



OEM

For the Original Equipment Manufacturer with demanding product development cycles and a need for scalability, Ocean Optics provides sound solutions in large or small runs.

Our optical sensing products deliver proven performance and are smaller and more flexible than comparable brands. These modular products are ideal for a variety of processes and easily scalable.

Ocean Optics is a unique and vertically integrated partner providing you with an entire range of parts and equipment for optical sensing measurements.

Your Dedicated OEM Partner

Since 1992, Ocean Optics has enabled over 150,000 customer solutions. With our vast variety of spectrometer models, custom photometric systems, light sources, sampling accessories, optical fibers and thousands of available configurations, Ocean Optics has the uncommon ability to assist you at the component level or with entire systems.

Whether you are developing a groundbreaking new analytical technique or designing the next-generation system for sophisticated markets, Ocean Optics has the knowledge and experience to help you succeed.

Ocean Optics' OEM Division was established to guide you from product development through launch by providing you with outstanding pricing as well as customized assistance in getting the most from your Ocean Optics equipment. Ocean Optics is ISO 9001:2008 Certified, assuring adherence to the International Standards Organization's benchmarks in design, development, manufacturing and service.



Whether you're interested in smaller runs or larger volumes, Ocean Optics can provide you discounts that allow you to take your product from vision to reality.

Global Sales and Development Capabilities

Our OEM team provides support – from development to manufacturing– within nearly every major region in the world. We have dedicated OEM teams in the Americas, Europe and Asia-Pacific, putting us closer to where you are developing your next great product.

In addition, as a Halma company (LSE code: HLMA), we are part of a leading safety and environmental technology company with over 3,500 employees in 70 locations worldwide. Halma has a strong focus on innovation and the financial resources to help us invest in new and exciting technologies that benefit our customers.

Technical Expertise

We offer worldwide engineering support ranging from optical design and software engineering to rapid prototyping and feasibility testing. Our global OEM Team is available to directly address your needs – especially during the vital early phases of product design. Plus, our experience makes us the logical choice for supporting both modestly sized OEMs and larger-volume customers.

Clear Advantages

- More than 20,000 applications enabled
- Complete suite of miniature fiber optic spectrometers, optical sensors and accessories
- Custom optical fibers and probes
- Provider of sub-systems, instruments and fully integrated modules
- Proprietary technologies for optimizing spectrometer performance
- Easily scalable products – from tens to thousands of units
- The opportunity for entrepreneurs to co-market
- Dedicated OEM Engineering Team providing optical, electronic, mechanical and software support
- Dedicated OEM Sales and Applications support



OEM Products

The World's Most Innovative Spectroscopy Products

Our miniature spectrometers, fiber optic accessories, optical components and sensors are used in a vast array of OEM products. Ocean Optics is known for providing specialized solutions for a broad variety of manufacturing applications. We have worked with customers across a range of industries, from medical diagnostics to solid-state lighting and semiconductor processing.

The volumes you require, the delivery you need and the quality you demand are all assured under the Ocean Optics OEM program.

The diversity of Ocean Optics' spectrometers, accessories, fiber assemblies and sensor solutions allows us to effectively fulfill your requirements:

- Spectrometer models ranging from Deep UV (150 nm) to NIR (2500 nm)
- Sub-systems, instruments and full integrated models
- Custom photometric solutions inclusive of light source, free beam or fiber coupling to the sample, detector and interface electronics
- Collimating optics, sample holders, flow cells, filters and reference standards
- Probes, patch fibers, furcated assemblies and custom fiber assemblies
- Multi-channel systems
- O₂ and pH probes and patches for in situ measurements
- Metrology laboratory for NIST traceable UV, VIS and NIR irradiance calibrations (210 - 2400 nm)

