

# Ingenious UV/Visible Spectrophotometer

Cat No: UV/VIS-SP-M-002

**MOLEQULE-ON®**



## Description

The MOLEQULE-ON Ingenious UV/Visible Spectrophotometer is an accurate, reliable, and cost effective instrument. Ingenious is designed to accomplish the requirements of research institutes, quality control of manufacturing facilities and also of teaching labs. The system is also designed with a narrow, and focused beam to provide excellent linearity, and small variance with small samples in semi microcells. The Ingenious offers a large on-board graphical display and soft-keys to provide access to functions, and to perform applications easily. Users can store the data and parameters from the experiment on-board in standalone machine or export to a PC with the PC-mate software. For different experiment needs, the Ingenious offers additional flexibility with temperature control, sipper, 6 cell holder, and rectangular cell holder modules. The sample compartment modules can be interchange by the end user at ease. With improvement and upgrades the Ingenious, has become a reliable, versatile and easy to use instrument in its class.

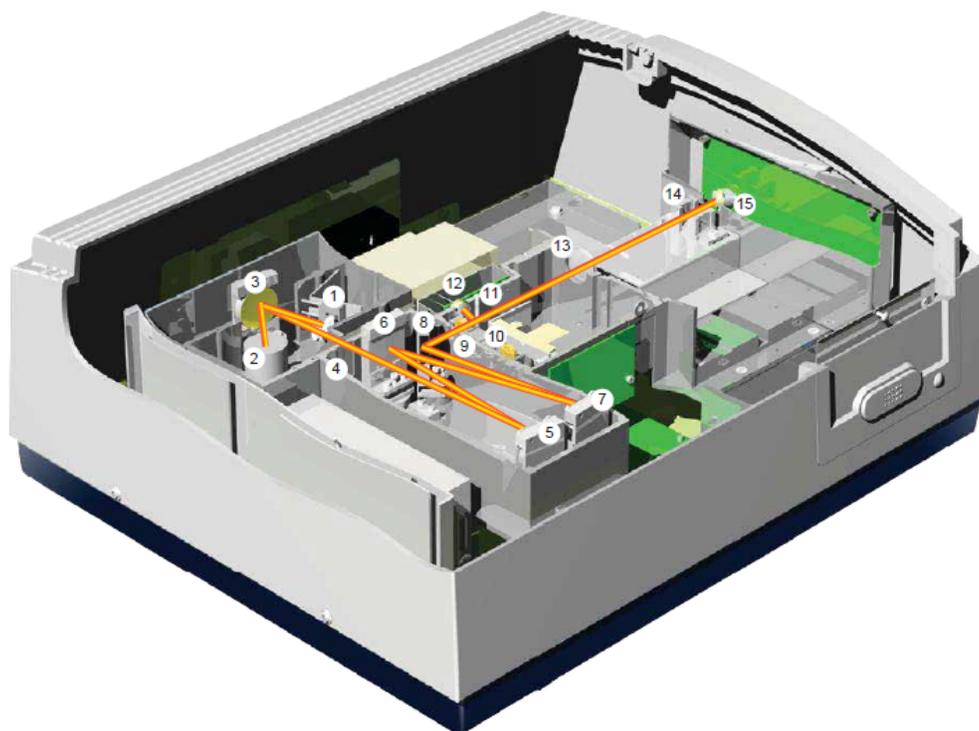
## Features

### **Intuitive design, which requires minimum training to use**

The Ingenious screen graphic display and softkeys allows user to quickly setup and execute the experiment with only a few keystrokes on the softkey to get their Absorbance, Concentration, Transmittance, and Spectrum reading data.

## High performance optical design for reliability and easy maintenance

The dual beam optical design allows the Ingenious to measure samples with enhanced stability. With the design of a reference detector the readings are subtracted by the sample detector results, so the results will be more accurate and less affected by the environmental condition. The narrow (0.3x 0.6mm) and focused beam design within the system allows to produce excellent resolution and reproducible results for normal, and small samples (50uL). The UV and Visible light source will automatically switch independently to save lamp life and cost. The Deuterium will only turn on when the instrument is scanning samples in the UV range.



- |                  |                  |                       |
|------------------|------------------|-----------------------|
| 01 WI Lamp       | 02 D2 Lamp       | 03 Switching Mirror   |
| 04 Entrance Slit | 05 Collimator    | 06 Entrance Slit      |
| 07 Collimator    | 08 Reflector     | 09 Exit Slit          |
| 10 Filter        | 11 Beam Splitter | 12 Reference Detector |
| 13 Lens          | 14 Sample        | 15 Sample Detector    |

## Ingenious sample compartment design accommodates all needs

The universal sample compartment can easily accommodate all kinds of cell from 10~100mm path length cuvette to 10~13mm diameter test tube, users will be able to choose different type of sample holder for their experiment needs. Thermal-controlled sample compartment and multiple sample holder can be adapted on Ingenious. Change of cell holder is quick and simple.



Sipper unit



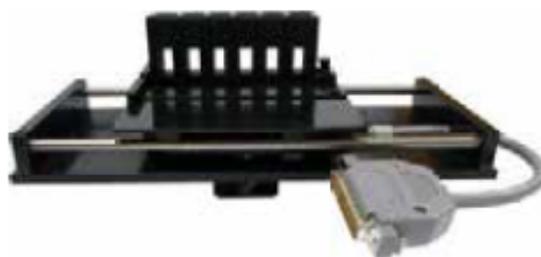
Rectangular cell holder



Single cell holder

### Automatic 6 cell changer accessory

The 6 cell changer on the Ingenious provides a simple automatic method to measure multiple samples at once. User can designate one position as blank leaving five spaces for samples to be measured.



