

Distinguishing Features Of 400 Series Spectrophotometers

The 400 Series Spectrophotometers represent high performance, research grade instruments. Designed for precision analytical measurements and versatility, the 400 Series may very well be the last instrument you will ever purchase.

Here are just a few key features that distinguish the 400 Series Spectrophotometers;

Spectrograph

- The entire spectrograph is temperature stabilized for unprecedented precision and wavelength accuracy, a feature not available with lesser instruments.
- All optical components are sealed from ambient conditions thus preventing dust and harsh laboratory vapors from degrading performance.
- There are no moving parts within the spectrophotometer thus eliminating the need for service and realignment of optical components.

Detector

- The 400 Series instruments offer two detector options.
- The detector offered in the Model 410 and 420 spectrophotometers incorporate a 2,048 pixel CCD. While this detector is standard on our entry level instruments it is a premium upgrade on competing systems.
- The detector offered in the Model 430 and 440 spectrophotometers is a 3,648 pixel, high sensitivity, low noise CCD. None of the competing systems offer a CCD of this quality.

Sources

- The deuterium lamp used in all 400 Series instruments is a high output extreme stable source with a 2000 hour lifetime. This is twice the expected lifetime as lamps used in competing instruments.
- Lamp life is further extended in that the software only ignites the deuterium source when needed.

Shutters

- Optical shutters are used with all 400 Series light sources. This feature ensures accurate integration of both blank and dark current measurements. Competing instruments actually require the user to turn the lamp off for dark current measurements.
- The use of shutters also prevents unwanted heating and photo-degradation of light sensitive samples.
- Shutters also prevent solarization of optical fibers.

Software

- Intuitively integrated software control automates many features. Blank measurements, dark current corrections and integration times are automatically optimized and performed.
- Key features such as Peak Find, Kinetics, Timed Acquisition and Quantitation are included in the standard software package. There is no need for additional software.
- Data is completely exportable as both Excel and text formats.

Fiber Optics

- Only the highest quality, high OH, solarization resistant optical fibers are used in the 400 Series instruments.
- Unlike competing instruments, which demonstrate significant attenuation of light throughput during the first few months of operation, the 400 Series are free from solarization.
- Solarization typically occurs during the first ten hours of exposure. The optical shutters used to control exposure times limit exposures to approximately one second per measurement. As a result, solarization will not occur for 36,000 measurements.

Size

- The size and footprint of the 400 Series is extremely compact and therefore requires only minimal bench space. Unlike the modular systems offered by competitors, this results in less clutter and ease of use.