


**RIGOL**



**Ultra-6000 Ultra-3000 Series**  
UV-Vis Spectrophotometer

RIGOL TECHNOLOGIES, INC.



## Company Profile

Founded in 1998, RIGOL Technologies, Inc. is an ISO9001:2000 Quality Management System and ISO14001:2004 Environmental Management System Certified company, an emerging T&M leader and a technology innovator in Chemical Analysis and Electronic Measurement. RIGOL's premium line of products includes HPLC and UV-Vis Spectrophotometers, and General Purpose, RF Communication Electronic Instruments, which help the engineers, researchers, educators to address their measurement challenges in confidence with better affordability than ever before.

RIGOL is headquartered in Beijing, China, with the branch offices in Cleveland, OH, United States and Munich, Germany. The company's 400 employees and more than 150 distributors or representatives offer products and services in over 60 countries/regions on six continents. More information about RIGOL is available at [www.rigol.com](http://www.rigol.com).



## Ultra-6000 Accurate & Powerful



0.0003  
%T

Unique dual-monochromator optical design, 0.0003%T ultra-low stray light.

5  
Abs

Linear range 5Abs, accurate test for high-concentrated samples without pre-dilution.

0.1  
nm

0.1 nm optical resolution with six options for spectral bandwidth selection.

±0.3  
nm

Test with ±0.3nm wavelength accuracy ensures confidence.

BETTER  
Durability

High precision processes and high quality techniques achieve higher durability.

MORE  
User friendly

Powerful workstation with intuitive user interface.

Ultra-6000 series UV-VIS Spectrophotometer achieved ultra low stray light under 0.0003% T, by the advanced optical design with build-in dual monochromator. This low stray light level makes precise measuring of high concentration sample possible. Meanwhile, the sample chamber is suitable for various accessories, which enlarge the scope of application to meet diverse requirements.

## Ultra-3000 Easy to use & Versatile



Light  
Path

Double-beam and split beam designs

0.02  
%T

Ultra-low stray light  $\leq 0.02\%$

0.5  
nm

0.5nm optical resolution with 4 options of spectral bandwidth, 0.5/1/2/4 nm

Better  
Usability

Versatile test solutions, with built-in bio-analytical methods

Friendly  
Design

7" TFT color screen WVGA(800X480), water-proofing keyboard design

Data  
Processing

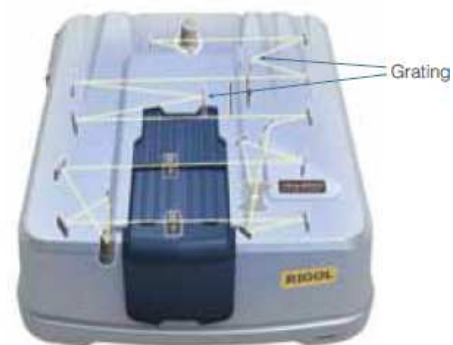
Supports storage & printing with USB devices, controllable by UltraUV workstation for extended functions

Ultra-3000 series UV-VIS Spectrophotometer could help you to accomplish various analysis by its advanced design and user-friendly interface. With its build-in high resolution color screen and water-proof keyboard, you can easily scan spectrum, monitor kinetic curve, measure unknown sample concentration or even print the report directly via simple operation.

# Ultra-6000 Series UV-VIS Spectrophotometer

## <0.0003% Ultra Lower Stray Light

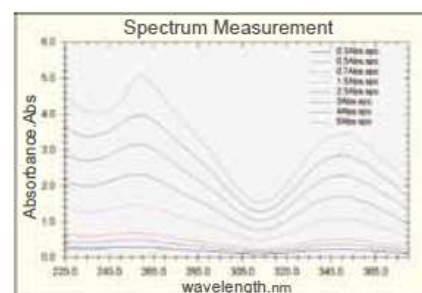
The world leading dual-monochromator dispersion system design achieves low stray light less than 0.0003%T, while the holographic grating with groove density 1800mm improving test result accuracy with better linearity.



