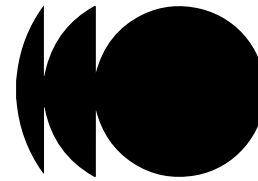


Spectroscopy Solutions Catalogue

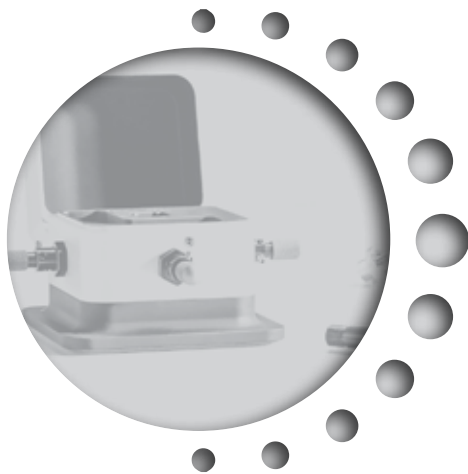
MR SPECTRON
Scientific & Laboratory Equipment Trading LLC





**Ocean
Insight**

 **OptoSigma[®]**



NKT  **Photonics**
the power of light



ARA Spectron is a full-line distributor of Scientific Instruments, and laboratory equipment, and an Analytical method developer and solution provider based on Spectroscopy, Electrochemistry, and Chromatography in collaboration with her International well-known Partners.

ARA Spectron is providing joint integrity solutions (Consulting and Contracting) to different fields including R&D Sector, oil & gas, petrochemical, Mining, Metals, power generation, Food & Beverage, and Environment industries in the Middle East Projects.

Our goal is to discover and bring cutting-edge products to the attention of our customers. ARA Spectron is a service-oriented company with our primary marketing focus on providing excellent customer service. We endeavor to provide our customers with a hassle-free buying experience. It is ARA Spectron's policy to establish business relationships with specialized and quality committed companies and to supply products, services, and consultancy that fully meet the specification, expectations, and satisfaction of our customers. This policy will be achieved in a professional, ethical and responsible manner.



ARA General Trading

Our History

In 2002 "ARA General Trading LLC" was established with a Team of Experienced Engineers in UAE, Dubai to become a part of the Fast Growing Trading HUB of the region. ARA General Trading was engaged as a supplier of Analytical Instruments and Laboratory Equipment. The division of Modular Spectroscopy based on Fiber Spectrometers started its activity in 2007. Our first Turn-key project was including Design, Supply & Installation of the Laboratory Furniture, Gas Distribution System, and Laboratory Equipment as well as Analytical Instruments of The Central Laboratory of a Refinery in 2009.

The company succeeded in obtaining the ISO 9001 standard certificate in 2010 New Company – New approach– New Service

To enable us to better serve a wide range of our Customers, and considering some limitations of "General Trading Company" formation Company, The Section of "Scientific Instruments and Laboratory Equipment supply" has been separated from Activities of "ARA General Trading LLC" and "ARA Spectron Scientific & Laboratory Equipment Trading LLC" has been established to handle it in 2020.

Applied Science Workshop & Training Center

Simultaneous with the introduction of ARA Spectron Co., we announced the launch of our "Applied Science Workshop & Training Center" located in office No. 929 Tamani Arts Offices Building, Business Bay, Dubai where we develop the solution for specific Applications of our Customers and will hold the training courses with the support of our Partners from the USA, The Netherlands, Germany, Japan, and the UK.



ARA Spectron

S P E C T R O S C O P Y S O L U T I O N S

Providing custom Providing custom solutions starts with a standard infrastructure and offers you high levels of confidence.

Spectroscopy is a powerful tool providing a wealth of information with the relatively simple measurement of how light interacts with a sample. Chemical composition, analyte concentration, color and many other sample characteristics are all readily determined with spectroscopy. Modularity and flexibility is of paramount importance when performing optical spectroscopy experiments and the power of the modular spectroscopy is the ability to take a snapshot of the sample or to collect additional data for providing custom solutions for any specific application.

We offer comprehensive lines of ultraviolet (UV), visible light (Vis) and near-infrared (NIR) Modular Fiber Optic Spectrometers, wide range of Continues and line-based Light Sources, Single and Multimode Fiber cables and Probes, Free-space and integrated Sampling Accessories, different range of Optics, Opto-mechanics and Photonics Components including Optical Systems, Optical Assemblies, Optical Coatings, Manual and Motion Control Stages, and a variety of complimentary Photonics products along with customizable software control systems, which can be combined for measurement of various spectral characteristics and covering different applications like Raman, Fluorescence, Optical Emission Spectroscopy (OES), Absorbance, Reflection, Colorimetry, Irradiance, or any combination of these applications from a sample.



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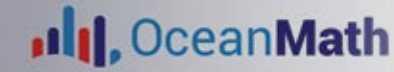


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From single element Optics and Opto-Mechanics, to multi-element assemblies and systems, our team is ready to support your project.

1

Measurement Packages

Preconfigured spectrometers, accessories and software are bundled for popular measurements including absorbance, fluorescence, Raman and plasma monitoring. Take the advantage of Ocean Insight application-ready systems – spectrometer, light source, accessories and software for each application.



Absorbance Measurement Packages

Take advantage of Ocean Insight application-ready systems – spectrometer, light source, accessories and software – for absorbance measurements. These bundles have all the components necessary for cuvette-based UV-Visible (200-850 nm) absorbance measurements. Whether you're an educator looking for an instrument to teach students basic principles of spectroscopy or a research lab making routine lab measurements, Ocean Insight absorbance measurement packages deliver the features, performance and convenience you need.

- In this Series, there are 2 versions:**
1- BUNDLE-QEPRO-ABS 2- BUNDLE-HDX-ABS



Fluorescence Measurement Packages

Take advantage of Ocean Insight application-ready systems – spectrometer, excitation source, accessories and software – for fluorescence measurements. These bundles have all the components necessary for cuvette-based fluorescence measurements. Each measurement package provides a simple yet effective setup for fluorescence measurements. Choose from a general-purpose or high-sensitivity spectrometer, plus a cuvette holder, 365 nm LED excitation source and large-diameter patch cords. Software completes the package.





1-3 Plasma Measurement Packages

If you need to measure plasma emission, Ocean Insight plasma measurement packages are convenient, robust and easy to work with. Each bundle comprises a spectrometer, solarization-resistant optical fiber and a cosine corrector with Spectralon diffusing material. OceanView operating software completes the setup.

Plasma measurement packages are ideal for plasma monitoring, solar irradiance, light characterization and other emissive measurements. By monitoring the emission spectrum of a sample plasma, users can determine critical plasma parameters required for controlling plasma-based processes.

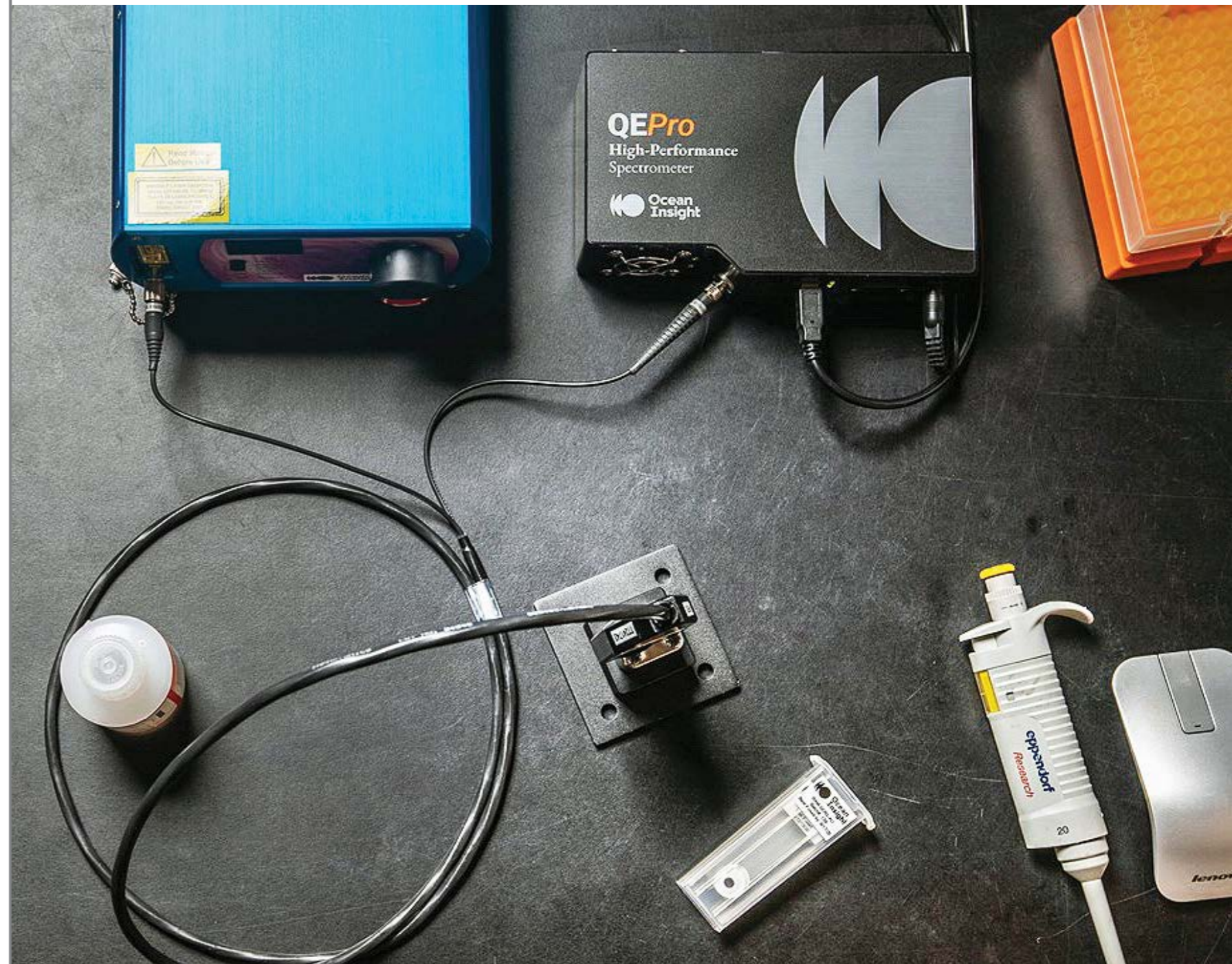
1-4 Raman Measurement Packages

These bundles have all the components necessary for probe-based Raman measurements. Packages are available for Raman excitation wavelengths of 532 nm, 638 nm, 785 nm and 1064 nm. Designed to operate as a system, the components in these packages mate seamlessly to get you started taking Raman spectra more quickly. All bundles come with software and the appropriate laser safety glasses.

All excitation wavelength versions are anchored by our high-sensitivity QE Pro-Raman+ spectrometer. Also available for 785 nm Raman applications is a more affordable measurement package anchored by the Ocean HDX-Raman spectrometer. The RAMAN-BUNDLE-HDX-785 is a great option for folks who seek modular Raman analysis that's a little more accessible than high-priced, premium-grade turnkey systems.

In this Series, there are 5 versions:

- 1- Raman-Bundle-532: High-sensitivity QE Pro-Raman+ spectrometer, a 532 nm laser.
- 2- Raman-Bundle-638: High-sensitivity QE Pro-Raman+ spectrometer, a 638nm laser.
- 3- Raman-Bundle-785: High-sensitivity QE Pro-Raman+ spectrometer, a 785nm laser.
- 4- Raman-Bundle-1064: High-sensitivity QE Pro-Raman+ spectrometer, a 1064nm laser.
- 5- RAMAN-BUNDLE-HDX-785: Ocean-HDX spectrometer, a 785nm laser.



2

Spectrometers

Compact spectrometers with versatile performance covering UV, Visible and NIR wavelengths are available for multiple applications in Research, OEM and Process solutions.

They can be divided on bellow categories:

- Next Generation Spectrometers
- High Sensitivity Spectrometers
- Near Infrared Spectrometers
- High Resolution Spectrometers
- General Purpose Spectrometers
- Micro-spectrometers
- High Speed Spectrometers
- Raman Spectrometers



Next Generation Spectrometers

Our newest spectrometers combine the latest advances in opto-electronic design and components with the lasting innovation that is our hallmark.

SR Series Spectrometers

The newest spectrometers combine the latest advances in opto-electronic design and components with the lasting innovation that is our hallmark. Enjoy great spectral performance without the trade-offs.



