size	Outside size (mm)	Type	Weight (kg)
STE-TIN	220/50	1800	16	Ø240x360mm	W440xH400xD560	B	64 (Net:52)



STE-18L\B

### STE-18L, 18 Liter Autoclave

#### Technical features:

- According to EN13060 standard completely
- Manual door locking system
- Sterilization temperature: 121, 134 Cent degrees
- Programs: 10 programs (Including test programs)
- Test program; Helix test, B&D test, Vacuum test
- Drying Program: Vacuum drying
- LCD display
- Sterilization record: mini external printer is available
- Safety: safety valve, temperature control, pressure protection system, temperature protector of chamber wall
- Independent steam generator inside
- Sterilization and drying time adjustable help you to get the best sterilization effect
- Open type water storage tank
- Quick drain connector.

Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber size	Outside size (mm)	Type	Weight (kg)
STE-TIN-18L	220/50	1800	18	Ø247x350mm	W480xH590xD455	B	50 (Net:44)
STE-TAN-18L		1750				N	



STE-TIN-23

### STE-23L, 23 Liter Autoclaves

It adopts B-wclass (prED-13060), with 3-times pre-vacuum preceding vacuum drying. Residual humidity is  $<0.2$ , vacuum measurement reaches  $-0.7\text{bar}$ .

It sterilizes & sanitizes miscellaneous packed or unpacked medical instruments, whether solid or A-type hollow, whether with multi-apertures or inset pipes.

It efficiently rid air from every hollow area of any hollow instrument, such as hand piece, making sure that water steam reaches every corner.

It is installed with BOWIC & DICK which measures the penetration of water steam. Mini printer can be attached to record the process of sterilization. Optional type N: with liquid sterilization.



Model	Voltage (V/Hz)	Power (W)	Capacity (L)	Chamber size	Outside size (mm)	Type	Weight (kg)
STE-TIN-23	220/50	2300	23	Ø247x450mm	W480xH699xD455	B	55 (Net:48)
STE-TAN-23		1850				N	



### Safety Devices

- Auto protection device against over temperature: This system cuts off power automatically if the designed temperature is surpassed.
- Door safety interlock: The door cannot be opened until there is no pressure in the chamber and power for heating cannot be switched on until the door is firmly closed.
- Safety valve of auto release against overpressure: It opens when the designed pressure is surpassed.
- The program will be stopped if water level lower than the low limit. alarm with sound and light.
- Electronic circuits safety device: direct current control loop and has protection against overload and voltage surpassed, alternating current main loop has short-circuit protection device.

### Option Pulse Vacuum

- Pulsant final vacuum drying system ensures the best drying effect of package.
- B-O test and vacuum test programs.

### STE-H-60/80, 60 liter or 80 liter Automated Water filling Horizontal Autoclave

- Steam and water circulation system. no external water source. not exhaust steam outside. environment is dean and dryness.
- Micro-computer control, touch-key.
- Automatic control over the processes of heating, sterilization. steam exhaust. filling water and dryness.
- Process. temperature. time dynamic LCD displayed.
- Positive pressure pulse function exhaust cool air of sterilizing chamber thoroughly and ensure the steam saturation.
- There are equipped with instrument. instrument bags. dressing. rubber sterilization programs for customer's choice.
- Self-failure test system capable of displaying failure on the LCD.
- Printer is available for optional.
- The buzzer alarms when a cycle of operation is completed.

### Main Technical Parameters

- Designed pressure: 0.26Mpa.
- Designed temperature: 150°C.
- Rated working pressure: 0.22Mpa.
- Sterilization temperature, 105°C~136°C.
- Precision of temp. displayed: 0.1°C.
- Temp. degree of uniformity:  $\pm 0.5^{\circ}\text{C}$ .
- Material of chamber:  
SUS 304  
stainless steel.



Model	Voltage	Power	Capacity	Chamber Size	Outside size (mm)	Net weight
STE-H-60	220V/ 50Hz	3.6Kw	60L	Ø380x500mm	W730xH540xD840	85kg
STE-H-80	380V/ 50Hz	5.7Kw	80L	Ø380x700mm	W730xH540xD1040	100kg



### DIST, 1.5 liter/hour Distillator

Autoclave must adopt distilled water as operation medium. Even Purified water has various minerals, & can produce furring scale after evaporation at high temperature, which, after a period of time, can lead to leaking of steam due to improper closure. It can also lead to the clog in the narrow pipes and pressure sensor, to the malfunction of temperature sensor and to other failures.

Once the furring scale enters handpiece and other instrument which are hollow inside or has apertures, it will clog the narrow pipes and axis, lowering the turning speed of handpiece, thus reducing its life span. Therefore, using distilled water is necessary.

Model	Voltage V/Hz	Power (W)	Distilled water L/h	Chamber size	Outside size	Weight	Packing size
DIST	220/50	750	1.5	Ø180x200mm	290x290x390mm	3.5kg	245x285x510mm

**Internal Calibration**

- Filling
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- GLP procedures
- Infrared sensors
- Comparative weighing

**1µg  
MGB-Series**

**MGB Microbalances, 0.001mg**

MGB series of microbalances series Y have been designed to meet the high requirements of mass measurements with the highest precision. Measurement reliability and accuracy is ensured by internal calibration. Microbalances consist of 2 major parts (an electronic system & a precise mechanical measurement system in a separate enclosure). This solution eliminates the temperature influence & separates from shocks & vibrations caused by users operating software. All the elements of the balance are made of glass and steel which eliminates the influence of electrostatics on the weighing process.

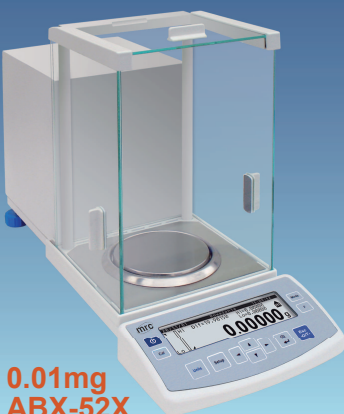
**Additional equipment:** Anti-vibration table • Thermal printer • Set for the determination of air • Foot tare & print buttons • Additional attachment for pipettes calibration • Professional weighing table • Ultrasonic air ionizer with humidifier • Standard mass • Computer software.

	MGB-5	MGB-11	MGB-21	MGB-31
Max capacity	5g	11g	21g	31g
Readability	1µg			
Repeatability	2µg	3µg	5µg	
Linearity	±3µg	±5µg	±10µg	
Pan size	ø30mm			
Weighing chamber dimen.	ø90×90mm			
Stabilization time	10s			
Calibration	automatic (internal)			
Working temperature	+18 ° - +30 °C			
Interface	RS 232, 2×USB, Ethernet			
Power supply	230V / 11V AC			
Display	5,7" touch screen			

**Internal Calibration**

- Counting pieces
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy cor.
- Under-hook weighing
- GLP procedures
- Infrared sensors
- Pipette calibration

**0.01mg  
ABX-52X**

**ABX Professional Level Analytical Balances, 0.01mg**

ABX balances are equipped with big backlit graphic display with extended menu, 12-keys membrane keyboard, big weighing chamber with sliding upper glass door and side glass door.

Balance accuracy is guaranteed by automatic internal calibration dependant on time and temperature changes. Balances have possibility of disconnecting the head from weighing chamber.

This solution considerably reduces vibrations transferred to weighing chamber and decreases dimensions of device. ABX balances enable to generate GLP procedures, these balances have RS 232 socket, PS/2, possibility of connecting additional display and possibility of weighing loads outside the main weighing platform (so called under-hook weighing).

- New electronics and technological solutions!
- New intuitive operation & user friendly software of balances!

MODEL	ABX-52X	ABX-110X	ABX-210X	ABX-60-220X	ABX-100X	ABX-160X	ABX-220X	ABX-310X
Max capacity	52g	100g	210g	60/220g	100g	160g	220g	310g
Minimal load	1mg				10mg			
Readability	0.01mg			0.01/0.1mg	0.1mg			
Tare range	-52g	-100g	-210g	-220g	-100g	-160g	-220g	-310g
Working temp.	+50°C - +10°							
Repeatability	0.01mg	0.025mg	0.03mg	0.02/0.1mg	0.01mg			0.02mg
Linearity	±0.02mg	±0.05mg	±0.1mg	±0.05/0.2mg	±0.2mg			±0.3mg
Sensitivity drift	2ppm/°C in temperature +18 ° - +30 °C							
Stabilization time	5s			5s/3s	3s			
Power supply	230V / 11V AC or 120V / 11V AC							
Calibration	internal (automatic)							
Pan size	Ø85mm				Ø100mm			



**CALI-350**

Model	CALI-350
Range	35°C to 300°C
Accuracy	±1°C
Stability	±0.3°C
Heating times	15 Minutes
Well depth	100mm
Power	230V/60Hz
Size (mm)	H57xW125xD150
Weight	3 kg

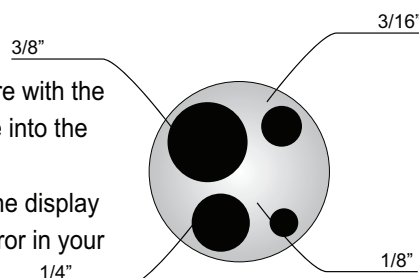
### CALI-350, Portable Dry-Well Calibration, Up To 300°C

They're the smallest, lightest & most portable dry-wells in the world. It's convenient. It has a range to 300°C and is perfect for checking RTDs, thermocouples and bi-metal thermometers in the field.

Plug it in, switch it on, set the temperature with the front panel buttons and insert your probe into the properly sized well.

Compare the reading of your device to the display temperature, and the difference is the error in your device.

The Cali 350 has a display resolution of 0.1 degrees, an accuracy of ±1°C, a stability of ±0.3°C.

**CALI-1200**

### CALI-1200, Thermocouple Calibration Furnace 400÷1200°C

Model	CALI-1200
Max. temperature (°C)	1200
Continuous temperature (°C)	1150
Temperature range (°C)	400-1200
Stability	Better than +1°C
Overall dimensions (mm)	W310xD225xH399
Heated length (mm)	150
Controller	eurotherm 2132
Indicator	eurotherm 2132
Heating rate	20 mins (to 1150°C)
Cavity diameter (mm)	20
Weight (kg)	8.8
Furnace voltage	120/240 externally selectable
Max. power (W)	1100
Thermocouple type	N

The Portable Thermocouple calibrator is a high stability heat source designed for the calibration of thermocouples up to 7.5mm, with a maximum operating temperature of 1200°C. Thermocouples are inserted into the work tube through an insulation plug

& can be compared with the temperature indicator. It is portable and self contained, with built in PID microprocessor controller & separate digital temperature indicator giving 1°C resolution. The special work tube design results in a much higher temperature uniformity than is normally associated with a furnace of this size. The metallic work tube is earthed for operator safety when used with metal sheathed mineral insulated thermocouples. The CALI-1200 can be used in a laboratory or in site as its rapid heat up and stabilization make it ideal for quick set up. With optional RS-232 communication to control the bath from a PC.

**WBL-102**

### WBL-102, Temperature Calibration Water Bath -30÷100°C

MRC Temperature Calibration Bench top Bath covers a range from -30°C to 100°C with stability & uniformity of ± 0.1°C. tank volume is nine liter-large enough to test many sensors at once. Bath opening is 200 x 150 mm, and 150 mm deep.

Using high precision PID microprocessor controller Eurotherm model 3216 with high stability RTD sensor.

With optional RS-232 communication to control the bath from a PC.

### OBH-183, Temp. Calibration Oil Bath Up To 300°C

**OBH-183**

Model	OBH-183
Temp. range	Room temp. +5°C to 300°C
Stability	±0.1°C
Setting/readout	Digital
Heater	1.2KW
Stirring	By built-in circulation pump
Inside dimen.	W30xD30xH20cm
Outside dimen.	W66xD40xH39.5cm
Volume	18L
Power source	110/220V 50/60Hz, 13A/6.5A



CALI-R40

### CALI-R40, Sub-Zero Low Temp. Dry Block Calibrator

Testing and Calibration of Temperature Sensors | Switches, RTD'S, Thermistors (PTC/NTC) | Dial Thermometers | Thermostats.

- Range: -35°C above ambient to 123°C
- Accuracy:  $\pm 0.5^\circ\text{C}$ . Resolution:  $0.1^\circ\text{C}$ .
- Compact Size: W160xH350xD300mm. Weight: 8kg.
- Stability:  $\pm 0.05^\circ\text{C}$ , Well Dia/Depth 19/100mm, Single/Multi-hole Inserts.
- Portable - Field & Lab use.
- Cost Effective.
- Fast Heating & Cooling.
- Switch Test Facility.



CALI-250

### CALI-250, Micro Oil Bath

Portability of Dry Block & Precision of Oil Bath

- Range: RT+20°C to 250°C.
- Stability:  $\pm 0.1^\circ\text{C}$ .
- Accuracy:  $\pm 0.6^\circ\text{C}$ . Resolution:  $0.1^\circ\text{C}$ .
- Compact Size: W155xH355xD295mm. Weight: 10kg.
- Working Area: Well Dia 19mm/170mm
- Auto-tune PID Temperature Control.
- Stirrer to ensure Temperature Uniformity.
- (Oil) Spill Proof Transport Lid.
- Optional: RS 232.



CALI-650H1/2

### CALI-650H1/2, Temperature Calibrator

Medium Temperature Dry Block Calibrator.

- Range: RT+20°C to 650°C.
- Stability:  $\pm 0.1^\circ\text{C}$ .
- Accuracy:  $\pm 1.5^\circ\text{C}$ . Resolution:  $0.1^\circ\text{C}$ .
- Size for H1: W160xH280xD325mm. for H2: W160xH350xD325mm. Weight: 8.5/11kg.
- Working Area: Depth - 110/190mm
- Heavy Duty Bench Top Model with carrying Handle.
- Auto Tune PID Control action. Switch test Capability.
- Fast and Reliable.
- Interchangeable Thermowell Inserts, Single/Multi-hole.
- Switch Test Capability.



CALI-600

### CALI-600, Temperature Economy Calibrator

Portable | Bench-Top Dry Block. Medium Temperature Calibrators.

- Range: RT+50°C to 600°C.
- Stability:  $\pm 0.05^\circ\text{C}$ .
- Accuracy:  $\pm 0.1^\circ\text{C}$ . Resolution:  $1^\circ\text{C}$ .
- Size: W270xL124xH240mm. Weight: 7kg.
- Well - 120mm (200mm optional).
- Analog Output. Provision for Thermostat Switch Testing.
- Interchangeable Thermowell Inserts, Single/Multi-hole.



CALI-D350

### CALI-D350, Temperature Calibrator

Dual Dry Block (Hot Cold), Temperature Calibrator

- Truly Portable - for Field & Lab use.
- Most Cost Effective Model in the International Market to Calibrate over a wide range: -35°C from Ambient to 350°C.
- Stability:  $\pm 0.05^\circ\text{C}$ .
- Accuracy:  $\pm 0.5^\circ\text{C}$ . Resolution:  $0.1^\circ\text{C}$ .
- Size: W244xH430xD341mm. Weight: 8kg.
- Well - Cold 100mm, Hot 120mm.
- Common Display & Dual PO Control Function - for simultaneous Control &
- Calibration time reduced by 50%.
- Housed in elegant sturdy Case.



### CALI-1200HN, High Temperature Calibrator

High Temperature Ceramic Dry Block: Calibrator. Stable High (1200°C) Temp. Source for Calibration of Multiple Sensors (upto 6) at High Temperature.

- Range: 300°C above ambient to 1200°C.
- Stability: Better than  $\pm 0.5^\circ\text{C}$  (below 600°C).
- Accuracy: Better than  $\pm 3^\circ\text{C}$ . Resolution:  $1^\circ\text{C}$ .
- Size: W205xD365xH480mm. Weight: 13kg.
- Well Depth - 150mm.
- High Stability.
- RS - 232 Interface.
- Multi-Hole 1 Interchangeable (Thermowell) Inserts - to suit.
- High Accuracy.
- Auto - Tune PID Control. Semi Portable.



### CALI-1500HN, Very High Temperature Calibrator

Very High Temperature Ceramic Dry Block: Calibrator

- Temperature Range: 500 to 1500°C.
- Stability:  $\pm 2^\circ\text{C}$ .
- Accuracy:  $\pm 0.5\%$  of Span. Resolution:  $1^\circ\text{C}$ .
- Size: W345xD510xH830mm ( with wheel).
- Fast, Stable & Accurate. Autotune PID Controller.
- Heating Element: Silicon Carbide.
- Dry Block: - High Alumina Ceramic
- Single (Interchangeable) & Multi Hole (Fixed).
- Immersion Depth - 250mm.
- Interchangeable Single Hole Thermowells-ID 7/11 & 15 mm\*.
- Semi Portable - Castor Wheels. RS-232 Computer Interface.



### CALI-FB600L, Temperature Calibrator

Fluidised bath switch test facility.

- Ideal for calibration of Multi Type odd shaped sensor.
- Temperature Range: RT+20 to 600°C.
- Stability:  $\pm 0.5^\circ\text{C}$ .
- Accuracy:  $\pm 1.5^\circ\text{C}$ . Resolution:  $1^\circ\text{C}$ .
- Size: W730xD470xH780mm.
- Fast, Stable & Accurate.
- Immersion Depth - 250mm/400mm.
- Semi Portable - Castor Wheels optional.
- RS-232 Computer Interface.



### CALI-PP/PPH, Semi-Portable Pressure Calibrators

PP: Ranges: -0.85 to 2/7/10/20 Bar PPH : Ranges: -0 to 200/400 Bar

- Temperature Range: 0 to 50°C (Automatic).
- Accuracy: PP ( $\pm 0.05\%$  F.S. + 1digit). PPH ( $\pm 0.025\%$  F.S. + 1digit)
- Size: L330xB230xH125mm for 2/7/10 bar. L330xB230xH175mm for 20 bar.
- Advanced Microprocessor Based. Light Weight 1 Compact.
- Trendy, Elegant 'Rugged' Case - Truly Portable.
- Resolution: Minimum 5 digits. Large Graphic Display.
- Touch Membrane Keypad with 15 Selectable Pressure Units eg mbar, bar, Kg/cm<sup>2</sup>, Psi, in Hg, mm Hg, mm H<sub>2</sub>O, cm H<sub>2</sub>O, m H<sub>2</sub>O, in H<sub>2</sub>O, ft H<sub>2</sub>O, Pa, MPa, KPa, atm.
- DC Current Measurement: Active Loop: 50 mA, Passive Loop: 25 mA.
- Switch test Capability & Zero Offset facility.
- Audio & Visual Alarms for Over Pressure.
- NI- MH Rechargeable Batteries with Low Battery Indication.

- Pressure Transducer - All Media Compatible with SS316 .
- Integral 1 In-Built Vacuum & Pressure Hand Pump, Vernier Adjustment & Release Valve .





**CALI-PPD**

## CALI-PPD, Portable Precision Pressure Calibrator (DUAL) (Pneumatic & Hydraulic)

- Ranges: Pneumatic: -0.85 to 20 Bar, Hydraulic: 0 to 400 Bar
- Accuracy:  $\pm 0.05\%$  F.S. + 1 digit.
- Size: L420xW335xH195mm. Weight: 9.5kg.
- Unique Combo 2-in-1 Model.
- Advanced Microprocessor Based. Light Weight / Compact.
- Trendy, Elegant 'Rugged' Case - Truly Portable.
- Resolution: Minimum 5 digits. Large Graphic Display.
- Touch Membrane Keypad with 15 Selectable Pressure Units eg mbar, bar, Kg/cm<sup>2</sup>, Psi, in Hg, mm Hg, mm H<sub>2</sub>O, cm H<sub>2</sub>O, m H<sub>2</sub>O, in H<sub>2</sub>O...
- DC Current Measurement: Active Loop: 50 mA. Passive Loop: 25 mA.
- Switch test Capability & Zero Offset facility.
- Audio & Visual Alarms for Over Pressure.
- NI - MH Rechargeable Batteries with Low Battery Indication.
- Pressure Transducer - All Media Compatible with SS316
- 2 independent integral/ built-in pumps (Pneumatic (Vacuum / Pressure) and Hydraulic) with Verniers .
- Automatic Temperature Compensation (0 to 50°C).



**CALI-PPE**

## CALI-PPE, Economy Pressure Calibrator (Pneumatic)

- Pneumatic Several - Ranges: -0.85 to 2 / 10 / 25 / 40 bar. Hydraulic 0-700bar.
- Accuracy:  $\pm 0.1\%$  F.S.
- 2 line alpha - numeric display.
- Touch Membrane Keypad with Selectable Pressure Units eg mbar, bar, Kg/cm<sup>2</sup>, Psi, in Hg, mm Hg, mm H<sub>2</sub>O, cm H<sub>2</sub>O, m H<sub>2</sub>O, in H<sub>2</sub>O, ft H<sub>2</sub>O, Pa, MPa, KPa, atm.
- DC Current Measurement: 0 to 50 mA.
- Switch test Capability & Zero Offset facility.
- Audio & Visual Alarms for Over Pressure.
- Pressure Transducer - All Media Compatible with SS316.
- 9V Battery operated with Low Battery indication.
- Digital Pressure Indicator with Matching Pneumatic Hand Pump with vernier.



**CALI-PPC**

## CALI-PPC, Smart Pressure Calibrator (Pneumatic)

- Advanced Microprocessor based.
- Pneumatic - Several Ranges -0.85 to 2 / 10 / 25 / 40 Bar. Hydraulic 0-700bar.
- Accuracy:  $\pm 0.05\%$  ES.
- Size: 170x100x60mm.
- Automatic Temperature Compensation (0 to 50°C).
- 2 line alpha - numeric display.
- Touch Membrane Keypad with 15 Selectable Pressure Units eg mbar, bar, Kg/cm<sup>2</sup>, Psi, in Hg, mm Hg, mm H<sub>2</sub>O, cm H<sub>2</sub>O, m H<sub>2</sub>O, in H<sub>2</sub>O, ft H<sub>2</sub>O, Pa, MPa, KPa, atm.
- DC Current Measurement: 0 to 50 mA.
- Switch test Capability & Zero Offset facility.
- Audio & Visual Alarms for Over Pressure.
- Pressure Transducer - All Media Compatible with SS316.
- 9V Battery operated with Low Battery indication.
- Digital Pressure Indicator with Matching Pneumatic Hand Pumps with verniers.



**CALI-6600/6900**

## CALI-6600/6900, High Precision Dead Weight Testers (Hydraulic)

- Ranges: upto 700 bar.
- Standard Accuracies: 0.1% /  $\pm 0.05\%$  /  $\pm 0.025\%$  /  $\pm 0.015\%$  of Rdg.
- Size: L530xW325xD230mm.
- Oil Operated. Single & Dual Piston. Bench/Table Top.
- 4 levels of Accuracy:  $\pm 0.015\%$  of Rdg. (Ultra High),  $\pm 0.025\%$  of Rdg. (Very High),  $\pm 0.05\%$  of Rdg. (High),  $\pm 0.1\%$  of Rdg. (Medium).
- Adjustable feet & Spirit Level.
- Calibrated to Standard Gravity (to user specified Gravity on request).
- Piston Calibrated Thru 'Cross Floating' Techniques.
- Accuracies Traceable to International Standards.

### LCEN-100 Series, Clinical Centrifuges, Eight Places Rotor Of 15ml Tubes, 2500rpm Or 6000rpm



These centrifuges are widely used in many fields such as biology, medicine, pharmacology, veterinary laboratory & other regions.

They are small, compact, strong & easy & safe for operation. The centrifuge operate smoothly & steadily. The design is up to date, beautiful outlook & durable.

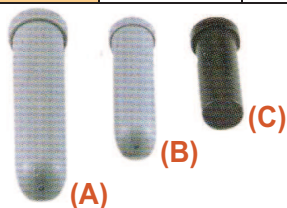
ABS outer shell can resist collision.

It could accommodate 7ml, 10ml and 15ml centrifuge tubes without changing the rotor. With safety lock, when cover is opened, the motor can be stopped.

Precision mechanical timer with bell can be set from 0 to 30 minutes. Speed is linear and stable. Auto balancing system. Vacuum rubber feet provide stable: "not walking" unit.

#### Specifications:

Model	Power Supply	Speed range	Rotor angle	Max. RCF(xG)	Dimensions Weight	Timer	Max. Capacity
LCEN-100	220V/50Hz or 110/60Hz	up to 2500rpm or up to 3200rpm	45°	1210xG	(HxWxDmm) 220x255x255 3kg	0-30min	15ml x 8 Optional adaptors for 7ml and 10ml
LCEN-101	110V/60Hz or 220/60Hz	300-6000rpm	45°	4100xG	(HxWxDmm) 270x255x255 5kg	0-30min	15ml x 8 Optional adaptors for 7ml and 10ml
LCEN-102 with tachometer	110V/60Hz or 220/60Hz	300-6000rpm	45°	4100xG	(HxWxDmm) 270x255x255 5kg	0-30min	15ml x 8 Optional adaptors for 7ml and 10ml



#### Options: Adaptors for tubes

(A) Standard 10~15ml tube holder; inner size: Ø17.5mm x L98mm (included).

(B) Optional 5~7ml tube holder; inner size: Ø13.5mm x L69mm.

(C) Optional 0.5~2.0ml tube holder; inner size: Ø11.0mm x L42mm.



### LCEN-200/201, Clinical Centrifuges, 8 Places Or 12 Places Of 15ml Tubes

#### Features:

- Free change of carbon brush motor, stepless speed change.
- Auto power off when open & auto-balance device.
- For angle rotor.
- Power pilot light and fuse safety device.
- ABS hard shell and see-through window.
- Auto-cooling air circulation & manual cover lock.
- **Optional:** 6 ml adapter can be replaced.

**Rotor Included**



**R-8**  
LCEN-200  
Max. 3,500rpm



**R-12**  
LCEN-201  
Max. 3,500rpm



#### Specifications:

Model	Power Supply	Speed(rpm) (50/60Hz)	Max. RCF (50/60Hz)	Max. capacity (ml x pcs)	Dimensions Weight	Timer (min)
LCEN-200	AC110/220V, 50/60Hz	0~3,000/0~3,500	1,050/1,430	15x8	(WDHmm) 290x320x245 8kg	0~30 or "ON"
LCEN-201	AC110/220V, 50/60Hz	0~3,000/0~3,500	1,050/1,430	15x12		

#### Rotors Specifications:

Model	Max. Capacity	Tube size (Ø x L) mm	Max.Speed (rpm)	Max.RCF (xg)
LCEN-200	15mlx8	12~16.5x70~117	3,500	1,360
LCEN-201	15mlx12	12~16.5x70~100		

# CENTRIFUGES

480ml, 1000ml Capacity



LGCEN-307

## LGCEN-307, Economy Centrifuge

### Features:

- LED speed and time display.
- Quiet brushless motor.
- Microprocessor control.
- 10 memory programs for preset parameters.
- Overheat and overload safety protection.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- Hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

### Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min)	Weight (kg)	WxDxH Size (cm)
LGCEN-307	500~5,500	4,640	480	0~30 or "ON"	38	45x56x38



LGCEN-402

## LGCEN-402, Brushless Centrifuge

### Features:

- LED speed display .
- Regressive timer: 30min, or continuous operation.
- Stable and stepless speed change.
- Quiet brushless motor.
- Overheat and overload safety protection.
- Hidden auto-balance device.
- Safety door lock and cover open indication.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

### Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min)	Weight (kg)	WxDxH Size (cm)
LGCEN-402	500~6,500	4,900	1000	0~30 or "ON"	38	45x56x38



LGCEN-403

## LGCEN-403, 10 Memory Programs Centrifuge

### Features:

- LED speed and time display.
- Quiet brushless motor.
- Microprocessor control.
- 10 memory programs for preset parameters.
- Overheat and overload safety protection.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- Hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

### Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
LGCEN-403	500~6,000	4,900	1000	99:59	40	45x53x34

The speed & RCF are different from the sort of rotors





LGCENR-400

### LGCENR-400, Large Size Refrigerated Centrifuge

#### Features:

- LCD, temperature, speed & RCF setting also display.
- Temperature range: 0°C~40°C.
- 10 memory programs for preset parameters.
- Microprocessor control.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function & high effective control system.
- Overheat and overload safety protection.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- Low noise.

Refrigerated



#### Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
LGCENR-400	500~6,500	4,900	1000	99:59	112	52x58x90



LGCENR-401

### LGCENR-401, Bench Top Refrigerated Centrifuge

#### Features:

- LCD, temperature, speed and RCF setting also display.
- Temperature range: 0°C~40°C.
- 10 memory programs for preset parameters.
- Microprocessor control.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function and high effective control system.
- Overheat and overload safety protection.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- Low noise.

Refrigerated

#### Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer(min:sec)	Weight (kg)	WxDxH Size (cm)
LGCENR-401	500~6,500	4,900	1000	99:59	75	80x56x38



LGCEN-404

### LGCEN-404, Large Size Centrifuge





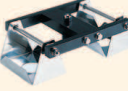

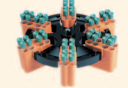

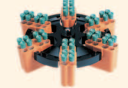

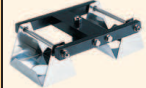
















#### Features:

- LCD speed and time display with RCF setting.
- Quiet brushless motor.
- Microprocessor control.
- 10 memory programs for preset parameters.
- Overheat and overload safety protection.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light and fuse safety device.
- Auto accelerating and decelerating functions.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

#### Specifications:

Model	Speed(rpm)	Max. RCF(g)	Max. capacity(ml)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
LGCEN-404	500~6,500	4,900	1000	99:59	40	45x56x38

## Optional Rotors &amp; Adapters for Centrifuges LGCENR-400/401, LGCEN-402/403/404/307

Applicable model	Rotor		Max. speed (rpm)	Max. RCF (xg)	Capacity (ml x pcs)	Tube size (φx1) mm Max. Min.		Cat. No.
LGCENR-400 LGCENR-401 LGCEN-404 LGCEN-402 LGCEN-403	RS-250		3500	2250	1.5x96	10.7x100	8x41	2-6000-21
					6x112	12x110	8.5x60	2-6000-22
					10x80	15.8x100	12x60	2-6000-23
					15x40TC	16.5x122	14x60	2-6000-25
					15x48	17.2x122	14.5x60	2-6000-24
					50x16TC	29.5x125	27.5x50	2-6000-26
					250x4	62x130	58x70	2-6000-27
	<div></div> <div>2-6000-212-6000-222-6000-232-6000-252-6000-242-6000-262-6000-27</div>							
	RS-1548		3500	2430	15x48	17.5x107	14x80	2-6000-12
	RS-2504		3500	2480	250x4	65.5x130	61x90	2-6000-13
LGCENR-400 LGCENR-401 LGCEN-404 LGCEN-307 LGCEN-402 LGCEN-403	RS-9602		2500	1060	96micro x4	129x86	126x83	2-6000-14
	RS-100		3500	2090	6x56	13x105	10x50	2-5400-21
			3500	2150	10x48	16x107	13x50	2-5400-22
			3500	2150	15x16TC	16.7x135	13.5x86	2-3400-32
			3500	2150	15x32	17.5x115	14x80	2-5400-23
			4000	2770	50x4	35x135	32x90	2-3400-22
			5000	4640	50x4TC	29.5x137	26.5x90	2-3400-23
			3500	2120	50x8	35x120	32x90	2-5400-24
			3500	2120	50x8TC	29.5x127	26.5x90	2-5400-25
			4000	2930	100x4	45.5x130	42x95	2-3400-21
	<div></div> <div>2-5400-212-5400-222-3400-322-5400-232-3400-232-5400-242-5400-252-3400-21</div>							
	RS-50		4500	3280	15x16	16.7x115	13.5x86	2-3400-32
			4000	2600	50x4	35x117	32x90	2-3400-22
			5500	4900	50x4TC	29.5x120	26.5x90	2-3400-23
			5000	4050	100x4	45x112	42x95	2-3400-21
	<div></div> <div>2-3400-322-3400-222-3400-232-3400-21</div>							
	RA-5008		6000	4500	50x8	29.5x118	27.5x90	2-6000-16
	RA-1512H		6000	4500	15x12	16.7x130	13.5x86	2-6000-15

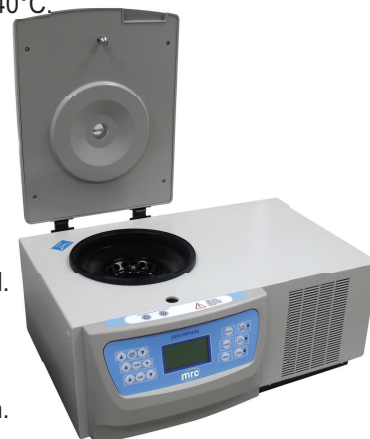


MDCENR-301

Refrigerated

**MDCENR-301, Universal Refrigerated Centrifuge Features:**

- LCD, temperature, speed and RCF setting also display.
- Temperature range: 0°C~40°C.
- 10 memory programs for preset parameters.
- Microprocessor control.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function and high effective control system.
- Overheat and overload safety protection.
- Stainless steel inside bowl.
- Breakdown indication & fuse safety device.
- Auto accelerating & decelerating functions.
- Auto-cooling air circulation.
- Low noise.

**Specifications:**

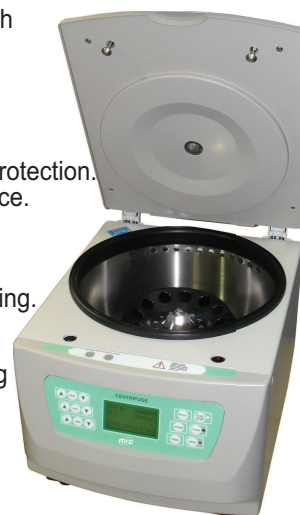
Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
MDCENR-301	500~6,500	4,500	400	99:59	52	65x53x34



MDCEN-302

**MDCEN-302, 10 Memory Program Brushless Centrifuge Features:**

- LCD speed and time display with RCF setting.
- Quiet brushless motor.
- microprocessor control.
- 10 memory programs for preset parameters.
- Overheat and overload safety protection.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- Hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light & fuse safety device.
- Auto accelerating & decelerating functions.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

**Specifications:**

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size(cm)
MDCEN-302	500~6,500	4,500	400	99:59	20.5	36x48x34



MDCEN-306

**MDCEN-306, 10 Memory Programs Centrifuge Features:**

- LED Speed and time display.
- Quiet brushless motor.
- Microprocessor control.
- 10 memory programs for preset parameters.
- Overheat and overload safety protection.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function and high effective control system.
- Hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light and fuse safety device.
- Auto accelerating and decelerating functions.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

**Specifications:**

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size(cm)
MDCEN-306	500~6,000	4,500	400	99:59	17	36x42x29

The speed & RCF are different from the sort of rotors





**MDCEN-303**

### MDCEN-303, Universal Centrifuge, Low Cost

#### Features:

- LED speed display.
- Change in speed stepless: stable speed.
- Auto current-restarting function.
- Overheat & overload safety devices.
- With safety door lock, hidden auto-balance & imbalance device.
- Safety door lock & cover open indication.
- Stainless steel inner, erosion-proof & anti-lash.
- Breakdown indication & fuse safety device.
- Auto accelerating & decelerating function.
- Air auto-cooling circulation.
- See-through window.
- Optional rotors for various tube size.
- Low noise design.

#### Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min)	Weight (kg)	WxDxH Size(cm)
MDCEN-303	0~5,500	3,780	400	0-30 or "ON"	18	36x42x29



**MDCEN-304**

### MDCEN-304, General Purpose Centrifuge

#### Features:

- LED speed display .
- Regressive timer: 30min, or continuous operation.
- Stable and stepless speed change.
- Overheat and overload safety protection.
- Hidden auto-balance device.
- Safety door lock and cover open indication.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

#### Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min)	Weight (kg)	WxDxH Size (cm)
MDCEN-304	500~5,500	3,790	400	0~30 or "ON"	18	36x48x34



**MDCEN-305**

### MDCEN-305, Brushless General Purpose Centrifuge

#### Features:

- LED speed display .
- Regressive timer: 30min, or continuous operation.
- Stable and stepless speed change.
- Quiet brushless motor.
- Overheat and overload safety protection.
- Hidden auto-balance device.
- Safety door lock and cover open indication.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- See-through window.
- Optional rotor selections for various tube size.
- Low noise.

#### Specifications:

Model	Speed(rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min)	Weight (kg)	WxDxH Size (cm)
MDCEN-305	500~6,500	4,500	400	0~30 or "ON"	18	36x48x34

## Optional Rotors &amp; Adapter For Centrifuge MDCEN-301/302/303/304/305/306

Rotor		Max. speed (rpm)	Max. RCF (x g)	Capacity (ml x pcs)	Tube size (x1) max Max. Min.		Cat. No.
RS-50		3500	1990	100x4	45x112	42x95	2-3400-21
		4000	2600	50x4	35x117	32x90	2-3400-22
		4000	2600	50x4TC	29.5x120	26.5x90	2-3400-23
		3500	1990	15x16	16.7x115	13.5x86	2-3400-32
		3500	1990	15x12TC	17x120	15x85	2-3400-24
		3500	1990	10x24	15.5x113	14x85	2-3400-25
		3500	1700	6x40	12.7x88	11x63	2-3400-26
		3500	1700	6x36	12x106	11x85	2-3400-27
		3500	1330	1.5x48	11x56	10x36	2-3400-28
<div>        </div> <div>2-3400-21    2-3400-22    2-3400-23    2-3400-32    2-3400-24    2-3400-25    2-3400-26    2-3400-27    2-3400-28</div>							
RS-1508		3500	1990	15x8	17x122	15x90	2-300-14
RA-1508		6000	3940	15x8	16.7x122	15x90	2-5052-11
RA-1512H		6000	4500	15x12	16.7x122	15x90	2-6000-15
RA-1516		4000	2250	15x16	16.7x115	15x90	2-3000-12
RA-1024		3500	1840	10x24	16.7x107	15x90	2-3000-13
RA-5004		6000	3980	50X4	29.5x130	27.5x94	2-5052-12
RA-5006		6000	3980	50x6	29.5x130	27.5x90	2-5052-22
RA-5008		6000	4500	50x8	29.5x117	27.5x90	2-1000-12
REA-1520		6000	3140	1.5x20	11x56	10x36	2-5052-13

Tubes not included. The speed &amp; RCF are different from the sort of rotors

**ECENR-210, Micro Size Refrigerated Centrifuge****Features:**

- LCD, temperature, speed and RCF setting also display.
- Temperature range: 0°C~40°C.
- 10 memory programs for preset parameters.
- Microprocessor control.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function and high effective control system.
- Overheat and overload safety protection.
- Stainless steel inside bowl.
- Breakdown indication and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.
- Low noise.

**Refrigerated**



**REA-1518** (Included)  
1.5/2.0ml x 18 places





**Specifications:**

Model	Speed(rpm)	Rotor	Max. RCF (g)	Max. capacity (ml x pcs)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
ECENR-210	1000~14,000	REA-1518	16,000	1.5/2.0 x 18	99:59	35	55x42x28

**HSCEN-204, Basic Type High-Speed Centrifuge****Features:**

- LED speed and time display.
- Microprocessor control.
- 10 memory programs for preset parameters.
- Auto accelerating & decelerating functions.
- Auto cover lock with motor running.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- ABS hard shell and see-through window.
- Auto-cooling air circulation.
- Include the stainless steel adapter, sterilizable.
- Max. capacity: 300ml, Timer: 99min 59sec.
- Optional rotor selections for various tube size.

**Specifications for Rotors:**

Optional Rotors		Speed (rpm)	Max. RCF (g)	Capacity (ml x pcs)	Tube size (Ø x L) mm	
					Max.	Min.
RA-1508		10,000	10,950	15x8	17x122	16x90
RA-1512S		9,000	8,900	15x12	17x122	16x90
RA-5004		8,000	7,000	50x4	29.5x117	27.5x90
RA-5006		7,000	5,400	50x6	29.5x117	27.5x90

AC110/220V, 50/60Hz, Tubes not included. Size: W290xD320xH245(mm) / N.W: 10KG



# CENTRIFUGES

## High Speed



**HSCEN-300**

### HSCEN-300, High Speed Centrifuges

#### Features:

- LED speed & time display.
- 10 memory programs for preset parameters.
- Microprocessor control.
- Auto power off for rotor imbalance.
- Auto buzzer when finish.
- High function and high effective control system.
- High torque motor.
- Overheat and overload safety protection.
- Hidden auto-balance device.
- Auto power off when open.
- Auto cover lock with motor running.
- Power pilot light and fuse safety device.
- Auto accelerating and decelerating functions.
- Auto-cooling air circulation.










- See-through window
- Optional rotor selections for various tube size
- Low noise.

#### Specifications:

Model	Speed (rpm)	Max. RCF (g)	Max. capacity (ml)	Timer (min:sec)	Weight (kg)	WxDxH Size (cm)
HSCEN-300	1000~10,000	10,950	400	99:59	17	36x42x29

#### Optional Rotors and Adaptors for HSCEN-300:

Optional Rotors		Max. speed (rpm)	Max. RCF (xg)	Capacity (ml x pcs)	Tube size (φx1) mm		Cat. No.
					Max.	Min.	
RS-50		4,500	3,290	50x4TC	29x120	26.5x90	2-3400-23
				50x4	35x117	32x90	2-3400-22
		3,800	2,340	15x16	16.7x115	13.5x86	2-3400-32
<div><div> 2-3400-32</div><div> 2-3400-22</div><div> 2-3400-23</div></div>							
RA-1508		10,000	10,950	15x8	16.7x122	15x90	2-5052-31
RA-1512H		9,000	10,130	15x12	16.7x122	15x90	2-3000-31
RA-5004		8,000	7,080	50x4	29.5x130	27.5x94	2-5052-12
RA-5006		7,000	5,400	50x6	29.5x130	27.5x90	2-5052-22
RA-5008		6,500	5,280	50x8	29.5x117	27.5x90	2-1000-12



CLC-570

### CLC-570, Colony Counter With Electronic Register

Colony counter 570 is designed with all solid state circuitry, & the pressure sensor system provides uniform sensitivity over the whole of working field; suitable for counting bacteria growing on all agar contained in different size of petri dishes. The model has adapted the latest electronic type ring-shaped lamp for its illuminating device. At a touch, the fluorescent tube lights up directly or indirectly over the entire petri plate surface for a steady, non-glare and quiet illumination; providing the operator the most comfortable working environment. The number of counts is capable of being registered to maximum of 4-digits, i.e. 9999, & displayed on bright red LED. The adjustable focusing arm enables the magnifying glass to be placed at various angles of working position. The focusing arm can also accommodate lens of various magnitude. Intelligent counting technology enables the Model 570 to count with any kind of marking pen. Every time a count is registered, & the beeper gives an audible signal to verify entry.

#### Standard accessories:

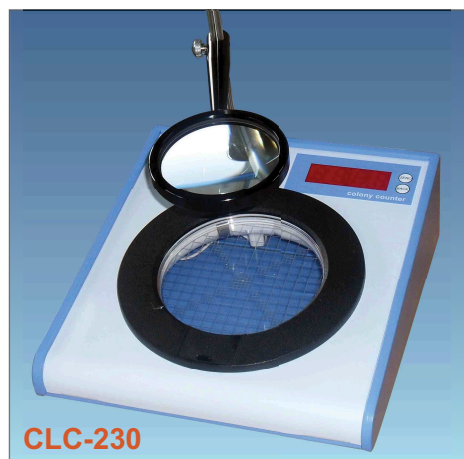
- 1.5x auxiliary - 1pc
- Adjustable focusing arm - 1pc
- Marking pen - 1pc
- Power cord - 1pc

#### Optional accessories:

- Switch pen 8-02-1

**Features:** Built-in electronic register on deluxe model-operated by any pen • Pressure sensor system provides uniform sensitivity over the whole of the working field • A reset button provides immediate zeroing of the 4-digit counter • Flexible adjuster accepts 10 cm to 15 cm petri dishes • Adjustable focusing arm allows 1.5x standard lens to be raised or lowered up to your preference • Lens can be rotated 360° for ready access to petri plates • Background plate can be changed to white or black for easy counting.

Model	CLC-570
Working principle	Pressure sensor system provides uniform sensitivity over the whole of the working field
Readout	4-Digit bright red, 0.6" LED display
Petri dish holder	Accept 10 cm to 15 cm dish using flexible adjuster
Illumination	Ring-shaped lamp provides direct or indirect illumination
Zero reset button	Yes
Modes of counting	Marking pen counting (any pen), switch pen counting
Dimension(mm)	W300xD330xH100
Power	115/230 VAC, 50/60Hz
Net weight	5 kgs



CLC-230

### Model: CLC-230, Colony Counter With RS-232 Communication & SoftWare

#### Features:

CLC-230 is designed for counting bacterial colonies growing on nutrient agar in Petri-dishes with a wide range of dish diameter from 90 to 150mm and 60mm. Innovative PC software enables you to record, trace, or report sample No., data, user's name, row count, dilution factor, total count etc. Pressure sensor design makes the counter to be operated by any marking pen. Ring-shaped illumination lamp with electronic ballast results in glare-free light without blinding or noise and makes operator working comfortable without eyestrain. Unique "BACK" button allows you to deduct data when over counting. Contrast-plate with white and black side is supplied for using dark or clear agar.

#### Applications:

- Total bacteria
- Total coliform

Model	CLC-230
Display	4-Digit (0-9999) bright red 0.6" LED display
Magnification	2~3x
Petri dish size	60mm and 90-150mm diameter, adjustable
Zero reset	YES
Count back	YES
Illumination	Glare-free ring-shaped lamp
Pressure sensitivity	Adjustable
Acoustical counting signal	Adjustable
Output	RS232
Dimensions (mm)	W313xH360xD346
Weight	Net: 5.2kg Shipping: 6.4kg

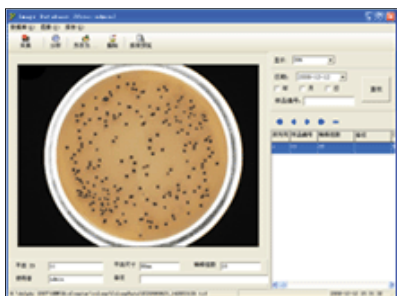


### COLONY-1200/1600, Automatic Colony Counter System

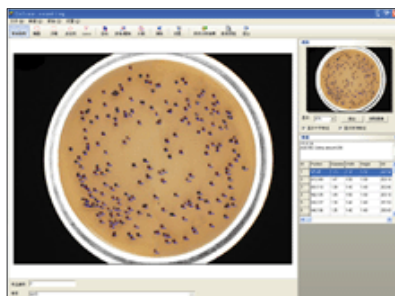
Colony Counter automatic colony counters provide fast and accurate colony counting and calculation. Typical users can be found widely in laboratories engaged in food, drink and milk testing, drug production and testing and Public Health departments as well as environmental monitoring. It can be used for colony counting (spiral, pour and spread plates), inhibition zone measurement and antibiotic susceptibility testing, etc.

Model	COLONY-1200	COLONY-1600
CCD camera	Professional Colour digital CCD	
Pixels	1.4 million	5 million
A/D converter	12bit	
Camera Lens	8mm high resolution	
Illumination	Long-life upper incident and bottom transmitted LED arrays, with dark field and bright field (selectable suspended LED arrays)	
Petri dish diameter	Standard 50mm ~ 100mm	
Testing method	Fully automatic with manual option	
Counting time/ Measurement time	Over 300 colonies per sec Over 1 plate per sec	
Resolution	For colony counting, smallest detectable colony better than 0.1mm, for zone sizing, detectable colony better than 0.05mm	For colony counting, smallest detectable colony better than 0.05mm, for zone sizing, detectable colony better than 0.03mm
Data interface	Single USB2.0	
Power	220V/110V, 50/60Hz	

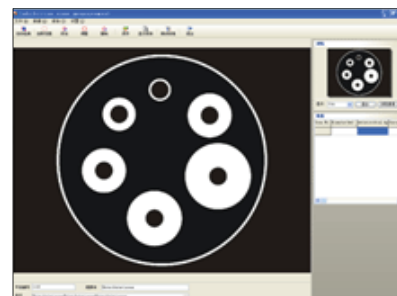
#### SoftWare:



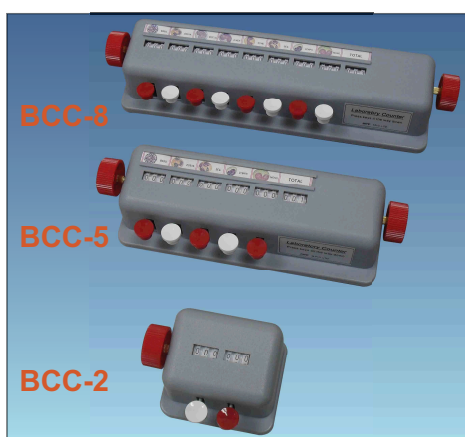
Database management



Colony count and analysis



Inhibition zone automatic/manual measurement



### BCC-2/5/8, Differential Blood Cell Counter

#### Features:

- ABS outer shell can resist collision
- Color charts of white blood cells are supplied. (BCC-5 including BASO., EOSIN., SEG., LYMPH., MONO.; DBC-9 including BASO., EOSIN., MYELO., JUVEN., STAB., SEG., LYMPH., MONO.)
- At one hundred increment of the total record, the bell sound "DON" will be heard (for BCC-5, BCC-8)
- Reset knob can easily clear all figures.

