DOUBLE BEAM UV VISIBLE SPECTROPHOTOMETER BHV1E1 (BSDBU-301)

DOUBLE BEAM UV VISIBLE SPECTROPHOTOMETER BHV1E1

SPECTROPHOTOMETER
It is an advanced double beam design consisting of 3 models.
The two detectors measure sample and reference respectively and simultaneously for optimizing measurement accuracy.
They provide excellent performance for measurements in the range of 190 to 1100 nm, the memory is 32K. They are suitable for pharmaceutical, biochemical and clinical lab applications as well as routine applications such as quantitative analysis, kinetics, wavelength scan, multiple components and DNA/Protein. PC Windows application software makes these instruments versatile. All instruments provide excellent performance for measurements.

Fixed or variable slits (Bandwidths).
For stand-alone models, all software methods are included as built-in standard; this eliminates the need of software.
Online software upgrading via the internet helps to keep it updated.
Data Download-to-PC software expands the data storage to unlimited.
The stand-alone model has a 5-inch screen and the PC model has UV-Vis Analyst software.
Data can be saved by a USB memory device directly.
Stand-alone models of UV-6 Series have the same functions as UV-3 series; see next page for details.
Brief Introduction:
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SPECIFICATIONS

Model	BHV1E1
Old Model	BSDBU-301
Wavelength Range	190-1100 nm
Spectral Bandwidth	1.8 nm
Optical System	Double Beam, Grating 1200 lines/mm
Wavelength Accuracy	±0.3 nm
Wavelength Repeatability	0.2 nm
Scan Speed	Hi, MED., LOW., MAX. 3000 nm/min
Photometric Accuracy	±0.3 %T or ±0.003A @1A
Photometric Range	0-200%T,-0.3-3A
Stray Light	0.04%T @220 nm, 360 nm
Stability	0.0003 A/h @500 nm
Display	5 inches LCD (320x240 dots)
Baseline Flatness	±0.0005 A
Standard Cell Holder	Standard 10 mm single cell holder (2 pcs)
Sample Compartment	Standard 10 mm pathlength cuvette
Light Source	Tungsten & Deuterium lamp (Pre-aligned)
USB Type A Port	USB Type A for USB memory device (Right side)
USB Type B Port	USB Type B for optional computer connectivity (Back)
Output Parallel Port	Parallel port for printer
Power Requirement	AC 110/220 V 50/60 Hz
Dimensions (LxWxH)	589x428x200 mm
Weight	22 kg
Alt Name	Double Beam Spectrophotometer

ACCESSORIES FOR PURCHASE

No	name
1	Micro Cell Holder (Beam height: 15mm)
2	8-Position Auto Cell Changer
3	4-Cell Holder for 10mm SQU.cuvette
4	4-Cell Holder for 50mm SQU.cuvette
5	4-Cell Holder for 100mm SQU.cuvette
6	Square Cuvettes Glass :10 mm
7	20 mm
8	30 mm
9	50 mm
10	100 mm
11	Square cuvettes Quartz:10 mm
12	20 mm
13	30 mm
14	50 mm
15	100 mm
16	Micro cell, Quartz (Beam height: 15mm) 100UL
17	200UL
18	500UL
19	Sipper System
20	Constant-Temperature System
21	Constant-Temperature Sipper System
22	Test Tube Holder
23	Cylindrical Cell Holder
24	Solid Sample Holder (Single Cell)
25	Water-Jacketed Cell Holder
26	10mm Water-Jacketed 4-Cell Holder
27	Milas Deuterium Lamp
28	Halogen Lamp(Philips)
29	Halogen Lamp(Philips)
30	Halogen Lamp(Osram)
31	Self Masking Cont. Flowthrough G.Cell (Beam height: 15mm) 5mm
32	10mm
33	20mm
34	30mm
35	Self Masking Cont. Flowthrough Q. Cell (Beam height: 15mm) 5mm
36	10mm
37	20mm
38	30mm

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39	Thermal Printer

FEATURES

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Online software upgrading via the internet helps to keep it updated.
Data Download-to-PC software expands the data storage to unlimited.
The stand-alone model has a 5-inch screen and the PC model has UV-Vis Analyst software.
Data can be saved by a USB memory device directly.
Stand-alone models of UV-6 Series have the same functions as UV-3 series; see next page for details.

Brief Introduction:
All methods are included as built-in standard; this eliminates the need for software. Online software update via the internet.
The local control software includes functions such as: Photometry, Quantitative, Wavelength Scan, Kinetics, DNA/Protein, Multi-wavelength Test and System Utilities.