In this Series, there are 9 versions:

- 1- SR-2UV240-25 Spectrometer: Wavelength Range: 200nm - 530nm, OceanDirect Software , Optical Resolution: 0.66 nm
- 2- SR-2UV240-25 Spectrometer: Wavelength Range: 185nm - 920nm, Optical Resolution: 1.33 nm
- 3- SR-2UV300-25 Spectrometer: Wavelength Range: 185nm - 920nm,

Optical Resolution: 1.33 nm

- 4- SR-2UV400-25 Spectrometer: Wavelength Range: 185nm - 920nm, Optical Resolution: 1.33 nm
- 5- SR-2VIS400-25 Spectrometer: Wavelength Range: 350nm - 1 μ m, Optical Resolution: 1.34 nm
- 6- SR-2VIS750-25 Spectrometer: Wavelength Range: 570nm - 850nm, Optical Resolution: 0.56 nm
- 7- SR-2VN500-25 Spectrometer: Wavelength Range: 350nm - 1 μ m, Optical Resolution: 1.34 nm
- 8- SR-2XR250-25 Spectrometer: Wavelength Range: 185nm - 1.1 μ m, Optical Resolution: 1.71 nm
- 9- SR-2N1000-25 Spectrometer: Wavelength Range: 650nm - 1.1 μ m, Optical Resolution: 1.30 nm

General Purpose Spectrometers

Versatile UV-Vis and NIR spectrometers from Ocean Insight address a range of applications and industries. Setups can be configured for absorbance, color and other measurements.

Flame series spectrometers

General purpose Flame spectrometers provide great thermal stability and excellent unit-to-unit variability, plus the freedom of interchangeable slits, simple device connectors and LED status indicators.

In this category, there are 5 versions:

- 1- Flame UV-VIS Spectrometers: preconfigured for UV-Visible (200-850 nm) measurements.
- 2- Flame VIS-NIR Spectrometers: preconfigured for Visible-NIR (350-1000 nm) measurements.
- 3- Flame Extended Range Spectrometers: preconfigured for extended range (200-1025 nm) measurements.
- 4- Flame-NIR+ Spectrometer: preconfigured for Shortwave NIR (970-1700nm) measurements.
- 5- Custom-Configured Flame Spectrometer: Configurable based on demand.



High Sensitivity Spectrometers

High-sensitivity CCD-array spectrometers for low light applications are ideal for fluorescence, DNA sequencing and Raman analysis



QE Pro Series, High Sensitivity Spectrometers

High-sensitivity, back-thinned CCD array spectrometers offer outstanding quantum efficiency and low noise operation for low light applications such as fluorescence measurement and Raman analysis.

In this category, there are 6 versions:

- 1- QEPRO-ABS: Wavelength Range: 200nm - 950nm, Optical Resolution: 1.70 nm FWHM (typical)
- 2- QEPRO-FL: Wavelength Range: 350nm - 1.1 μ m, Optical Resolution: 6.87 nm FWHM (typical)
- 3- QEPRO-UV-VIS: Wavelength Range: 200nm - 775nm, Optical Resolution: \sim 1.2nm FWHM
- 4- QEPRO-VIS-NIR: Wavelength Range: 350nm - 925nm, Optical Resolution: \sim 1.2nm FWHM
- 5- QEPRO-XR: Wavelength Range: 200nm - 950nm, Optical Resolution: \sim 1.6nm FWHM
- 6- Custom Configured QE Pro Series: Configurable based on demand.

Ocean HDX Spectrometers



Ocean HDX spectrometer uses a robust optical bench design, optimized components and precision engineering to maximize optical resolution, increase throughput, reduce stray light and maintain thermal stability for integrated, industrial and research applications.

HDX has a back-thinned CCD array and High Definition Optics design, with X-Platform Electronics to enhance communication capabilities, plus powerful

onboard storage and processing functions. Store up to 50,000 spectra and take advantage of onboard averaging to capture more spectral data in less time. Interface options include USB, Gigabit Ethernet, AP Wi-Fi and RS-232.

In this category, there are 3 versions:

- 1- OCEAN-HDX-UV-VIS: Wavelength Range: 200nm - 800nm, Optical Resolution: 0.73 nm FWHM (typical)
- 2- OCEAN-HDX-VIS-NIR, Wavelength Range: 350nm - 925nm, Optical Resolution: 0.70 nm FWHM (typical)
- 3- OCEAN-HDX-XR: Wavelength Range: 200nm - 1.1 μ m, Optical Resolution: 1.10 nm FWHM (typical)

Maya 2000 Pro Series

Custom Configured Maya2000 Pro spectrometers are a great choice for applications requiring high sensitivity, good UV-NIR response and wide dynamic range. Applications range from low light level fluorescence and Raman measurements to absorbance, transmission and emission analysis of solutions, solids and gases. Maya2000 Pro spectrometers are available in custom configured (you select the ideal combination of bench components) and preconfigured (we optimize the spectrometer for specific applications) options.



High Speed Spectrometers

High-speed electronics and onboard processing make the Ocean FX a great option ideal for process applications and measurement of fast events



Ocean FX series spectrometer

High Speed Ocean FX series Spectrometer has acquisition speed up to 4,500 scans per second, with onboard spectral buffering of up to 50,000 spectra, onboard processing for improved SNR and reduced data transfer time, and robust communications via USB, Gigabit Ethernet, RS-232 and Wi-Fi. It's a great option for high-speed process applications and measurement of flicker in lighting.

In this category, there are 4 versions:

- 1- Preconfigured Ocean FX UV-VIS Spectrometer: 200-850 nm.
- 2- Preconfigured Ocean FX VIS-NIR Spectrometer: Configurable based on demand.
- 3- Preconfigured Ocean FX Extended Range: Preconfigured Extended Range (200-1025 nm) Spectrometer
- 4- Custom Configured Ocean FX Spectrometer

High Resolution Spectrometers

High resolution spectrometers for UV, Visible and NIR wavelength ranges are ideal for laser characterization, gas absorbance and emission line analysis. Applications include laser wavelength monitoring and characterization for tunable lasers/LEDs and other sources such as elemental emissions from plasma & LIBS spectroscopy.

HR Series High Resolution Spectrometers

HR spectrometers are small-footprint, high-resolution spectrometers for applications such as wavelength characterization of lasers and LEDs, monitoring of gases and monochromatic light sources, and determination of elemental atomic emission lines. Depending on spectrometer configuration, optical resolution <math><0.1\text{ nm (FWHM)}</math> is possible.

New HR4Pro preconfigured spectrometers are compact, high-resolution options distinguished by low stray light performance and great thermal stability for applications in lab, field and process environments. With a robust optical bench design and optimized components, the HR4Pro provides up to 10x improvement in thermal stability compared with similar small-bench spectrometers. Models are available for UV-Vis (200-875 nm), Vis-NIR (350-1025 nm) and extended-range (200-1100 nm) measurements.



In this category, there are 7 versions:

- 1- HR4PRO-UV-VIS-ES: Wavelength Range: 200nm - 875nm, Optical Resolution: $\sim 0.66\text{nm FWHM}$
- 2- HR4PRO-VIS-NIR-ES: Wavelength Range: 350nm - 1.025 μm , Optical Resolution: $\sim 0.66\text{nm FWHM}$
- 3- HR4PRO-XR-ES: Wavelength Range: 200nm - 1.1 μm , Optical Resolution: $\sim 0.9\text{nm FWHM}$
- 4- HR2000+CG Spectrometer: Wavelength Range: 200nm - 1.05 μm , Optical Resolution: 0.62 nm FWHM (typical)
- 5- HR2000+ES Spectrometer: Wavelength Range: 190nm - 1.1 μm , Optical Resolution: $\sim 0.9\text{ nm FWHM}$
- 6- HR4000CG-UV-NIR Spectrometer: Wavelength Range: 200nm - 1.1 μm , Optical Resolution: 0.47 nm FWHM (typical)
- 7- Custom Configured HR Series Spectrometers: Configurable based on demand.

Micro-spectrometers

Lightweight, ultra-compact spectrometers for UV, Visible and NIR applications offer performance comparable to much larger systems.

Ocean ST UV Microspectrometer

Ocean ST is a powerful microspectrometer that provides excellent UV response ($\sim 185\text{-}650\text{ nm}$), high-speed spectral acquisition, and high signal to noise ratio performance in an ultra-compact footprint. Despite its small size and light weight, Ocean ST delivers full spectral analysis at a performance level comparable to larger and more expensive spectrometers. The ST microspectrometer is ideal for both everyday lab use and integration into other devices and setups where space is limited. Applications range from DNA absorbance to laser characterization.

Software Developers Kit Adds Value: Each Ocean ST microspectrometer comes with OceanDirect, a powerful, cross-platform Software Developers Kit (SDK) with an Application Programming Interface (API). With its library of functions, OceanDirect makes it possible for users to optimize spectrometer performance and access critical data for analysis. Use OceanDirect to write custom software solutions for your Ocean ST microspectrometers.



In this category, there are 4 versions:

- 1- ST-UV-25 Microspectrometer: Wavelength Range: 185nm - 650nm, Optical Resolution: 2.2 nm
- 2- ST-UV-50 Microspectrometer: Wavelength Range: 185nm - 650nm, Optical Resolution: 3.7 nm
- 3- ST-UV-100 Microspectrometer: Wavelength Range: 185nm - 650nm, Optical Resolution: 6.3 nm
- 4- ST-UV-200 Microspectrometer: Wavelength Range: 185nm - 650nm, Optical Resolution: 13 nm

Ocean ST VIS Microspectrometer

Ocean ST is a powerful Visible microspectrometer ($\sim 350\text{-}810\text{ nm}$) that provides rapid spectral acquisition and high signal to noise ratio performance in an ultra-compact footprint. Despite its small size and light weight, Ocean ST delivers full spectral analysis at a performance level comparable to larger and more expensive spectrometers. The ST microspectrometer is ideal for both everyday lab use and integration into other devices and setups where space is limited. Visible applications range from emissive color of LEDs to remote sensing for precision agriculture.

In this category, there are 4 versions:

1. ST-VIS-25 Microspectrometer: Wavelength Range: 350nm - 810nm, Optical Resolution: 2.2 nm
2. ST-VIS-50 Microspectrometer: Wavelength Range: 350nm - 810nm, Optical Resolution: 3.7 nm
3. ST-VIS-100 Microspectrometer: Wavelength Range: 350nm - 810nm, Optical Resolution: 6.3 nm
4. ST-VIS-200 Microspectrometer: Wavelength Range: 350nm - 810nm, Optical Resolution: 13.1 nm





Ocean ST NIR Microspectrometer

Ocean ST is a powerful Shortwave NIR microspectrometer (~645-1085 nm) that provides rapid spectral acquisition and high signal to noise ratio performance in an ultra-compact footprint. Despite its small size and light weight, Ocean ST delivers full spectral analysis at a performance level comparable to larger and more expensive spectrometers. The ST microspectrometer is ideal for both everyday lab use and integration into other devices and setups where space is limited. Shortwave NIR applications range from absorbance of liquids (water quality) to reflection of solid surfaces (product authentication).

In this category, there are 4 versions:

1. ST-NIR-25 Microspectrometer: Wavelength Range: 645nm - 1.085 μ m, Optical Resolution: 2.2 nm
2. ST-NIR-50 Microspectrometer: Wavelength Range: 645nm - 1.085 μ m, Optical Resolution: 3.7 nm
3. ST-NIR-100 Microspectrometer: Wavelength Range: 645nm - 1.085 μ m, Optical Resolution: 6.3 nm
4. ST-NIR-200 Microspectrometer: Wavelength Range: 645nm - 1.085 μ m, Optical Resolution: 13 nm

Near Infrared Spectrometers

A replaceable slit design and optional internal shutter add flexibility. Harness the power of NIR analysis in spectrometer options covering ranges from 900-2500 nm. Applications include chemical composition, moisture detection, and ...

Near Infrared Spectrometers

Its high-performance optical bench and low noise electronics make NIRQuest an excellent choice for applications from 900-2500 nm. A replaceable slit design and optional internal shutter add flexibility.

In this category, there are 3 versions:

1. NIRQUEST+1.7 Spectrometer: Wavelength Range: 900nm - 1.7 μ m, Optical Resolution: 3.13 nm FWHM (typical)
2. NIRQUEST+2.2 Spectrometer: Wavelength Range: 900nm - 2.2 μ m, Optical Resolution: 5.47 nm FWHM (typical)
3. NIRQUEST+2.5 Spectrometer: Wavelength Range: 900nm - 2.5 μ m, Optical Resolution: 6.25 nm FWHM (typical)



Flame-NIR+ Spectrometer

A powerful combination of the compact Flame optical bench and an uncooled InGaAs detector, the Flame-NIR+ is a versatile, affordable instrument for shortwave NIR spectroscopy from 970-1700 nm. With its NIR responsivity and ultra-low power consumption needs, the Flame-NIR+ is an attractive option for integration into handheld and portable systems. New Features! The Flame-NIR+ has better sensitivity and a wider spectral range (at higher wavelengths) than our original model. This allows users to detect weaker levels of NIR light at lower limits of detection and with shorter integration times. Increased sensitivity is important in diffuse reflectance and other applications, while the extended range (especially between 1650-1700 nm) makes it possible to measure samples comprising C-H hydrocarbons.

