

# UV/VIS

SPECTROPHOTOMETER

PG INSTRUMENTS LIMITED

# T90+

# UV/VIS

# Spectrophotometer

## Features

- **Excellent performance:** A high-performance diffraction grating spectrophotometer with a Czerny Turner Mounting with a Holographic Grating keeps stray to a minimum and offers excellent optical resolution over a wide spectral range. The use of photomultipliers as detectors offer exceptional sensitivity.
- **Very Stable Baseline:** The true double-beam optical array coupled with an efficient and well proven electronic control system ensures high stability and low background noise.
- **High resolution:** The double beam optical design coupled with a high specification holographic grating gives excellent wavelength separation and allows the user to examine wavelengths that are very close whilst providing excellent ratio to background noise.
- **Accurate wavelength:** The automatic wavelength control system and the automatic light sensors ensure wavelength accuracy and high performance of the instrument.
- **Easy accessories replacement:** The modular structure of the sample compartment enables the easy use of a wide range of optional accessories and ensures accurate analysis of various samples types.
- **User-friendly serviceability:** The user friendly design of the light source chamber for the deuterium lamp and tungsten halogen lamp allows easy light source replacement and simplified routine maintenance.
- **Versatile application software:** The PGI UVWin user friendly operating software operating on a Windows platform offers many operational and data processing capabilities. Thus presenting the user with a very versatile simple to use spectrophotometer system.
- **The key components:** All the components used in the T90+ are selected for their reliability and continued high performance.

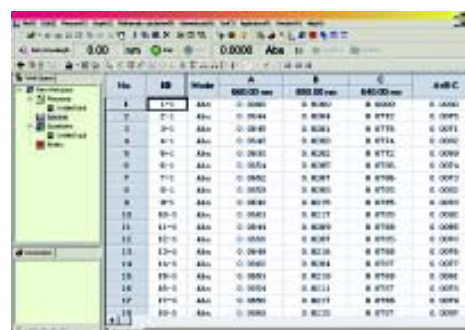
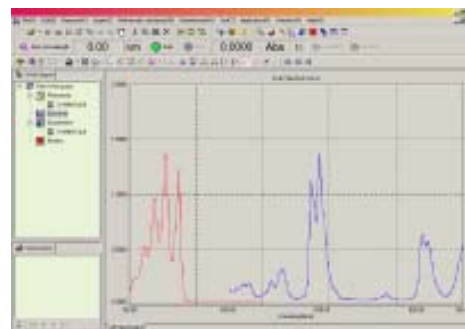


# T90+

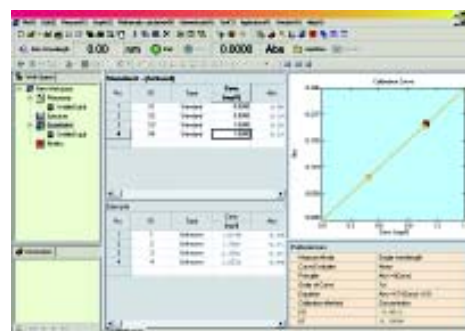
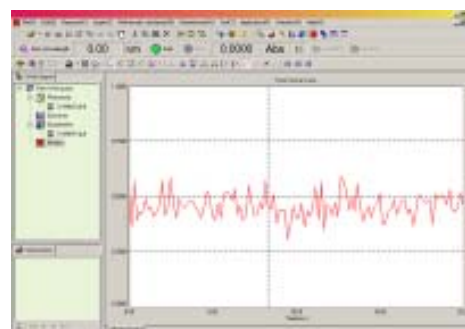
# T90+ UV/VIS Spectrophotometer

# Functions

- The T90+ UVWin applications software allows the simultaneous display of different measurement windows, toggling between different measurement modes can be achieved with ease. The Spectrophotometer and all accessories are under the control of UVWin Software. A hard copy of data can easily be obtained and data can also be exported to other Windows based programs for further data manipulation
- The multi-wavelength photometry can measure the absorbance and transmittance of samples using multiple wavelengths, average the measured values, and make calculations based upon operator derived factors and coefficients.
- Multi-channel measurement with colour display and printout, and various capabilities for data processing can meet the needs of most chemists. This module allows manipulation of information and data display, from spectra calculations to various transforms such as 1st - 4th derivative, smoothing, and logarithms. The data output for peak-picking and data-picking is also available.
- Creation of a standard curve is simple in quantitative analysis mode. This module has many powerful features such as determination of 1st - 4th Order curve coefficients, very accurate measurements can also be made on samples with nonlinear absorbance. The quantitative methods use single wavelength, two-wavelength, coefficient two-wavelength, three wavelength and 1st - 4th derivatives.
- Kinetic measurement can monitor the changes of absorbance and transmittance against time at 10 different wavelengths and can easily supply important information about the changes in a sample. This module allows manipulation of information and data display, from calculation of curves to various transforms, such as 1st-4th derivatives, smoothing, and logarithms etc. The data output of peak-pick and data-pick is also available.
- DNA and protein analysis is provided by a unique purpose designed program.



