



Cintra
5



**UV-Visible
Spectrometer**



THE GBC VISION

GBC Scientific Equipment will advance people's knowledge and their capacity to enhance the quality of life for all humankind.

Cintra 5 is a fully automatic scanning, stand-alone, double beam UV-Visible spectrometer.

Combining leading edge instrument design with modern software technology, the Cintra 5 provides users with unmatched performance, convenience and flexibility.

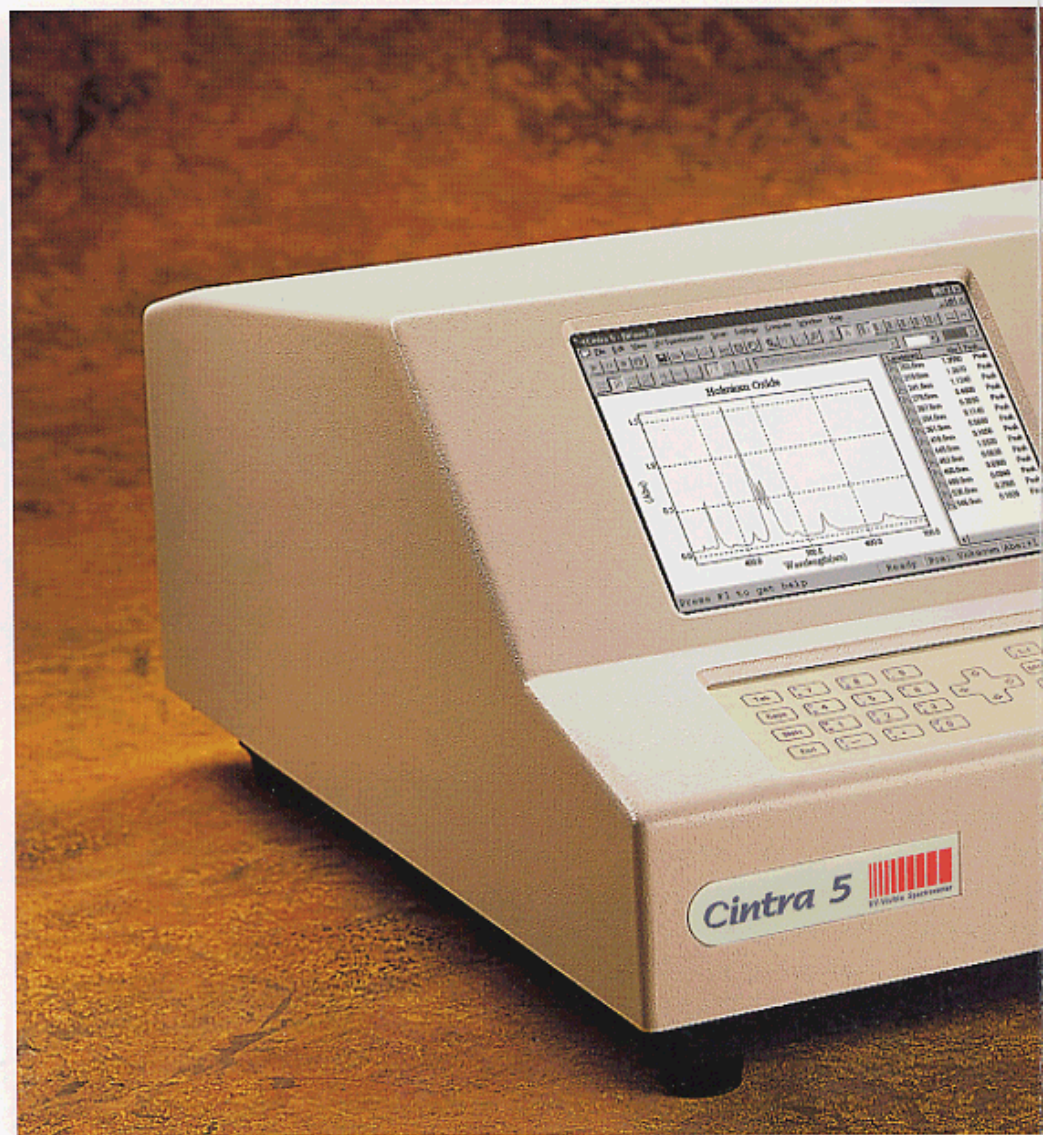
Whether your application is in a research institute, QC, biotechnology or environmental testing laboratory you can be assured that the Cintra 5 spectrometer will meet your needs.