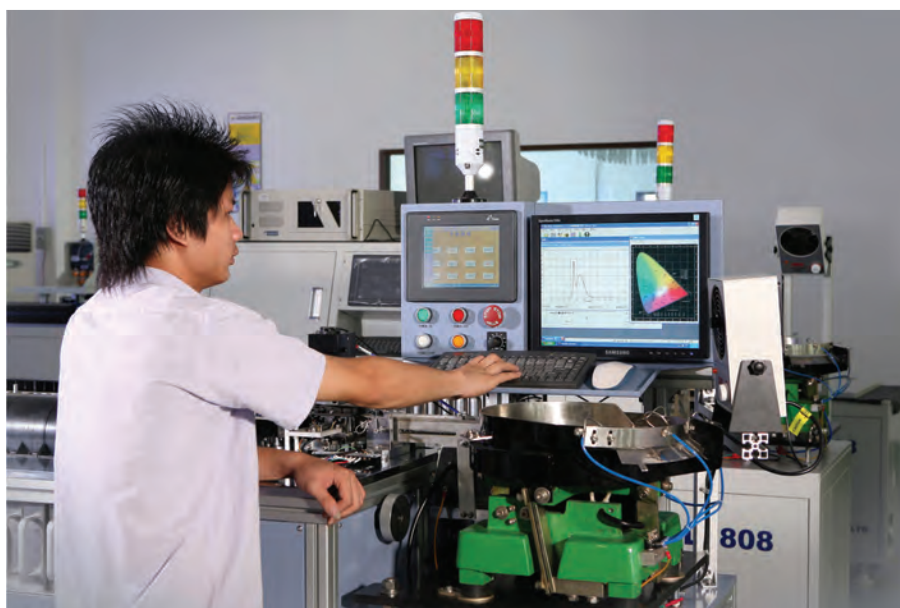
Our product offering is diverse and top-notch. Serving you with high-quality products is our top priority. Our parts are RoHS compliant and our procedures for quality assurance, production and continuous improvement have met ISO standards. Moreover, we can support you in meeting industry-specific requirements such as FDA, UL and CE approval.



STS Microspectrometer

The STS is a compact, low-cost spectrometer that's ideal for embedding into OEM devices. At just 40 mm x 42 mm x 24 mm, the STS has low stray light, high signal to noise and optical resolution of ~1.5 nm (FWHM) – remarkable performance for a spectrometer that size.

The STS is an especially attractive option for high-intensity applications such as LED characterization and absorbance/transmission measurements, yet versatile enough for an extensive range of spectral sensing requirements. Additional information is available in the following pages.



STS Series OEM Microspectrometer

Amazing Full-Spectrum Performance in a Tiny Footprint



The STS introduces a family of compact, low-cost spectrometers that's ideal for embedding into OEM devices. At just 40 mm x 42 mm x 24 mm (1.6" x 1.7" x 0.9"), the STS provides full spectral analysis with low stray light ($\leq 0.2\%$ SRPR @ 450 nm), high signal-to-noise ratio ($>1500:1$) and great optical resolution (~ 1.5 nm FWHM) – remarkable performance for a spectrometer its size. The STS is an especially attractive option for high-intensity applications such as LED characterization and absorbance/transmission measurements, yet versatile enough for an extensive range of spectral sensing requirements.

Key Features

Full Spectral Analysis in a Small Footprint

CMOS-based unit is less than 50 mm (2") square, weighs just 68 g (2.4 oz.)

Ideal for OEM Devices

Compact unit available at low cost and reproducible in large production quantities

UV-NIR Coverage

Now available with models covering ranges within 200-1100 nm

Remarkable Performance

Meets or exceeds optical resolution, stability, sensitivity and other performance criteria associated with larger, more expensive spectrometers

