



Precision™ Series
Double Beam
UV / VIS SPECTROPHOTOMETER



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Brand Introduction

As a high-tech enterprise, Mapada focuses on designing and manufacturing high-quality UV/VIS spectrophotometers. We sell to both domestic and foreign markets. 60% of our products are exported to Europe, USA, Japan and Russia. Mapada is a major global supplier of UV/Visible spectrophotometers. With excellent quality, more than 50000 sets of Mapada instruments are running smoothly around the world.

Design Concept

Precision Series – Your right choice!

With 13 years of professional spectrophotometer manufacturing experience, Mapada produced Precision Series UV/Visible spectrophotometers. The main features of Precision Series are user-friendliness, high accuracy, reliability and convenience.

You deserve it!

Here we introduce: P7/P8/P9 Double Beam UV/Visible Spectrophotometer.



Product Features



1. More durable with the strengthened structure;
2. The built-in computer provides excellent display effect, simple operation and good scalability;
3. Wide sample room, suitable for 5~100 mm sample holders and other accessories;
4. The new wavelength driving mechanism greatly improves the wavelength accuracy and repeatability, and effectively reduces the noise (patented);
5. The low-stray light 1200 l/mm holographic grating and the optimized split beam design ensures high accuracy;
6. By a wide variety of interfaces, you can connect keyboards, mice, projectors and printers to input and output data and access a network for remote control and data sharing.
7. Software design fully complies with 21CFR requirements stipulated in Pharmacopoeia. By GLP/GMP function, you can track and manage instrument performance and data;
8. By open data interface protocol, users can combine with other devices through simple development.
9. By open data interface protocol, users can integrate other devices into the system through simple development.
10. The computer can be connected by USB or Bluetooth and the instrument can be controlled by software;
11. Firmware upgrade by USB storage.
12. Perfect system and file management function.
13. Self-calibration and warm-up after power on.

Product Features

Benzene vaporization shows an obvious absorption curve at the UV range of 230~280nm. The absorption curve varies with bandwidth significantly if other conditions remain unchanged.

Use P9 to measure Benzene/ethanol solution with 2nm bandwidth and 0.5nm bandwidth. The curves obtained are as follows. The peaks are different obviously.

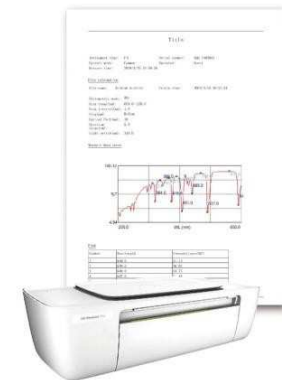


Measurement data can be exported by USB drive in Word, Excel, PDF and other formats;

New operating system based on Windows
Operated by touch as well as by mouse/keyboard
Multiple languages are available;



Complete functions, including:
Photometry, Quantitation, Multi Wavelength, Spectrum, Time scan, Kinetics, DNA/Protein, Dual component, etc to meet the requirements of research, education and test in various industries;



Customize the layouts of the printed reports, Save the parameters of the measurement method as a file, so you can load it later. Files can be named in multiple languages.



Performance Verification

- Wavelength accuracy and wavelength repeatability verification
- Photometric accuracy and photometric repeatability verification
- Stray light verification
- Resolution verification
- Noise
- Stability
- Bandwidth verification

Wavelength accuracy				Photometric accuracy			
Reference material	Wavelength (nm)	Measure value(%)	Standard(%)	Reference material	Wavelength (nm)	Measure value(%)	Standard(%)
485	485.0	100.0	100.0	T1	254.0	100.0	100.0
518	518.0	100.0	100.0	T2	365.0	100.0	100.0
545	545.0	100.0	100.0	T3	430.0	100.0	100.0
578	578.0	100.0	100.0	T4	510.0	100.0	100.0
585	585.0	100.0	100.0	T5	578.0	100.0	100.0
595	595.0	100.0	100.0	Blank	230.0	100.0	100.0
625	625.0	100.0	100.0				
650	650.0	100.0	100.0				
675	675.0	100.0	100.0				
700	700.0	100.0	100.0				

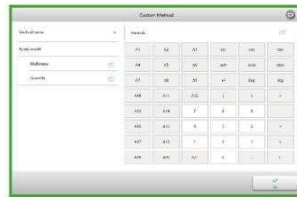
Product Function

**Photometry**

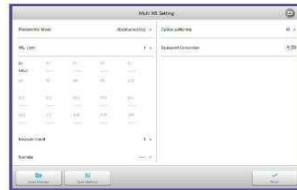
- One button A/T conversion
- Input coefficient K

**Custom Method**

- Edit formulas as needed;
- Formulas can be used for multiple modules;
- Formulas can be added, modified and saved as necessary.

