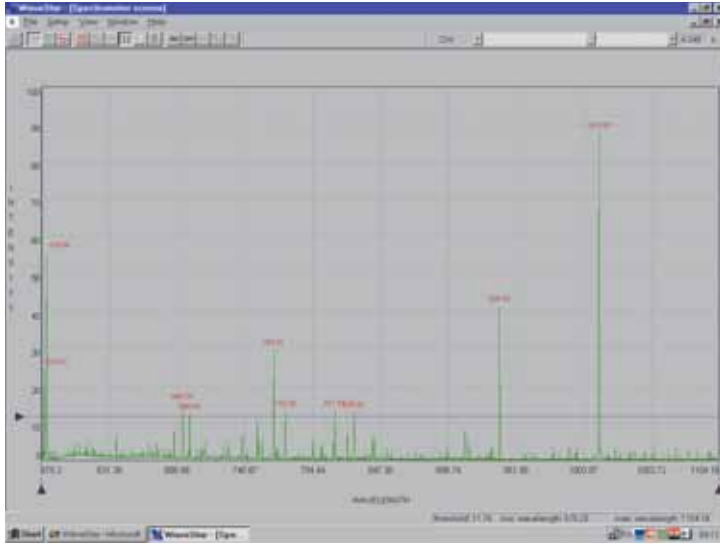


WaveStar

CCD Laser Spectrum Analyzer



- Unprecedented resolution for a CCD spectrometer - 0.5nm FWHM
- Automatically finds and tags peak wavelengths to 0.1nm accuracy
- Self-contained - plugs into parallel port - no PC card necessary
- WaveStar V 570 -1070nm, WaveStar U 360 -625nm
- Photodiode trigger to capture single shot events
- Complete set of fiber adapters and attenuators available
- True NIST traceable intensity vs. wavelength display
- Active X software included for controlling WaveStar from your software



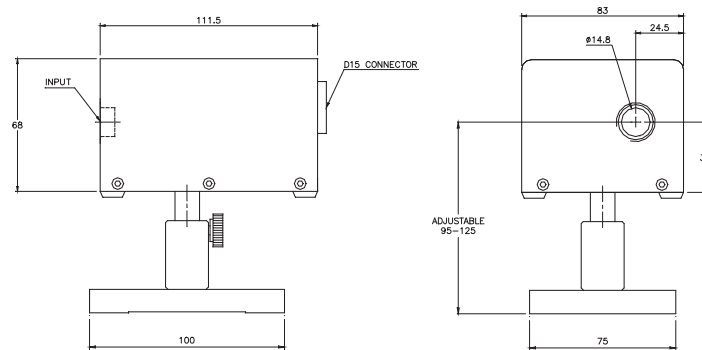
Laser Power & Energy

Heads



WaveStar with SMA fiber input

Displays



Beam Profile Wavelength

The Ophir WaveStar introduces a new level of accuracy and ease in spectral measurements. Just plug into your PC parallel port, install the software and easily and accurately measure spectra from a wide variety of sources including continuous and pulsed sources from microwatts to watts in intensity. The WaveStar program automatically tags the peaks with the wavelength so the result is readily available.

The WaveStar is available with interchangeable filters which together with the variable shutter speed allow you to easily and accurately measure any type of source from fractions of a microwatt to watts in intensity. Fiber adapters are available to connect to fiber sources. The WaveStar has up to four times higher resolution than similar competing instruments due to its innovative optical design (patent applied for). Its sophisticated peak interpolation algorithms allow you to find the peak wavelengths of lines at up to 10 times the accuracy of competing instruments and with greater ease. The built-in intensity calibration insures that the relative intensity vs. wavelength gives an accurate relative curve. This is especially important when measuring broadband sources such as lamps.