The Cintra 5 can be used for the measurement of Absorbance or Transmittance in single or multiple wavelengths, or wavelength scans plus time scans for kinetics measurements.

Additionally, concentration analysis, data analysis and data processing functions are available.

Enhance the productivity of your laboratory with these high-performance features:

- The Czerny-Turner type holographic grating monochromator and double beam optical system (<1.8 nm bandwidth) provide high energy, high resolution and low stray light.
- Selectable wavelength scan speed from 60 to 3,200 nm/minute permits fast and accurate analysis.



ISO 9001 QUALITY ACCREDITATION

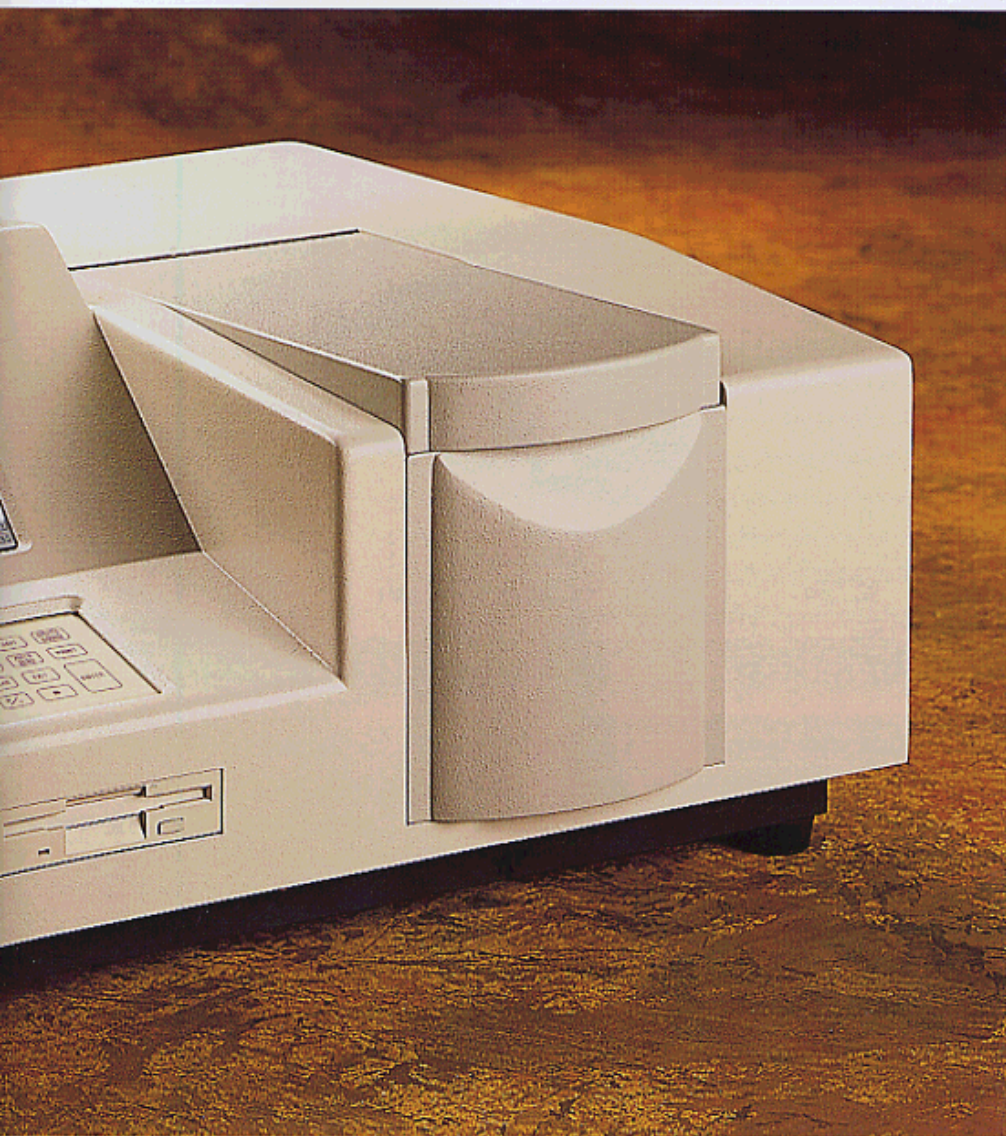
GBC has always placed a strong emphasis on quality in all aspects of our operation, from design and manufacture to the provision of service and support to our customers, and we are fully committed to continuous evaluation and improvement in all areas.