The Flame-NIR+ offers all the advantages of the Flame product line, including interchangeable slits and low unit to unit variability. The Flame-NIR+ is an ideal choice for applications including moisture measurement in grain and feed, measurement of fats and oils, detection of hydrocarbons, and pharmaceutical ingredients blending.



Raman Spectrometers

Raman spectrometer setups can be optimized to your excitation wavelength and range, resolution and sensitivity requirements.

Raman Spectrometers

The QE Pro-Raman product family comprises preconfigured spectrometers for 532 nm, 638 nm or 785 nm Raman excitation. Designed with gold-coated mirrors and a back-thinned FFT-CCD detector, QE Pro-Raman spectrometers offer a low noise floor even at long integration times. The ability to deliver sharp peaks from weak Raman signals makes QE Pro-Raman spectrometers an excellent choice for Raman analysis of chemicals, pharmaceuticals, illicit drugs, explosives and organic materials.

In this category, there are 3 versions:

- 1- QEPRO-RAMAN-785-PLUS: Optical Resolution: 11 cm⁻¹ FWHM (typical), Entrance slit: 50 μ m, 785 nm Excitation.
- 2- QEPRO-RAMAN-532: Optical Resolution: 14 cm⁻¹ FWHM (typical), Entrance slit: 25 μ m, 532 nm Excitation.
- 3- QEPRO-RAMAN-638: Optical Resolution: 10 cm⁻¹ FWHM (typical), Entrance slit: 25 μ m, 638 nm Excitation.



Ocean HDX Raman Series Spectrometers

The Ocean HDX Raman spectrometer is a compact, high-performance spectrometer for 785 nm Raman excitation applications. This small-footprint instrument unlocks Raman signature data from 150 cm^{-1} to 3400 cm^{-1} , is available with a 25 μm or 50 μm entrance slit, and can be combined with a laser, probe and sample holder to measure solids, powders and liquids. Applications range from authentication of spirits and analysis of cannabinoids, to identification of polymers and characterization of pharmaceutical ingredients.

Less expensive than traditional scientific-grade Raman instruments yet sacrificing very little in performance, Ocean HDX Raman is within reach to a wider range of users, including university teaching and research labs, budget-limited start-ups, and anyone that appreciates great value. In addition, Ocean HDX Raman is attractive for integration into other products, offering the advantages of small size and light weight, plus thermal stability, and Ethernet connectivity.

In this category, there are 2 versions:

- 1- OCEAN-HDX-RAMAN7: Entrance slit: 25 μm , Optical Resolution: 9 cm^{-1} at midpoint of shift, 785 nm Excitation.
- 2- OCEAN-HDX-RAMAN7-HT: Entrance slit: 50 μm , Optical Resolution: 12 cm^{-1} at midpoint of shift, 785 nm Excitation.



3

Light Sources

Modular sources are available for illumination, excitation and calibration, with options for UV, Visible and NIR wavelengths.

The main categories are:

- UV-Vis-NIR Light Sources
- LEDs
- Raman Lasers
- Visible and NIR Light Sources
- Calibration Sources



UV-Vis-NIR Light Sources

Light sources are available for illumination, excitation and calibration, with options for UV, Visible and NIR wavelengths

Xenon Light Sources

Xenon light sources offer very high intensity in the UV and are useful for absorbance, fluorescence or reflectance measurements. Pulsed xenon sources are high intensity with a lower duty cycle, making them ideal for measurements where high intensity UV light can damage the sample. Standard and high power output options are available. Ocean Insight xenon sources have an SMA 905 output connector and seamlessly integrate with our fiber optic spectrometers and accessories, including optical fibers, cuvette holders, probes and other sampling optics.

In this category, there are 3 versions:

1- PX-2 Pulsed Xenon Lamp: Wavelength Range: 220nm - 750nm, Pulsed Xenon, Shutter: Yes, Average Output Power: 9.9 W

2- HPX-2000 Xenon Light Source: Wavelength Range: 185nm - 2 μ m, Nominal Bulb Power: 35 W, Typical Output Power: 1.52 mW, Shutter: Yes

3- HPX-2000-HP-DUV Xenon Source: Wavelength Range: 185nm - 2 μ m, Continuous Xenon, Nominal Bulb Power: 75 W, Typical Output Power: 6.13 mW.



Deuterium-Tungsten Halogen Sources

Combination deuterium-tungsten halogen light sources fit the bill. From measuring organics and small molecules to the near-IR absorption of plastics and polymers, a combination light source allows you to extend the capabilities of your measurement. Using a combination of two lamps or a single lamp that has a wide spectral output, the entire UV-Visible-NIR range can be explored.



In this category, there are 4 versions:

- 1- DH-2000-BAL Light Source: Wavelength Range: 210nm - 2.5 μ m, Nominal Bulb Power: 25 W (deuterium), 20 W (tungsten halogen), Typical Output Power: 194 μ W (deuterium bulb), 615 μ W (tungsten bulb), Shutter: Yes
- 2- DH-2000-FHS-DUV-TTL Light Source: Wavelength Range: 190nm - 2.5 μ m, Deep-UV Deuterium & Tungsten Halogen, Nominal Bulb Power: 20 W (tungsten halogen), 26 W (deuterium), Typical Output Power: 217 μ W (deuterium), 295 μ W (tungsten halogen)
- 3- DH-2000-S-DUV-TTL: Wavelength Range: 190nm - 2.5 μ m, Source: Deep-UV Deuterium & Tungsten Halogen, Nominal Bulb Power: 20 W (tungsten halogen), 26 W (deuterium), Typical Output Power: 585 μ W (deuterium), 990 μ W (tungsten halogen), Shutter: Yes
- 4- FLAME-DA-CUV-UV-VIS: Wavelength Range: 200nm - 1.1 μ m, Source: Deuterium & Tungsten Halogen, Integrated Cuvette Holder: Yes, Power Requirements: 5V DC external power supply (included), Flame Direct Attach Accessory UV-Vis

Vis-NIR Light Sources

Krypton and tungsten halogen sources are available for measurements from 360-2500 nm. These white light (broad bandwidth) options are ideal for absorbance, color and reflectance.

Krypton Light Source

ecoVis is a compact, low-voltage Visible-NIR light source (400-2500 nm) with built-in cuvette holder that's great for basic lab measurements in teaching labs and other research environments. Its rugged, solid alloy housing helps to dissipate heat and in-line fiber ports allow for absorbance and fluorescence measurements. ecoVis has a 1 cm pathlength cuvette holder with a chromium-plated reflective insert that increases the output for fluorescence, can be adjusted through 90° to block the light path for dark measurements, and holds the cuvette securely in place.



Tungsten Halogen Light Sources

Ocean Insight offers sturdy, reliable tungsten halogen light sources to meet your application requirements. From high-power to long-lifetime models, our HL-2000 product family provides flexibility for your lab for measurements from 360-2400 nm. All HL-2000 models have an integrated fan to keep source cool and stable, and a built-in holder that accommodates filters for conditioning the light. Some models include an integrated shutter and long-lifetime bulb. A universal power supply makes setup quick and easy.

In this category, there are 3 versions:

- 1- HL-2000-FHSA-LL Light Source: Wavelength Range: 360nm - 2.4 μ m, Source: Long Lifetime Tungsten Halogen, Nominal Bulb Power: 4.75 W, Typical Output Power: 4.5 mW, Shutter: Yes
- 2- HL-2000-LL Light Source: Wavelength Range: 360nm - 2.4 μ m, Source: Long Lifetime Tungsten Halogen, Nominal Bulb Power: 4.75 W, Typical Output Power: 4.7 mW, Shutter: No
- 3- HL-2000-HP Light Source: Wavelength Range: 360nm - 2.4 μ m, Source: High-powered Tungsten Halogen, Nominal Bulb Power: 20 W, Typical Output Power: 8.8 mW, Shutter: No
- 4- HL-2000-HP-FHSA Light Source: Wavelength Range: 360nm - 2.4 μ m, Source: High-powered Tungsten Halogen, Nominal Bulb Power: 20 W (tungsten halogen), Typical Output Power: 8.4 mW, Shutter: Yes



LEDs

A light-emitting diode (LED) is a semiconductor light source that emits light when current flows through it. Electrons in the semiconductor recombine with electron holes, releasing energy in the form of photons (Energy packets). The color of the light (corresponding to the energy of the photons) is determined by the energy required for electrons to cross the band gap of the semiconductor.

UV LEDs

The LSM LEDs are controlled by the LDC-1 single channel driver and controller. LSM series LED light sources are ideal for fluorescence excitation and other measurements requiring narrowband illumination. The innovative optical design of the LSM LED family provides highly efficient coupling into an optical fiber, ensuring high power for fluorescence excitation where every photon counts. LSM LEDs are available in discrete wavelengths ranging from 310-880 nm and in a warm white option with color temperature of 3000K. LSM LEDs accommodate multiple mounting options (DIN rail, optical bench, rack) and are supplied with a rugged plastic case for carrying multiple LEDs and accessories



In this category, there are 3 versions:

- 1- LSM-310A LED: The LSM LEDs are controlled by the LDC-1 single channel driver, Typical Output Power: 0.21 mW, Fiber Connector: SMA 905,
- 2- LSM-365A LED: The LSM LEDs are controlled by the LDC-1 single channel driver, Typical Output Power: 10.08 mW, Fiber Connector: SMA 905
- 3- LSM-385A LED (The LSM LEDs are controlled by the LDC-1 single channel driver, Typical Output Power: 15.95 mW, Fiber Connector: SMA 905

Other LEDs

The broadband option is a warm white LED with color temperature of 3000K and there are many LEDs in this line of product with selectable wavelengths and output powers.

In this category, there are 3 versions:

- 1- Broadband LED
- 2- LED white lights
- 3- LED spot illumination



NIR LED

LSM-880A LED is controlled by the LDC-1 single channel driver with Typical Output Power: 0.84 mW and Fiber Connector: SMA 905.



LED Kits

LSM LEDs are available in discrete wavelengths ranging from 310-880 nm and in a warm white option with color temperature of 3000K. LSM LEDs accommodate multiple mounting options and are supplied with a rugged plastic case.

Kit versions (the controller plus selected wavelength units) cover Visible (405, 470, 533, 635 nm) wavelengths, or can be purchased with a mix of wavelength models (365, 470 nm and 3000K warm white). A kit with all wavelengths is also available.



Visible LEDs

The LSM LEDs are controlled by the LDC-1 single channel driver and controller. LSM series LED light sources are ideal for fluorescence excitation and other measurements requiring narrowband illumination. The innovative optical design of the LSM LED family provides highly efficient coupling into an optical fiber, ensuring high power for fluorescence excitation where every photon counts. LSM LEDs are available in discrete wavelengths ranging from 310-880 nm and in a warm white option with color temperature of 3000K. LSM LEDs accommodate multiple mounting options (DIN rail, optical bench, rack) and are supplied with a rugged plastic case for carrying multiple LEDs and accessories.

In this category, there are 4 versions:

- 1- LSM-405A LED (The LSM LEDs are controlled by the LDC-1 single channel driver, Typical Output Power: 10.26 mW, Fiber Connector: SMA 905
- 2- LSM-470A LED (The LSM LEDs are controlled by the LDC-1 single channel driver, Typical Output Power: 3.15 mW, Fiber Connector: SMA 905
- 3- LSM-533A LED (The LSM LEDs are controlled by the LDC-1 single channel driver, Typical Output Power: 1.96 mW, Fiber Connector: SMA 905
- 4- LSM-635A LED (The LSM LEDs are controlled by the LDC-1 single channel driver, Typical Output Power: 2.68 mW, Fiber Connector: SMA 905



Lasers

A laser is a device that emits light through a process of optical amplification based on the stimulated emission of electromagnetic radiation. Semiconductor lasers in the blue to near-UV have also been used in place of light-emitting diodes (LEDs) to excite fluorescence as a white light source. This permits a much smaller emitting area due to the much greater radiance of a laser and avoids the droop suffered by LEDs.

Raman Lasers

High power lasers are available for Raman excitation wavelengths of 532 nm, 638 nm, 785 nm and 1064 nm. These multimode diode lasers produce narrow spectral lines and have integrated laser drivers.

