

# The Right Solution, Right Now

With proven results, we give you access to high-level engineering know-how that will help make every photon count in your system.





## Get the Right Solution, Right Now

With proven results, we give you access to high-level engineering know-how that will help make every photon count in your system. As the pioneering experts in optical filters for life science, analytical instrumentation, and medical diagnostics applications, we have continually set the standards for advanced performance and reliability. Our unwavering commitment to quality and customer service allows us to consistently deliver much more than just filters.

When you are developing optical instrumentation you continually face new challenges: new customer requirements and product expectations, evolving technologies, changing markets, and the need for a rapid and decisive response. To help you conquer those challenges, Semrock a unit of IDEX Health & Science, provides superior products and expert, personalized support.

Semrock specializes in the volume production of optical filters for the life science and analytical instrumentation markets, and also manufactures filters for laser and optical systems applications. Our products exclusively feature hard, thin-film sputtered coatings for proven reliability. These filters will not change or degrade in any way as a result of humidity or temperature variations, nor will they “burn out” with normal use. All of our products are backed by our industry-leading ten-year warranty.

Overall, Semrock filters are brighter, more durable, and spectrally more sophisticated than those made by other coating technologies, driving significant improvements for our customers and their applications: faster measurement times, reduced downtime, repeatable manufacturing, and lower optical component count.

We make our unique products with lot-to-lot consistency in high volumes, providing our OEM customers with a dependable supply. We find solutions “within the box” of our standard catalog, and “out of the box” with the help of our expert design staff, and we apply each strategy in the right proportion.

With thousands of in stock items available for shipment the same day, combined with our ability to custom-size these items (typically in less than a week) and perform custom co-development engineering with fast prototyping, we can quickly provide intelligent solutions that meet your price points.

Semrock offers much more than just filters. With help from our sister companies, we can help you develop fully integrated systems designs down to the microfluidic level.

“ I have worked with several filter manufacturers for.....custom parts related to medical devices. Semrock has consistently delivered rapid turn-around for custom theoretical models, quotes, and part delivery. Further, the delivered part performance has provided a close match to the theoretical performance. Over 2 years, Semrock has worked with us through product development iterations while providing key filter related insights and sensitivities. ”

— Dr. S. Diol, Systems Engineering Team Leader, Ortho Clinical Diagnostics

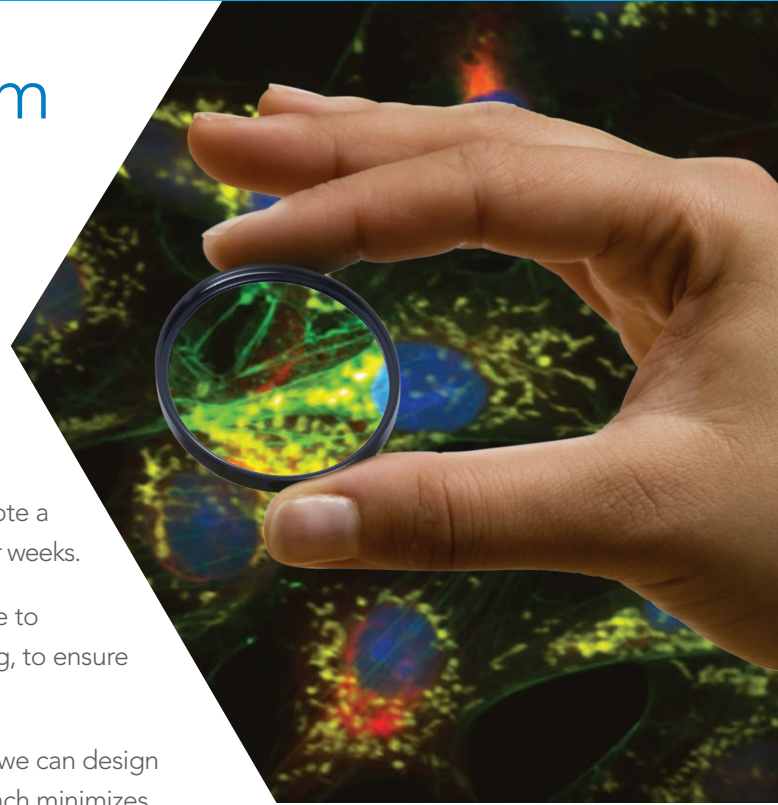
# Filter and Optical System Design Capabilities

**Versatility** — Our design engineers are experts in optical science, physics, electrical & mechanical engineering, and biology, all are experienced problem-solvers.