The GBC Quality Management System has been accredited to the ISO 9001 quality standard by Lloyd's Register Quality Assurance Limited. This certification is your assurance that the procedures and processes used to produce the goods and services which GBC provides comply with the relevant International Standard, and demonstrates our commitment to meeting the needs and expectations of our customers.



*Fully featured, high performance,
stand-alone, Double-Beam UV-Vis
Scanning Spectrometer*

- Double beam stability provides improved accuracy and repeatability over an extended period of time for trouble-free analysis.
- Large, high resolution monochrome backlit LCD screen provides a clear and user-friendly interface.
- Easy and rapid operation using the familiar Windows®95/98 point-and-click interface.
- Integrated 1.44 Mb 3.5 inch floppy and hard disk for unlimited data, method and graphics storage.
- Data processing for standard curve fitting, and spectrum manipulation such as addition, subtraction, derivatives, smoothing and resampling.
- Instrument performance validation is included.
- External ports for both a colour monitor and 101 keyboard are provided on the rear of the instrument.



**Performance Validation provides
confidence and peace of mind**

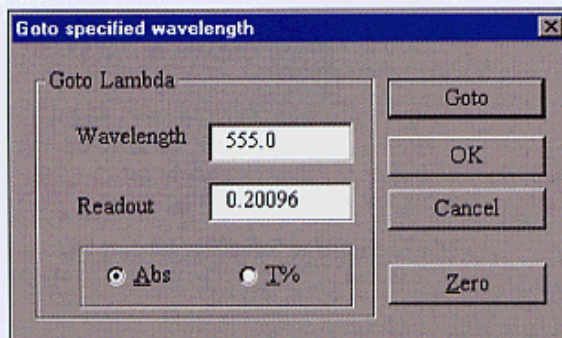
The Cintra 5 is equipped with a range of tools to make instrument validation easy and reliable. The advanced software automates testing of the instrument hardware for:

- Wavelength accuracy and reproducibility
- Photometric accuracy and reproducibility
- Baseline flatness
- Instrument noise
- Bandwidth

User friendly Windows® 95 based software provides you with prompt, easy and complete control of the spectrometer

Simple Absorbance or Transmittance Measurements

By using the simple GOTO icon, the Abs or %Trans can be quickly obtained for any sample at any wavelength. Both Abs and %T can also be displayed simultaneously.

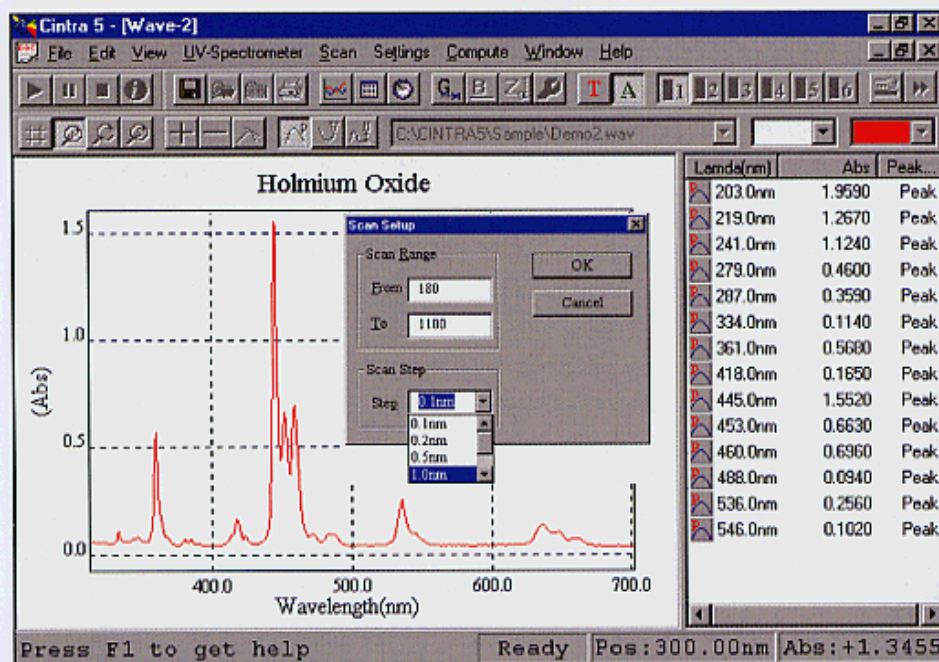


Wavelength scanning made easy

Wavelength scanning with the Cintra 5 is as simple as clicking the mouse. Scan steps of 0.1, 0.2, 0.5, 1.0, 2.0 and 4.0 nm allow rapid and accurate analysis.