Model	Total of keys	Total of windows	Totalizer	Figure range	Overall dimensions(mm) / Weight (g)
BCC-2	2	2	No	0~999	W100xD80xH50 / 325g
BCC-5	5	6	Yes	0~999	W250xD80xH50 / 690g
BCC-8	8	9	Yes	0~999	W320xD80xH50 / 800g



### BCCD-8, Digital Differential Blood Cell Counter

**Features:** 8 units lab-count with totalizer. For simplifying differential blood cell counts

- The 8 keys represent the normal Schilling Groups of Leucocytes. The above keys are the name and picture of particular cell
- Each stroke registers both in the unit corresponding to its pressed key & in the window
- When a total of every 100 cells are counted, a bell rings. BCCD-8 features the percentage of each type of cell to be read from the window above each key. Manually count and display from 0 - 999
- Counter clockwise rotate handle, it will clear figures.

Model	BCCD-8
Leucocytes	8 Units
Totalizer	Yes
Control	Microprocessor
Display	LED 0-999
Alarm at 100	Buzzer
%Display	Yes
Clear	Yes
Net weight	2.0kg
Functions	Clear, lock decrease, %



**D-LogMate-2TC, 2 Channels, K Thermocouple Datalogger**

Monitors temp. 2 separate type K, thermocouple to store measure! • High temp. measurement • 5 start modes to activate logger's recording (immediate, schedule, on-line, key start, repeat) • LCD displaying data being stored & viewing current recording status.



Model	D-LogMate-2TC
Range	-200~1370°C/-328-2498°F
Power bat.	3.6V Lithium battery (ER3)
Accuracy	±0.3%rdg±0.7°C(1.3°F)
Resolution	0.1°C/°F
Bat. low display	"BAT" icon display
Sample rate	16000
LCD display	SIZE: 20x40 mm
Dimensions(mm)	90x60x26.5 (H)
Optional accessory	USB Converter with cable & connector (RS232 to USB)
LED signal	Red (HI,LO Alarm)/Yellow(Record)

**Features:**

- Pressing Start/Stop button to activate logger.
- Features contacting measurement versatile K type sensors.
- Output: Big LCD display, RS232 interface connection to PC or uses USB converter to connect to USB port.
- Memory capacity : Total 16,000 points. K type : Dual K sensor inputs T1 and T2.
- Sample rate: User defined : From 1 second to 2 hours. Standards: CE and Rohs/WEEE compliance.

**D-LogMate Series, Temperature & Temperature Humidity Dataloggers****D LOGMATE-T**

- Model 1T is without display.
- Up to 8000 readings.
- Wide operating range:Temp.: -40 to 85°C.

**D LOGMATE-TD**

- Up to 8000 readings.
- View temp. on LCD display.
- Wide operating range: Temp.: -40 to 85°C.

**D LOGMATE-THD**

- Up to 16,000 readings. (8000 readings for each parameter).
- View temp. & Humidity on LCD display.
- Wide operating range:Humidity: 0 to 100% RH, Temp.: -40 to 85°C.

Model	D LogMate TD	D LogMate THD
Temp. range	-40~85°C/-40~185°F	
Humidity range	N/A	0~100% RH
Power bat.	ER3 or CR2 lithium battery x1	
Accuracy	Temp. ±0.6°C(-20~50°C) ±1.2°C(-40~20°C, 51~85°C)	Temp. ±0.6°C(-20~50°C) ±1.2°C(-40~20°C, 51~85°C), Humidity: ±3%RH
Bat. low display	"Lo" dosplay	
Sample data	Up to 16000	
LCD display	Size: 12x25.5mm	
Housing	Waterproof	
Dimensions (mm)	L124xW92xT37 (Interface), L80xW55xT22, L124xW92 (Complete set)	
LED signal	Red (hi,lo alarm)/yellow (record)	
Resolution	0.1°C(0.1°F)	
Cable length	150cm with DB9 connector	



HT-3007SD

## HT-3007SD, Humidity/temp. Meter, + type K/J Temp. With DataLogger

- Real time data logger, save the data into the SD memory card & can be down load to the Excel, extra software is no need.
- Humidity/%RH : 10 to 95 %RH.
- Humidity/Temp. : 0 to 50.0 DC, °C/°F.
- Type K Thermometer: -100 to 1300 DC, °C/°F.
- Type J Thermometer: -100 to 1200 DC, °C/°F.
- Data hold, Record ( Max., Min. ).
- RS232/USB computer interface .
- Patented.



TM-747D

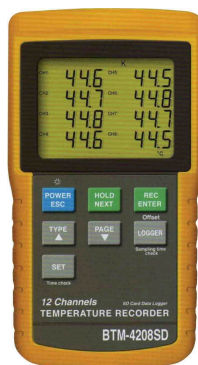
## TM-747D, Datalogger Thermometer 4 Channels Include Software/Cable

- Multi function for K/J/E/T/R/S/N types.
- Single / Dual / Triple / Four Channels.
- Programmable Hi / Lo audible alarm function.
- With built-in "time" function, RS-232 interface with window software.
- 10000 records data logger for each channel.



## TM-947SD, T/C & PT-100ohm 4 Channels Thermometer DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel.
- Type K/J/RIS/EIT, Pt 100 ohm, 4 display.
- 4 channels (T1, T2, T3, T4), T1-T2, °C/°F.
- Display 4 channels Temp. at the same time.
- Type K: -100 to 1300°C.
- Type J : -100 to 1200°C.
- Pt 100 ohm: -199 to 850°C.
- °C/°F, 0.1 degree/1 degree.
- Data hold, Record (max., min.).
- RS232/USB computer interface, Patented.
- Optional Type K & Pt-100 ohm Temp. probe.



## BTM-4208SD, 12 channels Temp. Recorder DataLogger

- 12 channels Temperature recorder, use SD card to save the data along with time information, paperless
- Real time data logger, save the measuring data along the time information ( year, month, date, minute, second) into the SD memory card and can be down load to the Excel, extra software is no need
- Channels no.: 12 channels (CH1 to CH12) temperature measurement
- Sensor type: Type J/K/I/T/E/R/S thermocouple
- Auto datalogger or manual datalogger
- Data logger sampling time range: 1 to 3600 seconds
- Type K thermometer: -100 to 1300°C
- Show CH1 to CH8 or CH9 to CH12

in the same LCD • Display resolution: 1 degree/0.1 • Time information: Year, Month, Minute and Second • Memory card size: 1 GB to 16 • Supper large LCD with reading • Data hold, Record (Max., Min.) • RS232/USB computer interface • Optional type K temperature probe: TP-01, TP-02A, TP-03, TP-04 • DC: 1.5. (UM-3, AA) x 8pcs or DC 9V adapter in.

## TP-01/02/03/04, Temp. Probes

TP-01: Bead wire, length 1.2 meter, wire diam. approx. 1.75mm. Subminiature type K connector. -40°C to 250°C, teflon insulation. TP-01: Glass, glass/silica insulation. -40°C to 480°C • TP-02A: High temperature, Immersion/penetration probe 200mm, diameter 3.2mm, type K, -40°C to 500°C, 1 meter cable, subminiature connector • TP-03: 87mm penetration probe, 3.2mm diameter, -40°C to 260°C, 673mm cable, subminiature type K connector • TP-04: SHORT-Surface probe -50°C to 400°C, sensing head 15mm diameter, probe length 120mm (up to 15°O) 1.5 cable, subminiature type K connector.



## VB-8205SD, Vibration Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- Acceleration: 200 m/s<sup>2</sup>. Velocity: 200 mm/s.
- Max hold, peak value, data hold.
- Memory (Max., Min.).
- RS232/USB computer interface, Patented.
- Vibration sensor is the standard accessory.

### Model : VB-8206SD

- The function are same as VB-8205SD but with the Displacement measurement.



SD Memory Card for all DataLoggers





**PS-9303SD**

### PS-9303SD, Pressure Meter, With DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- Meter connects with 2, 5, 10, 20, 50, 100, 400 bar sensor, no calibration procedures are necessary when change a new sensor.
- Bar, PSI, Kg/cm<sup>2</sup>, inch Hg, mm Hg, inch H<sub>2</sub>O, meter H<sub>2</sub>O, Atmosphere.
- Data hold, Memory (Max., Min.).
- RS232/USB computer interface.
- Optional pressure sensor, PS100-xxBAR.
- Patented, SD Card real time datalogger.



**PS100-xxBAR**

### PS100-xxBAR, Pressure Sensor for PS-9303SD

- Optional pressure sensor PS-9303SD
- PS100-2BAR : 2 bar sensor.
- PS100-5BAR : 5 bar sensor.
- PS100-10BAR : 10 bar sensor.
- PS100-20BAR : 20 bar sensor.
- PS100-50BAR : 50 bar sensor.
- PS100-100BAR : 100 bar sensor.
- PS100-400BAR : 400 bar sensor.



**PH-230SD**



**CD-4307SD**



**DO-5512SD**



### PH-230SD, pH Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- pH: 0 to 14.00 pH.
- mV (ORP): -1999 mV to 1999 mV.
- Manual temperature compensation.
- ATC (automatical temperature compensation) via optional Temp. probe (TP-07).
- Auto calibration for pH 7.0, pH 4.0 and pH 10.0.
- Data hold, Record (Max., Min.).
- RS232/USB computer interface.
- Patented, SD Card real time datalogger.

### CD-4307SD, Conductivity Meter TDS, Salt With DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- 3 function: Conductivity, TDS, Salt measurement.
- Conductivity: 200 uS/2 mS/20 mS/200 mS.
- Salt: 0 to 12 % salt (% weight).
- Automatic temp. compensation.
- It can select Temp. Coefficient of measurement solution.
- Separate probe, easy for operation.
- Carbon rod electrode for long life.
- Record (Max., Min.), Data hold, zero adjust.
- RS232/USB computer interface.
- Patented, SD Card real time datalogger.

### DO-5512SD, Dissolved Oxygen Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- Dissolved oxygen range: 0 to 20 mg/l.
- Auto temp. compensation, Auto Calibration.
- % salt and height value compensation adj ..
- The polarographic type oxygen probe with an incorporated temperature sensor.
- Probe head with diaphragm set and electrolyte are included.
- Record (Max., Min.), Data hold, zero adjust.
- RS232/USB computer interface.
- Patented, SD Card real time datalogger.

### WA-2017SD, pH/ORP, DO, CD/TDS, Salt Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need
- Multi-function: pH/ ORP, Conductivity/TDS, Dissolved oxygen, Salt
- pH: 0 to 14.00 pH • ORP (mV): ±1,999 mV • Conductivity: 200 uS/2 mS/20 mS/200 mS • TDS : 200/2,000/20,000/200,000 PPM • Salt: 0 to 12.0% salt (% weight) • Dissolved oxygen: 0 to 20.0 mg/L
- ATC (automatic temperature compensation) • Data hold, Record (Max., Min.) • RS232/USB computer interface • Optional electrode: pH electrode, ORP electrode, CD/TDS/SALT probe, Dissolved oxygen probe, pH ATC probe • Patented, SD Card real time datalogger.

**SD Memory Card for all DataLoggers**







**AM-4207SD**

### AM-4207SD, Anemometer, + type K/J Temp. With DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- Air velocity/Temp. measurement, professional.
- 0.5 to 25.0 m/s, ft/min., km/h. knots, mile/h.
- Low friction ball-bearing vane.
- Separate probe, high reliability.
- Type K Thermometer: -100 to 1300 DC, °C/°F.
- Type J Thermometer: -100 to 1200 DC, °C/°F.
- Data hold, Record (Max., Min.).
- RS232/USB computer interface.
- Patented, SD Card real time datalogger.



**AM-4214SD**

### AM-4214SD, Hot Wire Anemometer, + type K/J Temp. With DataLogger

- Real time data logger, save the data into the SD memory card & can be down load to the Excel, extra software is no need.
- 0.2 - 20.0 m/s, high precision for low air velocity measurement.
- m/s, ft/min, km/h, knots, mile/h, °C/°F.
- Type K Thermometer: -100 to 1300 DC, °C/°F.
- Type J Thermometer: -100 to 1200 DC, °C/°F.
- Data hold, Record (Max., Min.).
- RS232/USB computer interface.
- Patented, SD Card real time datalogger.



### YK-37UVSD, UVA, UVC Light Meter DataLogger

- Real time data logger, save the data into the SD memory card & can be down load to the Excel, extra software is no need.
- UVA, UVC light measurement.
- Select UVA, UVC function on front panel.
- Professional metallic housing UV light sensor.
- 2 ranges: 2 mW/cm<sup>2</sup> x 0.001 mW/cm<sup>2</sup>.  
20 mW/cm<sup>2</sup> x 0.01 mW/cm<sup>2</sup>.
- Data hold, Record (Max., Min.).
- RS232/USB computer interface.
- Patented, SD Card real time datalogger.



### LX-1128SD, Light Meter + type K/J Temp. With DataLogger

- Real time data logger, save the data memory card and can be down load to the Excel.
- 3 ranges, 2,000/20,000/100,000 lux.
- Lux & Foot Candle unit selection With default.
- Auto range for light measurement.
- Sensor meet C.I.E. spectrum, 2 filters.
- Separate probe, easy operation.
- Type K Thermometer: -100 to 1300 DC, °C/°F.
- Type J Thermometer: -100 to 1200 DC, °C/°F.
- Data hold, Record (Max., Min.).
- RS232/USB, Zero adjust.
- Patented, SD Card real time datalogger.

### SL-4023SD, Sound Level Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need.
- Meet IEC61672 class 2
- Auto range: 30 to 130 dB.
- Manual range: 3 ranges 30 to 80 dB, 50 to 100 dB, 80 to 130 dB.
- A/C frequency weighting.
- Fast/slow time weighting,
- Peak hold, Data hold.
- Record (Max., Min.).
- RS232/USB computer interface.
- Optional wind shield ball, SB-01.
- Patented, SD Card real time datalogger.



### EM-9300SD, Environment Meter DataLogger

- Real time data logger, save the data into the SD memory card and can be down load to the Excel, extra software is no need
- 4 in 1: Humidity meter, Light meter, Anemometer, Type KIJ thermometer
- Humidity: 10 to 95 %RH, 0 to 50°C
- Light: 0 to 20,000 Lux
- Anemometer: 0.5 to 25 m/s
- Type KIJ thermometer, °C/°F
- Data hold, Record (Max., Min.)
- RS232/USB computer interface
- Optional type K Temp. probes: TP-01, TP-02, TP-03, TP-04
- Optional sound level adapter: SL-417
- Patented, SD Card real time datalogger.

SD Memory Card for all DataLoggers





DBA-001



DBD-003



DBD-003E

## DB-Series, Dry Bath Incubator

### Features:

- Applications for incubating DNA specimens, cross matching and screens in blood bank, incubating melted agar, Enzyme assays, digestions, Residue tests for milk & also great for serology, hematology, pathology and biochemistry etc.
- Choose from various heating blocks that accommodate test tubes, cuvettes, and micro centrifuge tubes.
- Each block has a well to accommodate a removable thermometer, which monitors temperature of blocks.
- When solid block (no holes) is used, it can function as HOT PLATE.

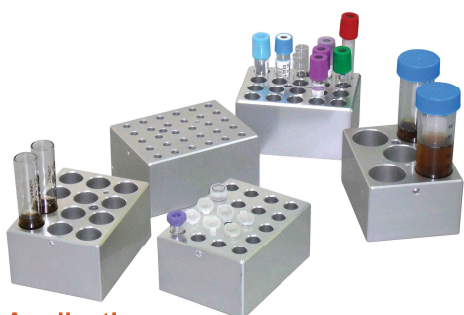
Model	DBD-003	DBD-003E	DBA-001
Overall dimension (mm)	370x245x135	290x290x110	210x235x115
Net weight (Not include blocks)	3.9kg	6.0kg	2.1kg
Temp. setting	Digital (3-digit)	Digital (3-digit)	Analog
Temp. reading	Digital LED	Digital LED	thermometer
Temp. range	Ambient to 99.9°C	Ambient to 150°C	25-105°C
Temp. accuracy	±0.1°C	±0.1°C	±0.2°C
Uniformity (at 37°C)	±0.2°C	±0.2°C	±0.5°C
Temp. sensor	PT-100	K-Type	*NTC
Temp. control	PID	PID	PID
Overheat alarm	Yes	Yes	No
Heating element	450W	450W	200W
Timer	Digital 99hr59min	Digital 99hr59min	No
Insulation	No	Yes	No

\*NTC: Negative Temperature Coefficient

### DBD-003 & DBD-003E

- Activate auto-off function to automatically shut out heater at the end of timed cycle.
- Digital temperature display for actual temperature PV and setting Sv.
- Timer start working when the preset temperature has been stabilized ensures an accurate incubation effect.
- When complete the heat cycling, the timer will alarm and display "END".
- Memory stores the set temperature and time of previous operation, use these set points to repeat the new operation and save time, or preset your new desired set points.

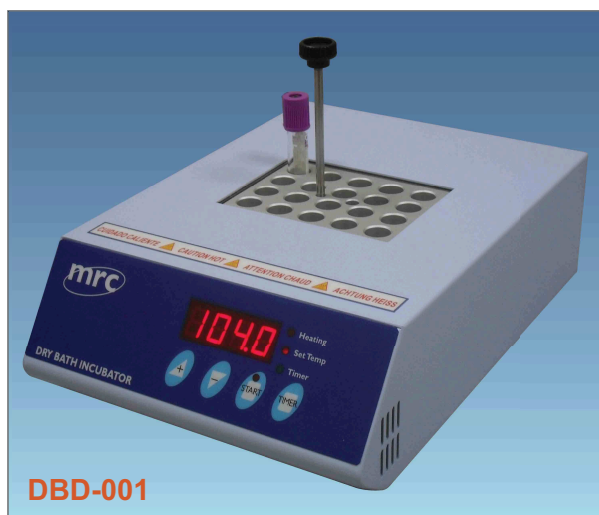
- DB-006E-150 features double wall construction with insulator by fiberglass for durability and good heat retention. Maximum temperature is designed up to 150°C capable of functioning more applications.
- Safety devices: Over temperature alarm; Heating failure alarm; Double overheating protection.



### Application:

- Solid anodized aluminium blocks resist the hardest environments and provide maximum heat retention.
- All blocks include thermometer well for easily measuring block temperature.

Number	Tube size	Openings No. / Ø
302-1-111101	6mm	30/6.5mm
302-1-111112	10mm	20/10.5mm
302-1-111113	12 or 13mm	20/13.5mm
302-1-111114	15 or 16mm	12/16.6mm
302-1-111115	18mm	12/18.6mm
302-1-111116	20mm	12/20.7mm
302-1-111117	25mm	6/25.7mm
302-1-111118	1.5ml Eppendorf	20
302-1-111119	0.5ml Eppendorf	20
302-1-111110	25+12+6mm or your request	3+5+6 holes
302-1-111111	Solid (no holes) used as HOT PLATE	
Block size	W100xD75xL50 (mm)	


**DBD-001**

**DBD-002**

### DBD-001/002, Dry Bath Incubators

Useful for a variety of applications in molecular biology, histology, clinical, environmental and industrial settings, including restriction digests, denaturing DNA, BUN, melting agar, coagulation studies, hybridization and Hot Start thermo-cycled reaction the dry baths feature a broad temperature range, up to 150°C, and excellent uniformity. A microprocessor regulates the high wattage heater to provide precise, accurate control and rapid heating.

The Aluminium block chamber ensures an even transfer of heat from the heating element to the block. Temperature is easily set using arrow keys while the value is shown on the large display. The user calibration function allows for easy calibration to in-house standards when required. Interchangeable blocks are available to accommodate a wide variety of tubes, plates and slides. Solid blocks are also available for custom machining. Each dry bath is supplied with a block lifter that enables the user to exchange blocks easily, even when the block is hot.

#### Features:

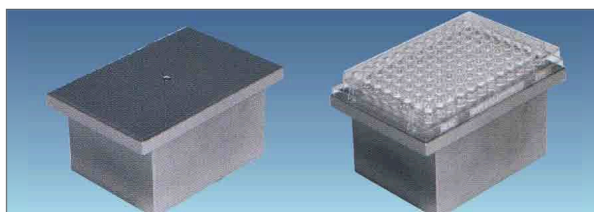
- Precise microprocessor control.
- Broad temperature range, to 150°C.
- Large digital display.
- Easy user calibration.
- Single and dual block models.
- Rapid temperature increasing rate.
- Large Digital LED display & timer.
- Used as a water bath.
- Molded aluminum alloy chamber.
- Function Control software available.

Model	DBD-001	DBD-002
Display	LED Display	
Heating power	125W	200W
Unit dimension (WxLxH)	200x290x80 mm	
Controller	Digital microprocessor controller	
Heating chamber	Molded aluminum alloy chamber	
Temperature control range	5°C Above ambient to 150°C	
Temperature increment	0.1°C	
Temperature uniformity in working area at 37°C	±0.2°C	
Temperature accuracy in working area at 37°C	±0.2°C	
Temperature calibration	Yes	
Timer	1~999 mins, continuous	
Safety device	Leakage proof for heating chamber, Over temperature protection, SSR failure detection	
Operating temperature	Ambient to 40°C	
Special feature	Used as water bath incubator	
Block material	Aluminum alloy	
Block type	Standard and customized type are available	
Data log	RS232	
Weight	approx. 2.6kg	approx. 2.8kg
Rated voltage	110V or 220V selectable	

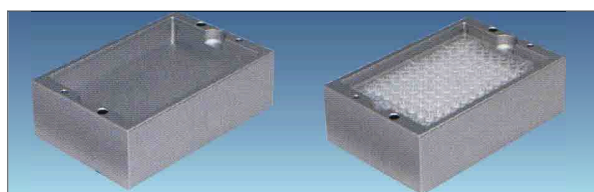


Dry Bath Blocks are designed for Dry Bath Incubator. The precision machined aluminum alloy blocks, which are suitable for microplate and different test tubes, range from 0.2ml tube to 50ml centrifuge tube, deliver efficient heat transfer. In addition to the standard blocks, customized blocks are also available for specified user requirement.

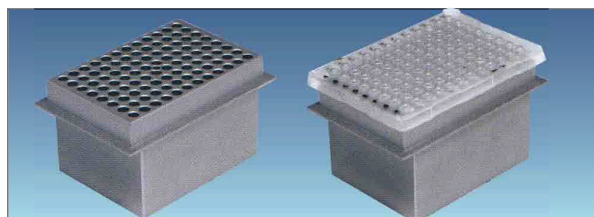
**300-1-111101:** For Microplate;Titerplate (Plain Block for Single Block unit only)



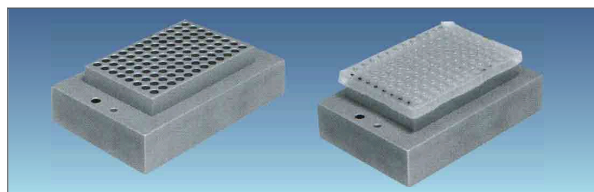
**300-1-111102:** For Microplate;Titerplate (Dual Block unit only)



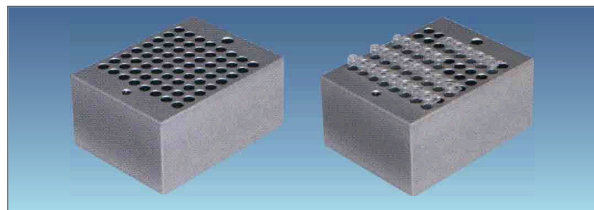
**300-1-111103:** For 96 wells Deep Microplate or PCR plate (for Single Block unit only)



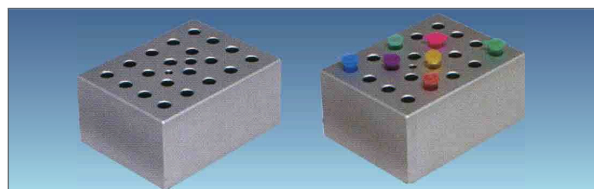
**300-1-111104:** For 96 wells Deep Microplate or PCR plate (for Dual Block unit only)



**300-1-111105:** For 0.2ml tube, 64 wells (or 0.2ml PCR Strip tube for 8 wells x 8)



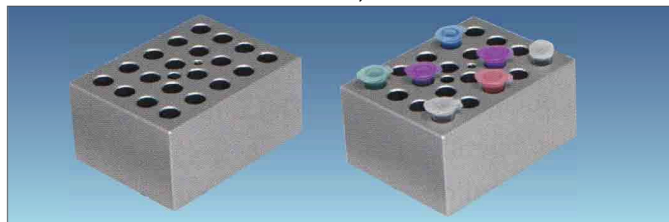
**300-1-111106:** For 0.5ml tube, 20 wells



## Specifications:

<b>Block material</b>	Aluminum alloy
<b>Dimensions (mm)</b>	W79xL104xH50
<b>Block lifter well</b>	Yes
<b>Thermometer well</b>	Yes (except microplate blocks)

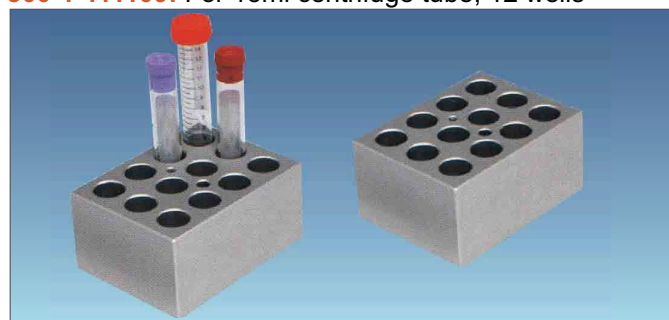
**300-1-111107:** For 1.5ml tube, 20 wells



**300-1-111108:** Well size 13mm, 20 wells



**300-1-111109:** For 15ml centrifuge tube, 12 wells



**300-1-111110:** Well size 20mm, 12 wells



**300-1-111111:** Well size 25mm, 6 wells



**300-1-111112:** For 50ml centrifuge tube, 4 wells



## DBC-001, Cool-Heater Dry Bath Incubator

Cool-Hotter Dry Bath Incubator is available with different temperature performance, along with a competitive range of interchangeable block. It is designed for a variety of applications including ligation, storage, restriction digests, denaturing DNA, BUN, melting agar, coagulation studies, hybridization and Hot Start thermo-cycled reaction.

The fully programmability contains Constant Operation, Programmable Mode, and Annealing Mode. A 2.6" LCD screen, showing all the running / setting conditions. Microprocessor controller offers easy temperature selection, rapid heat up and cooling down with an excellent stability. The temperature can be set in 0.1°C increments from -10°C to 100°C. Optional Function Control software is available for the control & real time data recording through a PC for specified user requirement.



DBC-001

### Features:

- Microprocessor control with digital performance for precise, accurate control.
- Wide temperature control range & great temperature controlled performance.
- Rapid temperature increasing rate.
- LCD screen shows all the parameters during run.
- User temp. calibration.
- Used as a water bath.
- Function Control software available.



Back Panel  
DBC-001

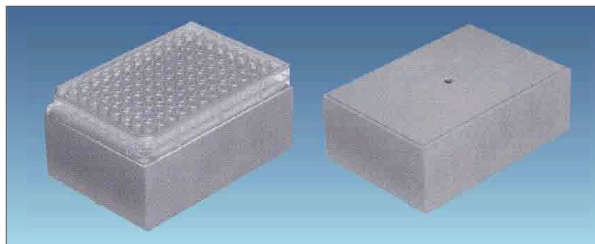
Model	DBC-001
Chamber dimensions (mm)	W125xL90xH50
Display	2.6" LED
Heating power	400W
Unit dimension (mm)	W200xL295xH140
Controller	Digital microprocessor controller
Heating chamber	Water-proof aluminum
Temperature control range	-10°C~100°C In the environment of 25°C
Temperature increment	0.1°C
Temp. uniformity in working area at 37°C	±0.2°C
Temp. accuracy in working area at 37°C	±0.2°C
Temperature calibration	Yes
Operation mode	Constant operation: constant temperature (-10°C~100°C), Timer: 1~9999 mins, Program operation: 1~4 steps and up to 9 cycles, Timer: 1~9999 mins, Annealing program
Safety device	Leakage proof for heating chamber
Operating temperature	Ambient to 40°C
Special feature	Used as water bath incubator
Block material	Aluminum alloy
Block type	Standard and customized type are available
Data log	RS232
Weight	approx. 8kg
Rated voltage	110V or 220V selectable

## Cool-Heater Dry Bath Blocks

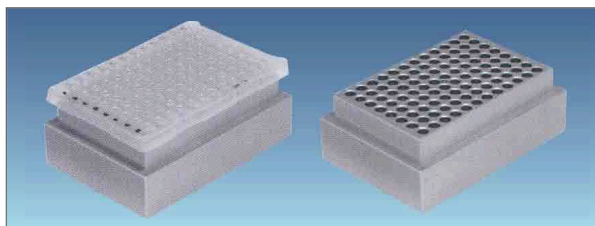
Non-porous aluminium for fast & efficient heat transfer, include a position for a thermometer, a hole for use with the block lifter tool.

- Corrosion resistant, anodized aluminium.
- Blocks for tubes from 0.2ml to 0.5ml, plates & slides.
- Precision machined for a close fit and efficient heat transfer.
- Solid block available for custom machining.

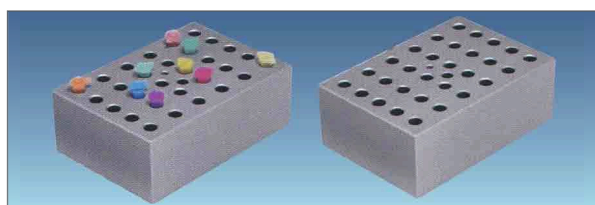
**300-1-111201:** For Microplate;Titerplate (Plain Block)



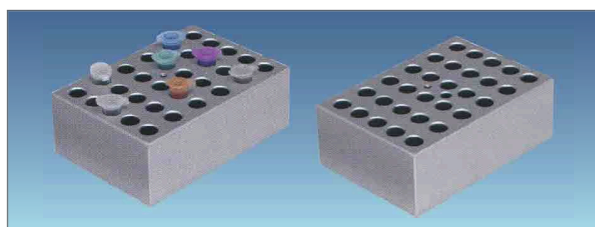
**300-1-111202:**  
For 96 wells Deep Microplate or PCR plate



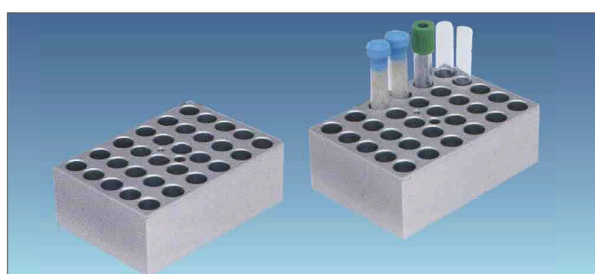
**300-1-111203:** For 0.5ml, 30 wells



**300-1-111204:** For 1.5 or 2.0ml, 30 wells



**300-1-111205:** Well size 13mm,30 wells



Model	300-1-11120x
Block material	Aluminum alloy
Dimensions (mm)	W90xL127xH50
Block lifter well	Yes
Thermometer well	Yes (except microplate blocks)

**300-1-111206:** For 15ml centrifuge tube,15 wells



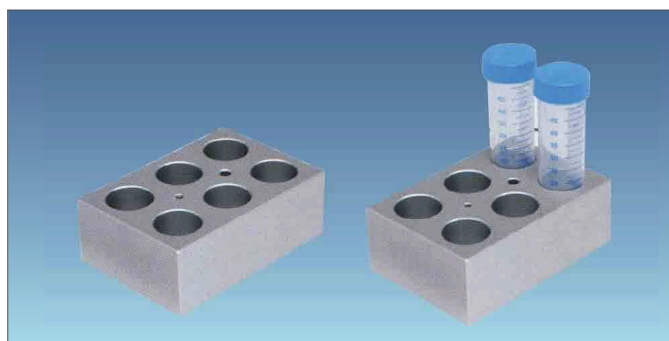
**300-1-111207:** Well size 20mm,15 wells



**300-1-111208:** Well size 25mm,6 wells



**300-1-111209:** For 50ml centrifuge tube,6 wells





# DRY BATHS

## Gas Distribution



**DBG-002**

### DBD-004, 4 Blocks Large Dry Bath DBG-002, Sample Constraction

The instrument consists of a base and stand assembly, sample holder and gas distribution system. Test tubes are held in a block. The gas at 5 to 10 psig passes through the distribution manifold. Depending on the test-tube size and solvent volume they can be individually raised or lowered to the correct height. Needles or glass pipets blow gas onto the surface of the solution resulting in rapid evaporation of the solvent. All materials used are laboratory quality and can withstand contact with organic solvents. Acid resistant models are available for corrosive application.

#### Features:

- High precision and wide range of temperature control.
- Blowing a large number of samples at one time.
- Blowing each sample independently.
- Amount of airflow can be adjusted.
- Easy operation; safe and reliable to use.

#### Blocks for DBG-002/DBD-004

Type	Parameter	Capacity	Dimension (mm)
301-1-111201	6mm	49	96x96x49
301-1-111202	7mm	49	96x96x49
301-1-111203	10mm	25	96x96x49
301-1-111204	12mm	25	96x96x49
301-1-111205	13mm	25	96x96x49
301-1-111206	15mm	12	96x96x49
301-1-111207	15mm	16	96x96x49
301-1-111208	16mm	12	96x96x49
301-1-111209	16mm	16	96x96x49
301-1-111210	19mm	12	96x96x49
301-1-111211	19mm	16	96x96x49
301-1-111212	20mm	9	96x96x49
301-1-111213	26mm	9	96x96x49
301-1-111214	28mm	4	96x96x49
301-1-111215	40mm	4	96x96x49
301-1-111216	0.5ml	49	96x96x49
301-1-111217	1.5ml	25	96x96x49
301-1-111218	2.0ml	25	96x96x49



**DBD-004**



**Blocks**

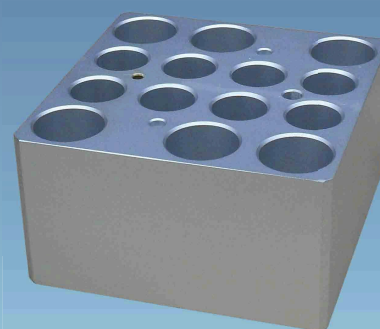
Type	DBG-002	DBD-004
Temp. control range	RT.+5°C~150°C	RT.+5°C~120°C
Homogeneity control discrepancy	1min~99h59min	1min~99h59min
Display	±0.3°C	±0.3°C
Temp. control discrepancy @40~100°C	±0.5°C	±0.5°C
Temp. control discrepancy @100~150°C	±1°C	±1°C
Display accuracy	0.1°C	0.1°C
Heating time 40~150°C	≤30min	≤30min
Standard blocks	2	4
Nitrogen consumption	0-10L/min	-
Dimension (mm)	L280xW240xH110	L380xW240xH110
Needles length	150mm	



DBR-001

## For The Digestion Of:

- COD (150°C)
- TOC (120°C)
- Total chromium (100°C)
- Total nitrogen (100°C)
- Total phosphate (100°C)



**179200-45**  
Option block  
(with 8x20mm Ø &  
6x25mm Ø vial holes)

Chemical digestion of the samples is a prerequisite for, among other tests, determination of COD, TOC, total phosphate and total nitrogen. The required temperature and reaction time are programmed using the membrane keypad on the front of the reactor. When digestion is complete, the reactor automatically switches off and sounds an alarm. DBR-001 COD reactor is designed to meet USEPA 410.4 method. It can be used to digest closed 1 micro reflux COD vial and other samples which diameter is 16mm.

Further, it is safer and easier than traditional open macro reflux method.

Unique COD program let DBR-001 to be a truly automatic reactor.

When the reactor is powered on, just click the start/stop button, then it starts to heat to 150°C and keep for 2 hours then stop heating with a audio alarm.

Samples are ready to be measured by colorimeter when they cool down.

DBR-001 COD reactor is compatible with any COD detectors which use 16mm COD vials. In addition to COD program, DBR-001 is a microprocessor controlled block heater, with temperature range from 60°C to 200°C and timer from 0 to 999 minutes or continuous operation, and 3 extra self-made heating programs can be stored.

## For The Digestion Of:

- COD (150°C)
- TOC (120°C)
- Total chromium (100°C)
- Total nitrogen (100°C)
- Total phosphate (100°C)

## Features:

- Approved by ERA (method 410.4) of USA and most of the countries in the world.
- Safer and easier than traditional open reflux method.
- Save lab top space, power and water consumption.
- Reduce waste & maximize safety.
- Unique COD program makes it truly automatic.

Model	DBR-001 COD REACTOR
Read out	4 Digital LED of set temperature, set time, process temperature, residual time display
Timer	1~999 minutes with audible alarm and automatic shut off or continuous operation
Accuracy	±2°C (at 150°C)
Temperature	Fixed 150°C (COD program) 60°C~200°C, adjustable
Safety	Hot top indicator (flashing when block temperature is over 70°C), Automatic shut off when block temperature is over 210°C)
Block capacity	25 of 16mm Ø sample vials, Option block(with 8x20mm Ø and 6x25mm Ø vial holes) is available
Structure	Housing: stainless steel with power paint coating, Block: Anodized aluminum
Power	AC110 or AC220V, 50/60Hz, 220Watt
Dimensions	W18.9xH11.6xD31.5mm
Weight	Net 4.5kg Gross 6.1kg



### DBS-001/DBSC-001, Thermo Shaker

Designed for simultaneous heating, cooling and mixing of small samples. Both DBS-001 and DBSC-001 are supplied with interchangeable platforms for various tubes. Mixing, heating and cooling modes can be used either simultaneously or independently. The main body housing the mixing and heating platform can accommodate different kinds of blocks.



#### Features:

- Clear, easy to use LCD display.
- Soft touch key pads.
- Small footprint.
- Accurately control and display time, temperature and speed.
- Over-heating protection device ensures safety & reliability.
- Audible signal to indicate end of run after program completion.
- Temperature can be calibrated to meet user's needs.
- Low noise working even under the speed of 1,500rpm.
- Conforms to CE safety standards.

Model	DBS-001	DBSC-001
Temp. setting range	5°C ~100°C	0°C ~ 100°C
Temp. control range	RT.+5°C ~ 100°C	0°C~100°C ambient temp.≤20°C 4°C~100°C ambient temp.≤25°C 10°C~100°C ambient temp.≤30°C
Timing range	1 min ~ 99h59min	1 min ~ 99h59min
Mixing speed	200 rpm ~ 1500 rpm	200 rpm ~ 1500 rpm
Mixing orbit	2 mm	2 mm
Temp. control accuracy	≤±0.3°C	≤±0.3°C
Display accuracy	0.1°C	0.1°C
Heating time (from 20°C to 100°C)	≤20 min	≤15 min
Cooling time	-	≤30 min (from RT. to RT.-20°C) ≤15 min (from 100°C to 20°C)
Dimension (mm)	L300xW220xH170	L300xW220xH170
Net weight	7 kg	8.5 kg

#### Blocks for MS-100 / MSC-100

Type	Parameter	Max. Temp	Max. Speed (rpm)
301-1-111101	96x0.2 ml	100°C	1500
301-1-111102	54x0.5 ml	100°C	1500
301-1-111103	35x1.5 ml	100°C	1500
301-1-111104	35x2.0 ml	100°C	1500
301-1-111105	15x0.5 ml+20x1.5 ml	100°C	1500
301-1-111106	24xDia.≤Ø12 mm tube	100°C	1200
301-1-111107	12x15 ml falcon	100°C	750
301-1-111108	6x50 ml falcon	100°C	750
301-1-111109	103x67x30 water bath block	100°C	1500
301-1-111110	96 well microplate	100°C	1500



Block  
for 0.5ml

Block  
for 1.5ml



### PWR-1560, 150V/600mA Power Supply PWR-3040, 300V/400mA Power Supply

PWR-1560/3040 power supplies have been developed specifically for horizontal gel electrophoresis systems.

These ultra compact power units with dual outlets, are recognised as amongst the most compact & inexpensive power supplies currently available & are designed & constructed to the most rigorous safety standards.

Compact Size • Safety Design: Shrouded plug & socket, no load detection • Constant Voltage • Low Cost & Economical.



The PWR-1560/3040 power supplies are microprocessor-controlled power supplies with universal rated voltage with up to 150/300 voltage output. The ultracompact sized unit provides power needed to run horizontal agarose or vertical polyacrylamide electrophoresis.

The PWR-1560/3040 series provide 6 different constant voltage selections in timed or continuous operation.

Easy to operate, dual output terminators, 6 constant voltages, and compact size are the features.

The PWR-1560/3040 series is also designed and constructed to the most rigorous safety standards.

The packages with 10 x 10 cm vertical electrophoresis or mild sized horizontal electrophoresis systems are valuable choices for educational market and personal use.

#### Features

**PWR-1560:** 25V, 50V, 75V, 100V, 125V, 150V constant voltage output, 600mA maximum current.

**PWR-3040:** 50V, 100V, 150V, 200V, 250V, 300V constant voltage output, 400mA maximum current • 60W maximum power • 2 pairs of outlet terminator • Timer with alarm function • Safety device • Compact size and lightweight • Competitive pricing choice • Packages with mild sized horizontal electrophoresis systems and vertical electrophoresis systems.

Specifications	PWR-1560	PWR-3040
Appearance	Blue color faceplate	
Max. voltage	150V	300V
Max. current	600mA	400mA
Max. watt	60W	
Output type	Constant voltage	
Control	Microprocessor controller	
Voltage selection	25V, 50V, 75V, 100V, 125V, 150V	50V, 100V, 150V, 200V, 250V, 300V
Terminator pairs	2 Pairs	
Timers	1 ~ 999 mins with alarm, continuous	
Safety device	No load detection; shrouded plugs and sockets	
Operation temperature	Ambient to 40 °C	
Unit dimension	115x150x80mm (WxLxH)	
Construction material	Frame retard ABS and aluminium rare and bottom plates	
Weight	approx. 0.6kg	
Rated voltage	100 ~ 240V	
Applications	Sufficient for mild sized horizontal electrophoresis systems & vertical electrophoresis systems	

# ELECTROPHORESIS

## Power Supply

### PWR-2570, 250V/700mA Power Supply & PWR-3070, 300V/700mA Power Supply

Four gel chambers can be connected at any one time. An optional timer can be set to end the run & sound an alarm. Run in Constant Voltage and Current • Alarm can be set at the end of program • Auto cut-off function • Current up to 700ma.

The MRC PWR-2570/PWR-3070 power supplies are designed to meet most electrophoresis needs, running horizontal & vertical electrophoresis, & two-dimensional electrophoresis SDS-PAGE applications. They are recognized as the most powerful units, running 4 cells simultaneously. Microprocessor control offers easy to use operation, constant voltage or constant current output & pause/resume run capability during timed or continuous operation. The safety devices include no load detection, leakage detection, sudden load change detection, over temp. protection, & over load detection.



**PWR-2570/3070**

#### Features

- 250V maximum voltage for **PWR-2570**  
300V maximum voltage for **PWR-3070**
- 700mA maximum current for PWR-2570 and PWR-3070
- 150W maximum power for PWR-2570 and PWR-3070
- Four pairs of outlet terminator
- Timer with alarm function
- Constant voltage or constant current operation
- Advanced safety device design
- Compact size
- Stackable case
- Wide applications for DNA, RNA and protein electrophoresis

### PWR-5080, 500V/800mA Power Supply & PWR-3030, 300V/3000mA Power Supply

Its design provides a compact and modern stackable case, and a 2.6" LCD screen, showing all the running / setting conditions. Safety devices include no load detection, leakage detection, sudden load change, over temperature protection, and over load detection.

It offers constant voltage, constant current or constant wattage and pause/resume run capability during timed or continuous operation. PWR-5080 is a fully programmable mode, offering up to 6 multi-step setting and saving up to 30 programs, and



**PWR-5080/3030**

capable for running 4 cells simultaneously.

Its microprocessor control offers constant voltage, constant current or constant wattage and pause/resume run capability during timed or continuous operation. PWR-3030 is a fully programmable mode, offering up to 6 multi-step setting and saving up to 30 programs, and capable for running 4 cells simultaneously.

**PWR-5080** power supply is a microprocessor-controlled power supply to cover the broadest range of applications.

**PWR-3030** power supply is the high current mode. In addition to running standard horizontal agarose and vertical polyacrylamide gels, the PWR-3030 power supply easily handles all your blotting applications.

#### Features

**PWR-5080:** Wide applications for DNA, RNA & protein electrophoresis.

**PWR-3030:** Wide applications for DNA, RNA & protein electrophoresis & blotting

Model	PWR-2570	PWR-3070	PWR-5080	PWR-3030
Display	LED	LED	2.6" LCD	
Output voltage / Inc	2~250V/1V	2~300V/1V	5~500V/1V	5~300V/1V
Output current / Inc	1~700mA/1mA		1~800mA/1mA	10~3000mA/10mA
Output watt / Inc	150W		300W/1W	
Operating constant	Voltage or current		Voltage or current or power	
Control	Microprocessor controller			
Program storage			30 Programmed files	
Program multi-step			Up to 6 steps	
Terminator pairs	4 Pairs			
Timer	1~999 mins with alarm, continuous		Constant mode: 1~9999 mins with alarm, continuous	
Pause function	Yes			
Safety device	No load detection; Leakage detection; Sudden load change detection; Over temperature protection; Over-load detection; Shrouded plug and sockets;			
Crossover	Yes			
Operation temperature	Ambient to 40 °C			
Unit dimension	190x305x95mm (WxLxH)			
Construction material	Frame retard ABS plates and aluminium			
Weight	approx. 2.5kg			
Rated voltage	100~240V			
Stackable	Yes			

**GEF-1006, Shorter Mini Horizontal Gel Electrophoresis System**

GEF-1006 Horizontal Cell offers many advantages for nucleic acid separation. Agarose gels are easy to cast and samples are easy to be loaded. It is the most recognizable mini horizontal cell on the market, and two colors are offered for the better visual distinguishing. Its molded design prevents cracks or leakages, and its sturdy PC provides up to 130°C temperature capacity. A safety interlock cover is designed to prevent electrical hazards during electrophoresis. It is ideal for many applications, including Northern and Southern blotting, Cosmid library restriction analysis, STS screening, Microsatellite analysis, PCR fragment analysis, RFLP analysis, DNA fingerprinting and High-throughput analysis.

**Features:**

- Less Agarose consumption • Less running buffer consumption • Multichannel pipet-compatible • Single molded tank • Two tray options available • Two cell color options available • Safety & Ventilation lid • Contain 2 sets of gel maker stand • No direct heat impact from power supply unit • Cast 6 pcs of agarose gel in one time • High temperature capability, 130°C • Easy sample loading • Great indications for gel making and running • No tapes, clamps or springs needed for gel casting.