In this category, there are 8 versions:

- 1- LASER-532 nm: Diode, Typical Output Power: > 100 mW, Fiber Connector: FC, Excitation Wavelengths: 532 nm
- 2- LASER-638 nm: Source: Diode, Typical Output Power: >50 mW, Spectral Linewidth: < 0.05 nm (FWHM), Excitation Wavelengths: 638 nm
- 3- LASER-785-LAB-FC: Typical Output Power: >350 mW, Fiber Connector: FC, Excitation Wavelengths: 785 nm
- 4- LASER-1064-LAB-ADJ-FC: Diode, Typical Output Power: Adjustable to >500 mW, Fiber Connector: FC, Excitation Wavelengths: 1064 nm
- 5- And more



Supercontinuum white light lasers

The SuperK series is an industry-leading range of turn-key supercontinuum white light lasers used by the most innovative companies within bio-imaging, semiconductor inspection, sorting, device characterization, and scientific instrumentation. The sources are robust and reliable, built for intensive use, and can replace multiple single-line lasers as well as broadband sources like ASE sources, SLEDs and lamps.

In this category, there are 5 models:

- 1- SuperK FIANIUM: High-end supercontinuum lasers
- 2- SuperK EVO: Industrial white light lasers
- 3- SuperK COMPACT: Cost-effective white light lasers
- 4- SuperK CHROMATUNE: The World's broadest tunable laser
- 5- SuperK VARIA: Variable bandwidth single-line tunable filter



ORIGAMI– high energy femtosecond lasers

Our all-in-one, single-box, microjoule femtosecond lasers. The laser head, controller, and air-cooling system are all integrated into one robust package so small it fits in your hand luggage.

In any ultrafast laser, light needs to be guided through free space. For our ORIGAMI lasers, short-pulsed light is generated in an intricate free-space cavity employing solid-state amplification. Inside our ORIGAMI lasers, many optical components are placed with high accuracy to ensure precision short-pulse generation over and over. These components must be stable despite large changes in the operating environment. To ensure a consistent laser cavity performance, thermal and mechanical stability is necessary. Optical components are bonded into precision-machined positions within a block (known as a “cage”) of aircraft-grade aluminum to achieve world-class stability. The temperature of the cage is controlled constantly to ensure minimal thermal and mechanical instability.

In this category, there are 5 models:

- 1- ORIGAMI XPS: High energy femtosecond laser
- 2- ORIGAMI IRO: Femtosecond optical parametric amplifier system
- 3- ORIGAMI LP: Ultra-low noise femtosecond laser



aeroPULSE ultrafast fiber lasers

aeroPULSE is our ultrafast fiber laser platform. Robust, industrial, and available in both pico- and femtosecond flavors. If you are looking for a laser to run 24/7, the aeroPULSE series is for you.



In this category, there are 4 models:

- 1- aeroPULSE FS10: Flexible femtosecond laser
- 2- aeroPULSE FS20: High power femtosecond lasers
- 3- aeroPULSE PS: High power narrow linewidth picosecond lasers
- 4- aeroPULSE FS50: High power femtosecond lasers

KATANA & PILAS pulsed diode lasers

With external trigger functionality, nano- to picosecond pulse duration, and a wide range of wavelengths, the KATANA & PILAS series are our most versatile offering.

In this category, there are 3 models:

- 1- Katana HP: High power picosecond laser, Versatile high-power, sub-nanosecond pulsed laser system designed for all industrial applications. Available at 592 and 775 nm as standard.
- 2- Picosecond pulsed diode lasers: Choose from more than 10 different wavelengths in the range from 375-1550 nm
- 3- Katana: Pulsed lasers, Versatile, sub-nanosecond pulsed laser system



aeroGAIN-BASE – high power ytterbium fiber gain modules

The aeroGAIN-BASE are high-performance ytterbium fiber gain modules. They are designed for industrial manufacturers of ultrafast pulsed fiber lasers, or you can use them as an easy entry into high-power scientific setups.

We have equipped all modules with an optional 10 or 15 μm step-index single-mode fiber input for easy splicing to a seed source. The gain fiber, our industry-leading DC-200/40-PZ-Yb, has the industry's largest single-mode MFD.

In this category, there are 8 models:

- 1- aeroGAIN-BASE: High power and low nonlinearity, high-performance ytterbium fiber gain modules designed for ultrafast pulsed fiber lasers.
- 2- aeroGAIN-ROD: Diffraction-limited beam quality, the ultimate ytterbium high-power fiber amplification module for ultrafast pulsed fiber lasers.
- 3- Photonic Crystal Fibers: Ytterbium doped double clad fibers, High peak power and pulse energy, Ytterbium doped double clad fibers offer the largest single-mode cores in the world.
- 4- Hollow Core crystal fiber: High-power delivery, Hollow Core photonic crystal fibers are ideal for ultrashort pulse applications.
- 5- Nonlinear photonic crystal fibers
- 6- Large Mode Area photonic crystal fibers
- 7- Large Mode Area PM photonic crystal fibers
- 8- aeroGUIDE: Broadband single mode patch cords



Calibration Sources

Sources are available to calibrate spectrometer wavelength or the absolute spectral response of a radiometric system.

Radiometric Calibrated Light Sources

Radiometrically calibrated light sources from Ocean Insight are used to calibrate the absolute spectral response of a spectrometer system. Using these light sources and our software, you can determine absolute intensity values across UV, Visible and NIR wavelengths. An extended-range (to 2400 nm) calibration option is also available, for an additional fee.

Radiometrically calibrated light sources are carefully characterized to deliver a known quantity of light with very low uncertainty. Each source is measured to NIST-traceable standards, creating an unbroken chain of traceability and providing you with the highest quality and most reliable data.

Also, Ocean Insight offers radiometric calibration services performed at our ISO 17025-certified lab.

In this category, there are 4 versions:

- 1- DH-3P-CAL: Wavelength Range: 210nm - 1.1 μm , Source: Deuterium & Tungsten Halogen, Nominal Bulb Power: 25 W (deuterium), 20 W (tungsten halogen), Shutter: Yes, Fiber Connector: SMA 905; CC-3-UV-S or 6.35 mm barrel for cosine corrector
- 2- DH-3P-BAL-CAL: Wavelength Range: 230nm - 1.1 μm , Nominal Bulb Power: 25 W (deuterium), 20 W (tungsten halogen), Shutter: Yes, Fiber Connector: SMA 905; CC-3-UV-S or 6.35 mm barrel for cosine corrector
- 3- HL-3P-CAL: Wavelength Range: 350nm - 1.1 μm , Nominal Bulb Power: 5 W, Shutter: Yes, Fiber Connector: SMA 905; CC-3
- 4- HL-3P-INT-CAL: Wavelength Range: 350nm - 1.1 μm , Source: Tungsten halogen, Nominal Bulb Power: 5 W, Fiber Connector: Integrating sphere



Wavelength Calibration Sources

Spectrometer wavelength calibration sources are available for convenient, reliable spectrometer calibration across UV-NIR wavelengths.

Options include mercury-argon (253-923 nm), krypton (427-893 nm), neon (540-754 nm), argon (696-1704 nm) and xenon (916-1984 nm) gas-discharge emission sources. With multiple wavelength options and emission lines to utilize, users can more readily choose a source, or combination of sources, to match analytical wavelengths of interest within the measurement range.

Quick tip: For a modest investment, adding an Ocean Insight wavelength calibration source is the perfect complement for your spectrometer setup. What's more, they're conveniently available for purchase online.

In this category, there are 4 versions:

1- AR-2: Wavelength Range: 696nm - 1.704 μ m,
Source: Argon, Fiber Connector: SMA 905,
Power Requirements: 5 VDC power supply;
rechargeable, embedded lithium ion battery,

2- HG-2: Wavelength Range: 253nm - 923nm,
Source: Mercury Argon, Fiber Connector: SMA
905, Power Requirements: 5 VDC power supply;
rechargeable, embedded lithium ion battery,

3- KR-2: Wavelength Range: 427nm - 893nm,
Source: Krypton, Fiber Connector: SMA 905, Power
Requirements: 5 VDC power supply; rechargeable,
embedded lithium ion battery

4- NE-2: Wavelength Range: 540nm - 754nm, Fiber Connector: SMA 905, Power Requirements: 5 VDC power supply;
rechargeable, embedded lithium ion battery



4

Fibers & Probes

Ocean Insight optical fiber assemblies, probes and accessories collect and direct light in spectrometer setups. Readily available in our online shop

The main categories are:

- | | |
|------------------------------|----------------------------|
| 1- Custom Fibers & Probes | 2- Optical Fibers |
| 3- Bifurcated fibers | 4- Fiber Splitter |
| 5- Optical fiber accessories | 6- Fiber Optic Probes |
| 7- Raman probes | 8- Transmission dip probes |
| 9- Probe accessories | |



Custom Fibers & Probes

If you don't see the exact assembly you need in our extensive stock of standard fibers and probes, please contact us to discuss creating a custom fiber assembly. Having the right connections is an essential part of our "take the instrument to the sample" philosophy, so we want to get it right!

We stock a wide variety of jacketing materials, connectors, ferrules and fiber core sizes that allow us to design and deliver a solution that is truly optimized for your application and environment.

Our custom designs have ranged from fibers designed for harsh environments like smokestacks to probes used in delicate in vivo applications.

Extreme Solarization Resistant Fibers

Premium-grade optical fiber assemblies are durable, high-quality patch cords that deliver uniform results with minimal signal variance. Premium-grade patch cords act as both illumination and read fibers and connect easily to Ocean Insight spectrometers, light sources and sampling accessories.

UV radiation < 300 nm degrades signal transmission in standard silica fibers, resulting in solarization (increased light absorption in the UV that can invalidate measurements). Solarization-resistant fiber assemblies use polyimide or aluminum buffers that mitigate the effects of UV degradation.

In this category, there are many versions:

- 1- QP115-025-XSR: Wavelength Range: 180nm - 800nm, Fiber Core Size: 115 μ m, Length: .25 m, Jacket: Stainless steel BX
- 2- QP115-1-XSR: Wavelength Range: 180nm - 800nm, Fiber Core Size: 115 μ m, Length: 1 m, Jacket: Stainless steel BX
- 3- QP115-2-XSR: Wavelength Range: 180nm - 800nm, Fiber Core Size: 115 μ m, Length: 2 m, Jacket: Stainless steel BX
- 4- QP230-0.25-XSR: Wavelength Range: 180nm - 800nm, Fiber Core Size: 230 μ m, Length: .25 m, Jacket: Stainless steel BX
- 5- And more ...



Solarization Resistant Fibers

premium-grade optical fiber assemblies are durable, high-quality patch cords that deliver uniform results with minimal signal variance. Premium-grade patch cords act as both illumination and read fibers and connect easily to Ocean Insight spectrometers, light sources and sampling accessories.

UV radiation <300 nm degrades signal transmission in standard silica fibers, resulting in solarization (increased light absorption in the UV that can invalidate measurements). Solarization-resistant fiber assemblies use polyimide or aluminum buffers that mitigate the effects of UV degradation.

In this category, there are many versions:

- 1- QP200-2-SR-BX: Wavelength Range: 200nm - 1.1 μ m, Fiber Core Size: 200 μ m, Length: 2 m, Jacket: Stainless steel BX
- 2- P300-1-SR: Wavelength Range: 200nm - 1.1 μ m, Fiber Core Size: 300 μ m, Length: 1 m, Jacket: PVDF zip tube.
- 3- P400-025-SR: Wavelength Range: 200nm - 1.1 μ m, Fiber Core Size: 400 μ m, Length: .25 m, Jacket: PVDF zip tube
- 4- QP600-2-SR-BX: Wavelength Range: 200nm - 1.1 μ m, Fiber Core Size: 600 μ m, Length: 2 m, Jacket: Stainless steel BX
- 5- QP1000-2-SR: Wavelength Range: 200nm - 1.1 μ m, Fiber Core Size: 1000 μ m, Length: 2 m, Jacket: Silicone-coated steel monocoil
- 6- And more ...



UV-Visible Fibers

The lab-grade and premium-grade UV-Visible optical fiber assemblies are durable, high-quality patch cords that deliver uniform results with minimal signal variance. Patch cords act as both illumination and read fibers and connect easily to Ocean Insight spectrometers, light sources and sampling accessories.

UV-Visible patch cords are high OH fibers that transmit efficiently from 300-1100 nm. Visible-NIR (400-2100 nm) and solarization-resistant (180-800 nm and 200-1100 nm) options are also available.



In this category, there are many versions:

- 1- P50-1-UV-VIS: Wavelength Range: 300nm - 1.1 μ m, Fiber Core Size: 50 μ , Length: 1 m, Jacket: PVDF zip tube
- 2- P100-5-UV-VIS: Wavelength Range: 300nm - 1.1 μ m, Fiber Core Size: 100 μ m, Length: 5 m, Jacket: PVDF zip tube
- 3- P300-2-UV-VIS: Wavelength Range: 300nm - 1.1 μ m, Fiber Core Size: 300 μ m, Length: 2 m, Jacket: PVDF zip tube
- 4- P600-025-UV-VIS: Wavelength Range: 300nm - 1.1 μ m, Fiber Core Size: 600 μ m, Length: .25
- 5- QP1000-2-UV-VIS: Wavelength Range: 300nm - 1.1 μ m, Fiber Core Size: 1000 μ m, Length: 2 m, Jacket: Silicone-coated steel monocoil
- 6- PL100-2-UV-VIS: Wavelength Range: 300nm - 1.1 μ m, Fiber Core Size: 100 μ m, Length: 2 m, Jacket: PVDF zip tube
- 7- And more ...

