

Technologies & Capabilities

Diffraction Gratings

- Custom Masters
- Ruled
- Holographic
- Planar and Concave

Replication

- Diffraction Gratings
- Mirrors

OEM Sub-Assembly

- Custom
- Pre-alignment

Thin Film Optical Coatings

- Hard IAD • Traditional • Metals

Photo-Lithography

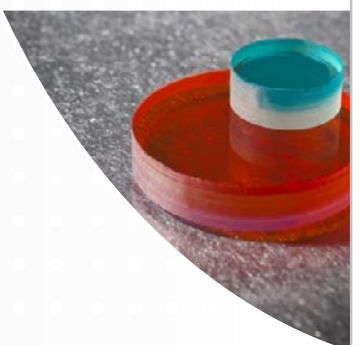
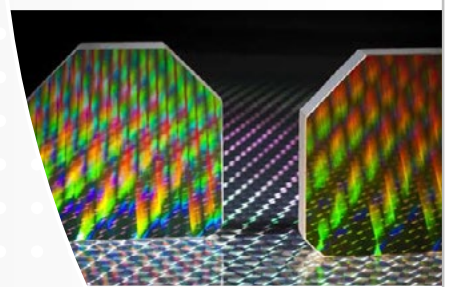
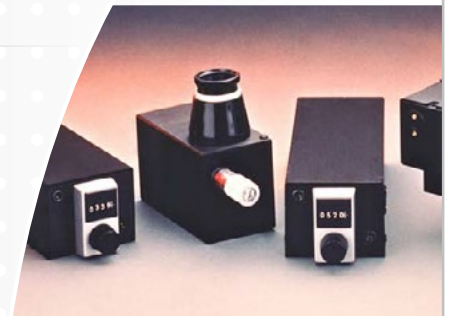
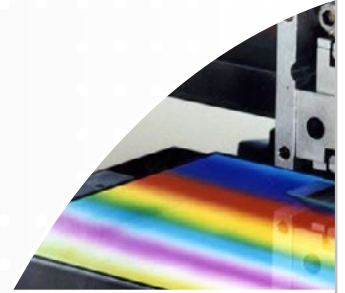
- Polka-Dot Beamsplitters
- Patterned Coatings

Wire Grid Polarizers

- Ruled • Holographic

Compact Monochromators

- OEM • Manual • Scanning



Wavelength Selection Solutions

For more than thirty years, Optometrics Corporation has designed and manufactured optical components and instruments for government laboratories, university, industrial and OEM customers.

Optometrics is an ISO 9001:2008 certified, Lean optical components and optical sub-assembly manufacturing company committed to supplying its customers with high quality, cost competitive products and services. Operating out of a modern engineering and manufacturing facility specifically built for precision optical fabrication, system assembly and testing, Optometrics' technology portfolio provides key wavelength selection solutions within the many industries it serves.

Optometrics has become a leading world-wide supplier of specialized optical products by successfully developing close working relationships with its customers. By understanding your unique supply chain requirements, Optometrics strives to operate as an efficient member of your engineering and manufacturing organization throughout all phases of your product development cycle.

The many support services we offer include:

- Extensive inventory of stock items
- Fast delivery of custom items
- Higher level pre-aligned assemblies
- Customer matched test protocols
- Kanban stocking arrangements
- Specialized packaging, marking, and bar coding services

Optometrics maintains several modern master diffraction grating production laboratories, producing both interferometrically controlled classically ruled and holographically recorded replication masters to optimize its OEM customers' instrument performance. Over 400 standard replication masters are inventoried. Optometrics also supports new OEM customers in need of regenerating less efficient grating replication masters, resulting in improved quality, manufacturing efficiencies, and lower costs. Many OEM's further benefit from Optometrics' related products, pre-aligned spectrometer sub-assemblies and precision optical replication expertise for critical mirror surfaces.

A large assortment of off-the-shelf and custom optical filters and coatings are available, produced using the latest hard ion-assisted deposition technology, along with traditional techniques which provide highly cost effective solutions.

Optometrics' core technologies of mechanical ruling, holographic recording, photolithography and optical thin film coatings have also positioned the company as a leading supplier of patterned optical coatings, polka-dot beamsplitters, wire grid polarizers, and specialty mirrors.