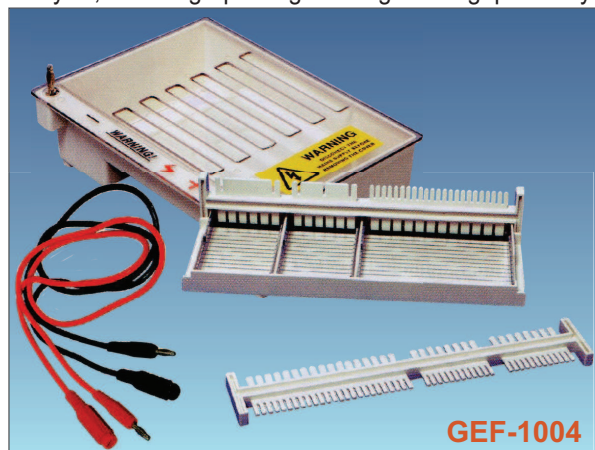
This product is offered as a complete system for the user to cast, and run electrophoresis, including:

- 1 x Electrophoresis Tank & Cover
- 2 x MJ-G01 (Gel Maker Stand)
- 2 x MJ-T02 (107 x 60mm Tray)
- 4 x MJ-T01 (52 x 60mm Tray)
- 2 x MJ-C01 (Double Size Comb: 8 teeth x 2 & 17 teeth, 12 teeth x 2 & 25 teeth)
- 1 x Black & Red Power Cord

Model	GEF-1006
Appearance	Snow tank & transparent lid
Construction	PC (Plycarbonate)
Temp. Capacity	130°C
Unit Dimension (mm)	W140xD140xH53
Gel Dimension (mm)	W52xL60 W107xL60
Max. Gel Thickness	10mm
Maximum Sample	25
Buffer Volume	200ml
Lid	Safety and ventilation
Tray	Black well-visualization strip /Migration distance index line /Agarose level, 5mm
Rapid Casting Gel	Use gel maker stand

**GEF-1004, Wide Mini Horizontal Gel Electrophoresis System**

GEF-1004 Horizontal Cell offers many advantages for nucleic acid separation. Agarose gels are easy to cast and samples are easy to be loaded. MT-1 08's longer tray allows running bigger fragments and the better separation. Its molded design prevents cracks or leakages, and its sturdy PC provides up to 130°C temperature capacity. A safety interlock cover is designed to prevent electrical hazards during electrophoresis. It is ideal for many applications, including Northern and Southern blotting, Cosmid library restriction analysis, STS screening, Microsatellite analysis, PCR fragment analysis, RFLP analysis, DNA fingerprinting and High-throughput analysis.

**Features:**

- Less Agarose consumption • Less running buffer consumption • Multichannel pipette-compatible • Single molded tank • Two tray options available • Safety & Ventilation lid • Cast 3 pcs of agarose gel in one time • No direct heat impact from power supply unit • High temperature capability, 130°C • Easy sample loading • Great indications for gel making and running.
- No tapes, clamps or springs needed for gel casting

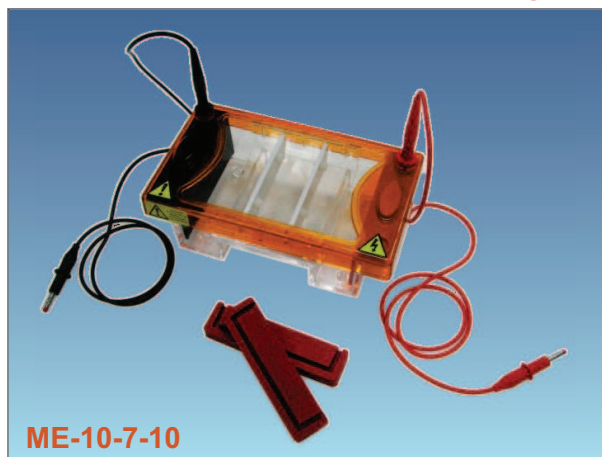
This product is offered as a complete system for the user to cast, and run electrophoresis, including:

- 1 x Electrophoresis Tank & Cover
- 1 x MT-G01 (Gel Maker Stand)
- 1 x MT-T01 (105x83mmTray)
- 2 x MT-T02 (50 x 83mm Tray)
- 1 x MJ-C01 (Double Size Comb: 8 teeth x 2 & 17 teeth, 12 teeth x 2 & 25 teeth)
- 1 x MT-C03 (multiple pipette compatible 23 teeth, Prep 1 & Marker 2, Prep 2 & Marker 2 on one side;
- 6 teeth x 2 for mini gel & 13 teeth for midi gel on the other side)
- 1 x Black & Red Power Cord

Model	GEF-1004
Construction	PC (Plycarbonate)
Temperature Capacity	130°C
Unit Dimension (mm)	W136xD188xH58
Gel Dimension (mm)	W105xL83 / W50xL83
Max. Gel Thickness	10mm
Maximum Sample	25
Buffer Volume	400ml
Lid	Safety and ventilation
Tray	Black well-visualization strip Migration distance index line
Rapid Casting Gel	Use gel maker stand



### ME-10-7-10, Horizontal Gel Electrophoresis System



ME-10-7-10

ME-10-7-10 has been designed for routine horizontal gel electrophoresis with gel tray options of 10 x 7cm and 10 x 10cm. Extending only the width of this unit allows more samples to be resolved per gel. A maximum of 100 samples per gel can be resolved making this unit ideal for those routinely checking medium numbers of samples over short to medium gel run lengths.

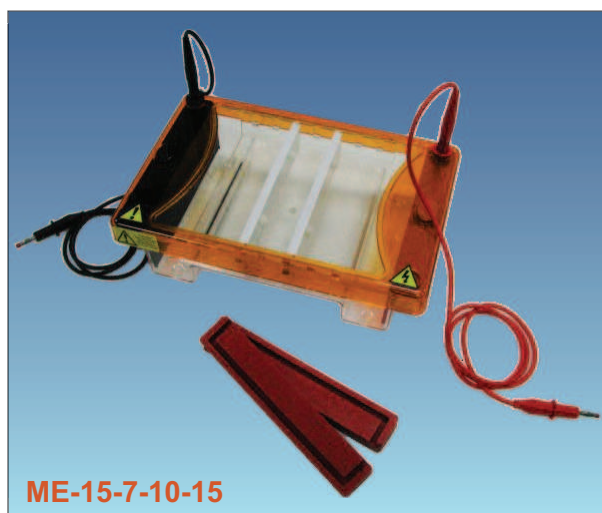
#### Features:

- Low buffer consumption.
- Single molded tank.
- Two tray options available.
- Easy sample loading.
- Great indications for gel making and running.
- No tapes, clamps or springs needed.

Model	ME-10-7-10
Unit dimension (WxLxH)	220x125x90mm
Gel dimension (WxL)	100x70mm
Maximum sample	50 for 100x70mm tray, 100 for 100x100mm tray
Buffer volume	300ml
Construction	Injection molded construction durable, leak proof environment for complete safety and long life
Cassette type electrodes	Inexpensive, easy to replace, made of 99.99% corrosion resistant pure platinum
Electrical safety	Lid can be located in one way only, on removal- power is disconnected from buffer chamber
Rapid casting gel	Use casting dams

### ME-15-7-10-15, Horizontal Gel Electrophoresis System

offers a wide degree of versatility. Three tray options are available, 15 x 7cm, 15 x 10 cm and 15 x 15cm allowing the choice of one, two or all three gel length options at the time of purchase. Further purchases of additional accessories are no longer required.



ME-15-7-10-15

Maximizing comb and tray options allow up to 210 samples to be resolved per gel. The 15 cm total run length allows restriction fragment or other close MW sample bands to be easily separated and identified.

Speed loading is accomplished using 10, 14, 16, 18, 28 and 30 sample multi-channel pipette compatible combs. In addition, the packages with Minis 300V power supply series are ideally offered to individuals in the laboratory at a competitive and acceptable pricing to avoid time waiting for those basic instruments and to accelerate the experimental progress.

#### Features

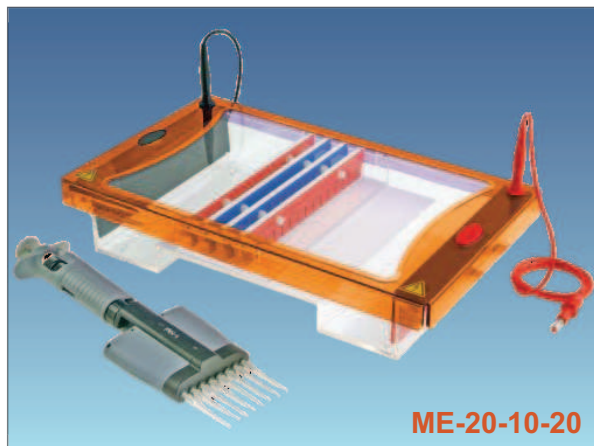
- Low buffer consumption.
- Single molded tank.
- Three tray options available.
- Multi-channel pipette compatibility.
- Great indications for gel making and running.
- No tapes, clamps or springs needed.

Model	ME-15-7-10-15
Unit dimension (WxLxH)	265x175x90mm
Gel dimension (WxL)	150x70mm, 150x100mm, 150x150mm
Maximum sample	70 for 750x70mm tray, 140 for 150x100mm tray, 210 for 150x150mm tray
Buffer volume	500ml
Construction	Injection molded construction durable, leak proof environment for complete safety and long life
Cassette type electrodes	Inexpensive, easy to replace, made of 99.99% corrosion resistant pure platinum
Electrical safety	Lid can be located in one way only, on removal- power is disconnected from buffer chamber
Rapid casting gel	Use casting dams

### ME-20-10-20, Maxi Horizontal Gel Electrophoresis System

ME-20-10-20 is primarily designed for resolution of high numbers of samples like cloning or PCR experiments.

ME-20-10-20 allows ultra high-resolution separations over extended runs. Tray sizes correspond to standard blotter sizes.



ME-20-10-20

It also allows easy sample transfer onto a membrane for further analysis. Three tray sizes are available, 20 x 20cm, 20 x 25cm and a half length, 20 x 10cm. Multi-channel pipette compatible combs up to 40 sample facilitate speed loading of up to 440 samples per gel. 50 sample combs allow maximum sample capability of 550 samples per gel.

#### Features:

- Low buffer consumption.
- Single molded tank.
- Three tray options available.
- Multi-channel pipette compatibility.
- Great indications for gel making and running.
- Up to 450 samples per tray.
- No tapes, clamps or springs needed.

Model	ME-20-10-20
Unit dimension (WxLxH)	395x230x90mm
Gel dimension (WxL)	200x100mm, 200x200mm, 200x250mm
Maximum sample	200 for 200x100mm tray, 450 for 200x200mm tray, 550 for 200x250mm tray
Buffer volume	1200ml
Construction	Injection molded construction durable, leak proof environment for complete safety and long life
Cassette type electrodes	Inexpensive, easy to replace, made of 99.99% corrosion resistant pure platinum
Electrical safety	Lid can be located in one way only, on removal- power is disconnected from buffer chamber
Rapid casting gel	Use casting dams

### ME-26-16-24-32, Maxi Plus Horizontal Gel Electrophoresis System

ME-26-16-24-32 is designed for rapid screening of very large numbers of cloning or PCR samples, and it has the maximum capacity of 672 samples per gel. This allows loading and analysis of exactly seven 96 well format micro titer plates. The large gel run length of 32cm also allows resolution of samples over a long distance for separation of complex sample bands such as in restriction fragment analysis.



ME-26-16-24-32

Maxi-plus is available with a full length tray or with other tray length options of 16 or 24cm so that user's exact requirements can be matched. In addition to options for single length gel trays, Maxi-plus is available with all three gel tray lengths to provide the maximum in flexibility, versatility and value. Buffer recirculation ports are included as standard to allow enhanced resolution over extended runs while loading guides enhance well visibility for easy sample loading.

#### Features

- Low buffer consumption.
- Single molded tank.
- Three tray options available.
- Multi-channel pipette compatibility.
- Great indications for gel making & running.
- Up to 672 samples per tray.
- No tapes, clamps or springs needed

Model	ME-26-16-24-32
Unit dimension (WxLxH)	500x280x90mm
Gel dimension (WxL)	260x160mm, 260x240mm, 260x320mm
Maximum sample	336 for 260x160mm tray, 504 for 260x240mm tray, 672 for 260x320mm tray
Buffer volume	1400ml
Construction	Injection molded construction durable, leak proof environment for complete safety and long life
Cassette type electrodes	Inexpensive, easy to replace, made of 99.99% corrosion resistant pure platinum
Electrical safety	Lid can be located in one way only, on removal- power is disconnected from buffer chamber
Rapid casting gel	Use flexi caster (optional accessory)

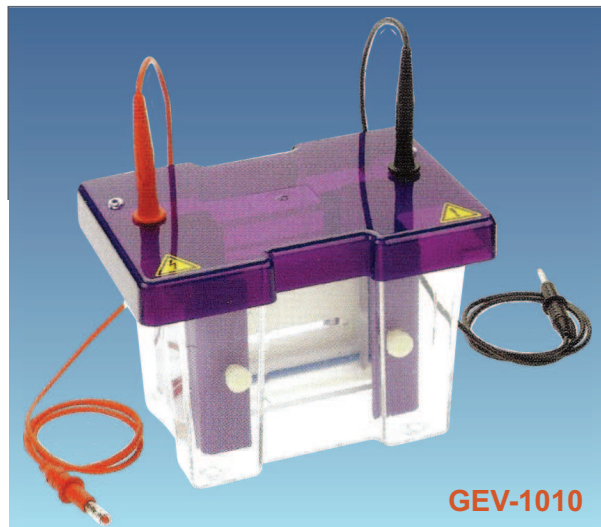
# E ELECTROPHORESIS

## Vertical Systems

### GEV-1010, Mini Vertical Gel Electrophoresis Apparatus

- Injection moulded construction • Compatible with all 8x10 & 10x10cm precast gels • Rapid gel casting & loading • Low Buffer volumes • Rapid set up cooling • Run up to four gels.

Mini SDS Page, Native Page, Gradient, Second dimensions & Nucleic acid separations.



GEV-1010

Mini Vertical is an injection molded vertical electrophoresis system providing leak-proof environment and safety concerns. In addition, its vertical tank is designed for blotting compatibly. Dual 10x10cm plates is the most popular application and it also has the capability of up to 2 plates. In addition, packages with Minis 300V power supply series are ideally offered to individuals in the laboratory at a competitive and acceptable pricing to avoid time waiting for those basic instrument and to accelerate the experimental progress.

#### Features

Low buffer consumption • Single molded tank • Compatible with all major types of precast gel • Up to 4 gels run at one time • Great indications for gel making and running • Ice cooling block • No tapes, clamps or springs needed

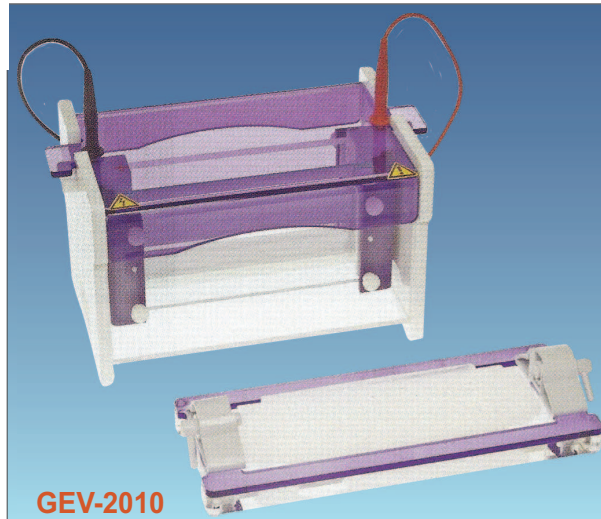
**GEV-1010** Complete mini vertical gel electrophoresis apparatus. Mini 10x10cm dual, 2 sets of glass plate with 1mm thick bonded spacers. 2x12 samples, 1mm thick combs, cooling pack, dummy plate and casting base.

Model	GEV-1010	GEV-2010
Unit dimension (WxLxH)	190x130x150mm	260x160x160mm
Plate dimension (WxL)	100x100mm	200x100mm
Gel dimension (WxL)	75x80mm	180x80mm
Maximum sample	80 samples, 20 samples per gel	192 samples, 48 samples per gel
Buffer volume	250 ~ 1200ml	600 ~ 2800ml
Ice cooling pack	Yes	
Dummy plate and casting base	Yes	
Construction	Injection molded construction durable, leak proof environment for complete safety and long life	
Cassette type electrodes	Inexpensive, easy to replace, made of 99.99% corrosion resistant pure platinum	
Electrical safety	Lid can be located in one way only, on removal- power is disconnected from buffer chamber	
Rapid casting gel	Use gel maker stand	

### GEV-2010, Mini Vertical Gel Electrophoresis Apparatus

- Offers the capacity of 2 mini gels on a single gel • Rapid gel casting & loading • Optional low or high buffer volumes • Rapid set up cooling. Mini SDS Page, Native Page, Gradient, Second dimensions & Nucleic acid separations.

Mini Wide Vertical Electrophoresis System with a gel width of 20cm effectively allows double the number of samples to be resolved as the Mini Vertical Electrophoresis System. This allows consistency of sample comparison on a single gel & is designed for those with greater than 20 samples to compare & resolve. Simple set up using ultra soft silicone seals guarantees trouble free glass plate loading & gel casting.



GEV-2010

Dual gasket on the gel running insert along with notched and plain glass plates ensure leak proof gel running. Rapid set up cooling retains resolution in extended separations and also saves on buffer volume without affecting run quality. 4mm thick glass plates reduce breakage and have bonded spacers for added convenience. A wide range of accessories is available allowing many techniques to be performed using the same unit. Prep combs can be used to maximize sample loading and recovery.

#### Features

Offers the capacity of two mini gels on a single gel • Rapid gel casting and loading • Low buffer consumption • Single molded tank • Up to 4 gels run at one time • Great indications for gel making & running • Ice cooling pack • Easy gel casting & no gel leakage • Competitive pricing.

**GEV-2010** Mini wide vertical gel electrophoresis apparatus. Mini wide 20x10cm dual, 2 sets of glass plate with 1mm thick bonded spacers. 2x24 samples, 1mm thick combs, cooling pack, dummy plate and casting base



### UV-26, Dual-Wavelength UV Transilluminator, 302nm/365nm

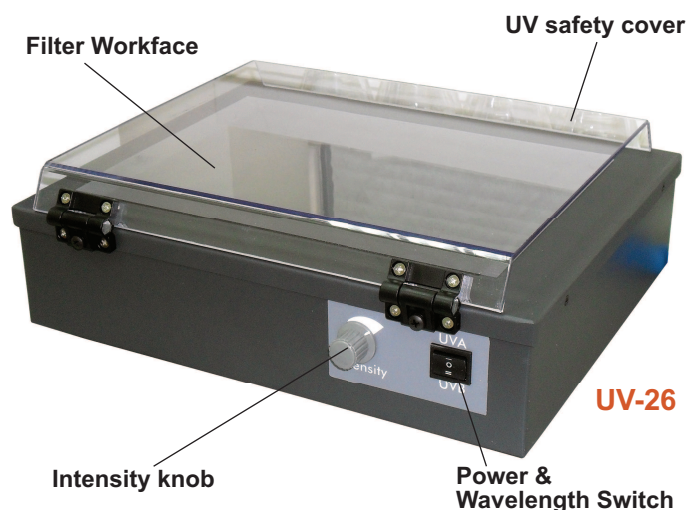
UV Transilluminators are designed for viewing DNA/RNA in agarose gels stained with ethidium bromide(EB) or other dyes.

Transparent hinged cover, with UV-safety cover to protect users from exposure to hazardous UV radiation, is mounted by slip-hinges for easily adjusting to user's visual angle.

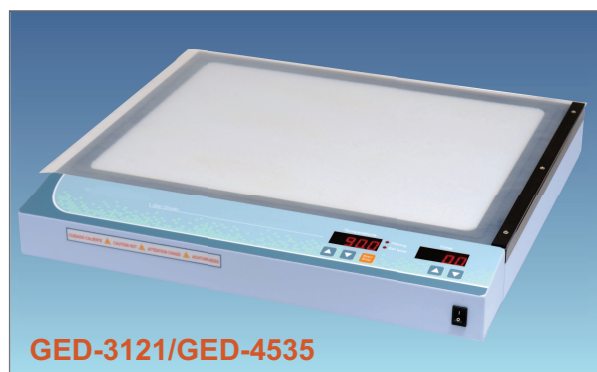
UV-26 Dual-wavelength UV transilluminator provides a uniform & intense source of 302nm & 365nm ultraviolet lights to back-illuminate transparent fluorescent materials.

Nucleic acids stained with fluorescent dyes such as ethidium bromide and acridine orange can be detected under UV illumination.

The filter surface is 210 x 260 mm. The light intensity level can be set from 0%-100% continuously. Either transilluminator can be converted from 302/365nm to 254nm by replacing the UV lamps as described in the Care and maintenance section.



Model	UV-26
UV Lamps	5-302nm lamp(8W) & 4x365 lamp(8W)
Intensity	Variable intensity 5% ~ 100%
Filter Size(mm)	L260xW210
UV Safety Cover Size(mm)	L320xW280
Dimensions(mm)	L340xW290xH85
Weight	5kg
Power	220V/50Hz



### GED-3121/GED-4535, Midi Gel Dryer

The microprocessor of Midi Gel Dryer controls temperature from ambient +5°C to 90°C with timer from 0 to 999 mins to heat gels from base plate and connect with a vacuum pump to remove the moisture to dry gels homogeneously.

The surrounding groove design and the optimal sealing silicon rubber with mask ensure the optimal sealing when connecting with a vacuum pump.

#### Features:

- Drying Area: 210x310mm (LxW), 350x450mm (LxW)
- Microprocessor for temperature control
- User temperature calibration
- Timer with alarm
- 2 digital LED display.

#### Specifications:

Model	GED-3121	GED-4535
Drying Area (mm)	L210xW310	L350xW450
Display	Two of 4 digital LED	
Control	Digital Microprocessor controller	
Temperature Control Range	ambient to 90°C	
Temperature Increment	0.1°C	
Temperature Uniformity at 37°C	±0.2°C	
Temperature Calibration	Yes	
Timer	0~999 mins	
Operating Temperature	ambient to 40°C	
Weight	approx. 9.0kg	approx. 15.0kg



**GDS-01**

## GDS-01, Digimage System

The Digimage System is a simple, compact gel documentation system with a rear digital control panel. It contains a digital camera with a superb resolution of 14.7 megapixels. The image is viewed from a large 8" TFT colorful screen. For limited space, low budget requirements, the Digimage System can be operated computer free.

A variety of images can be captured from agarose and other fluorescent gels, colorimetric gels, auto radiography film, and blotting membrane. A safety switch is equipped to turn off the UV Transilluminator automatically when the front door is opened. Files can be saved in a variety of formats, including RAW format, for transfer to a computer for storage and analysis. The Digimage System can also directly connect to a thermal printer for printing the result immediately.

**This product is offered as a complete system for the user to perform image capture, including:** 1 x Digimage System hood • 1 x 147 mega pixels digital camera • 1 x DC coupler • 1 x lens adaptor • 1 x 8" colorful TFT screen • 1 x 2GB memory card • 1 x memory card reader • 1 x EtBr filter or SYBR Filter optional).



## Specifications:

Model	GDS-01
Camera	Cannon ® Power SHop G11
Type	5 x optical 14 x digital zoom digital camera
Effective Pixels	approx. 14.7 megapixels
CCD	1/1 7" high-density CCD, total pixels 15.0 million
Maximum Aperture	f/2.8 (W) - f/4.5 (T)
Shutter Speed	15 ~ 1/4000 sec.
Filters	+3 Close up filter and EtBr or SYBR Green filter (optional)
Storage Media	memory card
Computer Interface	USB 2.0 Hi-Speed (mini-B jack)
Video Out	NTSC 1 PAL
Darkroom	
Multi-power Source	For camera, inner white LED, TFT screen
Inner White light	2 x 3 watt white LED
Safety Device	Safety door switch
Unit Dimension (mm)	W290xD220xH320
Rated Voltage	110V ~ 240V
Unit Weight	approx. 6.1 kg
8" TFT Screen	
Type	8" TFT crystal screen
Resolution	800x600pixels
Brightness	350cd / m <sup>2</sup>
Constant Ratio	300 : 1
Display Mode	NTSC / PAL / SECAM mode auto switching





# EDX Pocket III

## Handheld X-ray Fluorescence Spectrometer

- Alloy Analyzer
- Rapid Minerals Analyzer
- Rapid RoHS Tester



Handheld High-performance On-site Analyzer





## An introduction to EDX Pocket III

EDX Pocket III is a Handheld X-ray Fluorescence Spectrometer specifically developed for on-site analysis by Skyray. They include RoHS Analyzers, Alloy Analyzers, Scrap Metals Recycling Analyzers, Mineral Analyzers, Precious Metals Analyzers and Soil Analyzers. They are the smallest, rapidest, most functional and most accurate XRF analyzers available on the market. They can be used widely in fields such as alloy analysis, minerals analysis, geographic analysis, precious metals analysis, scrap metals recycling analysis, RoHS testing and soil analysis. Moreover, it can also be used to perform Positive Material Identification (PMI) and verification.



**Years of brewing and development**

**Persistent efforts in quality pursuit**

**Optimized integration of high-end configurations**

**EDX-Pocket III is always outstanding!**


- Its streamlined design brings us powerful visual impact
- Its magnificent colors exhibits unique charm
- Its exquisite kernel displays beauty of science and technology
- Its prudent gunlock design provides secure “firewall” at the fullest
- Its portability shows us great concern to humanity

*Rapid Accurate Non-destructive  
Intuitive Lightweight Easy-to-use Safe*

## Main characteristics of EDX Pocket III

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- \* The instrument is small, light and portable, providing rapid and non-destructive on-site analysis of the samples.
- \* Figurative interface, flexible software operation, intuitive spectrum display and definite results.
- \* Several working curves are provided in the software, which can even be edited and renewed by the users upon test requirements.
- \* Optional GPS helps locate the tested sample when mining or surveying mines in the field.
- \* SD card with super large capacity is available. There is no limit of data storage.
- \* Attractive design and comfortable feel when held in hand.
- \* The carrying case has high strength and high sealing capacity, drop and shock proof as well.
- \* Faster analysis and better accuracy, delivering lab-quality results.
- \* Wide range of measurable elements: Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Sn, Hf, Ta, W, Re, Pb, Bi, Se, Sb, Pb, Au and Hg.
- \* Broad application fields: RoHS testing, alloy analysis, geographic analysis, minerals analysis, precious metals analysis, heavy metals analysis in soils, and scrap metals recycling analysis.



EDX Pocket III Handheld X-ray Fluorescence Spectrometer is rapid, accurate, non-destructive, portable, safe and reliable.

- ※ Rapid and accurate on-site analysis, giving a test in tens of seconds and saving time and money significantly.
- ※ Field based direct surface measurement can be done without sample preparation. Any sample type, including soil, rock, dirt, dreg, solid particles, liquid sediments, etc can be tested.
- ※ It has maximized flexibility with choice of analysis modes, ensuring good test results.
- ※ It can withstand all kinds of harsh environment in temperature between -20°C and 50°C. It is ideal for dusty, humid, and high-temperature conditions over long periods.
- ※ The instrument is easy and comfortable to use. High visualized. Brief training is needed.

## An introduction to EDX Pocket III specifications

<i>Working principle</i>	XRF analysis exploiting X-ray Fluorescence Spectrometry
<i>Measurable elements</i>	S-U
<i>Detector</i>	advanced thermoelectric cooling Si-PIN semiconductor X-ray detector with high performance and high energy resolution
<i>Excitation source</i>	mini 40kV/50μA X-ray tube, Ag/W anode target
<i>Data display</i>	high definition and high resolution PDA (Personal Digital Assistant), Windows CE operating system, Bluetooth communication, personal data handling and e-mail sending.
<i>Data storage</i>	Large capacity SD card and SD card reader enable the data to store on PC and print out
<i>Power supply</i>	operating time of two fully-charged Lithium batteries is no less than 8 hours
<i>Weight</i>	1.4 kilos(without battery)
<i>Overall size</i>	260×325×125mm (L×H×W)
<i>Ambient environment</i>	temperature-20℃ ~ +40℃
<i>Safety feature</i>	both PDA and software operations are protected by passwords. Unauthorized people are not allowed to operate.
<i>Standard accessories</i>	shock, pressure & water-proof carrying case with padlocks, 110v/220v general-purpose charger, large capacity SD memory card, SD card reader, two 4000mAh Lithium batteries, Lithium battery charger, PDA accessories, lab test stand (optional), etc.



## EDX Pocket III

### Application fields

## An Introduction to Alloy Analysis

**EDX Pocket III Handheld X-ray Fluorescence Spectrometer** can analyze all kinds of high and low alloy steel, stainless steel, tool steel, Chrome-Molybdenum Steel, Nickel alloy, Cobalt alloy, Nickel-Cobalt heat-resistant alloy, Titanium alloy, Copper alloy, Bronze, Zinc alloy and Tungsten alloy; it can also identify Grades of light Aluminum and Magnesium alloys through measuring other alloy elements.

Steels are alloys in which Iron is mixed with Carbon (major elements) and other elements such as Silicon, Manganese, Sulfur and Phosphor. Other elements are added to produce the chemical specifications for the desired steel grade. By determining the concentration of these elements, we know the properties and types of steels.

◆Chromium—Chromium is added to increase abrasion resistance, hardness and most of all corrosion resistance. Steel with chromium above 13% is regarded as stainless steel.

◆Manganese—Manganese is a very important alloying element in steel, which helps to produce texture and strengthen toughness and abrasion resistance. In the heat treatment and press process, it de-oxidizes the inner side of the liquid steel. Manganese is often seen in steels used to make scissors (except A-2, L-6 and CPM420V).

◆Molybdenum—Molybdenum is a carbonization agent, which is used to prevent embrittlement of certain steels. It keeps the strength of the steel at higher temperature. Molybdenum is seen in many types of steel, e.g. the air-hardening steel (e.g. A-2, ATS-34 ). Air-hardening steel contains 1% or more Molybdenum. Mo's function is to cause the steel to harden in the air.

◆Nickel—Nickel is used to improve strength, corrosion resistance and ductility of the steels. It is often seen in L-6\AUS-6 and AUS-8.

◆Silicon—Like Manganese, Silicon improves the strength of the steel. Further, it keeps the strength of steel during the production process.

◆Vanadium—Vanadium is added to improve the abrasion resistance and the ductility of the steels. Vanadium appears in many types of steel, such as M-2, Vascowear, CPM T440V and 420VA. The biggest difference between BG-42 and ATS-34 is that the former contains Vanadium.

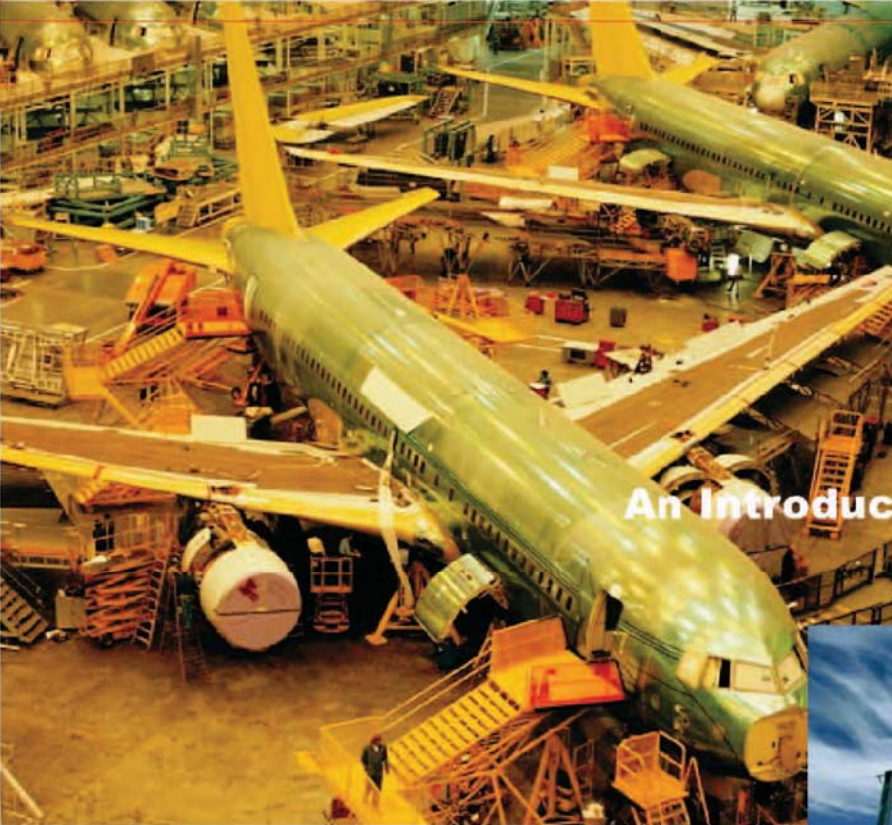
### Applied to:

- High-temperature and high-pressure industries: steel melting, boiler, pipeline and vessel manufacturing
- Industries such as non-ferrous metals, space and aviation, weaponry and shipbuilding

Material identification and quality assurance of high-temperature and high-pressure industries such as steel melting and boiler.







## EDX Pocket III Application fields

### An Introduction to Alloy Analysis



Alloy composition identification and quality assurance of high-tech industries such as shipbuilding and space and aviation industries

#### Alloy Grade Library and Measurable Standard Elements :

Extensive Alloy Grade Libraries: standard libraries of countries such as China (GB), USA (AISI, UNS, ASTM), Japan (JIS), France (NF), Russia (TOCT), Sweden (SS14), Britain (BS) and Germany (DIN). EDX Pocket III allows easy editing of grade libraries. The measurable standard elements include 26 elements Al, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Se, Zr, Nb, Mo, Pd, Cd, In, Sb, Hf, Ta, Pt, Pb, Ag, Sn, Bi and Au.



▲ Compliance and safety tests of spare parts in power and power station industries

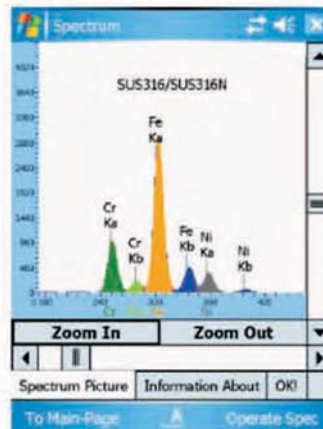




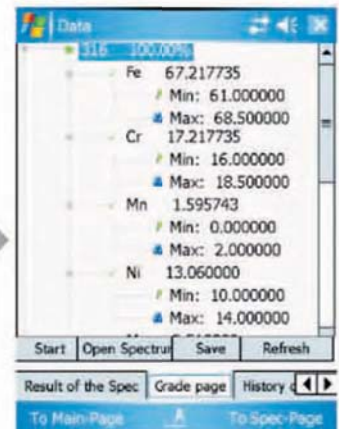
## EDX Pocket III

### Test Example and Analysis

As for finished products such as stainless steel, the users are more concerned about the concentration of Cr, Mn, Ni, Mo and Ti, for their varying concentrations may result in different uses of the steels. These alloying elements can be measured in the air.



▲Spectrum of grade analysis



▲Grade analysis display

The test sample is a national standard, with grade name 316. The measurement time is 30s and test environment is standard. The following are the measured results:

Element	316 Range of the content	Standard value	Tested value
Cr	16%~18%	17.07	17.22
Mn	0~2%	1.14	0.79
Fe	66%~72%	65.57	65.6
Ni	10%~14%	12.1	12.08
Cu	0~0.8%	0.073	0.054
Mo	2%~3%	2.92	2.92
Ti	0~0.05%	0.032	0.045
V	0~0.055	0.036	0.053
Co	0~0.1%	0.081	0.074
Al	0.00	0.00	0.05
Zn	0.00	0.00	0.00
Se	0.00	0.00	0.00
Zr	0.00	0.00	0.00
Nb	0.00	0.00	0.00
Pd	0.00	0.00	0.00
Ag	0.00	0.00	0.00
Cd	0.00	0.00	0.00
In	0.00	0.00	0.00
Sn	0.00	0.00	0.00
Sb	0.00	0.00	0.00
Hf	0.00	0.00	0.00
Ta	0.00	0.00	0.00
Pt	0.00	0.00	0.00
Au	0.00	0.00	0.00
Pb	0.00	0.00	0.00
Bi	0.00	0.00	0.00

▲ A test report of stainless steel

Corresponding grades

**SUS316J1/SUS316J11**

The main compositions of the stainless steel are Fe, Cr, Ni, Mo and Mn.



## EDX Pocket III Application fields

### An Introduction to Minerals Analysis

EDX Pocket III Handheld X-ray Fluorescence Spectrometer features rapid identification of mineral categories, auto qualitative and quantitative analysis of multi elements, different test options, free and unlimited adding of test modes and in-built intensity correction mode correcting deviation caused by different geometric shapes or uneven structural density. It is widely used in geography, metallurgy, rare earth, petroleum, environment monitoring, non-ferrous metals, food, agriculture, research institutes, colleges and mining enterprises.

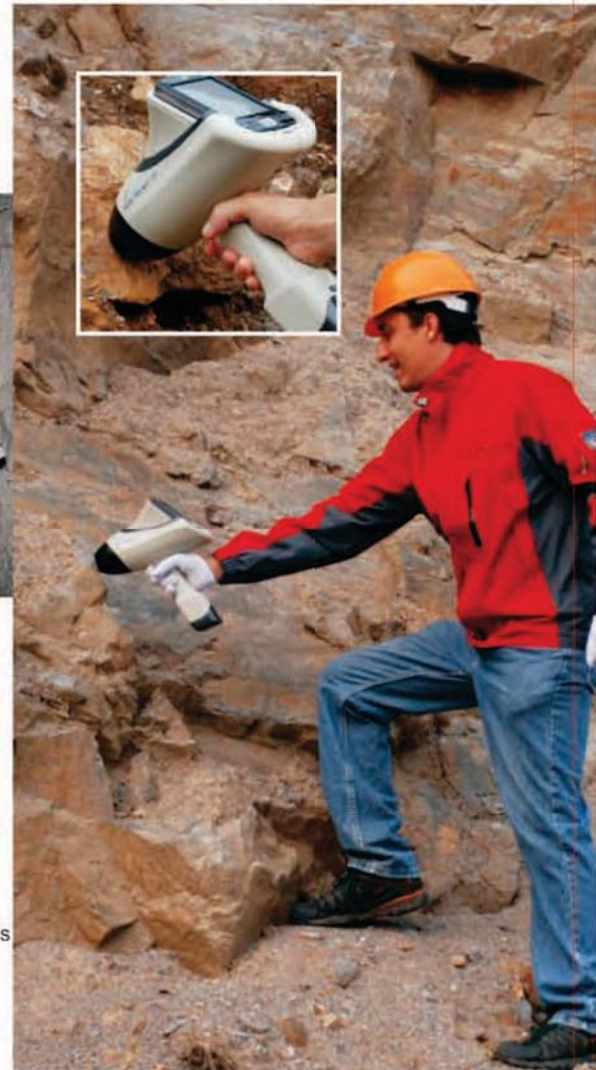


▲Ore tail analysis



▲Crude ore and ore concentrates analysis

▲Vein analysis



▲In-field minerals exploration and survey

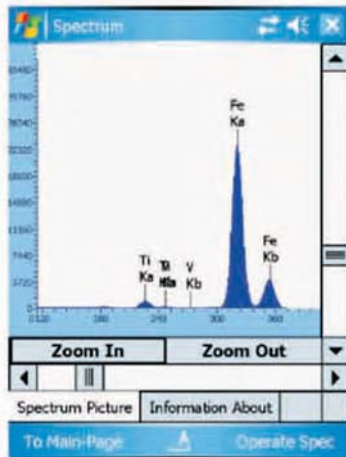
#### Applied to:

- Mineral exploration and survey
- In-situ inspection of rocks, soil, sediments and ores
- Drawing of atlas of mineral resources
- Analysis of crude ore, ore concentrates and tails in washing process
- Determination of grade of ores during the purchase of crude ores and ore concentrate
- In-field measurement of archeology

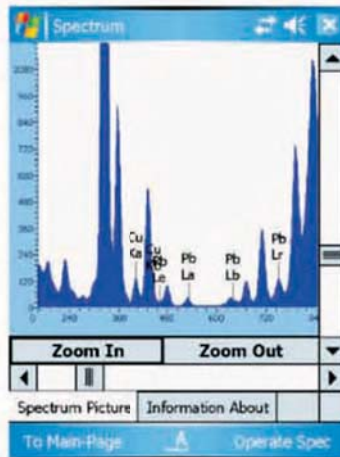


## EDX Pocket III Test Example and Analysis

### An Introduction to Minerals Analysis



▲ Vanadium-Iron sample GBW07224



▲ Sediment sample GBW07318



Element	Intensity	Content
Cr	5.11	0.0243
Fe	355.955	11.9
Ni	9.909124	0.0087
Cu	9.690593	0.0011
Zn	48.669674	0.0165
Ba	8.81	0.076
Pb	5.78	0.0066
V	4.805	0.019
Zr	27.215	0.0524
As	1.505	0.001029

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▲ Measurement results

The major compositions of the ores are Fe, Ba, Zr, and Ca.

● There is a wide range of samples in the geographic and mineral industries: rocks, soil, sediment, ores, etc. They have complicated compositions and require rapid and accurate qualitative and quantitative analysis on the site or in the field. Besides, if tests are to be carried out before large-scale production, they must produce results as quickly as possible. Therefore, two features are ascribed to this industry: sample complexity and measurement rapidness.

## EDX Pocket III Application fields

### An Introduction to Scrap Metals Recycling and Utilization

Scrap metals recycling is an indispensable aspect of circular economy, which has positive influence on environment protection and resources economization. Nowadays, nations around the world are propelling the cause of scrap metals recycling, waste electronic products reuse and circular economy transformation of steel and non-ferrous industries. China is currently making experiments on circular economy in key industries, areas, industrial parks, and cities.

Skyray **EDX Pocket III Handheld X-ray Fluorescence Spectrometer** is designed for on-site measurement and rapid sorting of volume scrap metals. It allows the scrap dealers to make rapid and reliable judgment on the raw material deals. As a powerful weapon used for metal identification in scrap and regeneration metals recycling, it has contributed significantly to the development of renewable material industry.



▲Overstock steels recycling in warehouses



#### Applied to:

- **Scrap metals recycling:** Rare metals: gilt,silver plating,silver point, Hg, Mo, Ni and W; Non-ferrous metals: Cu,Al,stainless steel, lead soldering tin, tin dross, zinc, etc
- **Waste electric appliances recycling:** household appliances such as air-conditioner, refrigerator, washing machine,TV and refrigerator
- **Waste commercial units recycling:** central air conditioning system, refrigeration equipment,electric wire and cable,battery cell, electric motor,machine tool,elevator, jack box, transformer and boiler



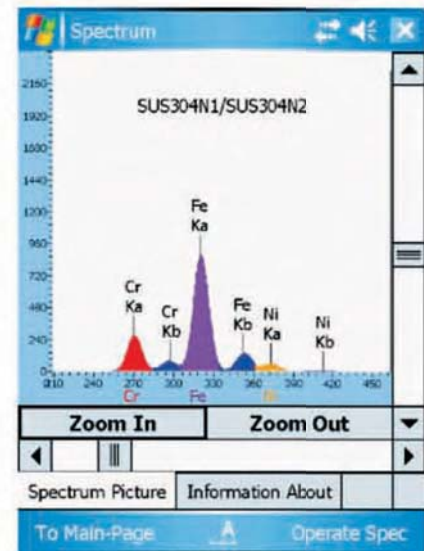
▲Test of cutting scraps or shavings

▲Sorting of metals in salvage station



## EDX Pocket III Test Example and Analysis

### An Introduction to Scrap Metals Recycling and Utilization



▲ Spectral analysis



Element	Intensity	Content
Cr	193.05	19.513111
Fe	654.203495	70.939709
Mn	22.601495	2.076465
Ni	58.2	7.460715
Cu	3.155911	ND
Mo	23.277595	ND

▲ Measurement Results

The major compositions of the scrap metals are Fe, Cr, Ni and Mn.

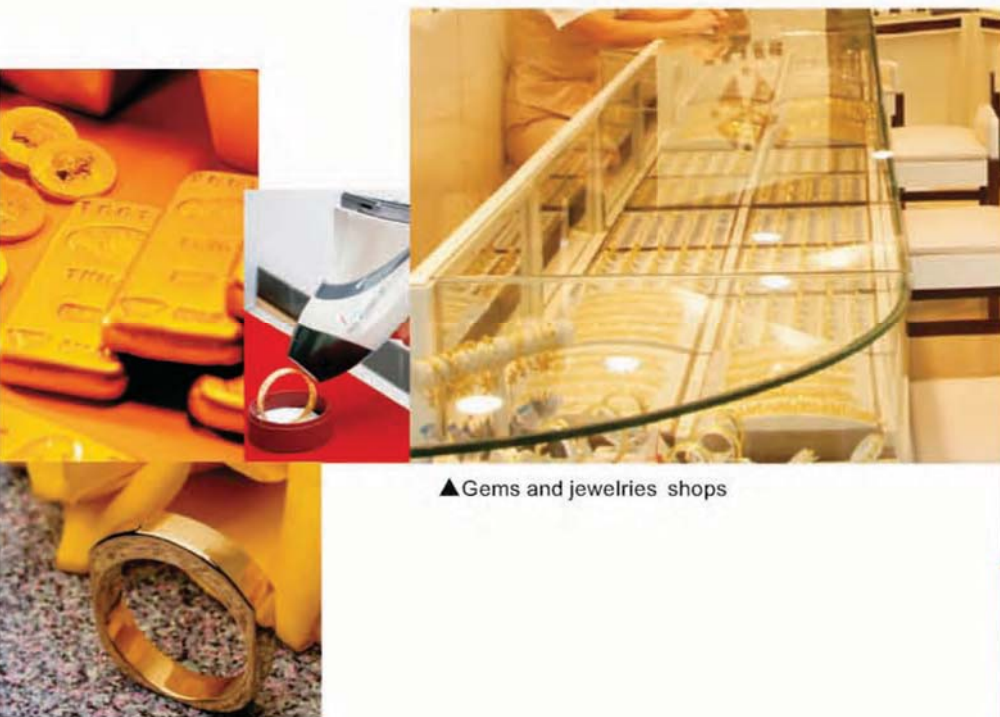


## EDX Pocket III Application fields

### An Introduction to Precious Metals Analysis

Precious metals refer to the eight metal elements Au, Ag and Ru, Rh, Pd, Os, Ir, Pt in Pt family. Most of these metals have beautiful colors. They are normally un-reactive as they have strong resistance to chemicals. They are usually made into jewelries or souvenirs. They also have wide industrial application.

**Skyray EDX Pocket III Handheld X-ray Fluorescence Spectrometer** can test grades and purity of the precious metals, identify grades of gemstones and conduct routine physical, compositional and structural analysis of jewelries.



▲Gems and jewelries shops



▲Test institutes of precious metals jewelries

#### Applied to:

- Measure concentration of precious metals Au, Pt, Ag and other jewelries
- Precious metals and jewelries processing industries
- Jewelry shops and test institutes
- Banks and electro plating industry





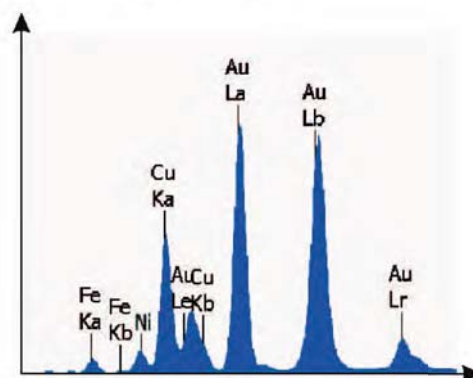
## EDX Pocket III Test Example and Analysis

### An Introduction to Precious Metals Analysis

EDX Pocket III tests precious metal fineness for gold, silver, platinum, palladium, etc in accordance with National Standard GB 1887 *Jewelry--Fineness of Precious Metal Alloys and Designation* and GB/T 18043 *Precious Metals Jewellery Content Non-destructive Test Method X-ray Fluorescence Spectrometry*.