Visible-NIR Fibers

lab-grade and premium-grade UV-Visible optical fiber assemblies are durable, high-quality patch cords that deliver uniform results with minimal signal variance. Patch cords act as both illumination and read fibers and connect easily to Ocean Insight spectrometers, light sources and sampling accessories.

Visible-NIR patch cords are low OH fibers that transmit most efficiently from 400-2100 nm. UV-Visible (300-1100 nm) and solarization-resistant (180-800 nm and 200-1100 nm) options are also available.



In this category, there are many versions:

- 1- P50-1-VIS-NIR: Wavelength Range: 400nm - 2.1 μ m, Fiber Core Size: 50 μ m, Length: 1 m, Jacket: PVDF zip tube
- 2- P100-10-VIS-NIR: Wavelength Range: 400nm - 2.1 μ m, Fiber Core Size: 100 μ m, Length: 10 m, Jacket: PVDF zip tube
- 3- P600-025-VIS-NIR: Wavelength Range: 400nm - 2.1 μ m, Fiber Core Size: 600 μ m, Length: .25, Jacket: PVDF zip tube
- 4- QP1000-2-VIS-NIR: Wavelength Range: 400nm - 2.1 μ m, Fiber Core Size: 1000 μ m, Length: 2 m, Jacket: Silicone-coated steel monocoil
- 5- And more ...

Single Mode Fibers

Single-mode optical fiber assemblies are durable, high-quality patch cords that deliver uniform results with minimal signal variance. Patch cords act as both illumination and read fibers and connect easily to Ocean Insight spectrometers, light sources and sampling accessories. Single-mode patch cords transmit efficiently from 1300-1600 nm. These 8 μ m fiber assemblies are designed for use with lasers and other sources having narrow spectral width.



In this category, there are 3 versions:

- 1- P8-2-SMA: Wavelength Range: 1.3 μ m - 1.6 μ m, Fiber Core Size: 8 μ m, Length: 2 m, Jacket: PVDF zip tube
- 2- QP8-2-SMA: Wavelength Range: 1.3 μ m - 1.6 μ m, Fiber Core Size: 8 μ m, Length: 2 m, Jacket: Silicone-coated steel monocoil
- 3- QP8-2-SMA-BX: Wavelength Range: 1.3 μ m - 1.6 μ m, Fiber Core Size: 8 μ m, Length: 2 m, Jacket: Stainless steel BX

UV-Visible Bifurcated Fibers

Bifurcated optical fiber assemblies have two fibers in the common end and break out into two legs at the other end. The fiber type (i.e., its most efficient transmission range) used in each leg can be the same or different, depending on your application needs.

UV-Visible bifurcated fibers are high OH fibers that transmit efficiently from 300-1100 nm.

Bifurcated fibers are good for routing equal amounts of light from a single source to two different locations, or from a single sample to two spectrometers configured for different wavelength ranges.



In this category, there are many versions:

- 1- QBIF50-UV-VIS: Wavelength Range: 300nm - 1.1 μ m, Fiber Core Size: 50 μ m, Length: 2 m, Jacket: Silicone-coated steel monocoil
- 2- BIF200-UV-VIS: Wavelength Range: 300nm - 1.1 μ m, Fiber Core Size: 200 μ m, Length: 2 m, Jacket: PVDF zip tube
- 3- BIF400-UV-VIS: Wavelength Range: 300nm - 1.1 μ m, Fiber Core Size: 400 μ m, Length: 2 m,
- 4- BIF600-UV-VIS: Wavelength Range: 300nm - 1.1 μ m, Fiber Core Size: 600 μ m, Length: 2 m, Jacket: PVDF zip tube
- 5- And more ...

Visible-NIR Bifurcated Fibers

Bifurcated optical fiber assemblies have two fibers in the common end and break out into two legs at the other end. The fiber type (i.e., its most efficient transmission range) used in each leg can be the same or different, depending on your application needs.

Visible-NIR bifurcated fibers are high OH fibers that transmit efficiently from 400-2100 nm.

Bifurcated fibers are good for routing equal amounts of light from a single source to two different locations, or from a single sample to two spectrometers configured for different wavelength ranges.

In this category, there are many versions:

- 1- BIF50-VIS-NIR: Wavelength Range: 400nm - 2.1 μ m, Fiber Core Size: 50 μ m, Length: 2 m, Jacket: PVDF zip tube
- 2- BIF200-VIS-NIR: Wavelength Range: 400nm - 2.1 μ m, Fiber Core Size: 200 μ m, Length: 2 m, Jacket: PVDF zip tube
- 3- BIF400-VIS-NIR: Wavelength Range: 400nm - 2.1 μ m, Fiber Core Size: 400 μ m, Length: 2 m, Jacket: PVDF zip tube
- 4- QBIF600-VIS-NIR, Wavelength Range: 400nm - 2.1 μ m, Fiber Core Size: 600 μ m, Length: 2 m, Jacket: Silicone-coated steel monocoil
- 5- And more ...



Mixed UV-Visible & Visible-NIR Bifurcated Fibers

Bifurcated optical fiber assemblies have two fibers in the common end and break out into two legs at the other end. The fiber type (i.e., its most efficient transmission range) used in each leg can be the same or different, depending on your application needs.

“Mixed” bifurcated fibers comprise one UV-Visible (300-1100 nm) and one Visible-NIR (400-2100 nm) assembly.

Bifurcated fibers are good for routing equal amounts of light from a single source to two different locations, or from a single sample to two spectrometers configured for different wavelength ranges.

In this category, there are 4 versions:

- 1- BIF200-MIXED: Wavelength Range: 300nm - 2.1 μ m, Fiber Core Size: 200 μ m, Length: 2 m, Jacket: PVDF zip tube
- 2- QBIF200-MIXED: Wavelength Range: 300nm - 2.1 μ m, Fiber Core Size: 200 μ m, Length: 2 m, Jacket: Silicone-coated steel monocoil
- 3- BIF400-MIXED: Wavelength Range: 300nm - 2.1 μ m, Fiber Core Size: 400 μ m, Length: 2 m, Jacket: PVDF zip tube
- 4- QBIF400-MIXED: Wavelength Range: 300nm - 2.1 μ m, Fiber Core Size: 400 μ m, Length: 2 m, Jacket: Silicone-coated steel monocoil



5

Sampling Accessories

Ocean Insight has accessories for free space measurements, and solid or liquid sampling. Available in our online shop for added convenience.

The main categories are:

- Free Space Optics: Collimating Lens, Cosine Correctors, Spheres
- Liquid Sampling: Cuvette Holders, Flow Cells and More
- Solid Sampling: Integrating Spheres, Filter Holders, Sample Stages
- Raman Accessories - Oxygen & pH Sensors
- Adapters, Cables & Power Supplies



Integrating Spheres for Irradiance

Integrating spheres are available that connect to Ocean Insight spectrometers and optical fibers to measure the spectral output of LEDs, lasers and other light sources. Each sphere consists of diffusing material that provides a Lambertian surface for irradiance measurements. Various sample port sizes are available and some models can be attached directly to the spectrometer.



In this category, there are 5 versions:

- 1- FOIS-1 Integrating Sphere: Sample Port Diameter: 9.5 mm, Spectral Range: 250-2000 nm, Sphere Coating: Spectralon, Sphere Diameter: 38.1 mm
- 2- ISP-30-6-I Integrating Sphere: Sample Port Diameter: 6 mm, Spectral Range: 200-2500 nm, Sphere Coating: PTFE, Sphere Diameter: 30 mm
- 3- ISP-50-8-I Integrating Sphere: Sample Port Diameter: 8 mm, Spectral Range: 200-2500 nm, Sphere Coating: PTFE, Sphere Diameter: 50 mm
- 4- And more ...

Integrating Spheres for Reflectance

ISP-R series fiber optic integrating spheres couple to Ocean Insight spectrometers to measure the total integrated reflectance of surfaces placed against the sphere's sample port. ISP-R integrating spheres are well-suited for measurement of opaque or highly directional samples. The spheres are available in 6 mm and 8 mm sample port diameters and gloss-trap options are available that allow you to measure the specular component of the total integrated reflection.

In this category, there are 5 versions:

- 1- ISP-30-6-R: Gloss Trap: No, Sample Port Diameter: 6 mm, Spectral Range: 200-2500 nm, Sphere Coating: PTFE, Sphere Diameter: 30 mm
- 2- ISP-50-8-R: Gloss Trap: No, Sample Port Diameter: 8 mm, Spectral Range: 200-2500 nm, Sphere Coating: PTFE, Sphere Diameter: 50 mm
- 3- ISP-50-8-R-GT: Gloss Trap: Yes, Sample Port Diameter: 8 mm, Spectral Range: 200-2500 nm, Sphere Coating: PTFE, Sphere Diameter: 50 mm
- 4- ISP-80-8-R: Gloss Trap: No, Sample Port Diameter: 8 mm, Spectral Range: 200-2500 nm, Sphere Coating: PTFE, Sphere Diameter: 80 mm
- 5- ISP-REF: Sample Port Diameter: 10.32 mm, Spectral Range: ~360-2500 nm, Sphere Coating: Spectralon doped with BaSO₄, Sphere Diameter: 38.1 mm



Collimating Lenses

Collimating lenses are optical lenses that make parallel the light beams that enter your spectrometer setup. These lenses allow users to control the field of view, collection efficiency and spatial resolution of their setup, and to configure illumination and collection angles for sampling.



Ocean Insight collimating lenses can be attached to the spectrometer, coupled to optical fibers, or integrated into sampling accessories. Most lenses have an inner barrel threaded for SMA 905 connectors. The inner barrel slides relative to the lens fixture for adjusting the focus; a setscrew secures the barrel.

In this category, there are 6 versions:

- 1- 74-ACR Achromatic Collimating Lens: Connects to: Optical fiber, Lens Material: f/2 BaF10 and FD10 fused silica, Type: Achromatic doublet, Wavelength Range: 350nm - 2.5 μ m
- 2- 74-DA Direct-attach Collimating Lens: Connects to: Spectrometer, Lens Material: f/2 fused silica Dynasil, Type: Single lens, direct-attach, Wavelength Range: 200nm - 2.5 μ m, 74-DA
- 3- 84-UV-25 Collimating Lens: Connects to: Optical fiber, Lens Material: f/4 fused silica Dynasil, Optical Diffuser: 100 mm, Type: Single lens, Wavelength Range: 185nm - 2.5 μ m
- 4- And more ...

Cosine Correctors

Cosine correctors are optical diffusers (opaline glass, PTFE or Spectralon) that couple to fibers and spectrometers to collect signal from 180° field of view. Cosine correctors are specified for setups requiring the redistribution of incident light, such as measuring spectral irradiance of a plane surface in air or other media.

Typical applications include relative and absolute spectral intensity measurements of LEDs, light sources and other radiant sources (including solar). Options are available for connecting to optical fibers or spectrometers.



In this category, there are 6 versions:

- 1- CC-3 Cosine Correctors: Connects to: Optical fiber, Optical Diffuser: Opaline glass, Wavelength Range: 350nm - 1 μ m
- 2- CC-3-DA Direct-attach Cosine Corrector, Connects to: Spectrometer, Optical Diffuser: Spectralon, Wavelength Range: 200nm - 2.5 μ m
- 3- CC-T-DIFFUSE PTFE Diffuser, Optical Diffuser: PTFE, Wavelength Range: 200nm - 750nm
- 4- And more ...

Lens Holders & Mounts

Ocean Insight offers optical lens holders, fixtures and mounts for manipulating collimating lenses in various measurement setups. Holders function to position lenses and can be adjusted to accommodate various samples. Optical post mounts allow users to position lenses on optical breadboards.



In this category, there are 6 versions:

- 1- 74-90-UV Collimating Lens Assembly: Lens Material: f/2 fused silica Dynasil, Type: Holder, Wavelength Range: 200nm - 2 μ m.
- 2- 74-ACH Adjustable Collimating Lens Holder: Accepts lenses with 3/8-24 threads Uses 10-32 setscrews for adjusting the bars (recommend 5/32" hex wrench to loosen)
- 3- OPM-M Optical Mount: Black anodized aluminum, 30 OD x 6.5 width
- 4- And more ...

General Purpose Cuvette Holders

Ocean Insight offers cuvette holders for a variety of absorbance and fluorescence sampling needs. Both discrete and direct-attach holders are available and integrate seamlessly with our spectrometers, light sources and optical fibers.