**Industry's fastest design turnaround** — We've implemented proprietary thin film design software to complete spectrally complex tasks in minutes. Now we can typically design and quote a prototype within a week, where previously it could take two to four weeks.

**Modeling toolbox** — We use our own state-of-the-art software to simulate complex coating runs before they reach manufacturing, to ensure high confidence in the engineering design.

**Custom evaluation** — By evaluating the entire optical system we can design and optimize the right filters the first time. This inclusive approach minimizes system redesigns which add cost and delay to your project development.

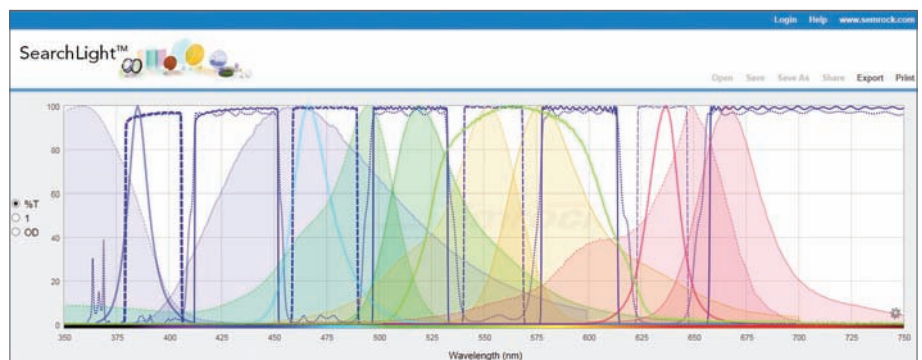


## Unique Online Tools

Shorten time-to-market, improve your engineering productivity and final system performance by taking full advantage of our proprietary design software — SearchLight™ and MyLight™.

Need to know if your system selections will play nice with each other? Test in a virtual situation by uploading your elements into our powerful SearchLight tool.

MyLight is accessible on every filter product page to obtain working performance knowledge.



Our powerful online tools light the way to faster design and selection <https://searchlight.idex-hs.com>

# Volume Manufacturing

- › **Dedicated high-volume coating facility** — We support the needs of our OEM customers by producing tens-of-thousands of spectrally complex, sputtered optical filters per month. Building on our renowned filter manufacturing capability, we can now match the volume demands of customers in the life science, analytical instrumentation, and medical point of care markets.
- › **Rapid prototyping high-mix facility** — Ideal for developing custom coatings, products, and sizes using flexible work cells. This enables rapid iteration with aggressive lead times at an economical price for small to moderate volume levels.
- › **Industry best lead times** — Our >98% on-time delivery guarantees your product will arrive when you need it. Same day shipping for catalog orders, custom-size catalog parts in a matter of days, and two to four weeks for custom OEM parts.
- › **Scalability** — We can quickly design and develop a prototype filter and then produce it repeatably in high volume. Manage demand with a personalized kanban system and pull inventory when you need it.



## Supply Chain Management (SCM)

We incorporate best SCM practices into disciplined standard operating procedures.

- › Rigorous documentation and revision control
- › Lead time management — monitoring tools keep inventory at levels to satisfy delivery goals
- › Traceability — complete product histories of each manufactured item
- › Blanket orders, purchasing contract and just-in-time delivery

## Optimized Manufacturing

We stress continuous improvement in our manufacturing processes.

