

SPECTROPHOTOMETERS

BOECO SPECTROPHOTOMETER MODELS S-200 VIS & S-220 UV/VIS

The BOECO S-220 (UV/VIS) and S-200 (VIS) are high quality, compact, low cost measurement systems for daily analysis in education, QC and basic research.

» Compact single beam optics with full range scanning

The single beam optics are compact and bench space saving. The long life Hamamatsu Xenon lamp optics in the S-220 ensure quick and reliable performance and the Tungsten Halogen lamp used in S-200 also provide a reliable measurement.

» Color touch screen operation

The intuitive color touch screen operation provides simple access to an extensive range of functions. The touch screen is sensitive to stylus and laboratory gloves. Icon driven on-board software improves accessibility and the graphical display allows spectrum or standard curve to be shown on the screen. The forward and back quick key allows the user to proceed or swiftly return to the process. An enlarged data display for photometry measurement makes result reading easier.

» Various measurement modes

Operation modes include photometric, multiple wavelength analysis, spectrum scanning, time scan and kinetics; direct concentration results are included.

» Optional accessories

A variety of accessories are included such as test tube holder, flow cell with sipper, temperature control holder, long path length cuvette holder & multiple cell holder are available to enhance different application needs.

» Storage and data output

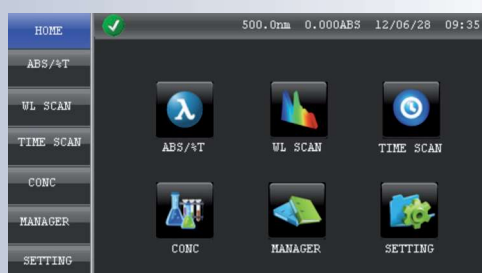
External storage with SD card and free downloadable PC Software MasterReport (www.boeco.com) allows data export to PC in compatible text or spreadsheet format for further data processing in the PC. Method and result storage is almost unlimited by exchanging SD card when needed. Printer options are available for direct result printing with graphics.

» Validation function

To ensure optimum instrument performance, self diagnosis functions are equipped in GLP/GMP feature for performance validation and auditing.



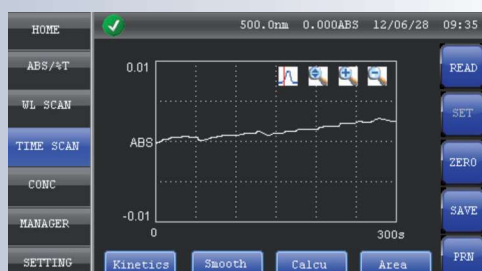
S-200
S-220



MAIN MENUE



LARGE DISPLAY MEASURE



TIME SCAN RESULTS AND DATA
PROCESSING

Code	Description
BOE 8620000	Model S-200 Vis Spectrophotometer, single beam with full range scanning and color touch screen operation. Supplied with 10 x 10 mm cuvette holder
BOE 8622000	Model S-220 UV/Vis Spectrophotometer, single beam with full range scanning and color touch screen operation. Supplied with 10 x 10 mm cuvette holder

Specification**S-200 Vis****S-220 UV/Vis**

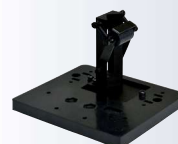
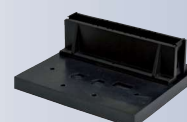
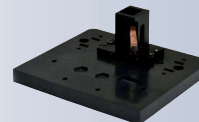
Wavelength Range:	320 to 1100nm	190 to 1000nm
Spectral Bandwidth:	6nm	5nm
Transmittance accuracy:	±0,5% T (NIST 930 Filter)	±1% T (NIST 930 Filter)
Transmittance repeatability:	0.2% T	0.5% T
Baseline flatness:	± 0.002 Abs (330-1090nm)	± 0.005 Abs (200-990nm)
Noise level:	≤ 0.001 Abs (500nm)	≤ 0.005 Abs (250 nm)
Baseline stability:	≤ 0.001 Abs/h (500nm) (after 2 hours warm up)	≤ 0.005 Abs/h (250nm) (after 2 hours warm up)
Stray light:	≤ 0.5% T	≤ 0.5% T
Wavelength controlled variable:	0.2nm	0,2nm
Wavelength accuracy:	± 1nm	± 2nm
Wavelength repeatability:	≤ 0,5nm	≤ 1nm
Wavelength scan speed:	2400nm/min (0,2 sampling interval without filter)	300nm/min (0,2 sampling interval without filter)
Wavelength move speed:	to any specified position within 1sec.	to any specified position within 1sec.
Absorbance:	-0.3 to 1.999	-0.3 to 1.999
Transmittance:	0 to 199.9%	0 to 199.9%
Spectrum Scanning:	Yes	Yes
Concentration:	-300 to 1999	-300 to 1999
Selectable Resolution:	1, 0.1, 0.01 or 0.001	1, 0.1, 0.01 or 0.001
Light source:	Tungsten Halogen lamp	pulsed-Xenon lamp
Detector:	Silicon photodiode	
Display screen:	4,3 inches colorful touch LCD screen	
Printer:	specified 80-column thermal printer (series port)	
Metering mode:	Single beam	
Memory:	SD card storage	
Time Scan:	Graphical and calculated concentration value	
Analysis:	Absorbance and wavelength of peaks and valleys	
GLP:	Real time clock and calendar, Self Diagnosis	
Size:	400 (W) x 280 (D) x 160 (H) mm	
Power requirement:	AC, 100-240V, 50/60Hz	
Power consumption:	100VA	
Communication ports:	Serial printer port connects thermal printer USB port connects PC	
	SD card port saves data and measurement methods	
	Accessories port connects and controls serval options	
Weight:	4,7 kg	