Data processing capabilities include:

- Derivatives up to 10th order
- Smoothing
- Arithmetic functions
- A-%T conversion
- Zooming
- Peak and valley identification



Simplify your task with comprehensive graphics, data and reporting functions

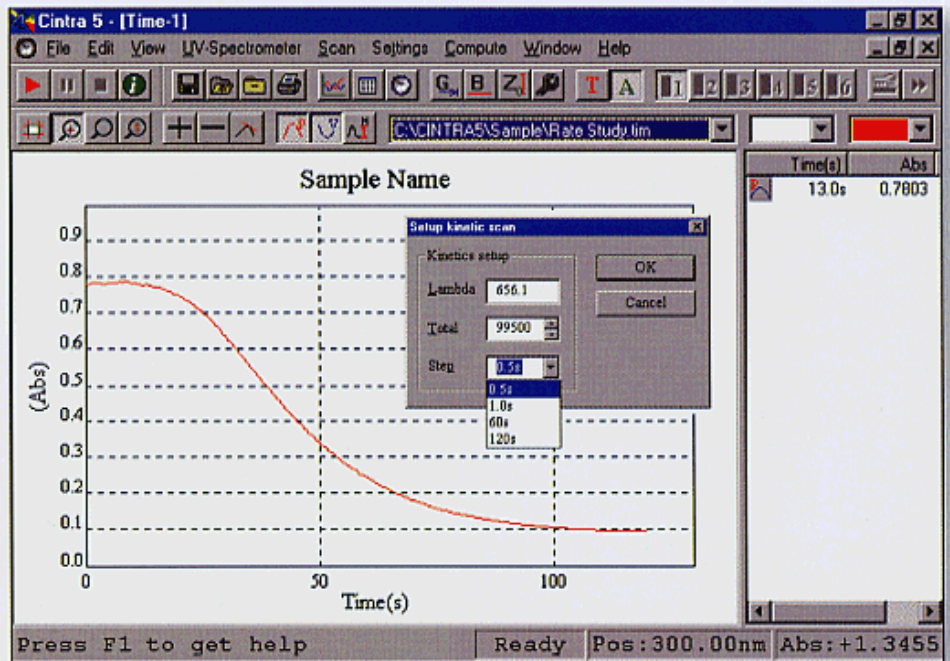
Kinetic Measurements

The time scan function enables you to monitor and display the change in photometric data over a period of time for rate studies.

A sampling frequency of 0.5, 1.0, 60 or 120 seconds can be selected with total scan duration up to 100,000 seconds (27.7 hours).

A-%T conversion can be done post-run.

Derivatives up to 10th order can be selected to enhance inflexion points in a time scan.



Lamp Switch Setting

You can specify the D₂ and UV lamp switch-over point anywhere between 320 nm and 360 nm.

The screenshot shows the "Set the switch point" dialog box. It has a "Switch point" section with three input fields: "Maximum" (320.0nm), "Minimum" (360.0nm), and "New point" (340.0nm). There are "Setup" and "Cancel" buttons on the right side of the dialog.

Print Function

The Cintra 5 can use virtually any dot matrix, inkjet or laser printer. You can tailor specific reports using the following editable options:

- Legends
- Footnotes
- Scalers
- Peak and valley identification
- Selection of Font type, size and colour

The screenshot shows the "Settings to display and print the spectra" dialog box. It has tabs for "View", "Peak and Valley", "Legend", "Special", "Scaler", and "Print". The "Print" tab is active, showing options for "Foot notes" (analysed by Paul Liberatore), "Spectrum" (checked), "Grid data" (checked), "Print ratio" (Full page selected, Keep shape selected), and "Center print" (Horizontal and Vertical checked). There are "OK", "Cancel", "Apply", and "Help" buttons at the bottom.