In this category, there are 7 versions:

- 1- SQUARE ONE Cuvette Holder: Collimating Lenses: Three 74-UV fused silica lenses (200-2000 nm), Filter Slot Specification: Two slots in total. Each slot accepts one 12.5 mm and 25 mm diameter filters, Pathlength: 1 cm
- 2- ACH-CUV-VAR: Pathlength: Up to 150 mm thick (solids) Up to 150 mm pathlength (cuvettes)
- 3- And more ...



Temperature Controlled Cuvette Holders

The qpod® and qpod 2e™ series of temperature-controlled sample compartments are designed for use with fiber optic spectrometers and provide precise control from -30 °C to 105 °C. Each unit is calibrated using a NIST-traceable thermometer and includes variable speed magnetic stirring, dry gas purge and thermometer probe input.

When combined with Ocean Insight spectrometers and accessories, qpod/qpod 2e sample compartments are ideal for absorbance and fluorescence measurements that require careful control of sample temperature. Typical applications include protein and DNA thermodynamics, fluorophore characterization, enzyme kinetics and on-line thermocycling of biological particles.

Specifications:

Pathlength: 12.5 mm x 12.5 mm OD

Integrated PID Temperature Controller: No and Yes

Temperature Precision: -0.01 °C and -0.02 °C

Z Dimension Specification: 8.5 mm

Temperature Accuracy: -0.15 °C

Temperature Range: -30 °C to 105 °C

Cuvette Holder Accessories

Optional covers are available for 1 cm pathlength CUV-series cuvette holders. These covers fit over the sample chamber to block ambient light from the sample. Standard and "tall" versions are available.

Also available for use with CUV-series fluorescence cuvette holders are mirrored screw plugs, which are inserted into a collimating lens port on the cuvette holder to redirect energy to the sample or collimating lens.



In this category, there are 7 versions:

1- 74-MSP: Mirror Screw Plug

3- ECOVIS-INSERT

5- CUV-COVER-TALL: Tall Cuvette Cover

7- Cuvette Covers

2- CVD-DIFFUSE

4- CUV-COVER: Cover for 1-cm Cuvette Holder

6- CUV-VAR-OPTION: Flow cell adapter for CUV-VAR Cuvette Holder

Plastic Cuvettes

CVD Series plastic cuvettes are versatile, no-maintenance sample cells for spectroscopy applications in the UV-Vis (220-900 nm) and Vis-NIR (350-900 nm) regions. Each cuvette has a 1 cm (10 mm) pathlength but varies by filling volume and window dimension. Optional cuvette caps are available in blue, green, orange and yellow.



In this category, there are 5 versions:

1- CVD-UV1S: Filling Volume: 1.5-3.0 mL, Material: Plastic, Pathlength: 1 cm, Wavelength Range: 230nm - 900nm, UV-Vis Plastic Cuvettes, Pack of 100

2- CVD-UV1S-SAM: Filling Volume: 1.5-3.0 mL, Material: Plastic, Pathlength: 1 cm, Wavelength Range: 230nm - 900nm, UV-Vis Plastic Cuvettes, Sample Pack of 8

3- And more ...

Plastic Cuvettes

Ocean Insight offers a variety of quartz sample cells for absorbance, transmission and fluorescence measurements. All cuvettes are suitable for use from 170-2700 nm and will fit securely into our cuvette holders. Options are available to meet your fill volume requirements and measurement needs. With proper care and maintenance, cells can be reused effectively for as long as they remain free of scratches, cracks and similar imperfections.



In this category, there are 5 versions:

1- CVFL-Q-10: Filling Volume: 3.5 mL, Pathlength: 1 cm, Wavelength Range: 170nm - 2.7µm, Quartz Cuvette for Fluorescence

2- CVF-Q-10, Filling Volume: 0.42 mL, Pathlength: 1 cm, Wavelength Range: 170nm - 2.7µm, Quartz Flow Cell Cuvette

3- CV-Q-10: Filling Volume: 3.5 mL, Pathlength: 1 cm, Wavelength Range: 170nm - 2.7µm, Standard Quartz Cuvette

4- CV-Q-100: Filling Volume: 28.2 mL, Pathlength: 10 cm, Wavelength Range: 170nm - 2.7µm, Cylindrical Quartz Cell for Absorbance

5- CVS-Q-10: Filling Volume: 1.4 mL, Pathlength: 1 cm, Wavelength Range: 170nm - 2.7µm, Micro-volume, Self-masking Quartz Cuvette



Z-type Flow Cell Kit with pump, tubing and fittings

Measure the optical absorbance of fluids moving through flow injection system with FIA series flow cells. These Z-type cells are available in a variety of materials, pathlengths and internal volume levels. When combined with Ocean Insight spectrometers, light sources and accessories, FIA flow cells allow rapid analysis of laboratory, industrial and environmental samples.

FIA Z cells are available with standard and adjustable pathlengths and can be purchased as part of a kit comprising the cell, peristaltic pump, tubing and fittings.

In this category, there are 5 versions:

- 1- FIA-1000-Z-PEEK: Cell Material: PEEK, Internal Volume: Up to 26 μ L, Pathlength: Adjustable up to 10 mm, Wavelength Range: 210nm - 2 μ m, Window Material: Fused silica
- 2- FIA-1000-Z-PLEX: Cell Material: Plexiglas, Internal Volume: Up to 26 μ L, Pathlength: Adjustable up to 10 mm, Wavelength Range: 210nm - 2 μ m, Window Material: Fused silica
- 3- FIA-1000-Z-SS: Cell Material: Stainless steel, Internal Volume: Up to 26 μ L, Pathlength: Adjustable up to 10 mm, Wavelength Range: 210nm - 2 μ m, Window Material: Fused silica
- 4- FIA-1000-Z-TEF: Cell Material: Teflon, Internal Volume: Up to 26 μ L, Pathlength: Adjustable up to 10 mm, Wavelength Range: 210nm - 2 μ m, Window Material: Fused silica
- 5- FIA-1000-Z-ULT: Cell Material: Ultem, Internal Volume: Up to 26 μ L, Pathlength: Adjustable up to 10 mm, Wavelength Range: 210nm - 2 μ m, Window Material: Fused silica

Fluorescence Flow Cell

FIA fluorescence flow cells combine the benefits of flow injection analysis with optical components optimized for fluorescence. A fiber sends excitation energy through a fused silica window into the sample compartment. Emitted energy is collected by a second fiber, oriented at 90 degrees, that connects to an Ocean Insight spectrometer configured for fluorescence. Each flow cell comes with 2 meters of Teflon tubing, plus chemically resistant connectors and seals. Two 600 μ m fibers (sold separately) are required to complete the setup.

In this category, there are 2 versions:

- 1- FIA-SMA-FL-SS: Cell Material: Stainless steel, Wavelength Range: 260nm - 2 μ m, Window Material: Fused silica
- 2- FIA-SMA-FL-ULT: Cell Material: Ultem, Wavelength Range: 260nm - 2 μ m, Window Material: Fused silica



Adjustable Pathlength Flow Cell Kits

Measure the optical absorbance of fluids moving through flow injection system with FIA series flow cells. These Z-type cells are available in a variety of materials, pathlengths and internal volume levels. When combined with Ocean Insight spectrometers, light sources and accessories, FIA flow cells allow rapid analysis of laboratory, industrial and environmental samples.

FIA Z cells are available with standard and adjustable pathlengths and can be purchased as part of a kit comprising the cell, peristaltic pump, tubing and fittings.

Replacement windows and other components are also available.

In this category, there are 6 versions:

- 1- FIA-SMA-WIN: Wavelength Range: 210nm - 2 μ m, Window Material: Fused silica
- 2- FIA-SMA-WIN-SS:
- 3- FIA-SMA-Z-10-PEEK: Cell Material: PEEK, Pathlength: 10mm, Window Material: Fused Silica
- 4- FIA-SMA-Z-2.5-PEEK, Cell Material: PEEK, Pathlength: 2.5 mm, Window Material: Fused Silica
- 5- FIA-SMA-Z-2.5-UVOL: Pathlength: 2.5 mm, Window Material: Fused Silica
- 6- FIA-SMFC



Ultra Short Pathlength Flow Cells

FIA series Ultra Short Path Flow Cells are a great option for absorbance and transmission of liquids with high opacity or available at very low sample volume levels. Pathlengths from 100 μ m-2000 μ m are available. Primary applications include life sciences analyses and process control of optically dense samples such as dye baths used in textile manufacturing.

Each flow cell has a 2% pathlength tolerance and a 10-50 μ L/second flow rate (push or pull). Tubing and fittings are included.

In this category, there are 5 versions:

- 1- FIA-USP-100: Internal Volume: 0.03 mL, Pathlength: 100 μ m, Window Material: Fused silica
- 2- FIA-USP-1000: Internal Volume: 0.30 mL, Pathlength: 1000 μ m, Window Material: Fused silica
- 3- FIA-USP-200: Internal Volume: 0.06 mL, Pathlength: 200 μ m, Window Material: Fused silica
- 4- FIA-USP-2000: Internal Volume: 0.60 mL, Pathlength: 2000 μ m, Window Material: Fused silica
- 5- FIA-USP-500: Internal Volume: 0.15 mL, Pathlength: 500 μ m, Window Material: Fused silica



Adjustable Pathlength Z Flow Cells

Measure the optical absorbance of fluids moving through flow injection system with FIA series flow cells. These Z-type cells are available in a variety of materials, pathlengths and internal volume levels. When combined with Ocean Insight spectrometers, light sources and accessories, FIA flow cells allow rapid analysis of laboratory, industrial and environmental samples.

FIA Z cells are available with standard and adjustable pathlengths and can be purchased as part of a kit comprising the cell, peristaltic pump, tubing and fittings.

In this category, there are 5 versions:

- 1- FIA-ZCELL-PEEK: Cell Material: PEEK, Internal Volume: Up to 26 μL , Pathlength: Adjustable up to 10 mm, Wavelength Range: 210nm - 2 μm , Window Material: Fused silica
- 2- FIA-ZCELL-PEX: Cell Material: Plexiglas, Internal Volume: Up to 26 μL , Pathlength: Adjustable up to 10 mm, Wavelength Range: 210nm - 2 μm , Window Material: Fused silica
- 3- And more ...



Standard Z Flow Cells

Measure the optical absorbance of fluids moving through flow injection system with FIA series flow cells. These Z-type cells are available in a variety of materials, pathlengths and internal volume levels. When combined with Ocean Insight spectrometers, light sources and accessories, FIA flow cells allow rapid analysis of laboratory, industrial and environmental samples.

FIA Z cells are available with standard and adjustable pathlengths and can be purchased as part of a kit comprising the cell, peristaltic pump, tubing and fittings.



In this category, there are many versions:

- 1- FIA-ZSMA-100-PE: Cell Material: PEEK, Internal Volume: 260 μL , Pathlength: 100 mm, Wavelength Range: 210nm - 2 μm , Window Material: Fused silica
- 2- FIA-Z-SMA-SS: Cell Material: Stainless steel, Internal Volume: 26 μL , Pathlength: 10 mm, Wavelength Range: 210nm - 2 μm , Window Material: Fused silica
- 3- And more....

Microvolume Flow Cells

FIA series microliter volume flow cells are useful tools for absorbance measurements of various lab samples. The cells are available in a variety of pathlengths, materials and internal volume levels. When coupled to our spectrometers, light sources and optical fibers, FIA flow cells are convenient tools for monitoring immunoassays and chemical and biological processes.

In this category, there are many versions:

- 1- FIA-ZSMA-ML-100-PEEK: Cell Material: PEEK, Internal Volume: 60 μL , Pathlength: 100 mm, Wavelength Range: 210nm - 2 μm , Window Material: Fused silica
- 2- FIA-ZSMA-ML-2.5-PE: Cell Material: PEEK, Internal Volume: 2 μL , Pathlength: 2.5 mm, Wavelength Range: 210nm - 2 μm , Window Material: Fused silica
- 3- FIA-ZSMA-ML-20-PEEK, Cell Material: PEEK, Internal Volume: 12 μL , Pathlength: 20 mm, Wavelength Range: 210nm - 2 μm , Window Material: Fused silica
- 4- FIA-ZSMA-ML-50-PEEK, Cell Material: PEEK, Internal Volume: 30 μL , Pathlength: 50 mm, Wavelength Range: 210nm - 2 μm , Window Material: Fused silica
- 5- FIA-Z-SMA-ML-PE: Cell Material: PEEK, Internal Volume: 6 μL , Pathlength: 10 mm, Wavelength Range: 210nm - 2 μm , Window Material: Fused silica,
- 6- And more



Longpass Flow Cells

LPC Longpass Flow Cells couple to Ocean Insight spectrometers and light sources for measurement of low-volume and low-concentration aqueous samples. The cells are available in standard and microvolume versions, with pathlengths ranging from 1 cm-500 cm and internal volume levels from 2.4 μL -1,250 μL .

