DRAWELL

Artist of Science

## PCR

ELISA Reader

Microplate Washer

Biochemistry Analyzer

Biosafety Cabinet

# Research Clinical Equipment

# Quantitative Real-Time PCR System Accurate 96

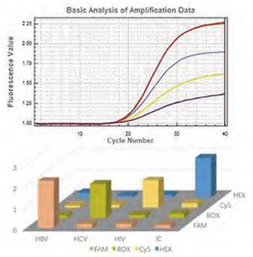
- DRAWELL Accurate 96 is based on global vision of product design concepts and manufacturing processes. It creatively combines Fresnel lens optical signal acquisition technology, time-resolved signal separation technology and unique temperature control technology. And it reaches international advanced level in sensitivity, multi-color crosstalk, temperature uniformity and accuracy. It supports the application of all common QPCR detection modes.
- Up to 6 fluorescence detection channels allowing multiplex PCR.
- Effectively reduce multi-color crosstalk and edge effect, no ROX correction required.
- New optical scanning detection system
- Innovative scanning method and time-resolved signal separation technology
- Unique edge temperature compensation technology
- User-friendly software

| Temperature control system | |
|---|---|
| Sample capacity | 96 |
| Reaction volume | 10-50 μl |
| Thermal cycle technology | Peltier |
| Max. Heating/Cooling rate | 6.0° C/s |
| Heating temperature range | 4 - 100 °C |
| Temperature accuracy | ± 0.2°C |
| Temperature uniformity | ±0.2°C @60°C， ±0.3°C @95°C |
| Temperature gradient setting range | 30-100°C |
| Temperature gradient difference setting range | 1 -36°C |
| Detection system | |
| Excitation light source | 4/6 monochrome high efficiency LEDs |
| Detection device | PMT |
| Detection mode | Time-resolved signal separating technology |
| Excitation/detection wavelength range | 455-650nm/510-715nm |
| Fluorescent channels | 4/6 channels |
| Supported dye | FAM/SYBR Green, VIC/JOE/HEX/TET, ABY/NED/TAMRA/Cy3（6 channels）, JUN, ROX/Texas Red, Mustang Purple, Cy5/LIZ |
| Sensitivity | Single copy gene |
| Resolution | 1.33 folds copy number difference can be distinguished in single-plex qPCR |
| Dynamic range | 10 orders of magnitude copies |

## Technical Innovation 1

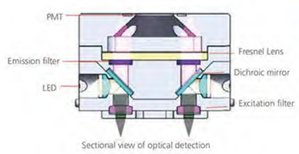
### Effectively reduce multi-color crosstalk and edge effect, no ROX correction required

- The multi-color crosstalk caused by the small sample spacing of 96 or 384-well plates has a great influence on the accuracy of the experimental results, especially in multiplex qPCR detection. The new optical signal detection system and unique time-resolved scanning can reduce non-target sample optical signal collection. Thereby high repeatability of single fluorescent channel can be ensured.



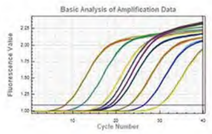

- Four different target genes (2 repeats) of FAM/HEX/ROX/Cy5 were simultaneously detected in one reaction tube, and the results showed that there was almost no cross-interference between the different channels.

### New optical scanning detection system—High sensitivity /resolution



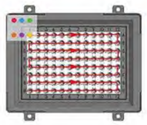

Sectional view of optical detection

- LED light source Efficient and maintenance-free
- Fresnel Lens It greatly reduces the light collection of the non-target area. And the relative position of the detector to the block hole ensures that one optical detection channel is aligned with one target to be tested at the bottom.




Different concentrations of plasmids were amplified by probe assay (concentration from left to right is 5 μg, 500 ng, 50 ng, 20 ng, 10 ng, 5 ng, 500 pg, 50 pg, 5 pg), three replicates for per concentration. The Ct values difference of the 10-fold dilution is exactly 3.3. The Ct values difference of the 2-fold dilution is exactly 1

### Innovative scanning method and time-resolved signal separation technology—High accuracy



- Unique time-resolved scanning method The different fluorescence signals of the same sample are collected at different times.The high-speed stepping motor and the highly sensitive detector ensure that all signal acquisition of the entire sample plate is completed in a short time.

- Innovative detection channel arrangement Interlaced arrangement of upper and lower channels further reduces inter-hole and multi-color fluorescence crosstalk.
- Double FAM scanning for melting curve Scan time is shortened a lot.