Accessories

Code	Description
BOE 8620005	Test tube holder (only for S-200)
BOE 8622004	Rectangular long-path cuvette holder for cuvettes with 10, 20, 30, 50 and 100 mm path-length
BOE 8620003	Micro-cuvette holder, for cuvettes with centre height of 15 mm
BOE 8620020	Flow cuvette holder, incl. quartz glass flow cuvette of 150 µl
BOE 8620030	Set of Auto sample sipper and Flow cuvette holder with quartz glass flow cuvette of 150 µl
BOE 8622040	Electronic thermostat (Peltier element) TC cuvette holder (only for S-220, S-300)
BOE 8620050	Automatic 5 position cuvette holder
BOE 8620060	Thermo printer with 100V-240V AC power supply
BOE 8620001	Tungsten halogen lamp (S-200)
BOE 8622001	Xenon Lamp module (S-220, S-300)

BOE 8622070 UV DETECTIVE software to control and operate the spectrophotometer on a PC. The versatile software can control all spectrophotometer operations such as photometry, wavelength scans, time scans and more.

Further functions include storage of methods programs, saving of numerical and graphical data, downstream data processing, data transfer to commercial spreadsheets such as Excel® and report generation.

**TEST TUBE HOLDER****LONG PATH
CUVETTE HOLDER****5-PLACE AUTO
SAMPLE HOLDER****ELECTRONIC THERMOSTAT
HOLDER****FLOW CUVETTE HOLDER****SAMPLE SIPPER****THERMO PRINTER****MICRO CUVETTE HOLDER**



S-300

BOECO LIFE SCIENCE SPECTROPHOTOMETER MODEL S-300

The BOECO S-300 life science spectrophotometer allows measurement of nucleic acid concentrations and purity (using ratio function) including protein concentrations. As a high quality spectrophotometer, the S-300 features touch screen operation packaged as a lightweight system with a compact footprint for life science and education related applications.

» Life Science Programs

The S-300 contains onboard functions for the quantification of nucleic acid, including dsDNA, ssDNA, RNA and Oligonucleotides. The purity of the nucleic acid can also be determined with the ratio A260/A280 calculation. Protein concentrations can be measured from a range of colourimetric assays such as Bradford, Lowry, Biuret and BCA. Standard calibration data and curves can also be displayed. Furthermore, proteins can be quantified at 280nm. Bacterial cell density at 600nm can also be measured under the OD600 cell culture optical density function. It can define a bacterial culture in exponential growth phase and at the most appropriate time for harvest or induction.

» Compact Optics with Full Range Scanning

The single beam optics are compact resulting in significant bench space saving. The long life Hamamatsu Xenon lamp optics system in the S-300 ensures quick and reliable performance.

» Color Touch Screen Operation

The intuitive color touch screen provides simple access to an extensive range of function. The touch screen is sensitive to stylus or hands (with and without gloves). Icon driven on board software improves accessibility and the quick action keys are another convenience feature.

» Various measurement modes

In addition to the Lifescience program, the S-300 also features conventional spectrophotometer functions such as single/ multiple wavelength analysis, spectrum scanning, kinetics and concentration measurement.

» Optional accessories

A various selection of optional accessories is available such as flow cell with sipper, temperature control holder, long path length cuvette holder & multiple cell holder to enhance different application needs.