▲ Jewelry test example



Spectral analysis

The major constituents of this jewelry are: Au, Zn, Ni, Ag and Cu; the Au content is 74.495%

Element	Intensity	Content
Au	0.484258	74.492227
Cu	0.196015	15.420389
Ni	0.122583	6.225294
Fe	0.090834	1.902314
Zn	0.080972	1.535448
Ag	0.012456	0.316642

Corresponding Jewelry Type

18k gold

Name of the precious metals jewelry	Types of jewelry	Content of metal elements	Type identifier
Au jewelry	18k gold	Au≥750‰	18K, G18K, G750, Au750
	Pure gold	Au≥990‰	Pure gold, G990, Au990
	Gold999	Au≥999‰	Gold999, G999, Au999
Ag jewelry	Ag jewelry	Ag≥925‰	S925, Ag925
	925 silver	Ag≥990‰	S990, Ag990
Pt jewelry	PT900	PT≥900‰	PT900
	PT950	PT≥950‰	PT950
	PT990	PT≥990‰	PT990
Pd jewelry	Pd950	Pd≥950‰	Pd950
	Pd990	Pd≥990‰	Pd990

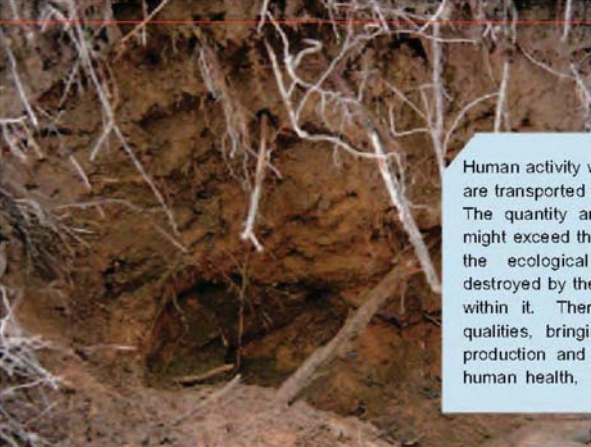
▲ Precious metals jewelry currently sold on the market

Name of the imitation jewelry	Remarks
Gold filled	gold-filled jewelry is usually composed of a layer of thin gold leaf bonded to base metals such as brass, silver, zinc and nickel. Some gold-filled pieces have the look and feel of the gold. Jewellery of this kind are usually stamped with 34kf or 18kf.
Gold plating	gold plating is to deposit a thin layer of gold with thickness of about 10 micrometer onto the surface of another base metal, most often copper, silver, zinc, nickel or their alloys, by electrolyzing means. Jewellery of this kind are usually stamped with 18KGP and 24KG.
Pinchbeck	pinchbeck is a gold imitation material made by brass, most often plated with gold on the surface.
Rare-earth gold	rare-earth gold does not contain gold. It is an alloy composed of copper, nickel and a small amount of rare earth elements.
Ti gold	Ti gold is also an imitation jewelry and is seldom seen on the market. The base metal is usually coated with Ti to form a new substance TiN.

▲ Imitation jewelry currently sold on the market







Human activity will produce different wastes, which are transported to the soils through different ways. The quantity and generation speed of the wastes might exceed the purifying ability of the soils. Then the ecological balance of the soils may be destroyed by the dominant accumulation of wastes within it. Therefore, soils lose functions and qualities, bringing a harmful effect on the growth, production and quality of the crops and that on human health, existence and development.

## EDX Pocket III Application fields

▲soil cutaway view

### An introduction to heavy metals in soils

Soils may be polluted by liquid and solid wastes from cities and industries dealing with heavy metals. The surface soil full of high intensity heavy metals, driven by wind or water forces, may continue to pollute the air, the surface water, the underground water and the ecological system, which altogether pose a great threat to human life and health. This is especially true when the pollutants are Hg, Cd, Pb, As, Cu, Zn, Ni, Co and V. Hg is usually found in waste water released by some plants. They will continue to exit in the soils for a very long time. Pb is usually found in car exhausts and steel melting industry. They are most often discovered in the soils on both sides of the roads. Arsenic is usually found in pesticide, antiseptic, rodenticide, weed killer and vulcanization ores exploration, separation and melting industry.

As a powerful weapon to keep soils safe, **EDX Pocket III Handheld X-ray Fluorescence Spectrometer** is widely used to provide multi-elemental analysis of all types of soils. It can also be used in archeology. The samples can be solids, dust, powder, scraps, slurry filtered substances and membranes.



▲On-site analysis of suspicious polluted area



▲Area identification of landfills

#### Applied to:

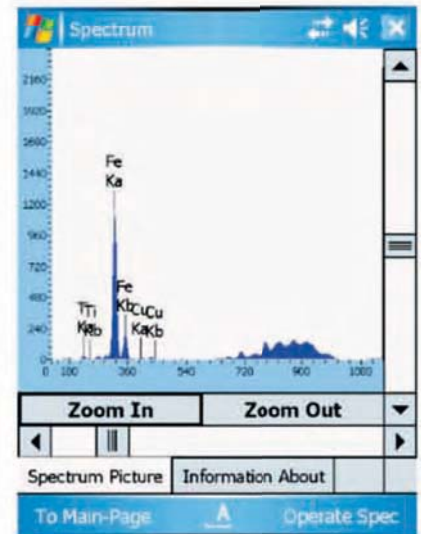
- Pre-sorting of contaminated soil before landfill
- Protection of water resource
- Environment protection institutes
- Archeology and soil research



▲Evaluation of soil ecological balance influenced by industrial liquid wastes

## EDX Pocket III Test Example and Analysis

### An Introduction to Precious Metals Analysis



▲ Spectrum of soil test



Data		
Element	Intensity	Content
Ca	0.011259	0.528252
Ti	0.026632	0.918795
V	0.005475	0.017697
Cr	0.040963	0.062305
Mn	0.048252	0.033808
Co	0	0
Fe	1.68686	6.339775
Ni	0.021085	0.001014
Cu	0.030997	0.011775
Zn	0.03379	0.017276
Br	0.00825	0
Zr	0.103853	0.105714

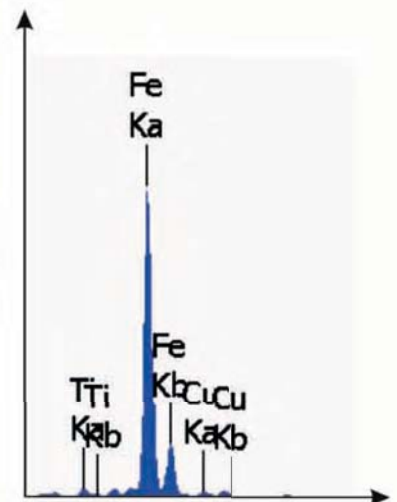
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▲ Results of soil test



Heavy metals contained in the soils are Fe, Ti, Ca, Zr, Cr, and Mn.



▲ Heavy metals spectrum in soils



# An Introduction to RoHS/Non-halogen Testing of Electric and Electronic Appliances and Toys

RoHS directive is also called green directive, which covers a wide range of products: electronic, electric, medical, communication, toys, and safety protection equipments. They include not only the whole machine products, but also the related spare parts, raw materials and packing materials.

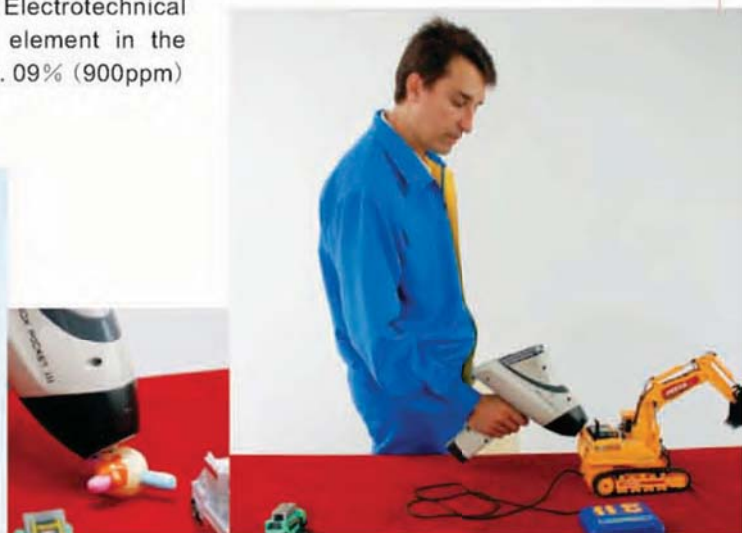
RoHS directive restricts the amount of Pb, Hg, Cr<sup>6+</sup>, PBB and PBDE contained in the related products to be less than 0.1%(1000ppm) and Cd 0.01%(100ppm). These restriction values are the legislative basis for determining whether the products comply with the directive or not.

According to Non-halogen Standard of International Electrotechnical Commission (IEC 61249-2-21), the maximum amount of Br element in the related products is restricted to 0.09% (900ppm), Cl to 0.09% (900ppm) and Br+Cl to 0.15% (1500ppm).

Skyray instrument has been engaged in the research, production and sales of X-ray fluorescence spectrometers since its establishment. Our **EDX Pocket Series Handheld X-ray Fluorescence Spectrometers** have received warm repercussion from the manufacturers of electric and electronic products for RoHS testing. After the enforcement of EU Toy Directive, they have become a powerful weapon of toy safety testing.

### Applied to:

- Production of electric components and parts
- Third party evaluation of electric spare parts and raw material suppliers
- Testing and verification of packing material
- Testing and identification of hazardous elements in batteries
- Testing of toys, stationeries, children goods and gifts



▲ Toy safety testing



Large-sized articles: tested without barrier or limitation.



Precision parts: accurate positioning, interference eliminated.



Non-destructive test of precious goods: with no damage to the objects.



## EDX Pocket III

### Application fields

#### Testing standard of substances restricted by RoHS Directive

Hazardous substances	Standards (mg/kg)
<b>Cd</b>	<b>100</b>
<b>Pb</b>	<b>1000</b>
<b>Hg</b>	<b>1000</b>
<b>Cr<sup>6+</sup></b>	<b>1000</b>
<b>PBBs</b>	<b>1000</b>
<b>PBDEs</b>	<b>1000</b>

#### Non-halogen Standard

Hazardous substances	Standards (mg/kg)
<b>Br</b>	<b>900</b>
<b>Cl</b>	<b>900</b>
<b>Br+Cl</b>	<b>1500</b>

#### Restricted substances and their typical uses

<b>Pb</b>	
Solders	
Paints	Pigments and driers
Glass materials	Pb is allowed in fluorescent lamp
Ceramic materials	Pb is allowed in certain electronic ceramic materials
Iron, aluminum & copper materials	A certain amount of Pb is allowed
Plastics	PVC stabilizer and pigments
Batteries	Pb is allowed in acidic batteries for vehicles

<b>Cd</b>	
Plastics	Stabilizer and pigments
Solders	Seldom used
Ceramics	Seldom used
Connectors	Relays and switches
Batteries	Cd is allowed in Ni-Cd batteries
Semiconductors	Optical sensors and solar cell panels

<b>Hg</b>	
Batteries	Prohibited (see battery directive)
Connectors	Relays and sensitive switches
Fluorescent lamps	A certain amount of Hg is allowed

<b>Cr<sup>6+</sup></b>	
Passivation layers	Commonly used for naked metal surfaces to enhance adhesion of plating layers
Anti-corrosive plating layers	Painting and plating layers
Chrome plating layers	Plating layer of chromium metal is not under control
Plasticizer	Commonly used to plastics plating process but not final products

<b>PBBs &amp; PBDEs</b>	
Plastics	Brominated flame retardants

#### What are RoHS and WEEE Directives?

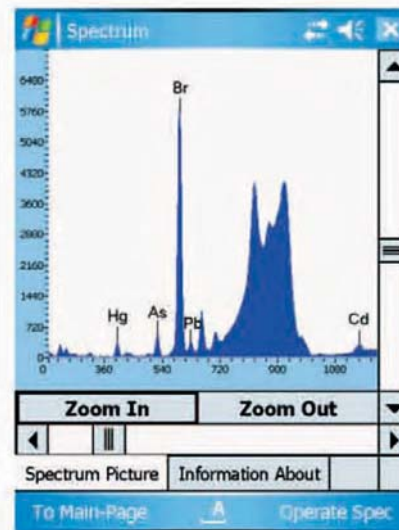
The European Union has adopted Directive 2002/95/EC on the restriction of certain hazardous substances (RoHS) and Directive 2002/95/EC on waste electrical and electronic equipment (WEEE) with their publication in the Official Journal of the European Union on February 13, 2003, which stipulates that the producer responsibility principle of WEEE comes into effect on August 13, 2005, and six hazardous substances are restricted to use in new electrical and electronic equipments put on market from July 1, 2006.



## EDX Pocket III

### Test Example and Analysis

# An Introduction to RoHS/Non-halogen Testing of Electric and Electronic Appliances and Toys



▲ Spectrum of toy test



Data			
	Element	Intensity	Content
▶	Br	494.715	808
	Cd	14.295	140.8
	Hg	24.4	25.3
	Pb	13.905	107.6
	As	34.62	30.9

Result of the Spec    History of the Mode

To Main-Page    To Spec-Page

▲ Results of toy test





Cd in this toy is RoHS incompliant:  
Content of Cd is 140.8ppm > 100ppm  
CBR in this toy is Non-halogen compliant:  
Content of Br is 808ppm < 1500ppm









Bench top freeze dry system offer an economical solution for processing light loads of aqueous samples specially designed for use by researchers small footprint simple operation.



## FDL-10N-50-Series, Bench Top Freeze Dryers

FDL-10N-50: 50°C lyophilizer(freeze-dryer)				
	FDL-10N-50-BA	FDL-10N-50-8M	FDL-10N-50-TD	FDL-10N-50-TD-MM
Picture				
Freeze temperature	-50°C			
Vacuum degree	<15Pa			
Freeze-dry area	0.12 m²		0.07 m²	
Tray load	1.2L		0.7L	
Water capture	3kg/24h			
Sample tray	Φ200mm x4		Φ180mm x3	
Power supply	220V 50Hz 800W			
Machine size (mm)	L380xW500xH340			
Character	Big cold tray hole, with sample pre-freeze, stainless 304# cold tray, no pipe in cold tray, anti rust transparent plastic cover for dry chamber, security and direct-viewing stainless sample shelf, the distance between trays is adjustable international standard interface to pump			

## FDL-10N-80-Series, Floor Freeze Dryers

FDL-10N-80: 80°C lyophilizer(freeze-dryer)				
	FDL-10N-80-BA	FDL-10N-80-8M	FDL-10N-80-TD	FDL-10N-80-TD-MM
Picture				
Freeze temperature	-80°C			
Vacuum degree	<15Pa			
Freeze-dry area	0.12 m <sup>2</sup>		0.07 m <sup>2</sup>	
Tray load	1.2L		0.7L	
Water capture	3kg/24h	4kg/24h	3kg/24h	
Sample tray	Φ200mm x4 lays		Φ180mm x3 lays	
Power supply	220V 50Hz 800W	220V 50Hz 1300W	220V 50Hz 800W	
Machine size (mm)	L500xW500xH750	L492xW540xH800	L492xW500xH750	L500xW500xH750
Character	Big cold tray hole, with sample pre-freeze, stainless 304# cold tray, no pipe in cold tray, anti rust transparent plastic cover for dry chamber, security and direct-viewing stainless sample shelf, the distance between trays is adjustable international standard interface to pump			

## FDL-10N-50/80T, Bench Top Freeze Dryers

FDL-10N-50 T type for multi-manifolds		
	FDL-10N-50T	FDL-10N-80T
Picture		
Brief	Basic components: 2L vacuum pump, 24pcs "T" shelf, 24pcs rubber valves. This type can be customized for your request	
Freeze temperature	-50°C	-80°C
Vacuum degree	<15Pa	
Water capture	3kg/24h	
Freeze-dry area	0.12m <sup>2</sup>	
Power supply	220V 50Hz 800W	
Machine size (mm)	L380xW500xH340	L500xW500xH750
Character	Big cold tray hole, with sample pre-freeze, stainless 304# cold tray, no pipe in cold tray, anti rust international standard interface to pump	

## FDL-18N-70-Series, Floor Freeze Dryers

FDL-18N-70: -70°C lyophilizer(freeze-dryer)					
					
	FDL-18N-70-NH	FDL-18N-70-BA	FDL-18N-70-TD	FDL-18N-70-8M	FDL-18N-70-TD-MM
Heat	Without heating	Basic type	Top-down stoppering	Multi-manifolds (8 manifolds)	Top-down stoppering & Multi-manifolds
Heating function	No	Yes			
Freeze temperature	< -70°C				
Vacuum degree	<13Pa				
Freeze-dry area	0.27m²	0.18	0.11	0.18	0.11
Tray load capacity	2.7L	1.8L	1.1L	1.8L	1.1L
Water capture	6kg/24h				
Sample tray	Φ200mm x6	Φ200mm x4	Φ200mm x3	Φ200mm x4	Φ200mm x3
Power supply	220V 50Hz 1800W				
Machine size (mm)	L540xW640xH920				





GC3400

### GC3400, Gas Chromatograph

**Applications:** GC3400 Gas Chromatograph, made according to international standards, its technical feature and index are in the world high level. The key components are imported from world famous suppliers. It is widely used for petrol-chemistry, environmental protection, epidemic prevention, pharmacology, scientific research, etc.

#### Features:

• **Self-diagnostic function:** 1) Core tests; 2) Automatic tests; 3) Extended tests; 4) Basic tests; Monitor the status of GC continuously. Once finding faults, it'll display the information and show the wrong zone and the settling method • **Self-protective function:** 1) Overrun temperature protection; 2) Short circuit hint; 3) TCD filament protection; 4) FID flameout hint; 5) PFD exposed-light protection; 6) Keyboard locking with password; etc., ensuring

normal running • **Simple operation, powerful automation:** 1) All parameters can be entered through keyboard with prompt function; 2) 4 sets of complete chromatography analysis methods can be stored and recalled automatically; An autosampler can be connected; Parameters can be modified instantly while the GC is running; 5) Chromatography analysis method can be activated for 99 times repeatedly at the same time. It's especially suitable for unattended operation • **More choices of injectors:** 1) On-Column Injector for Packed Column; 2) Flash Vaporization Injector for Packed Column 3) Automatic or manual gas inject valve; 4) Headspace sampler; 5) Thermal desorption system 6) Split/Splitless Capillary Injector; Three Injectors or two Split/Splitless Capillary Injectors can be fixed on GC • **More choices of detectors:** 1) TCD; 2) FID; 3) ECD; 4) FPD; 5) TSD Maximum of two TCDs or three different kinds of detectors can be installed • **Reactor:** 1) Internal; 2) external • **Time programming of detectors:** Each of detectors has 5-ramp programmable time control. Output-signal, attenuation range, and polarity can be set automatically • **Time programming of external events:** Providing 4 external events with 20-ramp, programmable time control. The optional GC relays may be used to automate valves, operate split/splitless capillary injectors, drive auxiliary devices, or switch signals between detector A and detector B in a run • **Many kind of special-purpose GC can be provided according to user's request.**



GC3420A

### GC3420A, Gas Chromatograph

#### Features:

• **Self-diagnostic function:** 1) Core tests; 2) Automatic tests; 3) Extended tests; 4) Basic tests; Monitor the status of GC continuously. Once finding faults, it'll display the information and show the wrong zone and the settling method • **Self-protective function:** 1) Overrun temperature protection; 2) Short circuit hint; 3) TCD filament protection; 4) FID flameout hint; 5) PFD exposed-light protection; 6) Keyboard locking with password; etc., ensuring normal running • **Simple operation, powerful automation:** 1) All parameters can be entered through keyboard with prompt function; 2) 4 sets of complete chromatography analysis methods can be stored and recalled automatically; Maximum of two TCDs or three different kinds of detectors can be installed • **Reactor:** 1) Internal; 2) external • **Time programming of detectors:** Each of detectors has 5-ramp programmable time control. Output-signal, attenuation range, and polarity can be set automatically • **Time programming of external events:** Providing 4 external events with 20-ramp programmable time control. The optional GC relays may be used to automate valves, operate split/splitless capillary injectors, drive auxiliary devices, or switch signals between detector A and detector B in a run. • **Many kind of special-purpose GC can be provided according to user's request.**



HPLC8100

### HPLC8100, High Performance Liquid Chromatograph

#### Description:

• Scientific and reasonable function and structure design satisfy your needs for accuracy and reproducibility to the maximum • Building-block modular design enables easy use and convenient maintenance • Rich function PC control and chromatograph data processing software make it simple for instrument control and data processing.

#### Innovation:

• High pressure solvent delivery pump adopting electronic pulsation suppression technology displacing traditional mechanical buffer to thoroughly solve the problem caused by frequent leakage of mechanical buffer, and to reduce the dead volume of solvent delivery system to the minimum • The wavelength positioning of Multi-wavelength UV-Vis detector is realized via the grating's turning which is directly controlled by the SCM(Single Chip Micryoco). It takes place the conventional sine-pole mechanism (monochromator), eliminating the error of wavelength positioning brought by the mechanical abrasion and returning error of the Guide-screw transmission, and also avoiding the monochromator's hitting accident which might be brought by false operation.

For detailed information look on our website: [www.mrclab.com](http://www.mrclab.com)

## Specialty Heating Mantles



KJL-2000

KJL-1000



KJLS-2000

KJLS-1000

Built-in electronic controller regulates heating element from ambient to 750°C, 2 ranges: low & high

- Durable housing is chemically resistant
- Accept a large range of flasks
- For maximum operator protection, models are grounded should spillage or flask breakage occur
- Units are designed with a built-in stainless steel liner that gives electrical & mechanical protection against spillage & enables easy cleaning
- All models include support rod holder.

## Three Flask Size In One Mantle

## Model KJL-1000

- For flasks up to 1000ml.
- Stepless heat control.
- Operating temperature up to 750°C.

Model KJL-2000 for flasks up to 2000ml

## Features:

- Three in one design accommodates 250, 500 or 1000ml round bottom flasks (KJL-1000, KJLS-1000).
- Three in one design accommodates 500, 1000 or 2000ml round bottom flasks (KJL-2000, KJLS-2000).
- Different vessel sizes, spill proof heater.
- Includes rear bracket for support rod.
- Stepless heat control up to 750°C (650°C with stirrer)
- Variable speed control up to 1800rpm (KJLS-1000, KJLS-2000).
- Heater on light.
- Element temperature range of ambient to 750°C.

## Heating Mantle With Magnetic Stirrers

## Model KJLS-1000/KJLS-2000

- Steeples heat control up to 650°C
- Variable speed control up to 1800 RPM

## Specifications:

Model	Temp. range	Capacity	Stirring	Dimensions	Weight	Watt
KJL-1000	up to 750°C	250-1000ml	-	W12xD17xD18cm	1.2kg	550
KJL-2000	up to 750°C	500-2000ml	-	W21xD20xD24cm	1.4kg	750
KJLS-1000	up to 650°C	250-1000ml	up to 1600rpm	W16xD17xD23cm	2.3kg	550
KJLS-2000	up to 650°C	500-2000ml	up to 1600rpm	W21xD20xD24cm	2.5kg	750

## BMN-C Serie, Heating Mantles For Beakers



Model	Capacity	Power
BMN-250C	250ml	200W
BMN-500C	500ml	300W
BMN-1000C	1000ml	400W
BMN-2000C	2000ml	500W
BMN-3000C	3000ml	600W
BMN-5000C	5000ml	700W

## Features:

Maximum 450°C operating temperature • Aluminium housed case, rigid housing to support the weight of the beaker • Provide uniform heating of beaker without the danger of open frame • For beaker capacity: 250ml, 500ml, 1 litre, 2 litre, 3 litre, 5 litre • Fabric mantles for effective heating & protection of glass beaker from thermal shock • Manual control- proportional voltage control from 0-100%.



## KJL-Series, Multi Unit Macro Kjeldahl Apparatus



KJL-6100

## Model KJL-6100, 6 Positions

Up to 6 flasks • 220 Volt (or 110V), 6x550 Watt •  
 Dimensions: (WxHxD) 80x19x20 cm (D includes rear  
 bracket for support rod) • Nett weight: 6.8 Kgs.



KJL-4100

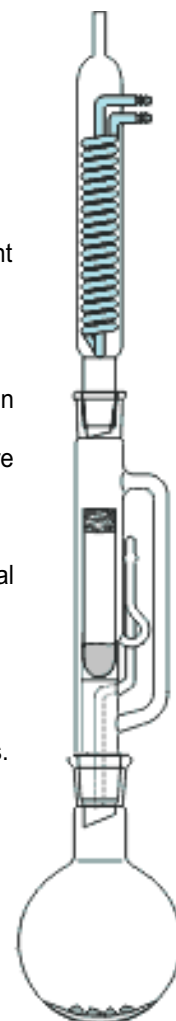
## Model: KJL-4100, 4 Positions

Up to 4 flasks • 220 Volt (or 110 V), 4 x 550 Watt •  
 Dimensions: (WxHxD) 60x19x20cm (D includes rear  
 bracket for support rod) • Net weight: 4.8 Kgs.

- For flasks 250 up to 1000 ml.
- Spillproof—Stainless Steel Heater.
- Stepless—heat control.
- Operating temperature: up to 750°C.
- Includes 4 support rods and 4 clamps.
- Durable housing is chemically resistant.
- Built-in electronic controller regulates element temperature to 750°C, 2 ranges: low & high.
- Robust aluminium construction permits operation of the units as required by extraction and distillation processes.
- "Heat on" light for each recess indicates when power is being supplied to the heater.
- For maximum operator protection, models are grounded should spillage or flask breakage occur.
- Units are designed with a built-in stainless steel liner that gives electrical and mechanical protection against spillage & enables easy cleaning.
- Lower profile for space-saving convenience.
- Ideal for repetitive extracting (kjeldahl, soxhlet, and other extraction procedure), refluxing and distilling laboratory applications.
- Analog controller built-in system.
- Rods & clamps are offered as standard.
- Ideal for all brands round flasks.
- Highly-processed aluminium case offers robust standing, easy handling.

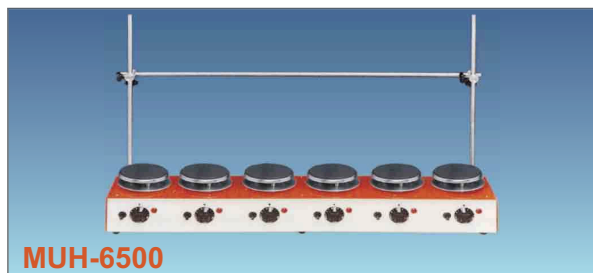
## Extraction Apparatus, Soxhlet

For cold extraction from consisting of round bottom flask with sicket NS 29/32.



Model	Extractor Capacity	Flask Capacity	Cone/Condenser Socket/Extr
21-452-49	70ml	100ml	34/35NS
21-452-55	100ml	250ml	45/40NS
21-452-59	150ml	250ml	45/40NS
21-452-63	200ml	250ml	45/40NS
21-452-65	250ml	500ml	45/40NS
21-452-67	300ml	500ml	60/46NS
21-452-73	500ml	1000ml	60/46NS

## MUH-Series, Multi Position Round Top Extraction Heater



MUH-6500

## Application:

- Allows you to run different projects concurrently or to make simultaneous multiple runs of the same project.
- Ideal for extraction, distillation, and digestion.
- Optional: Aluminium top mould for round bottom flasks up to 250ml/500ml for extraction apparatus soxhlet

The Multi Heating Apparatus offers such versatility that is suitable for many laboratory purposes: extractions, distillations, digestions, evaporation etc. The 6 separate heat controls allow the heaters to be used for several different projects or multiple runs of the same project. The Multi Heating Apparatus in conjunction with inter-changeable top mould for round bottom flasks - solves the most varied heating problems.

**Model MUH-6500** Six individual heat controls with pilot lights  
 • Built-in temperature regulator • For 6 places, 220 Volt (on request 115 V), 2700 Watts (6x450 W) • Approximate temp.: 40 - 450°C • Hotplate top 85 mm. dia. • Dimensions (WxHxD): 80x17x20 cm • Accesories: Optional: 6 interchangeable aluminum top moulds for round bottom flasks up to 100 ml or 250 to 500ml (Kjeldahl flasks 500-800 ml) • 4 support rods 800x12 mm. with 4 clamps.

**Model MUH-4500** as described above, but for 4 places 220 Volts 1800Watts (4x450 W). Dimen. (WxHxD): 60x17x20 cm.

# H HEATING MANTLES

Digital & Analog

## MN-C/MN-D Serie, Metal Case Mantles, Analog/Digital Control



Model Manual Control	Model Digital Control	Capacity	Power
MN-50C	MN-50D	50ml	60W
MN-100C	MN-100D	100ml	80W
MN-250C	MN-250D	250ml	200W
MN-500C	MN-500D	500ml	300W
MN-1000C	MN-1000D	1000ml	400W
MN-2000C	MN-2000D	2000ml	500W
MN-3000C	MN-3000D	3000ml	600W
MN-5000C	MN-5000D	5000ml	700W
MN-10LC	MN-10LD	10L	1300W

### Features:

Aluminum housing is chemical resistant, tough, lightweight and easy to clean • Built-in controller regulated element temperature to 450°C • 10 series mantles sizes available from 50 to 12liter • Unique air flow through ventilation slots beneath and around the rim and case keeps the exterior safe to touch • Flexible coiled heating element provides good heat transfer while absorbing shock minimizing risk of flask breakage • Heating element and insulation form an easily replaceable heating cartridge • A "Heater On" light indicates when power is being supplied to the heaters • Aluminium housed case, rigid housing to support the weight of the vessel • Provide uniform heating of vessel without the danger of open frame • Covering only the bottom half of the vessels & provide full view of the contents of the vessel • Fabric mantles for effective heating & protection of glass vessels from thermal shock • MN-C series manual control-proportional voltage control from 0-100% • MN-D Series with external probe for precise control of the sample.



## MNS Serie, Heat And Stir Cool Case Heating Mantle

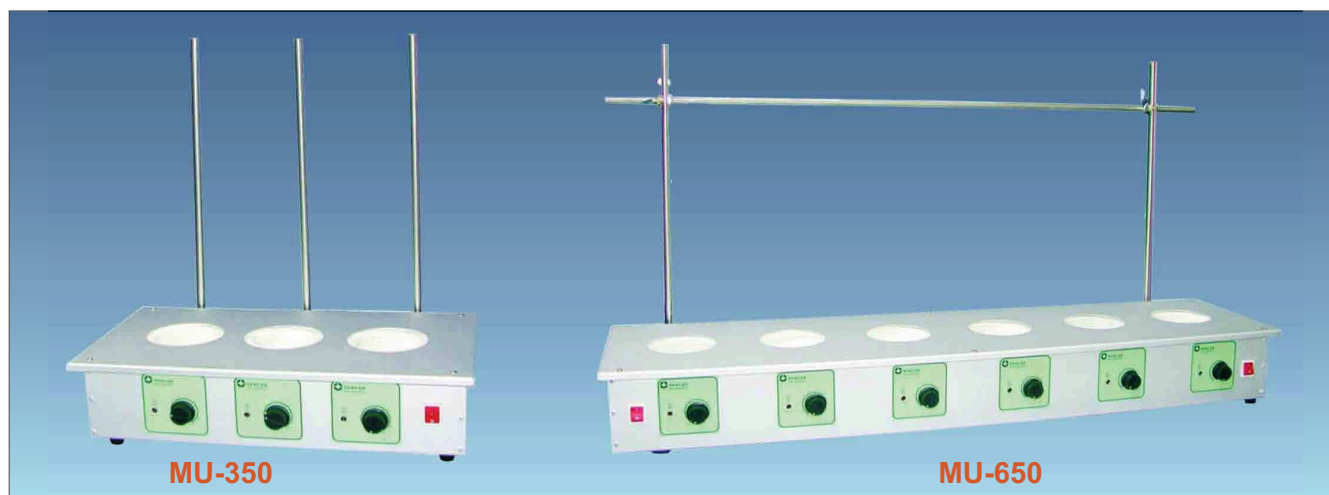


Model	Capacity	Speed range	Power
MNS-250	250ml	0-1200rpm	200W
MNS-500	500ml	0-1200rpm	300W
MNS-1000	1000ml	0-1200rpm	400W
MNS-2000	2000ml	0-1200rpm	500W
MNS-5000	5000ml	0-1200rpm	700W

### Features:

Built-in electronic controller • Designed for stirring and heating of liquid • Heating cartridge can be quickly and easily replaced in the event of failure. • Stirring is Independently controlled with a variable speed control up to 1200rpm • Built-in temperature control maintains element temperature from ambient to 450°C • Combines the traditional Electrothermal heating element with easily controlled solid state stirring • Vented case creates a unique air flow which allows housing to be safe to the touch when in use.





MU-350

MU-650

### Multi-position Heaters

Choice of three or six recesses • Build-in electronic controller • Choice of heater only or heater/stirrer combination • Vented case ensures case remains “cool to the touch”.

### Product Description:

- Individual built-in solid state electronic controls enable easy regulation of each heater, while removing sparking associated with mechanical switching.
- Units include three 0.5" (12.7mm) diameter support rods.
- The robust construction permits continuous operation of the units as required by routine extraction tests.
- MUS models incorporate a stirring module that allows the solution to be stirred and heated at the same time.
- MUS stirrer models include stirring control for each heater.
- Element temperature range to 450°C.
- Stirrer models include a stirring speed range of 50-1000 rpm.
- The coiled heating element is suspended within a thermal insulating cartridge to provide maximum heat transfer and support while removing sparking associated with mechanical switching.
- Heater cartridge can readily be replaced when necessary.
- For additional operator protection a safety earth (ground) screen encloses the heaters.
- Unique air flow ensures unit is safe to the touch.
- Pilot lights indicate when power is on, supplied to heaters and supplied to stirrers.

Models	Capacity	Units	Total watts	Dimension(mm)		
				H	W	L
MU-325	250 ml	3	600W	135	300	660
MU-350	500 ml	3	900W	135	300	660
MU-3100	1000 ml	3	1200W	170	300	750
MU-625	250 ml	6	1200W	135	300	1200
MU-650	500 ml	6	1800W	110	300	1200
MU-6100	1000 ml	6	2400W	170	300	1500

Models with stirrers	Capacity	Units	Speed Range	Total watts	Dimension(mm)		
					H	W	L
MUS-325	250 ml	3	0~1200 rpm	600W	210	300	660
MUS-350	500 ml	3	0~1200 rpm	900W	210	300	660
MUS-3100	1000 ml	3	0~1200 rpm	1200W	245	300	750
MUS-625	250 ml	6	0~1200 rpm	1200W	210	300	1200
MUS-650	500 ml	6	0~1200 rpm	1800W	210	300	1200
MUS-6100	1000 ml	6	0~1200 rpm	2400W	245	300	1500

## PL-600, Bench Top pH mV/Temp/Meter, Complete Kit



PL-600

- pH electrode (glass)
- Temperature probe (Pt 100)
- Electrode holder.
- Buffer solution 4 & 7
- AC/DC adaptor
- Instruction manual, Gift box

### Features:

- Microprocessor based designed. Simultaneous display pH & Temperature, C/F switchable.
- Compensation by ATC or MTC. Backlight for operating conveniently anytime.
- Stores up to 64 reading which you can download to your computer via R232 output.
- All reading feature stamp meeting GLP guidelines.

Model	PL-600		
	pH	mV	Temp.
Range	0-14pH	-2000 - 2000	-0.5 - 105°C
Accuracy	±0.01pH+1digit	0.1% mV/F.S	±0.2°C+1digit
Resolution	0.01pH	1mV	0.1°C
ATC	0-100°C		
Memory datalogging	64 reading		
Output	RS-232		
Power	DC 9V by AC adaptor		
Dimensions	200x160x65mm		
Weight	650g		

**Option:** Model: MS-11C magnetic stirrer with clamp for holding ph electrode & temp. probe

## 86505/86555, BenchTop PH/ORP/COND/TDS/Salt Meter/ With Printer



86505

**Features:** Programmable ph/orp(mv)/conductivity itds isalinity w/temperature & real time clock stamped (86555 witheasy & convenient to operate printer) • Powered by adaptor for continuously using super large lcd multi-display (or Batteries for 86555) • Collect data via rs232 by linking with a pc • Automatic ph buffer recognition for calibration up to 5 points hold function • Freezes the current readings • Maxi min review the memorized data • Reliable probes witemp. compensation • Convenient to view calibration information of probes • Ready indicator shows on lcd is selectable • Stores up to 99 memories stamped w / real time • Automatic or manual temp. compensation • Able to read ph slope(%)/offset(mv) displays • optional &

replacement accessories: condo electrode: vz830paz-graphite or vz831 paz-platinum , ph electrode:vz86p3az-atc,vz86p2az-w/o atc , orp electrode:vz850paz-platinum pin type , vz86p5az-platinum band type.

Model	86505 / 86555 with printer	
Cond. Range	0-19.99,0-199.9,0-1999uS/cm 0-19.99mS/cm,0-199.9mS/cm	
Cond. Accuracy	±(1%FS+1digit)Under good calibration	
Cond. Resolution	0.01 uS/0.1 uS/1 uS/0.01 mS/0.1 mS	
Cond. Sell constant	1.0	
mV Range	-1999-+1999mV	
mV Resolution	0.1mV (± 199.9mV) or 1mV(others)	
pH Accuracy	±0.02 pH	
TDS Range	(f: TDS conversion factor) 0.00~(19.99*f)ppm 0.0~(199.9*f)ppm 0~(1999*f)ppm 0.00~(19.99*f)ppt, 0.1~(199.9*f)ppt	
TDS Accuracy	±(1% FS+1 digit)	
TDS Resolution	0.01/0.111 ppm,0.01/0.1 ppt	
Salinity Range	0~11.38ppt 0~80.0ppt(8ased on NaCl)	
Salt Accuracy	±(1% FS+1 digit)	
Salt Resolution	0.01 ppt , 0.1 ppt	
Temp.(TpH & Tcond)	-5.0~80.0°C(23.0~176.0°F)	
Temp. Accuracy	±0.5°C(±0.9°F)	
Cond-TDS conversion factor	0.300-1.000	
Cond/Temp. coefficient	0.0 to 10.0% per °C	
Power	Adaptor 9VDC (Recommend Linear AC adaptor)	AA bat. X4pcs or Adaptor 9VDC (Optional)
Operating Temperature	5~40°C (41~104°F)	
Operating/storage RH	Up to 95% w/o condensation	
Storage Temperature	-20~60°C (-4~140°F)	
Dimensions (mm)	L217xW168xH58	L260xW169xH56.8
Weight	137g	150g





MP-103

**MP-103, PH/MV/Temp. Meter**

**Features:** Microprocessor based with splash proof housing. Rubber protective holster with magnetic • Simultaneous display pH and Temperature • Simple to calibrate by one keyboard for 3 points buffer. Calibration value can be adjusted as needed • Compensation by ATC or MTC. Indicate percentage of slope(PTS) after calibration • Low battery & consumption indicator. Auto shut off after 10 minutes of non use.

**Accessories:** Buffer solution 4 & 7 • 9V Battery • Electrode holder • Instruction manual • Gift box • pH electrode with Pt 100.

	pH	mV	Temp.
<b>Range</b>	0-14.00	±1999	0-100°C
<b>Accuracy</b>	±0.01+1 digit	±1+1 digit	±0.2°C+1 digit
<b>Resolution</b>	0.01	1	0.1°C
<b>Compensation</b>	ATC:0-100°C		
<b>Calibration</b>	pH 4.00, 7.00, 10.00		
<b>Battery</b>	9V		
<b>Dimensions</b>	108 x 75 x 30 mm		
<b>Weight</b>	135g (with battery)		



PH-207

**PH-207, PH/MV/Temp. Meter**

**Features:** Multi-measurement : pH, mV, Temperature • Dual display, show the pH & Temp. value at the same LCD display • High input impedance • Wide automatic & manual temperature compensation range • With the optional temp. probe for temp. compensation automatically or temperature measurement • The instrument build in mV (milli volt) measuring function, useful for making ion-selective, ORP, and other precise mV measurement • Built in Slope (PH 4) & Cal. (PH 7) calibration VR on the front panel, easy for single point or 2 points pH calibration • Heavy duty & compact housing case • Records Maximum, Minimum & Average readings with recall • Data hold • RS 232 PC serial interface.

<b>Display</b>	Dual function meter's display, 13mm(0.5"), Super large LCD display with contrast adjustment for best viewing angle
<b>Data Hold</b>	To hold the reading values on display
<b>Memory Recall</b>	Records Max., Min. & Average readings with RECALL
<b>Power off</b>	Auto shut off saves battery life, or manual off by push button
<b>Data Output</b>	RS232 PC serial Interface
<b>Standard Accessories</b>	Carring case, pH electrode, PE-01, ATC temp. probe, TP-07 PH 4 buffer solution, PH-04. PH 7 buffer solution, PH-07

Measurement	Range	Resolution	Accuracy
<b>PH</b>	0 to 14PH	0.01PH	±(0.03PH+2d)
<b>mV</b>	0 to 1999mV	1mV	±(0.5%+1d)
<b>Temp. (°C)</b>	0 to 65°C	0.1°C	±1°C(0-50°C) ±4°C(>50°C)
<b>Temp. (°F)</b>	32 to 150°F	0.1°F	±1.8°F(32-122°F) ±7.2°F(>122°F)



YK-23RP

**YK-23RP+ORP-14, ORP Meter+Electrode**

**Applications:** Use for oxidation/reduction measurement in plating baths, waste water monitoring and other applications such as Aquarium, Beverage, Fish Hatcheries, Food Processing, Photography, Laboratory, Quality Control, School & Colleges, Swimming Pools...

Model	YK-23RP
<b>Features</b>	Easy operation, compact size. Water resistance on the front panel. All function keys are used the rubber button.
<b>Display</b>	LCD, 21.5 mm ( 0.7" ) digit height
<b>Range</b>	-1,999 mV to +1,999 mV
<b>Resolution</b>	1 mV
<b>Accuracy</b>	± (0.8 % + 1d) @ 23 ± 5°C
<b>Data Hold</b>	To freeze the measured pH value on the display
<b>Power Supply</b>	DC 9V battery
<b>Dimensions</b>	205x68x30mm (8.1x2.7x1.2inch)
<b>Weight</b>	200 g/0.44 LB

Model	ORP-14
<b>Features</b>	Professional ORP electrode with high accuracy & extreme reliability
<b>Electrode Structure</b>	Silver-silver/chloride reference gel
<b>Measure Range</b>	-2,000 to 2,000 mV
<b>Body Material</b>	Epoxy
<b>Connector</b>	BNC
<b>Mechanical Protection</b>	With protection bottle on the electrode head
<b>Dimensions</b>	Body length - 150mm. Body Dia. - 12.5mm. Cable length - 3meter.

**CD-4303, 200 uS/2 mS/20 mS, RS-232, Conductivity Meter**

**Features:** Wide applications: water conditioning, aquariums, beverage, fish hatcheries, food processing, photography, laboratory, paper industry, quality control, school & college, water conditioning • Innovative feature with built-in automatic temperature compensation • Carbon rod electrode for long life • Dual LCD display, show both conductivity & temp. values • Heavy duty & compact housing case • Records Maximum, Minimum & Average readings with RECALL • Data Hold function • Auto shut off saves battery life • Operates from DC 9V battery • RS 232 PC serial interface.



Model	CD-4303
Measurement	Conductivity: 3 ranges, 199.9 uS, 1.999 mS, 19.99 mS
Memory Recall	Records Max., Min. & Average readings with recall facility
Power off	Manual off by push button or Auto shut off offer 10 minutes(not activated during memory record function)
Data Output	RS 232 PC serial interface
Power Supply	DC 9V battery
Weight	350g
Size	Main instrument: 180 x 72 x 32 mm (7.1 x 2.8 x 1.3 inch) Probe: Round, 22mm Dia. x 120mm length
Accessories Included	Instruction Manual - 1 PC. Sensor Probe - 1 PC. Carrying case - 1 PC.

**Conductivity:**

Range	Measurement	Resolution	Accuracy
200 uS	0.1 to 199.9 uS	0.1 uS	±(2%F.S. +1d) *F.S. - Full scale
2 mS	0.2 to 1.999 mS	0.001 mS	
20 mS	2 to 19.99 mS	0.01 mS	
* uS - micro Simens, mS - milli Simens			

**Temperature:**

Measuring Range	0°C to 60°C/ 32°F to 140°F
Resolution	0.1°C/ 0.1°F

**YK-2014CD, 200 uS/2 mS/20 mS, RS-232, Conductivity, TDS Meter - Glass Probe**

**Features:** Wide applications: water conditioning, aquariums, beverage, fish hatcheries, food processing, photography, laboratory, paper industry, plating industry, quality control, school & college, water conditioning • Can default auto power off or manual power off.



Model	YK-2014CD
Dimensions	Main instrument: 203x76x38mm, Pt glass conductivity probe: Round, 12.4mm Dia. x 162mm length. Available for low conductivity measurement, K value=1 approx.
Data Hold	Freeze the display reading
Memory Recall	Maximum & Minimum value
Data Output	RS 232 PC serial interface
Accessories Included	Instruction manual - 1 PC, Conductivity probe - 1 PC, Carrying case - 1 PC
Optional Accessories	1.413 mS Conductivity Standard solution, AC to DC 9V adapter, RS232 cable, UPGB-02, USB cable, USB-01, Data Acquisition software SW-U801-WIN

**Conductivity:**

Range	Measurement	Resolution	Accuracy
200 uS	0 to 200.0 uS	0.1 uS	±(2%F.S. +1d) *F.S. - Full scale
2 mS	0.2 to 2.000 mS	0.001 mS	
20 mS	2 to 20.00 mS	0.01 mS	
200 mS	20 to 200.0 mS	0.1 mS	

**TDS (Total Dissolved Solids)**

Range	Measurement	Resolution	Accuracy
200 PPM	0 to 132 PPM	0.1 PPM	±(2%F.S. +1d) *F.S. - Full scale
2000 PPM	132 to 1320 PPM	1 PPM	
20,000 PPM	1320 to 13,200 PPM	10 PPM	
200,000 PPM	13,200 to 132,000 PPM	100 PPM	

**Temperature:**

Function	Measuring Range	Resolution	Accuracy
°C	0°C to 60°C	0.1°C	0.8°C
°F	32°F to 140°F	0.1°F	1.5°F





DO-5510

**DO-5510, Dissolved Oxygen Meter**

**Features:** The polarographic type oxygen probe with an incorporated Temp. sensor, high precision measurement for Dissolved Oxygen(DO), Oxygen in air(O<sub>2</sub>) & Temp. measurement • Heavy duty dissolved oxygen probe, probe head can connect with BOD bottle • Automatic Temp. compensation from 0 to 50°C for sensor probe • Build in “ % SALT ” & “ Mountain Height ” compensation adjustment button • Microprocessor circuit • Records Maximum, Minimum value • RS 232 PC serial interface.

Model	DO-5510	
Display	Dual function meter's display, 13 mm(0.5"). Super large LCD display with contrast adjustment for best viewing angle.	
Measurement & Range	Dissolved Oxygen	0 to 20.0 mg/L(liter)
	Oxygen in Air	0 to 100.0 %
	Temperature	0 to 50°C
Resolution	Dissolved Oxygen	0.1 mg/L
	Oxygen in Air	0.1% O <sub>2</sub>
	Temperature	0.1
Accuracy (23±5°C)	Dissolved Oxygen	±0.4mg/L
	Oxygen in Air	±0.7% O <sub>2</sub>
	Temperature	±0.8°C/1.5°F
Sensor Structure	The polarographic type oxygen probe with an incorporated temperature sensor.	
Probe Compensation & Adg.	Temperature	0 to 50°C Automatic
	Salt	0 to 39% Salt
	Height (M.T.)	0 to 3900 meter
Memory Recall	Records Maximum, Minimum and Average readings with RECALL	

**WA-2015, pH/ORP, DO, CD/TDS Meter - Complete Kit**

**Features:** Professional bench type meter with large size LCD display with green color back light • One meter for multi purpose operation: pH/ORP, CD/TDS ( Total dissolved solids ), Dissolved Oxygen • Real time data logger ( record year, month, date, hour, minute, second ), 16,000 data logger • Auto data record, 16,000 Data logger no • Wide sampling time adjustment range from one second to 8 hours 59 minutes 59 seconds • Auto data logger, manual data logger • RS232 computer interface • Max., Min., Data hold • Can default auto power off or manual power off • Separate probe, easy for operation of different measurement environment • Wide applications: water conditioning, aquariums, beverage, fish hatcheries, food processing, photography, laboratory, paper industry, plating industry, quality control, school & college, water conditioning.

**Optional Accessories:** RS232 cable, UPGB-02, USB cable, USB-01, Data Acquisition software, SW-U801-WIN, Data Logger software, SW-DL2005.