# Real-time PCR System Gentier-96R/96E

**High sensitive and precise optical system**

- High-sensitivity and wide dynamic range of fluorescence detection system, sample dynamic range could be from 101 to 1010 copies.
  Fast and precise mechanical scanning structure ensures the illumination uniformity of 96 wells, eliminate edge effects, no need for ROX calibration.
- Fluorescence excitation by a high-intensity and long-life LED. Bulb Luminance will not attenuation over time, free maintenance optical system through the entire life.
- Professional designed fluorescence filters realize the highly fluorescence transmittance and meanwhile minimize the fluorescence channel crosstalk.

| Model | Gentier 96E | Gentier 96R |
|---|---|---|
| Thermal Block | | |
| Sample capacity(wells) | 96 | |
| Reaction Volume | 0-100 μL | |
| Consumables | 0.2ml 96-well Plates（unskirt）; 0.2ml 8-strip tubes ,0.2ml PCR single tube (Optical flat cap,clear，frosted，white tube | |
| Temperature range | 0°C-100°C | |
| Heating/cooling method | Peltier | |
| Max heating rate | 6.1°C/sec | |
| Average heating rate | 4.5°C/sec | |
| Max cooling rate | 5.0°C/sec | |
| Average cooling rate | 2.8°C/sec | |
| Temperature accuracy | ±0.1°C | |
| Temperature uniformity | ±0.1°C | |
| Gradient Range | 1°C-40°C | |
| Gradient block | 12 row | |
| Special temperature protocol | Gradient PCR, Long PCR, Touch Down PCR | |
| Heat Lid | | |
| Temperature range | Room Temperature–110°C | |
| Optical System | | |
| Excitation Source | 6 LEDs | 4LEDs |
| Detector | Photodiode | |
| Detection Position | Excitation and scan at top | |
| Detection method | 6 channels scanning at the same time, no edge effect. | |
| Detection time | 7 seconds for 96 wells for all channels | |
| Range of excitation/emission wavelengths (nm) | 1.465 /510 (FAM,SYBR Green I,SYTO9, EvaGreen，LC Green) 2.527/ 563(HEX,VIC,TET,JOE) 3.580 /616 (ROX,Texas Red) 4.632/ 664( Cy5) 5.680 /730 (Alexa Fluor680) 6.465 /616 (FRET) | 1.465 /510 (FAM,SYBR Green I,SYTO9, EvaGreen，LC Green) 2.527/ 563(HEX,VIC,TET,JOE) 3.580 /616 (ROX,Texas Red) 4.632/ 664( Cy5) 5.680 /730 (Alexa Fluor680) 6.465 /616 (FRET) |
| Probe | Taqman Probe,Molecular beacons probe, Scorpion probe ,FRET | Taqman Probe, Molecular beacons probe, Scorpion probe |
| Multiplexing | Up to 6 targets | Up to 4 targets |
| Fluorescence Linearity | r≥0.990 | |
| Fluorescence Dynamic Range | Adjustable | |
| Performance | | |
| Sample Linearity | /r/≥0.999 | |
| Sample repeatability | Ct value CV≤0.5% | |
| Sample Dynamic Range | 1-1010 copies | |
| Software Functions | | |
| Data Analysis modes | Qualitative analysis, Absolute quantification, Relative quantification, Genotyping analysis, Endpoint analysis，Melt curve analysis, High Resolution Melting | |
| Control modes | 1.10.4' touch screen 2. PC direct control 3. WLAN control(One PC can control max 10 units, and device can be controlled by any PC in the WLAN) | |
| Sample Drawer | Touch screen commend | |
| Data Stroage | Upload and download through USB disk,1000 results can be stored in machine | |
| Power failure protection | Automatically start running experiments after power supply, no need wait PC software | |
| Customize Report | Templates reserved ,report can customized | |
| Administration Management | Administrator can set functions limits for users | |
| Transport Locker | Automatically detect transport locker | |
| Fault Management | Fault report and analysis, solution instruction | |
| LIS connection | CSV,Excel,TXT format data output,open port for LIS connection | |
| Others | | |
| PC operating system | Win 7, Win 10 | |
| Communication Port | 1 ethernet and 3 USB | |
| Footprint (WxDxH) | 355mm X 480mm X 485mm | |
| Weight | 30kg | |
| Power usage | AC 100 to 125 V / 200 to 240 V (50/60 Hz). | |
| Power consumption | 900VA | |
| Work environment | Temperature:10°C~30°C Humidity:20%~85% | |

# Gradient PCR Thermal Cycler

## DW-K960

### Feature

- Convenient and flexible module replacementmode.
- Large size super-high-definition LCDscreen.
- Intuitive, friendly user interface makesprogram easier and faster.
- Memory function in case of power-down.
- Low noise，low energy consumption，long application life.
- Solemn, elegant appearance, innovativemodel.
- Unique rotating stall heat-regulatingfunction.
- Optimal panel design for human ,moreconvenient operation.
- Heated lid could be stopped at any angle.
- Handle-module, more secure and convenientmodule replacement, improving using efficiency and expanding using years.

