JENWAY

Описание на спектрофотометры. Серия 7200, 7205

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72 Series
Spectrophotometers
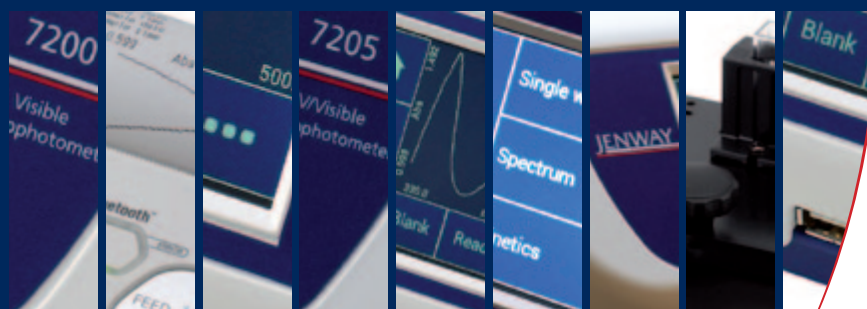
Introducing the 72 Series

The 72 series spectrophotometers are the first scanning spectrophotometers in the Jenway range to leverage diode array technology to produce exceptionally fast results. The range includes two models: model 7200 covers a wavelength range of 335 to 800nm with a spectral bandwidth of 7nm and model 7205 covers a wavelength range of 198 to 800nm with a spectral bandwidth of 5nm.

The 72 series spectrophotometers are covered by a two year warranty.

■ Measurement Modes

Both models offer measurement modes for single wavelength with basic absorbance and % transmittance. Concentration can be calculated using a known factor or by measuring a single standard. Up to 6 standards can also be measured to create a quantitation curve, with the option to measure each standard up to 3 times. Optical density can be measured at 600nm, which is ideal for cell harvesting.

Both models perform an exceptionally fast spectrum scan across the entire wavelength range in less than 6 seconds; displaying the results at 1nm resolution across the selected range. Model 7205 can measure from 198nm to 800nm and model 7200 can measure from 335nm to 800nm.

The kinetics measurement mode can be used to measure the change in absorbance over time for up to 3 wavelengths simultaneously. The concentration can also be calculated following completion of the kinetics experiment.
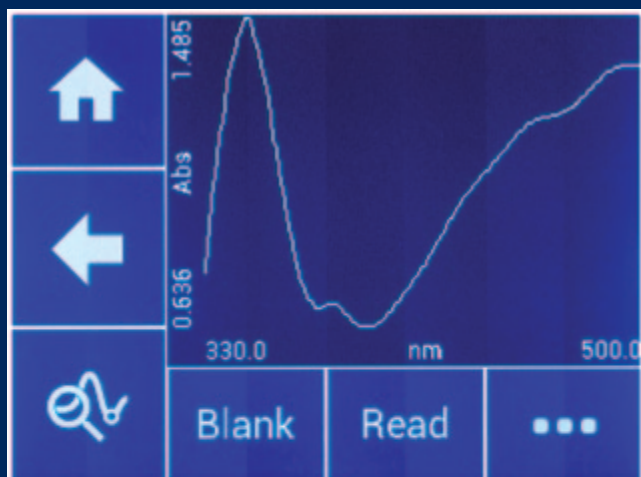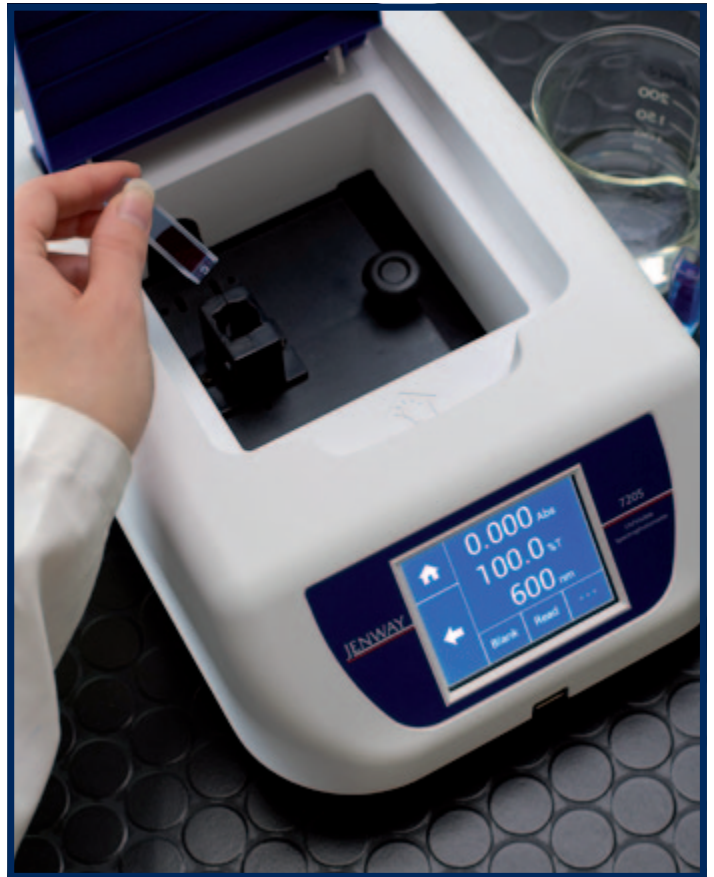
Key Features