WA-2015

**Electrical Specifications:**

Probes & accessories	pH electrode - PE-01 • ATC (automatic temp. probe) - TP-07 •
	pH 7 buffer solution - pH-07 • pH 4 buffer solution - pH-04 • ORP electrode - ORP-14

**pH/mV:**

Range	Measurement	Resolution	Accuracy
pH	0 to 14 pH	0.01 pH	± (0.02 pH + 2 d)
mV	0 to 1999 mV	1 mV	± (0.5% + 2 d)

**Conductivity (uS, mS):**

Range	Measurement	Resolution	Accuracy
200 uS	0 to 200.0 uS	0.1 uS	± (2% F.S.+1d) * F.S. - Full scale
2 mS	0.2 to 2.000 mS	0.001 mS	
20 mS	2 to 20.00 mS	0.01 mS	
200 mS	20 to 200.0 mS	0.1 mS	

**TDS (Total Dissolved Solids):**

Range	Measurement	Resolution	Accuracy
200 PPM	0 to 132 PPM	0.1 PPM	± (2% F.S.+1d) * F.S. - Full scale
2,000 PPM	132 to 1320 PPM	1 PPM	
20,000 PPM	1320 to 13,200 PPM	10 PPM	
200,000 PPM	13,200 to 132,000 PPM	100 PPM	

**Temperature:**

Function	Measuring Range	Resolution	Accuracy
°C	0°C to 60°C	0.1°C	± 0.8°C
°F	32°F to 140°F	0.1°F	± 1.5°F

**Dissolved Oxygen:**

Oxygen Probe	Optional, The polarographic type oxygen probe with		
Measurement & Range	Dissolved Oxygen	0 to 20.0mg/L (liter)	± 0.4 mg/L
	Oxygen in Air	0 to 100.0 %	± 0.7% O <sub>2</sub>
	Temperature	0 to 50°C	± 0.8°C/1.5°C
Resolution	Dissolved Oxygen	0.1 mg/L	± 0.4 mg/L
	Oxygen in Air	0.1 % O <sub>2</sub>	± 0.7% O <sub>2</sub>
	Temperature	0.1 °C	± 0.8°C/1.5°C
Probe Size	190mm x 28mm Dia. (7.5"x1.1" Dia.)		
Optional Accessories	Oxygen probe - OXPB-11 • Spare Probe head with diaphragm set - OXHD-04 • Probe-filling Electrolyte - OXEL-03		





**TU-2016**

## TU-2016, Turbidity Meter

### Features:

- Designed to meet ISO 7027.
- NTU (Nephelometric TURBIDITY Unit) measuring unit.
- Wide and auto measurement range : 0 to 1,000 NTU.
- High resolution : 0.01 NTU/1 NTU.
- The unique optics structure, enables the instrument to read low value of TURBIDITY to the high level up to 1,000 NTU.
- Four operation buttons and two calibration points, easy operation and guarantee the spec. accuracy.
- Jumbo LCD, easy readout.
- Microprocessor circuit assures maximum possible accuracy, provides special functions and features.
- Battery operated for field and on-site testing convenience.
- Data hold function for freezing the desired value on display.
- Records Maximum and Minimum readings with Recall.
- Heavy duty & compact housing with hard carrying case, designed for easy carry out & operation.
- Auto shut off is available to save battery life.
- Application : Test municipal water, food and beverage water, or other aqueous solution where fluid clarity is important.

Model	TU-2016
<b>Circuit</b>	Custom one-chip of microprocessor LSI circuit.
<b>Display</b>	LCD size: 41mm x 34mm
<b>Range</b>	0.00 to 50.00NTU, 50 to 1,000NTU • NTU : Nephelometric Turbidity Unit • Auto range
<b>Accuracy</b>	± 5 % F.S. or ± 0.5 NTU, which ever is greater
<b>Light source</b>	LED, 850nm
<b>Detector</b>	Photo diode
<b>Standard</b>	Meet ISO 7027.
<b>Response time</b>	Less than 10 seconds
<b>Sample volume needed</b>	10 mL
<b>Data Hold</b>	Freeze the display reading
<b>Memory Recall</b>	Maximum & Minimum value
<b>Display Sampling Time</b>	Approx. 1 second
<b>Power off</b>	Auto shut off saves battery life or manual off by push button.
<b>Calibration points</b>	0NTU, 100NTU
<b>Operating Temperature</b>	0 to 50°C
<b>Operating Humidity</b>	Less than 85% R.H.
<b>Power Supply</b>	DC 1.5 V battery ( UM4, AAA ) x 6 PCs, or equivalent
<b>Power Current</b>	Stand by: Approx. DC 3.5 mA. Testing: Approx. DC 36 mA
<b>Weight</b>	320 g/0.70 LB. @ Battery is included.
<b>Dimension</b>	155x76x62mm (6.1x3.0x2.4inch)
<b>Accessories Included</b>	Instruction manual - 1 PC Included • Testing bottle with 0 NTU standard solution - 1 PC • Testing bottle with 100 NTU standard solution....1 PC • Empty testing bottle - 2 PCs • Clean cloth - 1 PC • Clean solution (Distill water) - 1 bottle • Hard carrying case, CA-08 - 1 PC.
<b>Optional Accessories</b>	Testing bottle with 100 NTU standard solution, TU-100NTU • Empty testing bottle, 0601.



CL-2006

### CL-2006, Chlorine Meter

**Features:** The meter measures the Free and Total chlorine (CL) in the 0.00 to 3.50 ppm (mg/L) • The measuring method is an adaptation of the USEPA Method 330.5 for waste water and Standard Method 4500-Cl G for drinking water • The advanced optical system based on a special narrow band LED lamp that allows most accurate and repeatable reading • Friendly and powerful calibration function are able to validate good performance of your meter at any time • 1.00 ppm Free standard solution and 1.00 ppm Total standard solution are included as the standard accessories • The unique optics structure, enables the instrument to read with high resolution: 0.01 ppm (mg/L) • Splash waterproof on the front panel • Jumbo LCD, easy readout • Microprocessor circuit assures maximum possible accuracy, provides special functions and features • Battery operated for field and on-site testing convenience • Data hold function for freezing the desired value on display • Records Maximum and Minimum reading with Recall • Heavy duty & compact housing with hard carrying case, designed for easy carry out & operation • Auto shut off is available to save battery life • Application: Test swimming pool, municipal water, food and beverage water, or other aqueous solution where fluid clarity is important.

Model	CL-2006
<b>Circuit</b>	Custom one-chip of microprocessor LSI circuit
<b>Display</b>	LCD size: 41mm x 34mm
<b>Range</b>	Free chlorine (CL): 0.00 to 3.50 ppm (mg/L)
	Total chlorine (CL): 0.00 to 3.50ppm (mg/L)
<b>Resolution</b>	0.01ppm (mg/L)
<b>Accuracy</b>	± 0.02ppm (mg/L) @ 1.00ppm (mg/L)
<b>Light source</b>	LED, 525nm
<b>Light detector</b>	Photo diode
<b>Method</b>	The measuring method is an adaptation of the USEPA Method 330.5 & Standard Method 4500-Cl G. The reaction between free (total) chlorine & the DPD reagent cause a pink tint in the sample.
<b>Response time</b>	Less than 10 seconds
<b>Sample volume</b>	10 mL
<b>Data Hold</b>	Freeze the display reading
<b>Memory Recall</b>	Maximum & Minimum value
<b>Display Sampling Time</b>	Approx. 1 second
<b>Power off</b>	Auto shut off saves battery life or manual off by push button.
<b>Calibration points</b>	Zero chlorine. 1.00ppm (Free chlorine). 1.00ppm (Total chlorine).
<b>Operating Temperature</b>	0 to 50°C
<b>Operating Humidity</b>	Less than 85% R.H.
<b>Power Supply</b>	DC 1.5 V battery ( UM4, AAA ) x 6 PCs, or equivalent
<b>Power Current</b>	Stand by: Approx. DC 4 mA
	Testing: Approx. DC 12 mA
<b>Weight</b>	320 g/0.70 LB. @ Battery is included.
<b>Dimension</b>	155x76x62mm (6.1x3.0x2.4inch)
<b>Accessories Included</b>	Instruction manual - 1 PC Included • 1.0 ppm Free Chlorine standard solution, CF-01 - 1 PC • 1.0 ppm Total Chlorine standard solution, CT-01 - 1 PC • Zero Chlorine standard solution, CL-01 1 PC • Empty testing bottle - 2 PCs • Clean cloth - 1 PC • Free Chlorine DPD powder - 10 PCs • Total Chlorine DPD powder. - 10 PCs.
<b>Optional Accessories</b>	Free Chlorine DPD powder (10 PCs), Model : CFP-10 • Total Chlorine DPD powder (10 PCs), Model : CTP-10 • Empty testing bottle, Model : 0601 • 1.0 ppm Free Chlorine standard solution, Model : CF-01 • 1/0 ppm Total Chlorine standard solution, Model : CT-01 • Zero Chlorine standard solution, Model : CL-01.



**YK-2004AH**

## YK-2004AH, CFM Hot Wire Thermo Anemometer

Hot Wire Anemometer+Air Flow: CMM, CFM. 0.2 - 20.0 m/s, • high precision for low air velocity measurement • Telescope probe. m/s, ft/min, km/h, knots, mile/h, °C/°F • Max., Min., Data hold, RS-232.



**AM-4206M**

## AM-4206M, CFM Metal Vane Anemometer, 0.5 TO 35.0M/S

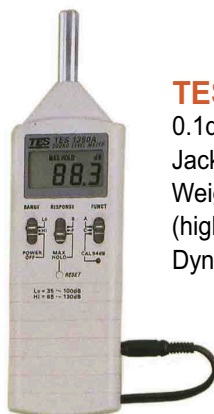
Anemometer With Air Flow & Air Velocity • CMM (m3/min.) • CFM (ftVmin. • m/s, ft/min, km/h, mile/h, knots, Temp.(°C/>°F 0.4 to 25.0 m/s., ± -P circuit • Max., Min., Memory recall button • Size: 180x72x32mm • RS-232, Metal Vane.



**AM-4216**

## AM-4216, CFM Mini Metal Vane Anemometer

Anemometer, 13 mm Dia. heavy mini vane, telescope probe High Temp, air velocity measurement, m/s, ft/min, km/h, knots, mile/h, Temp • 0.8 to 12.0m/s., /z-P circuit. RS-232, With the CMM m3/ min. CFM ftVmin. measurement.



## TES-1350A, Sound Level Meter

0.1dB Resolution • Maximum hold function • AUX Output Jacks • Range: ALO (low)Weighting: 35~100dB, AHI (high) Weighting: 65~130dB, CLO (low)Weighting: 35~100dB, CHI (high)Weighting: 65~130dB • Frequency: 31.5Hz~8KHz • Dynamic: 65dB • Display: 4 digital • Accuracy: ±2dB.

## LM-8100, Anemometer, Humidity Meter Light Meter, Thermometer

4 function: Humidity/Temp. measurement, Anemometer/ Temp. measurement, Light measurement Type K Thermometer. Humidity: 10 to 95 %RH, Temp. (°C/°F). Anemometer: 0.4 to 30 m/s, Temp. (°C/°F) • Light : auto range, 0 to 20,000 Lux, 0 to 1,860 Ft-cd • Type K Thermometer: -100 to 1300 °C, °C/°F • Data hold, Record (Max., Min.) • RS232/USB computer interface • Optional type K Temp. probe: TP-01,TP-02A, TP-03, TP-04 • Compact housing, easy carryout



## LM-8102, Anemometer, Humidity Meter, Light Meter, Thermometer, Sound Level Meter

Sound level meter: 30 to 130 dB, auto range • Humidity: 10 to 95 %RH, Temp.. (°C/°F) • Anemometer: 0.4 to 30 m/s, Temp.. (°C/°F) • Light: 0 to 20,000 Lux, 0 to 1,660 Ft-cd, auto range • Type K Thermometer: -100 to 1300 °C, °C/°F • Sound level meter meet IEC 61672 TYPE 2. Data hold, Record (Max., Min.), RS232/USB • 5 function, all in one.

## TES-1332A, Digital Light Meter, Up To 200000Lux+Analog Output

Cosine Angular corrected • Analog output jack for recording • Range: (±3%rdg ±0.5%f.s.) 200/2,000/20,000/200,000Lux.



## YK-37UVSD, UVA, UVC Light Meter

Realtime data logger, save the data into the SO memory card and can be down load to the Excel, extra software is no need • UVA, UVC light measurement. Select UVA, UVC function on front panel • Professional metallic housing UV light sensor • 2 ranges: 2 mW/cm' x 0.001 mW/cm'. 20 mW/cm' x 0.01 mW/cm' • Data hold, Record (Max., Min.) • RS2321USB computer interface • Patented.





### TES-1370, CO2 Analyzer

Range: 0 ~ 6000PPM • Humidity: 10% ~ 95%RH • Temperature Indication: -20°C ~ 60°C • Logging Capacity: 2000 Readings • Max./Min with time stamp • Alarm & Time setting.

### MCH-383SD, CO2/Humidity/Temperature Monitor

- Monitor with real time data logger, save the measuring data along the time information (year, month, date, minute, second) into the SD memory card and can be down load to the Excel, extra soft ware is no need.
- CO2 range: 0 to 4000 ppm.
- Humidity: 10 to 95 %RH.
- Temperature: 0 to 50.0°C, °C/°F.
- Show CO2, humidity and temperature value in the same LCD.
- Large LCD display, easy readout.
- Low power consumption and long battery life when use battery power.
- DC 1.5V ( UM-4, AAA ) battery x 6 PCs or DC 9V adapter in.
- RS232/USB computer interface.
- Size: 132x80x32mm..



TES-92

### TES-92, ElectroSmog Meter

#### Features:

50MHz to 3.5GHz Frequency range • For isotropic measurements of electromagnetic fields • Non-directional (isotropic). measurement with threechannel measurement probe • High dynamic range due to three-channel digital results processing • Configurable alarm threshold, and memory function • Easy to use.

#### Applications:

High frequency (RF) electromagnetic. wave field strength measurement • Mobil phone base station antenna radiation power density measurement • Wireless communication applications (CW, TDMA, GSM, DECT) • RF power measurement for transmitters • Wireless LAN (Wi-Fi) detection, installation • Spy camera, wireless bug finder • Cellular / Cordless phone radiation safety level • Microwave oven leakage detection • Personal living environment EMF safety.

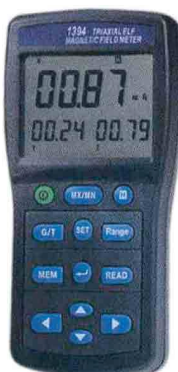


### EMF-810, MicroWave Leakage Detector

- Operating freq. range : 2.45 GHz 50 MHz.
- Measurement range : 0 to 1.999 mW/cm.2
- Peak hold, Alarm Setting.
- Application for measuring the EMF value of micro-wave frequency precisely.
- Useful equipment to detect the leakage of micro wave oven.

### MG-3002, Wide Range, General Purpose AC/DC Magnetic Meter

- Wide range, general purpose magnetic measurement.
- Unit: G (Gauss), mT (milli Tesla).
- DC/AC magnetic measurement.
- DC Range: 300.00 mT/3000.0 mT.
- AC Range: 150.00 mT/1500.0 mT.
- Resolution: 0.01 mT/0.1 mT, 0.1 G/1 G. DC polarity: N/S
- Sensor: Hall sensor.
- Zero, Data hold. Record (Max., Min.).
- RS232/USB computer interface.
- DC 9V battery (006 P) x1 PC or DC 9V adapter.



### TES-1394, EMF Tester, 3 Axis

- Display: 3-1/2 digits, Max. indication 1999.
- Range: 20/200/2000 milli Gauss
- Resolution: 0.01/0.1/1 milli Gauss.
- Accuracy:  $\pm(3\%+3d)$  at 50Hz/60Hz,  $\pm(5\%+3d)$  at 40 Hz/~200Hz.
- Number of Axis: Three axis.
- Band Width: 30 Hz~2000 Hz.
- Data logging Capacity: 999 Points.
- Sampling Time: Approx. 0.5 second.



## CR4-KTH, Temperature/Humidity Recorder, 0-100% Humidity, -40 To 55degC

Automatic Probe recognition • Front panel touch pad • Real Time data view • Battery backup (CR4) • Field replaceable probes • Field calibration of probes • Independent Channel Alarms (CR4) • PC software included (SL4) • (Windows 95 & 98 compatible only).



## MHB-382SD, Digital Temp. & Humid. Barometer

Monitor with real time data logger, save the measuring data along the time information (year, month, date, minute, second) into the SO memory card and can be down load to the Excel, extra software is no need • Humidity: 10 to 95 %RH • Temperature: 0 to 50.0 °C, °C/F • Barometer; 10 to 1100 hPa, mmHg, inHg • Show barometer, humidity and temperature value in the same LCD • Large LCD display, easy readout • Low power consumption and long battery life when use battery power • DC 1.5V ( UM-4, AAA ) battery x 6 PCs or DC 9V adapter in • RS232/USB computer interface. Size: 132x80x32mm.

## 445703, Indicator, RH/Temp. Big Digit

1" Digits on super large LCD • Max/Min with "reset" function • Humidity: 10 to 99% RH • Temp: 14 to 140°F or -10 to 60°C • Accuracy: ±5%RH; ±1.8°F, ±1°C.



## HT-315, Fast Response, %RH, Temp., Dew Point Humid. Meter

Measurement: Humidity, Temperature, Dew point • Resolution: 0.01 %RH, 0.01 degree. Fast response time • Separate probe. Pocket and compact housing case • Max., Min. measurement • Data hold. LCD display • DC 006P 9V battery • Size: 135x60x33 mm.

## 8808, Larg LCD Temp./RH Monitor & Logger

A very useful tool for iaq(indoor air quality) monitoring and control. Wall mountable super large lcd display easy to read and save space. Record range:Temp .. -20°C-70°C(-4°F-158°F), RH: 0-100% • Power requirement: Battery 4 pes xAAsize(Inciuded) • Accuracy: Temp .. ±0.6°C(0-500C),others ±1.2°C, RH:±.3%(1 0-90% at 25°C) others±.5% • Resolution: Temp .. 0 1°C/F,RH: 0.1% • Power weak: Battery icon display • LCD display: Super large size:50.9x65.5mm.

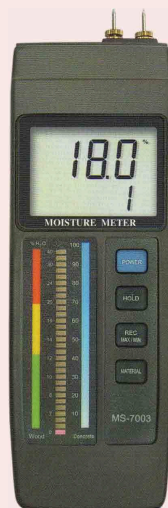
• Dimension: 120Lx93W x42Tmm, Programmable parameters:Sample points,logger sample interval start I stop date and time hi/lo alarm threshold unit selection, real time • Optional accessories: Salt calibration 0033AZ1,0075AZ1, 9 volt adaptor.



PMS-714

## PMS-714, Soil Moisture Meter

Range: 0 to 100% moisture content • Heavy duty probe,probe length: 20cm • Meter build test probe all in one, easy operation • Hold, record (Max, Min)q • IP-65 Water resistance, heavy duty • DC 1.5V battery (UM-4, AAA)X4.



## MS-7003, Bar Graph LED+LCD Moisture Meter

Designed to check the moisture level of wood, concrete, and other non-wood material • 6 % to 40 % moisture range on wood • 0 to 100% relative moisture value for Concrete and other non-wood material • Red LED bar graph indicator and LCD digital display • All in one, meter build in the test pins • Optional separate probe, available for remote measurement • Microprocessor circuit assures maximum possible accuracy, provides special functions and features • Records Maximum & Minimum reading with recall • Data hold function to freeze the desired value on display • Heavy duty & compact housing case, designed for easy carry out & operation • Built-in low battery indicator.





CR87HT220C

### CR87HT220C, High Temp. Recorder

Applications: Broad range of Temperature Applications • Measures and records temperature in air, gas, liquids, powders, solids, and semi-solids • Features/Benefits: Temperature range: 0°F to 1000°F (0°C to 500°C) • Remote readings from up to 2000 ft • Programmable speed and temperature ranges.



CR87B220C

### CR87B220C, Temperature Recorder, -40 to 50°C

Applications: Designed for Refrigerators/Freezers, Laboratory & Environmental Applications • Measures & records temperature in air, gas, liquids, powders, solids, and semi-solids • Features/Benefits: Temp. range: -40°F to 120°F (-40°C to 50°C) • Remote readings from up to 100 ft. (optional sensor wire p/n CABLE10T) • Programmable speed and temperature ranges.



### TM-5005, Thermometer, Big Digit Indoor/Outdoor

Large LCD display with 1" (25mm) digits • Simultaneous display of indoor/outdoor temperature • Indoor Range: 14 to 140°F (-10 to 60°C) • Outdoor Range: -58 to 158°F (-50 to 70°C). ±1.8°F / 1°C accuracy; 0.1°F/°C resolution.



### 42510A, IR Temp. Meter, -50 to 650°C

• IR Temperature range: -58 to 1200°F (-50 to 650°C). High resolution of 0.1° up to 199.9°. High/Low setpoints with audible alarm. 0.10 to 1.00 adjustable emissivity for better accuracy on different surfaces • Built-in laser pointer for easy targeting. Large backlit LCD display • Data Hold and Min/Max, overrange indicator, auto power off • Complete with 9V battery and pouch case.

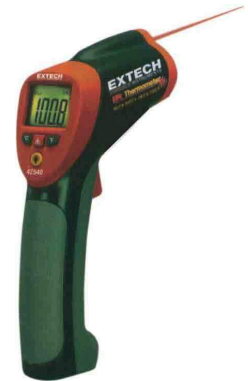


### 42540, High Temperature IR Thermometer

Widest temperature range from -58° to 1400°F (-50 to 760°C). Built-in laser pointer for easy targeting, high resolution of 0.1° up to 199.9°. High 16 to 1 distance to target ratio measures smaller surface areas at greater distances • Large backlit LCD display. 0.10 to 1.00 adjustable emissivity for better accuracy on different surfaces. MAX/MIN/AVG/DIF features display highest, lowest, average, and MAX minus MIN values. Automatic Data Hold, auto power off.

### 42545, IR Temp. Meter, -58 to 1000°C

Wide temperature range from -58 to 1832°F (-50 to 1000°C) • Built-in laser pointer for easy targeting • Large backlit LCD display • Adjustable emissivity High resolution of 0.1° up to 199.9° • High and low alarm set points.



### 42570, Dual Laser InfraRed Thermometer

High 50:1 distance to target ratio measures smaller surface areas at greater distances • Dual Laser Targeting indicates ideal measuring distance when two laser points converge to 1" target spot • IR Temp. range: -58 to 3992°F (-50 to 2200°C) • Type K thermocouple input from -58 to 2498°F (-50 to 1370°C) • White backlit multifunction LCD display with bargraph • Fast 100 millisecond response time • MAX/MIN/AVG/DIF feature displays highest, lowest, average, & MAX minus Min values • Adjustable emissivity increases

measurement accuracy for different surfaces • Adjustable High/Low set points with audible alarm alerts user when temperature exceeds the programmed set points • USB interface • Double molded housing • Complete with Type K Temperature probe, USB cable and software, carrying case and 9V battery.







PM-9100

## PM-9100/9102/9107, Manometer, Dual & Differential Input.

Dual & differential input, 200/2000/7000 mbar maximum range • Application: Industrial, laboratory, heating, ventilation, medical hospital, used for air or not corrosive and not ionized gas & liquid • Sensor is built inside the housing. Single lugs for pipe connection • 8 kind display units (mbar, psi, Kg/cm<sup>2</sup>, mm Hg, inch Hg, meter H<sub>2</sub>O, inch H<sub>2</sub>O, Atmosphere) select by pushbutton on the front panel • Records max. & min. readings • Zero button on the front panel, easy to offset the zero value • Data Hold. RS232 PC serial interface, can match the personal computer used as the Data Logger, Recorder.... and other modern pressure measuring system.

## PS-9302, Advanced Digital Pressure Meter+ Sensor (PS-100)

Meter connects with 2, 5, 10, 20, 50, 100, 400 bar sensor • no calibration procedures are necessary when change a new sensor. Bar, PSI, Kg/cm<sup>2</sup>, inch/Hg, mm/Hg, inch/H<sub>2</sub>O, meter/H<sub>2</sub>O, Atmosphere • Data hold, Memory (Max., Min.) • RS232. Size: 180x72x32mm.



## PS100-Series, Pressure Sensor

Pressure sensor connected with PS-9302

- PS100-2BAR : 2 bar sensor.
- PS100-5BAR : 5 bar sensor.
- PS100-10BAR : 10 bar sensor.
- PS100-20BAR : 20 bar sensor.
- PS100-50BAR : 50 bar sensor.
- PS100-100BAR : 100 bar sensor.
- PS100-400BAR : 400 bar sensor

## VC-9200, Vacuum Meter

- 1125 torr x 1 torr, 1500 mbar x 1 mbar.
- Units : torr, mm Hg, micron, KPa, Pa, inch Hg, psi.
- RS232, Hold, Record (Max., Min.).
- Heavy duty vacuum sensor used for air, oil gas...
- Application : Automobile, Industrial, laboratory, heating, ventilation, medical hospital...



KA-7531

## KA-7531, Simulator, Thermocouples, mV, V, mA, Hz

### Features:

- Universal manual simulator for simulating temperature sensors and process variables when testing measuring instruments, regulators, & other equipment.
- Pt100 simulation with 5 fixed resistors in 4-conductor technology Voltage and thermocouples simulation with 16-bit D/A converter, current simulation with 16-bit D/A converter frequency and pulse generator with quartz-crystal oscillator continuity check with settable threshold.
- All signals are available at the same time.
- Signals can be set either manually or automatically, in step or ramp form.
- All signals and all the programming can be shown on the illuminated graphics display.
- Connection of peripherals via clamp connectors, cable with anti-kink protective sleeve and strain relief.

- Power supply via battery, mains unit, USB cable ZA 1919-DKUV or connection to RS422 network distributor with connector ZAS099-FSV.
- Modem, compact housing - also suitable for DIN top-hat rail mounting.
- Option of PC-controlled operation via all data cables, also networked with settable device address via network distributor & RS422 connector.



5900AV

## 5900AV, Voltage & Current Loop Simulator

- Rugged design for handheld or bench top use
- Large 3-1/2 digit LCD built into adjustable "flip-up" cover
- Precision source for calibrating process devices & measuring DC process signals from 0 to 24 mA & 0 to 10V
- High accuracy to 0.075 % & drives current loads to 350ohm
- Range: Source-0-24 mA, 0-10V, Measure-0-50 mA, 0-19.99V
- Resolution: 0.01/0.1mA, 1/10 mV • Accuracy: ±0.075% of reading +1 digit
- Power: 9V or AC Adaptor(optional)
- Dimensions: 96 x 120 x 46 mm(folded)
- Weight: 260 g (with battery).



CM-8825FN

### CM-8825FN, Coating Thickness Meters

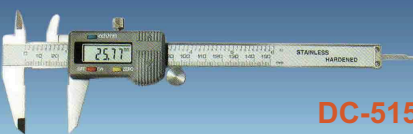
Measuring Range: 0-50mil •  
Resolution: 0.5mil • Accuracy: 1~3%  
• Min. Measuring area: 6mm • Min.  
Sample Thickness: 0.3mm.



CM-8829S

### CM-8829S, Coating Thickness Meter

Measuring Range: 0-50mil •  
Resolution: 1mil • Accuracy: 1~3%  
• Min. Measuring area: 5mm •  
Min. Sample Thickness: 0.3mm.



DC-515

### DC-515, Digital Caliber

**DC-515:** 150mm x 0.01mm, 6inch x 0.0005" mm/inch select, zero button •  
1.5 V silver oxide battery, long life •  
Size: 235x75x15mm.



### TACO-30, Photo/Contact Tachometer, Pocket Type

- Mini pocket size, easy carryout.
- Photo tach. : 5 to 100,000 RPM  
Contact tach. : 0.5 to 19,999 RPM.  
Surface speed: m/min, ft/min.
- Laser beam for Photo tachometer, long measuring distance.
- LCD display, RS-232USB interface.
- Patented.
- DC 1.5V battery ( UM-4, AAA ) x 4.

### DT-2239A, Portable Digital Stroboscope

- Range : 100 - 10,000 RPM.
- Accuracy : ( 0.05 % + 1 d ). Xenon flash tube.
- Display : 10 mm red LED.
- Size : 210 x 120 x 120 mm.



### VB-8212/8213, Vibration Meters+Sensor

**VB-8212:** Separate professional vibration probe •  
Velocity: 200 mm/s • Acceleration: 200 m/s<sup>2</sup>. RMS,  
Peak, RS232, Hold, Record (Max., Min.) • Build-in  
Metric & Imperial display unit.

**VB-8213:** Acceleration : 200 m/s<sup>2</sup>. Velocity : 200  
mm/s. Displacement : 2.0 mm • Max hold, peak value,  
data hold. Memory (Max., Min.) • LCD display with bar  
graph. 500 point data logger. Zero adjustment, RS232  
computer interface • Optional data transmission  
software, SW-DL2005 • Accelerator and hard carrying  
case are included.



### DI-800, Laser Distance Meter

Great product very easy to use and  
set up • One tool that everyone from the professional the  
DIYer • Bnglncsp vertical and horizontal lines for layout  
• Two laser lines with adjustable angle 0-180degree for  
more Complicated work • Taking field  
measurements and checking for plumb and level so there  
are no surprises later • Using for everything from  
installing cabinets and trim to hanging Pictures on the  
wall • Backlight available.



DC-516

### DC-516, Digital Micrometer

**DC-516:** 25mm x 0.001mm, 1inch  
x 0.00005" • Accuracy: 0.002mm.  
mm/inch select, zero button. 1.5V  
silver oxide battery, long life • Size:  
156x56x22mm.





ARIMAD-3000

### Arimad Advantage:

Arimad reflects changes taking place in the development of the plant.

Typical samples can be taken from various fields with immediate results.

Irrigation scheduling based on Arimad enable postponement of over irrigation and result in water economies. A frequent check of plant's water, which causes a reduction in yield. The correct use of Arimad helps to fix an exact water allocation. The growth of the plant remains controlled from the first stage of irrigation. A significant correlation is established between the water potential of the plant and its yield.

An approximate indication can be given as to recommended indications for watering cotton: Sprinkler irrigation - 18 bar. Drip irrigation - 14 bar.

Adjustments need to be made for every crop for different climatic conditions. If tests show a deviation from recommended averages, a modification of the irrigation schedule should be adapted:

High tension values - immediate application & increasing amount of water.

Low tension values - reduction of the water application  
Arimad is already widely used in different climatic regions.

Warranty - one year (excluding damage).

Spare parts - supply guaranteed.

Website : [www.chromtech.net.au](http://www.chromtech.net.au)

E-mail: [info@chromtech.net.au](mailto:info@chromtech.net.au)

Tel No : 03 9762 2034 . . . in AUSTRALIA

### ARIMAD-3000

#### An Instrument For Measuring The Water Potential Of Plants

**Arimad** uses a pressure chamber of the "Schulander" type to measure water potential of plants. This Indicates:

- Prevailing soil moisture condition;
- Influence of environment factors
- State of water within the plant

**Arimad** is light and portable. It can be operated easily by one person anywhere.

**Arimad** tests are simple and short. The five steps are:

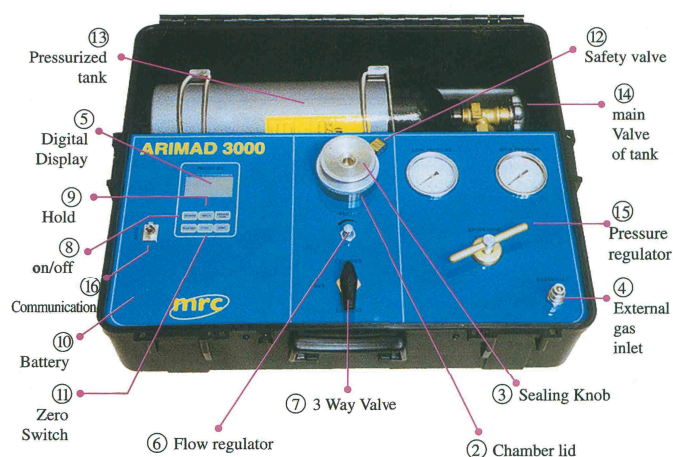
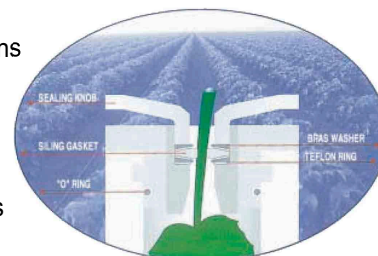
- Selecting a representative leaf;
- Preparing the instrument;
- Inserting pressure in the chamber;
- Reading the plant's water potential.

**Arimad** is a plant tester in contrast to other instrument switch test soils or climatic conditions. The pressure chamber method demonstrates the plant's reaction to moisture excess or deficiency. This data will determine an exact irrigation schedule.

### General Observations:

The water potential imply changes in growth, proteins & photo synthetics.

Hence, an accurate picture of developmental changes within the crop is portrayed.







### SMZ-168-BL/TL, Advanced Zoom Stereo Microscopes

The SMZ-168 provides a zoom ratio of 1:6.7 with excellent optical performance, ultra long working distance, unbeatable depth of view as well as an extra large and comfortable working surface.

MRC introduces a new zoom stereo microscope - the SMZ-168 with continuous zoom range from 0.75X to 5X, complete image parfocality, 23mm field of view & using MRC's established high-performance optics with amazing clarity and depth of view.

**Optical System:** High Resolution Stereo Image • Zoom Magnification Click Stops • Anti-Fungus Properties.

**Focusing Block:** Ball bearing focusing mechanisms • 50mm focusing range • 76mm inner head mount.

**Base Stand:** Streamlined base stand • large working area • 12V/10W Halogen transmitted light (intensity control) • Universal power input 110V - 220V.

Model	SMZ-168-BL	SMZ-168-TL
Optical system	Greenough	Greenough
Total magnification	2.25X~320X	2.25X~320X
Zoom body magnification	0.75x~5x	0.75x~5x
Zoom ratio	1:6.7	1:6.7
Eyepiece	WF10x/23 high eyepoint	WF10x/23 high eyepoint
Interpupillary distance	52mm~79mm	52mm~79mm
Diopter adjustment	±5°	±5°
Observation angle	±35°	±35°
Working distance	113mm	113mm
Choice of eyepiece	WF5X/23; WF6.25X/23; WF10X/21; WF15X/17; WF20X/13; WF30X/8; WF32X/8	WF5X/23; WF6.25X/23; WF10X/21; WF15X/17; WF20X/13; WF30X/8; WF32X/8
Additional objectives available	0.3x WD=343mm, 0.5x WD=200mm, 0.75x WD=130mm, 1.5x WD=54mm, 2x WD=34.5mm	0.3x WD=343mm, 0.5x WD=200mm, 0.75x WD=130mm, 1.5x WD=54mm, 2x WD=34.5mm
Max. magnification	320x	320x
Max. field of view	102mm	102mm
Max. working distance	343mm	343mm
Top light	12V/10W Halogen	12V/10W Halogen
Bottom light	12V/10W Halogen	12V/10W Halogen
Photo & video adapter		Photo & video adapter 1/3" CCD available

### Accessories:

#### Auxiliary Objectives

0.3X W.D. 324mm AX6602607	0.5X W.D. 192mm AX6602608	0.63X W.D. 156mm AX6602643
0.75X W.D. 127mm AX6602609	1.5X W.D. 50mm AX6602610	2X W.D. 34.5mm AX6602611

#### Camera Adapters

2X Photo Adapter 35mm SLR Camera AX6602603	0.35X CCD Adapter 1/3" CCD Camera AX6602602	0.65X CCD Adapter 1/2" CCD Camera SW0113R5

#### Mechanical Stage

Base stand mountable Max. X distance: 75mm Max. Y distance: 50mm Dimension in mm: 222.8(w) x 170(l) x 29.5(h) SW010338K	
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## Light Sources

### IL-RF, Fluorescent Ring Light

- The bright 7W fluorescent lighting system provides cool white illumination.
- Long life bulb, spare bulb included.
- Ring design eliminates shadows.
- Fits cones between 4.5-6.5cm (1.8"-2.4" dia.)
- Adapters available to fit most models of stereozoom microscope.



This is an excellent way to add Alighting to stereozoom microscopes.

### AC-LED, LED Ring Light

- Power Supply: AC 90-265V, 50/60Hz
- Output 24V 6W
- Color Temperature: 6400K
- Lamp Life: Minimum 10,000 hours
- Operating Temperature: 32-104 F(0-40°C)
- Humidity Range: 0-80%
- Max. Opening: 62mm
- Fuse: 1A
- The Power Box Dimensions: 103x 61x32mm.



- 60 LED Bulbs, adjustable brightness.
- Applicable to SZ, SZ2, SZ3 and FS Series Stereo Microscopes

### CL-150, Fiber Optical

The newest addition to our line of illumination equipment is the CL-150. It features "cold" illumination through filtration and a series of user defined colored filters. The cold light source has high intensity fiber optic illumination & accessories that allow you to position your light for best possible viewing. The original design shown. above features a sturdy small footprint through integrated solid state. circuitry. The 150 watt lamp is equipped with a variable control. The CL-150 provides the best illumination for high brightness & low temperatures.



- Streamline façade
- New Design for easy replacing lamp
- Adopt over loading protect set
- Brightness > 23000LU

<b>Power Input</b>	90V-265V	
<b>Power Output</b>	5V-21V	
<b>Power Consumption</b>	150W	
<b>Dimensions(mm)</b>	210×170×130	
<b>Filter</b>	Filter Red/Blue/Green/Yellow	
<b>Reflector Lamp</b>	21V/150W	
<b>Fiber Adapter</b>	F20	
<b>Option Specification</b>	Twin-Arm Fibre	Ring Fibre
	2-F5X500mm	F55XF10X1000mm
<b>Option</b>	Microscope Adapter for Ring Fiber	
<b>Adapter Specification</b>	M44X0.75	M50X0.75
	M48X0.75	M54X0.75

### Eyepieces

WF6.25X/23mm  
WF10X/23mm  
WF15X/17mm  
WF20X/13mm  
WF32X/8mm

SG02T0103  
SG02T0218  
SG02T0318  
SG02T0406  
SG02T0502



### Measuring Eyepieces

360° : 10° SG060314	10mm:0.1mm SG060312	14mm:0.2mm SG060320	14mm:0.1mm SG060315

### Polarizing Equipment

- Base stand mountable 1-piece set
- 360° independently rotatable polariser (top)
- 360° independently rotatable analyser (bottom)

SP080013K



### Darkfield Attachment

- Conical glossy central stop for diffracted light observation
- Iris diaphragm for controlling the shape of light
- Base stand mountable

SP090001



### SMZ-168 Stands



#### 2105

##### Special Universal Stand

- Length of base 250mm
- Height of pole 373mm
- Width of base 250mm
- Diameter of pole for focusing mount 32mm



#### 2108K

##### Ball Bearing Boom Stand

- Diameter of vertical pole 36mm.
- Diameter of pole for focusing mount 32mm.



#### 2107K

##### Articulating Arm Boom Stand

- Diameter of vertical pole 36mm.
- Diameter of pole for focusing mount 32mm.



#### 2109K

##### Articulating Arm Boom Stand

- Diameter of vertical pole 36mm.
- Diameter of pole for focusing mount 32mm.

**SMZ-430, Stereo Magnifier**

SMZ-430 Improves operators' working efficiency and makes operators no longer suffer the strain of eye, neck or back due to the humanistic design.

It can be applicable to the field of electronic industry, precision mold,

plastic shop, medical diagnosis, public security system, and so on.

SMZ-430 with magnification 4-30x and stereo image; rotary turret can hold three pieces of Objective to work, wide-field view and long working distance make the observation more ease and joyful.

**Specifications:**

Outfit	Objective Magnification	Total Magnification	Working Distance	Visual Field
Standard	SMZ430-2X	4X	208mm	68mm
Standard	SMZ430-4X	8X	98mm	34mm
Standard	SMZ430-6X	12X	80mm	22.7mm
Optional	SMZ430-8X	16X	58mm	17mm
Optional	SMZ430-10X	20X	46mm	13.6mm
Optional	SMZ430-15X	30X	50mm	9.1mm



**GEM-250, Stereo Gemological Microscope**

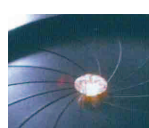
The GEM-250 utilizes the optical performance of MRC's GEM-250 stereomicroscope to enhance distinct three-dimensional details with a zoom function. Rugged and precise, the optics of the GEM-250 performs enlargements, analyses, & measurements more accurately & efficient! thus reducing your workload. At a working distance of 113mm, manipulation of the inspected gem or the addition of a further apparatus is permitted without obstruction. Available in a trinocular version for photographic or digital capture of the gem, the GEM-250 provides you with an opportunity for extra revenue. Moreover, when teamed with MRC's RCam 480, the GEM-250 becomes your instrument of instruction for teaching and training by showcasing the gem in real time via a television, a projector, and computer simultaneously..



GEM-250

**Eyeieces:**

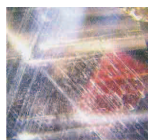
- Magnification range: 0.75x-5x
- Zoom Ratio: 1: 6.7
- Observation angle: 35°
- Working distance: 113mm
- Magnification: 10x
- Field of View range: 30.7mm-4.6mm
- Mount Diameter: Ø30mm
- Reticules: Ø25mm

**Illumination: Bright Field Illumination**

Integrating a consistent & powerful SOW Quartz Halogen Bright field illumination with a precise, adjustable aperture diaphragm [Ø41mm - Ø2mm], you are able to measure with a table gauge the proportions and pavilions of a diamond.

**Dark Field Illumination**

Dark field is the ideal illumination for observation of inclusions. With MRC's versatile aperture diaphragm [pictured above], you can control the depth of field and contrast while using the dark field illumination for better identification.

**Incident fluorescent illumination, Diamond Light**

Designed for use with diamonds, the incident light can be adjusted for a thorough examination of the clarity, colour, & finishing. The bulb has a colour temp. of 6000K to reduce any yellowing effects on the gem.

**Holders, Plates, & Analysers:**

**1.Wire Stone holder** The ideal holder for diamonds, rubies and sapphires. Comprised of stainless steel for a long working life, the wire stone holder permits the maximum amount of observation.

**2.Rounded Edge Stone holder** Perfect for irregular gems and jewelry. Precision Grafted of stainless steel to provide an adequate grip without corrupting irregular shaped gem samples.

**3.Inclusion pointer** For rapid location of inclusions and fractures on the surface of gem.

**Large gem stags plate**

Magnetically attachable & covering the stage area of the GM168 base to provide a large surface for rough stones and large gems (i. e. fade) inspection in conjunction with the incident fluorescent illumination.

**Dimont Proportion Analyser Kit**

Complete kit for effective 8, accurate identification 5 measurement of proportions 4 pavilions. Includes the magnetised diamond mount, diamond proportion reticule, & micrometer eyepiece(10x)

**Immersion cell**

Capable of rapid & easy detection of treated gems characteristics: such as clarity enhancement, HPHT annealing, irradiation, & surface colouration, the immersion cell is especially useful for rubies.

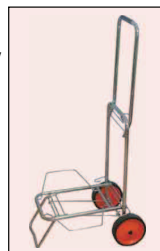
**Accessories: Case**

When moving the microscope from place to place use our rigid case.

Model: SC-70: with lock & key. Dimensions: 295x535x400mm (high)

**Trolley**

Our trolley Model TR-70

**Stand Features & Benefits:****Rotary Base**

360° rotary base allows you to showcase the gem to a customer or to confer with a colleague on proper identification.

**Tilting Base**

With a tilting range of 0° [upright] to 45°, the GEM-250's base is accessible to users of various heights.

**Focus Adjustment**

Allowing for a total travel of 125mm for adaptation to different sizes of gems and stones, no sample is too small or too large.

**Stage**

Able to accommodate both a gem holder and inclusion pointer simultaneously in addition to different contrast methods.





MZ-3

### MZ-3, Video Zoom Microscope

The quality optical system & the specially coated optical components adopted in MZ3 Video Zoom Microscope furnish it to deliver sharp and flat images.

With the locking screw, the zoom knob of the zoom body can be operated more precisely.

This product can be applied to viewing, inspecting and testing digital images in electronic components, semiconductor, laser, LED, LCD, industrial and biological fields. Digital Camera, CCD Camera, DSLR and SLR can be attached to MZ3 Video Zoom Microscope by using the relevant adapters.

Based on the best optical system, can deliver clear, bright and flat images.

The zoom knob of zoom body with lock-up equipment can reach high precision. It can apply to modern electronic equipment, semiconductor, laser, LED, LCD, industry inspection, digital observation on biology and other fields.

#### Specifications:

- Zoom Range: 0.7X-5X.
- Zoom Ratio: 1: 7.
- Magnification: 16X-160X.
- Field of View: 2.14mm-21.4mm.
- Working Distance: 100mm-105mm.



MZ-CHG

#### Option:

**MZ3-H:** Horizontal Stand with separate 15" LCD.

#### Option:

**MZ-CHG:** Cross Hair Generator. Easy operation-Button control, knob control and mouse control. High work efficiency-Real-time data updated, without waiting, work stability.

The Cross-hair generator with built-in video conversion can show analog signal with folding cross-hair and coordinate outputted from CCD on screen. It can provide adjustable cross-hair observation when observing. For VGA LCD, it can convert analog signal into VGA signal, output resolution of VGA:

1024X768 and 1280X 1024, power supply: 5V 1A. Can be used for measurement of high-precision, realizing data processing of video signal, measurement of distance and angle. When installed in microscope, observation, inspection & measurement functions can be realized. This product can be widely used in biology, medical treatment and chemistry.

#### Optical Data Sheet: (Based on 14" Monitor and 1/3" CCD Camera)

Model	MZ3110101		
Objective Lens	Working Distance (mm)	Coupler	
		0.4X	
		Mag.	FOV (mm)
1X	105	16X-114.3X	21.4-3
1.4X	100	22.4X-160X	15.3-2.14



BAM100

**BAM100, Biological Microscope**

Equipped with UCIS universal infinity independent-achromatic optical system, chromatic aberrations and curvature of field are both ideally corrected over the field of view. And the UCIS objectives own higher NA's producing crisp, clear images with minimal flare. Benefit from UCIS infinity optics, BAM100 series provide a flexible upgrade path to accommodate various accessories to meet your applications for observations of light field, phase contrast, dark field and polarization. And the BAM100 series optics are perfect for both observations through the eyepiece as well as capturing images with a digital camera or a computer. Giency heat-sink-device of BAM 100 series keeps the microscopes surface at lower temperature even after long time work.

**Features:** High eye-point eyepiece • Eergonomic and Flexible observation tub  
 • Trinocular Tub • Abbe condenser with color-coded diaphragm scale markings  
 • Revolving nosepiece • Eergonomic co-axial coarse and find, adjustment knob  
 • Grasping part • Dark condenser • Bright and even illumination.