Physical	
Dimensions:	40 mm x 42 mm x 24 mm
Weight:	68 g (2.4 oz.), incl. fixed fiber
Operating temperature:	0-50 °C, 10 °C change/hour ramp
Storage temperature:	-20 to +75 °C
Detector	
Detector type:	ELIS-1024, 1024 pixel linear CMOS
Detector range:	200-1100 nm (uncoated)
Pixels/size:	1024, 7.8 x 125 μ m
Pixel well depth:	800,000 e-
Optical Bench	
Design:	Crossed Czerny Turner, focal length 28 mm
Entrance aperture:	Shaped aperture; 10 μ m, 25 μ m, 100 μ m and 200 μ m slits
Gratings:	600 g/mm
Fiber optic connector:	~ 2 cm x 400 μ m fixed fiber assembly (not detachable)
Quantum efficiency:	60% (@ 675 nm)
Spectroscopic	
Wavelength range:	UV (200-600 nm), VIS (350-800 nm), NIR (650-1100 nm)
Optical resolution:	FWHM 1.0 nm (10 μ m slit), 1.5 nm (25 μ m slit), 6.0 nm (100 μ m slit), 12.0 nm (200 μ m slit)
Signal-to-noise ratio:	$>1500:1$ (at maximum signal)
A/D resolution:	14 bits
Dark noise:	≤ 3 counts RMS
Dynamic range:	5 x 10 ⁹ (system, 10 s max integration), 4600 single acq.
Integration time:	10 μ s-10 s
Stray light:	$\leq 0.25\%$ @ 450 nm; $\leq 0.1\%$ @ 750 nm
Corrected linearity:	$< \pm 0.5\%$ from 15-95% full scale
Max dark current:	~ 150 counts/second at 60 °C; ~ 50 counts/second at 35 °C
Electronics	
Power consumption:	0.75 W (average)
Power options:	USB or GPIO port
Data transfer speed:	USB full speed
Acquisition time:	60 scans/second (max) (more scans with binning)
Connector:	Micro-USB
Inputs/Outputs:	GPIO
Trigger modes:	3 modes
Strobe functions:	Single/Continuous
Gated delay feature:	Yes
Computer Requirements	
Computer interface:	USB 2.0, RS-232
Operating systems:	Any supported by OmniDriver/SeaBreeze or RS-232
Compliance	
CE mark:	Yes
RoHS:	Yes
Software	
Operating software:	SpectraSuite support (extra)
Dev. software:	OmniDriver/SeaBreeze driver support (extra)

STS Series OEM Microspectrometer

Amazing Full-Spectrum Performance in a Tiny Footprint

Robust Optical Bench Design

At the heart of the STS is a CMOS detector in a crossed Czerny Turner optical bench. The bench is distinguished by custom-molded collimating and focusing mirrors and a 600 lines/mm groove density grating that projects spectra onto the detector. Special coating technology minimizes etalon effects.

The unit achieves significantly better optical resolution and produces less stray light than most filter-based and other spectrometers of its size. For example, STS has 14-bit A/D resolution and has low power consumption of just 0.75 W. Plus, STS has triggering functions for instances when precise timing is necessary. For example, synchronizing measurements with an external event, such as the pulsing of an excitation lamp for fluorescence, is no challenge for the STS.

STS takes advantage of recent advances in CMOS detectors that elevate optoelectronic performance and improve system reproducibility. It uses a 1024-element ELIS-1024 linear image sensor that's responsive from 200-1100 nm and has excellent sensitivity (6.74V/lux-second typical). This new generation of CMOS detectors offers excellent performance with great value.

STS Options

We offer STS models for 200-600 nm (STS-UV), 350-800 nm (STS-VIS) and 650-1100 nm (STS-NIR) applications. Each unit has a fixed optical bench configuration, although you can select from standard slit sizes of 10, 25, 100 and 200 μm . Custom slits are also available. To optimize signal collection efficiency and improve reproducibility, STS utilizes a fixed-fiber design. The fiber has a 400 μm core and is 2 cm in length (including SMA connector). Custom configurations – including versions with different fiber lengths and with a cosine corrector – are available for high-volume applications.*

The STS is fully operational with SpectraSuite spectroscopy software. Operating software and software development tools are priced separately.

