

## UV-Vis/NIR Spectrophotometer

Dual-grating, dual-detector design to fully cover the range to 2700 nm

# V-670



The V-670 double-beam spectrophotometer utilizes a unique, single monochromator design covering a wavelength range from 190 to 2700 nm (3200 nm option). The monochromator features dual gratings (automatically exchanged): 1200 grooves/mm for the UV/VIS region; 300 grooves/mm for the NIR region. A PMT detector is provided for the UV/VIS region and a Peltier-cooled PbS detector is employed for the NIR region. Both gratings and detector are automatically exchanged within the user selectable 750 to 900 nm range.

Two graphical user interfaces are available including a newly redesigned intelligent remote module (iRM) with a color LCD touch screen and Spectra Manager™ II software, the latest version of JASCO's innovative cross-platform spectroscopy software. Both of these interfaces allow full system control and advanced data processing. Spectra Manager CFR is a 21 CFR part 11 compliant version of software and can be ordered as an option.

- **IQ Accessory and IQ Start**

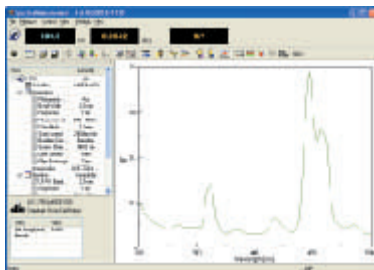
User-friendly features include the IQ Accessory function for automatic accessory recognition and IQ Start for immediate execution of registered control programs when conducting routine measurements.

- **Wide Wavelength Range from UV to NIR**

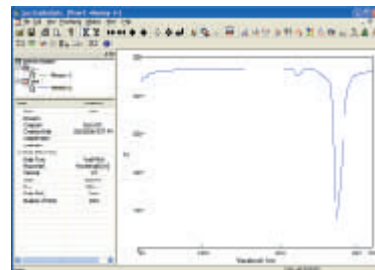
The V-670 measures the spectrum of a sample over a wavelength range of 190 to 2700 nm (3200 nm - factory option). The single monochromator design reduces the number of mirrors needed to obtain high energy throughput resulting in better S/N ratio over the entire range.

- **Full Line of Accessories**

A full complement of accessories is available to optimize the V-670 for particular applications. Options include a wide variety of liquid cell holders, micro cell holders, flow cell units and accessories for solid samples. Advanced accessories such as automated cell changers, sippers and programmable temperature control systems are fully controlled by the iRM or Spectra Manager II.



Spectra Manager II (Spectra Measurement)



Spectra Manager II (Spectra Analysis)



## Hardware Specifications

Optical system	Single monochromator; dual-grating, dual detector UV/VIS region: 1200 lines/mm plane grating NIR region: 300 lines/mm plane grating Czerny-Turner mount Double beam type
Light source	Deuterium lamp: 190 to 350 nm Halogen lamp: 330 to 2700 nm (3200 nm, option)
Light source exchange wavelength	User-selectable in the range of 330 to 350 nm
Detector	Photomultiplier tube (PMT) Peltier cooled PbS detector
Detector/grating exchange	Grating and detector exchange is user selected in the range of 750 to 900 nm.
Wavelength range	190 to 2700 nm Range of 190 to 3200 nm is a factory option.
Wavelength accuracy	±0.3 nm (using a spectral bandwidth of 0.5 nm; UV/VIS region; stabilized room temperature) ±1.5 nm (using a spectral bandwidth of 2.0 nm; NIR region; stabilized room temperature)
Wavelength repeatability	±0.05 nm (UV-Vis bandwidth: 0.5 nm) ±0.2 nm (NIR bandwidth: 2.0 nm)
Scanning speed	10 - 4000 nm/min (8000 nm/min in preview mode)
Slew speed	12,000 nm/min (UV-Vis region) 48,000 nm/min (NIR region)
Spectral bandwidth	0.1, 0.2, 0.5, 1, 2, 5, 10 nm (UV-Vis region) L2, L5, L10 nm (low stray-light mode, UV-Vis region) M1, M2 nm (micro-cell mode) 0.4, 0.8, 1, 2, 4, 8, 20, 40 nm (NIR region) L8, L20, L40 nm (low stray-light mode, NIR region) M4, M8 nm (micro-cell mode, NIR region)
Photometric range	0 to 10000 %T -2 to 4 Abs (UV-VIS region) -2 to 3 Abs (NIR region)

