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Specification Sheet

UV-3600i Plus
UV-VIS-NIR Spectrophotometer

This model includes a photomultiplier tube detector for the ultraviolet-to-visible light region and InGaAs and cooled PbS detectors for the near-infrared region.
That ensures high sensitivity across the entire measurement wavelength range by using an InGaAs detector for detection where sensitivity drops in the area where detection switches from the PMT detector to the PbS detector in conventional models.

Leading the Way to New Solutions

Hardware Specifications

Item	Specification
Wavelength range	185 to 3,300 nm
Spectral bandwidth	UV/VIS 0.1, 0.2, 0.5, 1, 2, 3, 5, 8 nm (8-step switcheable) NIR 0.2, 0.5, 1, 2, 3, 5, 8, 12, 20, 32 nm (10-step switcheable)
Wavelength setting	0.1 nm increments (1 nm increments when setting scanning range)
Wavelength sampling pitch	0.01 nm
Wavelength accuracy	UV/VIS: ±0.2 nm, NIR: ±0.8 nm
Wavelength repeatability	UV/VIS: Within ±0.08 nm , NIR: Within ±0.32 nm
Wavelength scanning speed	Wavelength transfer: UV/VIS: Approx.18,000 nm/min NIR: Approx.70,000 nm/min Wavelength scan rate: UV/VIS: Max Approx.4,500 nm/min NIR PMT/InGaAs: Max Approx. 9,000 nm/min NIR PbS: Max Approx. 4,000 nm/min
Lamp interchange wavelength	Auto switching synchronized with wavelength; switching range selectable between 282 and 393 nm (0.1 nm increments)
Stray light	0.00008% or less (220 nm, NaI) 0.00005% or less (340 nm, $NaNO_2$) 0.0005% or less (1,420 nm, H_2O) 0.005% or less (2,365 nm, $CHCl_3$)
Photometric system	Double beam optics
Photometric range	-6 to 6 Abs (Display range ±6 Abs, ±10^8%)
Photometric accuracy	±0.002 Abs (0.5 Abs) ±0.003 Abs (1.0 Abs) Measured using NIST930/NIST1930 or equivalent filter

Item	Specification
Photometric repeatability	±0.0008 Abs or less (0.5 Abs) ±0.0016 Abs or less (1 Abs)
Baseline stability	0.0002 Abs/h or less (500 nm) 2 hour after light source is turned ON
Baseline flatness	Within ±0.004 Abs (185 to 200 nm) Within ±0.001 Abs (200 to 3,000 nm) Within ±0.005 Abs (3,000 nm to 3,300 nm) 2 hour after light source is turned ON
Noise level	0.00005 Abs or less (500 nm) 0.00008 Abs or less (900 nm) 0.00003 Abs or less (1,500 nm)
Light source	50 W halogen lamp, deuterium lamp Light source auto position adjustment built in
Monochromator	High performance blazed holographic grating Grating type double monochromator Pre-monochrome: Concave grating spectrometer Main monochrome: Czerny–Turner mount with aberration correction
Detector	UV/VIS: Photomultiplier tube NIR: InGaAs photodiode Cooled PbS Photomultiplier
Sample compartment	Internal dimensions: W 150 x D 260 x H 140 mm Distance between light beams: 100 mm
Power requirements	AC 100 V to 240 V , 50/60 Hz, 300 VA
Operating temperature/humidity	15°C to 35°C 35 to 80% (no condensation, less than 70% above 30°C)
Dimensions	W 1,020 x D 660 x H 286 mm
Weight	96 kg

Software Specifications
LabSolutions™ UV-Vis

Measurement Modes	Spectrum, quantitation, photometric, and time course
General	• Save data files, parameter files, and template files. • Retain history of changes to data files and parameter files. • Manage sample information (sample name, sample ID, comments, etc.). • Specify all sample information settings before measurements. • Control automatically from external application. • Real-time display of wavelength, photometric value, and concentration values • Graph settings (line type, line color, etc.) • Adjust graph scale or use auto-scale. • Automatically send measurement data to Excel® spreadsheet. • Automatically output measurement data in text format.
Spectrum Mode	• Automatically analyze data after measurements (evaluation function, peak detection, extract photometric value for specified wavelength, calculate area, correction, and conversion). • Automatically print report after measurements. • Overlay spectral waveforms. • Analysis and pass/fail judgment using spectral evaluation function • Data processing (detect peaks, extract photometric value of specified wavelength, calculate area) • Correction (dilution factor correction, optical path length correction, etc.) • Conversion (smoothing, differentiation, etc.) • Specialized analysis (color calculation, film thickness calculation, solar reflectance calculation, UPF calculation)* • Output text for multiple spectra in matrix format.
Quantitation Mode	• Quantitation for specified wavelengths (one wavelength, difference between two wavelengths, ratio of two wavelengths, three wavelengths) • Quantitation based on maximum/minimum spectrum value • Single-point calibration curve, multi-point calibration curve, K-factor method • Calibration curve method (first to fourth-order equations) • Correct dilution factor for each sample. • Specify weighting factors for each sample (standard samples). • Concentration value pass/fail judgment • Perform repeated measurements. • Remeasure

Photometric Mode	• Measure fixed wavelength or range (max./min. value). • Correct dilution factor for each sample. • User-defined calculation formulas (polynomial) • Calculation formula pass/fail judgment • Perform repeated measurements. • Remeasure
Time Course Mode	• Automatically print report after measurements. • Measure at one wavelength or two wavelengths. • Pause and resume • Overlay time course waveforms. • Data processing (activity value or total change) • Conversion (smoothing, differentiation, etc.)
Reports	• Freely specify report layouts. • Save report template files. • Automatically print report after measurements. • Print with single-click in data analysis window. • Insert graphs or data processing results. • Insert metadata, such as measurement parameters or data summary.
Optional Products	• Automatic analysis application* • UVProbe file viewer
Configuration Settings	• Set number of decimal places displayed. • Set format for displaying data. • System log management • Set regulation value for output folders.
ER/ES Regulations*	• Manage data in a database. • Manage user privileges. • Input reasons for changing data files and parameter files. • Data integrity support (report set function and analysis sequence management function)

* Requires separate purchase of optional software.

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The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct.
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