Parts	Sepecifications	BAM102	BAM103	Order Number
BAM 100 Frame	One-piece construction from arm to base	•	•	UB100
Optics	UCIS Infinity Independent Achromatic Optical Design	•	•	MS3
Seidentopf Observation Tube	Binocular Tube, Interpupillary distance 52-75mm, 30° inclined, 360° rotateable	•	•	MT3
	Trinocular tube, Interpupillary distance 52-75mm, 30° inclined, trinocular light is split 20/80 by a high quality prism		•	
Plan Eyepiece	WF10X/18, High eye-point up to 21mm, diopter adjustable	••	••	E1018PB
	WF10X/20, High eye-point up to 21mm, diopter adjustable	••	••	E1020PB
	WF16X/14	••	••	E1614WA
	WF10X/18(Pointer), High eye-point up to 21mm, diopter adjustable	•	•	E1018GB
	WF10X/20(Pointer), High eye-point up to 21mm, diopter adjustable	•	•	E1020GB
	Reticule Eyepiece: CROSSWF10X/18	•	•	E1018RA
	Reticule Eyepiece: CROSSWF10X/20	•	•	E1020RB
Centering Telescope	CTE	•	•	WY2
Infinity Achromatic Objectives	4X/0.13 ∞/0.17, WD12.31	•	•	WB-X4A
	10X/0.30 ∞/0.17, WD6.75	•	•	WB-X10A
	40X/0.70 ∞/0.17, WD0.76 (Spring)	•	•	WB-X40A
	100X/1.25 ∞/0.17, WD0.12 (Spring,Oil)	•	•	WB-X100A
Infinity Achromatic Phase-Contrast Objectives (positive Or negative)	PH 10X/0.30 ∞/0.17, WD6.75	•	•	WB-XPHp10A/WB-XPHn10A
	PH 40X/0.70 ∞/0.17, WD0.76 (Spring)	•	•	WB-XPHp40A/WB-XPHn40A
	PH 100X/1.25 ∞/0.17, WD0.12 (Spring,Oil)	•	•	WB-XPHp100A/WB-XPHn100A
Infinity Plan Objectives	Plan 4X/0.13 ∞/0.17, WD12.31	•	•	WB-P4A
	Plan 10X/0.30 ∞/0.17, WD4.00	•	•	WB-P10A
	Plan 20X/0.45 ∞/0.17, WD1.24	•	•	WB-P20A
	Plan 40X/0.70 ∞/0.17, WD0.29 (Spring)	•	•	WB-P40A
	Plan 60X/0.80 ∞/0.17, WD0.40 (Spring)	•	•	WB-P60A
	Plan 100X/1.25 ∞/0.17, WD0.09 (Spring,Oil)	•	•	WB-P100A
Infinity Plan Phase-Contrast Objectives	PH Plan 10X/0.30 ∞/0.17, WD4.00	•	•	WB-PPHp10A/WB-PPHn10A
	PH Plan 20X/0.45 ∞/0.17, WD1.24	•	•	WB-PPHp20A/WB-PPHn20A
	PH Plan 40X/0.70 ∞/0.17, WD0.29 (Spring)	•	•	WB-PPHp40A/WB-PPHn40A
	PH Plan 60X/0.80 ∞/0.17, WD0.40 (Spring)	•	•	WB-PPHp60A/WB-PPHn60A
	PH Plan 100X/1.25 ∞/0.17, WD0.09 (Spring,Oil)	•	•	WB-PPHp100A/WB-PPHn100A
Phase-Contrast Slide	10X PH	•	•	PCB-XPH10A
	40X PH	•	•	PCB-XPH40A
	100X PH	•	•	PCB-XPH100A
Condenser	Abbe codenserAbbe condenser: NA 1.25, with iris diaphragm	•	•	JG3
	Dark Condenser	•	•	JG10
Stage	Mechanical Stage: 142x135mm platform, with X/Y travel of 76X52mm by low-positioned X/Y coaxial contrl knob, with scale mark and specimen-slide clip, enough space to hold 2 specimen-slide	•	•	ZT3
Revolving Nosepiece	quadruple, inward facing	•	•	ZQ470
Illumination Kohler	No field diaphragm	•	•	KL2
	With field diaphragm	•	•	KL3
C-Mount	SX2: 0.5X	•	•	SX2
	SX3: 1X	•	•	SX3
Filter	Blue	•	•	LA2-0011
	Green	•	•	LU2-0011
	Yellow	•	•	LH2-0011
	Grass Glass	•	•	LB2-0011
Filter Holder	Filter Holder: (Attached to the Kohler) for more than one filter	•	•	LA1-0071
Polarization kits	Analyzer	•	•	PQ1
	Polarizer	•	•	PY1
Illumination Bulb	6V20W Osram Halogen Bulb	•	•	BZ-0022A
	3W LED Bulb	•	•	DQL1-1000
Immerse Oil	8ml	•	•	BZ-0027
Allen Screw Driver	Φ2mm	•	•	BZ-0018
Power Line	1.8m, CE certified	•	•	BZ-0021
Package	Inner package: foam, plastic bag; Out Package: Paper box	•	•	BZ3-0011A

Symbol Meaning: • means standard ○ means optional





BAM200

### BAM200, System Microscope

BAM200 is our contribution to you for your application in medicine, clinical laboratories, pathology, and biology, from routine task to research. Equipped with advanced USIC infinity optics and ergonomic, flexible, stable, high efficiency mechanism, BAM200 can satisfy your observation of brightfield, darkfield, polarization, phase-contrast, and fluorescence.

#### Features:

- High eye-point up to 21mm • Abbe condenser • Dry dark-field condenser
- Simple polarizing observation • Phase-contrast condenser • Reflected light fluorescence • Mechanical stage • Rackless stage with enhanced operability
- Nward-facing revolving nosepiece • Observation tub • Comfortable ergolift
- Grasping part.

Symbol Meaning: • means standard ○ means optional

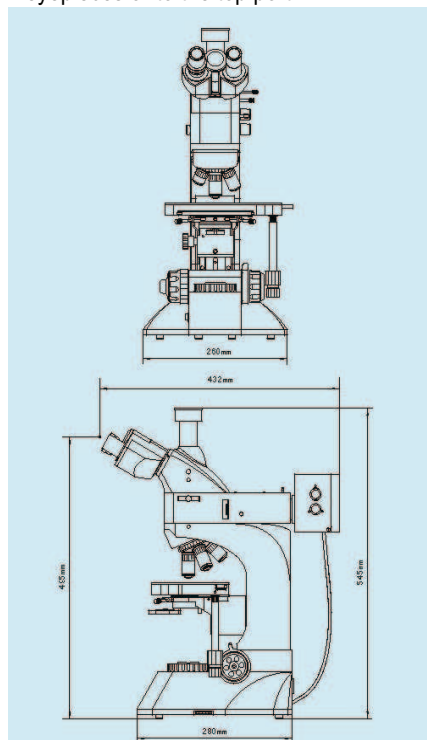
Parts	Specifications	BAM202	BAM203	Order Number
UB200i Frame	One-piece construction from arm to base	•	•	UB200
Optics	UCIS Infinity Independent Achromatic Optical Design	•	•	MS2
Seidentopf Observation Tube	Binocular Tube, Interpupillary distance 52-74mm, 30° inclined, 360° rotateable Trinocular tube, Interpupillary distance 52-74mm, 30° inclined, trinocular light is split 20/80 by a high quality prism	•	•	MT2
Eyepiece	WF10X/20, High eye-point up to 21mm, diopter adjustable	••	••	E1020PA
	WF10X/22, High eye-point up to 21mm, diopter adjustable	○ ○	○ ○	E1022PC
	WF16X/14	○ ○	○ ○	E1614WB
	WF10X/20(Pointer), High eye-point up to 21mm, diopter adjustable	○	○	E1020GA
	WF10X/22(Pointer), High eye-point up to 21mm, diopter adjustable	○	○	E1022GC
	Reticule Eyepiece: CROSSWF10X/20	○	○	E1020RA
Centering Telescope	Reticule Eyepiece: CROSSWF10X/22	○	○	E1022RC
	CTE	○	○	WY2
Infinity Semi Plan Objectives	4X/0.13 ∞/0.17, WD12.31	•	•	WB-X4A
	10X/0.30 ∞/0.17, WD6.75	•	•	WB-X10A
	40X/0.70 ∞/0.17, WD0.76 (Spring)	•	•	WB-X40A
	100X/1.25 ∞/0.17, WD0.12 (Spring, Oil)	•	•	WB-X100A
Infinity Semi Plan Phase-Contrast Objectives (positive or negative)	PH 10X/0.30 ∞/0.17, WD6.75	○	○	WB-EPHp10A / WB-EPHn10A
	PH 40X/0.70 ∞/0.17, WD0.76 (Spring)	○	○	WB-EPHp40A / WB-EPHn40A
	PH 100X/1.25 ∞/0.17, WD0.12 (Spring, Oil)	○	○	WB-EPHp100A / WB-EPHn100A
Infinity Plan Objectives	Plan 4X/0.13 ∞/0.17, WD12.31	○	○	WB-P4A
	Plan 10X/0.30 ∞/0.17, WD4.00	○	○	WB-P10A
	Plan 20X/0.45 ∞/0.17, WD1.24	○	○	WB-P20A
	Plan 40X/0.70 ∞/0.17, WD0.29 (Spring)	○	○	WB-P40A
	Plan 60X/0.80 ∞/0.17, WD0.40 (Spring)	○	○	WB-P60A
	Plan 100X/1.25 ∞/0.17, WD0.09 (Spring, Oil)	○	○	WB-P100A
Infinity Plan Phase-Contrast Objectives	PH Plan 10X/0.30 ∞/0.17, WD4.00	○	○	WB-PPHp10A / WB-PPHn10A
	PH Plan 20X/0.45 ∞/0.17, WD1.24	○	○	WB-PPHp20A / WB-PPHn20A
	PH Plan 40X/0.70 ∞/0.17, WD0.29 (Spring)	○	○	WB-PPHp40A / WB-PPHn40A
	PH Plan 60X/0.80 ∞/0.17, WD0.40 (Spring)	○	○	WB-PPHp60A / WB-PPHn60A
	PH Plan 100X/1.25 ∞/0.17, WD0.09 (Spring, Oil)	○	○	WB-PPHp100A / WB-PPHn100A
Phase-Contrast Slide	10X PH	○	○	PCB-XP10A
	40X PH	○	○	PCB-XP40A
	100X PH	○	○	PCB-XP100A
Condenser	Multi-purpose phase-contrast Condenser: NA:1.25, Phase-contrast observation from 10X to 100X and Dark- field observation from 10X to 40X is allowed	○	○	JG20
	Abbe condenser/Abbe condenser: NA 1.25, with iris diaphragm	•	•	JG2
	Dark Condenser	○	○	JG10
Stage	Mechanical Stage: 156x138mm platform, with X/Y travel of 76X54mm	•	•	ZT2
Revolving Nosepiece	quadruple, inward facing	•	•	ZQ480
Illumination Kohler	With field diaphragm	•	•	KL3
C-Mount	SX2: 0.5X	•	•	SX2
Filter	Blue	•	•	LA1-0011
	Green	○	○	LU1-0011
	Yellow	○	○	LH1-0011
	Grass Glass	○	○	LB1-0011
Filter Holder	Filter Holder: (Attached to the Kohler) for more than one filter	○	○	LA1-0071
Polarization kits	Analyzer	○	○	PQ1
	Polarizer	○	○	PY1
Illumination Bulb	6V20W Osram Halogen Bulb	•	•	BZ-0022A
	6V30W Osram Halogen Bulb	○	○	BZ-0022B
	3W LED Bulb	○	○	DQL1-1000
Immerse Oil	8ml	•	•	BZ-0027
Allen Screw Driver	Φ2mm	•	•	BZ-0018
Power Line	1.8m, CE certified	•	•	BZ-0021
Package	Inner package: foam, plastic bag; Out Package: Paper box	•	•	BZ3-0011A



L3230

**Features:**

- With infinity plan achromatic objectives with long working distance (no cover glass) and wide-field eyepieces, can get clear pictures and wide view field.
- Coaxial coarse/fine focus system, with tensional adjustable and up stop, minimum division affine focusing: 2~1m.
- Movement of stage: 30mm
- With vertical illuminator and transmitted illuminator, can observe surfaces of non-transparent object or transparent object.
- Trinocular, can switch to observe normally or to observe the Polarize, can send 100% or light to the binocular eyepieces or to the top port.

**L3230, Reflected Light & Transmitted Light Microscope**

L3230 reflected and transmitted microscope is suitable to observe surfaces of non-transparent object or transparent object. It is equipped with vertical illuminator, infinity plan achromatic objectives with long working distance (no cover glass), wide-field eyepieces and set polarizer device in trinocular. It provides clear and high-contrast image, beautiful sculpt, convenient control, etc. It is the ideal instruments in research work in biology, metallography, mineralogy, precision engineering, electronics, etc. It is suitable for scientific research, teaching demonstration in the colleges and factory.

Model	L3230
Eyepiece & Objectives	Wide field WF10X(Φ20mm)
	PL L5X/0.12 Infinity plan achromatic objectives with long working distance (no cover glass)
	PL L10X/0.25 Infinity plan achromatic objectives with long working distance (no cover glass)
	PL L40X/0.60 (spring) Infinity plan achromatic objectives with long working distance (no cover glass)
	PL L60X/0.75 (spring) Infinity plan achromatic objectives with long working distance (no cover glass)
Eyepieces tube	Trinocular, Inclination of 30°, (Analyzer with field diaphragm to switch)
Vertical illumination unit	6V 30W, halogen lamp, adjustable brightness
	Vertical illumination with field diaphragm, aperture diaphragm and polarizer,(Y,B,G)filter and Ground glass
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: 2μm.
Nosepiece	Quadruple (Backward ball bearing inner locating)
Stage	Double layer mechanical (Size:210mmX140mm,movingrange: 75mmX50mm)
Vertical illumination unit	Abbe condenser NA.1.25 Rack & pinion adjustable
	Blue filter and Ground glass
	Collector for illumination with halogen lamp (With field diaphragm )
	6V 20W, halogen lamp, adjustable brightness

Name	Sort/Technique parameter	NO.
Eyepiece	Wide field eyepiece WF10X(Φ18mm)	1041010
	Wide field eyepiece WF16X(Φ11mm)	1051016
	Dividing eyepiece 10X(Φ18mm) 0.10mm/Div	1121010
Objective	PL L 20X/0.40 Infinity plan achromatic objectives with long working distance (no cover glass)	2830120
Nosepiece	Quintuple Backward ball bearing inner locating	032002
Filter	Green filter	115002
	Yellow filter	115003
CCD adapter	0.4X	810001
	0.5X	810004
	1X	810002
	0.5X with dividing 0.1mm/Div	810003
Photo unit	2.5X/4X Change over photograph attachment with 10X viewing eyepiece	840001
	4X Focusing photograph attachment	840002



B1-220ASC

### Accessories For Microscope Applications

#### Phase Contrast

Phase contrast provides clear contrast of specimen without dying and therefore useful for observing alive or transparent specimens.



By simply rotating the turret, the condenser can be set for brightfield and phase contrast microscopy. It can be used with 10x, 20x, 40x and 100x phase objectives. Simple plug in phase ring is also available for 10X, 20X and 40X phase objectives.



#### Polarizing

Polarizing - special polarizing equipment available with polarizer, analyzer and an optional pol specimen stage enable pol microscopy as Geology, Mineralogy etc.



#### Darkfield

Darkfield central stopenables darkfield observation at 4x through 40x when the attachment is mounted on the brightfield condenser bottom section.

#### Kohler Illumination

Kohler Illumination which is centerable and can be ordered as option.



### B1-Series, Biological Microscope

The MRC B1-Series Biological Microscopes with its standard features are designed for school applications. This system is for use in laboratories/ clinics, research facilities and medical schools. The modern and ergonomic design distinguish itself from the others. Its affordable price and excellent quality give you the best value for your money.

#### Head

There are five kinds of head for your choice, which are 360° rotating around its vertical axis. Two binocular heads are available, with standard 45° inclined and optional 30° inclined, providing adequate choices for your best viewing comfort. Also, diopter rings on both tubes are a standard feature to facilitate compensation for eye acuity. Graduated interpupillary distance adjustment is from 54mm to 76mm. Also, there are monocular, dual teaching and trinocular head available for selection.

#### Mechanical Stage

Built-in ball bearings mechanical stage provides a travel range of 76mm X 50mm in the X and Y direction respectively with graduations reading up to 0.1 mm for accurate positioning of specimen.

#### Coaxial Coarse and Fine Focusing Knobs

The precision Focusing mechanism is designed for frequent use and also provides a smooth adjustment of focus. The coarse focus is with adjustable tension device.

#### Condenser

The extremely efficient, removable N.A. 1.25 abbe condenser for brighter illumination level, and an iris diaphragm for resolution and contrast control.

#### Illuminator

A standard halogen lamp 1 2V/20W with the intensity control system is used, providing an even and bright illumination for all magnifications. Kohler illumination can be ordered as option which is centerable for advanced and special applications.

#### Objectives:

A full range of achromatic(A-10X, A-40XR and A-100XR oil) & plan achromatic super contrast (Plan ASC4X, Plan ASC10X, Plan ASC40XR, and Plan ASC100XR oil) objectives in the B1 series provide you with superior optical quality. A new device for anti-fungus is available, this effect can last for more than three years.



	Magnification	Model	N.A.
High performance Achromatic	PL4X	SG01.S01211	0.1
	A10X	SG01.S02211	0.25
	A20X	SG01.S03211	0.45
	A40X	SG01.S04211	0.65
	A60X	SG01.S05211	0.85
	A100X	SG01.S06211	1.25
Ultra high performance Plan Achromatic Super Contrast	Plan ASC4X	SG01.S01217	0.1
	Plan ASC10X	SG01.S02217	0.25
	Plan ASC40X	SG01.S04217	0.65
	Plan ASC100X	SG01.S06217	1.25



**DMBA210, Basic Digital Biological Microscope**

The DMBA210 Digital is designed for both educational and teaching environments delivering a new higher level of optical performance.

**Description:**

The new DMBA210 series is setting a new standard in microscope performance through improvements both in optical and mechanical features. Designed to be used in Educational Life Science, Medical as well as a variety of biological applications, this new microscope is built around Mrc's complete understanding of the daily demands placed on the standard educational microscope.

Student proof features together with a new generation of EF-N Plan Achromatic objectives provide a fully corrected intermediate image for crisp and clear visual and digital results. The DMBA210 is a robust student instrument that brings professional, repeatable image quality results to all of its intended applications. The DMBA210 Digital is a Digital version of the DMBA210 that features a built-in imaging head with 3.0MP streaming live output through USB2.0 connections.

Model	DMBA210		
Observation Tubes	Ergonomic 30 degree viewing angle		
	55-75mm interpupillary distance		
	Large field of view with 18mm or 20mm options		
	Built-in Digital with 20/80 split and 3.0MP imaging sensor delivering high-resolution streaming images through a USB2.0 connection		
Eyepieces	N-WF 10x/18mm		
	N-WF 10x/20mm		
	N-WF 15x/13.3mm		
	N-WF 12.5x/16mm		
Objectives		<b>Magnification</b>	<b>N.A.</b>
			<b>W.D (mm)</b>
	EF-N Plan 4x	0.1	6.3
	EF-N Plan 10x	0.25	4.4
	EF-N Plan 20x	0.4	4.66
	EF-N Plan 40x	0.65	0.35
	EF-N Plan 60x	0.85	0.13
	EF-N Plan 100x	1.25	0.13
	EF-N Plan Phase 10x	0.25	4.4
	EF-N Plan Phase 40x	0.65	0.35
Illumination Options	6V/30W Halogen		
	3W LED		
	Mirror		
Condenser	Abbe 1.25NA with slot for accessories and condenser lock available		
Stage	Hard Coated Mechanical Stage with 76x30mm travel range		
	Left or Right Stage drive available		
Other Options	Simple Phase Contrast 10x and 40x sliders for condenser		
	Darkfield slider for condenser		
	Simple Polarisation with analyser and polarizer		

**Features:**

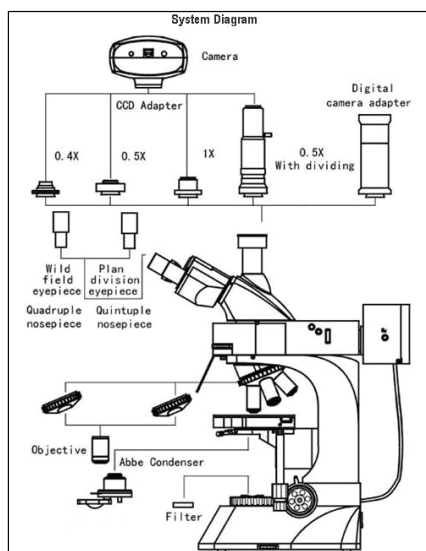
Requires a USB2.0 connection • Windows XP, Vista or OSX • Intel Centrino Recommended • Mrc Images Plus 2.0 software for PC and Mac (OSX).



L3201LED

**Features:**

- Adopt infinity optical system and modularization function design.
- Equipped with infinity plan achromatic fluorescent objectives, enable obtain more clearer and brighter image.
- Wide-field plan eyepieces: field number  $\Phi 22\text{mm}$ .
- Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing:  $2\mu\text{m}$
- Transmitted illumination: 3W high brightness white LED, brightness adjustable.
- Epi-illumination: 3W high brightness monochromatic LED, enable changing for different wave length LED, but the brightness can't be adjustable.
- Trinocular can be observation for eyepieces and micro photography in 100% light flux, suits for low illuminance micro photography.
- Wide voltage range power supply (85-265V 50/60Hz).

**L3201LED EPI-Fluorescent Microscope**

L3201LED Epi-fluorescent microscope is used for fluorescence microscopy and transmitted field observation. It is equipped with no magnification spherochromatic aberration infinity plan achromatic fluorescent objectives and wide field eyepieces, has clear picture and wide view field. The transmitted and epi-fluorescent illumination light source are high power & brightness LED, but power consumption is lower and use life longer, very good radiating heat effect. Safely and comfortably using the instrument, the cost of use and maintenance are more lower. It is the ideal instrument in biology, cytology, oncology, genetics, immunology etc. It also can be used in scientific research, universities, medical treatment, epidemic prevention etc.

**Standard Configuration:**

Model	L3201LED
Objectives	Infinity plan achromatic objectives
	PL 4X/0.10 (Work distance) : 19.8mm
	PL 10X/0.25 (Work distance) : 5.0 mm
	PL FL20X/0.65 (spring) Work distance : 0.70 mm
	PLF L40X/0.85 (spring) Work distance : 0.42 mm
	PL 100X/1.25(Spring, oil) Work distance : 0.36mm
Eyepieces tube	Trinocular (Inclination of $30^\circ$ )
Epi-fluorescent illumination system	3W high brightness LED. Enable selecting monochromatic or bichromatic LED for light source, every monochromatic LED wave band: Green (520nm - 530nm) Blue (460nm - 470nm)
	Fluorescence filters: B(Blue) and G(Green)
Focus system	Coaxial coarse/fine focus system, with tension adjustable and limit stopper, minimum division of fine focusing: $2\mu\text{m}$
Nosepiece	Quadruple(Backward ball bearing inner locating)
Stage	Double layer mechanical (Size: 210mmX140mm, movingrange: 75mmX50mm)
Transmitted illumination system	Abbe condenser NA.1.25 Rack & pinion adjustable
	Blue filter and Ground glass
	Collector for LED illumination and integrated field diaphragm
	3W high brightness white LED, brightness adjustable

**Optional accessories:**

Name	Sort/Technique parameter	NO.
Eyepiece	Dividing eyepiece(field number:22mm) 0.10mm/Div	1122010
Objective	Infinity plan achromatic objective	
	PL 60X/0.80 Work distance : 0.46 mm	2060160
Nosepiece	Quintuple(Backward ball bearing inner locating)	032002
Filter	Green filter	115002
	Yellow filter	115003
LED	390nm~400nm Violet (390nm~400nm)	-
	360nm~370nm Ultraviolet (360nm~370nm)	-
Fluorescent filters	V(Violet)	-
	UV(Ultraviolet)	-
CCD adapter	0.4X	810001
	0.5X	810004
	1X	810002
	0.5X with dividing 0.1mm/Div	810003
Camera	2DV-1 (With USB & video output)	800001
	DV-2 (With USB output)	800003
	DV-3 (With video output)	800005
Digital camera adapter	CANON(EF) NIKON( F)	820001



AE31

### The Light Source

The Koehler illumination system with a 6V-30W Quartz halogen lamp provides bright, even illumination at any magnification. The "only one in its class" centerable lamp is housed externally and has an externally operated mechanism for control of all facets of illumination. A segmented illumination intensity indicator is ideally located for easy viewing.

### Specifications:

	AE30	AE31
Optical system	CCIS (Colour corrected infinity optical system). Parfocal distance: 45mm	
Observation Tubes	Siedentopf type binocular tube	Siedentopf type trinocular tube (light distribution, bino/photo: 1 00/0 or 0/100)
	Inclination	
	45 degrees	45 degrees
	Interpupillary distance	
	50-75mm	50-75mm
	Eyepoint height	
	380mm from table	400mm from table
Eyepieces	Widefield High Eyepoint WF PL 10X (FN 22) with diopter adjustment	
Nosepiece	Quintuple nosepiece, side facing type	
Plain stage	Stage size: 200 x 260mm. Stage height: 207mm from table.	
Focusing	Coaxial/via nosepiece up I down movement Coarse/fine movement - 42mm/0.2mm Min. fine reading Zpm. Adjustable coarse torque	
Illumination	6V-30W Quartz halogen centerable lamp is housed externally and has an externally operated device for all the elements of illumination with built-in heat absorbing filter & removable diffuser	
Condenser	ELWO N.A. 0.30 (WO. 72mm) Focusable LWO N.A. 0.50 (WO. 28mm) Focusable for objectives 4X to 40X	
Collector	Aspherically with field diaphragm	

### AE31, Inverted Microscope

MRC combines CCIS optics with innovative mechanical design, unrivalled versatility, ergonomics and optical excellence and brings you a new series of inverted microscopes.

### Colour Corrected Infinity Optical System

The eels optics allows new accessories and functions to be incorporated into the AE30/31 inverted microscope.

The CCIS infinity design has succeeded in achieving longer working distance objectives with higher numerical apertures. This represents a significant development in optical performance and versatility.

### The Microscope Stand

The design of the AE30/31 inverted microscopes optimally integrates all functions enabling effective ergonomics and maximum expandability.

### Condenser Mount

The centerable condenser mount is height adjustable with rack and pinion and is dovetail mounted on an illuminating pillar with a clamp screw.

### Standard & Optional Set Configuration

Specifications			Order No.	AE30	AE31
Eyepieces	Widefield High Eyepoint	WF PL 10XI22 with diopter adjustment	SG02S0144	●	●
CCIS Infinity Objectives	LWD Phase	CCIS PL Ph10X	SG01S02291	●	●
		CCIS LWD PL Ph20X	SG01S03291	●	●
		CCIS LWD PL Ph40X	SG01S04291	○	○
	LWD Plan	CCIS PL4X	SG01S01241	●	●
		CCIS PL10X	SG01S02241	○	○
		CCIS LWD PL20X	SG01S03241	○	○
		CCIS LWD PL40X	SG01S04241	○	○
		CCIS LWD PL60X	SG01S05241	●	●
Condenser	ELWD N.A. 0.30 (W.D. 72mm)		SG030401A	●	●
	LWD N.A. 0.5 (W.D. 28mm)		SG030701	○	○
Phase Slider	Centerable: Ph1, Ph3, One empty position		SW0123F8	●*	●*
	Non-centerable Ph1, Brightfield, Ph3(to be released)				
Phase Contrast Accessories	Phase Centering Telescope (030)		SG069993	●*	●*
Photo Adapters	Photo Adapter (requires one of the photo eyepieces below)		SP100294	-	○
	2.5X Photo eyepiece		SG02S1001	-	○
	4X Photo eyepiece		SG02S1101	-	○
Video Adapters	CCD adapter 0.65X		SP100384	-	○
	CCD adapter 1X		SP100350	-	○
Stage & Accessories	Glass stage insert		SP100301	●	●
	Metal stage insert		SW0199F9	●	●
	Auxiliary stages (paired set)		SW0123G3	○	○
	Universal attachable mechanical stage with well plate holders		SW010392	○	○
	35mm Petri dish holder		SP100303	○	○
	54mm Petri dish holder		SP100304	○	○
	65mm Petri dish holder		SP100302	○	○
Filters	Green interference (45mm diameter)		SG060747	●	●
	Blue filter (45mm diameter)		SG060727	●	●
	Ground glass (45mm diameter)		SG060729A	●	●
Allen Hex. Key	Two keys provided		SP070014	●*	●*
<b>Notes:</b> ● represents the standard accessories. ○ represents the optional accessories. * to be used with phase objectives.					





### MIP6A, Metallurgical Microscope

MIP6A is the ideal tools for testing metal material, verifying the quality of casting and analyzing metallographic organization of the material metallized. It can be widely used in such as factories, schools and science research institutions for identifying and analyzing the microstructure of all kinds of metal and alloys. Note: in this table, "n" denotes a standard attachment, "m" denotes an optional accessory. Design change: To keep pace with technological advances, we have reserved the right to make design modifications & changes without notice.

Design Change: To keep pace with technological advances, we have reserved the right to make design modifications and changes without notice • Package dimension: 665mm x 475mm x 310mm • Net weight: 14kg • Gross weight: 19kg • ISO9001 Certification.

#### Standard Outfits:

Order No.	Item	Standard Outfits
	Main body	•
S09	Mechanical stage with a stroke of 75 by 50 & size of 180 by 55	•
EP10	Plan eyepiece 10 X -18	• •
EP12.5	Plan eyepiece 12. X -14	• •
EH5	Huygenian ocular 5 X -20	○ ○
EW10	Plan eyepiece 10 X -20	○ ○
Epr10b	Plan eyepiece 10 X -14	•
B-OAr4	Achromatic objective 4/0.10	
M-OAr10	Achromatic objective 10/0.25	
M-OSPr40	S-plan achromatic objective 40/0.65	
M-OAor100	Achromatic objective 100/1.25 oil	
B-OPr2.5	Plan achromatic objective 2.5/0.07	○
B-OPr4	Plan achromatic objective 4/0.10	○
B-OPr10	Plan achromatic objective 10/0.25	•
B-OPr20	Plan achromatic objective 20/0.35	•
B-OPr40a	Plan achromatic objective 40/0.65	•
M-OSPor100	S-plan achromatic objective 100/1.25 oil	•
9J-6	Stage plate (1)	•
9J-7	Stage plate (2)	•
9J-8	Stage plate (3)	•
9J-9	Stage plate (4)	○
9J-11	Stage plate holder	•
TBR03	Rotating binocular head ( 45 degree )	•
LH01	Lamp housing	•
	Halogen lamp 6V30W	• •
PO02	Polarizer	•
PA01	Analyzer	•
CL02	Specimen clamps	•
9J.7	Photo adaptor	○
EPHp5	Photo eyepiece S5X	○
EPHp6.3	Photo eyepiece S6.3X	○
EPHp0.65	Video eyepiece 0.65X	○
	Metallurgical Microphotography equipments	○
	35mm DF camera with shutter release	○
SC03	Specimen holder	○
	Stage micrometer ( division 0.01mm )	○

200



MIP101

**MIP101, Metallurgical Microscope**

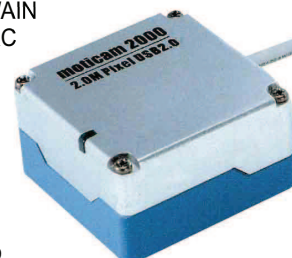
MIP101, the reflected light microscope is suitable to observe the microscopical surfaces of non-transparent object. It is equipped with large move range stage, vertical illumination, plan achromatic objectives and wide-field eyepieces. It provides clear and high-contrast picture, and with polarizer device. It is the ideal instrument in research work in metallography, mineralogy, precision engineering, electronics etc. It's suitable for scientific research, teaching demonstration in the colleges and factory.

Module & Spec.				
Eyepieces	Wide field	WF10X(Ø18mm)		●
		WF16X(Ø11mm)		○
	Plan dividing	10X (0.10mm/div)		○
Objectives	Plan achromatic (No cover glass)	Magnification/N.A	Work distance	
		PL5X/0.12	18.3	●
		PL10X/0.25	8.9	●
		PL25X/0.40	8.7	●
		PL40X/0.60	3.7	●
		PL50X/0.70	2.02	○
		PL80X0.80	0.96	●
Eyepieces tube	Trinocular	Compensation (inclination of 30°) Including analyzer		●
Stage	Size: 250x250mm can be move quickly. Move Range: 153x153mm			●
	Size: 274x274mm can be move quickly. Move Range: 203x203mm			
Nosepiece	Backward inner locating on ball bearing	Quintuple		●
CCD Camera Accessories	0.4X CCD Camera adapter			○
	CCD Camera adapter			○
	0.5X CCD Camera adapter with dividing			○
	CCD Camera			○
Illumination unit	Vertical illuminator 6V 20W halogen lamp, adjustable brightness, with polarizer			●
Digital Camera Adapter	CCD camera and accessories			○

Imaging Device	2.0 Megapixels 1/2"
Effective Pixels	1600 x 1200
Max. Still Image Resolution	2.0 Megapixels
Scanning System	Progressive Scan
Max. Frame Rate	10fps@Max. Res, 40 fps@Binning
Max. Data Transfer	480MB/Sec through USB2.0
Min. Illumination	3 Lux
Camera Power Supply	5V self-power through USB connection
Min. System Requirements	P3; 1GHz, 256MB RAM, 32MB Display, Win XP/2000, USB2.0 G4; 1GHz, 256MB RAM, OSX, USB2.0
Included Software	MRC Images Plus 2.0 for Windows & Macintosh (2 CD)
Calibration Slide	MRC Certified printed calibration slide

**Live High Resolution Digital Camera**

Moticam is compact and lightweight camera that attach to virtually any microscope through the eyepiece, eyetube or onto a trinocular mount • Easy plug & play USB2.0 Hi-Speed connection ensures that crisp and clear real-time images are displayed on the computer monitor turning any microscope into a Digital Microscope • Use this camera with your own software through a TWAIN interface or use the included MRC Images Plus 2.0 application software on both Windows and Macintosh systems • The complete set of included accessories gives these hi-resolution cameras the ability to be used in many different applications from Macro to Micro viewing.

**MOTICAM 2000**  
**201**

## STM-505 Series, Measuring Microscopes

**Applied fields:**

It is an excellent measuring instrument for non-contact inspection and 2D precision measurement, it is applicable to measure the small parts in the metrology department and product line.

It can be installed with digimatic measure heads, CCD adapter, CCD camera, digital crossline generator, monitor to be a 2D vision system.

Model	STM-505	STM-505D
Measuring travel	50x50mm	
Working distance	67mm	
Glass stage size	96x96mm	
Maximum work piece height	115mm	
Maximum work piece weight	5kg	
Optical system	Magnification: 30x (15x eyepiece; 2 objective)	
	The eyepiece protractor is graduated in 1°	
	Minimum angel reading: 6'	
	Sighting device: cross-reticel	
Measuring heads&resolution	Mechanic & 0.002mm	Digital (164-162) & 0.001mm
Optional accessories	Rotary table with diameter: φ66mm	
	5x, 10x objective	
	CCD adapter	
	CCD camera	
	Digital cross line generator	
	monitor	
Power supply	AC110V/60Hz; 220V/50Hz	
Dimension	210x333x391mm	
Weight	13.5kg	





PM11-Series

## PM11-Series, Portable Measuring Microscope

A brand new portable microscope with a wide field of view for general applications. Provides a bright, clear and undistorted image with high quality optics and a rack focusing system. Can be used in low light areas with a pen-light attachment and an alloy base. Widely applied to biology, archaeology, botany, forensics, geology, entomology horticulture, numismatics and philately, quality control, textiles and electronic industries. An excellent introductory microscope for a beginner.

	PM112231	PM113231	PM114231	PM117231
<b>Magnification</b>	20x	40x	50x	100x
<b>Eyepiece</b>	10x	10x	10x	10x
<b>Objective</b>	2x	4x	5x	10x
<b>Numerical Aperture</b>	0.05	0.10	0.12	0.25
<b>Min. readable division</b>	0.002" (0.05mm)	0.001" (0.025mm)	0.001" (0.025mm)	0.0004" (0.01mm)
<b>Working distance</b>	0.68" (17.2mm)	0.71" (18mm)	0.69" (17.6mm)	0.27" (6.93mm)
<b>Focus range</b>	0.65" (16.5mm)			
<b>Battery</b>	2 AAA Batteries			
<b>Height of Microscope</b>	5" (127mm)			



PM12-Series

## PM12-Series, Portable Measuring Microscope With Penlight

Compact and light weight with a wide field of view.

It allows not only to provide magnified view of fine pattern and contour of objects, but also to measure length and compare dimensions by using a scale included in the eyepiece.

It is useful not only for the general observation but also for improving accuracy in precision machining and securing uniform quality in the inspection process. The pen illumination system provides a high intensity source but is removable if not needed.

	PM121021	PM121041	PM121061	PM121101
<b>Magnification</b>	20x	40x	60x	100x
<b>Eyepiece</b>	10x	10x	10x	10x
<b>Objective</b>	2x	4x	6x	10x
<b>Numerical Aperture</b>	0.05	0.10	0.15	0.25
<b>Min. readable division</b>	0.005" (0.1mm)	0.002" (0.05mm)	0.0012" (0.02mm)	0.0005" (0.01mm)
<b>Working distance</b>	0.63" (16mm)	0.59" (15mm)	0.39" (10mm)	0.22" (5.5mm)
<b>Focus range</b>	1.42" (36mm)			
<b>Battery</b>	2 AAA Batteries			
<b>Height of Microscope</b>	7.4" (188mm)			

# M MICROSCOPES

## Surgical



AMP3000

### Features:

- Ergonomic hanging Counterbalanced pantographic arm design allows you to sit straight, which helps to eliminate back and neck pain.
- Optical head can be folded down to the arm at a highest position. In that way you will have a clear and free working area when you don't use microscope.
- Objective lens 200mm & 250mm with fine focusing adjustment knob.
- Two 150W Halogen bulbs with through the lens coaxial lighting and "change on the fly" lamp selector.  
\*\*Should a lamp fail during an examination, this feature allows a quick change from one lamp to another resulting in an uninterrupted procedure.
- Infinity corrected optical system / coaxial illumination. Fiber optic illumination system with brightness adjustment knob. The knob is just over the optical head. It is very convenient to adjust the brightness.
- Built-in orange filter and green filter. You can select the filters by a knob located at the same place of the fiber optic cable which is connected to the back of optical head.
- Easily maneuverable optical head with tension control knobs and 2 handles (One front handle is optional). The optical head can be stopped at any position in the moving range.
- A special switch is fitted into the arm. The lamp will keep "on" when the optical head moves in normal working range and the lamp will turn off automatically while the optical head moves out of normal working range.
- An integrated 1/3" CCD video camera is available for some models.

### AMP3000, Surgical Microscope

MRC AMP3000 series Surgical Microscopes offer outstanding optical performance with brilliant apochromatic optics and excellent ergonomics. It brings high performance, reliability. The ergonomic design of the microscope gives precise,



fatigue-free operation, with brilliant three-dimensional images at a large depth of focus. It is suitable to be used as Dental and ENT surgical microscope especially.

### Specifications:

- Either 45° indined or 0 -1800 indinable binocular head for Dental surgery or Straight binocular head for ENT surgery.
- 12.5x118mm High Eye-point Wide-Field eyepieces.
- Range of Pupillary distance: 50mm to 70mm.
- Range of the Diopter of Eyepiece: +/- 70.
- 250mm apochromatic objective lens.
- Magnification: 5-step, Total magnification indicator 0.4=3.44x, 0.6=5.36x, 1 =8.48x, 1.6=13.6x, 2.5=21.2X.
- Diameter of object field: 8.3mm to 51.9mm.
- Arms: First big arm, 500mm in length can be rotated 360°. Second small arm, 600mm in length with movement +/- 300mm, can be rotated +/-150°. Third angled arm can be 3-D movement.
- Height: 1750mm.
- Base size: 610mm X 600mm.
- Two 15V/150W Halogen Lamps are manually changeable by a level.
- Maximum Object Illumination: 30,000 Lx.
- Built-in Orange filter and Green filter changed by a knob.
- Power supply: 220V/50Hz or 110V/60Hz.

### Optional Accessories:

AM-E10x: 10x eyepiece  
 AM-E16x: 16x eyepiece  
 AM-Lens: Objective Lens 200mm, 300mm, 350mm, 400mm  
 AM-BS : Beam Splitter  
 AM-CA : Video (CCO Camera) Adapter  
 AM-DA : Digital Camera Adapter  
 Microscope Rotation Ring System  
 Wall Mount System  
 Ceiling Mount System  
 Fixed Mount System  
 CCD Video Cameras & Monitors.



AMP6000

**Features:**

- 12.5x High Eye-point Wide-Field eyepieces with diopter locks & fold down eyecups.  
The range of the Diopter of Eyepiece: +/- 6D.
- 250mm objective lens with objective protector.
- The range of pupillary distance: 50mm to 75mm.
- 3-Step Magnifications (5x, 8x, 12.7x), 5-Step Magnifications (3.2x, 5x, 8x, 12.7x, 20x) or Magnification (3.2x-20x) with standard 12.5x eye piece & 250mm objective lens.
- Observation field from 42mm to 16mm for 3-Step, from 65mm to 10mm for 5-Step & from 65mm to 10mm for Continuous Zoom.
- Optional magnification are available by combining eyepiece 10x, 16x or 20x & objective Lens 100mm, 175mm, 200mm, 300mm, 350mm or 400mm.
- Infinity corrected optical system/ coaxial illumination.
- Fiber optic illumination system with 12V/150W Halogen illumination and built-in orange filter.
- Object Brightness: 38,000.00 Lx Min.
- Manual focusing control or Motorized focusing with foot control with adjustable Focus Range of 30mm.
- Motorized focusing speed: 2mm/s Max.
- Counterbalanced pantographic arm.
- Easily maneuverable optical head with tension control knobs and 2 handles.
- Microscope body can be rotated 315° when casters are fixed.
- AM-P6000D series Dental Microscope comes with 31 inches post and AM-P6000E series ENT Microscope comes with 41 inches post.

**AMP6000, Surgical Microscope**

MRC is proud to offer AMP6000 series surgical microscopes. It is a light weight and portable surgical microscope suitable for almost all working situation, especially in a small space. The lenses inside the microscope are made of Schott" Optical Glass imported from Germany, which offers excellent optic feature, such as high resolution, long depth of field, etc. It brings high performance, reliability.

The ergonomic design of the microscope gives precise, fatigue-free operation, with brilliant three-dimensional images at a large depth of focus. It is suitable to be used as Dental and ENT surgical microscope especially.

**MOTICAM Cameras**

MOTICAM 1000

**MOTICAM 1000**

- No pixelation when used with a projector.
- Crisp & Clear images, great for Interactive White boards.
- Used in Schools, Universities and Laboratories.

1280x1024  
12mm



MOTICAM 2000

**MOTICAM 2000**

- Live 2 Megapixel solution in small metal casing.
- Live Scale-Bar and Scale-Cross.
- Includes additional Eyetube adapter.

1600x1200  
12mm



MOTICAM 2300

**MOTICAM 2300**

- 3 Megapixel Live Resolution with advanced controls.
- May be used for most bright Fluorescence Applications.
- Live Scale-Bar and Scale-Cross.

2048x1536  
16mm



MOTICAM 2500

**MOTICAM 2500**

- 5 Megapixel Live Resolution with enhanced clarity.
- Affordable documentation solution.
- Live Scale-Bar, Grid and Scale-Cross.

2592x1944  
12mm



Motic Images Plus 2.0  
PC & OSX



USB2.0



28mm, 30mm,  
34mm, 35mm

For more details see page 209





### COL-1320, Colposcope

#### Features:

- Hand polished optics for exceptional clarity.
- Individually adjustable binocular optics for true stereoscopic view.
- Optical measuring circles for precise measurements.
- Clear, bright LED light source that is longer lasting, gives more sure color balance, and is cooler to the touch than the standard halogen light source.
- Light intensity 6.5V /10,000 LUX.
- Focal length: 300mm.
- Magnification: 15x, 7.5x, and 3.75x.
- Field of View: 7.74mm, 15.5mm, 30.93mm.
- Depth of Field: 3mm, 4mm, 22mm.
- Smooth adjustable controls for gross and fine focus
- Optic Angle of binocular head is 45°.
- Universal Teflon<B> ball joint never has to be tightened or adjusted & it gives you a fluid 360° motion for gross focus.
- Roller base for easy transport.
- Space saving small footprint: length is 14" and width is 12".
- Clutter reducing internal power cable.
- Working height: 33" to 49".
- One piece shipplaq that puts you in operation within minutes of opening the box (no assembly/installation necessary).
- Comes with color instruction booklet, dust cover to limit wear and tear, and two extra fuses.

MRC is proud to offer the COL-3000 Series Colposcopes. The lenses inside these colposcopes are made by Schott® Optical Glass imported from Germany. which offers excellent optic feature. such as high resolution. long depth of field. etc.



### COL-3300, Colposcope

#### Features:

- Smooth three-step turret magnification changer.
- 300mm working distance objective lens offering 2.7x, 6.7x, and 16.7x magnifications. Optional magnifications/objective lens combinations are available.
- Widefield 12.5x eyepieces with diopter locks and fold-down rubber eyecups for eyeglass wearers.
- Straight binocular head F=160.
- Light Intensity on object plane: 38,000.00 Lux. Min.
- Fan cooled, \*\*dual-port variable fiber optic coaxial illumination with 15V/150W lamp.
- Maximum height from floor to objective lens: 1200mm.
- Minimum height from floor to objective lens: 1050mm.
- Green filter in selector knob.
- Small diameter base on roller castors with adjustable vertical post height.
- Spare lamp, dust cover and instruction manual.

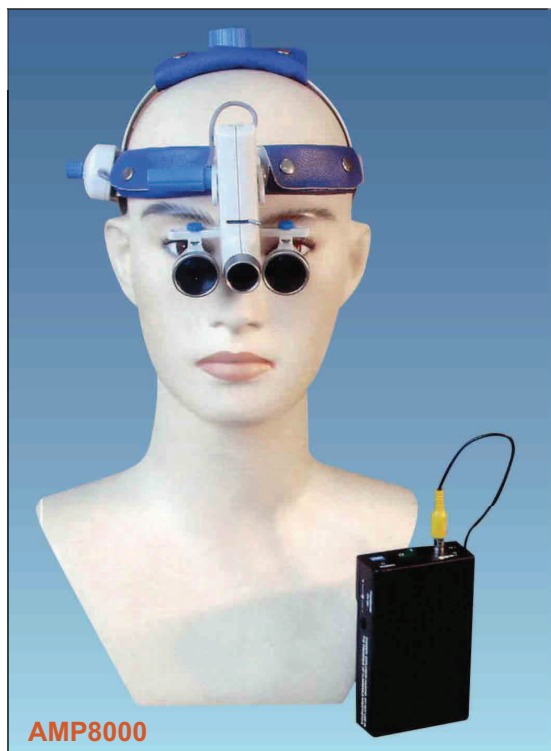
\*\*should a lamp fail during an examination, the dual-port feature allows a quick change from one lamp to another resulting in an uninterrupted procedure.

**COL-3500, Colposcope****Features:**

- Smooth five-step turret magnification changer.
  - 300mm working distance objective lens offering 2.7x, 4.2x, 6.7x, 10.7x, and 16.7x magnifications.
  - Optional magnifications/objective lens combinations are available.
  - Widefield 12.5x eyepieces with diopter locks and fold-down rubber eyecups for eyeglass wearers.
  - Straight binocular head F=160.
  - Light Intensity on object plane: 38,000.00 Lux Min.
  - Fan cooled, \*\*dual-port variable fiber optic coaxial illumination with 15V/150W lamp.
- \*\*should a lamp fail during an examination, the dual-port feature allows a quick change from one lamp to another resulting in an uninterrupted procedure.
- Maximum height from floor to objective lens: 1200mm.
  - Minimum height from floor to objective lens: 800mm.
  - Overall distance from the column to the objective lens: 1050mm.
  - Green filter with selector knob.
  - Spare lamp, dust cover and instruction manual.

**COL-3900, Colposcope****Features:**

- Continuous zoom magnification system from 2.2x through i2.9x.
  - 300mm working distance objective lens offering continuous zoom magnifications from 2.2x to i2.9x.
  - Optional magnifications/objective lens combinations are available.
  - Widefield i2.5x eyepieces with diopter locks and fold-down rubber eyecups for eyeglass wearers.
  - Straight binocular head F=i60.
  - Light Intensity on object plane: 38,000.00 Lux Min.
  - Fan cooled, \*\*dual-port variable fiber optic coaxial illumination with i5V i50W lamp .
- \*\*should a lamp fail during an examination, the dual-port feature allows a quick change.
- Maximum height from floor to objective lens: i200mm.
  - Minimum height from floor to objective lens: 800mm.
  - Overall distance from the column to the objective lens: i050mm.
  - Green filter with selector knob.
  - Spare lamp, dust cover and instruction manual.



AMP8000

**AMP8000, LED Heading**

AMP8000 brings you the most advanced lighting technology.

Our new LED headlight provides cool, bright, white light for procedures and examinations

The LED headlight is more than twice as bright as other standard LED and conventional headlights.

When you need well-defined illumination - without the heat of traditional halogen headlight - look at our new LED headlights providing superior quality and reliability.

**Features:**

- Light source: our LED lamp without the heat of traditional halogen headlight. with a color temperature of 6000 kelvin, this light supplies bright, white, shadow-free light allowing the doctor to see tissue characteristics without distortion.
- Enjoy the flexibility of operating the headlight by the use of the rechargeable lithium battery, without the use of direct power source.  
It is one of the most comfortable lightweight headlight and suitable for all kinds of surgery.
- The headlight could be used when it is charging.
- With low-battery indicator light.
- Smart design, convenient for mobile diagnosis.