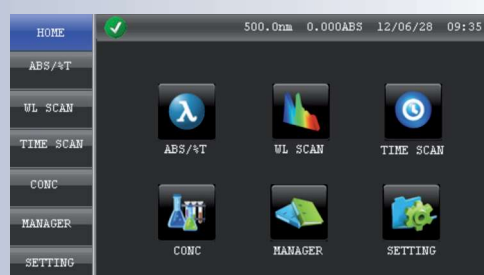
» Storage and data output

External storage with SD card allows data export to PC in compatible text or spreadsheet format. Free downloadable PC Software MasterReport (www.boeco.com) allows data export to PC in compatible text or spreadsheet format for further data processing in the PC.

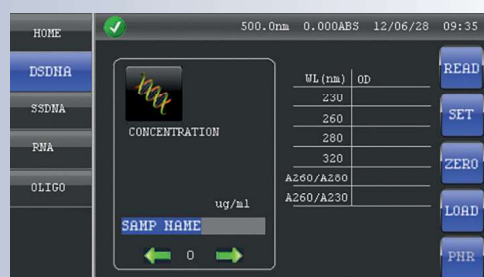
Method and result storage is almost unlimited by exchanging SD card when needed. Printer options are available for direct result printing with graphics.

» Validation function

To ensure optimum instrument performance, self diagnosis functions are equipped in GLP/GMP feature for performance validation and auditing.



MAIN MENU



Code

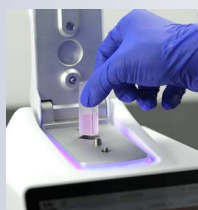
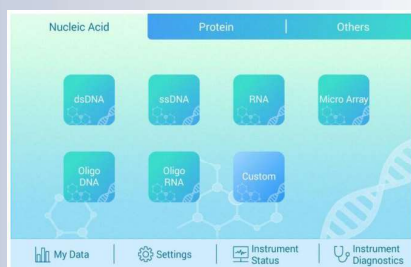
BOE 8630000

Description

Model S-300 UV/Vis Life Science Spectrophotometer, single beam with full range scanning and color touch screen operation. Supplied with installed micro cuvette holder (centre height 15 mm) and with optional 10 x 10 mm cuvette holder and sample pack of 8 pcs. disposable UV Micro Cuvettes

Specification

Wavelength Range:	S-300 UV/Vis 190 to 1000nm
Wavelength Resolution:	0.2nm
Spectral Bandwidth:	5nm
Transmittance accuracy:	±1% T (NIST 930 Filter)
Transmittance repeatability:	0.50% T
Detection limit Concentration:	dsDNA 1.5 - 100µh/ml (for 100µl cell)
Noise level:	0.005 Abs (at 250 nm)
Stray light:	≤ 0.5% T at 220, 340 nm
Wavelength accuracy:	± 2nm
Wavelength repeatability:	≤ 1nm
Absorbance:	-0.3 to 1.999
Transmittance:	0 to 199.9%
Spectrum Scanning:	Yes
Concentration:	0 to 1999
Light source:	pulsed-Xenon lamp
Detector:	Silicon photodiode
Display screen:	4,3 inches colorful touch LCD screen
Printer:	specified 80-column thermal printer (series port)
Metering mode:	Single beam
Memory:	SD card storage
Time Scan:	Graphical and calculated reaction activity
Wavelegth Scan Analysis:	Absorbance and wavelength of peaks and valleys
GLP:	Real time clock and calendar, Self Diagnosis
Size:	400 (W) x 280 (D) x160 (H) mm
Power requirement:	AC, 100-240V, 50/60Hz
Power consumption:	100VA
Communication ports:	Serial printer port connects thermal printer USB port connects PC SD card port saves data and measurement methods Accessories port connects and controls serval options
Weight:	4,7 kg



BOECO MICRO UV-VIS SPECTROPHOTOMETER MODELS N-1 TOUCH & N-1C TOUCH

The BOECO N-1 / N-1C Touch Micro volume (UV-Vis) spectrophotometers with built-in 7-inch color touch screen, can complete all detection functions without connecting a computer, display test results in real time, store historical data, and export to a computer. The Android operating system, optimized for the touch operation habits, improves the operating feelings. The integrated design and compact size are ideal to save the space in the crowded laboratories, or as the in-vehicle mobile inspection device. It can be applied to the concentration detection of nucleic acids, proteins, bacterial cell cultures, etc., as well as the absorbance measurement of unknown samples.

The variable path length of the N-1C Touch Micro UV-Vis Spectrophotometer realizes both the minimum sample volume pedestal detection as low as 0.5µL, suitable for precious samples, and the detection to the high concentration samples without dilution at all. Including the liquid drop, it builds in the standard cuvette detection module for more use.