| Model | K960-A；K960-B；K960-C；K960-D |
|---|---|
| Capacity | 96×0.2mL(A)；54×0.5mL(B)；<br>96×0.2mL+77×0.5ml（C）；384well（D） |
| Temp range | 0℃—99.9℃（Rt≤30℃） |
| Max cooling rate | ≥3.5 Celsius degree/s |
| Max heating rate | ≥4.0 Celsius degree/s |
| Heating/cooling rate | 0.1℃/s—4 Celsius degree/s（Adjustable） |
| Uniformity | ≤±0.2 Celsius degree |
| Accuracy | ≤±0.1 Celsius degree |
| Gradient temp range | 30℃—99 Celsius degree |
| Gradient spread | 1℃—30 Celsius degree |
| Gradient Uniformity | ≤0.2 Celsius degree |
| Heated lid temp | 30℃—110 Celsius degree |
| Environment model | Manually select |
| Temp control | block，tube，calculated |
| Stored program No. | 200 |
| Max. No. of Cycle | 99 |
| Display | 5.7inch，320*240pels LCD |
| Communication | USB2.0 、Rs232 |
| Size | 380mm(L)×270mm(W)×250mm(H) |
| Weight | 7.2kg |
| 110V-220V international general voltage | |

# Smart Gradient PCR

## DW-B960

- **Gradient PCR:**
- 12 channel temperature probes detect simultaneously
- Adopt the Windows CE operation system
- Adjustable lid
- 12 channel temperature probes detect simultaneously, which ensure thehomogeneity of sample temperature. The hermeticspace technique can efficiently eliminate PCR margin reaction.The technique of outside temperature probe tracing the inside curve testing can effectively ensure the accuracy of sample temperature.

  Temperature extended control mode which is closer to required experiment temperature control and is able to effectively avoid the system error caused by the disaccord of the temperature points among the instrument's display temperature, actual block temperature and the temperature required for reagents.So as to improve the accuracy of the experiment and ensure the high efficiency. Strict temperature control debugging program makes sure that each instrument can meet the needs of different experiment.

### Specifications

| Capacity | 96×0.2mL(A)；54×0.5mL(B)；96×0.2mL+77×0.5mL(C)；384well(D) |
|---|---|
| Temp range | 0℃~99℃(Rt≤30℃) |
| Max heating rate | ≥4.5℃/s |
| Max cooling rate | ≥4℃/s |
| Heating/cooling rate | 0.1℃/s—4℃/s（Adjustable） |
| Uniformity | ≤±0.2℃ |
| Accuracy | ≤±0.1℃ |
| Gradient temp range | 30~99℃ |
| Gradient spread | 1~30℃ |
| Gradient Uniformity | ≤0.2℃ |
| Heated lid temp | 20~110℃ |
| Environment model | Automatic identification |
| Temp control | block，tube（10~100μl can be used），calculated |
| Stored program No. | 1000 |
| Max. No. of cycle | 999 |
| Display | 5.7'LCD |
| Communication | USB2.0 、Rs232、RJ45 |
| Size | 380mm(L)x270mm(W)x250mm(H) |
| Weight | 7.8kg |





# PCR Thermal Cycler

## Accurate 16-T

### Features

- **On board software with large screen panel, easy for use:**
  7-inch color touch screen shows all parameters, test results and real time testing curve.
- **Portable and light :**
  the weight is only 4kg. It can be used with vehicle power supply for immediate on-site detection.
- **Sensitive and efficient optical signal detection system, multi-channel fluorescence without crosstalk:**
  based on unique Fresnel lens,
  high-efficiency PMT and maintenance-free LED. 16-hole scanning takes only 1s.
- **Ultra-fast temperature control system:** unique liquid circulation refrigeration.
- **Compatible with 0.2mL PCR transparent tubes or eight stripes, can measure 16 samples at a time.**
  Software functions can be customized.
  4G data memory. Testing results can be exported with USB or printed.

### Specifications

| Sample capacity | 2×8 0.2ml tube/strips，clear |
|---|---|
| Reaction volume | 10-50μl |
| Touch screen | YES |
| Thermal cycle technology | Peltier, liquid circulation refrigeration |
| Max. Heating/Cooling rate | 6.0°C/s |
| Heating temperature range | 4 – 100 °C |
| Temperature accuracy | ±0.2°C |
| Temperature uniformity | ±0.2℃ @60℃ ±0.3℃ @95℃ |
| Excitation light source | Monochrome high efficiency LED |
| Detection device | PMT |
| Detection mode | Fast hole-by-hole scanning |
| Fluorescent channels | Standard: FAM/ SYBR, VIC/HEX/ TET<br>Optional：ROX，CY5/TAMRA |
| Sensitivity | Single copy gene |
| Dynamic range | 10 orders of magnitude copies |
| Analysis mode | CT value analysis, absolute quantitative analysis |
| Dimension [W×D×H] | 205×190×98mm |
| Power Supply | 100-240V or Optional 12V, 10A mobile power |
| Weight | 4kg |

## TC1000-G TC1000-S

### Features

- Reliable heating/cooling elements and precise temperature control
- Unique design of block ensur es the temperature uniformity and repeatable results
- 7 inch Large color touch panel screen for easy programming with user friendly software
- High performance DSP and temperature control
- Fast heating and cooling rate
- Large user program storage