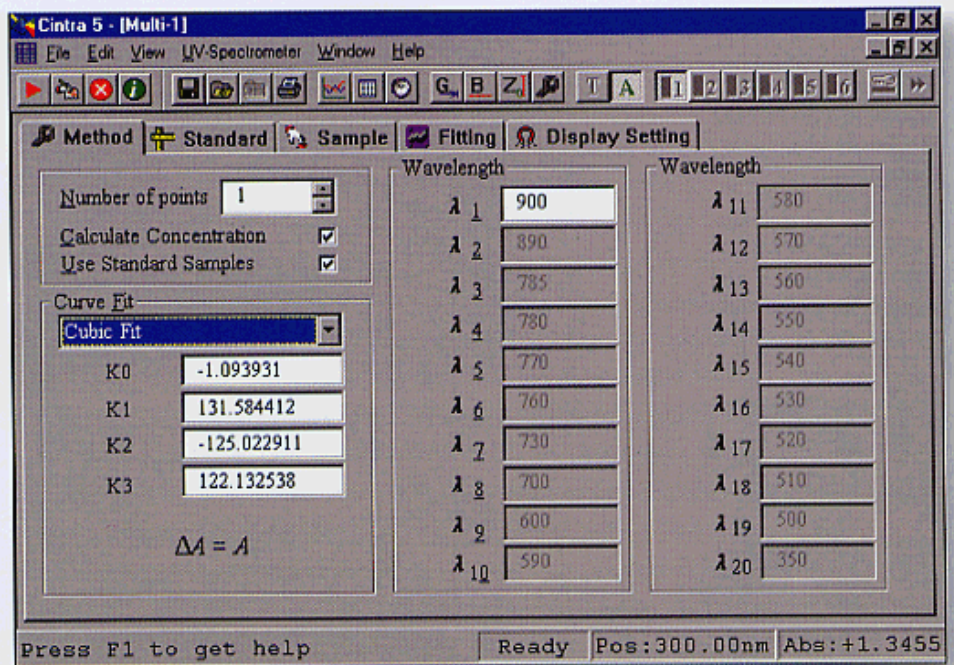
Concentration measurements for precise quantification of absorbance vs. concentration

Concentration Measurements

Concentration measurements are ideal for Quality Control Laboratories that perform quantitative measurements.

Quantitative measurements can be performed using as many as 200 standards.

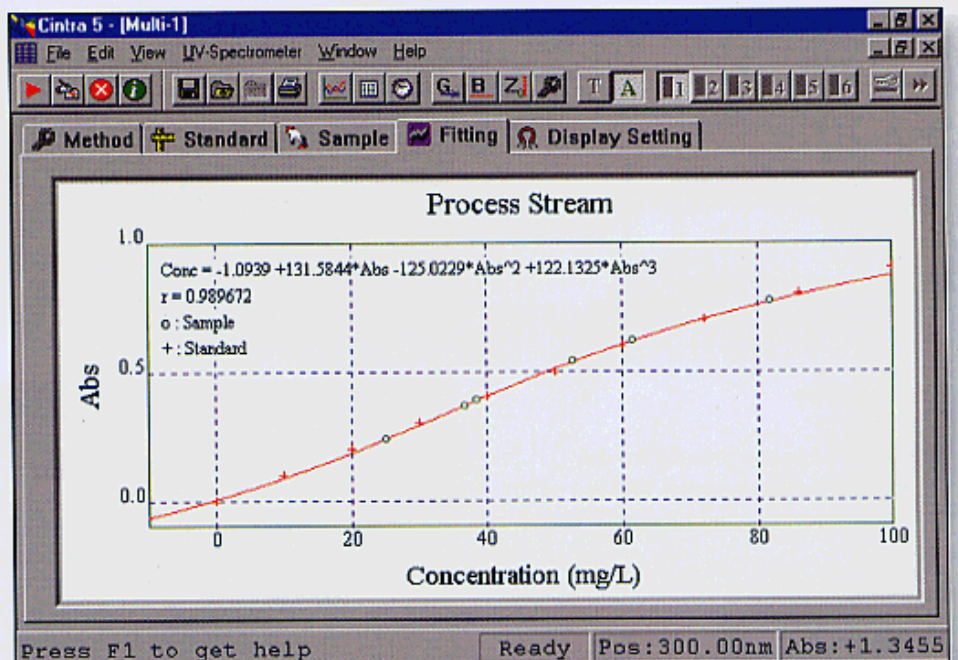
Up to 20 user-selectable wavelengths can be analysed allowing the user to perform any data manipulation using either standard methods or allowing custom calculations



