



**pg** instruments

# T60 UV/VIS Spectrophotometer



**PG INSTRUMENTS LIMITED**



# T60

## UV/ VIS Spectrophotometer

LOW STRAY LIGHT

EXCELLENT STABILITY

EASILY UPDATED

MANY APPLICATIONS

LOW COST HIGH QUALITY

SMALL FOOTPRINT

USER FRIENDLY SOFTWARE



PG INSTRUMENTS LIMITED has developed its latest Spectrophotometer, the T60, based on advanced technology. The advanced modular design ensures outstanding performance combined with quality and an excellent specification.

The T60 provides the functionality of an advanced instrument, at an affordable price. The superior flexibility, high level of automation and user friendly software, backed up with excellent service makes the system the "Professionals" Choice.





The advanced optical system ensures very low stray light

Stray light is controlled by a very low noise electronic circuit

High Quality optical components ensure accurate reliable analytical data

## Low stray light

Stray light below 0.05%



## Excellent stability

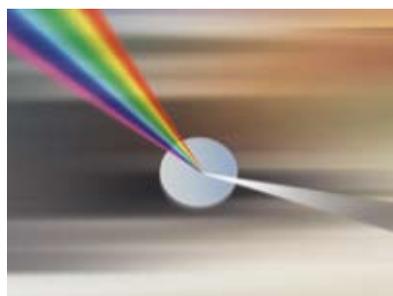
Superior material makes it stable and durable



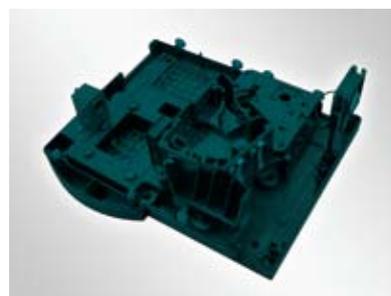
A micro-step motor positions the grating very precisely. This motor is free from maintenance.



Deuterium and Tungsten lamps are used as the light source.



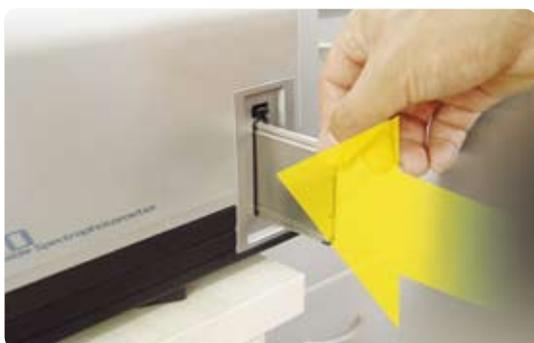
The monochromator is totally sealed and the optical surfaces are protected with a silicon dioxide membrane.



The Spectrophotometer shell is made from an environmentally friendly non corrosive material.

## Hardware and Software easily updated

Pre-programmed application cards to perform analysis such as DNA/Protein, photometric, kinetics etc can be easily inserted by the user.



The cell compartment is easily opened to allow other accessories to be used.



System is easily interfaced to a PC via a standard RS232 interface.



Can be easily interfaced to many different printers.



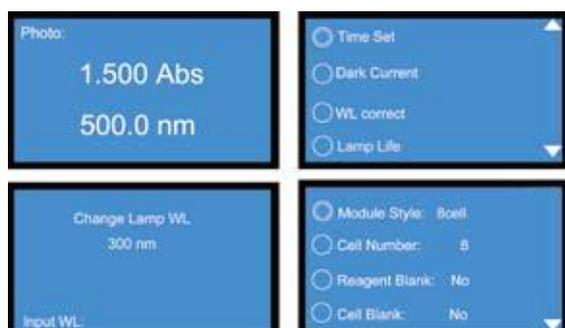
The user can easily receive program updates from the PG Instruments internet site.

## User friendly design

Offers ease of use and simple maintenance

### Full Automation

Automatic wavelength positioning, lamp change over, wavelength calibration, motorised sample changer etc.



### Fast Scan

The speed of the wavelength drive is up to 7000nm/min and the speed of the wavelength scan is up to 2500nm/min.



### Built in Cell Holder Storage

The cell holder on one side of the sample compartment allows for easy access.



### Cleanable Dust Filter

The Dust Filter ensures the internal parts of the instrument remain contamination free.



### Automatic Lamp Usage detection system

The user allows to check the lamp usage information. For example, if the tungsten lamp has operated for 201 hours and the deuterium lamp for 197 hours, it will display as following.



### Simple Maintenance

The retaining mechanism at the bottom and the back of the instrument make maintenance a simple process.

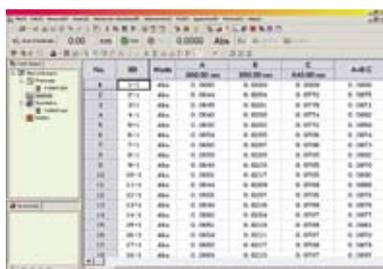


UV-Win is a powerful, intuitive software product used for connectivity to the PG Instruments range of bench top UV-Vis Spectrophotometers.