### Specifications

| Model | TC1000-G | TC1000-S |
|---|---|---|
| Sample Capacity | 96X0.2mL PCR tube，8X12 PCR plate or 96 well plate | 96X0.2mL PCR tube，8X12 PCR plate or 96 well plate |
| Heating Temperature Range | 4-105℃ | 4-105℃ |
| Lid Temperature Range | 30-110℃ | 30-110℃ |
| Temperature Display Accuracy | ±0.1℃ | ±0.1℃ |
| Temperature Control Accuracy [at 55℃] | ±0.3℃ | ±0.3℃ |
| Temperature uniformity[at 55℃] | <0.3℃ | <0.3℃ |
| Max. Heating/Cooling Rate | 3℃Sec | 3℃/Sec |
| Gradient Temperature Setting Range | 30-99℃ | |
| Gradient Range | 1-42℃ | |
| Adapter block material | Aluminum | Aluminum |
| Display | 7" LCD 800x480 | 7" LCD 800x480 |
| Input | Touch panel | Touch panel |
| User defined file system | Max. 30 segments 99 cycles max.<br>16 folder and 16 files each folder | Max. 30 segments 99 cycles max.<br>16 folder and 16 files each folder |
| Power off protection | Yes | Yes |
| Power Supply | 100-120V/200-240V,50/60Hz | 100-120V/200-240V,50/60Hz |
| Dimension [D×W×H]( without the heating block ) | 280x370x250 mm | 280x370x250 mm |
| Weight | 11kg | 11kg |

# Microplate (ELISA) Reader

## DNM-9602

### Application

- The instrument is compatible with registered diagnostic ELIA kit, primarily used in hospitals or some detections related to clinical immunology.

### Items Detected

| 1. Tumor Marker | 2. Infectious Disease | 3. TORCH |
|---|---|---|
| 4. Antenatal Down Syndrome Risk | 5. Thyroid (5 items) Testing | 6. Sex Hormone (6 items) |
| 7. Autoimmune Disease | 8. Diabetes Series | 9. Myocardial Infarction Diagnosis |
| 10. Hepatic Fibrosis | 11. Human Cytokines Detection | 12. Hematology |
| 13. Renal Function | 14. Drug | 15. Allergic Source |
| 16. Food Safety | 17. Animal Quarantine | etc... |

### Specifications

- Measurement System: 8-Channel optical system
- Standard: 4 filters (405,450,492,630nm) Totally 10 filters can be installed.
- Reading speed: single wave :5s, dual waves :10s
- Repeatability: < ±0.5% (0.001~1.500Abs)
- Linearity: < ±1% (0.001~1.500Abs)
- Software: compatible withWin 7 and Win XP system.
- Range of working wavelength: from 400nm to 800nm
- Measurement Range: 0.001~4.000Abs
- Photometric Accuracy: ±0.01Abs (0.001~1.500Abs)
- Stability: < 0.005Abs
- Printer: with internal thermal printer

## DNM-9602G DNM-9606

### Features

- Self-checking function.
- Filter choosing-mode: automatically.
- Large memory to pre-store 200 programs and save detection results on 120 pieces of plates.
- Internal printer and external printer via software
- Checking mode: single wave/dual wave detection.
- High sensitivity, high accuracy, fast detection speed and friendly operation.

### Specifications

| Model | DNM-9602G | DNM-9606 |
|---|---|---|
| Range of working wavelength | 400nm - 800nm | |
| Measurement System | 8-Channel optical system | |
| Filters | 4 standard filters (405,450,492,630nm) or totally 10 filters can be installed | |
| Reading Speed | Single wave :5s, dual waves :10s | |
| Measurement Range | 0.000~4.000Abs | |
| Photometric Accuracy | ±0.01Abs (0.001~1.500Abs) | |
| Stability | <0.005Abs | |
| Linearity | <±l%(0.001~1.500Abs) | 7.5" Touch-screen |
| Display | 5.5" Touch-screen | |
| System | Win 7 and Win XPZ LIS, HIS | |
| Calculation Method | Two-point, Linear regression method, Semi logarithmic method, Ratio log method, Full log method, Exponential regression(LogA-C), Logit-Log, Point to point(Broken line method), Four parameter method, Two square curve, Three square curve and Three square spline | |
| Printer | Built-in thermal print | |
| Data Communication | RS232 | |
| Power Supply | AC220V/110V±22V, 50HZ 6OHZ±1HZ | |
| Dimension | 420x350xl70(mm) | |
| Weight | 9 kg | |





# DW-TC220 Automatic Chemistry Analyzer

### Sample/Reagent Position

- 18pcs sample position
- Reagent refrigerated function
- 26pcs reagent position

### Sample/Reagent/Mixing Probe

- Automatic liquid level detect
- Collision protection function
- Probe internal/external washing
- Independent mixing probe

### Intellective software

- Automatic washing cuvette when startup & shut down
- Automatic detect reagent volume during every startup
- Reagent plate temperature detecting when startup

### Dynamic and Real-time display of running status

- Real-time online monitoring running status of sample tray, reagent tray and cuvette
- Real-time online monitoring reagents residual volume
- Real-time online monitoring waste volume