## 5Abs Linearity Range

With a wider linear range, high-concentrated samples can be tested without any pre-dilution, and inseparable samples can be tested directly.

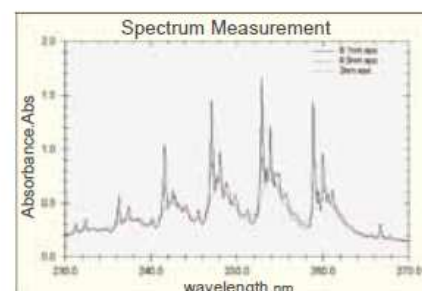
Test Objective: 0.005mol/L $K_2Cr_2O_7$ in $H_2SO_4$ solution.	
Instrument for test: RIGOL Ultra-6600A	
Instrument sets:	
wavelength range	225nm-380nm
bandwidth	2nm
scanning step	0.5nm



## 6 Steps Variable Bandwidth

6 tunable bandwidths of 0.1nm, 0.2nm, 0.5nm, 1nm, 2nm and 4nm

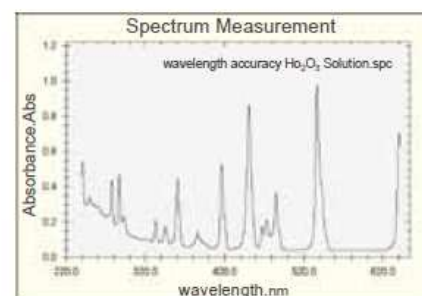
Test Objective: Benzene Steam	
Instruments for test: RIGOL Ultra-6600A	
Instrument sets:	
Wavelength range	230nm-270nm
Scanning Speed	Low
Wavelength step	0.05nm



## Excellent Wavelength Accuracy

Better wavelength accuracy ensures confidence in the test results.

Number	Standard wavelength $Ho_2O_3$ Solution (nm)	Measured wavelength (nm)	Wavelength error (nm)
1	640.7	640.6	-0.1
2	536.9	536.7	-0.2
3	485.1	485.2	+0.1
4	451.1	451.05	-0.05
5	416.4	416.45	+0.05
6	361	360.95	-0.05
7	333.4	333.35	-0.05
8	287.5	287.4	-0.1
9	278	277.95	-0.05
10	241.1	241	-0.1



Test Objective: $Ho_2O_3$ Solution	
Instrument for test: RIGOL Ultra-6600A	
Instrument sets:	
wavelength range	240nm-642nm
bandwidth	2nm
Scanning Speed	Low
scanning step	0.05nm

# Ultra-3000 Series UV-VIS Spectrophotometer

## High Cost Performance



Low stray light  $\leq 0.02\%T$   
 0.5nm resolution  
 Various spectral bandwidth selection

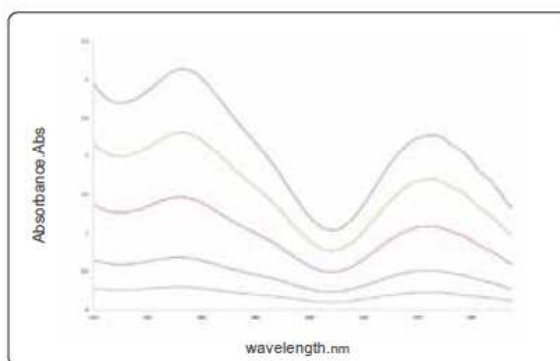
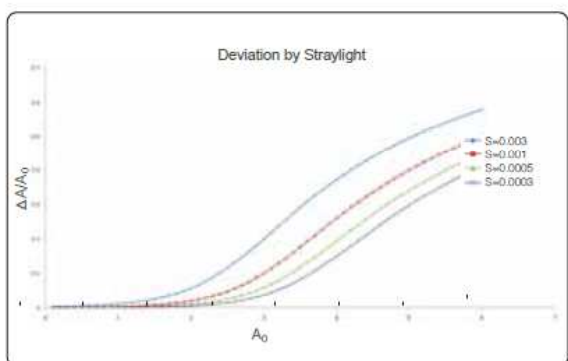