Photometric accuracy	±0.002 Abs (0 to 0.5 Abs) ±0.003 Abs (0.5 to 1 Abs) ±0.3 %T (Tested with NIST SRM 930D)
Photometric repeatability	±0.001 Abs (0 to 0.5 Abs) ±0.001 Abs (0.5 to 1 Abs)
Stray light	1 % (198 nm KCL 12 g/L aqueous solution) 0.005 % (220 nm NaI 10 g/L aqueous solution) 0.005 % (340 nm NaNO <sub>2</sub> 50 g/L aqueous solution) 0.005 % (370 nm NaNO <sub>2</sub> 50 g/L aqueous solution) (spectral bandwidth: L2 nm, 10 mm cell) 0.04% (1690 nm H <sub>2</sub> O, 10 mm cell) 0.1% (1690 nm CH <sub>2</sub> Br <sub>2</sub> , 50 mm cell) (spectral bandwidth: L8 nm)
Baseline stability	±0.0003 Abs/hour (Value obtained greater than two hours after turning on the light source; stabilized room temperature; wavelength: 250 nm; response: slow; spectral bandwidth: 2 nm)
Baseline flatness	±0.0005 Abs (Value obtained after instrument baseline correction with a temperature variation of less than 5°C; wavelength range: 200 to 850 nm; response: medium; spectral bandwidth: 2 nm; scanning speed: 400 nm/min; spectral bandwidth: 8 nm for wavelength range 850 to 2500 nm [based on JAIMA Standard JAIMAS-0001])
RMS noise	0.00003 Abs (0 Abs; wavelength: 500 nm; measurement time: 60 sec.; response: medium; bandwidth: 2 nm)
Power requirements	145 VA
Dimensions and weight	460(L) x 602(W) x 270(H) mm (excluding accessories) 28 kg

## Spectra Manager II

Computer Requirements	Windows XP (Service Pack 2)
Recommended system (minimum specifications)	Intel Pentium 4 (or similar); 2.0 GHz; 512 MB RAM; 10 GB HDD
Measurement modes	Quantitative Analysis Wavelength scan (Abs, %T, %R, Sample, Reference) Time scan (Abs, %T, %R, Sample, Reference) Fixed wavelength (Up to 8 wavelengths) Abs/%T monitor
Data processing	Peak picking, Peak height, Peak area, Peak width, Derivatives, Smoothing, Data truncation, Arithmetic, Baseline correction, Subtraction, Deconvolution, Vertical axis conversion, Horizontal axis conversion
Other standard functions	Validation Software, Enzyme activity calculation, JASCO Canvas, Film thickness measurement, Color analysis
Optional	Spectra Manager CFR

## Standard Composition

Description	Qty	Remarks
V-670	1	
UV-Vis-NIR Spectrophotometer		
Holmium glass	1	Bi-functional Holmium glass holder/shielding plate
Time-delay fuse	2	
USB cable	1	
AC power cable	1	
Phillips screw driver	1	For adjustment of the light source mirror
Software installation CD	1	
Certificate of inspection	1	
Instruction manual	1 set	



● Specifications are subject to change without notice.

## JASCO INTERNATIONAL CO., LTD.

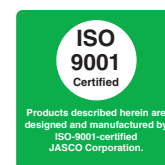
4-21, Sennin-cho 2-chome, Hachioji, Tokyo 193-0835, Japan  
Tel: +81-426-66-1322 Fax: +81-426-65-6512 Internet: <http://www.jascoint.co.jp/english/index.html>  
Australia, China, Hong Kong, India, Indonesia, Iran, Korea, Malaysia, New Zealand, Pakistan, Philippines, Russia, Singapore, South Africa, Taiwan, Thailand

## JASCO INCORPORATED

8649 Commerce Drive, Easton, Maryland 21601-9903, U.S.A  
Tel: +1-800-333-5272 Tel: +1-410-822-1220 Fax: +1-410-822-7526 Internet: <http://www.jascoinc.com>  
Canada, Costa Rica, Mexico, Puerto Rico, Argentina, Brazil, Chile, Colombia, Paraguay, Peru, Uruguay

## JASCO EUROPE s.r.l.

Via Confalonieri 25, 23894 Cremella (Lc), Italy  
Tel: +39-039-956439 Fax: +39-039-958642 [www.jasco-europe.com](http://www.jasco-europe.com)  
JASCO Deutschland [www.jasco.de](http://www.jasco.de), JASCO UK [www.jasco.co.uk](http://www.jasco.co.uk), JASCO France [www.jascofrance.fr](http://www.jascofrance.fr),  
JASCO Benelux [www.jasco.nl](http://www.jasco.nl), JASCO Spain [www.jasco-spain.com](http://www.jasco-spain.com), JASCO Scandinavia [www.jascoscandinavia.se](http://www.jascoscandinavia.se)  
Austria, Finland, Greece, Hungary, Poland, Portugal, Romania, Switzerland, Algeria, Cyprus, Egypt, Israel, Jordan, Kuwait, Lebanon, Morocco, Saudi Arabia, Syria, Tunisia, Turkey, U.A.E.



LUV05-0609 Printed in Japan