Automatic 6 cell holder

### Advance temperature control

The Ingenious offers advance temperature control accessory. User will have the option to use a standalone thermal electric for temperature control or use a re-circulating water circulating bath for temperature control.



Thermo electric cell holder



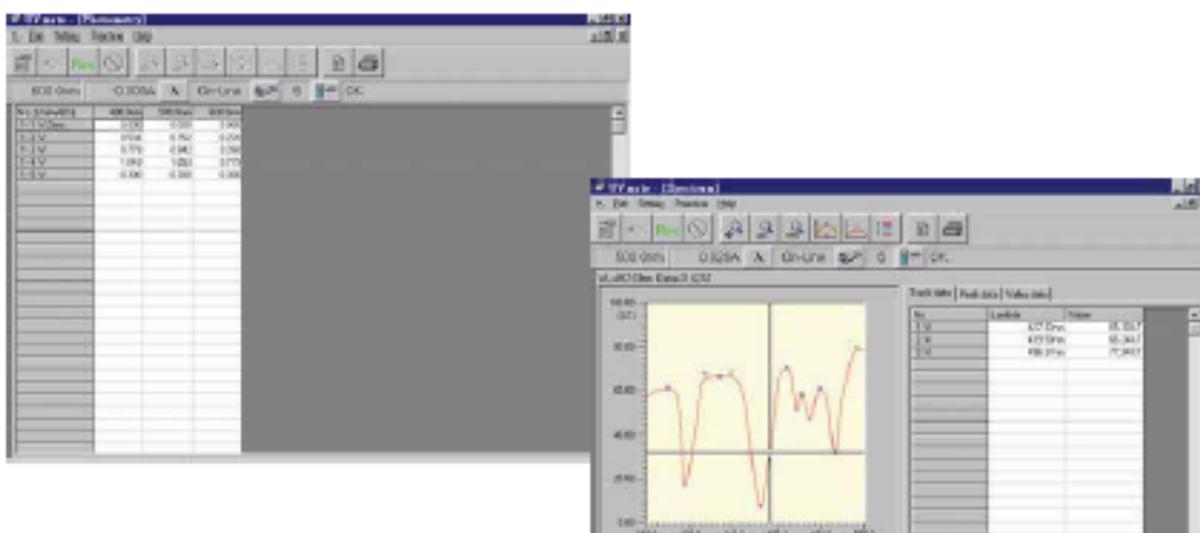
Thermo fluid cell holder



Cylindrical cell holder

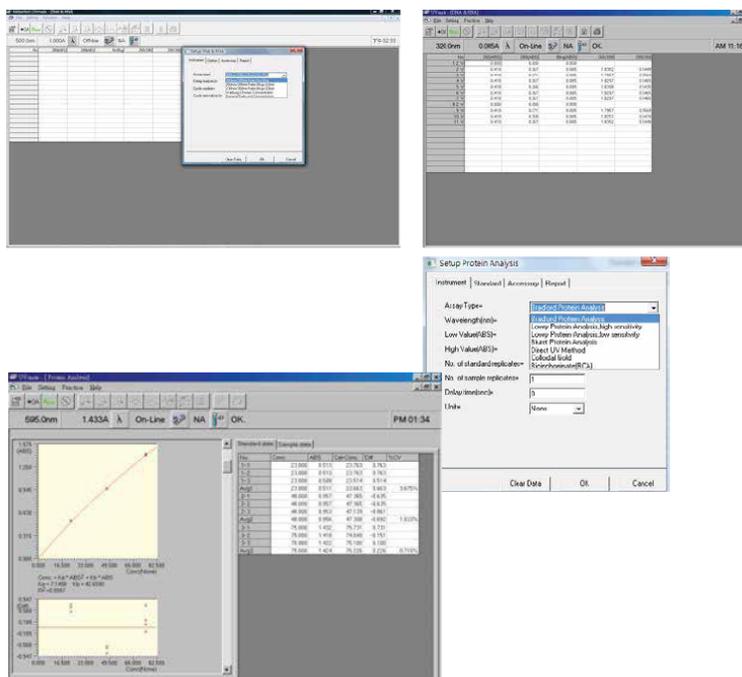
### Enhance features on UV-Mate PC software

For enhance features and data storage, the Ingenious can connect to a PC with the UV-Mate software. The UV-Mate software comes with the standard Photometric, Spectrum, Time scan, Kinetic, and quantitative features, but also comes with more complex features such as DNA/RNA, and Protein analysis. Users will also have the flexibility to save the data into Excel format.



## Application of lab routine measurement of nucleic acid and protein

The Ingenious offers built-in applications for DNA and protein analysis. Users can choose between using the standalone mode, or use the UV-Mate software to control the instrument for analysis.



## Specifications

Model Number	Ingenious
Optical Design	Dual Beam
Light Source	Deuterium and Halogen lamp, auto switching at 320~360nm
Detector	Silicon photodiode
Wavelength Range	190-1100 nm
Bandwidth	2nm
Wavelength Accuracy	+/- 0.5 nm
Wavelength Repeatability	+/- 0.2 nm
Measurement mode	Absorbance, Transmittance (%T), Concentration
Photometric accuracy	+/- 0.005Abs at 1.000Abs
Photometric range	-0.300~3.500Abs
Baseline flatness	+/-0.002Abs (210~1000nm)
Noise level	+/-0.0001Abs (500nm)
Stability	Drifting < 0.0003Abs/hour at 500nm after 1 hour warm-up
Stray Light	<0.05% at 340 and 220 nm by NIST SRM2031
Wavelength scanning speed	100-5000 nm/min (user programmable)
Display	6 Inch LCD display with back light
Interface	RS232 and parallel port
PC software	UV-mate software
Power	100 ~ 240V at 50/60Hz
Dimension	506(W) x 430(D) x 220(H) mm
Weight	18 kg