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#### Imaging Spectrograph:

The TRIAX series use special corrective optics that maintain an excellent image quality and resolution along the length of the slit as well as along the dispersion axis in the exit focal plane. Thus, a point source on the entrance slit is re-imaged as a point for every occurrence of its wavelength in the focal plane. This makes TRIAX instruments the ideal spectrographs for a wide application range of high resolution multichannel spectroscopy.

#### Technical Specifications:

All TRIAX spectrographs have been optically optimized by using toroidal mirrors and an asymmetric optical path for superb exit imaging quality with the lowest re-entrant and stray light. TRIAXs are also equipped with larger focusing mirrors for a maximized non-vignetted and maximum optical throughput.

Each spectrometer in the TRIAX series can be provided with up to three gratings mounted in a single turret. This allows for tremendous flexibility in the choice of the gratings for optimum resolution and desired spectral range.

The turret in the TRIAX series is the result of our latest technology. Our unique patented on axis triple grating turret, allows the TRIAX to maintain on-axis grating rotation during scanning, keeping a constant f number and image quality whatever the working grating and its position. A high-speed drive and precise motorized slits fully automate the adjustments on the TRIAX. Several options are available such as automated port selection on the both entrance and exit, filter wheel drive capability, microstep motor, 2 or 7 mm, maximum slit aperture, dual array capability, tiltable flange accommodating to most array detectors, and single channel detectors as PMT, solid state detectors

A comprehensive range of accessories such as light sources, sample compartments, fibers, detectors, software can be supplied with our TRIAX.



TRIAX322 dual array spectrograph equipped with two arrays detectors

#### Features

- On-Axis Triple Grating Turret
- Fully automated
- Toroidal mirrors
- Asymmetric design
- Large focusing exit mirror
- Tilted CCD flanges
- High speed
- 2 mm slits (7 mm in option)
- 30 x 15 mm focal plane
- Automated swing away mirrors
- Filter wheel drive
- RS232/IEEE interface

#### Image quality of standard spectrograph vs TRIAX series

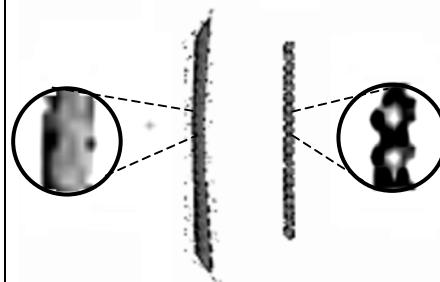


Image of a 19 fiber bundle (200  $\mu\text{m}$  x 19)

At the left, image obtained with a classical spectrograph.

At the right, image obtained with a TRIAX series spectrograph.



## TRIAX imaging spectrographs, the best choice for your spectroscopic measurements

### Specifications

#### TRIAX180:

Imaging Monochromator/Spectrograph  
 1 entrance port, 1 exit port  
 Focal length: 190 mm, f number: F/3.9  
 Dispersion: 3.6 nm/mm  
 Resolution: 0.3 nm

#### TRIAX190:

Imaging Monochromator/Spectrograph  
 1 entrance port, 2 exit ports  
 Focal length: 190 mm, F number: F/3.9  
 Dispersion: 3.6 nm/mm  
 Resolution: 0.3 nm

#### TRIAX320:

Imaging Monochromator/Spectrograph  
 Up to 2 entrance ports, 2 exit ports  
 Focal length: 320 mm, F number: F/4.1  
 Dispersion: 2.64 nm/mm  
 Resolution: 0.06 nm (microstep option)

#### TRIAX550:

Imaging Monochromator/Spectrograph  
 2 entrance ports, 2 exit ports  
 Focal length: 550 mm, F number: F/6.4  
 Dispersion: 1.55 nm/mm  
 Resolution: 0.03 nm

#### TRIAX322 and TRIAX552:

Dual array imaging spectrographs  
 2 entrance ports, 2 exit ports  
 Focal length: 320 or 550 mm,  
 f number: f/4.1 or f/6.4  
 Dispersion: 2.64 nm/mm or 1.55 nm/mm  
 Resolution: better than 3 pixels (with 25 microns pixel size)

#### In the USA:

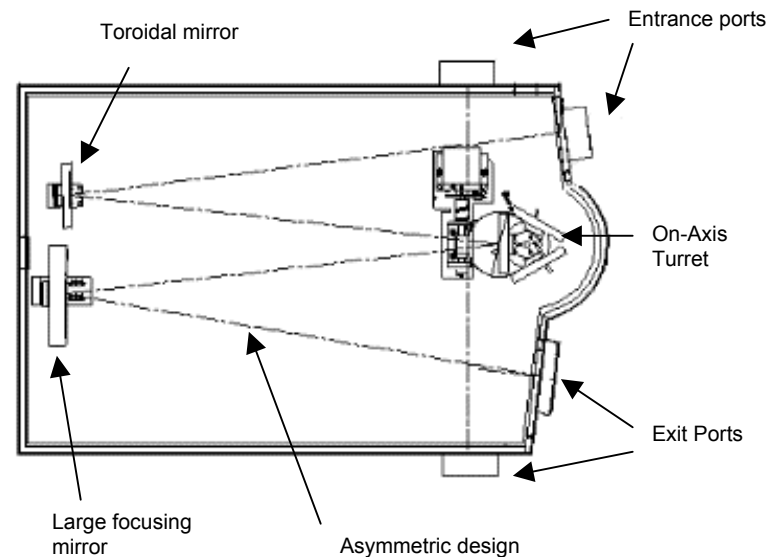
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TRIAX 550

### Keywords:

#### Monochromator:

Manual or motorized wavelength selection, presenting one wavelength or bandpass at a time from its exit slit.

#### Spectrometer:

An apparatus designed to measure the distribution of radiation of a source in a particular wavelength region. Its principal components are a monochromator and a radiant power detector

#### Spectrograph:

Presents a range of wavelengths at the exit focal plan for detection by an array detector.

#### Focal Length:

The focal length of the monochromator is the distance from the exit-imaging mirror to the flat focal plane. The longer the focal length, the better the resolution that can be achieved.

#### f number (f/#):

The f/# is the input aperture of the monochromator. The faster the f/#, the greater the acceptance cone and the more light that can be collected. The light gathering power of an optical device increases as the inverse square of the f/#.



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