



Ocean News - Fall 2010

New Shortwave Infrared Spectrometers

Small scanning spectrometers from 900-6500 nm

Ocean Optics introduces a new series of shortwave infrared (SIR) spectrometers. This new SIR series of spectrometers includes four standard configurations based on detector type and wavelength range:

An InAs detector for 900 - 2600 nm (SIR 2600) and 1000 - 3400 nm (SIR 3400) and an MCT detector for 2000 - 5000 nm (SIR 5000) and 3000 - 6500 nm (SIR 6500).



Ideal for lab or process applications

The new SIR fibre based system utilizes a unique design that allows for rapid spectral scans over its entire range, or it can provide real time data from one or more discrete wavelengths. The compact design allows the SIR Analyzers to be easily integrated into lab and online applications.

New Shortwave Infrared Spectrometer

Reader reply

01

The New Cool Red

The near infrared light source

Our new Cool Red near infrared light source is designed specifically for infrared fibre-based spectroscopy. This silicon Nitride emitter, glowing at 1500 °Kelvin, is suitable for spectroscopy measurements from ~ 700 to > 6500 nm.



Cool Red Light Source

Reader reply

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24-6 Live Chat

24-hour service

In collaboration with our other worldwide offices, we are now able to give 24-6 live support. Go to www.oceanoptics.eu/livechat for all your sales and service questions.



www.oceanoptics.eu/livechat

Win \$2,500

Photo & Video Contest is Back!

The Ocean Optics Photo Contest is back, and it's bigger than ever. This year the competition has been expanded to place a special emphasis on videos. The most innovative, entertaining and educational submissions will win prizes, including a grand prize of \$2,500.

www.oceanphotochallenge.com

Read all about it

Communicating

You've told us how helpful this newsletter is as a source of new products and services at Ocean Optics. We're pleased to report that this issue won't disappoint, with new infrared spectrometer options, application news and more. Newsletters, our website and outlets such as YouTube, Facebook and Twitter are all great ways to communicate, but they're no substitute for personal contact. That's why we love to hear from you -- whether it's a phone call about your latest application challenge or an onsite visit or tradeshow demonstration. So, check the back page of this newsletter for our upcoming show schedule. Or give us a call anytime!

Best regards,
Marco Snickers
Commercial Director



In This Issue

Jaz Updates: New Xenon source, new XR grating and mounting options

NIRQuest Stories: Environmental monitoring, processing applications and more

Raman Spectroscopy: New turnkey and handheld Raman systems and more

Monitoring the impact of the oil spill in the Gulf of Mexico

New high power fibre coupled LED light sources

OEM Special: Spectral shaping, water quality story, new website & new OEM manager





New Pulsed Xenon Source for Jaz

High flash rate, short-arc xenon lamp from 190-1000 nm

The Jaz-PX is a high flash rate, short-arc xenon lamp especially useful for UV-VIS applications such as absorbance, bioreflectance, fluorescence and phosphorescence. The lamp has a maximum pulse frequency of 500 Hz and spectral response from 190-1000 nm.

Pulses are easily coordinated with other devices

The Jaz-PX operates in both free running and triggered modes, which allow its pulses to be synchronised with other devices in the Jaz stack. Flash-to-flash stability is <1% and the flash rate is 500 Hz. Jaz-PX has an SMA 905 connector that couples to Ocean Optics accessories, including optical fibres, cuvette holders, probes and other sampling optics. Because it produces a pulsed signal, the Jaz-PX is less likely to cause solarisation in optical fibre assemblies, which can occur when fibres are illuminated with signal < 260 nm.



New pulsed xenon source

Reader reply

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Jaz DIN3 Rail Mounting Kit

Broad UV-NIR coverage in a single system

The Jaz DIN3 Rail Mounting Kit is a new Jaz accessory that attaches a clip to the End Module. This Jaz accessory attaches a clip to the End Module using a 1/4" x 20 screw hole. This gives you the ability to simply clip the Jaz onto DIN3 rails, commonly found in industrial settings. This accessory will hold a maximum of three modules (excluding the DPU and End Module).

