

UV-Vis Spectrophotometer

A high resolution instrument for today's laboratory

V-650



The V-650 is a double-beam spectrophotometer with a photomultiplier tube detector. The high sensitivity of the photomultiplier tube detector enables accurate measurements of low concentration samples. By controlling the high voltage applied to the PM tube, the dynode feedback circuit allows a wider dynamic range. It also enables the use of such solid sample handling accessories as integrating spheres to collect diffuse light transmitted or reflected by the sample. The advanced optical design results in high optical throughput and allows the bandwidth to be set as low as 0.1 nm for high resolution work such as gas and vapor phase spectroscopy. Low stray light slit settings provide excellent linearity of up to 4 absorbance units.

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 is available 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 start of registered control programs when conducting routine measurements.

- **Excellent Optical Performance**

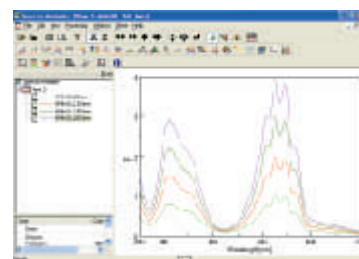
Recent advances in optical technology have been utilized to provide excellent reliability and assure highly accurate results. High throughput optics combined with a modern electronic design provide excellent sensitivity and stability.

- **Full Line of Accessories**

A full complement of accessories is available to optimize the V-650 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 allow full control by the iRM or Spectra Manager II.



Spectra Manager II (Spectra measurement)



Spectra Manager II (Spectra Analysis)



Hardware Specifications

Optical system	Single monochromator, 1200 lines/mm plane grating, Czerny-Turner mount, Double-beam
Light source	Deuterium lamp: 190 to 350 nm Halogen lamp: 330 to 900 nm
Light source exchange wavelength	User-selectable in the range of 330 to 350 nm
Detector	Photomultiplier tube
Wavelength range	190 to 900 nm
Wavelength accuracy	±0.2 nm (using a spectral bandwidth of 0.5 nm; wavelength: 656.1 nm; stabilized room temperature)
Wavelength repeatability	±0.05 nm
Scanning speed	10 - 4000 nm/min (8000 nm/min in preview mode)
Slew speed	12,000 nm/min
Spectral bandwidth	0.1, 0.2, 0.5, 1, 2, 5, 10 nm L2, L5, L10 nm (low stray-light mode) M1, M2 nm (micro-cell mode)
Photometric range	0 to 10000 %T -2 to 4 Abs
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)

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 (V-650 PC Type)

Description	Qty	Remarks
V-650 UV-Vis Spectrophotometer	1	
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	



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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 ₂ 50 g/L aqueous solution) 0.005 % (370 nm NaNO ₂ 50 g/L aqueous solution) (spectral bandwidth: L2 nm, 10 mm cell)
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: 2nm)
Baseline flatness	±0.0003 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 [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) 27 kg

iRM-700 Intelligent Remote Module

Display	320 x 240 pixel color LCD Touch sensitive screen
Measurement mode	Quantitative analysis Wavelength scan Time scan Fixed wavelength Abs/%T monitor
Data processing	Scale change, Zoom, Trace, Peak picking, Peak ratio, Ratio of 2 WL, Derivatives, Smoothing, Arithmetic, Overlay
Other standard functions	Instrument validation, Enzyme activity calculation
Data handling	Data format: JASCO format (.jws), text format (ASCII.txt) Auto print Auto save (to flash memory)
Printer	USB compatible printer (optional)
Card slot	Compact flash memory card/flash ATA card

Standard Composition (V-650 iRM Type)

Description	Qty	Remarks
V-650 UV-Vis Spectrophotometer	1	
Intelligent remote module (iRM)	1	
iRM touch pen	1	
Compact flash memory card	1	
Card adapter	1	
Holmium glass	1	Bi-functional Holmium glass holder/shielding plate
Time-delay fuse	2	
AC power cable	1	
Phillips screw driver	1	For adjustment of the light source mirror
Certificate of inspection	1	
Instruction manual	1 set	

● Specifications are subject to change without notice.



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