- Scanning diode array technology
- Colour touchscreen navigation
- Small footprint and lightweight
- Fast scan speed
- English, French and German language options
- Multiple USB ports for data storage and printer connectivity
- Extensive range of accessories available
- 2 year warranty

■ Diode Array Technology

The benefits of diode array technology include very fast scanning with the ability to scan the entire wavelength range of 198 to 800nm in less than 3 seconds (7205), which is ideal for fast chemical reactions and denaturing materials. Traditional spectrophotometers use stepper motors to select the required wavelength. With diode array technology each wavelength is selected by electrical scanning, which results in excellent wavelength reproducibility. Diode array optics are very reliable and require very little maintenance.

Due to the reversed optic structure utilised by the 72 series, they are not affected by ambient stray light so experiments can be performed with the lid open. This is ideal for samples in tall test tubes, or where fast access is required for kinetics experiments, where the prompt introduction of the reaction component is required.

With diode array technology each time a measurement is performed the absorbance is recorded across the entire wavelength range regardless of the wavelength selected. Therefore if a sample is measured incorrectly at 555nm instead of 550nm, there is no need to perform another blank and measure the sample again. Adjusting the wavelength range to the desired wavelength will automatically display the photometric results at that wavelength, saving valuable time.

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■ Display

The colour touchscreen user interface provides fast and easy set up and navigation of the instrument. The 4" display allows full spectrum scans, quantitation curves and kinetics runs to be viewed easily. The touchscreen capability enables users to zoom in and out and select spectral analysis points, all by simply tapping the screen.

■ USB Connectivity

There are two USB ports for data storage and printer connectivity. The easy access USB port on the front of the instrument can be used to easily store results and transfer data as tab delimited text files to Microsoft Excel®. As well as results storage, quantitation curves can also be saved to a USB memory stick for easy and quick access, so there is no need to recreate the calibration curve each time you need to perform a measurement. User selected spectral analysis points (up to 50) can also be saved to USB memory stick or printed. The front USB port can also be used for software updates, so it is easy to keep up to date with the latest software version.

The USB port on the rear of instrument can be used for connection to the optional external printer for instant results. The spectrum scans and kinetics runs are printed in a vertical orientation to maximise the amount of information displayed. The spectrophotometers can also be configured to save results automatically to USB memory stick or to automatically print to the external printer.