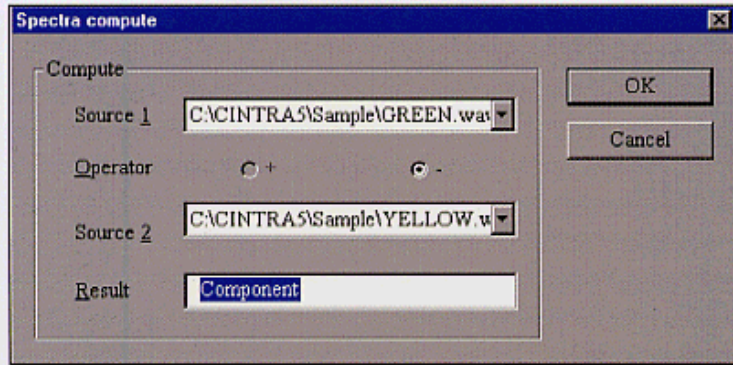
Curve Fitting

Linear, quadratic or cubic fit can be selected to tailor the analysis of your unknown samples.

Both sample and standard concentrations are displayed on the calibration curve. This enables you to quickly view the portion of the standard curve in which your samples lie, and hence determine whether you need to add or remove standards.



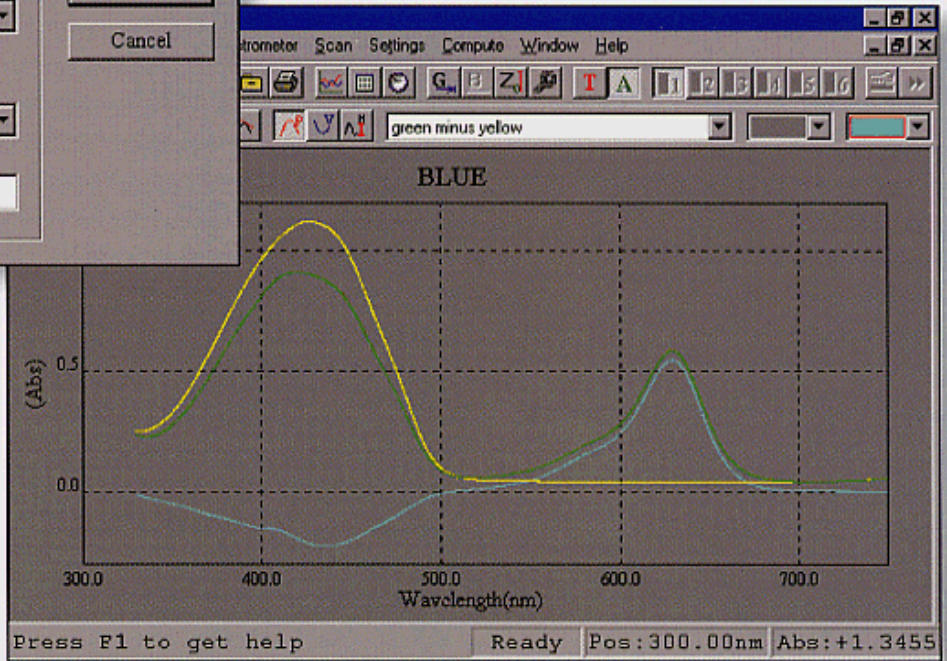
All methods, results, calibration curves, scans, and in fact the entire operating system, can be password protected from within the Cintra 5 software



Spectra Processing

Scans (up to the 10th Derivative) can be calculated and the spectra can be smoothed and resampled so that every point to every 100th point can be excluded.

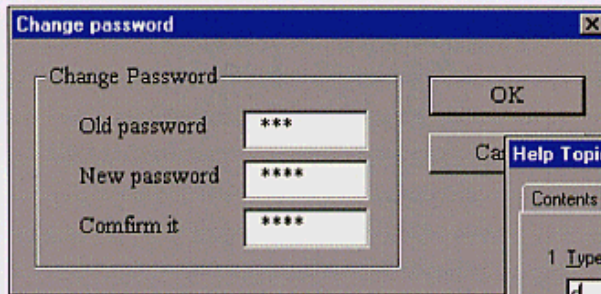
Spectra can also be added and subtracted enabling unknown samples to be easily identified.