Built-in formulas and methods,  
 operable both via panel and workstation



TFT color screen & compact design;  
 Complete connectivity: LAN, USB host & device

- ▶ Ultra-low stray light design for more precise measurement  
 Stray light  $\leq 0.02\%T$  under each bandwidth



## Easy to Use

- ▶ Support Flash disk storage and USB print  
 Connectable to PC via LAN and USB ports
- ▶ 7" TFT color screen WVGA(800X480), graphical interface  
 Water-proofing design keyboard  
 Knob button for simple operation



## Accessories

- ▶ **Automatic 8-cell holder**  
Enable the automatic switching and measuring of eight 10mm square cuvettes
- ▶ **Solid sample holder**  
Used for transmittance/absorbance measurement of a solid sheet sample Sample size: 80L x 40W x 20H mm
- ▶ **Absolute Reflectance Attachment**  
Used for testing materials with optical surface, or semi-conductive materials. 5° incident angle can reduce the polarized light to the least. Max. sample size: 100L x 160W x 15H mm
- ▶ **Rectangular long-path cell holder**  
Holds two long path cells (light path 5-100mm)
- ▶ **Integration sphere**  
Designed for diffuse reflectance measurement of solid sample surface and absorbance measurement of a turbid sample. Wavelength: 230-850nm, ID of sphere: 60mm
- ▶ **Diverse types of cuvettes**  
Diverse Quartz and glass cuvettes with different light path and volume

## Specifications

### Performance Parameters of Ultra-6000 Series

Model	Ultra-6600A	Ultra-6600	Ultra-6100
Stray Light	≤0.0003%T	≤0.015 %T	≤0.015 %T
Spectral Bandwidth	0.1/0.2/0.5/1/2/4nm	0.1/0.2/0.5/1/2/4nm	2nm
Wavelength Range	190nm-900nm		
Wavelength Accuracy	± 0.3nm(Ho <sub>2</sub> O <sub>3</sub> solution)		
Wavelength Reproducibility	0.1nm(Ho <sub>2</sub> O <sub>3</sub> solution)		
Photometric Range	5 Abs	4 Abs	4 Abs
Photometric Accuracy	±0.002Abs(0 ~ 0.5A) ±0.004Abs(0.5 ~ 1A) ±0.3%T(0 ~ 100%T)		
Photometric Reproducibility	0.001Abs(0 ~ 0.5A) 0.002Abs(0.5 ~ 1A)		
Baseline Flatness	±0.0008Abs		
Baseline Drift	0.0003 Abs/h ( 250nm/500nm, 2.5h preheat )		
Noise	±0.0002Abs ( 250nm/500nm, 0.5 preheat )		
Detector	Photomultiplier		
Software	UltraUV		

### Performance Parameters of Ultra-3000 Series

Model	Ultra-3660	Ultra-3600	Ultra-3560	Ultra-3400
Light Path	Double beam	Double beam	Ratio beam	Ratio beam
Spectral Bandwidth	0.5/1/2/4	1 or 2	0.5/1/2/4	1 or 2
Wavelength Reproducibility	0.1 nm	0.1 nm	0.1 nm	0.1 nm
Wavelength Accuracy	±0.1 nm	±0.1 nm	±0.1 nm	±0.1 nm
Wavelength Range	190-1100 nm	190-1100 nm	190-1100 nm	190-1100 nm
Noise	±0.00004A	±0.00004A	±0.00004A	±0.00004A
Drift	0.0005Abs/hr	0.0005Abs/hr	0.0005Abs/hr	0.0005Abs/hr
Stray Light	≤ 0.02%T	≤ 0.02%T	≤ 0.02%T	≤ 0.02%T
Spectrum Scanning	Standard			Optional
Screen	7" TFT color screen WVGA(800X480)			
Direct Printing	Available			
USB Storage	Available			
Built-in Methods	Available			
Workstation	Available			

# UltraUV Workstation

## Friendly Interface

UltraUV workstation adopt intuitive RIBBON style interface design. With the help of build-in measuring mode, UltraUV can easily meet the need from basic measurement to sophisticated research analysis. By dividing the measuring process into "3-Steps", user could comfortably accomplish the process from method edition, measuring operation and results reporting.