The Minichrom™ OEM compact monochromator, with over 20,000 units sold, is a proven workhorse integrated within analytical instrumentation worldwide.

The SPF-290 Sun Protection Factor analyzer has been a recognized performance leader in in-vitro SPF testing for over 20 years.



Diffraction Gratings

Custom Masters

Environmentally and interferometrically controlled production on one of several ruling engines and two holographic laboratories, uniquely positions Optometrics as a premier source of many forms of diffraction grating masters for consistent high quality, low cost replicas, and high damage threshold laser applications.

Standard Ruled and Holographic Gratings

More than 400 standard master gratings inventoried, combined with extensive in-house precision optics cutting and forming capabilities, enables Optometrics to offer an extensive selection of catalog gratings, as well as custom sizes and thicknesses and gratings optimized for narrow and broad spectral bands, from the UV to the Infrared.

Replication

Diffraction Gratings

Leveraging nano-precision manufacturing accuracies required in high quality diffraction grating replication, Optometrics provides large volume replication of critical mirror surfaces on a variety of materials. Considerable cost savings can be realized by replicating the critical surface finish and figure onto less expensive and pre-aligned integral system components, resulting in excellent uniformity and batch to batch consistency.

OEM Subassembly

Custom & Pre-Alignment

Optometrics has years of experience producing thousands of custom OEM optical sub-assemblies, pre-aligned and pretested, with drop-in capability.

Thin Film Optical Coatings

Hard Ion Assist Deposition

Advanced Ion Assisted thin film deposition (IAD) of refractory oxides provides exceptional environmental durability and enables the design and manufacture of complex coating designs exposed to the atmosphere on a large variety of substrate materials.

Traditional Thin-Film Coatings

With a time-proven, viable and economical approach, Optometrics produces narrow and broadband optical interference filters with central wavelengths from 330 nm – 1650 nm. The company also offers an extensive selection of catalog optical filters, as well as custom sizes and thicknesses.

Photolithography

Microfabrication of photolithographically patterned optical coatings on glass substrates enables innovative solutions for optical system designers. Precise control over the shape and size of optically coated and non-coated surface areas enables the manufacture of specialty optical components such as polka dot broad spectral band beamsplitters, and resolution test targets for machine vision, field imaging, and microscopy applications.

Polka Dot Beamsplitters

Optometrics offers a line of broadband Polka Dot Beamsplitters with a near constant reflection to transmission ratio ranging from 20:80 to 90:10 over the

entire 250 nm – 2.0 μ m spectral range. These versatile beamsplitters are typically produced with Al or Cr, and have negligible angle sensitivity.

Patterned Coatings

Custom microfabrication of photolithographically patterned optical coatings on glass substrates.

Wire Grid Polarizers

Optometrics manufactures Wire Grid Polarizers using the mechanical ruling method and holographic recording.

Ruled Polarizers

Produced in Optometrics' diffraction grating ruling facility, precisely spaced grooves are ruled directly into CaF₂ or ZnSe substrates. The ruling process forms sharp, well defined peaks which are then deposited with aluminum, forming an array of parallel "wires". This technique produces polarizers which are useful in relatively high power laser applications.

Holographic Polarizers

Produced in the company's holographic laboratories, an interferometrically generated monochromatic wavelength pattern is projected onto a photo-resist coated substrate. Once processed, the resist has a sinusoidal surface relief profile which is then deposited with aluminum, forming an array of parallel "wires".

Compact Monochromators

Optometrics' Minichrom is a family of compact, in-line Fastie Ebert monochromators with a 74mm focal length, ideally suited for OEM system integration, as well as general spectroscopy use.

OEM Monochromators

This cost effective design provides remarkably high spectral resolution, accuracy and repeatability. The OEM model is designed to be driven by stepping or servo-controlled motors, and used in applications requiring either single or repetitive scans of wavelength intervals or the sequential selection of discrete wavelengths. Proven robustness, with over 20,000 units in the field.

Research Monochromators

In addition to the motor driven designs, the Minichrom is also available with either a micrometer, digital counter, or integral digital counter/stepping motor controlled by a calibrated drive for wavelength selection and readout. They are used in a variety of applications requiring an inexpensive, small, yet high performance monochromator.