Jaz DIN3 Rail Mounting Kit

Reader reply

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Broadband XR Grating

UV-NIR coverage in one system

The new XR-1 grating option overcomes the traditional challenges of providing broad UV-NIR coverage (200-1050 nm) in a single miniature spectrometer. With a 500 lines/mm density, the grating delivers high performance at a budget-friendly price, without increasing the system footprint. The XR-1 grating is available pre-configured in the USB2000+, JAZ-EL2000, and USB4000 and may also be added as an option to custom-built systems.

Covering the broadest range

The XR-Series spectrometers deliver an optical resolution of ~2.0 nm (FWHM) when using 25 µm slit. Ocean Optics' proprietary order sorting filter is applied directly to the detector to eliminate second- and third-order effects. XR-Series spectrometers are a convenient single-instrument solution for setups requiring a broad range from 200 - 1050 nm, such as solar irradiance, atomic emission line measurement and plasma applications.

The XR-series for broad UV-NIR coverage

Reader reply

05

Broadest Range of Spectrometers for Any NIR Application

The flexible and configurable spectrometer platform

We have developed a family of products with the most flexible and configurable NIR spectrometers available today. You can choose among five different detectors covering various ranges from 900 to 2500 nm, 3 broadband gratings and 5 narrow band gratings. Choosing the slit size will allow you to optimize optical sensitivity and fine tune resolution. Combining these unique sets of optical components in our proven asymmetric Czerny-Turner optical bench gives you instant spectra as fast as 1000 spectra/seconds and allows very fast feedback loops in process lines. The broad range of different gratings (75 lines/mm to 1000 lines/mm) gives you the opportunity to choose to monitor broad spectral phenomenon or to characterise narrow spectral features with very high resolution. See the tables below for the details of the various gratings.

Environmental monitoring

NIRQuest spectrometers provide an economical solution for environmental monitoring, contaminant detection in wastewater and soil and content analysis of recycled plastics. The compact, multi-interface spectrometer is available in several ranges from 900 - 2500 nm. NIRQuest provides a less costly alternative to FT-IR and comparable technologies currently used in environmental monitoring. From lab analysis to process safety and industrial hygiene, NIRQuest's modular design provides great flexibility for a wide variety of applications, including integration into OEM devices.

Processing applications

A diverse range of applications includes moisture detection in grains and meats, materials characterization of semiconductor components, bacterial detection in food and beverage production and chemical analysis of pharmaceuticals. NIRQuest represents the next generation of optical sensing technologies that are moving from the lab to the process line. Flexible detectors, light sources and sampling optics result in instruments more easily implemented into the process stream. The modular approach of systems such as NIRQuest makes multiple-point sampling easily accessible for on-line applications, and versatile system setups enable far less costly adaptation to changing process line needs.



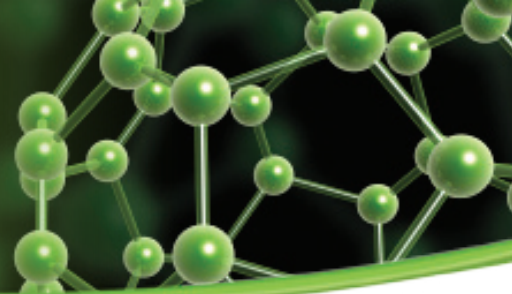
Broadband NIR Spectrometers (900 - 2500 nm)

Spectrometer model	Grating number / density (lines/mm)	Number of pixels	Spectral range	Maximum resolution
NIRQuest 512 1.7	NIR3 / 150	512	900 – 1700 nm	2.0 nm (FWHM)
NIRQuest 256 2.1	NIR2 / 100	256	900 – 2100 nm	7.0 nm (FWHM)
NIRQuest 512 2.2	NIR2 / 100	512	900 – 2200 nm	3.1 nm (FWHM)
NIRQuest 256 2.5	NIR1 / 75	256	900 – 2500 nm	9.4 nm (FWHM)
NIRQuest 512 2.5	NIR1 / 75	512	900 – 2500 nm	4.2 nm (FWHM)

Narrow band NIR grating choices (900 - 2500nm)

