SE100 Single-Beam Vis Spectrophotometer

Precision Measurement Made Simple

The SE100 Spectrophotometer is a reliable, easy-to-use analytical instrument designed for routine laboratory measurements in research, quality control, and educational environments. Combining accurate optical performance with intuitive operation, the SE100 delivers dependable absorbance and transmittance results across a wide wavelength range.

Optical & Measurement Performance

The SE100 utilizes a single-beam optical system designed to deliver reliable and consistent measurement performance for routine laboratory applications. At the core of the system is a precision 1200 lines/mm diffraction grating combined with a 16-bit high-resolution A/D converter, providing enhanced wavelength accuracy, excellent repeatability, and low noise characteristics. This optical configuration ensures stable signal processing and dependable results across repeated measurements.
A high-quality tungsten lamp serves as the light source, offering stable illumination throughout the visible and near-infrared spectrum. With a spectral bandwidth of 4 nm and a wavelength range spanning from 325 to 1050 nm, the system supports a wide variety of analytical tasks, from basic absorbance measurements to more advanced quantitative analysis. Wavelength accuracy of $\pm$1.5 nm, repeatability of $\leq$0.5 nm, and a wavelength resolution of 1 nm contribute to precise spectral positioning and reproducible data.

Photometric Performance

Designed for precise quantitative analysis, the SE100 supports a wide photometric range suitable for diverse laboratory needs. Absorbance measurements span from −0.3 to 3 A, transmittance from 0 to 200 %T, and concentration readings up to 1999 C. Photometric accuracy reaches $\pm$0.5 %T within the 0–100 %T range, with repeatability of $\pm$0.2 %T. Stray light is controlled to $\leq$0.2 %T at 360 nm, while system noise is maintained at $\leq$0.001 A at 500 nm to ensure stable and reproducible results.

Measurement Functions

The SE100 provides core analytical functions essential for routine spectrophotometric analysis. Absorbance mode allows accurate measurement of sample absorbance at a specified wavelength, while transmittance mode measures the percentage of light transmitted through the sample at a selected wavelength. When connected to a PC via USB, the instrument also supports spectrum scanning for expanded analytical capability.

Learn more at www.mpdscientific.com
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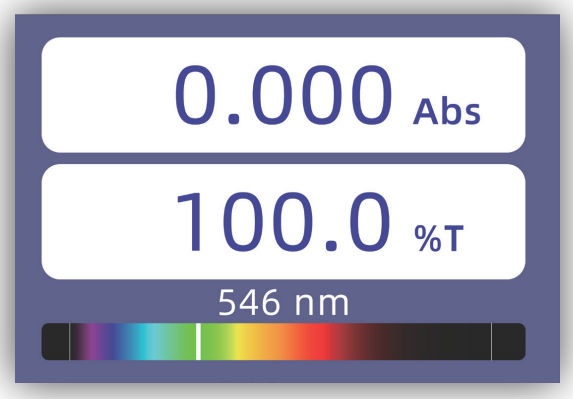
User Interface & Operation

The instrument features a high-resolution 3.5-inch TFT color LCD with a 480 × 320 display, providing clear and easy visualization of measurement results, wavelength settings, and system status. The bright color screen enhances readability and allows users to quickly review data and operating parameters, even in busy laboratory environments.

Operation is simplified through an intuitive menu structure and a rotary encoder that enables smooth, precise wavelength adjustment and menu navigation. Automatic blanking further streamlines routine workflows by reducing manual steps and improving measurement consistency. Together, these features minimize setup time and help ensure accurate results with each measurement.

Designed with user convenience in mind, the interface requires minimal training, making the instrument accessible to both experienced technicians and new users. Clear on-screen prompts and straightforward controls support efficient daily operation, helping laboratories maintain productivity while reducing the potential for operator error.

SE100 Interface



Standard Accessories

Each SE100 Spectrophotometer is supplied with the main instrument unit, an instruction manual, a US power cord, and a protective dust cover.

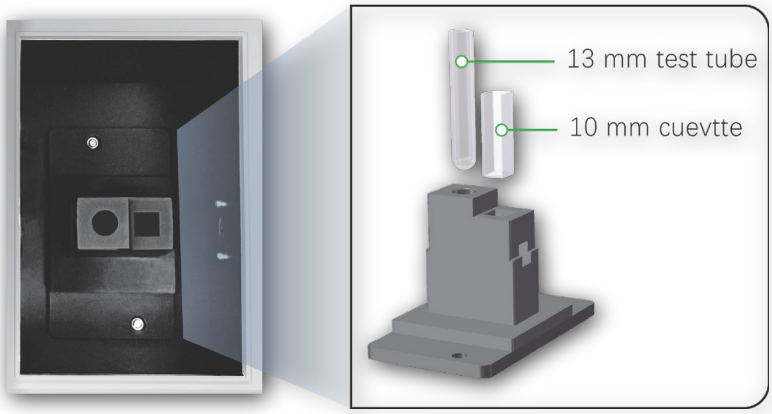
Sample Compartment

The SE100 features a wide and accessible sample compartment designed to accommodate a variety of sample containers and accessories. The standard configuration includes a combination 10 mm cuvette and 13 mm test tube sample holder, with compatibility for sample path lengths ranging from 5 to 100 mm, offering flexibility for different analytical applications.

Connectivity & Data Handling

The instrument supports USB-B connectivity for direct communication with a PC, enabling data transfer, spectrum scanning, and system control through compatible software. Measurement results can be output directly to a connected printer, and firmware upgrades can be performed online via USB to ensure long-term performance and functionality.

USB port



SE100 Sample Compartment

Specifications

Model	SE100
Optical system	Single beam, 1200/mm grating
Detector	Tungsten lamp
Spectral bandwidth	4 nm
Wavelength range	325–1050 nm
Wavelength accuracy	±1.5 nm
Wavelength repeatability	≤0.5 nm
Wavelength resolution	1 nm
Wavelength selection	Automatic
Wavelength calibration	Automatic calibration after power on
Photometric range	-0.3–3 A, 0–200 %T, 0–1999 C
Photometric accuracy	±0.5 %T (0–100 %T)
Photometric repeatability	±0.2 %T (0–100 %T)
Stray light	≤0.2 %T (360 nm)
Noise	≤0.001 A @ 500 nm
Sample holder	10 mm cuvette/13 mm test tube combination sample holder
Display	3.5 inch TFT color LCD screen (Resolution: 480×320)
Interface	USB-B×1 (PC)
Power supply	100–240V AC, 50–60Hz, 55W
Size	450 (W) ×360 (D) ×160 (H) mm
Weight	8 kg