Password Protection

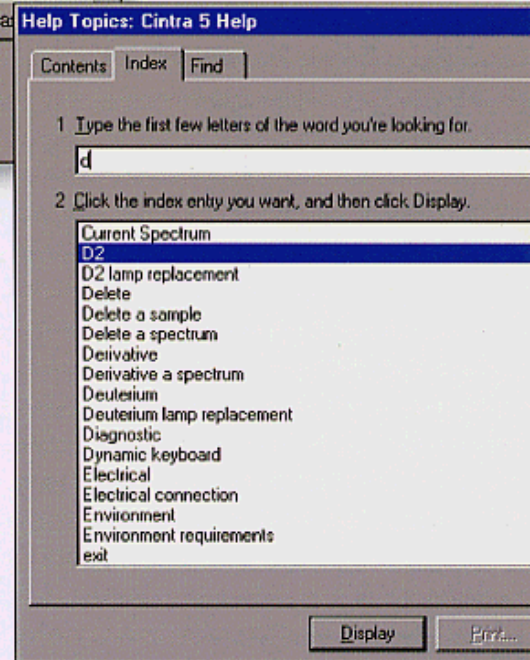
All methods, results, calibration curves, scans, and in fact the entire operating system, can be password protected from within the Cintra 5 software.

This protects the integrity of methods and results, as well as ensuring only authorised users have access to data and results.



Online Help

Extensive help is available. Select a topic from the index, or search for a particular keyword to rapidly find answers and definitions presented in a text/graphic format.



Export Functions

Wavelength scans and time scans can be saved as X, Y pairs. This data can then be exported to third-party software for further manipulation.

Ordering Information

Cintra 5

Each UV-Vis spectrometer comes supplied complete with a 1x1 variable path length cell holder, integrated microprocessor, high resolution monochrome LCD screen, membrane keypad, mouse, IDE hard disk, 1.44 Mb FDD, external SVGA and keyboard ports, Operation Manual, Windows@95/98 operating system and Cintra 5 software.

Cintra 5 with standard variable cell holder (10, 20, or 30 mm cells)	99-0402-00
Cintra 5 with 100 mm variable cell holder (10, 20, 30, 40, 50 or 100 mm cells)	99-0408-00

Accessories

1 x 1	Variable cell holder (10, 20, 30, 40, 50 or 100 mm cells)	54-0263-00
1 x 1	Water-thermostatted cell holder	99-0403-00
6 x 1	Manual cell holder	99-0404-00
6 x 1	Automatic cell holder	99-0405-00
	Auto-sipper	99-0406-00

Cintra 5

Specifications

Monochromator

Double Beam Czerny-Turner configuration, 1,200 line/mm holographic diffraction grating

Spectral Bandwidth

<1.8 nm

Wavelength Range

180 to 1,100 nm

Wavelength Setability

0.1 nm increment

Wavelength Accuracy

<0.1 nm

Wavelength Reproducibility

<0.1 nm

Photometric Mode

Absorbance and % Transmittance

Photometric Range

-0.477 to 3.000 A

Photometric Accuracy

±0.003 A (1 A)

Photometric Reproducibility

<0.002 A (1A)

Photometric Drift

<0.0009 A/hr

Baseline Flatness

<0.005 A (200-1,100 nm)

Stray Light

<0.05 %T

Photometric Noise

<0.00018 A RMS

Wavelength Slew Speed

6,000 nm/min (full wavelength range)

Wavelength Scan Speed

60 to 3,200 nm/min

Wavelength Scan Steps

0.1, 0.2, 0.5, 1.0, 2.0 or 4.0 nm

Kinetic Measurement Time

1 to 100,000 s.

Kinetic Sampling Interval

0.5 s, 1 s, 6 s, 30 s, 60 s or 120 s.

Light Source

Deuterium Lamp, Tungsten-Halogen Lamp

Light Source Switching

Automatic light source switching.
User selectable within the range of
320 to 360 nm

Detector

Dual Silicon Diode Photocell Detectors

Display

Large backlit Liquid Crystal Display
177 x 133 mm (W x H)

Sample Compartment

100 mm beam spacing
120 x 280 x 140 mm (WxDxH)

Dimensions

610 x 550 x 240 mm (WxDxH)

Certification

CE labelled

Weight

74 kg (packed)

Power Source

110 or 220 VAC, 50/60 Hz

Environment

Tested at altitudes up to 2000 m



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specifications without prior notice.

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GBC SCIENTIFIC EQUIPMENT

Manufacturer of world-class
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ICP-OES and ICP-MS

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