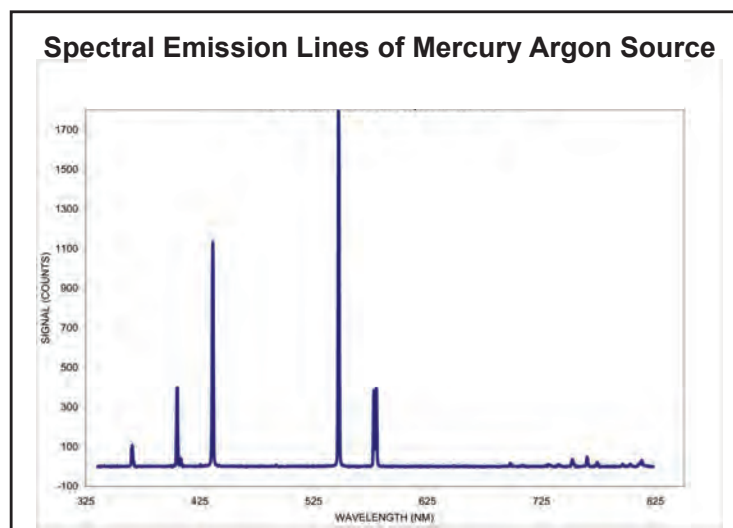
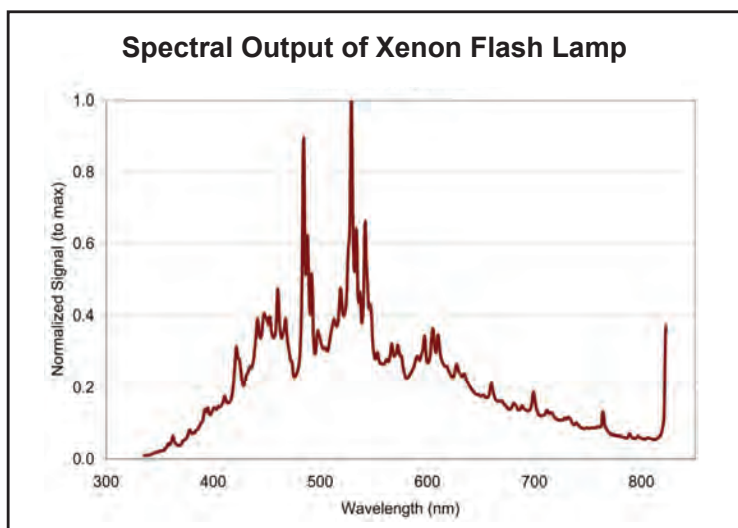
Markets and Applications

The STS was conceived as a low-cost, high-performance spectrometer for OEM and high-volume applications where one or more wavelengths are being monitored and a highly reproducible result is required. Life sciences, medical diagnostics, solid state lighting and environmental analysis are among the industries where STS is an attractive alternative to filter-based optical sensing systems and other microspectrometers.

*Minimum quantities required. Contact an Ocean Optics OEM Representative for details.



Sample Results with STS OEM Microspectrometer



Customized OEM Service

Helping You Meet Your Goals



Do you have a great idea for a product that uses optical sensing? Whether you're an inventor at a startup or part of a product development team at a Fortune 500 company, Ocean Optics delivers products that meet your performance and cost specifications, along with on-demand integration support and the unique perspective of the company that invented the world's first miniature spectrometer.

Working with Entrepreneurs and Small Companies

Developing your great idea into a viable technology business is a challenging prospect for small companies. But we can offer an array of consultative services geared toward propelling you through product launch and ramp-up. What's more, we even can offer co-marketing services and access to our distribution network – the type of sales exposure that many startups struggle to accomplish.

One small-business customer recently developed a system for dental educators, researchers and clinicians that simply and accurately measures the useful energy a simulated resin restoration (a filling) receives from a dental curing light – a procedure affected by a number of variables that often leads to too much or too little exposure. Improper curing can lessen the lifetime of the filling and potentially damage the tooth.

By using an iterative approach to the system design and providing a combination of custom fiber, sampling optics and NIST-traceable radiometrically calibrated spectrometer, we were able to supply a highly reproducible system that the customer has released successfully. Its potential impact is staggering: 130 million dental restorations are performed each year in the U.S. alone.

Supporting Developers at Larger Corporations

Established companies are constantly striving to create new products and services – either to develop new markets or to preserve existing market share. We have significant experience with such companies, who benefit from our array of à la carte engineering, testing and validation services and our ability to scale our manufacturing processes to their high-volume needs.

For example, we recently supported a large manufacturer of medical devices for heart health with an application measuring blood oximetry at the distal end of a disposable catheter. Due to size limitations and special communications requirements, product development required highly customized engineering and design work. By drawing on our expertise in optical design and electronics, we were able to accomplish the customer's goals.

Ensuring Service for All Customers

Regardless of your company's size, the challenges of integrating components into a new product or system can be great. Because of that, we've created an OEM Developer's Program that provides technical guidance and discounted pricing throughout the product development cycle. With a Developer's Agreement, you ensure a 25% discount on the purchase of products for up to one year during the development process. If the development cycle is longer than one year, your agreement may be renewed at a reduced rate. In addition, we will develop a product specification unique to your system requirements to ensure reliable production and delivery of your product.

Worldwide Support

With locations in the United States, Europe and Asia, Ocean Optics' OEM Division is able to provide unparalleled service – before and after the sale.

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