Standard Curve:
Up to 10 standard solutions may be used to establish a calibration equation curve. There is a choice of four methods for fitting curves through the calibration points: Linear fit, Linear fit through zero, square fit and cubic fit.
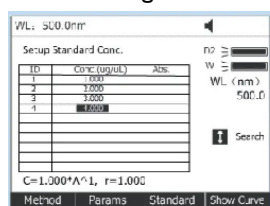
Multi-Wavelength:

Up to 10 wavelengths may be entered, allowing the measurement of multiple wavelengths on a series of samples.
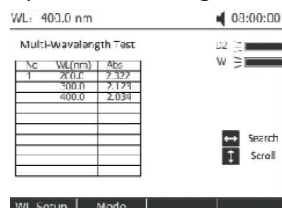
Wavelength Scan:

The Wavelength Scan intervals are 0.1, 0.2, 0.5, 1, 2, 5 nm, and High, Medium and Low scan speeds are available. Scan speeds vary from 100 to 3000 nm/min. Wavelengths are scanned from high to low so that the instrument stands-by at high wavelength. This minimizes the degradation of UV sensitive samples. Precise control of filter and lamp changes means that their effects are not seen on the final scan. Post-run manipulation includes re-scaling axes, curve tracking and peak picking.
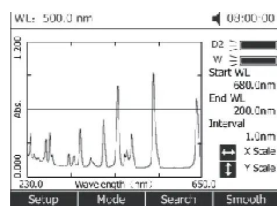
Kinetics:

This mode may be used for scanning time courses or reacting rate calculations. Abs. VS Time graphs are displayed on the screen in real time.

Wait time and measurement time up to 12 hours may be entered with time intervals of 0.5, 1, 2, 5, 10, 30 seconds and 1 min. Post-run manipulation includes re-scaling, curve tracking and selection of the part of the curve required for the rate calculation. Rate is calculated using a linear regression algorithm before multiplying by the entered factor.
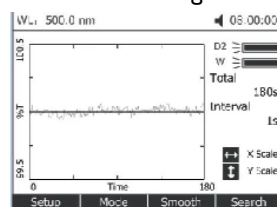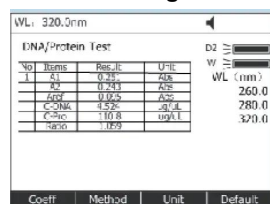

DNA/Protein Test:

Concentration and DNA purity are calculated by Absorbance ratios 260 nm/280 nm or 260 nm/230 nm with optional subtracted absorbance at 320 nm.

DNA Concentration = $62.9A_{260} - 36.0A_{280}$ or $49.1A_{260} - 3.48A_{230}$

Protein Concentration = $1552A_{260} - 757.3A_{280}$ or $183A_{220} - 75.8A_{230}$

Other wavelengths and factors may be entered.

UV Analyst PC-Control Software:

The PC application software offers:
Photometric Mode
Quantitative test (Standard curve)
Wavelength Scan
Kinetics

DNA/Protein
Multi-Wavelength
System Utility
The PC application software UV-Vis Analyst takes the best features of the stand-alone version plus more powerful data processing, expanded data collecting, and storage capability. It comes standard with UV3/6 series PC models and is optional to stand-alone models.

Quantitative Test (Standard curve):
Use up to 20 standards to establish a standard curve. Four methods for fitting a curve:
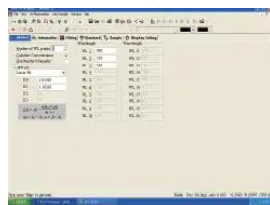Linear fit.
Linear through zero.
Square fit.
Cubic fit.

Multi-wavelength:
Up to 20 wavelengths can be selected and multiple samples can be measured. (Auto cell changer is required to run multiple samples automatically)
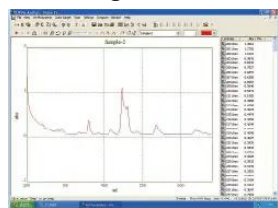

Wavelength Scan:
Automatically record peaks and valleys. The quantity of channels is unlimited; you can simultaneously store as many as desired.
Post-run manipulation and processing includes:
Re-scaling axes, curve.
1 to 4 derivative.
Smoothing, combination, zooming, overlap.

Kinetics (Abs. VS Time):
The Kinetics mode may be used for scanning time courses or reacting rate calculations. Abs. VS Time graphs are displayed on the screen in real time. Wait time, measurement time and time intervals may be entered.
Post-run manipulation includes re-scaling, curve tracking and selection of the part of the curve required for the rate calculation. Rate is calculated using a linear regression algorithm before multiplying by the entered factor.
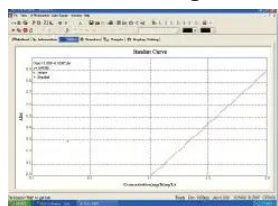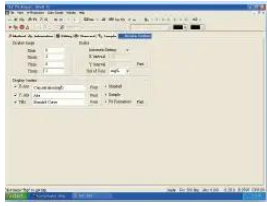
DNA/Protein:

Concentration and DNA purity are quickly and easily calculated:

Absorbance ratios 260 nm/280 nm with optional subtracted absorbance at 320 nm.

DNA Concentration = $62.9A_{260} - 36.0A_{280}$

Protein Concentration = $1552A_{260} - 757.3A_{280}$

Other wavelengths and factors may be entered.