LPCs use a capillary tube as both sample compartment and light waveguide. Chemical and biological samples such as proteins, nutrients and DNA are introduced with a syringe or a pump into the fluidic ports mounted on the face panel. Optical fibers connect to SMA 905 fittings to deliver and return light to the spectrometer.

In this category, there are 7 versions:

- 1- LPC-10MM: Internal Volume: 2.4 μL , Pathlength: 10 mm, Wavelength Range: 200nm- 1 μm
- 2- LPC-100MM: Internal Volume: 24 μL , Pathlength: 100 mm, Wavelength Range: 200nm-1 μm
- 3- LPC-050CM: Internal Volume: 125 μL , Pathlength: 50 cm, Wavelength Range: 230nm- 800nm
- 4- LPC-100CM: Internal volume: 250 μL , Pathlength: 100 cm, Wavelength Range: 230nm-730nm
- 5- LPC-250CM: Internal Volume: 625 μL , Pathlength: 250 cm, Wavelength Range: 250nm- 730nm
- 6- LPC-500CM: Internal Volume: 1250 μL , Pathlength: 500 cm, Wavelength Range: 280nm-730nm
- 7- LPC-CLEANKIT



Reflectance Standards

Ocean Insight offers specular and diffuse reflectance standards for measurements of various types of sample surfaces. Reflectance measurements are a ratio of the reflected light spectrum to the incident light spectrum. Since there is no way to directly collect all of the light incident on a surface, reflectivity is usually measured relative to a reference standard. To ensure best results, the standard selected should be similar in reflectivity to the sample to be measured.

In this category, there are 6 versions:

- 1- STAN-HOLDER for Reflectance Standards: Holder for Reflectance Standards
- 2- STAN-SSH Specular Reflectance Standard: Reflectance Material: Front surface-protected aluminum mirror on fused silica substrate, Reflectivity: ~87%-93% (200 - 1000 nm) ~93%-98% (1000 - 2500 nm), Specular Reflectance Standard, High Reflectivity
- 3- STAN-SSH-NIST Specular Reflectance Standard: Reflectance Material: Front surface-protected aluminum mirror on fused silica substrate, Reflectivity: ~87%-93% (250 - 1000 nm) ~93%-98% (1000 - 2500 nm), STAN-SSH-NIST Specular Reflectance Standard
- 4- And more ...



Filter Holders

Inline filter holders from Ocean Insight are sturdy, convenient accessories for measuring the absorbance and transmission of optical filters and solid samples. Several options are available depending on your application needs.

In this category, there are 4 versions:

- 1- FHS-LVF: In-line filter holder for LVFs
- 2- FHS-UV Filter Holder: Dimensions: 50.6 mm x 140 mm x 43.1 mm (LWH), Maximum Filter Thickness: 6 mm
- 3- FHSA-TTL Filter/Cuvette Holder: Integrated Light Source: No
- 4- 4- INLINE-SFH Inline Filter Holder, Dimensions: 57.5 mm x 19.5 mm x 19.5 mm diameter, Maximum Filter Diameter: 12.7 mm, Maximum Filter Thickness: 9 mm

Optical Filters

Ocean Insight makes available high-quality glass filters that absorb light energy in certain regions of the spectra. These OF2 series filters fit easily into our light sources, cuvette holders and sample holders for a variety of applications.

High-pass filters often are used to block second orders, test for stray light and block excitation energy in fluorescence and Raman experiments.

Balancing filters absorb energy in some regions while transmitting in others.

Bandpass filters transmit a particular wavelength range while rejecting energies higher and lower than the selected range.

In this category, there are many versions:

- 1- OF2-BG34R Balancing Filter
- 2- OF2-GG375 High-pass Optical Filter
- 3- OF2-GG395 High-pass Optical Filter
- 4- OF2-GG400 High-pass Optical Filter
- 5- OF2-GG475 High-pass Optical Filter
- 6- OF2-HPKIT-UV-VIS High-pass Filter Kit
- 7- And more ...



Linear Variable Filters

Linear Variable Filters (LVFs) from Ocean Insight are handy tools for any optical experiment where high-pass, low-pass or bandpass filters are required. The filters are epoxied into slide carriers so you can move the transmission or blocking band through each filter's wavelength range. LVFs are available with accessories for mounting the filters in-line or adapting them to the filter slot of a cuvette holder.

LVFs are available in single and double filter versions, have excellent transmission (~90%) and blocking (99.8%) bands and are optimized for 230-500 nm or 300-750 nm wavelength ranges. LVFs are especially useful for spectrally shaping the excitation energy from broadband sources used for fluorescence.

In this category, there are many versions:

- 1- LVF-CUV-ADP Sample Holder Adapter
- 2- LVF-H Linear Variable Filter: Filter Dimensions Specification: 57 mm x 10 mm, Filter Material: Interference coating on quartz substrate, Filter Ranges: 300-750 nm, Filter Type: Single high-pass
- 3- LVF-HH Linear Variable Filter: Filter Dimensions Specification: 57 mm x 10 mm, Filter Material: Interference coating on quartz substrate, Filter Ranges: 300-750 nm, Filter Type: Double high-pass
- 4- LVF-HL Linear Variable Filter: Filter Dimensions Specification: 57 mm x 10 mm, Filter Material: Interference coating on quartz substrate, Filter Ranges: 300-750 nm, Filter Type: Adjustable bandpass
- 5- And more ...



Sample Stages

Optical stages from Ocean Insight are versatile accessories for reflection and transmission measurements of flat substrates. Versions are available for single-point reflection measurements and for multipoint reflection and transmission measurements. These rugged, reliable tools are especially effective for maintaining fiber and probe positioning in your sampling setup.

In this category, there are 4 versions:

- 1- STAGE Manual Optical Stage: Base Dimensions: 152.4 mm, Rail Height: Adjustable to 63.5 mm, Sample Area Dimensions: 101.6 mm,
- 2- STAGE-RTL-T Reflection-Transmission Stage: Base Dimensions: 206.3 mm diameter, Rail Height: Adjustable to 400 mm, Sample Area Dimensions: 152.4 mm diameter
- 3- TC-DYNACUP Sampling Device: TC-DYNACUP Sampling Device
- 4- ISP-RTL-ADP Optical Stage Adapter: ISP-RTL-ADP Optical Stage Adapter



Raman Sample Holders

Ocean Insight offers sample holders for Raman analysis of liquids and solids. The holders accommodate Raman probes from 9.5 mm-12.7 mm diameter, and 1 cm pathlength cuvettes and vials of various dimensions. The RM-SERS-SHS holder is ideal for surface enhanced Raman spectroscopy (SERS) substrates, which comprise nanoparticle chemistries on slides. The holder accommodates standard glass SERS slides and connects to a Raman probe.

In this category, there are 4 versions:

- 1- RM-LQ-SHS Raman Sample Holder: Cuvette Type: 1 cm pathlength square or 15 mm OD vials, Mirror/Cuvette Plugs: Yes, Probe Diameter: 9.5 mm, Translation Stage: No
- 2- RM-SERS-SHS Raman Sample Holder: Cuvette Type: Standard microscope slide 75 x 25 mm or SERS substrates, Mirror/Cuvette Plugs: No, Probe Diameter: 9.5 mm, Translation Stage: No
- 3- OOA-RAMAN-SH Raman Sample Holder: Cuvette Type: 1 cm pathlength square, Mirror/Cuvette Plugs: No, Probe Diameter: 9.5 mm, Translation Stage: Yes
- 4- OOA-HOLDER-RFA Raman Sample Holder: Cuvette Type: 1 cm pathlength square, Mirror/Cuvette Plugs: Yes, Probe Diameter: Raman probe: 9.5 or 12.7 mm; Reflection probe: 6.35mm, Translation Stage: Yes



SERS Substrates

Surface-enhanced Raman spectroscopy (SERS) substrates let you make fast, repeatable measurements for the identification and quantification of SERS-active analytes. Typical applications include trace level detection of narcotics, pesticides and taggants.



In this category, there are 2 versions:

- 1- RAM-SERS-AG SERS Substrates: Excitation Wavelengths: 532 nm, SERS Active Chemistry: Silver (Ag) Nanoparticles, Pack of 5 substrates.
- 2- RAM-SERS-AU-5 SERS Substrates: Excitation Wavelengths: 785 nm, SERS Active Chemistry: Gold (Au) Nanoparticles, Pack of 5 substrates.

Oxygen Sensor Probes

Ocean Insight optical oxygen sensors utilize both ruthenium and platinum-based fluorescent molecules whose fluorescence is quenched by the presence of molecular oxygen. We embed these molecules into thin-films that are applied to the tips of fiber optic probes or to peel-and-stick patches for non-invasive measurement.

Oxygen sensor probes are available in designs including slender probes for fine spatial resolution applications to rugged stainless steel probes for robust environments.

In this category, there are many versions:

- 1- FOSPOR-1000-TSFIBER: Fiber Core Diameter: 1000 μm , Length: 15 cm Outer Diameter: 6.35 mm (1/4"), Industrial Process-ready Oxygen Probe
- 2- FOSPOR-AL300: Compatible Fiber Assembly: BIFBORO-300-2, 21-02, Fiber Core Diameter: 300 μm , Length: 18 cm, Outer Diameter: 420 μm
- 3- FOSPOR-OR125: Compatible Fiber Assembly: BIFBORO-1000-2, 21-02, Fiber Core Diameter: 1000 μm , Length: 63.5 mm, Outer Diameter: 3.175 mm (1/8")
- 4- FOSPOR-PI600: Compatible Fiber Assembly: BIFBORO-600-2, 21-02, Fiber Core Diameter: 600 μm , Length: 18 cm, Outer Diameter: 710 μm
- 5- And more ...



Oxygen Sensing Patches

Peel-and-stick RedEye indicator patches measure oxygen safely and non-invasively in sealed packaging and containers used in medical, pharmaceutical and food applications. Patches can be applied to flexible substrates of any shape or size, or adhered to a transparent vessel or process line. RedEye patches enable rapid, quantitative determination of oxygen levels.

Flexible patch material: allows adhesion to curved surfaces

Silicone adhesive: maintains optical clarity and mechanical hold to glass and plastics for months in aqueous environments; tested at pH 1 and 11, in DI water and seawater

Fast response: <5 seconds without overcoat and <20 seconds with overcoat in both gas and liquid media



Oxygen Bifurcated Fibers

These bifurcated optical fibers are optimized to complete the connection between your oxygen probe and the NeoFox system electronics via a splice bushing. Both fibers and splice bushings are required for most oxygen probe setups.



In this category, there are 3 versions:

1- BIFBORO-300-2: Compatible Fiber Assembly: AL300 series, Fiber Core Diameter: 300 μm , Length: 2 m

2- BIFBORO-600-2: Compatible Fiber Assembly: PI600, Fiber Core Diameter: 600 μm , Length: 2 m

3- BIFBORO-1000-2: Compatible Fiber Assembly: R-series, OR125 series, T1000-TS-NEO, Fiber Core Diameter: 1000 μm , Length: 2 m

Interchangeable Slits

Precision laser-cut slit and aperture assemblies in Ocean Insight spectrometers provide users with a degree of measurement flexibility not typically available with most spectrometers.

Spectroscopy is a technique in which the design criteria exist as a set of trade-offs. For example, a smaller slit yields higher optical resolution, but decreases throughput. Also, changing the slit requires spectrometer rework that has to be performed at the manufacturer's facility. With replaceable slits, users can change the spectrometer's performance directly in the field. Changing slits can be accomplished within minutes, with minimal tinkering.

Measurement flexibility: replacement slits to change spectrometer performance on the fly

Multiple options: aperture-slit assembly sizes from 5 μm -200 μm , plus an aperture-only (no slit) version and a kit comprising 5 μm , 10 μm 25 μm , 50 μm 100 μm and 200 μm slits

Software:

Ocean Insight provides software tools at varying levels of complexity to meet spectroscopic analysis and automation needs. Including:

- Acquisition and Analysis Software
- Software Development Kits
- Chemometric Packages



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Ocean View 2.0 Software

OceanView 2.0 is our powerful, signature desktop spectroscopy application. The software has a cleaner graphical interface and provide fast, stable data acquisition and processing.



The enhanced OceanView 2.0 GUI also has easily identifiable icons and better visual contrast to reduce eyestrain. Other changes compared with earlier versions included boosted software functionality for a more robust, streamlined experience. OceanView is compatible with 32-/64-bit operating systems running Windows, Mac OS, and Linux 32-/64-bit.

OceanView 2.0 allows you to design your own measurement procedures using a "visual schematic" view that lets you drag-and-drop spectrometers, transform functions and display nodes to automate your unique post-processing workflow.

Ocean Direct

OceanDirect is the premier device driver platform for control of Ocean Insight spectrometers. Upgraded from its forerunner OmniDriver and now working free of Java layers or virtual machines, OceanDirect offers a library of functions that allows you to easily write custom software solutions for your Ocean Insight USB-interface spectrometers.