Optical specifications		
Illumination light spot at 420mm distance (with iris diaphragm)		20-100mm
Illumination in 250mm working distance		≥25000lx
Adjustable range		
Fluctuation distance		12.5mm
Angle		Range vertical ±25°
Weight		
Head lamp (excluding head band)		70g
Electrical Specifications		
Illumination source		Extremely bright light, 3W LED, life 20000 hours, continuous burn, does not need to change the LED lamp
Battery		7.2V Lithium battery
Battery run time		Not less than 2.5 hours continuous run time on a fully charged battery
Voltage		220V AC/110V AC
Maximum input power		15W
Electrical safety standard		GB9706. 1, Class II type BF equipment
Environment requirments		
Use condition	Environment temperature	+10°C~+40°C
	Relative humidity	30%~75%
	Atmospheric pressure	700hPa~1060hPa
Shipping and stock	Environment temperature	-40°C~+55°C
	Age relative humidity	10%~90%
	Atmospheric pressure	500hPa~1060hPa



## Cameras

# MICROSCOPES

M



**MOTICAM 1000**

### MOTICAM 1000

- No pixelation when used with a projector.
- Crisp & Clear images, great for Interactive White boards.
- Used in Schools, Universities and Laboratories.

1280x1024  
12mm



**MOTICAM 2300**

### MOTICAM 2300

- 3 Megapixel Live Resolution with advanced controls.
- May be used for most bright Fluorescence Applications.
- Live Scale-Bar and Scale-Cross.

2048x1536  
16mm



**MOTICAM 2000**

- Live 2 Megapixel solution in small metal casing.
- Live Scale-Bar and Scale-Cross.
- Includes additional Eyetube adapter.

1600x1200  
12mm



**MOTICAM 2500**

### MOTICAM 2500

- 5 Megapixel Live Resolution with enhanced clarity.
- Affordable documentation solution.
- Live Scale-Bar, Grid and Scale-Cross.

2592x1944  
12mm



Motic Images Plus 2.0  
PC & OSX



USB2.0



28mm, 30mm,  
34mm, 35mm

**Software Included**

**MOTICAM-PRO** feature a 4 frame buffer as well as on-board image processing with the built-in Schott BG 40 bandpass filter further ensuring high-quality imaging. The Moticam Pro also features an external hardware trigger port (TTL) which can be used to trigger the camera or have the camera trigger an external device.



Model	252A	205A	205C	285A	285C
Colour/Monochrome	Color	Color	Monochrome	Color	Monochrome
Resolution	2080x1542	1360x1024	1360x1024	1360x1024	1360x1024
Max. Frame Rate of full Resolution	4.28fps	7.5fps	7.5fps	15fps	15fps
Image Sensor	ICX2520AQ	ICX2050AK	ICX205AL	ICX285AQ	ICX285AL
Sensor Size	1/1.8	1/2	1/2	2/3	2/3
Pixel Size	3.45µ x 3.45µ	4.65µ x 4.65µ	4.65µ x 4.65µ	6.45µ x 6.45µ	6.45µ x 6.45µ
ADC Converter	12 bit				
Image Memory	4 frame buffer				
Shutter Settings	125ms-60sec				





BR200

**BR200, Video Boreoscope/Wireless Inspection Camera**

**Features:** Captured video with date/time stamp can be played back on the wireless monitor or on any monitor with a video input jack • Video and images can also be transferred to your PC via the microSD card (with included SD adaptor) or USB cable (included) and viewed using Windows®Multimedia Player • NTSC or PAL operation with menus in 10 languages: English, Chinese, German, French, Spanish, Portuguese, Italian, Japanese, Dutch, & Russian • Mini water-proof (IP67) camera for high resolution viewing • Two bright LED lamps with dimmer to illuminate viewed object • Glare-free close-up field of view • 39" (1m) flexible gooseneck retains configured shape.

**Applications:**

- Home inspection: Inspect in walls for mold, insect infestation, electrical wire or water pipe location.
- HVAC: Inspect inside ducts, behind motors and compressors.
- Automotive: View inside or around engines and transmissions.
- Government: Safety and security inspections.
- Industrial: Inspect weld integrity, process equipment, gears, molding machines.
- Aerospace: Aircraft inspections for contamination, debris, cracks or other damage.

Complete with 4 AA batteries, microSD memory card with SD adaptor, USB cable, extension tools (mirror, hook, magnet), video interconnect cable, AC adaptor (100-240V, 50/60Hz), magnetic base stand, and storage case.

Model	BR200
<b>Pixels</b>	712x486 (NTSC)/704x576 (PAL)
<b>Transmission Frequency</b>	2.4GHz
<b>Modulation Type</b>	FM
<b>Bandwidth</b>	18MHz
<b>Transmission Range</b>	32ft (10m) unobstructed view
<b>Viewing direction</b>	Viewing Angle 50°
<b>Viewing distance</b>	5.9"to 9.8" (15 to 25cm)
<b>Shaft diameter</b>	0.66" (17mm)
<b>Minimum bend radius</b>	2.36" (60mm)
<b>Working length</b>	39" (1m)
<b>Camera Dimensions</b>	7.3 x 5.7 x 1.6" (186 x 145 x 41mm)
<b>Weight</b>	18.7oz (530g)
<b>Monitor</b>	
<b>LCD Screen Type</b>	3.5" TFT
<b>Pixels</b>	320 x 240
<b>Video Output Level</b>	0.9 to 1.3V@75Ω
<b>Frame Rate</b>	10, 15, 20, 25, 30FPS
<b>Video Resolution</b>	960 x 240 (avi format)
<b>Image Resolution</b>	640x 480 (jpeg format)
<b>Monitor Dimensions</b>	3.9 x 2.7 x 1" (100 x 70 x 25mm)
<b>Operating/Charge Time</b>	1.5 hours/3 hours
<b>Weight</b>	4.9oz (140g)

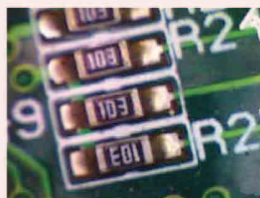


MC108

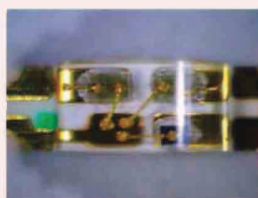
**MC108, Digital Mini Microscope****Features:**

- 7x to 108x magnification range, Optical Zoom: 7x to 27x, Digital Zoom: 4x.
- Four white LEDs with adjustable brightness for object illumination.
- 5 Image Effect modes: Normal, Gray, Inverse, Emboss, & Dual Window View.
- Dual Window View simultaneously displays the magnified image next to the original image.
- Real-time imaging on your PC screen via USB interface and included software.
- Includes microscope stand for hands-free viewing.

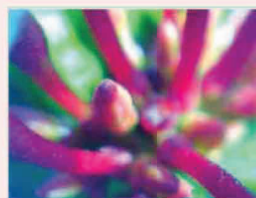
- Dimensions: 4.7x2.2x0.8" (120x56x20mm). Weight: 2.5oz (70g) without batteries.
- Complete with stand, three AAA Ni-MH rechargeable batteries, 100 to 240VAC (50/60Hz) adaptor/charger, Windows® compatible PC software with mini USB cable, cleaning cloth, and wrist strap.



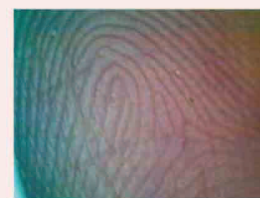
PC board inspection



Soldering check



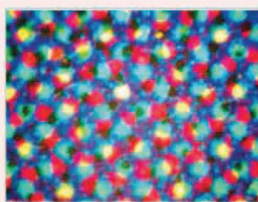
Plant research



Fingerprint verification



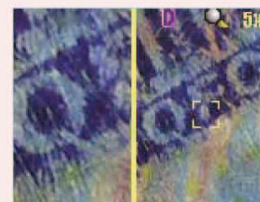
Fabric inspection



Analysis of printing



Check for counterfeit money



Dual Window view simultaneously displays magnified image next to the original image



BT501J

**BT501J, 0.005-10mL/min**

Acceptable pump heads are JY10 & D61x. The pump provides flow rates from 0.005 to 10mL/min. It can realize speed adjusting and direction changing and has functions of prime and external start/stop. It features compact size & easy to operate.

**Functions and Features:**

- Applicable pump heads: JY10 and DGtx (10 rollers).
- Prime key for fast filling and emptying.
- Speed, start/ stop and direction can be controlled through membrane keypad or through external Control interface.
- Memory function, storing the running parameters automatically.
- Compact size, light weight and low power consumption.
- Membrane keypad, easy to operate.
- Good performance and low price.
- At normal lab conditions.



BT1002J

**BT1002J, 0.0002-380mL/min**

Acceptable pump heads for BT100-2J are YZ1515x, YZ2515x, YZII15, YZII25 DG-1 and DG-2. The pump provides flow rates from 0.0002 to 380 mL/min. The speed can be adjusted manually or automatically through external control. Store the running parameters automatically. Easy to operate.

**Functions and Features:**

- Applicable pump heads: YZ1515x, YZ2515x, YZII15, YZII25, DG-1, DG-2.
- Prime key for fast filling and emptying.
- Adjust speed manually or automatically through analog interface.
- Memory function, storing the running parameters automatically.
- Membrane keypad, easy to operate.
- Good performance and low price.
- At normal lab conditions.



BT3002J

**BT3002J, 0.07-1140mL/min**

Acceptable pump heads for BT3002J are VZ1515x, YZ2515x, YZII15, YZII25, BZ25. The pump delivers flow rates from 0.07 to 1140 mL/min. The speed can be adjusted manually or automatically through external control interface. Store the running parameter automatically. Easy to operate.

**Functions and Features:**

- Applicable pump heads: YZ1515x, YZ2515x, YZII15, YZII25, BZ25.
- Prime button for fast filling and emptying.
- Adjust speed manually or automatically through analog interface.
- Memory function, storing the running parameters automatically. Equipped with Longer Dispensing Controller for filling function.
- At normal lab conditions.

Model	BT501J	BT1002J	BT3002J
Speed	0.1 to 50.0 rpm, reversible	0.1 to 100 rpm, reversible	1 to 300 rpm, reversible
Speed precision	0.1 rpm		1 rpm
Speed control	Membrane keypad		10-turn potentiometer
Display	3-Digit LED displays current rpm		3-digit LED displays current speed
Communication interface	-	RS-485	-
External control	Start/stop & cw/ccw control	Start/stop, cw/ccw control, and speed control (0 to 5 V, 0 to 10 V, 4 to 20 mA and 0 - 10 KHz optional)	
Power supply	AC 220V $\pm 10\%$ 50/60 Hz (standard), AC 110V $\pm 10\%$ 50/60 Hz (optional)	AC 90-260V 50/60Hz	AC 220 V $\pm 10\%$ 50/60 Hz (standard), AC 110 V $\pm 10\%$ 50/60 Hz (optional)
Power consumption	< 10 W	< 30 W	< 35 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%		
Dimension (mm)	L176xW110xH115	L232xW142xH149	L227xW155xH171
IP rating	IP 31		
Drive weight	2.2kg	2.3kg	3.6kg



**LEAD2, Flow Rate 0.01-350mL/min**

The applicable pump heads for Lead2 are Lead1 5-48, Lead1 5-88, Lead1 5-24, Lead15-44 & max. 8 channels are available. The pump delivers flow rates from 0.01 to 350 mL/min. It has flow rates display & flow rates calibration functions. It also has functions of speed adjustment, start/stop, cw/ccw, prime (rinsing), tubing selection, 485 communication, analog control, etc.

**Functions and Features:**

Accept 4 special pump heads • Planetary gearbox is adopted in its pump heads. This changes the traditional driving methods of tubing pumps, decreases abrasion, prolongs tubing life and improves accuracy • **Display can switch between flow rates and speed** • **Calibration function for more accurate flow rates** • Computer control available through RS485 communication • Prime key for fast filling and emptying.

Model	LEAD2
Speed	1 to 100 rpm, reversible
Speed precision	0.1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x32 graphic LCD displays current running status
Analog interface	Start/stop and cw/ccw control, 0 to 5V, 0 to 10V, and 4 to 20mA speed Control
Communication	RS-485
Power supply	AC 220 V $\pm$ 10% 50/60 Hz (standard), AC 110 V $\pm$ 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L190xW162xH275
Drive weight	3.5kg
IP rating	IP 31

**BT1001L, Flow Rate 0.05-500mL/min**

The max. output torque of BT1001L drive is 2 Nm. Multi pump heads are available. The pump provides flow rates from 0.05 to 500 mL/min. 128x64 graphic LCD displays running menus and parameter setting menus. The flow rate & the speed (rpm) can be displayed in the same screen. The display interface is friendly. It has flow rate calibration function to make the flow rate more accurate. It has many control modes. The external control can be realized through standard external interface or RS485 communication interface.

**Functions and Features:**

**Display can switch between flow rates & rpm** • **Calibration capability for more accurate flow rate** • Graphic LCD together with rotary coded switch makes it friendly and easy to use • Higher torque to accept more pump heads and more channels • RS485 communication interface available. Offering communication protocol to customer and customizing software according to customer's requirements.

Model	BT1001L
Speed	1 to 100 rpm, reversible
Speed precision	0.1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x64 graphic LCD displays current running status
Analog interface	Start/stop and cw/ccw control, 0 to 5V, 0 to 10V, and 4 to 20mA speed Control
Communication	RS-485
Power supply	AC 220 V $\pm$ 10% 50/60 Hz (standard), AC 110 V $\pm$ 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L202xW160xH239
Drive weight	5.34 kg
IP rating	IP 31



BT1001F

**BT1001F, Dispensing, 0.16-500mL/min**

Applicable pump heads for BT100-1F are YZ1515x, YZ2515x, YZ1115, YZ1125 and D6-1, DG-2, DG-4. The pump delivers flow rates from 0.02 pL to 480 mL/min and dispensing volume is from 0.01 mL to 9900 mL. Combining 128\*32 LCD display with membrane keypad and rotary coded switch makes the operation easy and prompt. The speed can be adjusted manually or automatically through external control interface.

**Functions and Features:** Acceptable pump heads: YZ1515x, YZ2515x, YZ1115, YZ1125 and OG-1, OG-2, DG-4 • Micro flow rates transferring: The smallest flow rate can reach 0.16  $\mu\text{L}/\text{min}$  • Back suction function: In

dispensing mode, the pump runs reversely after stopping to prevent the liquid from dripping • Operating mode: Membrane keypad & rotary coded switch • Speed control: The speed can be adjusted manually or automatically through external control interface • Display: LCD displays current running status • MAX key: For fast filling and emptying • Memory function: Storing the running parameters automatically • Calibration function: The flow rates and the dispensing volume can be calibrated to increase the accuracy • Communication function: Realize computer control through RS485 communication interface

Model	BT1001F
Flow rate	0.16 J IL/ min to 500 mL /min
Dispensing volume	0.01 mL to 9.99L
Speed	0.01rpm to 100.0rpm
Copy number	0 to 9999
Pause time	0.1 s to 99.90 min
Back suction time	0 to 99.9s
External control input interface	start/stop control, direction control, flow rates control (0-5V,0-10V,4-20mA,0-10KHz optional)
Output interface	start/stop, direction output and 0-10KHz frequency output (corresponding to 0 to 100.0 rpm) with insulating function
Communication	RS-485
Power	AC 100 - 240 V $\pm$ 10% 50/60 Hz
Power consumption	< 40 W
Operating condition	Temperature 0 to 40°C
Relative humidity	< 80%
Dimensions (mm)	L292xW185xH180
Drive weight	3.8 kg
IP rating	IP31



BT3001F

**BT3001F, Dispensing, 0.07-1140mL/min**

The applicable pump treats for BT3001F are YZ1515x YZ2515x YZ1115 YZ1125 The pump delivers Flow rates from 0.07 to 1140 ml/mm 128 x 64 graphic LCD displays running menus and parameter Setting menus The display interfaces are friendly. It has many control modes. The external control can be realized through standard external control interface or 485 communication interface.

**Functions and Features:** Applicable pump heads YZ1515x YZ2515x, YZ1115, YZ1125 • Set pause time to realize dispensing and filling automatically • Display can switch between flow rates & rpm • Calibrate setting flow rates to acquire more accurate flow rates • RS485 communication interface available. Offering communication protocol to customer and customizing software according to customer's requirements.

Model	BT3001F
Speed	1 to 100 rpm, reversible
Speed precision	1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x64 graphic LCD displays flow rate speed or dispensing
Copy number	1 to 999
Dispense volume	0.1ml tp 99.9L
Pause time	1 to 999s
Back suction angel	0 to 360 18° increments
Analog interface	Start/stop and cw/ccw control, 0 to 5 V, 0 to 10 V, and 4 to 20 mA speed contro
Communication interface	RS-485
Power supply	AC 220 V $\pm$ 10% 50/60 Hz (standard), AC 110 V $\pm$ 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L202xW160xH239
Drive weight	4.3 kg
IP rating	IP 31



BT6002J

**BT6002J, 0.07-3000mL/min**

Suitable pump heads for BT6002J are YZ1515X, YZ2515X, YZ1115, YZ1125 and BZ25. It can deliver flow rates from 0.07 to 3000 mL/min and its speed can be adjusted manually or automatically through external control interface. BT6002J can realize dispensing function when it connects to a FK-1C dispensing controller. It is easy to operate.

**WT6002J, 4.2-6000mL/min**

WT6002J peristaltic pump adopts brushless DC motor. It has features of high output torque, low vibration, high efficiency. It can drive double pump heads. It accepts many pump heads and delivers flow rate from 4.2 to 6000 mL/min. The speed can be adjusted manually or automatically through external control.

**Features:**

High IP rating suitable for wet and dust environment • Big torque, high efficiency, maintenance-free • LED display speed and working status • Using membrane to control pump operation • Prime key: Fast filling and emptying • Start/stop, CW/CCW and speed can be controlled by external control • Memory function: Storing the running parameters automatically • Program download functions: Reserve ISP port on PCB, program can be download and updated • Cooling functions: Natural heat dissipation, ensure the temperature of drive not exceed the scope • Output port: Output the work status of pulse, start/stop and direction.

Model	BT6002J	WT6002J
Speed	1-600 rpm, reversible	60-600rpm
Speed accuracy	±1.0%	
Speed resolution	1 rpm	
External control	Star t/stop, cw/ccw control, and speed control (0 to 5 V, 0 to 10 V, 4 to 20 mA and 0 - 10 KHz optional)	
Communication interface	RS-485	
Power supply	AC 90 - 260 V 50/60 Hz	AC 176-264V, 50/60Hz
Power consumption	< 100 W	≤ 200W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%	
Dimension (mm)	L280×W200×H180	L292×W185×H180
Drive weight	3.8 kg	5.2kg
IP rating	IP 31	



ZG-60600

**ZG-60600, 740-12000mL/min**

Applicable pump heads for ZG-60600 are YZ35-13, YZ35 (AI), YZ35 (POM). The pump delivers flow rates from 0.74 to 12 Umin. The speed can be adjusted manually or automatically through external control interface. Driven by DC motor the ZG60-600 has higher torque and can drive double pump heads. ZG-60600 is ideal for industrial application to meet your needs for higher pressure and quick fluid transfer. Steady flow rate, lower noise and easy to operate.

**Functions and Features:**

Applicable pump heads: YZ35-13, YZ35 (AI), YZ35 (POM) • Stainless steel housing of the drive is available • Suitable for industrial applications • Longer Footswitch or other external control device optional • Equipped with Longer Dispensing Controller for filling function.

Model	ZG-60600
Speed	60-600 rpm, reversible
Speed control	10-turn potentiometer
Analog interface	N/A
Power supply	AC 220 V ±10% 50/60 Hz
Power consumption	< 400 W
Operating condition	Temperature 0 to 40°C, Relative humidity <80%
Dimension (mm)	L325xW236xH193
Drive weight	17 kg
IP rating	IP 31





### WT6001F, Dispensing 0.7-6000mL/min

Applicable pump heads for WT600-1F are YZ1515x, YZ2515x, YZ1115, YZ1125, KZ25, BZ25, DMD25 and DG15-24. The pump delivers flow rates from 0.7 mL to 6000 mL/min and dispensing volume is from 0.1 mL to 99.9 L. Combining 128x32 LCD display with membrane keypad and rotary encoded switch makes the operation easy and prompt. The speed can be adjusted manually or automatically through external control interface.

#### Functions and Features:

Acceptable pump heads: YZ1515x, YZ2515x, YZ1115, YZ1125, DG15-24, KZ25, BZ25, DMD25 • Back suction function: In dispensing mode, the pump runs reversely after finishing one filling operation to prevent the liquid from dripping • Operating mode: Membrane keypad and rotary encoded switch.

- Speed control: The speed can be adjusted manually or automatically through external control
- Display: LCD displays current running status and parameters
- Prime key: For fast filling and emptying
- Memory function: Storing the running parameters automatically
- Calibration function: The flow rates and the dispensing volume can be calibrated to increase the accuracy

Model	WT6001F
Dispensing volume	0.1 mL to 99.9 L
Speed	10 to 600 rpm, reversible
Copy number	0 to 9999
Pause time	0.1 s to 99.9 min
Back suction	0 to 9.9 revolution
External control	Control start/stop, direction, flow rate control (0-5V, 0-10V, 4-20mA, 0-10KHz optional)
Output interface	start/stop, direction output, and 0 - 10 KHz frequency output
Communication	RS-485
Power	AC 176 - 264 V 50/60 Hz
Power consumption	< 140 W
Operating condition	Temperature 0 to 40°C, Relative humidity <98%
Dimensions (mm)	L292 × W185 × H180
Drive weight	5.2kg
IP rating	IP 31



### JL350-2J, ≤ 35L/min, Industrial

JL350-2J peristaltic pump is ideal for high flow rates fluids transfer, driven by the AC motor and the frequency converter control the speed. The pump delivers flow rates from 1.6 to 35L/min. Through the transparent front cover, the running status of the pump head is visible. The speed, running direction and run/stop of the pump we controlled manually by membrane Keypad or automatically by external control interface. Its operation is Simple and reliable.

#### Functions and Features:

- High-power pumps, and the maximum flow rates can reach 35L/min
- The structure of concave working surface and convex roller realizes the tubing self-position function. It reduces abrasion and prolongs tubing life
- Variable frequency speed control to AC motor with creeper gear
- Adjustable occlusion
- Strong drive
- Pump head operation is visible through transparent front cover.

Model	JL350-2J
Speed	30-350 rpm, reversible
Speed precision	0.6 rpm
Power supply	AC 220 V ±10% 50/60 Hz
Power consumption	< 400 W
Operating condition	Temperature 0 to 40°C, Relative humidity <80%
Dimension (mm)	L417xW401xH321
Drive weight	32 kg
IP rating	IP 31



WT6003J

**Water Proof  
IP-65**

### WT6003J, Industrial 4.2-6000mL/min

WT6003J peristaltic pump is high IP rating and high efficiency. It adopts brushless DC motor and speed closed loop control. It has features of high output torque, low vibration and free maintenance. It accepts multiple two channels pump heads and delivers flow rates from 4.2 to 6000 mL/min (single channel).

#### Functions and Features:

- High IP rating: Suitable for moist and dust working condition
- MAX key: For fast filling and emptying
- Memory function: Storing the running parameters automatically
- Communication function: Realize the computer control through RS485 interface
- Display: 3 digits LED displays the speed of the pump
- External control input: Control the speed, start/stop and direction of the pump
- Suitable for different pump heads and tubing
- High output torque which can drive double pump heads
- Brushless DC motor, high output torque, free maintenance
- Operation mode: Switch and membrane keypad. Easy to operate.

Model	WT6003J
Speed	60 to 600 rpm, reversible
Speed resolution	1 rpm
IP rating	IP 55
Drive output torque	≥1.50 N-M
Speed Control Accuracy	±1.0%
Communication	RS-485
Power	AC 176-264V 50/60Hz
Power consumption	< 190 W
Operating condition	Temperature -10 to 40°C, Relative humidity <80%
Dimensions (mm)	L273xW190xH272
Weight	7.3kg
Heat emitting mode	Natural cooling. the inner temperature of the drive is less than 40°C
Speed control mode	Membrane keypad
Display mode	3digits LED displays the speed of the pump, 4pcs LED indicators display the working state
External control	0.5 - 5 V, 1 - 10 V, 4 - 20 mA or 1 - 10kHz are corresponding to 60 - 600 rpm



YT600-1J

### YT600-1J, 600-11000mL/min

The pump delivers flow rates from 600 to 11000 mL/min. The speed can be adjusted manually or automatically through external control interface. Driven by DC motor YT600-1J has higher torque and can drive double pump heads. Suitable for industrial applications which need high pressure and big flow rates.

#### Functions and Features:

- Acceptable pump heads: YZ35-13, K 35
- Suitable for industrial applications
- Can be equipped with Longer Dispensing Controller for filling function when connecting single channel pump head.

**IP-54**

## YZ35-Series, Industrial Easy-Load Pump Heads

**YZ35-13**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.

**YZ35(AI)**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.
- The housing material is alloy aluminum, surface anodizing.

**YZ35(POM)**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.
- The housing material is POM.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ35-13	73" 82"	11000	≤600	PSU AL POM
YZ35				

## DMD25, Low Pulse Pump Head

**DMD25**

- Suitable for accurate dispensing.
- Track assembly and base are independent. Easy to load tubing.
- Accept many sizes of tubing to realize wide range flow rates transferring.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
DMD25	119"	150	≤350	POM
	120"	800		
	15"	1500		
	24"	2400		
	35"	2950		
	36"	4000		

## BZ-25, Standard Pump Head

**BZ25**

- Stable operation and stackable.
- Compact size.
- Standard pump head, fixed occlusion.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
BZ25	24"	1600	≤600	PC

## DG15-Series, Medium And Small Flow Rates Multi-Channel Pump Head

**DG15**

- Cartridges and base can be separated.
- Suitable for several tubing sizes for a wide flow range.
- The material of the roller is RULON®J.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
DG15-24	16# 17# 25#	1800	≤600	POM
DG15-28	Inner diameter ≤3.17mm, Wall thickness 0.8-1 (mm) 13# 14#	75	≤100	
DG15-48				

## KZ25, Quick-load Pump Head

**KZ25**

- Cartridges and base can be separated.
- Pump heads can be stackable.
- Compact size and a wide flow range.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
KZ25	15"	1800	≤600	PC
	24"	3500		
	35"	5000		
	36"	6000		



## DG-Series, Heads Information



## Features:

Multi-channel transfer • Change tubing easily • Fix tubing easily • Occlusion can be adjusted slightly by ratchet wheel to meet different tubing wall thickness requirements • 6-roller and 10-roller pump heads available • More rollers reduce pulsation and flow rates slightly • Skillful trigger design, convenient to open the cartridges (DG-1, DG-2).

Type	Tubing	Max. flow rate (mL/min)		Speed (rpm)	Cartridge material	Part number		Weight (kg)	
		6 Rollers	10 Rollers			6 Rollers	10 Rollers	6 Rollers	10 Rollers
DG-1	Inner diameter ≤3.17mm wall thickness 0.8-1 (mm)	48 (per channel)	32 (per channel)	≤ 100	POM	51011001	51011002	0.21	0.20
DG-2						51012001	51012002	0.27	0.26
DG-4						51013001	51013002	0.40	0.39
DG-6						51014001	51014002	0.54	0.51
DG-8						51015001	51015002	0.67	0.63
DG-12						51016001	51016002	0.95	0.88

## Easy-load Pump Heads



## YZ II 15 (YZ II 25)

- Change tubing easily & rapidly.
- Compact size.
- Accept several tubing sizes for a wide flow range.



## YZ1515x (YZ2525x)

- Change tubing easily and rapidly.
- Accept several tubing sizes for a wide flow range.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ II 15	13" 14" 16" 17" 18" 19" 25"	2200	≤600	PESU
YZ II 25	15" 24" 35" 36"	3000		

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ1515x	13# 14# 16# 17# 18# 19# 25#	2200	≤600	PESU
YZ2525x	15# 24#	1600		

# PRESSURE METER

Model : PS-9302

*ISO-9001, CE, IEC1010*

## FEATURES

- \* Meter can cooperate with 2, 5, 10, 20, 50, 100, 400 bar sensor, new calibration are not necessary when change the new sensor .
- \* 8 kind pressure units : bar, psi, Kg/cm<sup>2</sup> mm/Hg, inch/Hg, meter/H<sub>2</sub>O, inch/H<sub>2</sub>O, Atmosphere.
- \* 4 pin DIN socket, 2 pins to provide DC 5 V exciting voltage .
- \* Zero button.
- \* Separate pressure sensor, easy operation. & remote measurement.
- \* Records max. & min. readings.
- \* Data Hold.
- \* RS 232 PC serial interface.



# PRESSURE METER

Model : PS-9302

## FEATURES

* Meter can cooperate with 2, 5, 10, 20, 50, 100, 400 bar sensor, new calibration are not necessary when change the new sensor.	* Zero button on the front panel, easy adjust the zero value of pressure sensor.
* When change the new pressure sensor, just select pressure type ( 2, 5, 10, 20, 50, 100, 400 bar ) on the front panel button. The sensor type will memorize into the circuit permanently by EEPROM.	* Push button gain adjustment, usage for calibration precisely if necessary.
* 8 kind pressure units ( bar, psi, Kg/cm2 mm/Hg, inch/Hg, meter/H2O, inch/H2O, Atmosphere ) select by push button on the front panel	* Separate pressure sensor, easy operation. & remote measurement.
* Optional full line pressure sensor ( 2, 5, 10, 20, 50, 100, 400 bar ) are available.	* Microprocessor circuit assures maximum possible accuracy, provides special functions and features,
* Auto shut off saves battery life.	* Super large LCD display with contrast adjustment for best viewing angle.
* 4 pin DIN socket, 2 pins to provide DC 5 V exciting voltage ( power supply ) to pressure transducer, another two pins for accept transducer signal of 100mV full scale.	* Records maximum & minimum readings with recall.
	* Data Hold function for stored the desired value on display.
	* Built-in low battery indicator.
	* RS 232 PC serial interface, can match the personal computer used as the Data Logger, Pressure Recorder.... & other modern pressure measuring system.

## GENERAL SPECIFICATIONS

Circuit	Microprocessor LSI circuit.	Power off	Auto shut off, saves battery life, or manual off by push button.
Display	61 mm x 34 mm supper large LCD display. 15 mm ( 0.6" ) digit size.	Sampling time	Approx. 0.8 second.
Display units	bar, psi, Kg/cm2, mm/Hg, inch/Hg, meter/H2O inch/H2O, Atmosphere.	Operating temperature	0 to 50 °C ( 32 to 122 °F ).
Pressure transducer	Optional, exciting voltage DC 5V, Sensor max. range output is DC 100 mV.	Operating humidity	Less than 80% R.H.
Zero adjust	Push button on the front panel.	Power supply	006P DC 9V battery(heavy duty).
Span adjust	Push button gain adjustment, usage for calibration precisely if necessary.	Power current	Approx. DC 8.5 mA.
Transducer mV input signal	Approx 100 mV ( Full Scale ).	Weight	345 g/0.76 LB
Exciting output power supply	DC 5 V.	Dimension	180 x 72 x 32 mm ( 7.1 x 2.8 x 1.3 inch ).
Data hold	By push button.	Accessories included	* Instruction manual..... 1 PC * Hard carrying case ( CA-06 )..... 1 PC
Data record	Record maximum & minimum readings.	Optional accessories	* Pressure sensor, PS100-xxBAR * Data acquisition software ( Windows version ), SW-U101-WIN * RS232 cable, UPCB-01
Data output	RS 232 PC serial interface.		

## APPLICATIONS

* Measure Pneumatic Pressures.	* Hydraulic Servo controls	* Refrigeration
* Measure Automobile Engine Vacuum Pressures.	* Air conditioning	
* Pressure for Super Heat Measurements	* Food Processing	

## ELECTRICAL SPECIFICATIONS

Sensor type	2 bar		5 bar		10 bar		20 bar		50 bar		100 bar		400 bar	
	Max. range	Resolution	Max. range	Resolution	Max. range	Resolution	Max. range	Resolution	Max. range	Resolution	Max. range	Resolution	Max. range	Resolution
bar	2	0.002	5	0.005	10	0.01	20	0.02	50	0.05	100	0.1	400	0.5
psi	29	0.02	72.5	0.1	145	0.2	290	0.2	725	1	1450	2	5800	5
Kg/cm2	2.040	0.002	5.095	0.005	10.19	0.01	20.40	0.02	50.95	0.05	101.9	0.1	408	0.5
mm/Hg	1500	2	3750	5	7500	10	15000	20	37500	50	75000	100	300000	500
inch/Hg	59.05	0.05	147.6	0.1	295.2	0.2	590.5	0.5	1476	1	2952	2	11810	10
meter/H2O	20.40	0.02	50.95	0.05	101.9	0.1	204.0	0.2	509.5	0.5	1019	1	4075	5
inch/HF20	802	1	2006	2	4010	5	8020	10	20050	20	40100	50	160600	200
Atmosphere	1.974	0.002	4.935	0.005	9.87	0.01	19.74	0.02	49.35	0.05	98.7	0.1	394.5	0.5

## PRESSURE SENSOR, Model : PS100-XXBAR

Description	* Optional, pressure sensor that cooperate with PS-9302. * Out put : 100 mV DC for full scale. * 4 pin DIN plug, 2 pins to accept DC 5 V exciting voltage(power supply) for pressure transducer, another two pins for output signal of 100mV full scale. Size : 30 mm dia. x 85 mm. Weight : 160 g. Pressure Port Connector : PS 1/4", 19 teeth per inch.
Model	2 bar sensor PS100-2BAR 5 bar sensor PS100-5BAR 10 bar sensor PS100-10BAR 20 bar sensor PS100-20BAR 50 bar sensor PS100-50BAR 100 bar sensor PS100-100BAR 400 bar sensor PS100-400BAR

\* Appearance and specifications listed in this brochure are subject to change without notice.

MRC.VER.01-12.09



# PRESSURE SENSOR

Model : PS100-xxBAR

ISO-9001, CE, IEC1010



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# PRESSURE TRANSDUCER

## Model : PS100-xxBAR

SPECIFICATIONS		
Max capacity & model	<i>Max capacity</i>	<i>Model</i>
	2 BAR ( 29 PSI )	PS100-2BAR
	5 BAR ( 72.5 PSI )	PS100-5BAR
	10 BAR ( 145 PSI )	PS100-10BAR
	20 BAR ( 290 PSI )	PS100-20BAR
	50 BAR ( 725 PSI )	PS100-50BAR
	100 BAR ( 1450 PSI )	PS100-100BAR
	200 BAR ( 2900 PSI )	PS100-400BAR
Application	Optional pressure transducer for the pressure meter PS-9302	
Overload protection for the pressure sensor	150% max. capacity	
Supply voltage	DC 9V	
Transducer Port Connector	1/4" PS ( per inch 19 teeth ).	
Span	$\pm 1 \% \text{ F.S.}$ @ Within 10 °C to 40 °C . @ Linearity + Hysteresis + Repeatability	
Zero	$\pm 2 \% \text{ F.S.}$ @ Within 10 °C to 40 °C .	
Operating Temperature	0 °C to 60 °C ( 32 °F to 140 °F ).	
Operating Humidity	Max. 80% RH.	
Output	Full capacity output = 100 mV DC	
Size	30 mm dia. x 85 mm.	
Weight	160 g.	
Cable length	1 meter.	
Wire Connection	4 pins standard DIN plug to cooperate the PS-9302 input socket. * 2 pins for 5V DC power supply. * 2 pins for 100 mV DC input signal.	



BT501J

**BT501J, 0.005-10mL/min**

Acceptable pump heads are JY10 & D61x. The pump provides flow rates from 0.005 to 10mL/min. It can realize speed adjusting and direction changing and has functions of prime and external start/stop. It features compact size & easy to operate.

**Functions and Features:**

- Applicable pump heads: JY10 and DGtx (10 rollers).
- Prime key for fast filling and emptying.
- Speed, start/ stop and direction can be controlled through membrane keypad or through external Control interface.
- Memory function, storing the running parameters automatically.
- Compact size, light weight and low power consumption.
- Membrane keypad, easy to operate.
- Good performance and low price.
- At normal lab conditions.



BT1002J

**BT1002J, 0.0002-380mL/min**

Acceptable pump heads for BT100-2J are YZ1515x, YZ2515x, YZII15, YZII25 DG-1 and DG-2. The pump provides flow rates from 0.0002 to 380 mL/min. The speed can be adjusted manually or automatically through external control. Store the running parameters automatically. Easy to operate.

**Functions and Features:**

- Applicable pump heads: YZ1515x, YZ2515x, YZII15, YZII25, DG-1, DG-2.
- Prime key for fast filling and emptying.
- Adjust speed manually or automatically through analog interface.
- Memory function, storing the running parameters automatically.
- Membrane keypad, easy to operate.
- Good performance and low price.
- At normal lab conditions.



BT3002J

**BT3002J, 0.07-1140mL/min**

Acceptable pump heads for BT3002J are VZ1515x, YZ2515x, YZII15, YZII25, BZ25. The pump delivers flow rates from 0.07 to 1140 mL/min. The speed can be adjusted manually or automatically through external control interface. Store the running parameter automatically. Easy to operate.

**Functions and Features:**

- Applicable pump heads: YZ1515x, YZ2515x, YZII15, YZII25, BZ25.
- Prime button for fast filling and emptying.
- Adjust speed manually or automatically through analog interface.
- Memory function, storing the running parameters automatically. Equipped with Longer Dispensing Controller for filling function.
- At normal lab conditions.

Model	BT501J	BT1002J	BT3002J
Speed	0.1 to 50.0 rpm, reversible	0.1 to 100 rpm, reversible	1 to 300 rpm, reversible
Speed precision	0.1 rpm		1 rpm
Speed control	Membrane keypad		10-turn potentiometer
Display	3-Digit LED displays current rpm		3-digit LED displays current speed
Communication interface	-	RS-485	-
External control	Start/stop & cw/ccw control	Star t/stop, cw/ccw control, and speed control (0 to 5 V, 0 to 10 V, 4 to 20 mA and 0 - 10 KHz optional)	
Power supply	AC 220V $\pm 10\%$ 50/60 Hz (standard), AC 110V $\pm 10\%$ 50/60 Hz (optional)	AC 90-260V 50/60Hz	AC 220 V $\pm 10\%$ 50/60 Hz (standard), AC 110 V $\pm 10\%$ 50/60 Hz (optional)
Power consumption	< 10 W	< 30 W	< 35 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%		
Dimension (mm)	L176xW110xH115	L232xW142xH149	L227xW155xH171
IP rating	IP 31		
Drive weight	2.2kg	2.3kg	3.6kg



**LEAD2, Flow Rate 0.01-350mL/min**

The applicable pump heads for Lead2 are Lead1 5-48, Lead1 5-88, Lead1 5-24, Lead15-44 & max. 8 channels are available. The pump delivers flow rates from 0.01 to 350 mL/min. It has flow rates display & flow rates calibration functions. It also has functions of speed adjustment, start/stop, cw/ccw, prime (rinsing), tubing selection, 485 communication, analog control, etc.

**Functions and Features:**

Accept 4 special pump heads • Planetary gearbox is adopted in its pump heads. This changes the traditional driving methods of tubing pumps, decreases abrasion, prolongs tubing life and improves accuracy • **Display can switch between flow rates and speed** • **Calibration function for more accurate flow rates** • Computer control available through RS485 communication • Prime key for fast filling and emptying.

Model	LEAD2
Speed	1 to 100 rpm, reversible
Speed precision	0.1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x32 graphic LCD displays current running status
Analog interface	Start/stop and cw/ccw control, 0 to 5V, 0 to 10V, and 4 to 20mA speed Control
Communication	RS-485
Power supply	AC 220 V $\pm$ 10% 50/60 Hz (standard), AC 110 V $\pm$ 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L190xW162xH275
Drive weight	3.5kg
IP rating	IP 31

**BT1001L, Flow Rate 0.05-500mL/min**

The max. output torque of BT1001L drive is 2 Nm. Multi pump heads are available. The pump provides flow rates from 0.05 to 500 mL/min. 128x64 graphic LCD displays running menus and parameter setting menus. The flow rate & the speed (rpm) can be displayed in the same screen. The display interface is friendly. It has flow rate calibration function to make the flow rate more accurate. It has many control modes. The external control can be realized through standard external interface or RS485 communication interface.

**Functions and Features:**

**Display can switch between flow rates & rpm** • **Calibration capability for more accurate flow rate** • Graphic LCD together with rotary coded switch makes it friendly and easy to use • Higher torque to accept more pump heads and more channels • RS485 communication interface available. Offering communication protocol to customer and customizing software according to customer's requirements.

Model	BT1001L
Speed	1 to 100 rpm, reversible
Speed precision	0.1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x64 graphic LCD displays current running status
Analog interface	Start/stop and cw/ccw control, 0 to 5V, 0 to 10V, and 4 to 20mA speed Control
Communication	RS-485
Power supply	AC 220 V $\pm$ 10% 50/60 Hz (standard), AC 110 V $\pm$ 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L202xW160xH239
Drive weight	5.34 kg
IP rating	IP 31



BT1001F

**BT1001F, Dispensing, 0.16-500mL/min**

Applicable pump heads for BT100-1F are YZ1515x, YZ2515x, YZ1115, YZ1125 and D6-1, DG-2, DG-4. The pump delivers flow rates from 0.02 pL to 480 mL/min and dispensing volume is from 0.01 mL to 9900 mL. Combining 128\*32 LCD display with membrane keypad and rotary coded switch makes the operation easy and prompt. The speed can be adjusted manually or automatically through external control interface.

**Functions and Features:** Acceptable pump heads: YZ1515x, YZ2515x, YZ1115, YZ1125 and OG-1, OG-2, DG-4 • Micro flow rates transferring: The smallest flow rate can reach 0.16  $\mu$ L/min • Back suction function: In

dispensing mode, the pump runs reversely after stopping to prevent the liquid from dripping • Operating mode: Membrane keypad & rotary coded switch • Speed control: The speed can be adjusted manually or automatically through external control interface • Display: LCD displays current running status • MAX key: For fast filling and emptying • Memory function: Storing the running parameters automatically • Calibration function: The flow rates and the dispensing volume can be calibrated to increase the accuracy • Communication function: Realize computer control through RS485 communication interface

Model	BT1001F
Flow rate	0.16 J IL/ min to 500 mL /min
Dispensing volume	0.01 mL to 9.99L
Speed	0.01rpm to 100.0rpm
Copy number	0 to 9999
Pause time	0.1 s to 99.90 min
Back suction time	0 to 99.9s
External control input interface	start/stop control, direction control, flow rates control (0-5V,0-10V,4-20mA,0-10KHz optional)
Output interface	start/stop, direction output and 0-10KHz frequency output (corresponding to 0 to 100.0 rpm) with insulating function
Communication	RS-485
Power	AC 100 - 240 V $\pm$ 10% 50/60 Hz
Power consumption	< 40 W
Operating condition	Temperature 0 to 40°C
Relative humidity	< 80%
Dimensions (mm)	L292xW185xH180
Drive weight	3.8 kg
IP rating	IP31



BT3001F

**BT3001F, Dispensing, 0.07-1140mL/min**

The applicable pump treats for BT3001F are YZ1515x YZ2515x YZ1115 YZ1125 The pump delivers Flow rates from 0.07 to 1140 ml/mm 128 x 64 graphic LCD displays running menus and parameter Setting menus The display interfaces are friendly. It has many control modes. The external control can be realized through standard external control interface or 485 communication interface.

**Functions and Features:** Applicable pump heads YZ1515x YZ2515x, YZ1115, YZ1125 • Set pause time to realize dispensing and filling automatically • Display can switch between flow rates & rpm • Calibrate setting flow rates to acquire more accurate flow rates • RS485 communication interface available. Offering communication protocol to customer and customizing software according to customer's requirements.

Model	BT3001F
Speed	1 to 100 rpm, reversible
Speed precision	1 rpm
Speed control	Rotary coded switch coupled with membrane keypad
Display	128x64 graphic LCD displays flow rate speed or dispensing
Copy number	1 to 999
Dispense volume	0.1ml tp 99.9L
Pause time	1 to 999s
Back suction angel	0 to 360 18° increments
Analog interface	Start/stop and cw/ccw control, 0 to 5 V, 0 to 10 V, and 4 to 20 mA speed contro
Communication interface	RS-485
Power supply	AC 220 V $\pm$ 10% 50/60 Hz (standard), AC 110 V $\pm$ 10% 50/60 Hz (optional)
Power consumption	< 50 W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%
Dimension (mm)	L202xW160xH239
Drive weight	4.3 kg
IP rating	IP 31



BT6002J

**BT6002J, 0.07-3000mL/min**

Suitable pump heads for BT6002J are YZ1515X, YZ2515X, YZ1115, YZ1125 and BZ25. It can deliver flow rates from 0.07 to 3000 mL/min and its speed can be adjusted manually or automatically through external control interface. BT6002J can realize dispensing function when it connects to a FK-1C dispensing controller. It is easy to operate.

**WT6002J, 4.2-6000mL/min**

WT6002J peristaltic pump adopts brushless DC motor. It has features of high output torque, low vibration, high efficiency. It can drive double pump heads. It accepts many pump heads and delivers flow rate from 4.2 to 6000 mL/min. The speed can be adjusted manually or automatically through external control.

**Features:**

High IP rating suitable for wet and dust environment • Big torque, high efficiency, maintenance-free • LED display speed and working status • Using membrane to control pump operation • Prime key: Fast filling and emptying • Start/stop, CW/CCW and speed can be controlled by external control • Memory function: Storing the running parameters automatically • Program download functions: Reserve ISP port on PCB, program can be download and updated • Cooling functions: Natural heat dissipation, ensure the temperature of drive not exceed the scope • Output port: Output the work status of pulse, start/stop and direction.

Model	BT6002J	WT6002J
Speed	1-600 rpm, reversible	60-600rpm
Speed accuracy	±1.0%	
Speed resolution	1 rpm	
External control	Star t/stop, cw/ccw control, and speed control (0 to 5 V, 0 to 10 V, 4 to 20 mA and 0 - 10 KHz optional)	
Communication interface	RS-485	
Power supply	AC 90 - 260 V 50/60 Hz	AC 176-264V, 50/60Hz
Power consumption	< 100 W	≤ 200W
Operating condition	Temperature 0 to 40°C, Relative humidity < 80%	
Dimension (mm)	L280×W200×H180	L292×W185×H180
Drive weight	3.8 kg	5.2kg
IP rating	IP 31	



ZG-60600

**ZG-60600, 740-12000mL/min**

Applicable pump heads for ZG-60600 are YZ35-13, YZ35 (AI), YZ35 (POM). The pump delivers flow rates from 0.74 to 12 Umin. The speed can be adjusted manually or automatically through external control interface. Driven by DC motor the ZG60-600 has higher torque and can drive double pump heads. ZG-60600 is ideal for industrial application to meet your needs for higher pressure and quick fluid transfer. Steady flow rate, lower noise and easy to operate.

**Functions and Features:**

Applicable pump heads: YZ35-13, YZ35 (AI), YZ35 (POM) • Stainless steel housing of the drive is available • Suitable for industrial applications • Longer Footswitch or other external control device optional • Equipped with Longer Dispensing Controller for filling function.

Model	ZG-60600
Speed	60-600 rpm, reversible
Speed control	10-turn potentiometer
Analog interface	N/A
Power supply	AC 220 V ±10% 50/60 Hz
Power consumption	< 400 W
Operating condition	Temperature 0 to 40°C, Relative humidity <80%
Dimension (mm)	L325xW236xH193
Drive weight	17 kg
IP rating	IP 31





### WT6001F, Dispensing 0.7-6000mL/min

Applicable pump heads for WT600-1F are YZ1515x, YZ2515x, YZ1115, YZ1125, KZ25, BZ25, DMD25 and DG15-24. The pump delivers flow rates from 0.7 mL to 6000 mL/min and dispensing volume is from 0.1 mL to 99.9 L. Combining 128x32 LCD display with membrane keypad and rotary encoded switch makes the operation easy and prompt. The speed can be adjusted manually or automatically through external control interface.

#### Functions and Features:

Acceptable pump heads: YZ1515x, YZ2515x, YZ1115, YZ1125, DG15-24, KZ25, BZ25, DMD25 • Back suction function: In dispensing mode, the pump runs reversely after finishing one filling operation to prevent the liquid from dripping • Operating mode: Membrane keypad and rotary encoded switch.