- › 5S — the five dimensions of workplace organization methodology and streamlining practice
- › Kaizen — system problem solving for continual improvements of our manufacturing processes
- › Lean principles — continual streamlining to reduce waste



## Product Capabilities

### Types of Filters We Produce

Fluorescence filters; Raman spectroscopy filters; tunable bandpass filters; deep notch filters and laser-line filters; laser diode clean-up filters; filters to combine or separate laser beams; filters to isolate popular mercury lamp lines; polarization filters; dispersion controlled coating designs and laser mirrors

### Custom Solutions

- › Wavelength functionality to specification, 230 nm – 2000 nm
- › Ability to produce 10's of thousands of parts per month
- › Sizes down to 1 mm<sup>2</sup> on 0.5 mm thick glass, and as large as 200 mm.
- › Spectrally complex custom designs for customers (e.g. LED optimized filter designs)
- › Custom sizing – Round, square, or rectangular, from several mm to a few inches
- › Product labeling – On-filter laser engraving for easy identification and storage

## Our Technology

Thin-film sputtering deposits low-loss, precise-thickness, and reliable optical-thickness layers. Semrock has made it viable for high-volume production using our proprietary processes and optical monitoring technology.

Our manufacturing facilities use state-of-the-art coating chambers in protected cleanroom environments. We are currently expanding to meet increasing demand and planning for continued growth.



# The Semrock Advantage

## Performance

Semrock optical filters have the highest transmission specifications, yielding better contrast and faster measurements, even at ultraviolet (UV) wavelengths.

Maximum transmission, optimized blocking and the steepest edges give Semrock filters market-leading performance.

## Reliability

- › Impervious to humidity and temperature induced degradation
- › Lasting high level of performance, backed by field data proven 10-year warranty
- › Meet or exceed requirements for environmental and physical durability in MIL-STD-810F, MIL-C-48497A, MIL-C-675C, and ISO 9022-2.
- › Eliminate replacement costs, decreasing the cost of ownership
- › With a return rate of 0.3% (industry standard is 1%) you don't need to worry about unreliable parts.

# Quality Systems

At Semrock we adhere to high levels of internal process control and reliability testing that well exceed the industry standard. We have passed 100% of quality audits by our major OEM customers.

## Quality Standards in Place with Thorough Process Documentation

The Semrock quality system is modeled on the ISO 9001:2008 Quality System Standard 2. The structure of the quality system is fully documented and controlled by our dedicated Documentation Specialist. In addition to rigorous documentation, many of the quality system processes are controlled via our Enterprise Resource Planning (ERP) computer system.

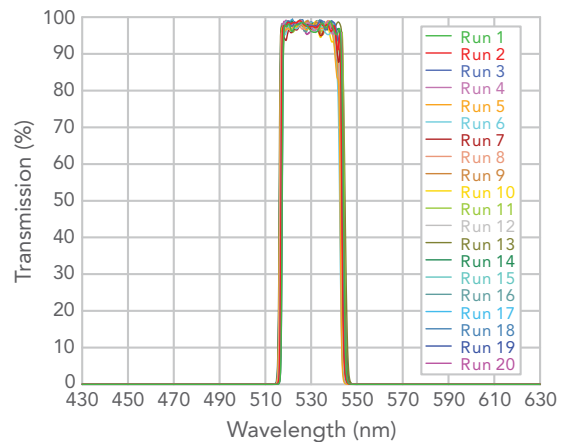
## Service and Support

We are responsive to your needs supplying careful analysis and prompt replies. Dedicated application and R&D team to support your needs for design and system optimization using SearchLight and other Semrock proprietary tools.

## Repeatability

Whether a filter is from the first lot or the last, its spectral properties are the same. Our OEM customers can rely on a secure and dependable supply line.

*20 different batches; reproducible results!*



## Certifications and Compliance

Semrock products are compliant, without exemptions, with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011, Restrictive Use of Hazardous Substances (RoHS). We have instituted controls to ensure our suppliers provide only RoHS 2 compliant materials for our products. Semrock is committed to complying fully with the SEC's Conflict Minerals reporting requirements.



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# Markets and Applications Served

We serve key applications across life sciences, analytical instrumentation, medical diagnostics, and science & technology. Our team has expertise in cell biology, photonics, optical system design, fluidics, and instrumentation.

