

# Maya2000 Pro Spectrometer

## High Sensitivity and Deep UV Measurement



**NOW WITH TRIGGERING!**

### Maya2000 Pro

Our Maya2000 Pro® Spectrometer offers you the perfect solution for applications that demand low light-level, UV-sensitive operation.

This back-thinned, 2D FFT-CCD, uncooled instrument offers greater than 75% quantum efficiency, high dynamic range and UV response to 190 nm and lower. The Maya2000 Pro can deliver accurate analysis down to 185 nm with high dynamic range and good signal-to-noise ratio.

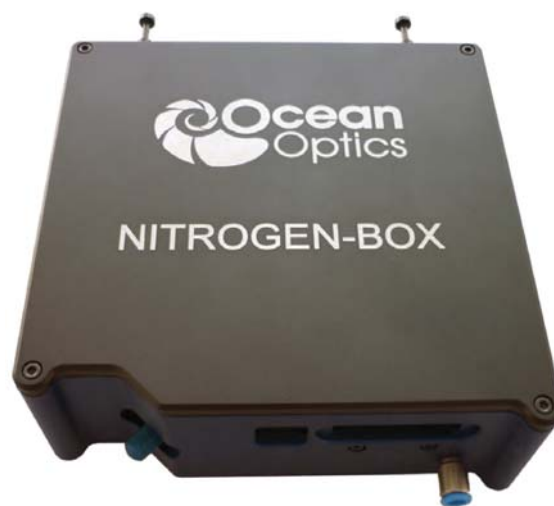
The Hamamatsu FFT-CCD detector used in the Maya2000 Pro has excellent performance characteristics. Because of their UV response, FFT-CCD detectors do not require UV-sensitive coatings and provide performance advantages such as low dark current and good signal processing.

Maya2000 Pro has very good response across the UV and is a great choice for vacuum ultraviolet applications such as analysis of semiconductor materials, measurement of biological samples and noble gases, and determination of chemical elements such as sulfur.

### Features

- Low-noise electronics
- Optical resolution to ~0.035 nm (FWHM)
- Multiple grating options including HC-1 composite grating for coverage from 200-1050 nm (additional charge)
- Slits available in widths of 5, 10, 25, 50, 100 and 200  $\mu\text{m}$
- Optional filters to eliminate second- and third-order effects
- Fully controllable strobe signals (single or continuous)
- 10 onboard digital user-programmable GPIOs

Maya2000 Pro	
Dimensions:	149 mm x 109 mm x 50 mm
Weight:	0.96 kg (without power supply)
Detector:	Hamamatsu S10420
Architecture:	Back-thinned, 2D
Thermoelectric cooling:	No
Pixels:	All: 2068 x 70 Active: 2048 x 64
Pixel size:	14 $\mu\text{m}$ square
Column height:	896 $\mu\text{m}$
Pixel depth:	200,000 e-
Peak QE:	75%
QE @ 250 nm:	65%
CCD effective number of bits:	~14 bit
Integration time:	7.2 ms – 5 seconds
A/D converter:	16 bit, 250 kHz
Dynamic range:	10000:1+ (typical: ~15000:1+)
Signal-to-noise ratio:	450:1
Non-linearity (uncorrected):	~10.0%
Linearity (corrected):	<1.0%
Column sensitivity:	~0.32 Counts/e-
2D Imaging:	Yes



### Nitrogen Purgebox for Maya VUV Applications

Maya2000 Pro Spectrometers have excellent response <190 nm and are even useful for vacuum ultraviolet (VUV) measurements to ~150 nm. But because oxygen and water absorb in the VUV spectral band, maintaining sufficient signal outside a vacuum is not possible without an option such as the Maya Nitrogen Purgebox. The purgebox flushes the environment with nitrogen to help mitigate water and oxygen absorption in the VUV.