Grating number	Density [lines/mm]	Spectral range	Best efficiency	Maximum resolution
NIR10	300	350 – 380 nm	750 – 2200 nm	0.9 nm (FWHM)
NIR11	400	240 -290 nm	980 – 2500 nm	0.6 nm (FWHM)
NIR12	500	160 – 220 nm	900 – 2500 nm	0.4 nm (FWHM)
NIR13	600	100 – 180 nm	800 – 2500 nm	0.25 nm (FWHM)
NIR14	1000	50 – 90 nm	900 – 1700 nm	0.14 nm (FWHM)

Raman Spectroscopy



Turnkey Raman Systems

The state-of-the-art Aspire Raman System

The Aspire Raman System is a state-of-the-art, cost-effective Raman spectrometer system that includes the QE65000, a 785 nm laser, Raman probe, sample chamber, measurement caps and a laptop computer that is preloaded with spectrometer operating software.



The compact and versatile solution

Aspire is the compact, portable and value-packed Raman solution. Sampling can be done either through the rugged probe or through the internal sample compartment, allowing the user to sample any solid, liquid or powder through just about any container. Its compact, rugged construction and ergonomic design make it easy to be placed anywhere.

The turnkey Aspire Raman systems

Reader reply

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Portable Raman Systems

Fully featured handheld PinPointer

The PinPointer delivers a full-featured Raman spectroscopy system in a remarkably affordable, true handheld format. The lightweight unit is controlled by a pocket-sized computer and features easy-to-use RSIQ software for fast point-and-click operation.

Easy and fast substance identification

The PinPointer makes Raman measurements as easy as Touch & Go. With a touch of a button, the device collects your measurement after which it can be analysed using the optical RSIQ-QUAL software. The analysing software will search thousands of stored reference material spectra to identify unknown substances. Within seconds, the detected chemicals are identified and displayed to the system user.



The handheld PinPointer Raman systems

Reader reply

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! Did You Know ?

Raman is a very useful technique for:

- » Raw material identification
- » Detection and identification of drugs
- » Petrochemical process monitoring and control
- » Analysis of mineral deposits in rocks
- » Identification of explosives
- » Studies of bone composition
- » Identification of pigments used in art
- » Monitoring chemical composition of polymers
- » Characterization of semiconductors
- » Identification of paint chips for forensics
- » Studying proteins
- » Real time monitoring of blending pharmaceuticals
- » Non-destructive analysis of tablets
- » Studying crystallization
- » Characterization of catalysts

Raman applications

Reader reply

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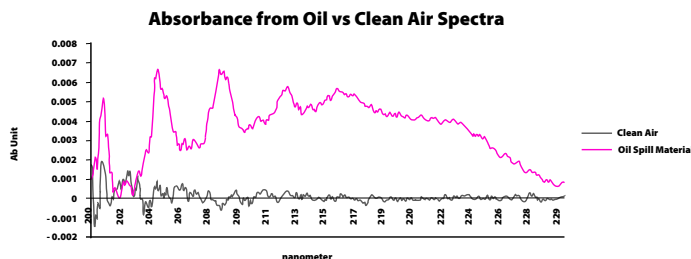
Gulf Air Quality Monitoring in Wake of Deepwater Horizon Spill

HR2000 used in portable UV DOAS system

Our modular HR2000 spectrometers are enabling air quality monitoring in the Gulf of Mexico as part of Argos Scientific's portable UV DOAS air monitoring system. Argos Scientific is working in conjunction with Hillsborough County, Florida, to monitor the environmental impact of the Deepwater Horizon oil spill in the Gulf of Mexico.

A custom configuration

The project has special significance to Ocean Optics as the company is located on the Gulf side of Florida and its community will be affected in coming months as the oil advances, upsetting both water and air quality. Argos is using a custom configured HR2000 spectrometer in its portable UV DOAS air monitoring system. In the Gulf, the system has already analysed a number of environmental samples, containing a mixture of oil and sea water, from the spill area. Vapour analyzed from the samples indicate the presence of two gases with unique UV spectral features being emitted from the samples. The data from these initial investigations will be used to update the system's spectral libraries. A UV DOAS system has been set up in Mississippi for continuous monitoring, with real time data posted at: <http://fenceline.org/test/map.php>.