Features

Large size colour touch screen

Built-in-7-inch high resolution color touch screen for more detection information, all operations can be done on the screen.

Two models in one (N-1C Touch)

Pedestal Micro volume or cuvette mode, to meet the flexible detection need. The cuvette module has a heating stirrer.

Wide detection range

The 0.03 minimum detection path length, combined with a new generation spectrophotometer, increases the maximum detection concentration to 27,500 ng/µl and the lowest detection concentration as low as 0,2 ng/µl

Stability for long life

Long-life xenon flash lamp of Hamamatsu ensures stability of detection and the long life of the instrument.

The lifting detection base with sliding bearing structure has high precision, not easy to damage.

Ultra-wide wavelength range

With continuous wavelength range as 185-910nm, the instrument can detect various samples through selecting any band. It adapts to a variety of detection requirements with wide range of near infrared wavelength.

Accurate path length

The stepper motor combined unique double track technology (DPTL), allows the precision of optical path length as 0.001mm, thus to achieve highly repeatability of absorbance detection.

Cuvette detection mode (N-1C Touch)

The cuvette detection mode comes with magnetic stirring function. User can set the heating function and stirring speed for dynamic analysis detection.

And the user can define different path length, such as 1mm, 2mm, 5mm, 10mm.

Android operating system

The spectrophotometer has a built-in operating system and detection software, without need of a computer. Graphical touch operation is in line with user friendly design and improves work efficiency.

Light status

The lighting strip around the test stand flashes with different states to show the detection process straightforwardly

Multi-functions

Nucleic acid detection

Built-in common calculation formula of dsDNA, ssDNA, RNA, Oligo-DNA, Oligo-RNA, can get the concentration and purity of samples automatically.

UV visible custom scanning

In the full wavelength range, set the detected wavelength through increasing or decreasing wavelength with 1 nm as expected.

Nucleic acid fluorescence marker detection

Preinstall extinction factor of commonly used fluorescent dyes of dsDNA, ssDNA, RNA, Oligo-DNA, Oligo-RNA.

Protein detection

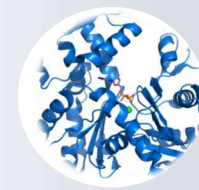
Can detect the concentration of protein solution, or detect protein concentration of dye marker. Built-in common detection methods of BCA, Bradford, Lowry, Pierce 660nm.

Cell detection

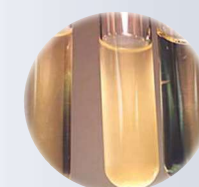
Can detect absorbance value at 600nm automatically. Meanwhile, it can detect absorbance value at any band under set wavelength range.



NUCLEIC ACID DETECTION



PROTEIN DETECTION



CELL DETECTION

Code	Description
BOE 8638000	Model N-1 Touch micro UV/Vis Spectrophotometer, with pedestal microvolume mode
BOE 8638100	Model N-1C Touch micro UV/Vis Spectrophotometer, with pedestal microvolume and cuvette mode

Research use only

Specification

Parameters	N-1C touch	N-1 touch
Detector		2048-element liner CCD array
Light Source		Xenon flash lamp
Mini.Sample Amount (μl)		0.5
Pathlength (mm)		0.03, 0.05, 0.1, 0.2, 1.0 auto ranging
Wavelength Range (nm)		185-910
Wavelength Accuracy (nm)		±1
Spectral Resolution (nm)		≤1.8(FWHM at Hg 253.7nm)
Photometric Accuracy		0-550 (10 mm equivalent)
Measurement Repeatability		0.002 (1mm optical length)
Limit of Detection		Pedestal: 2ng/μl ds DNA, 0.006 mg/ml BSA, 0.03 ng/ml IgG
Maximum Concentration		Pedestal: 27.500 ng/μl ds DNA, 820ml/ml BSA, 400 mg/ml Lg
Limit of Detection		2ng/μl dsDNA
Measurement Time		5 Sec.
Cuvette Mode	Heating Temp.(°C)	NA
	Cuvette Stirring Speed (RPM)	NA
	Cuvette photometric	NA
	Cuvette Limit of Detection	NA
		0.2ng/μl dsDNA, 0.006mg/ml BSA, 0.003 mg/ml LgG
Display		7 inch, 1280 x 800 high definition LCD
Internal storage		32GB flash memory
PC software requirements		Windows 7:32/64 bit, Windows 8/10 64 bit
Data transfer & PC connecting		USB, Wifi
Power		AC 110 V - 220 V, 50/60 Hz (Power adapter)
Net Weight		2,3 kg