| No. | Wavelength (nm) | Abs    | T%      |
|-----|-----------------|--------|---------|
| 1   | 217.0           | 0.0000 | 99.9999 |
| 2   | 217.0           | 0.0000 | 99.9999 |
| 3   | 217.0           | 0.0000 | 99.9999 |
| 4   | 217.0           | 0.0000 | 99.9999 |
| 5   | 217.0           | 0.0000 | 99.9999 |
| 6   | 217.0           | 0.0000 | 99.9999 |
| 7   | 217.0           | 0.0000 | 99.9999 |
| 8   | 217.0           | 0.0000 | 99.9999 |
| 9   | 217.0           | 0.0000 | 99.9999 |
| 10  | 217.0           | 0.0000 | 99.9999 |
| 11  | 217.0           | 0.0000 | 99.9999 |
| 12  | 217.0           | 0.0000 | 99.9999 |
| 13  | 217.0           | 0.0000 | 99.9999 |
| 14  | 217.0           | 0.0000 | 99.9999 |
| 15  | 217.0           | 0.0000 | 99.9999 |
| 16  | 217.0           | 0.0000 | 99.9999 |
| 17  | 217.0           | 0.0000 | 99.9999 |
| 18  | 217.0           | 0.0000 | 99.9999 |
| 19  | 217.0           | 0.0000 | 99.9999 |
| 20  | 217.0           | 0.0000 | 99.9999 |

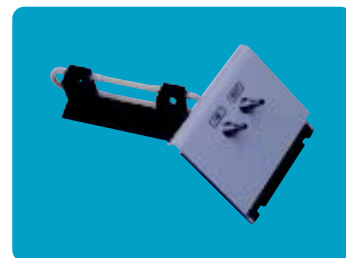


## Optional accessories

- PS19-2 T90 Sipper Pump Accessory (Pump, Tubing, Cassette, Front Panel, Flow Cell)
- CH19-1 T90 Fixed Position 10mm Constant Temperature Cell Holder
- PTC-2 Peltier Module
- DS19-1 T90 Adjustable Angle Solid Sample Holder
- S19-1 T90 Solid Sample Holder
- ST19-1 T90 Standard Fixed Position 10mm Path Length Cell Holder
- MN19-1 T90 Manual 8 Position Cell Changer (Fixed Reference Position)
- LS19-1 T90 Universal 5-100mm Path Length Cell Holder (Sample & Reference)
- MH19-1 T90 Micro Cell Holder
- MH19-2 T90 Ultra Micro Cell Holder
- MR19-1 T90 Specula Reflectance Accessory
- IS19-1 T90 Integrating Sphere (Diffuse Reflectance)
- TR19-1 T90 Test Tube Holder 13-16mm Variable



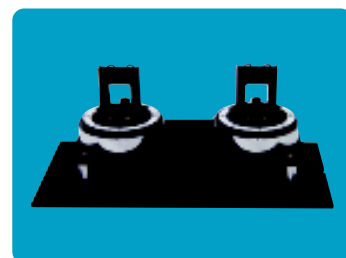
Sipper Pump



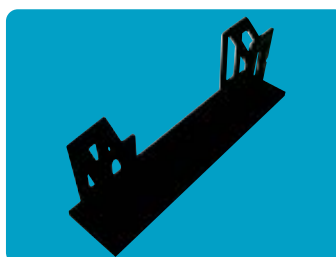
Fixed Position Constant-temperature Cell Holder