**Multi Wavelength**

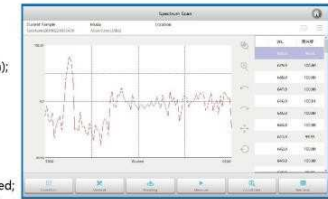
- Measure up to 20 wavelengths at a time;
- Customize formulas for data calculation;
- User-selectable one-point measurement times (1-50)
- Parameters can be saved and loaded;
- Results can be recorded, renamed, deleted, saved, printed and exported.

**Time scan**

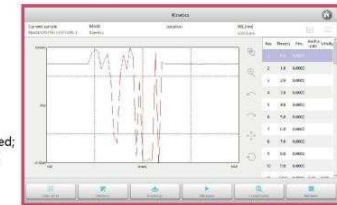
- Unlimited scanning time
- Scan Interval can be customized;
- Point by point (peak) view, mark and select;
- Curves and data can be deleted, saved, printed and exported;
- Curves and results can be saved and printed automatically.

**Spectrum**

- User-selectable scanning speed (low, medium, high);
- User-selectable scanning interval (0.1, 0.2, 0.5, 1, 2, 5, 10nm);
- A/T display mode switchable;
- Automatic peak search;
- Point by point (peak) view, mark and select;
- Rich map processing functions; (arithmetic operation, derivation, area and 3D map);
- Adaptive coordinates and a variety of ways to modify coordinates;
- Curves and data can be deleted, saved, printed and exported;
- Curves and results can be saved and printed automatically;

**Kinetics**

- Unlimited scanning time;
- Delay time and interval can be customized;
- Automatically calculate kinetic rates;
- Point by point (peak) view, mark and select;
- Adaptive coordinates and a variety of ways to modify coordinates;
- Curves and data can be deleted, saved, printed and exported;
- Curves and results can be saved and printed automatically.

**Quantitation**

- Single wavelength, dual wavelength (difference, ratio), three wavelength and custom methods;
- 3 ways to establish a standard curve (input coefficients, measure 2-20 standard samples or input absorbance and concentration values of standard samples)
- 4 fitting methods (linear through zero, linear, quadratic, cubic)
- Parameters can be saved and loaded;
- Standard samples can be saved and loaded;
- Built-in common concentration units and user-defined units;
- Diagram of measure values are displayed and results are determined automatically;
- Results can be recorded, named, deleted, saved, printed and exported;
- Customize report layouts.

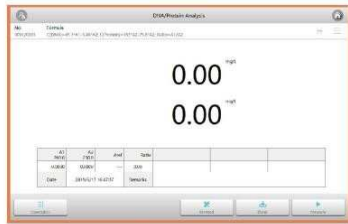


Product Function



Dual component

- Two standard curves and their concentrations are obtained from one measurement;
- Results can be recorded, renamed, deleted and saved;
- Customize printed reports.



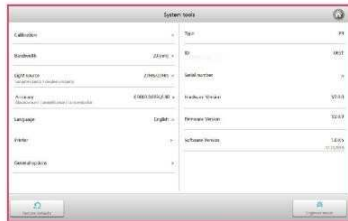
DNA/Protein

- 7 built-in methods: 260/280, 260/320, Lowery, UV method, BCA, CBB, Biuret, Custom calculation;
- User-selectable one-point measurement times (1-50);
- Parameters can be saved and loaded;
- Display the distribution map of the measured values and automatically determine the results;
- Results can be recorded, named, deleted and saved;
- Customize printed reports.



File manager

- Files can be deleted, renamed, batch imported/exported



System

- System calibration (dark current, wavelength system baseline);
- Light source (light switch, timing);
- Clock management
- Storage management (storage statuses display, formatting)
- Language (multiple languages are available);
- General setting (display resolution, system parameter, etc.)
- Reset
- About (system information)

GLP/GMP

GLP/GMP Compliance

- Multi-user management
- Logging
- Binary file saving
- Quality control
- Report output

• Report output

Report output of measurement results;
Personalized report layouts;
Print preview.

• Binary file saving

Save measurement data in binary format;
Enhancing data confidentiality;
Saving disk space.

• Data export

Share data with other systems



• Logging

Automatic record of user actions;
Save log files in database format;
Administrators can look up and process logs by category.

• Multi-user management

Administrators are allowed to create users and groups with privileges;
Every user needs to enter account and password to login into the software;
Data protection for general users.

• Quality control

Monitor measurement data according to user settings;
Abnormal data will be indicated, marked and re-measured automatically.



Related Accessories



10-100mm Cell Holder
Cat No.: 1102900430

10-100mm universal holder for various cuvettes.



10-50mm Cell Holder
Cat No.: 1102900421

10-50mm universal holder for various cuvettes.