### Automatic dilute and re-test

- Automatic dilute and re-test when absorbance range is out of range
- Automatic dilute and re-test when linear limit is out of range
- Automatic dilute and re-test when linear range is out of range
- Freely set the auto dilute ratio and dilute water position

### A revolutionary automatic biochemistry analyzer with

- Compact design: 54.8cmX42.2cmX38.3cm
- Easy to carry: net weight≤23kg

### Optimal substitution of semi-auto biochemistry analyzer

- Minimal labor required
- Independent mixing probe
- Utility of reagents decreased: 300ul/test
- Efficiency speed: 200 tests/hour
- User friendly: Smart and easy-operating software
- High Accuracy: Minimal operating/random errors
- High reputation from clinics

### System Functions

- Analysis Methods: end-point, kinetic, two-point, double-reagent, double-wavelength, multi-standard etc, open to various reagents

### Reaction System

- Reaction Cuvette: 60 reusable plastic units
- Optical Length of Cuvette: 6mm
- Reaction Volume: 180~500μl
- Max reaction Time: 12 minutes
- Reaction Temperature: 37±0.1℃

### Operation System

- Windows XP or Windows 7

### Input and Output

- Input: RS-232 interface/computer
- Output: multi-format printout

### Reaction Cuvettes

- 60 pcs reusable plastic cuvettes
- Automatic blank testing for cuvette
- Colorimetry system in the pattern of light splitting behind cuvette
- Dismountable, easily replacement

### 7-Step Auto Cleaning System

- Automatic 7-step washing
- Hi-tech washing station to ensure accurate results
- With low water consumption: 1-2L/H

### Optimum calibration cuvette

- Automatic Cuvette blank testing
- Automatic wash selected cuvettes


### Sample/Reagents Handling

- Sample volume: 2-50μl, 0.1μl step
- Sample Dilution: automatic/Manual pre-dilution, with dilution ratio up to 1:100
- Reagent Position: 26 pcs (Refrigeration function is optional)
- Reagent Volume: 10-400μl, 1μl step

### Optical System

- Light Source: halogen-tungsten lamp
- Wavelength: 340-690nm, 9 wavelengths, precision ±2nm
- Absorbance Range: 0~4.0 Abs
- Resolution: 0.001 Abs
- Rear spectrophotometry

### Calibration

- Calibration: linear/nonlinear multi-points calibration
- Re-test: retest the sample automatically when the result is out of the linearity range or the sample is not sufficient

### Working Condition

- Power Supply: ~100-240V, 50/60Hz, 300VA
- Temperature: 10-30℃
- Humidity: ≤90%, no dew

# DW-TC6030 Automatic Chemistry Analyzer

## System Functions

- Fully automatically, discrete, random STAT function
- Online test items: at most 40 testing items
- Throughput: 260 tests/hour
- Analysis Method: end-point, kinetic, two-point, double-reagents,double-wavelength, multi-stan dard etc, open to various reagents
- Data Processing: memory up to 200,000 patients' data

## Sample/Reagents Handling

- Sample Position: 40 pcs (Include standard,QC,STAT positions)
- Sample volume: 2-50μl, 0.1μl step
- Sample Probe Cleaning: automatic internal & external washing
- Sample Dilution: automatic/Manual pre-dilution, with dilution ratio up to 1:100
- Reagent Position: 40 pcs (With refrigerated function, 2℃-8℃)
- Reagent Volume: 10-500μl, 1μl step
- Reagent Probe: automatic liquid level detect, with collision protection function
- Reagent Probe Cleaning: automatic internal & external washing

## Optical System

- Light Source: halogen-tungsten lamp
- Wavelength: 300-700nm, 9 wavelengths, precision ±2nm
- Absorbance Range: 0～4.0Abs
- Resolution: 0.001Abs
- Spectrophotometry: rear spectrophotometry

## Calibration

- Calibration: linear/nonlinear multi-points calibration
- Re-test: retest the sample automatically when the result is out of the linearity range or the sample is not sufficient

## Dimension and Weight

- Upper cabinet: 700×650×530mm
- Net Weight: 62kgs
- Bottom cabinet: 700×705×620mm
- Net Weight: 47kgs

## Sample/Reagent Position

- 40 pcs sample position
- 40 pcs reagent position
- Reagents refrigerated function
- Primary tube and blood serum cup can be used

## Reaction Cuvettes

- 90 pcs reusable cuvettes
- Automatic blank testing for cuvette
- Colorimetry system in the pattern of light splitting behind cuvette
- Dismountable, easily replace cuvette

## 8-step auto cleaning System

- Automatic 8-step washing
- Automatic cuvette dry function
- Hi-tech washing station to ensure accurate test results
- With low water consumption: 4L/H

- Automatic washing cuvette when start up & shut down the instrument
- Test order setting program is available to avoid carry-over
- Automatic detect reagent volume during every startup of the instrument
- Show reagent plate temperature during every startup of the instrument

- Automatic Cuvette blank testing -
- Automatic wash selected cuvettes -
- Real-time online monitoring running status of cuvette -

- Freely set the autodilute ratio when re-testing
- "No dilute" re-testing mode is available