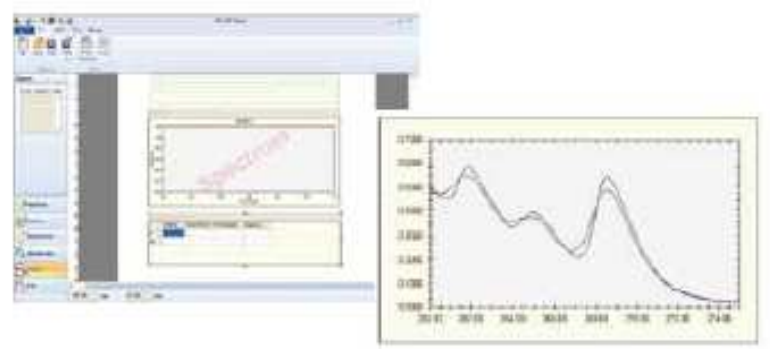
## Versatile test solutions

UltraUV includes all your needs for spectrum scanning, kinetic testing, photometric measuring and quantitative analysis. With robust data processing function such as interpolation method, grand average, arithmetic and data set, UltraUV satisfy the most sophisticated application requirements.



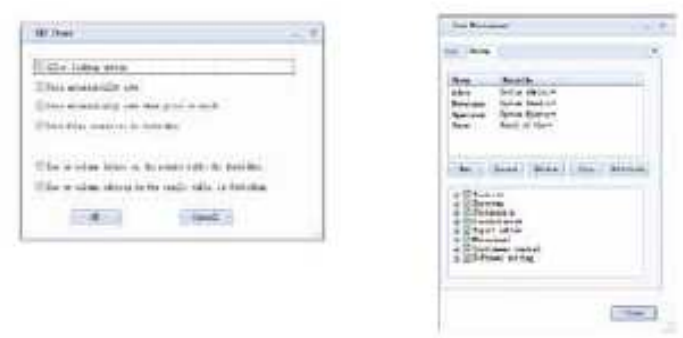
## Flexible report design

UltraUV report editor is powerful and flexible, by adopting the principle of "what you see is what you get", you can input related data in right position based on requirements. The report can be saved as template for future usage.



## GLP/GMP regulations compliance

UltraUV is totally compliance with GLP/GMP regulatory. It ensures the data authenticity & standardability by build-in user account access control, audit trail and encrypted data saving algorithm.



## Technical Support and Customer Service



### Powerful Lab Test Procedures–Development

**RIGOL**'s experienced Application Engineer team is dedicated to lab solutions and test procedures development, public hot case study, application optimization, etc. in food safety, pharmacy, biology and environmental monitoring fields. The team also provides the customers with test procedures verification service.



### Completed Solutions

**RIGOL**'s technical support team understands customers needs, provides the customers' with application optimized system configurations, regulations complied test solutions, as well as responsive and quality customer support.



### Quality Training Services

**RIGOL** offers on-site training service, **RIGOL** technical support engineers will help the customers better understand the instruments operations and maintenance, provide the customers with the prompt consulting and support on-site and/or remotely.



### Comprehensive Customer Service

**RIGOL**'s customer-service center is committed to answering customers' service requirement effectively and professionally.

---

**RIGOL**

---

Service & Support Email Address: [service.chem@rigol.com](mailto:service.chem@rigol.com)

**RIGOL**® is the registered trademark of **RIGOL** technologies, Inc. Product information in this catalogue subject to be changed without notification. For the latest information about **RIGOL**'s products, applications and services, please contact **RIGOL** local office or visit [www.rigol.com](http://www.rigol.com)