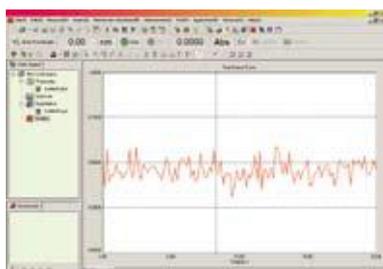
The UV-Win software offers complete instrument control along with data acquisition and a whole host of mathematical tools for interpretation of measurement results. The UV-Win software is separated into four key workspaces:

- Spectral Analysis
- Quantitative Analysis
- Kinetic Analysis
- Photometric Analysis

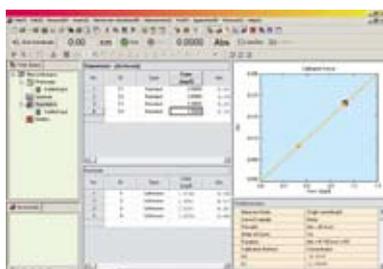
### Four regular functions



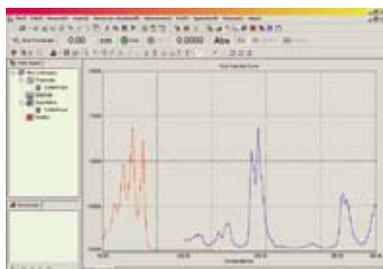
Photometric measurement



Kinetics measurement



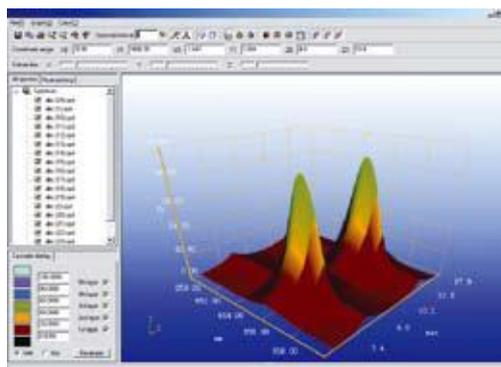
Quantitative measurement



Spectrum scan

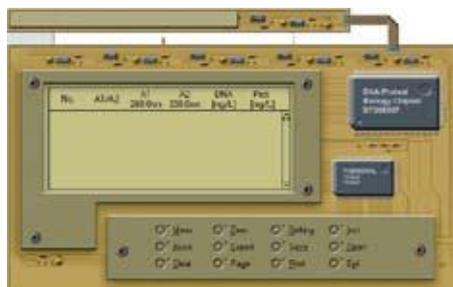
### 3D Presentation

- 3D Presentation by combining multiple spectrum
- Spectra can be fully and easily manipulated
- Peak Picking
- Graphics printout



### DNA/Protein Analysis

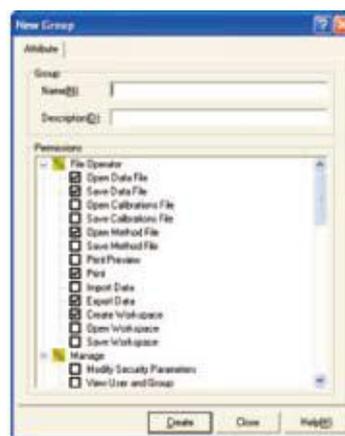
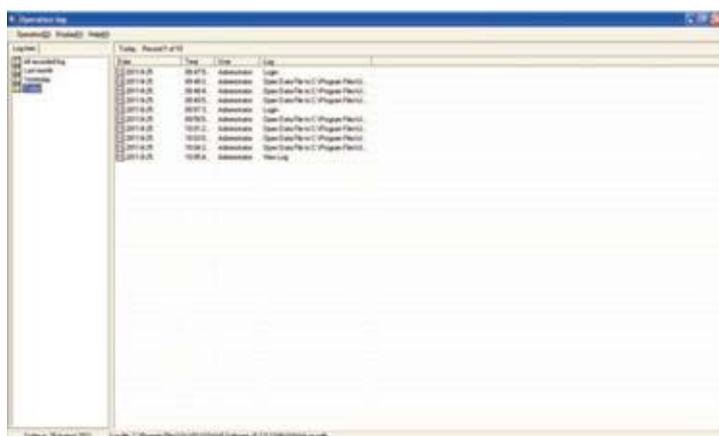
- Measurement of absorbance ratios at 260nm and 230nm, at 260nm and 280nm, and at custom defined wavelengths
- Background correction using absorbance at 320nm (Optional)
- Absorbance ratio calculation for user selected wavelengths
- Concentration calculation using arbitrary factors when selecting custom defined wavelengths



UVWin GLP offers all of the features and functionality of UVWin whilst also offering extensive Administrative capabilities along with a detailed audit trail.