## Fluorescence Instrumentation Filters

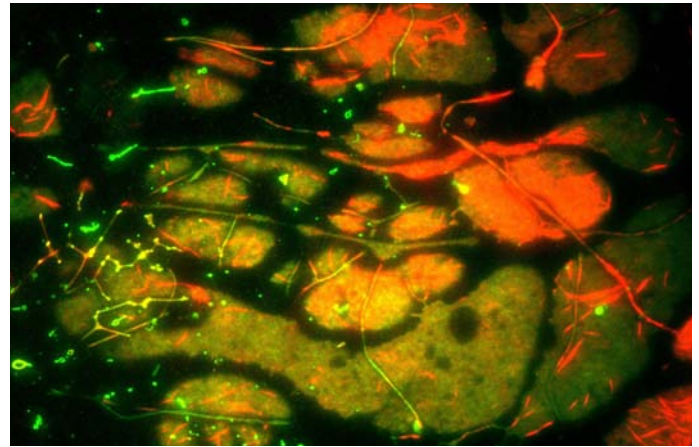
Fluorescence microscopy, DNA sequencing, in-vivo imaging, quantitative real-time PCR, optogenetics, point-of-care diagnostic devices, high-content screening, endoscopy, optical coherence tomography (OCT), microarray readers, laboratory fluorometers, microplate readers, flow cytometry, and gel electrophoresis imaging systems.

## Raman Spectroscopy Filters

Raman microscopy, coherent Raman scattering microscopy, portable and handheld Raman analyzers, materials characterization, surface-enhanced Resonance Raman (SERS) based diagnostics, and chemical process monitoring.

## Laser Analytical & Optical System Filters

Surgical laser systems, laser materials processing, environmental monitoring, hyperspectral remote sensing and imaging, ultrafast science, robotics, and machine vision.



*Xenopus laevis embryos transfected with GFP-cadherin and RFP-actin imaged with TIRF using Semrock's Di03-R405/488/561/635-t1 super-resolution dichroic in a full-multiband configuration. Image courtesy of Keck Imaging Center, University of Virginia.*

# Case Study — Collaborative Engineering Project

## The Challenge

- › 18 different large diameter filters with demanding specifications for transmission, passband, optical density uniformity, wide-angle performance, and scattering

## The Solution

- › Re-designed customer's optical cell to solve scattering problems
- › Designed all filters to meet or exceed specifications

- › Designed and built a unique, high-volume measurement platform for OD testing
- › Applications Scientists partnered with OEM engineering to analyze & certify system performance

## The Result

- › Product launched on schedule and to budget
- › Instrument achieved industry leading signal and SNR performance for the in-vivo imaging market

# Global Leaders

We are a strong force of committed people and innovative products for your complete pathway, continually increasing our product offering, expanding our market relevance by connecting to new customers, and positioning ourselves as global leaders in optofluidics engineering.

## Worldwide Optofluidics

As a global company, IDEX Health & Science has an international network of direct sales professionals and distribution partners in place to provide personal service to our OEM customers. Our experts are ready to visit your operation, assess your needs, and develop intelligent solutions for your challenges.

## Community Responsibility

Since 2014, the IDEX Foundation has distributed approximately \$400K to support 58 events in 6 different countries involving hundreds of employees who touched thousands of lives. Our mission is to engage our customers, shareholders, and employees to create value and positively impact the communities in which we live and work.



## North America

Bristol, CT, USA  
Carlsbad, CA, USA  
Middleboro, MA, USA  
Oak Harbor, WA, USA  
Rochester, NY, USA  
Rohnert Park, CA, USA  
Wallingford, CT, USA

## Europe

Erlangen, Germany

## Asia

Saitama, Japan  
Shanghai, China  
Beijing, China

For ordering and technical support, please contact  
[semrock@idexcorp.com](mailto:semrock@idexcorp.com) or call 585 594 7050

For more information and  
to order visit [idex-hs.com](http://idex-hs.com)

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