## Reaction System

- Reaction Cuvette: 90 pcs made of special material
- Optical Length of Cuvette: 6mm
- Reaction Volume: 200～500μl
- Reaction Time: 8-10 minutes
- Reaction Temperature: 37℃±0.1℃
- Mixing System: independent mixing probe

## Cleaning System

- 8-step automatic washing, automatic cuvette dry function
- Water Consumption: 4L/hour

## Working Condition

- Power Supply: ~100-240V, 50/60Hz, 1KVA
- Temperature: 10℃-35℃
- Humidity: ≤90%, no dew

## Operation System

- Windows XP or Windows 2000

## Input and Output

- Input: RS-232 interface / keyboard / com-
- puter

## Packing Information

- Adopts plywood case
- Upper Cabinet: 830×880×732mm G.W.: 95kgs
- Bottom Cabinet: 800×880×855mm G.W.: 74kgs

## Sample/Reagent/Mixing Probe

- Probe telflon coating technology
- Automatic liquid level detect
- Collision protection function
- Independent mixing probe
- Probe internal/external washing
- Clot detection function

## QC

- Various QC managements, insert QC randomly; save, display & print QC chart; define different QC in advance

- Real-time online monitoring running status of sample tray, reagent tray cuvette
- Real-time online monitoring reagents residual volume
- Real-time online monitoring waste volume

- Automatic dilute and re-test when absorbance range is overrange -
- Automatic dilute and re-test when linear limit is overrange -
- Three modes (no dilute, autodilute and handwork dilute) are available -
- Freely set the autodilute ratio and dilute water position -





# DW-TC6090 Automatic Chemistry Analyzer

## System Functions

- Fully automatically, discrete, random STAT function
- Online test items: at most 40 testing items
- Throughput: 400 tests/hour
- Analysis Method: end-point, kinetic, two-point, double-reagents, double-wavelength, multi-standard etc, open to various reagents
- Data Processing: memory up to 2 million patients' data

## Sample/Reagents Handling

- Sample Position: 93 pcs (Include standard, QC, STAT positions)
- Sample volume: 2-50μl, 0.1μl step
- Sample Probe Cleaning: automatic internal & external washing
- Sample Dilution: automatic/Manual pre-dilution, with dilution ratio up to 1:100
- Reagent Position: 80 pcs (With refrigerated function, 2℃-8℃ )
- Reagent Volume: 10-500μl, 1μl step
- Reagent Probe: automatic liquid level detect, with collisionprotection function
- Reagent Probe Cleaning: automatic internal & external washing

## Bar-code Reader (Optional)

- Bar-code reader used for sample/reagent programming

## ISE Module (Optional)

- Optional 1: K, Na, Cl, Ca, PH (5 items)
- Throughput: 300 tests/hour
- Optional 2: K, Na, Cl (3 items)
- Throughput: 180 tests/hour

## Cleaning System

- 8-step automatic washing, automatic cuvette dry function
- Water Consumption: 8L/hour

## Working Condition

- Power Supply: ~100-240V, 50/60Hz, 1KVA
- Temperature: 10-35℃
- Humidity: ≤90%, no dew

## Operation System

- Windows XP or Windows 2000

## Input and Output

- Input: RS-232 interface / keyboard / computer
- Output: multi-format printout

## Dimension and Weight

- Upper cabinet: 950×710×1180mm
- Net Weight: 136kgs

## Packing Information

- 890×1135×1400mm; G.W.: 215kgs (With plywood case)

## R1 Reagent Position

- 40 pcs R1 reagent positions
- Non-stop reagents refrigerating
- Auto detect of reagent volume

## R2 Reagent/Sample position

- 40 pcs R2 reagent positions
- 93 sample positions, suitable for
- primary tube abd serum cup
- Non-stop reagents refrigerating
- Auto detect of reagent volume

- Freely set the autodilute ratio when re-testing
- "No dilute" re-testing mode is available

## Reaction System

- Reaction Cuvette: 90 pcs made of special material
- Optical Length of Cuvette: 6mm
- Reaction Volume: 200～500μl
- Reaction Time: 8-14 minutes
- Reaction Temperature: 37℃±0.1℃
- Mixing System: two independent mixing probe

## Optical System

- Light Source: halogen-tungsten lamp
- Wavelength: 300-700nm, 9 wavelengths, precision ±2nm
- Spectrophotometry: rear spectrophotometry
- Test Range: 0-4.0 Abs
- Resolution: 0.001Abs

## QC

- Various QC management function and random QC insert Control and Calibration
- Calibration: linear/nonlinear multi-points calibration
- Re-test: retest the sample automatically when the result is out of the linearity range or the sample is not sufficient
- Automatic sample dilute function

## Sample/Reagent Probe

- Probe telflon coating technology
- Automatic liquid level detect
- Collision protection function
- Independent mixing probe
- Probe internal/external washing

## Reaction Cuvettes

- 90 pcs reusable cuvettes
- Automatic blank testing for cuvette
- Dismountable, easy to replace Cuvette
- Advanced thermostat to ensure accurate test result