Sample Chamber

The instruments have been cleverly designed to incorporate a large sample chamber into a very small footprint, ideal when bench space is at a premium. The large sample chamber allows easy access for loading and unloading samples. It has been designed with a tapered base so that any accidental spillages will drain away, making it easy to clean.

The sample chamber will easily accommodate the optional long path length cuvette holder or the heated cuvette holder.

Heated Cuvette Holder

Cuvette Rack

There is a handy built-in cuvette rack for convenient storage of samples and blanks, which keeps the bench space tidy and clutter free.

Design

The 72 series spectrophotometers use a 1024 element diode array detector, with a tungsten halogen lamp (7200) or a xenon lamp (7205), which gives good intensity over the whole spectrum with low noise and drift. Both lamps are press to read which increases the lamp's lifespan.

This is all cleverly packaged resulting in a lightweight instrument weighing less than 3 kg, which is ideal if the spectrophotometer needs to be moved around the laboratory or stored away after use.

Ordering Information

Product Code	Description
720001	7200 visible scanning spectrophotometer, fitted with 10x10mm cuvette holder, and supplied with a universal power supply and an instruction manual.
720501	7205 UV/visible scanning spectrophotometer, fitted with 10x10mm cuvette holder, and supplied with a universal power supply and an instruction manual.

Accessories

The 72 series spectrophotometers have been designed to be compatible with the extensive range of accessories already available from Jenway. These include a test tube holder, adjustable path length (10 to 100mm) cuvette holder and a micro-cuvette holder. All of the accessories are easy to interchange using the ergonomic thumb screw.

For applications where the temperature of the sample needs to be controlled there is a heated cuvette accessory. The heated cuvette holder accepts 10x10mm cuvettes and enables 2.5ml of sample to be heated to 37°C in 30 minutes. When this accessory is fitted the instrument automatically detects it upon power up and the software controls become active. The heated cuvette holder has a temperature range of 32°C to 42°C in 0.5°C increments. It can be easily fitted and removed without the need for any tools.
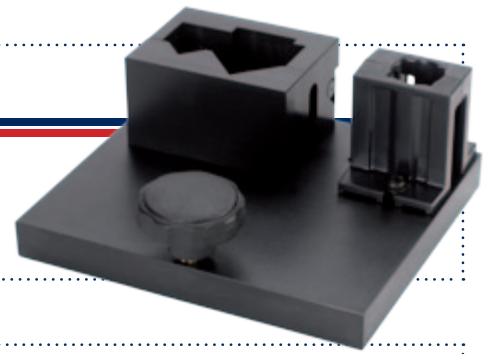
Both models are supplied with a 10x10mm cuvette holder as standard. The sample chamber lid can also be left open during measurements which is ideal for samples in tall test tubes.

10x10mm Cuvette Holder

Test Tube Holder - (637071)

For larger sample volumes there is a test tube holder which can hold test tubes with diameters of 13, 16 or 24mm.

Adjustable Path Length Cuvette Holder - (630005)

Where cuvettes greater than 10mm are required there is an adjustable path length cuvette holder which can accept cuvettes with a path length from 10 to 100mm.

Micro-cuvette Holder - (630304)

For small sample volumes down to 50µl Jenway offer a micro-cuvette holder which is ideal for use with micro-cuvettes.

Heated Cuvette Holder - (725201)

For applications where the temperature of the sample needs to be controlled there is a heated cuvette accessory. The heated cuvette holder accepts 10x10mm cuvettes and can be easily fitted and removed without the need for any tools. This accessory has a temperature range of 32°C to 42°C. The heated cell accessory is supplied with a UK, EU and US power lead, which is required to power the spectrophotometer and the heated cuvette holder.
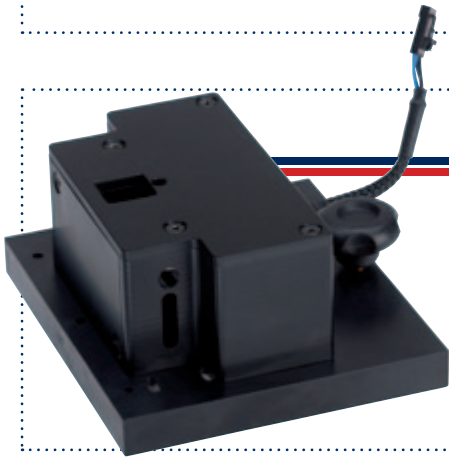
Printer - (SMP50/PRINTER)