### Administration

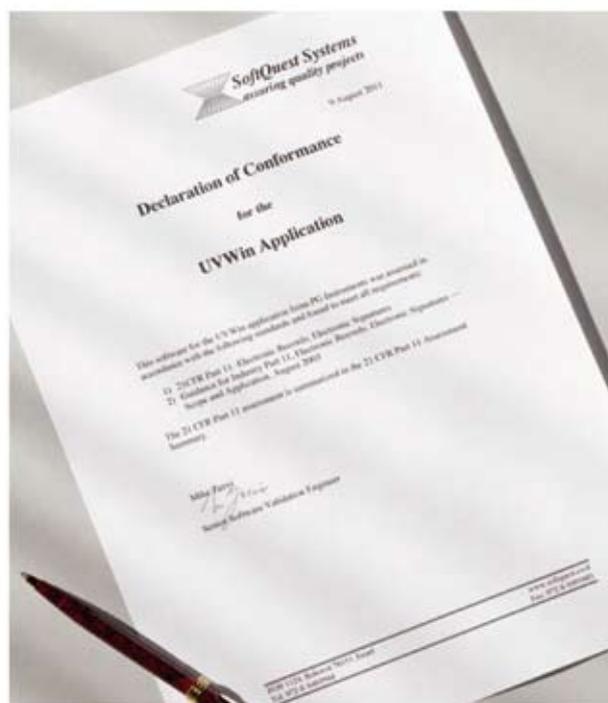
- Administrative settings can be made where Analysts may require conformity to GLP/GMP/GRP
- Create User groups specifying exactly what actions they are able to perform.
- Add New Users to custom User Groups to determine their privilege settings.
- Automatically log software activity in an Audit Trail.
- Use Password control to ensure Users are logged in for instrument usage.



### Certification

UV-Win GLP has been evaluated and tested by a third party software validation specialist. As a result it was found that UV-Win GLP offers all of the features and functions required for use in compliance with the guidance specified in:

- 21CFR Part 11- Electronic Records; Electronic Signatures
- Guidance for Industry Part 11, Electronic Records; Electronic Signatures — Scope and Application, August 2003



## Specifications

	T60U	T60V
Optical system	The split beam monitoring ratio system	The split beam monitoring ratio system
Wavelength range	190~1100nm	325~1100nm
Wavelength accuracy	±1nm	±2nm
Wavelength reproducibility	≅ 0.2nm	≅ 0.4nm
Spectral bandwidth	2nm	2nm
Stray light	≅ 0.05%T	≅ 0.1%T
Photometric range	-0.3~3Abs	-0.3~3A
Photometric accuracy	±0.002Abs(0~0.5A) ±0.004Abs(0.5~1A) ±0.3%T(0~100%T)	±0.002A (0~0.5A) ±0.004A (0.5~1A) ±0.3%T(0~100%T)
Photometric reproducibility	≅ 0.001A(0~0.5A) ≅ 0.002A(0.5~1A) ≅ 0.15%T(0~100%T)	≅ 0.001A (0~0.5A) ≅ 0.002A (0.5~1A) ≅ 0.15%T(0~100%T)
Baseline flatness	±0.002A (200~1000nm)	±0.002A (325~1000nm)
Noise	±0.001A (500nm,p-p), half an hour warm-up	±0.001A (500nm,p-p), half an hour warm-up
Baseline stability	≅ 0.001A/h (500nm,0Abs), 2hr warm-up	≅ 0.002A/h (500nm,0Abs) , 2hr warm-up

Performance	Photometric measurement	Photometric measurement
	Program card(DNA/Protein analysis, Quantitative measurement, Photometric measurement, Multi-wavelength analysis)	Quantitative measurement
	Life check for Tungsten-Halogen lamp and Deuterium lamp	
	Auto 8-cell changer	
	Backlight digital LCD	Auto 8-cell changer
	Mini-printer, HP Deskjet printer and laserjet printer, via parallel port	Mini-printer, HP Deskjet printer and laserjet printer, via parallel port
	PC interface via RS232 link	PC interface via RS232 link

## Optional accessories

- **UVWIN5** UV/Win 5 Software & RS232 Communication Cable
- **PC161-1** T60U Quantitative PCMCIA Program Card
- **PC161-2** T60U Multi Wavelength PCMCIA Program Card
- **PC161-3** T60U Scanning and Kinetics PCMCIA Program Card
- **PC161-4** T60U DNA/Protein PCMCIA Program Card
- **PC161-5** T60U Palm Oil PCMCIA Program Card
- **PS16-2** T60 Sipper Pump Accessory (Pump, Tubing, Cassette, Front Panel, Flow Cell)
- **CH16-1** T60 Constant Temperature Holder
- **DS16-1** T60 Adjustable Angle Solid Sample Holder
- **21601-00** T60 Universal 5 Position 5-100mm Cell Changer Motorised Assembly
- **21603-00** T60 8 Position 10mm Path length Cell Changer Motorised Assembly
- **TR16-1** T60 Single Position Variable 13-16mm Test Tube Holder
- **PTC-2** Peltier Module
- **UP16-1** Micro Printer Accessory (UP)



Program Card



Sipper Pump



Constant-temperature Cell Holder



Adjustable Angle Solid Sample Holder



Long Pathlength 5-cell Holder



Automatic 8-cell Holder



Test Tube Holder



Peltier

## Dimensions

Width×Depth×Height 476(mm)×362(mm)×225(mm)  
Weight 11 kg



Micro Printer