



# HR4000

## High Resolution Spectrometer

The HR4000 Spectrometer is a versatile high-resolution spectrometer. The HR4000 has a 3648-element CCD-array detector from Toshiba that enables optical resolution as precise as 0.02 nm (FWHM). The HR4000 is responsive from 200-1100 nm, but the specific range and resolution depend on your grating and entrance slit choices. This novel combination of optics and electronics is ideal for applications such as characterizing lasers, measuring gas absorbance, and determining atomic emission lines.





## At a Glance

Size: 148.6 mm x 104.8 mm x 45.1 mm

Weight: 570 g

Wavelength range: 200-1100 nm

Signal-to-noise ratio: 300:1 (at full signal)

Dynamic range:  $3.4 \times 10^6$  (system);  
1300:1 for a single acquisition

Integration time: 3.8 ms - 10 sec



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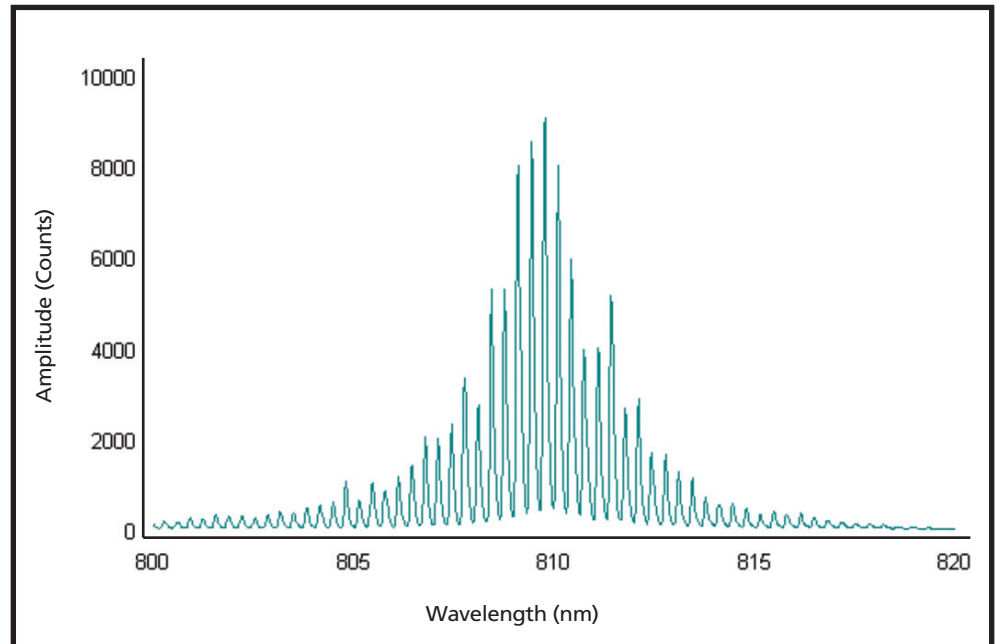
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## High Resolution. Rapid Response.

Thanks to its high-resolution performance and rapid response, the HR4000 is ideal for applications where closely aligned spectral features must be resolved and where high light levels may saturate detectors. Typical applications include characterization of laser wavelength, absorbance of gases and determination of atomic emission lines.

## Triggering Options

The HR4000 has triggering functions to provide accurate timing and synchronization between the spectrometer and other devices. Four low-jitter trigger modes and normal (free-running spectral acquisition) operating modes are possible. The HR4000 can be triggered so that sending the spectrometer a pulse causes it to do something such as a turn off or on a light, activate a laser or start or end spectral acquisition in the spectrometer.



HR series spectrometers are ideal for measuring spectral characteristics of lasers and light sources.

## Features

- Optical resolution of  $<0.5$  nm (FWHM)
- Ideal for laser characterization and high-resolution applications
- Built-to-suit wavelength range and optical resolution performance
- Triggering functions for synchronizing the spectrometer with other devices



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