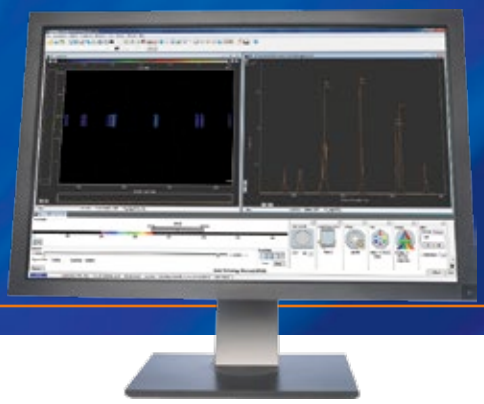

ANDOR
an Oxford Instruments company

Spectroscopy Solutions

Highlights

- Pre-aligned, pre-calibrated spectrograph systems
- Image astigmatism correction with toroidal optics (Shamrock 193i, 303i and Shamrock 500i)
- All-in-one interactive and dedicated Solis software
- USB 2.0 connectivity
- Indexed Dual and triple exchangeable grating turret
- Double detector outputs
- Innovative adaptive focus technology (Shamrock 193i)
- Wide range of accessories available
- Gold and Silver optics coating options for superior NIR detection
- Seamless connections to microscope
- µManager software control

Shamrock Motorized Series

Research-grade high performance spectrographs

The Shamrock imaging spectrographs are research grade, high performance and rugged platforms designed for working with demanding low-light applications, but equally suited to routine measurements. The Shamrock series boosts a range of highly versatile accessories and are seamlessly configurable.

The Shamrock 193i boasts 'intelligent' motorized adaptive focusing, allowing access to the very best spectral resolution performance in any configuration with un-matched repeatability.

These instruments can be easily integrated with Andor's world-class range of CCDs, Electron-Multiplying CCDs, Intensified CCDs and InGaAs cameras to offer a versatile, yet most sensitive modular solutions on the market. Andor Solis software offers the most user-friendly and state-of-the-art real-time control of detectors, spectrograph and motorized accessories at the touch of a button.

Key Applications

- Absorption - Transmission -Reflection (UV-NIR and SWIR)
- Raman (244 to 1,064 nm)
- Fluorescence - Luminescence - Photoluminescence (UV-NIR and SWIR)
- Micro-Raman and micro-Fluorescence
- Single molecule spectroscopy
- Plasma studies
- Laser Induced Breakdown Spectroscopy (LIBS)
- Plasmonics

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Spectroscopy Solutions

Features and Benefits

Pre-aligned, pre-calibrated detector and spectrograph systems	Motorized, individually factory-calibrated systems - out of the box operation and seamless integration to experimental set-ups
Image astigmatism correction with toroidal optics (Shamrock 193i, 303i and 500i)	Maximum light throughput and optimized multi-track capabilities
USB 2.0 connectivity	"Plug-and-play" connectivity, ideal for laptop operation and multi USB cameras control
Dual or triple exchangeable grating turret	Interchangeable in the field, RFID tag and seemless integration (Shamrock 193i only)
Double detector outputs	For extended wavelength coverage when combining Andor UV-NIR CCD and InGaAs cameras, and up to LWIR with PbS, InSb and MCT detectors
Innovative adaptive focus	Intelligent and user-friendly interface for uncompromised high spectral resolution performance
Wide range of accessories available	Motorized slits and filter wheel Microscope interfaces Shutters Fiber-optic and lens couplers Multi-way fiber-optic bundles
Monochromator capabilities (Shamrock 193i, 500i and 750)	Extract best optical resolution while allowing use of Single Point Detectors with sensitivity up to 12 µm
Gold or Silver optics coating options	Most efficient for NIR detection when used in conjunction with Andor InGaAs cameras or infrared single point detectors

Spectrograph Specifications Comparison*

	193i	303i	500i	750
Aperture (F/#)	F/3.6	F/4	F/6.5	F/9.8
Focal length (mm)	193	303	500	750
Reciprocal dispersion (nm/mm)	3.53	2.41	1.44	1.01
Wavelength resolution (nm)	0.21	0.1	0.06	0.04
Bandpass (nm)	81	67	40	28
Imaging correction optics	Y	Y	Y	Y+

* = Specifications given for a 1200 l/mm grating at 500 nm, 10 µm slit and 13.5 µm pixel size, 27.6 mm wide CCD ; resolution figures assume FWHM of 5x 13.5 µm pixels.
+ Achieved through lens-based aberations correction.

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