The printer connects to the spectrophotometer via the USB port on the rear of the instrument and will provide instant results. Spectrum and kinetics graphs are printed in the vertical direction to maximise the amount of information displayed. The spectrophotometer can be set up to automatically send results to the printer. The printer has a rechargeable battery and is supplied with UK, EU and US power leads.

Accessory Ordering Information

Product Code	Description
725201	Heated cell 10x10 cuvette holder supplied with UK, EU and US power leads
SMP50/PRINTER	External Printer fitted with a battery and supplied with UK, EU and US power leads
630204	10 x 10mm single cuvette holder
630005	10 to 100mm adjustable path length cuvette holder
630304	Micro-cuvette holder with reduced aperture
637071	Test tube holder (accepts 10mm square cuvettes, 16 and 24mm diameter test tubes)
037702	Additional paper roll for the SMP50/PRINTER
700000	Dust cover for the 72 series spectrophotometers
012050	Tungsten Halogen Lamp
060084	Pack of 100 plastic cuvettes, visible wavelengths only
060230	Pack of 100 plastic cuvettes, UV and visible wavelengths

Technical Specification

Model	7200	7205
Wavelength		
Accuracy	± 2nm	± 2nm
Repeatability	± 2nm	± 2nm
Photometrics		
Transmittance	0 to 199.9%	0 to 199.9%
Absorbance	-0.300 to 2.500A	-0.300 to 2.500A
Accuracy	+/- 0.01A at 1.0A and 546nm	+/- 0.01A at 1.0A and 546nm
Stability (A)	+/- 0.005A/h at 0.04A and 546nm after 60 min warm-up	+/- 0.005A/h at 0.04A and 546nm after 60 min warm-up
Noise	+/- 0.002A at 0.04A and +/- 0.02A at 2.0A and 546nm	+/- 0.002A at 0.04A and +/- 0.02A at 2.0A and 546nm
Stray Light at 340nm, %T	<1%T according to ANSI/ASTM E387-72	<1%T according to ANSI/ASTM E387-72
Concentration		
Range	+/- 2500	+/- 2500
Calibration	Blank with a single standard or factor	Blank with a single standard or factor
Factor	+/- 1000	+/- 1000
Standard	+/- 1000	+/- 1000
Optical Density		
Factor	+/- 1000	+/- 1000
Quantitation		
Range	+/- 2500	+/- 2500
Calibration	Blank with up to 6 standards	Blank with up to 6 standards
Curve fit algorithms	Linear and linear through zero	Linear and linear through zero
Kinetics		
Number of wavelengths	3	3
Calibration	Blank with a factor	Blank with a factor
Display	Graphical and concentration	Graphical and concentration
Analysis	Concentration	Concentration
Spectrum		
Analysis	Absorbance or % transmittance and up to 50 spectral analysis points	Absorbance or % transmittance and up to 50 spectral analysis points
Other		
Beam height	15mm	15mm
Results memory	Limited by attached mass storage device	Limited by attached mass storage device
Removable media	USB (not supplied)	USB (not supplied)
Outputs	USB x 2	USB x 2
Supply voltage/frequency	100 – 240VAC at 50 to 60Hz	100 – 240VAC at 50 to 60Hz
Power	12V DC, 3.8A	12V DC, 3.8A
Size (w x d x h)	212 x 422 x 120mm	212 x 422 x 120mm
Weight	2.8kg	2.8kg

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