## Mixing Probe

- Two independant mxing probes
- High precision mixing station
- Collision protection function
- Probe internal/external washing
- Probe telflon coating technology

## 8-step auto cleaning System

- Automatic 8-step washing
- Automatic cuvette dry function
- Hi-tech washing station to ensure accurate test results
- With low water consumption: 8L/H

- Automatic washing cuvette when start up & shut down the instrument
- Test order setting program is available to avoid carry-over
- Automatic detect reagent volume during every startup of the instrument
- Show reagent plate temperature during every startup of the instrument

- Automatic Cuvette blank testing -
- Automatic wash selected cuvettes -
- Real-time online monitoring running status of cuvette -

- Real-time online monitoring running status of sample tray, reagent tray cuvette
- Real-time online monitoring reagents residual volume
- Real-time online monitoring waste volume

- Automatic dilute and re-test when absorbance range is overrange -
- Automatic dilute and re-test when linear limit is overrange -
- Three modes (no dilute, autodilute and handwork dilute) are available -
- Freely set the autodilute ratio and dilute water position -

# Class II A2/B2 Biological Safety Cabinet

## Working principle

- The bio-safety cabinet is a box-shaped air purification negative pressure safety device that prevents aerosols from containing dangerous or unknown biological particles during handling.
- Its working principle is mainly to pump the air inside the cabinet to keep the negative pressure state inside the cabinet to protect the operator through the vertical air flow. The outside air is filtered through the HEPA filter and then enters the safety cabinet to avoid contamination of the sample. The air in the cabinet is also filtered through the HEPA filter and then vented to the atmosphere to protect the environment.

## Characteristics

- 10° tilt design, more ergonomic
- Vertical flow negative pressure machine type, 30% of air is filtered and recycled, 70% air is filtered and then discharged into the room or connected to the exhaust system.
- Lighting and sterilization system safety interlock
- HEPA high-efficiency filter can filter more than 99.99% of 0.3um dust particles
- Digital display LCD control interface, fast, medium. Slow three speed
- The working area is SUS304 brushed stainless steel, strong, durable, easy to clean, anti-corrosion
- Standard configuration diameter 160mm, 1 meter long exhaust duct and elbow
- Work area is equipped with a five-hole socket

BSC-1000IIA2/BSC-1300IIA2/BSC-1600IIA2

BSC-1000IIB2/BSC-1300IIB2/BSC-1600IIB2

## Technical Parameters

| Model | | BSC-1000IIA2 | BSC-1300IIA2 | BSC-1600IIA2 |
|---|---|---|---|---|
| Clean level | | Grade 100(209 E U.S. Federal) | Grade 100(209 E U.S. Federal) | Grade 100(209 E U.S. Federal) |
| Number of bacteria | | ≤0.5per utensil.hour(90mm utensil) | ≤0.5per utensil.hour(90mm utensil) | ≤0.5per utensil.hour(90mm utensil) |
| Average wind speed | Inside the door | 0.38±0.025 m/s | 0.38±0.025 m/s | 0.38±0.025 m/s |
| | Middle | 0.26±0.025 m/s | 0.26±0.025 m/s | 0.26±0.025 m/s |
| | Inside | 0.27±0.025 m/s | 0.27±0.025 m/s | 0.27±0.025 m/s |
| Front suction wind speed | | 0.55m±0.025m/s (70% air exhaust) | 0.55m±0.025m/s (70% air exhaust) | 0.55m±0.025m/s (70% air exhaust) |
| Noise | | ≤62dB(A) | ≤62dB(A) | ≤62dB(A) |
| Working area dimension(W*D*H) | | 1000*650*620mm | 1300*650*620mm | 1600*650*620mm |
| Overall dimension(W*D*H) | | 1195*720*1950mm | 1495*720*1950mm | 1795*720*1950mm |
| HEPA filter specifications and quantity | | 955*554*50mm*1pc | 1290*554*50mm*1pc | 1590*554*50mm*1pc |
| Fluorescent/UV lamp specifications and quantity | | 20W*1PC/20W*1PC | 30W*1PC/30W*1PC | 30W*PC/30W*1PC |

| Model | | BSC-1000IIB2 | BSC-1300IIB2 | BSC-1600IIA2 |
|---|---|---|---|---|
| Clean level | | Grade 100(209 E U.S. Federal) | Grade 100(209 E U.S. Federal) | Grade 100(209 E U.S. Federal) |
| Number of bacteria | | ≤0.5per utensil.hour(90mm utensil) | ≤0.5per utensil.hour(90mm utensil) | ≤0.5per utensil.hour(90mm utensil) |
| Average wind speed | Inside the door | 0.38±0.025 m/s | 0.38±0.025 m/s | 0.38±0.025 m/s |
| | Middle | 0.26±0.025 m/s | 0.26±0.025 m/s | 0.26±0.025 m/s |
| | Inside | 0.27±0.025 m/s | 0.27±0.025 m/s | 0.27±0.025 m/s |
| Front suction wind speed | | 0.55m±0.025m/s (100% air exhaust) | 0.55m±0.025m/s (100% air exhaust) | 0.55m±0.025m/s (100% air exhaust) |
| Noise | | ≤62dB(A) | ≤62dB(A) | ≤62dB(A) |
| Working area dimension(W*D*H) | | 1000*650*620mm | 1300*650*620mm | 1600*650*620mm |
| Overall dimension(W*D*H) | | 1195*720*1950mm | 1495*720*1950mm | 1795*720*1950mm |
| HEPA filter specifications and quantity | | 955*554*50mm*1pc | 1290*554*50mm*1pc | 1590*554*50mm*1pc |
| Fluorescent/UV lamp specifications and quantity | | 20W*1PC/20W*1PC | 30W*1PC/30W*1PC | 30W*1PC/30W*1PC |