High resolution spectrometers for DOAS applications

Reader reply

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New Line of Smart LED Light Sources

High power fibre-coupled LED light sources

Our unique line of high-powered, ergonomic and smartly designed fibre-coupled LED light sources are ideal for fluorescence, spectroscopy and general fibre illumination applications. An innovative optical design enables these fibre-coupled light sources to provide highly efficient light coupling into a single optical fibre.

Stable high current operation

The proprietary electronics design provides stable high-current operation and allows the LEDs to run at high peak currents when in external trigger mode. The controls feature a three-way switch to move the light source between continuous, off and trigger modes. A second control is used to manually adjust the drive current.

The wavelength ranges available

We offer warm, neutral and cool white light LEDs as well as over 15 single wavelength LEDs up to a wavelength of 627 nm. Included are the UVTOP® LEDs which cover wavelengths from 240-400 nm.

These sources are also ideal for OEM integration.



Smart high-power LED light sources

Reader reply

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! Featured Product !

HR2000+ / HR4000

High resolution spectrometers

The HR series of spectrometers provides you with high spectral response and optical resolution in a single unit.

Fast response times

HR spectrometers are used where fast reactions need to be monitored and high resolution is necessary, such as characterizing lasers, measuring gas absorbance and determining atomic emission lines.



Technical specifications

Detector Range: 200 - 1100 nm
Dynamic Range: 1300 : 1
Signal-to-noise: 250 : 1
Optical Resolution: 0.02 ~ 8.4 nm FWHM
Non-Linearity: <1%
More info at: www.oceanoptics.eu/hr

HR spectrometers

Reader reply

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OEM Opportunities

Optimised performance

Choosing the right optical sensor is very important for the performance of your measurement, analysis and results. We offer the capability to adopt and optimize our components and sub-systems to your requirements.

Flexible optical bench components

We can customise our optical benches like the small size USB bench and our high resolution HR bench with a robust Sony or Toshiba detector or with a high-end back-thinned detector.

Revolutionary Jaz sub-systems

The Jaz is a modular system that can include sensing modules and functionalities such as Ethernet connectivity and battery capabilities. It can also include a micro-processor and your programmers will get full access to the API code for customizing the user interface.

Optical bench OEM spectrometers

Reader reply

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Spectral Shaping Technology

Improved signal-to-noise performance

Ocean Optics has the capabilities to custom tune the spectral response of spectrometer modules to your application. Based on your prototype performance testing, our OEM application experts can propose alterations of the optics components to guarantee sufficient signal to noise ratio and sensitivity over the complete spectral range of the detector. We call this spectral shaping.

Special OEM privileges

Spectral shaping technology is only available for our OEM customers that are part of the Ocean Optics OEM development program. Spectral shaping can be used to compensate for the balancing peaks of UV-VIS light sources. Ask our OEM team about our full range of special OEM services.

Spectral shaping technology

Reader reply

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Surface Water Monitoring Project

Meet the WISP-3

The new advances in miniature spectroscopy and long term research on water quality monitoring algorithms have resulted in the development of a hand portable water quality system, called the WISP-3. WISP-3 is a low-cost, high quality and continuous information portable instrument for analysing most of the controlling parameters relevant to authorities responsible for monitoring water quality. Because of its unique set of measured parameters, the instrument is also eminently suitable to monitor the effect of water quality improvement programs and to act as a controlling device for restorative measures such as water inlet, bubble screens (to prevent layer formation), etc.

Portable optical spectroscopy techniques

Water Insight has combined simultaneous spectroradiometric measurements from 3 directions to characterize how sunlight interacts with water and its coloured constituents. To simultaneously acquire the three required spectra and analyse the data in real-time, the instrument is based on the Jaz Suite. The Jaz Suite is ideal for multichannel OEM applications as it has an onboard microprocessor and a Jaz stack can include any module you require for your application. In this specific configuration, Water Insight choose to use the onboard microprocessor with OLED display, three spectrometer channels, a battery module and an Ethernet module to enable remote sensing.