- Speed control: The speed can be adjusted manually or automatically through external control
- Display: LCD displays current running status and parameters
- Prime key: For fast filling and emptying
- Memory function: Storing the running parameters automatically
- Calibration function: The flow rates and the dispensing volume can be calibrated to increase the accuracy

Model	WT6001F
Dispensing volume	0.1 mL to 99.9 L
Speed	10 to 600 rpm, reversible
Copy number	0 to 9999
Pause time	0.1 s to 99.9 min
Back suction	0 to 9.9 revolution
External control	Control start/stop, direction, flow rate control (0-5V, 0-10V, 4-20mA, 0-10Khz optional)
Output interface	start/stop, direction output, and 0 - 10 KHz frequency output
Communication	RS-485
Power	AC 176 - 264 V 50/60 Hz
Power consumption	< 140 W
Operating condition	Temperature 0 to 40°C, Relative humidity <98%
Dimensions (mm)	L292 × W185 × H180
Drive weight	5.2kg
IP rating	IP 31



### JL350-2J, ≤ 35L/min, Industrial

JL350-2J peristaltic pump is ideal for high flow rates fluids transfer, driven by the AC motor and the frequency converter control the speed. The pump delivers flow rates from 1.6 to 35L/min. Through the transparent front cover, the running status of the pump head is visible. The speed, running direction and run/stop of the pump we controlled manually by membrane Keypad or automatically by external control interface. Its operation is simple and reliable.

#### Functions and Features:

- High-power pumps, and the maximum flow rates can reach 35L/min
- The structure of concave working surface and convex roller realizes the tubing self-position function. It reduces abrasion and prolongs tubing life
- Variable frequency speed control to AC motor with creeper gear
- Adjustable occlusion
- Strong drive
- Pump head operation is visible through transparent front cover.

Model	JL350-2J
Speed	30-350 rpm, reversible
Speed precision	0.6 rpm
Power supply	AC 220 V ±10% 50/60 Hz
Power consumption	< 400 W
Operating condition	Temperature 0 to 40°C, Relative humidity <80%
Dimension (mm)	L417xW401xH321
Drive weight	32 kg
IP rating	IP 31



WT6003J

**WT6003J, Industrial 4.2-6000mL/min**

WT6003J peristaltic pump is high IP rating and high efficiency. It adopts brushless DC motor and speed closed loop control. It has features of high output torque, low vibration and free maintenance. It accepts multiple two channels pump heads and delivers flow rates from 4.2 to 6000 mL/min (single channel).

**Water Proof  
IP-65**

**Functions and Features:**

• High IP rating: Suitable for moist and dust working condition • MAX key: For fast filling and emptying • Memory function: Storing the running parameters automatically • Communication function: Realize the computer control through RS485 interface • Display: 3 digits LED displays the speed of the pump • External control input: Control the speed, start/stop and direction of the pump • Suitable for different pump heads and tubing • High output torque which can drive double pump heads • Brushless DC motor, high output torque, free maintenance • Operation mode: Switch and membrane keypad. Easy to operate.

Model	WT6003J
Speed	60 to 600 rpm, reversible
Speed resolution	1 rpm
IP rating	IP 55
Drive output torque	≥1.50 N-M
Speed Control Accuracy	±1.0%
Communication	RS-485
Power	AC 176-264V 50/60Hz
Power consumption	< 190 W
Operating condition	Temperature -10 to 40°C, Relative humidity <80%
Dimensions (mm)	L273xW190xH272
Weight	7.3kg
Heat emitting mode	Natural cooling. the inner temperature of the drive is less than 40°C
Speed control mode	Membrane keypad
Display mode	3digits LED displays the speed of the pump, 4pcs LED indicators display the working state
External control	0.5 - 5 V, 1 - 10 V, 4 - 20 mA or 1 - 10kHz are corresponding to 60 - 600 rpm



YT600-1J

**YT600-1J, 600-11000mL/min**

The pump delivers flow rates from 600 to 11000 mL/min. The speed can be adjusted manually or automatically through external control interface. Driven by DC motor YT600-1J has higher torque and can drive double pump heads. Suitable for industrial applications which need high pressure and big flow rates.

**Functions and Features:**

Acceptable pump heads: YZ35-13, K 35 • Suitable for industrial applications • Can be equipped with Longer Dispensing Controller for filling function when connecting single channel pump head.

**IP-54**

## YZ35-Series, Industrial Easy-Load Pump Heads

**YZ35-13**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.

**YZ35(AI)**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.
- The housing material is alloy aluminum, surface anodizing.

**YZ35(POM)**

- Change tubing easily and rapidly.
- Automatic tubing retention.
- Suitable for several tubing sizes.
- The housing material is POM.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ35-13	73" 82"	11000	≤600	PSU AL POM
YZ35				

## DMD25, Low Pulse Pump Head

**DMD25**

- Suitable for accurate dispensing.
- Track assembly and base are independent. Easy to load tubing.
- Accept many sizes of tubing to realize wide range flow rates transferring.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
DMD25	119"	150	≤350	POM
	120"	800		
	15"	1500		
	24"	2400		
	35"	2950		
	36"	4000		

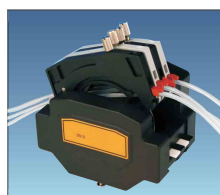
## BZ-25, Standard Pump Head

**BZ25**

- Stable operation and stackable.
- Compact size.
- Standard pump head, fixed occlusion.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
BZ25	24"	1600	≤600	PC

## DG15-Series, Medium And Small Flow Rates Multi-Channel Pump Head

**DG15**

- Cartridges and base can be separated.
- Suitable for several tubing sizes for a wide flow range.
- The material of the roller is RULON®J.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
DG15-24	16# 17# 25#	1800	≤600	POM
DG15-28	Inner diameter ≤3.17mm, Wall thickness 0.8-1 (mm) 13# 14#	75	≤100	
DG15-48				

## KZ25, Quick-load Pump Head

**KZ25**

- Cartridges and base can be separated.
- Pump heads can be stackable.
- Compact size and a wide flow range.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
KZ25	15"	1800	≤600	PC
	24"	3500		
	35"	5000		
	36"	6000		



## DG-Series, Heads Information



## Features:

Multi-channel transfer • Change tubing easily • Fix tubing easily • Occlusion can be adjusted slightly by ratchet wheel to meet different tubing wall thickness requirements • 6-roller and 10-roller pump heads available • More rollers reduce pulsation and flow rates slightly • Skillful trigger design, convenient to open the cartridges (DG-1, DG-2).

Type	Tubing	Max. flow rate (mL/min)		Speed (rpm)	Cartridge material	Part number		Weight (kg)	
		6 Rollers	10 Rollers			6 Rollers	10 Rollers	6 Rollers	10 Rollers
DG-1	Inner diameter ≤3.17mm wall thickness 0.8-1 (mm)	48 (per channel)	32 (per channel)	≤ 100	POM	51011001	51011002	0.21	0.20
DG-2						51012001	51012002	0.27	0.26
DG-4						51013001	51013002	0.40	0.39
DG-6						51014001	51014002	0.54	0.51
DG-8						51015001	51015002	0.67	0.63
DG-12						51016001	51016002	0.95	0.88

## Easy-load Pump Heads



## YZ II 15 (YZ II 25)

- Change tubing easily & rapidly.
- Compact size.
- Accept several tubing sizes for a wide flow range.

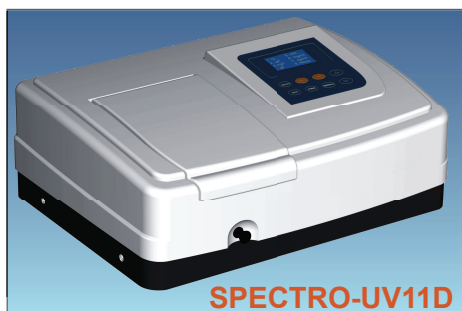


## YZ1515x (YZ2525x)

- Change tubing easily and rapidly.
- Accept several tubing sizes for a wide flow range.

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ II 15	13" 14" 16" 17" 18" 19" 25"	2200	≤600	PESU
YZ II 25	15" 24" 35" 36"	3000		

Type	Tubing	Max. flow rates (mL/min)	Speed (rpm)	Housing material
YZ1515x	13" 14" 16" 17" 18" 19" 25"	2200	≤600	PESU
YZ2525x	15" 24"	1600		



### SPECTRO-V11D Spectrophotometer

SPECTRO-V11D is the only model of manually setting wavelength among families, But precise design & high quality components ensures excellent performance. It is widely used in high schools and colleges for general analysis and experiments

- Optical System: Single Beam, Grating 1200 lines/mm
- Detector: Silicone Photo diode

**Features:** Large LCD Screen(128x64Dots) • The wavelength can be read out from the screen directly • Auto zero & blank, easy to use. Press one button for easy switching of Transmittance, Absorbance & Concentration modes • Parallel port, data can be exported to printer directly • Coefficient method to measure the

unknown samples.  $C=A+B$ . It can memorize the Last input of K & B • Large sample compartment, it can accommodate 5-100mm path length cuvettes with optional holders • Pre-aligned design ensures the user to change lamp conveniently • Optional software M.Wave Professional based on windows® can expand the applications to Standard Curve & Kinetics • High quality silicon photometric diode detector and 1200 lines/mm grating ensure the high accuracy and precision.

Model	SPECTRO-V11D	SPECTRO-UV11
Wavelength range	325-1000nm	200-1000nm
Spectral Bandwidth	4nm	
Wavelength Accuracy	±2nm	
Wavelength Repeatability	1nm	
Wavelength Setting	Manual	Auto
Photometric Accuracy	±0.5%T	
Photometric Repeatability	0.3%T	
Photometric Range	-0.3-A, 0-200%T	
Stray Light	0.3%T	
Stability	±0.004A/h @ 500nm	
Display	128 x 64 Dots LCD	
Photometric Mode	T, A, C, F	
Standard Cell Holder	4-position 10mm cell changer	
Sample Compartment	Standard 10mm path length cuvette	
Light Source	Tungsten Lamp	Tungsten&Deuterium lamp
Output	USB Port&Parallel Port (printer)	
Power Requirement	AC 220V/50Hz or AC110V/60Hz	
Dimensions (mm)	W480xD360xH160	
Weight	10kg	12kg

### Wave Professional PC-Control Software

The windows® based PC application software takes the best features of the stand-alone version plus more powerful data processing and expanded data collecting and storage capability. The software is optional. Once it be used, the uv/v-l series become more excellent



**Quantitative:** Use up to 38 standards to establish standard curve. Four methods for fitting a curve: Linear fit, Linear through zero, Square fit.

**Kinetics:** The Kinetics mode may be used for time course scanning or reaction rate calculations. Abs. Vs. time graphs is displayed on the screen in real time. Wait time, test time and time intervals may be set.



### Wavelength Scan:

Automatically record peaks & valleys. The quantity of the curves is unlimited that you store. Post- run manipulation & processing includes: Re-scaling axes, curve Smoothing, combination, zooming, overlap... 1 st to 4th derivative.

**Multi-wavelength Test:** You can set at most 20 wavelengths to measure a sample.

### DNA Test:

2 formulas are under your choice:

ONACon. =  $62.9 \times A_{260} - 36.0 \times A_{280}$   
 or  
 =  $49.1 \times A_{260} - 3.48 \times A_{230}$   
 Protein Con. =  $1552 \times A_{260} - 757.3 \times A_{280}$   
 or  
 =  $183 \times A_{260} - 75.8 \times A_{230}$   
 You can also enter other wavelengths and factors to calculate.



SPECTRO-UV/V12

**SPECTRO-UV/V12, Spectrophotometer**

The UV/V12 spectrophotometer have the most attractive cost performance. Using your standard sample solutions, you can get a standard curve on the large LCD screen by the local control software, also you can print the curve through the parallel port. They are widely used in colleges and enterprises for general quantitative analysis and experiments.

Optical System: Single Beam, Grating 1200 lines/mm • Detector: Silicone Photo diode • SPECTRO-V12 Range: 325-1000nm, SPECTRO-UV12 Range: 200-1000nm.

**Functions:**

**1. Basic Mode** Absorbance, Transmittance or Concentration measurements.

**2. Quantitative** I) **Standard Curve** At most 9 standard samples can be used to establish a standard curve, the curve and the curve equation will display on the screen simultaneously. You can measure your unknown concentration solutions by the curve. II) **Coefficient Method** If you have known the coefficient k&b of the formula  $C=kA+b$ , you can input the value directly by the button, Then to test your unknown solutions.

Model	SPECTRO-V12	SPECTRO-UV12
Spectral Bandwidth	4nm	
Wavelength Accuracy	±2nm	
Wavelength Repeatability	0.8nm	
Photometric Accuracy	±0.5%T	
Photometric Repeatability	0.3%T	
Photometric Range	-0.3-3.0A, 0-200%T	
Stray Light	0.3%T	
Stability	±0.002A/h @ 500nm	
Sample Compartment	Standard 10mm pathlength cuvette	
Light Source	Tungsten Lamp	Tungsten&Deuterium lamp
Output	USB Port&Parallel Port (printer)	
Power Requirement	AC 220V/50Hz or AC110V/60Hz	
Dimensions (mm)	W470xD370xH180	
Weight	12kg	12kg



SPECTRO-UV3 Series

**SPECTRO-UV3, Scanning Spectrophotometer**

SPECTRO-UV3 Series is an advanced single beam design consisting of 10 models. They differ in bandwidth & wavelength accuracy, but provide excellent performance for measurements in the range of 190nm to 1100nm. Optional add: S to spectro UV 32 selectable bandwidth 0.5,1,2,4nm. They are suitable for clinical lab applications, pharmaceutical, & bio-chemical. as well as routine applications such as Quantitative analysis, Kinetics, Wavelength Scan, Multi-Wavelength, & DNA/Protein analysis. UV-Vis Analyst application software based Microsoft Windows makes these instruments versatile. All instruments provide excellent performance for measurements. They are divided into 2 types: PC models & stand-alone models -In Stand-alone models, all software methods are included as built-in standard; this eliminates the need of software. Online software update via Internet Data can be downloaded. The PC models come standard with Windows® based application software UV-Vis Analyst.

**Features:** Fixed or variable slits (bandwidths) Sealed, solvent-resistant tactile keypad with alpha-numeric entry for file names and units. Pre-aligned deuterium lamp for easy lamp replacement The status of the lamps may be monitored. Powerful built-in program or PC Windows® based software UV/VIS. Analyst including sophisticated utility programs. Data Download-to-PC software for stand-alone models (optional). Real-time clock for date & time stamping of results.

Model	SPECTRO-UV30/UV30PC	SPECTRO-UV31/UV31PC	SPECTRO-UV32/UV32PC	SPECTRO-UV32S/UV32PCS	SPECTRO-UV33/UV33PC
Wavelength range	190-1100nm				
Spectral bandwidth	4nm	2nm	1.8nm	0.5/1/2/4nm	1nm
Optical system	Single beam, grating 1200 lines/mm				
Wavelength accuracy	±0.5nm		±0.3nm		
Wavelength repeatability	0.3nm		0.2nm		
Scan speed	Hi, Med, Low, Max.3000nm/min				
Photometric accuracy	≤±0.5%T or ±0.003A@1A				
Photometric range	-0.3 -3A, 0-200%T				
Stray light	≤0.05%T@220nm, 360nm				
Stability	±0.002A/h@500nm				
Display	5 inches LCD (320x240 dots)				
Baseline flatness	±0.002A(200-1000nm)				
Standard cell holder	Standard 10mm pathlength cuvette				
Light source	Halogen&Deuterium lamp (pre-aligned)				
Output	USB Port&parallel port (printer)				
Power requirement	AC 110/220V 50/60Hz				
Dimensions (mm)	W480xD360xH160		W600xD450xH200		
Weight	14kg		20kg		





### SPECTRO-16/18 Series, Spectrophotometer

The SPECTRO-16/18 Series are developed for precise test, its stray light is only 0.05%T. They are flexible, easy to use and maximize value. The value is evident from the performance provided every day. The local stand-alone software provide functions of Basic Mode, Quantitative Test, Kinetics and System Utilities.

• Optical System: Single Beam, Grating 1200 lines/mm • SPECTRO-V16/V18 Range: 320-1100nm, SPECTRO-UV16/UV18 Range: 190-1100nm.










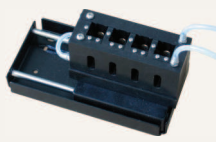
#### Features:

Large LCD screen (128x64Dots). Can display total 200 groups of data, 5 groups per screen. Can display standard curve and kinetics curve • System can also

save the test results, total 200 groups of data and 100 standard curves can be saved in the RAM. Be Convenient for check and reload • Data can be restored after a sudden power cut • Auto setting wavelength • Tungsten lamp & deuterium lamp can be turned on/off individually to extend lifetime • The optional application software M.Wave Professional provides complete control of the spectrophotometer from a Computer through the Built-in USB port. It can expand to the following functions: Quantitative, Kinetics, Wavelength Scan, Multi-wavelength & DNA/Protein Test • Pre-aligned design makes it convenient to Change lamps • Large sample compartment, It can accommodate 5-100mm path length cuvettes with optional holders. A variety of optional holders.

Model	SPECTRO-V16	SPECTRO-V18	SPECTRO-UV16	SPECTRO-UV18
Spectral Bandwidth	4nm	2nm	4nm	2nm
Wavelength Accuracy	±0.5nm			
Wavelength Repeatability	0.3nm			
Photometric Accuracy	±0.3%T			
Photometric Repeatability	0.2%T			
Photometric Range	-0.3-3A, 0-200%T			
Stray Light	0.05%T @ 360nm		0.05%T @ 220nm, 340nm	
Stability	±0.002A/h @ 500nm			
Display	Graphic LCD (128 x 64 Dots)			
Keyboard	22 Membrane keypad			
Sample Compartment	Standard 10mm pathlength cuvette			
Light Source	Tungsten Lamp		Tungsten&Deuterium lamp	
Output	USB Port&Parallel Port (printer)			
Power Requirement	AC 220V/50Hz or AC110V/60Hz			
Dimensions (mm)	W470xD370xH180			
Weight	14kg		14kg	

#### Accessories - Holder:

<b>P.N 900410</b>  4-Cell Holder for 10mm Squ. Cuvette	<b>P.N 900420</b>  4-Cell Holder for up to 50mm Squ. Cuvette	<b>P.N 900430</b>  4-Cell Holder for up to 100mm Squ. Cuvette	<b>P.N 900540</b>  Cylindrical Cell Holder	<b>P.N 900610</b>  Water-Jacketed Single Cell Holder
<b>P.N 900210</b>  Micro Cell Holder	<b>P.N 900530</b>  Test Tube Holder	<b>P.N 900310</b>  8-Position Auto Cell Changer	<b>P.N 900550</b>  Solid Sample Holder (Single Cell)	<b>P.N 900620</b>  10mm Water-Jacket 4-Cell Holder

#### Accessories - Others:

<b>P.N 900910</b>  Thermal Printer	<b>P.N 900920</b>  Stylus Printer	<b>1. P.N 900120 2. P.N 900110 3. P.N 900130</b>  1.Peltier Unit 2.Ambier Sipper Unit 3.Peltier/Sipper System
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**SPECTRO-UV6 Series, Double Beam Spectrophotometer**

UV-6 Series are advanced double beam design consisting of four models:

Stand-alone models: SPECTRO-UV61 with

1.8nm fixed bandwidth &

SPECTRO-UV63 with 1.0nm fixed

bandwidth; PC models: UV61PC with

1.8nm fixed bandwidth & UV63PC with

1.0nm fixed bandwidth. Optional add: S

to spectro UV 61 selectable bandwidth 0.5,1,2,4nm. Other specifications of the four models are almost the same except bandwidth. The 2 detectors are measuring sample & reference respectively & simultaneously for optimizing measurement accuracy. They provide excellent performance for measurements in the range of 190nm to 1100nm. They are suitable for pharmaceutical, biochemical & clinical lab applications as well as routine applications such as quantitative analyses, kinetics, spectrum scanning, multiple components & DNA/Protein, PC Windows application software make these instruments versatile. All instruments provide excellent performance for measurements.

- Optical System: Double Beam, Grating 1200 lines/mm
- To Stand-alone models, All software methods are included as built-in standard, thus eliminating the need for software options
- Online software upgrade via internet helps to keep your software up-to-date

Data Download-to-PC software expands the data storage to unlimited

- The stand-alone models with 5 inches screen and the PC models with 3.8 inches screen
- Model SPECTRO-UV61/UV61PC Range: 190-1100nm
- Model SPECTRO-UV63/UV63PC Range: 190-1100nm.



Model	SPECTRO-UV61	SPECTRO-UV61PC	SPECTRO-UV63	SPECTRO-UV63PC
<b>Spectral Bandwidth</b>	1.8nm	1.8nm	1.0nm	1.0nm
<b>Wavelength Accuracy</b>	±0.3nm			
<b>Wavelength Repeatability</b>	0.2nm			
<b>Scanning Speed</b>	Hi, Med, Low, Max, 3000nm/m in			
<b>Photometric Accuracy</b>	±0.3%T			
<b>Photometric Repeatability</b>	0.15%T			
<b>Photometric Range</b>	-0.3-3A, 0-200%T.0-9999Conc.			
<b>Stray Light</b>	0.05%T			
<b>Stability</b>	±0.001A/h @ 500nm			
<b>Display</b>	5 inches LCD (320x240)	3.8 inches LCD (320x240)	5 inches LCD (320x240)	3.8 inches LCD (320x240)
<b>Baseline Flatness</b>	±0.001A(200-1000nm)			
<b>Sample Compartment</b>	Accommodates 100mm pathlength cuvette with optional holder			
<b>Light Source</b>	Halogen&Deuterium lamp(Pre-aligned)			
<b>Output</b>	USB Port&Parallel Port (printer)			
<b>Power Requirement</b>	AC 220V/50Hz or AC110V/60Hz			
<b>Dimensions (mm)</b>	W600xD450xH200			
<b>Weight</b>	22kg		22kg	

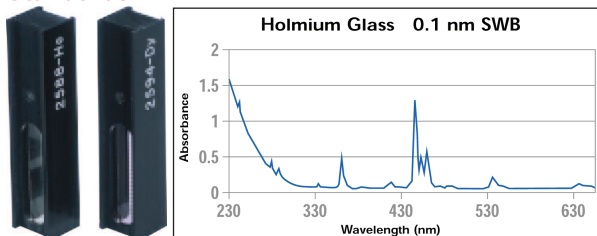
The PC models come standard with windows® based application software UV/VisAnalyst. S option bandwidth 0.5,1,2,4nm.

**Accessories - Cells:**

<b>Square Cuvette</b>		
Name&Specifications	P.N	Remark
Square Cuvettes.Glass 10mm	916101	/4pcs
Square Cuvettes.Glass 20mm	916102	/4pcs
Square Cuvettes.Glass 30mm	916103	/4pcs
Square Cuvettes.Glass 50mm	916104	/4pcs
Square Cuvettes.Glass 100mm	916105	/4pcs
Square Cuvettes.Quartz 10mm	916111	/2pcs
Square Cuvettes.Quartz 20mm	916112	/2pcs
Square Cuvettes.Quartz 30mm	916113	/2pcs
Square Cuvettes.Quartz 50mm	916114	/2pcs
Square Cuvettes.Quartz 100mm	916115	/2pcs

<b>Micro Cell</b>		
Name&Specifications	P.N	Remark
100UL Micro Cell	916121	/1pcs
Square Cuvettes.Glass 20mm	916122	/1pcs
Square Cuvettes.Glass 30mm	916123	/1pcs

<b>Flow Cell</b>		
Name&Specifications	P.N	Remark
5mm SEIF Masking Cont. Flowthrough G.Cell	916131	/1pcs
10mm SEIF Masking Cont. Flowthrough G.Cell	916132	/1pcs
20mm SEIF Masking Cont. Flowthrough G.Cell	916133	/1pcs
30mm SEIF Masking Cont. Flowthrough G.Cell	916134	/1pcs
5mm SEIF Masking Cont. Flowthrough Q.Cell	916141	/1pcs
10mm SEIF Masking Cont. Flowthrough Q.Cell	916142	/1pcs
20mm SEIF Masking Cont. Flowthrough Q.Cell	916143	/1pcs
30mm SEIF Masking Cont. Flowthrough Q.Cell	916144	/1pcs

**Standards**

# VACUUM METER

**Model : VC-9200**

*ISO-9001, CE, IEC1010*



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**TECHNOLOGY** Pty Ltd





# VACUUM METER

Model : VC-9200

## FEATURES

* Absolute vacuum & absolute pressure measurement	* Auto shut off saves battery life.
* Wide measure range from 1 to 1500 mbar.	* Microprocessor circuit assures maximum possible accuracy, provides special functions and features,
* Overload protection up to 2000 mbar max.	* Records maximum & minimum readings with recall.
* Separate probe, easy operation.	* Data Hold function for stored the desired value on display.
* Application : Automobile, Industrial, laboratory, heating, ventilation, medical hospital....	* Built-in low battery indicator.
* Heavy duty sensor used for air, oil gas, liquid.	* RS232 PC serial interface, can match the personal computer used as the Data Logger, Recorder....
* 8 kind display units ( torr, mm Hg, micron, mbar, KPa, Pa, inch Hg, psi ) select by push button on the front panel.	

## GENERAL SPECIFICATIONS

Display	61 mm x 34 mm supper large LCD display. 15 mm ( 0.6" ) digit size.	Power supply	006P DC 9V battery(heavy duty).
Display units	8 kind display units : torr, mm Hg, micron, mbar, KPa, Pa, inch Hg, psi.	Power current	Approx. DC 6.0 mA.
Circuit	Microprocessor LSI circuit.	Pressure Port Connector	1/4" PS
Function	Data hold, memory ( max., min.)	Weight	<i>Instrument :</i> 220 g/0.48 LB.
Sensor probe	* Separate probe, easy operation. * Heavy duty sensor uested for vacuum measurement of air, oil ga liquid.		<i>Sensor probe :</i> 175 g/0.39 LB.
Data hold	By push button.	Dimension	<i>Meter :</i> 180 x 72 x 32 mm ( 7.1 x 2.8 x 1.3 inch )
Data record	Record maximum & minimum readings.		<i>Sensor probe :</i> 90 mm x 30 mm Dia.
Data output	RS 232 PC serial interface.	Accessories	* Sensor probe..... 1 PC.
Sampling time	Approx. 0.8 second.		* Instruction manual..... 1 PC.
Power off	Auto shut off, saves battery life, or manual off by push button.	included	* Hard carrying case..... 1 PC.
Operating temperature	0 to 50 °C ( 32 to 122 °F ).	Optional accessories	* Data acquisition software ( Windows version ), SW-U801-WIN.
Operating humidity	Less than 80% R.H.		* RS232 cable, UPCB-01 * USB cable, USB-01

## ELECTRICAL SPECIFICATIONS

Unit	Max. range	Resolution	Accuracy ( 23± 5 °C )
mbar	1500 mbar	1 mbar	± 1 % F. S. ( F.S. : full scale )  <i>Note :</i> <i>Included linearity, hysteresis and repeatability</i>
KPa	150.0 KPa	0.1 KPa	
Pa	150,000 Pa	100 Pa	
torr	1125 torr	1 torr	
mm Hg	1125 mm Hg	1 mm Hg	
micron	1125,000 micron	1000 micron	
inch Hg	44.30 inch Hg	0.02 inch Hg	
psi	21.75 psi	0.01 psi	

\* Appearance and specifications listed in this brochure are subject to change without notice.

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## VP-Series, Oil-Free Vacuum Pump/Compressor



VP-17

VP-19

VP-33

VP Series vacuum pump is a piston-powered, oil-free pump.

With innovative electronic, mechanical technology and human design concept make.

VP's family quiet and low vibration, compact and light weight, clean and maintenance free, safe and comfortable.

- **Quiet and low vibration**

Directly motor driven without transmission mechanism and quality rubber feet keep noise level only 50 dB, which is the lowest among equivalent products.

- **Compact and light weight**

Aluminum die-cast and precise construction makes VP's family so small, compact, and light weight.

- **Clean and maintenance free**

Oil-free design makes it clean and maintenance free, we guarantee two years of free service parts.

- **Safe and comfortable**

VP's families are as appropriate as pressure air supplier or suction units.

They are adaptable to many laboratory and industry requirements, such as:

- Liquid filtration for microbiology
- Liquid filtration for suspended solid test
- Air sampling
- Vacuum tweezers
- Aeration bubbler
- Vacuum oven

Model		VP-17	VP-34	VP-19	VP-58	VP-33
Power		220-240V/50Hz	220-240V/50Hz	220-240V/50Hz	220-240V/50Hz	220-240V/50Hz
Max power consumption (W)		65/60	100/80	100/80	210/190	210/190
Max. current (A)		0.7/0.3	1.0/0.4	1.0/0.4	1.9/1	1.9/1
Max. vacuum		-650mmHg=85.5kPa =110Torr=146milibar	-650mmHg=85.5kPa =110Torr=146milibar	-730mmHg=97.33kPa =30Torr=40milibar	-650mmHg=85.5kPa =110Torr=146milibar	-730mmHg=97.33kPa =30Torr=40milibar
Vacuum	0mmHg	17 l/min=0.6CFM	34 l/min=1.2CFM	19 l/min=0.67CFM	58 l/min=2.05CFM	33 l/min=1.17CFM
	100mmHg	14 l/min=0.49CFM	31 l/min=1.09CFM	18 l/min=0.64CFM	52 l/min=1.84CFM	30 l/min=1.06CFM
	200mmHg	12 l/min=0.42CFM	29 l/min=1.02CFM	16 l/min=0.57CFM	46 l/min=1.63CFM	27 l/min=0.95CFM
	300mmHg	9.5 l/min=0.34CFM	23 l/min=0.81CFM	14 l/min=0.49CFM	40 l/min=1.41CFM	25 l/min=0.88CFM
	400mmHg	7 l/min=0.25CFM	19 l/min=0.67CFM	11 l/min=0.39CFM	30 l/min=1.06CFM	20 l/min=0.71CFM
	500mmHg	4.5 l/min=0.16CFM	13 l/min=0.46CFM	9 l/min=0.32CFM	16 l/min=0.57CFM	14 l/min=0.49CFM
	600mmHg	1.5 l/min=0.05CFM	4 l/min=0.14CFM	6 l/min=0.21CFM	6 l/min=0.21CFM	12 l/min=0.42CFM
Motor rotation		1450 RPM	1450 RPM	1450 RPM	1450 RPM	1450 RPM
Capacitor		6uf/250V/ 2uf/450V	10uf/250V/ 3uf/450V	10uf/250V/ 3uf/450V	16uf/250V/ 5uf/400V	16uf/250V/ 5uf/400V
Horse power		1/8HP	1/6HP	1/6HP	1/4HP	1/4HP
Pole		4P	4P	4P	4P	4P
Net wet		4.1kg	5.2kg	5.2kg	7.6kg	7.6kg
Port thread		5/16"	5/16"	5/16"	5/16"	5/16"
Noise level		50dB	50dB	50dB	52dB	52dB

# V VACUUM PUMPS

## Manifolds, Compressor

### MANF-3/6, Multi Brauch Manifolds



MANF-3

#### Specifications:

- 3-branch stainless steel manifold.
- Includes 3 stainless steel cups (100ml), each branch is individually controlled within maximum.
- Pressure 3000 psi.
- Filter size :47mm.
- SS#316 stainless steel construction.



MANF-6

#### Specifications:

- 6-branch stainless steel manifold.
- Includes 6 stainless steel cups (100ml), each branch is individually controlled within maximum.
- Pressure 3000 psi.
- Filter size :47mm.
- SS#316 stainless steel construction.

#### Specifications:

- The complete system includes MANVS.
- 3-branch stainless steel manifold.
- With 3 pcs stainless steel cup (SS316, 47mm, 100ml).
- A dragon 100 torch burner.
- PALL GN-6 membrane (200/pk).
- A suction bottle (3000ml,PC).
- Two silicon tube(1M) and Rocker 400 vacuum.
- pump for organism test.



### COMP-25, Compressor



COMP-25

#### Features:

- Quiet and low vibration.
- Compact and light weight.
- Clean and maintenance free Safe and comfortable.

#### Applications:

- Fermenter
- Bioreactor
- Dust cleaner

Model		COMP-25			
Power		220-240V/50Hz			
Max. power consumption (W)		125			
Max. current (A)		0.6			
Max. vacuum		60psi=4.2kg/cm²=4.1bar			
Max. pressure (without tank)	0 PSI	25 l/min=0.88CFM			
	20 PSI	23 l/min=0.81CFM			
	30 PSI	18 l/min=0.64CFM			
	40 PSI	16 l/min=0.57CFM			
Max. flow rate (with tank)	20	Time	0-15 sec.	15-30 sec.	after 30 sec.
	30	Flow	40 l/in=1.41CFM	Decreasing	25 l/in=0.88CFM
	30	Time	0-10 sec.	10-25 sec.	after 25 sec.
	PSI	Flow	50 l/in=1.77CFM	Decreasing	25 l/in=0.88CFM
	40	Time	0-8 sec.	8-22 sec.	after 22 sec.
	PSI	Flow	60 l/in=2.1CFM	Decreasing	25 l/in=0.88CFM
Motor rotation		1700 RPM			
Capacitor		3uf/250V			
Horse power		1/6HP			
Pole		4P			
Net wet		8.4kg			
Gross weight		9.4kg			
Port thread		5/16"			
Noise level		50dB			



## CVP-13/14/32, Chemical Resistant Pumps



CVP-14

CVP-32

CVP-13

## Features:

Chemker series are chemical resistant, diaphragm vacuum pumps which can be widely used to hard acidic, basic and solvent vapors by utilizing corrosion proof PTFE on all the wetted surfaces. Through innovative mechanical technology & human considerations, we have made Chemker series to be quiet, safe, maintenance-free and I cost effective vacuum pumps.

## Applications:

- Rotary evaporator (CVP-13 only).
- Gel drying.
- Blotting.
- Solvent filtration.



Model		CVP-14	CVP-32	CVP-13
Power		220-240V/50Hz	220-240V/50Hz	220-240V/50Hz
Max power consumption (W)		60	95	95
Max. current (A)		0.32	0.6	0.6
Max. vacuum		-650mmHg=85.5kPa =110Torr=146milibar	-650mmHg=85.5kPa =110Torr=146milibar	-750mmHg=98.68kPa =10Torr=13milibar
Max. pressure		25PSI	30PSI	30PSI
Vacuum	0mmHg	14 l/min=0.49CFM	28 l/min=0.99CFM	13 l/min=0.46CFM
	200mmHg	8 l/min=0.28CFM	16 l/min=0.57CFM	7 l/min=0.25CFM
	400mmHg	4 l/min=0.14CFM	8 l/min=0.28CFM	4 l/min=0.14CFM
	500mmHg	3 l/min=0.11CFM	6 l/min=0.21CFM	3 l/min=0.11CFM
Motor rotation		1450 RPM	1450 RPM	1450 RPM
Capacitor		2uf/450V	4uf/400V	4uf/450V
Horse power		1/8HP	1/6HP	1/6HP
Pole		4P	4P	4P
Net wet		5kg	7kg	7kg
Gross weight		5.2kg	7.4kg	7.4kg
Port thread		5/16"	5/16"	5/16"
Noise level		50dB	52dB	50dB

## Aspirator

## AS-3, Aspirator



AS-3

**Feature:** This apparatus is equipped with low-noise 150W motor, & this Aspirator of high suction ability. It can reach the vacuum station you need at very short time. Applied on the fields of vacuum evaporator, vapor filtration and all suction's procedures.

Vacuum capacity	5°C	10°C	20°C	30°C
	7mmHg	12mmHg	20mmHg	28mmHg
Air velocity	16~18L/Min x2			
Motor	Induction motor 150W			
Tank	Polypropylene tank 10L			
Suction port	Two suction port 8 mm			
Overflow & drain	Overflow nozzle 17.5 mm			
Aspirator tube	2 Pieces			
Power	110V/220V, 260VA			
Dimensions (mm)	360Lx240Wx390H			

# V VACUUM PUMPS

## Oil/ Vacuum Filtration



ST-Series

### ST-Series, Rotary Vane Vacuum Pump

**ST-Series** vacuum pump is a rotary pump, specially engineered for laboratory high volume and medium high vacuum applications, such as vacuum drying, vacuum filtration, centrifugal concentrator etc. With innovative mechanical technology and human design concept make tanker's family extremely quiet, now vibration, and long life service. In addition, ally aluminium casing and rugged handle make it light filter help us to avoid oil mist spraying and reducing air pollution.

**Features:** Very high vacuum • High flow rate • Quiet and low vibration • Compact and light weight.

**Applications:** Vacuum oven • Vacuum freezer • Vacuum concentrator.



#### Lubricant

ST SC is a special formulation lubricant for ST's pump, excellent viscosity temperature behavior, oxidation stability and resistance to ageing.



#### Exhaust Filter

Optional accessory for capturing oil mist from exhaust port stainless steel housing built in a replaceable filter element.

Model	ST-85	ST-140	ST-42	ST-185
CFM (L/Min) 60Hz	3(85)	5(140)	1.5(42)	3(85)
Max. Vacuum, Torr (mBar)	0.1(0.13)	0.1(0.13)	0.05(0.066)	0.05(0.066)
Motor Pump Speed (@60Hz)	1725 rpm	1725 rpm	1725 rpm	1725 rpm
Motor Horsepower (HP)	1/3	1/2	1/3	1/2
Intake Connection (inch)	5/16"	5/16"	5/16"	5/16"
Noise Level (dB)	52	52	52	52
Weight (kg)	8.6	12	10.4	13
Dimensions (mm)	L314xM122xH256	L335xM138xH270	L314xM122xH256	L385xM206xH304



FVP

### FVP, Vacuum Filtration Stand

FVP is an innovatory filtration stand, which is the first unit in the global market to assemble all apparatuses in one base so as to save 1/2 of table space than traditional way.

#### Features:

Unique magnetic fixing stand enable flask to be placed firmly • Rapid draining design let operator to be from unpacking flask to pour out filtrated water • Adopt oil free vacuum pump, no maintenance.

#### FVP-GN6 - filtration

stand, complete set

include suction

flask & stainless steel funnel

(100ml), dragon 100 torch burner and PALL GN-6 membrane filter (0.45 um).



FVP-GN6

**FVP** - filtration stand, complete set include suction flask (without funnel).

**FVP-4242** - filtration stand, AC110V/60Hz, AC220V/50Hz, complete set include suction flask & PALL# 4242 funnel (300ml).

290

Website : [www.chromtech.net.au](http://www.chromtech.net.au)

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Tel No : 03 9762 2034 . . . in AUSTRALIA

Vacuum filtration is widely used in laboratory for various tests such as microorganism test in food, pharmacy, beverage, drinking water industries and suspended solid test in environment protection field, sample or solution pretreatment before microanalysis such as AA, HPLS, GC, etc.

## Filtration Glass Set-include suction flask & funnel

Innovative suction bottle with drain • Weighted tray for firmly holding • All the glass ware are made of borosilicate glass.



**FGS-003** includes sintered I glass funnel (capacity 300ml, 47mm diam.) with tabulated base, clamp, jointed flask(1000ml) for sample pretreatment or solution refining used micro analysis, such as HPLC, AA, GC etc.



**FGS-005** includes sintered glass funnel with silicon stopper(capacity 300ml, 47mm diameter), clamp, flask (1000ml) for sample pretreatment or solution refining used micro analysis, such as HPLC, AA, GC etc.



**FGS-007** includes glass funnel (capacity 15ml, 25mm diameter), base with stainless steel support and PTFE gasket and silicon stopper, clamp, flask (125ml) for pretreatment of viscous sample.



**FGS-001** filtration glass set is an unique collocation which combines a magnetic funnel (capacity 300ml, 47mm diameter), stopper & an innovative magnetic suction bottle (PYREX flask modified, 1000ml) with drain & held firmly by a weighted tray for general filtration such suspended solid test.

## DC1S, Vacuum Controller



- Absolute Pressure 1400 - 1 mbar
- 1050 - 1 Torr

Silent vacuum controller with internal, continuous valves. By a novel, patented method and fuzzy logic extremely powerful, quick and precise.

### Advantages:

- continuous control valves made of synthetics (PPS)
- manual setpoint adjustment or automatic mode for finding boiling points
- chemically resistant ceramic-sensor

### Examples For Applications:

rotary evaporators • vacuum drying • laboratory workplaces



**FGS-002** filtration glass set is an unique collocation which combines a stainless steel funnel (100ml), stopper & an innovative magnetic suction bottle (PYREX flask modified, 1000ml) with drain and held firmly by a weighted tray for filtration need fast sterilization such as Total Bacteria, Coliform test.



**FGS-004** includes sintered glass funnel (capacity 15ml, 25mm diameter), clamp, suction bottle (125ml) for sample pretreatment used in micro analysis, such as DNA/RNA hybridization etc.



**FGS-006** includes glass funnel (capacity 300ml, 47mm diameter), base with stainless steel support and PTFE gasket and silicon stopper, clamp, flask (1000ml) for pretreatment of viscous sample.

Vacuum filtration system includes FGS-002 glass set & VP-17 vacuum pump.



Vacuum filtration system includes FGS-005 glass set & VP-14.





# V VACUUM PUMPS

## Portable Suction Unit

### Portable Suction Units



#### Features:

- Equipped with oil-less piston vacuum pump ensures lubrication free and maintenance free.
- A 1000ml autoclaveable polycarbonate collection jar graduated in "ml" with fluid overflow preventive fitting.
- Built-in vacuum gauge ranges 0 - 760mmHg (0 - 30inHg) easy for direct reading.
- All models are CE-certified complied with EMC requirement of EN60601-1/ EN60601-1-2/EN55011 Class B/ IEC61000-32/IEC61000-3-3.
- Classified the equipment as Class I.



#### BSU-510

- Choice of oil rotary vane pump or oil-less piston vacuum pump to suit your intended purpose.
- Comes with 2 plastic collection jars incorporated with overflow preventive stopper.
- Comes with foot switch providing another choice of operation for intermittent and continuous suction procedure.

#### BSU-990: (Battery Rechargeable for EMERGENCY purpose)

- Comes with plug-in cable available for use in ambulance, car or anyplace where 12VDC is available for emergency purpose.

- Equipped with a Sealed Lead-Acid 12V rechargeable battery and an automatic charging system to function a fully automatic power charge at the same time when AC mains power is used.
- 1 to 1.5 hours are available for operate from the full charge of battery. Or optional for.,battery capable of 3 - 3.5 hours. Ideal for use in areas where the failure of mains power, unstable current or the blackout occurs every often.
- 3-steps switch for BSU-990 functions Suction' OFF and Charge.
- **BSU-991** is operated in AC power and/or also applied to operate in ambulance and car by the attached plug-in cable, but no battery is equipped.

Model	BSU-990 (new)	BSU-991 (new)	BSU-660	BSU-510	
			BSU-770		
Dimension (MM) approx.	200x350x205	200x350x205	435x200x255 320x145x240	450x250x310	
Vacuum pump	Oil-less piston	Oil-less piston	Oil-less piston	Oil rotary	Oil-less
Airflow rate (LPM, approx.)	13-15L	13-15L	13-15L	80L	28-33L
Vacuum range (±10mmHg)	0-600mmHg	0-600mmHg	0-600mmHg	0-700	0-680
Overflow prevention	Yes	Yes	Yes	Yes	
Collection bottle (plastic)	1000ml x 1pc	1000ml x 1pc	1000ml x 1pc	1000ml x 2pc	
12V battery operation	190 minutes	N.A.	N.A.	N.A.	
(From the full charge) Standard accessory	Suction tubing 1000ml jar x 1	Suction tubing 1000ml jar x 1	Suction tubing 1000ml jar x 1	Suction tubing x 1 1000ml jar x 2	
Optional accessory	Bacteria filter	Bacteria filter	Bacteria filter	Bacteria filter	

## Mobile Suction Units



BSU-305

BSU-305P

BSU-510-1

### Features:

- User-friendly design, ideal for use in operation theater room or general wards providing an efficient performance such as suction biopsy, surgery, endometrial curette, OB/GYN and abortion etc.
- BSU-305 features a storage cabinet on back, convenient for storing accessories and tools.
- Built-in vacuum gauge with a range from 0 - 760mmHg (0 - 31 inHg) for direct readout.
- Provided with autoclave-able poly carbonate bottles graduated in ML incorporated with over-flow preventive fitting.
- Changeover to another bottle by turning the control knob LEFT-RIGHT for suctioning to the corresponding bottle.
- BSU-305P features one piece molded exterior body made by compact fiberglass for superior resistance to rust, chop and corrosion easy for cleaning.
- Mounted by 4 rubber anti-static wheels with 2 locking facility.
- Strong vacuum aspiration regulated from 0 to the maximum capable of sustaining of performing all purposes.
- Silicon suction tubing is autoclave-able and reusable.
- Low noise operation for use in hospital ward and theater room.

Model	BSU-305	BSU-305P		BSU-501-1	
Overall dimension	640x395x825mm	500x420x885mm		455x300x710mm	
Vacuum pump	Oil rotary	Oil rotary	Oil-less	Oil rotary	Oil-less
Cylinder (piston pump)	No	No	2	No	1
Wattage	191W	191W	270W	191W	200W
Max. airflow (±10%)	80 LPM	80 LPM	75-85 LPM	80 LPM	28-33 LPM
Max. vacuum (±10% mmHg)	710mmHg	710mmHg	680mmHg	710mmHg	680mmHg
Net weight (approx.)	35.3kg	28.3kg	26kg	23.5kg	19.3kg
Collection jars	3000ml plastic jars	3000ml plastic jars		1000ml plastic x 2 pcs	
Overall prevention	Yes	Yes		Yes	
Standard accessory	Jars x 2+footswitch x 1, Silicon suction tubing x 1	Jars x 2+footswitch x 1, Silicon suction tubing x 1		Jars x 2+footswitch x 1, Silicon suction tubing x 1	
Optional accessory	Bacteria filter, suction cup cannula tube set	Bacteria filter, suction cup cannula tube set		Bacteria filter, suction cup cannula tube set	
Quality standard	ISO9001, ISO 13485, GMP, CE	ISO9001, ISO 13485, GMP, CE		ISO9001, ISO 13485, GMP, CE	

### BSU-25/40, Bio Suction Units



#### Features: Double overflow Protection

Bio Suction System includes a level float control in the suction bottle and disc filter between bottle and pump which will completely avoid medium flowing into vacuum pump.

#### Maintenance free

Bio Suction system adopt oil free vacuum pump, low noise, durable and no maintenance is required.

#### Durable Case

Whole A.B.S.made outer shell with light weight, shiny appearance and easy maintenance.

#### Autoclavable

Suction Bottle, tube are steam autoclavable.

**Applications:** Cell culture aspiration • Medium suction

**BSU-25** - Includes suction bottle (1000cc), Silicon tube (100cm), Single-channel aspiration adapter each 1ea, 0.2µm disc filter (Ø37mm), fuse each 2ea.

**BSU-40** - Includes suction bottle (2000cc), Silicon tube (100cm), Single-channel aspiration adapter foot-switch each 1ea, 0.2µm disc filter (Ø50mm), fuse each 2ea.

Model	BSU-25	BSU-40
Pump type	Diaphragm	Piston
Motor power	25W	200W
Max. vacuum	680 mmHg	700 mmHg
Max. flow	25 l/min	40 l/min
Pole	4	4
Safety	Thermal protector, auto reset	
Foot switch control	-	ON for suction, OFF for release
Net/gross weight	4.3/5.5kg	12/16.2kg
Machine size (cm)	L37xW15xH25	L54xW26xH35
Dimensions (cm)	L43xW22xH32	L62xW32xH44
Power	AC 110V/60Hz or 220V/50Hz	

#### Options:

##### 167200-37, Bio-suction aspiration adapter set:

1. Single channel plastic aspiration adapter.
2. Single channel stainless steel aspiration adapter.
3. Single channel plastic aspiration adapter with ejector for plastic tips.
4. Hand operator.
5. 8 Channel stainless steel aspiration adapter.
6. 8 Channel plastic aspiration with ejector for plastic tips.
7. Stand for hand operator.



#### Options:

##### 0.2µm Disc filter:

1. Made of hydrophobic PTFE which can prevent medium from flowing into the pump.
2. Autoclavable (15 minutes at 121°C).
3. Air flow rate (at 10psi).

#### Options:

##### 167200-31/32/33, Suction bottles/rack:

1. Hit resistant adopt polycarbonate material to improve anti-bump ability.
2. Autoclavable heating resistant up to 130°C.
3. Safe with float level control to prevent medium from flowing into the pump.
4. Capacities: **167200-31** - 1000ml, **167200-32** - 2000ml, **167200-33** - 3000ml.