# Fume hood

## Working principle

- Fume hood has built-in multi-function power outlet for easy use of other equipment in the laboratory. The quick-opening faucet is used to facilitate experimental water use. The front glass baffle can be moved up and down, and the fan is placed on the top to extract the toxic and harmful gases in the experiment. The working surface can be equipped with a water tank to facilitate the discharge of the experimental residue through the water tank to protect the experimental environment safely and reliably.

## Characteristic

- Using fireproof high-density board material as the frame, the experimental area is made of stainless steel or PP veneer, and the sealing is good.
- Negative pressure form effectively discharges the experimental gas in the working area
- Digital display LCD control interface, fast and slow two speeds
- The working area is all SUS304 stainless steel or PP material, easy to clean and anti-corrosion
- Standard configuration diameter 160mm, 1 meter long exhaust duct and elbow
- Work area is equipped with a five-hole socket
- Optional work area sink and faucet

## Technical Parameters

| Model | SW-TFG-12 | SW-TFG-15 | SW-TFG-18 |
|---|---|---|---|
| Wins speed | 0.25-0.45 m/s | 0.25-0.45 m/s | 0.25-0.45 m/s |
| Power | 220V/50HZ | 220V/50HZ | 220V/50HZ |
| Working area size(W*D*H) | 1030*695*580mm | 1300*695*580mm | 1600*695*580mm |
| Overall dimension(W*D*H) | 1185*760*1950mm | 1455*760*1950mm | 1755*760*1950mm |
| Fluorescent lamp speciifcations and quantity | 20W*1PC | 30W*1PC | 20W*2PCS |

# All Steel Fume Hood

- 1.Standard Dimensions

| Model | SW-TFG-12 all steel | SW-TFG-15 all steel | SW-TFG-18 all steel |
|---|---|---|---|
| Working area size(W*D*H) mm | 985*595*1185 | 1285*595*1185 | 1585*595*1185 |
| Overall dimension(W*D*H) mm | 1200*850*2350 | 1500*850*2350 | 1800*850*2350 |

- 2. The outer shell material: The outer casing is made of high-quality cold-rolled steel plate of 1.0mm thickness in the machining center, which is cut, positioned, punched, bent and welded. After pickling and phosphating, the epoxy powder is sprayed and cured at elevated temperatures. High adhesion and aesthetics.
- 3. The inner shell material: 5mm gray anti-double board, laboratory-specific materials. It has a detachable maintenance hole for easy maintenance of circuits, water and air lines.
- 4. Operation surface material: It adopts 12.7mm solid core physicochemical plate countertop, acid and alkali resistant, chemical solvent corrosion, non-toxic and long service life.
- 5. Fluorescent lamp: The fluorescent lamp is hidden at the top and does not come into contact with the airflow in the fume hood for easy replacement. It uses a 12W LED lamp with 5mm tempered glass.
- 6.Handle material: pvc handle.
- 7.Deflector material: 5mm anti-double board, laboratory-specific materials.
- 8.Socket: Multi-function splash-proof power socket
- 9. Front window material: pvc plastic profile frame, the window is made of tempered glass, using stepless balance device, can move up and down, freely adjustable.
- 10. Gas hood material: made of PP material, integrated, acid and alkali resistant, corrosion resistant
- 11. Distribution box: Meets 220V and 380V power requirements, and is equipped with motor protection device.
- 12. Control switch: 12V liquid crystal touch switch, centralized control of the entire circuit system.
- 13. Equipment's process Description: All steel plates were soldered with epoxy resin powder and visually observed without solder joints. All water, electricity and gas paths must be safe,
  suitable and concealed. Maintenance holes are provided on both sides of the cabinet for maintenance and safety inspection.
  Three baffles can discharge harmful gases of different height spaces from different areas. The fume hood exits the air in the fume hood at a working surface wind speed of 0.5 m/s to
  ensure that no residual gas is present. The ventilation efficiency is high, the exhaust air volume is about 1600m3 / h, and the noise is small.
- 14. Lower cabinet material: 1.0mm high quality cold rolled steel plate (double layer), non-welded connection, removable pad. After molding, cutting, positioning, punching, bending and welding in machining center, after pickling and phosphating, the epoxy resin powder is sprayed and cured at a high temperature