OEM Products

Specifications of WaveStar U and WaveStar V

Detector	3000 element CCD
Optics	Proprietary optical design
Spectral response	WaveStar-V 570 -1070nm WaveStar-U 360 -625nm
Wavelength resolution	FWHM 0.5nm
Wavelength peak detection	Proprietary algorithm interpolates pixels and tags peaks with the wavelength value to an accuracy of 0.1nm. The FWHM of each peak is also shown if desired.
Mounting thread	¼" threaded mounting hole
Intensity vs.wavelength	The intensity display is corrected for variations in system sensitivity with wavelength to give a relative intensity accuracy of ±10% over spectral region
Dimensions	80mm x 70mm x 100mm
Optional accessories	SMA fiber adapter, diffusers, ND filters
Connections to PC	Connects to standard parallel port via 3 meter cable. No hardware installation in PC necessary.
Trigger	Photodiode trigger allows capture of single shot events.
Minimum host system requirements	Pentium 200 32MB RAM 10MB HD free, Windows 2000, XP, 2MB 16bit color VGA card one free parallel port.
Performance with pulsed sources	Operates with continuous or pulsed sources at pulse rates from <1Hz up. Special trigger photodiode allows measurement of single pulse events.
Temperature dependence	0.025nm/degC

Examples of Software Features

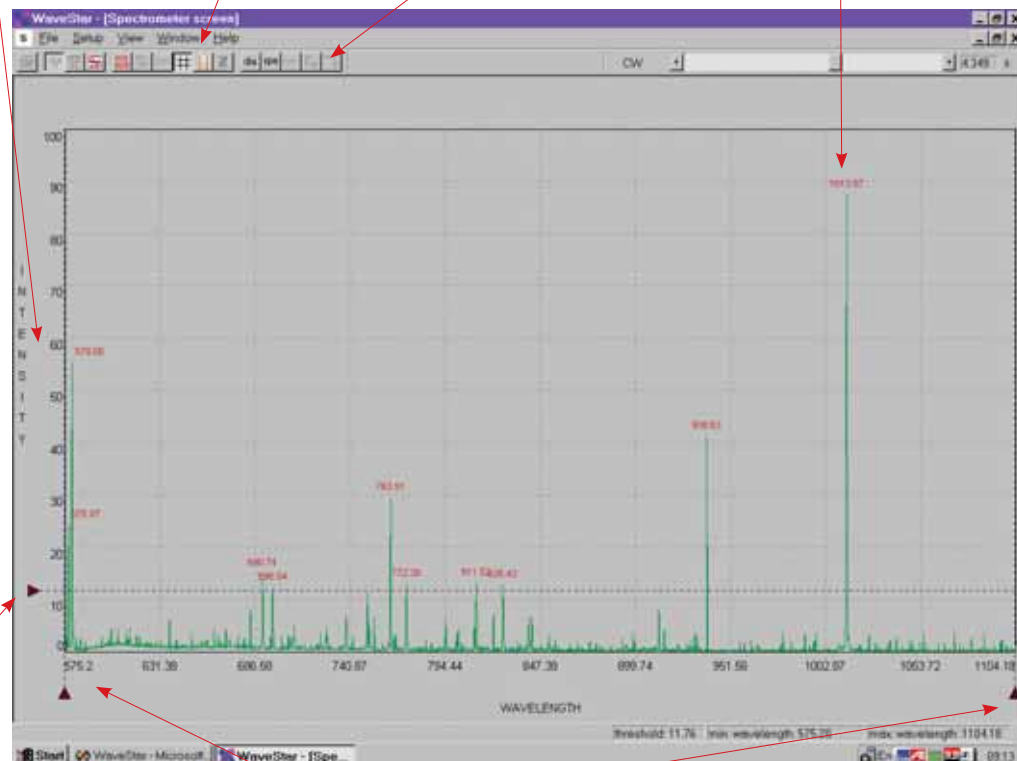
Intensity is corrected for variations in detector sensitivity so spectral curve intensity is proportionally correct

Zoom button blows up wavelength range selected with vertical bars below

Data log with time of peak wavelengths and FWHM

Continuously variable shutter speed from 28µs to 7.3s – a dynamic range of >100,000:1

Automatically tags all peaks with the center wavelength to an accuracy of ±0.1nm. Will show FWHM as well if desired