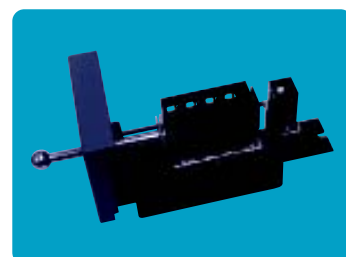
Peltier



Adjustable Angle Solid Sample Holder



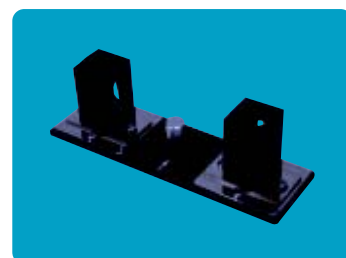
Solid Sample Holder



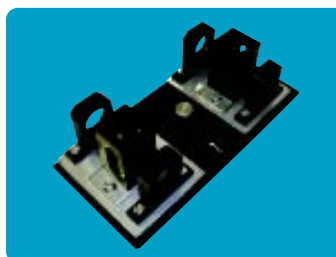
Manual 8-cell Holder



Long Pathlength Cell Holder



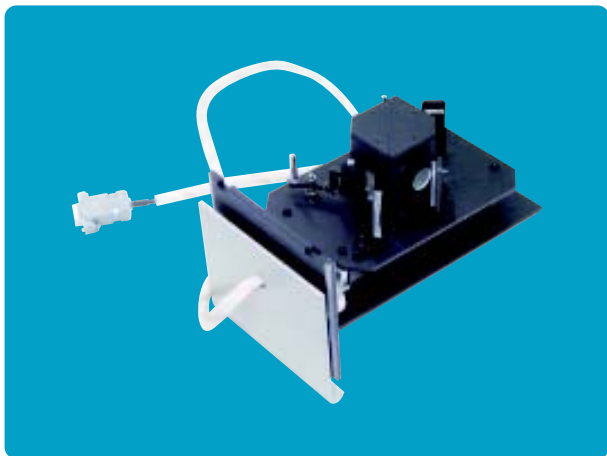
Micro Cell Holder



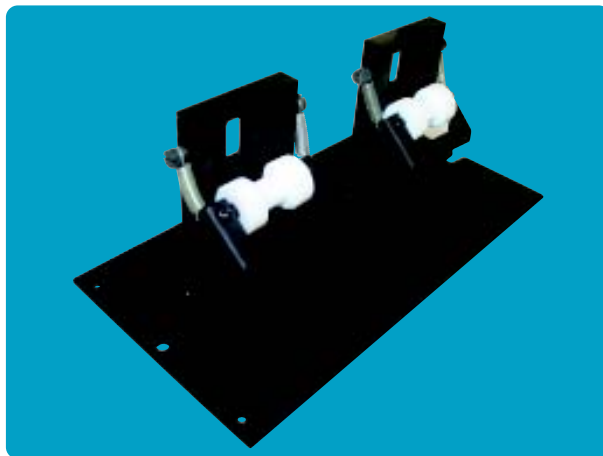
Ultra Micro Cell Holder



Specular reflection



Integrating Sphere



Test Tube Holder

## Specifications

### Optic System--- The C-T monochromator configuration with high-resolution holographic grating

|                             |                                                                             |
|-----------------------------|-----------------------------------------------------------------------------|
| Wavelength Range:           | 190nm-900nm                                                                 |
| Spectral Bandwidth:         | 0.1nm, 0.2nm, 0.5nm, 1.0nm, 2.0nm, 5.0nm                                    |
| Stray Light:                | < 0.01%T (220nm NaI), $\geq$ 2.0Abs (200nm, KCl)                            |
| Wavelength Accuracy:        | $\pm$ 0.3nm (automatic correction)                                          |
| Wavelength Reproducibility: | 0.1nm                                                                       |
| Light Source:               | Automatic interchange (selectable within the working range of light source) |

### Photometric System---The double beam ratio recording system

|                              |                                                                               |
|------------------------------|-------------------------------------------------------------------------------|
| Photometric Method:          | Transmittance, absorbance, reflectance, energy, concentration.                |
| Photometric Range:           | - 4.0 — 4.0Abs                                                                |
| Photometric Accuracy:        | $\pm$ 0.3%T (0-100%T); $\pm$ 0.002Abs (0-0.5Abs); $\pm$ 0.004Abs (0.5-1.0Abs) |
| Photometric Reproducibility: | 0.001Abs (0-0.5Abs)                                                           |
| Baseline Flatness:           | $\pm$ 0.001Abs                                                                |
| Baseline Stability:          | 0.0004Abs/h (500nm, after preheating)                                         |

### Software---The Windows platform application software

- Baseline Operations such as photometric measurement, spectrum measurement, quantitative measurement and kinetic measurement are offered in UVWin Windows applications.
- Measures up to 10 wavelengths according to the user-entered formula.
- Up to 10 spectra and time-course curves can be measured and recalled in memory with data handling of mathematic calculation, logarithmic calculation, reciprocal calculation, smoothing, derivative (1st - 4th), Abs to/from %T conversion and peak pick.
- Up to 24 standards can be entered and measured for the calibration curve with 1st - 4th order. Offering quantitative methods of single wavelength, two-wavelength, coefficient two-wavelength, three-wavelength and 1st-4th derivatives.
- Kinetic measurement can monitor the changes of absorbance and transmittance against a time line at 10 different wavelengths. This module allows flexibility in manipulation and data display.
- With Windows clipboard, the measured data and graphics can be copied to other applications software filing functions, display functions, and others (such as auto file and repeat measure/scan etc.) are offered.



# PG INSTRUMENTS LIMITED

Manufacturer of Atomic Absorption and UV/Vis Spectrophotometers



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