Micro Cell Holder
Cat No.: 1102900240

Dedicated for samples $\leq 200\mu$.



Test Tube Holder
Cat No.: 1102900560

1-position, $\Phi=16$ mm



Automatic 8-cell Holder
Cat No.: 1102900310

Measure 8 samples at a time, light path = 10mm.



10-100mm Automatic 5-cell Holder
Cat No.: 1102900330

Measure 5 samples at a time; light path adjustable from 10 to 100mm, improving efficiency and sample tolerance.



Solid Sample Holder
Cat No.: 1102900550

Measure transmittances of fixed film or glass.



5° Reflectance Meachment Attachment
Cat No.: 1102900940

Used to measure solid or mirror reflectances.



10mm Manual Water-jacketed 4-cell Holder
Cat No.: 1102900620

Measure samples under constant temperature.



Constant-temperature Peltier Sipper System A-1001
Cat No.: 1102901801

Use semiconductor refrigerator as temperature control element, auto sampler.



Constant-temperature system A-1201
Cat No.: 1102901901

Auto sampler, particularly suitable for contaminated samples.



Sipper System A1101
Cat No.: 1102901901

Use semiconductor refrigerator as temperature control element (10-60 °C)

Other Accessories



Tungsten Lamp
Cat No.: 0116004003

Spectrophotometer light source for UV region (320-1100nm), service life 2000 hours.



Deuterium lamp
Cat No.: 0116005001

Spectrophotometer light source for Vis region (190-340nm), service life 2000 hours.



Glass Cuvette
Cat No.: 0102001002

Used as a sample container for Vis region (320-1100nm).



Quartz Cuvette
Cat No.: 0102002003

Used as a sample container for UV-Vis region (190-1100nm).

Specifications

Model	P7	P8	P9
Optical System	Double Beam		
Light Source	Deuterium Lamp, Tungsten Lamp		
Detector	Silicon Photodiode		
Bandwidth	1.8 nm	1 nm	0.5, 1, 2, 4, 5nm adjustable
Wavelength	Range	190 ~1100 nm	
	Accuracy	± 0.3 nm	
	Repeatability	≤ 0.2 nm	
	Display	0.1 nm	
	Gyration speed	6000 nm/min	
	Scan speed	20 ~ 3200 nm/min	
Photometric	Range	-4 ~ 4 A, 0 ~ 400%T, 0 ~ 9999.9C	
	Accuracy	$\pm 0.002A$ @ 0.0 ~ 0.5 A, $\pm 0.004A$ @ 0.5 ~ 1 A, $\pm 0.3\%T$ @ 0 ~ 100%T	
	Repeatability	≤ 0.001 A @ 0.0 ~ 0.5 A, $\leq 0.002A$ @ 0.5 ~ 1 A, $\leq 0.15\%T$ @ 0 ~ 100%T	
	Noisy	≤ 0.0002 @ 0.0 A, 500 nm, ≤ 0.0004 @ 1A, 500 nm, ≤ 0.0008 A @ 2A, 500 nm	
Drift	≤ 0.0005 A/h @ 500 nm, 2 hours after preheating		
Stray Light	$\leq 0.03\%T$ @ 220, 360 nm		
Baseline Flatness	± 0.0005 A		
Storage	64GB(internal), unlimited expansion (USB storage, SD card, network storage)		
Display	10.1 Inch IPS color LCD screen (1280×800)		
Input	Capacitive Touch Screen (multi-touch)		
Interface	USB-A (printer, storage, mouse, keyboard...)×3		
	USB-B (PC)×1, RJ-45 (Ethernet)×1, VGA×1, HDMI×1, Bluetooth, WIFI		
Sample holder	Standard	10 mm 1- cell Holder	
	Optional	5-50mm Manual 4- cell Holder, 5-100mm Manual 4-cell Holder, 10mm Auto 8-cell Holder, 5-100mm Auto 5-cell Holder, Micro Holder, Peltier/Sipper System, Reflectance Accessories, Solid Sample Holder, Water-jacketed 1/4-cell holder, Test Tube holder, etc.	
Function	Photometric, Quantitation, Multi Wavelength, Spectrum, Time scan, Kinetics, DNA/Protein, Dual component, Custom Method, File Manager, System, Performance Verification		
Language	Multiple languages, switchable		
Power	100 ~ 240 V AC, 50/60 Hz, 140 W		
Dimension	456 (W) × 420 (D) × 235 (H) mm		
Weight	17 kg	18 kg	

Cat. No.

Model	Cat No.
P7 double beam UV/Vis spectrophotometer	1210300300
P8 double beam UV/Vis spectrophotometer	1210300400
P9 double beam UV/Vis spectrophotometer (variable bandwidth)	1210300500