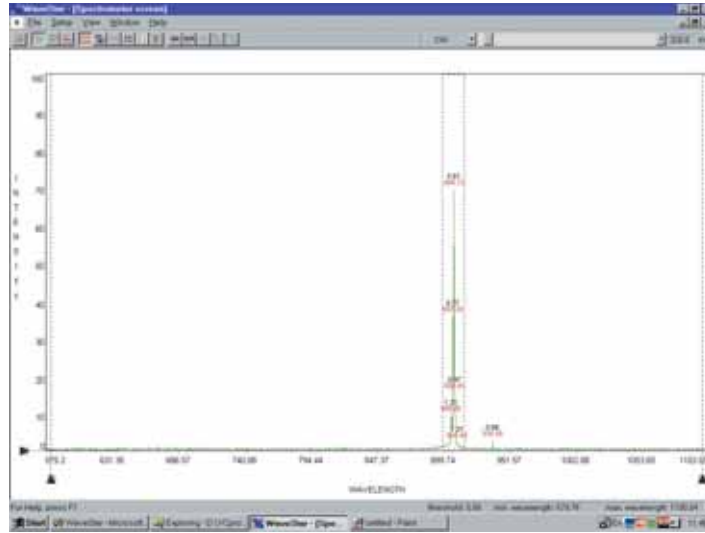


Horizontal bar determines threshold for displaying peak wavelength and FWHM so as not to clutter screen with unwanted data

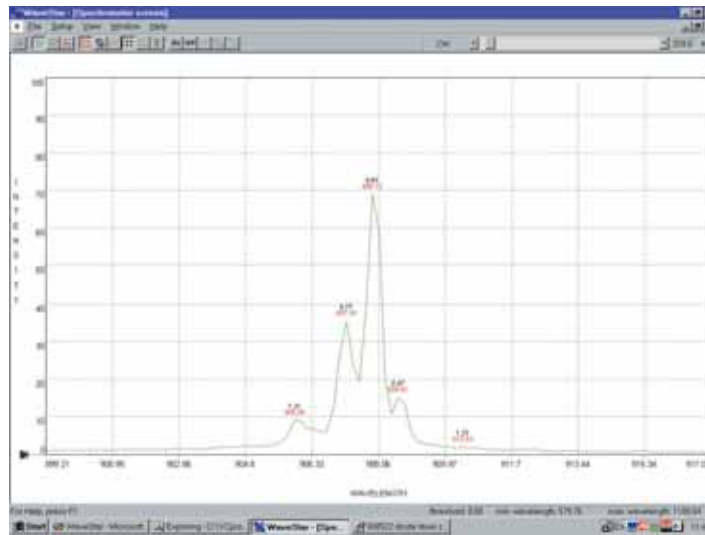
Vertical bars select wavelength region of interest for displaying wavelength and FWHM values and zooming with zoom button

Example of Expanded Wavelength Scale

The first screen shows the spectrum of a pulsed diode laser where the user has selected the region to zoom with the mouse. The second screen shows the zoomed picture from the selected region.



The screen below shows the zoomed region selected in the first screen. Note the resolution of the spectrometer, where the laser longitudinal modes spaced at 1nm intervals are clearly shown. In this view, the FWHM as well as the wavelength is displayed above each peak.



Ordering Information		
Item	Description	Ophir P/N
WaveStar V unit for 570-1070nm	Complete ready to install system including head, stand, cables, power supply and software. Not RoHS	1Z02550
WaveStar U unit for 360-625nm	Complete ready to install system including head, stand, cables, power supply and software. Not RoHS	1Z02551
Adapter for SMA fiber input to WaveStar	Adapter for SMA fiber input to WaveStar. For other adapters see page 163	1G01236
Lens assembly for focusing fiber input onto WaveStar slit	For weak signals (below ~100nW for narrow band source, more for broadband source) lens assembly to focus output onto slit. To be purchased together with SMA fiber adapter	1Z08205
Screw-on 50:1 filter for WaveStar	Screw-on filter for WaveStar with attenuation of between 50:1 and 200:1 depending on spectral range	1Z08201
Screw-on 10:1 filter for WaveStar	Screw-on filter for WaveStar with attenuation of between 10:1 and 20:1 depending on spectral range	1Z08200

Complete ready to install system including head, stand, cables, power supply and software. not RoHS.