The WISP-3 Water Monitoring Device

Reader reply

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New OEM Website

Dedicated content for OEMs

To better serve our broad OEM customer base, we have created a special OEM website that includes all the information relevant to OEM customers, like our latest product, application and engineering information. You can also find information here about our OEM developer program, about quality assurance and services.

Finding the information you need

At www.OceanOEM.com, you can browse the products and content relevant to your OEM mechanical, software, optical, or electronic integration needs. The site's Resource section serves up manuals, datasheets, engineering drawings, and educational articles.

Go to www.OceanOEM.com to learn more about our OEM services.



General Information about our OEM capabilities

Reader reply

The Latest Addition to the OEM Team - Introducing David Creasey

Serving our valued OEM partners

I am excited and honoured to be joining Ocean Optics' dedicated team as OEM & Business Development Manager. I joined Ocean Optics May 1st 2010 after many years experience in the photonic sector. I have a PhD in spectroscopy and will bring my commercial and technical knowledge to serve you, our valued OEM partner.

Partnership is key

For me it is all about partnerships! I look forward to forming close working relationships with you and helping you through the different stages on the OEM journey from product inception to product release. Backed by an experienced team of mechanical, software and electronic engineers and an excellent logistics and customer service group, I have the confidence that Ocean Optics is the right partner for your OEM needs. Whatever your requirement I will work with you and our skilled personnel to ensure we will be your first and last stop for your spectroscopic OEM requirements.

Customization for you

From the deep UV to the mid IR, we offer the spectrometers, fibres and light sources for your OEM project. It is my job; along with our EMEA sales channel to understand your requirements. Our customization capabilities and unique product specifications assure you get the perfect optical setup for your unique application.

Quality and reliability

My mission is to give you what you need – a fully optimized, high quality, highly reliable spectroscopic solution from a vendor you can trust and rely on. I would love to hear from you to discuss your OEM applications so please contact me at david.creasey@oceanoptics.eu or on +44 7825959138.

I look forward to hearing from you!
David.





Requesting More Information

I would like to receive more information about:

- 01 *New Shortwave Infrared Spectrometer*
- 02 *Cool Red Light Source*
- 03 *New pulsed xenon source*
- 04 *Jaz DIN3 Rail Mounting Kit*
- 05 *The XR-series for broad UV-NIR coverage*
- 06 *The NIRQuest spectrometers*
- 07 *The turnkey Aspire Raman systems*
- 08 *The handheld PinPointer Raman systems*
- 09 *Raman applications*
- 10 *High resolution spectrometers for DOAS applications*
- 11 *Smart high-power LED light sources*
- 12 *HR spectrometers*
- 13 *Optical bench OEM spectrometers*
- 14 *Spectral shaping technology*
- 15 *The WISP-3 Water Monitoring Device*
- 16 *General Information about our OEM capabilities*
- 17 *Other:* _____

My details:

Company Name _____

Contact Person _____

Address _____

Zip Code/Town _____

Country _____

Tel _____

Email _____

Fax this form to: +31 - 26 319 0505

Or mail us at: sales@oceanoptics.eu

Tradeshaw Overview

[Strategies in Light Europe](#)

28-29 September 2010
Frankfurt, D - Stand 28

[Het Instrument 2010](#)

28 Sept - 1 Oct 2010
Amsterdam, NL - Stand 1B040

[SolarPeq 2010](#)

28 Sept - 1 Oct 2010
Dusseldorf, D - Hall 14, Stand D49

[Industrial Processing 2010](#)

5-10 October 2010
Utrecht, NL - Stand 10.B047

[HortiFair 2010](#)

12-15 October 2010
Amsterdam, NL - Stand 04.0428

[Semicon Europe 2010](#)

19-21 October 2010
Dresden, D - Stand 4.175

[Photonex 2010](#)

3-4 November 2010
Telfort, UK - Stand D23

[Medica 2010](#)

17-20 November 2010
Dusseldorf, D - Hall 3, Stand E-92

[Precisiebeurs 2010](#)

1-2 December 2010
Veldhoven, NL - Stand 150

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