OceanDirect is a powerful, cross-platform Software Developers Kit (SDK) with an Application Programming Interface (API) that is the culmination of our best software driver packages to date.

Supported spectrometers: Ocean SR Series, Ocean ST Series, NIRQuest, NIRQuest+, QE Pro, Ocean HDX, Ocean OFX.

OceanDirect

OceanMath

OceanMath is a family of software library products that provides spectroscopy calculations and data processing of acquired data. OceanMath is organized into a series of libraries that will offer focused, application-specific, fully tested implementation of spectral processing functions. Modules are license-controlled and priced individually.

The first libraries to be released are OceanMathCore and OceanMathArt. The latter requires OceanMathCore to be installed to function.

OceanMathCore is the foundation for OceanMath and contains functions including blackbody spectrum handling and axis unit transformations to gigahertz, Raman shift and wavenumbers.

OceanMathART requires OceanMathCore to be present to operate. It comprises a full library of functions for the most common

spectroscopy applications:

- Absorbance - Reflectance - Transmission - Relative irradiance

Product Overview:

- Convenient software development tools to process spectral data into meaningful answers
- Spectral processing and math functions for handling tasks such as linear regressions, blackbody spectrum management and axis unit transformations
- Typically used with the OceanDirect software development kit for communication with, and control of, Ocean Insight spectrometers
- Convenient licensing options
- Makes spectral processing a point-and-click exercise



OmniDriver and SPAM

OmniDriver is the premier device driver platform for control of all Ocean Insight spectrometers. With it you can configure acquisition parameters, retrieve spectra, set triggering options, and the like.

OmniDriver supports these platforms:

Supports 32- and 64-bit versions of Windows (XP/7/8), Linux (32/64-bit), and Mac OS X

Can be called from Java (via OmniDriver.jar), .NET languages including C# (via NETOmniDriver.DLL), C/C (via DLL, .so, and .dylib respectively)

Supports .NET-capable frameworks like LabVIEW and tools supporting Java .jars (MATLAB). Please note that we do not provide a wrapper interface (DLL) for MATLAB. We only offer tools supporting Java .jar files that will allow you to work in conjunction with MATLAB.



SPAM (Spectral Processing and Math Library) is for people who like writing their own linear regression and LU decompositions; some prefer to pull a tested implementation from a DLL or jar. Some can breeze through u'v' and CIE L*a*b* transforms, while others would as soon call a handy function. Whenever you'd like a breather, feel welcome to lean on SPAM's industrial-strength signal-processing and colorspace routines to make spectral processing a point-and-click exercise. Fully LabVIEW compatible, and available in all your favorite .NET, .so, and .dylib flavors.

SPECLINE-AMS Atomic Emission Analysis Software

SpecLine is a software package for identifying atomic emission lines and molecular bands in spectral data. SpecLine's advanced evaluation, search, compare and identify functions – combined with a library of more than 100 elements and 400 compounds — enable users to quickly identify unknown emission lines, peaks and bands.

When configured with Ocean Insight spectrometers, plasma monitoring systems and modular LIBS instrumentation, SpecLine is a powerful analytical tool for applications in astrophysics, plasma sciences and plasma processing.



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Spectral Systems & Cameras

Ocean Insight provides turnkey systems for a wide range of applications including consumer electronics, lighting, oil & gas, life sciences, food, and medical devices. We provide off-the-shelf instrumentation and partner with some of the world's leading companies to deliver custom solutions.

The main categories are:

- LTMS Liquid Transmission Measurement System
- Sorting Systems
- Reflectance/Color Measurement Systems
- Oxygen Sensors
- Multispectral Imaging Devices



SpeedSorter™ LIBS Sorting Sensor

Ocean Insight's SpeedSorter™ is an industrial, high-throughput sensing system designed for in-line, nonferrous scrap sorting in difficult environments. Based on laser-induced breakdown spectroscopy (LIBS), the SpeedSorter quickly determines the chemical composition of each aluminum scrap object and communicates the result to the sorting system. With the SpeedSorter, separation of wrought from cast aluminum, aluminum from magnesium, and alloy class separations like 5xxx and 6xxx are all easily accomplished, where technologies like XRF and XRT do not perform as well.

SpeedSorter LIBS sensors are customized to your exact needs, with consideration of conveyor capabilities, input material composition and size, and desired output and diversion control. Custom separations are available as well. SpeedSorter is designed for single-lane or multi-lane systems, so you can start with one lane or as many as needed to handle the ever-growing market demand for recycled aluminum.

Product Overview:

- Superior aluminum sorting. Sorts classes and fractions with speed and precision, providing high-purity sorts for 5xxx from 6xxx, aluminum from magnesium, and wrought from cast
- High speed. Supports speeds as high as 5 tons per hour with an optimized sorting system
- Maximized profits. Precise, high-purity sorting equals a higher price per ton
- Flexible setup. Expandable, lane-based sensors are scalable to meet your needs
- Smart, compact design. No ablation laser or distance sensors needed -- our high-powered laser, electronics and machine-learning algorithms do it all, in a small package that fits easily into your new or existing nonferrous sorting system



FD-1665 Multispectral Camera System

Our multispectral imaging camera enables a range of applications including medical diagnostics, machine vision in process control, and safety and security. It is available in several configurations with resolution from 0.3MP (VGA) to 2MP, at frame rates up to 70 frames per second. Users can select from preconfigured 3-, 5- and 7-channel RGB-NIR cameras or configure a 3CCD camera with custom-specified filters for bands between 400-1100 nm.



Oxygen Systems

Ocean Insight optical oxygen sensors use light to probe the interaction between a sample and one of our proprietary sensing materials in order to quantify a chemical property of the sample. Our oxygen sensors have been used to monitor biological samples, headspace gases, industrial slurries, cosmetics, foods, and liquids in natural environments.

Recent enhancements to our line of optical oxygen sensors include a more convenient probe option for process environments; Lab Services testing options for chemical



compatibility and custom configurations; and redesigned NeoFox Viewer sensor software. The latter has been beefed up with faster response times, a friendlier graphical interface, and additional functions such as data logging capability and LED duty cycle control.



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Optics, Opto-mechanic & Photonics Components



We can provide spherical, aspherical, achromatic (also known as achromats), and other types of optical elements as well as provide over 100 various optical coatings for our catalog optics and custom optics. We also offer microscope objectives for UV, visible, and IR applications. If you are looking for optical filters, polarizers, waveplates, beamsplitters, prisms, optical flats, and uncoated substrates, we offer those as well. The products of this company falls into 7 categories including:

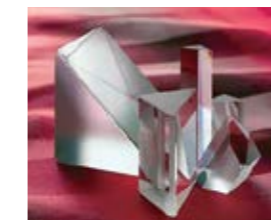
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|-----------------------|--------------------------|-------------------|
| 1. Optics | 2. Opto-mechanics | 3. Optical Tables |
| 4. Motion | 5. Light related devices | 6. Microscopy |
| 7. Laser & Lab Safety | | |

OPTICS

We are proud to offer Precision optics for use in medical, industrial, aerospace, defense, life sciences, and consumer applications. We manufacture spherical, aspherical, achromatic (also known as achromats), and other types of optical elements as well as provide over 100 various optical coatings for our catalog optics and custom optics. We also offer microscope objectives for UV, visible, and IR applications. If you are looking for optical filters, polarizers, waveplates, beamsplitters, prisms, optical flats, and uncoated substrates, we offer those as well. If you require semi-custom or custom optics, please contact us for those as well.

In this category, there are 12 versions:

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|-------------------------|---------------|---------------------|----------------|
| 1. MIRRORS | 2. PRISMS | 3. BEAMSPLITTERS | 7. POLARIZERS |
| 4. LENSES | 5. FILTERS | 6. LASER CRYSTALS | 10. ASSEMBLIES |
| 8. WINDOWS & SUBSTRATES | 9. OBJECTIVES | 12. FRAMELESS UNITS | |
| 11. FIBER OPTICS | | | |



OPTOMECHANICS

Optomechanics are the mounts, posts, and bases that interface between the optics in your system or experiment and the work surface (e.g. optical table). The main jobs of these components are to 1) hold the optic securely over time, 2) allow positioning the optic coarsely to the optical axis height, and 3) for adjustable mounts, enable fine, high-resolution alignment of the optic to the optical beam. There are unique fixed or adjustable mounts for each different type of optics to be held: mirrors, lenses, filters, prisms, beam splitters, and more. Each mount has different optic mounting methods and different adjustments depending on the type of optics held.

In this category, there are 8 versions:

- | | | |
|---------------------------------|-----------------------|----------------------------|
| 1. MIRROR MOUNTS | 2. OPTICAL CAGES | 3. OPTICAL RAILS |
| 4. LENS MOUNTS | 5. FIBER OPTIC MOUNTS | 6. OPTICAL POSTS AND BASES |
| 7. VACUUM COMPATIBLE COMPONENTS | 8. OTHER OPTIC MOUNTS | |



OPTOMECHANICS

Optical Table and Breadboard products are designed to provide a large, vibration-isolated, and damped work surface from which to conduct optical experiments. An optical table consists of two main items: a support and an optical tabletop or breadboard. The support can be in the form of a frame with casters or as four individual cylindrical legs.

In this category, there are 7 versions:

1. PNEUMATICALLY ISOLATED OPTICAL TABLES
2. ELASTOMERICALLY ISOLATED OPTICAL TABLES
3. OPTICAL BREADBOARDS AND TABLETOPS
4. OVERHEAD SHELVES
5. DESK-TYPE SYSTEMS
6. ACTIVE VIBRATION ISOLATION SYSTEMS
7. OPTICAL TABLE ACCESSORIES



MOTION

Manual stages are designed to provide precise, high-resolution travel over any combination of the six linear degrees of freedom. More importantly, however, they constrain any form of unwanted movement in the other angular or linear degrees of freedom: pitch, yaw, roll, as well as x-, y-, or z-axis translation. The offering includes linear stages, rotation stages, goniometers, labjacks and manual actuators like micrometers.

In this category, there are 9 versions:

1. MOTORIZED STAGE SYSTEMS
2. MANUAL LINEAR TRANSLATION STAGES - LINEAR STAGES
3. TILT PLATFORMS
4. MANUAL ROTATION STAGES - ROTARY STAGES
5. MANUAL GONIOMETER STAGES
6. MANUAL LAB-JACK PLATFORMS
7. VACUUM COMPATIBLE STAGES & ACTUATORS
8. MOTORIZED ACTUATORS
9. MANUAL ACTUATORS



LIGHT related devices

We also offer a wide variety of Opto-electronic devices, sensing and image evaluation products. Opto-electronic products include electro-mechanical shutters for controlling the direction of propagation of laser beams, Beam profilers for measuring the size, shape and energy distribution of the light in a laser beam, and Amplifiers and temperature controllers for powering Laser diodes to create laser light. Sensing products include passive and electronic sensors for detecting and measuring laser light in the visible wavelengths as well as invisible ultraviolet and infrared wavelength regions. Working with lasers often requires

being used. We offer a full lineup of laser power meters to measure Continuous wave (CW) lasers as well as Pulsed lasers.

In this category, there are 2 versions:

1. OPTICAL DEVICES
2. OPTICAL POWER AND ENERGY METERS





MICROSCOPY

We's Modular Zoom Microscopes are designed for high-resolution observation and feature continuously variable (rather than stepped) magnification. The modular design means it can be set up like a standard upright microscope or integrated into a larger optical system in any orientation. The zoom feature can be either manual or motorized. It also has high-resolution inspection applications and are particularly useful for multi-wavelength observations with multiple cameras. These microscopes are modular, allowing users to select the exact features needed for their application.

In this category, there are 5 versions:

1. Microscope objectives
2. Zoom microscopes
3. Modular microscope systems (OUCI)
4. Super resolution microscope
5. Stages of the microscope sample

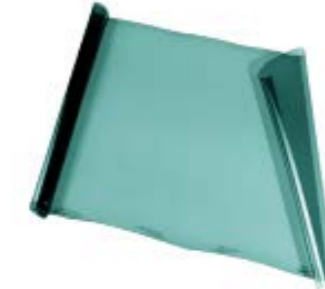


LASER & LAB SAFETY

The We/Yamamoto Laser and Lab Safety product line is a trusted name in the photonics industry. With over 100 years of manufacturing of safety products, our reputation is unmatched. We provide laser safety goggles, laser shield curtains, laser shield windows, and other safety-related products for medical, military, research & development, and OEM customers. Yamamoto is best known for high performance and high quality while maintaining competitive pricing.

In this category, there are 4 versions:

1. LASER PROTECTIVE EYEWEAR
2. FACE SHIELDS
3. LASER SAFETY WINDOW
4. LASER SHIELD WINDOW FILM





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