

OEM and Custom Coatings and Filters



History

Established in 1967, Newport's Franklin facility has been supplying Corion brand optical filters and coatings for more than 35 years. With the acquisition of Spectra-Physics Lasers and Photonics, which included the Franklin coating facility, Newport significantly expanded its thin-film coating capability. In addition to the Irvine coating operations, we manufacture optical coatings in our Tucson, AZ, Rochester, NY, Mt. View, CA, and Franklin, MA facilities. A significant portion of this coating capacity is devoted to vertically integrated manufacturing such as our inter-cavity laser optics coating facility, supporting our laser manufacturing operations, and our Rochester coating facility which supports diffraction grating manufacturing. Newport's Franklin facility is focused upon manufacturing optical filters and coatings for direct sale as components to OEMs and end-users who require custom products.

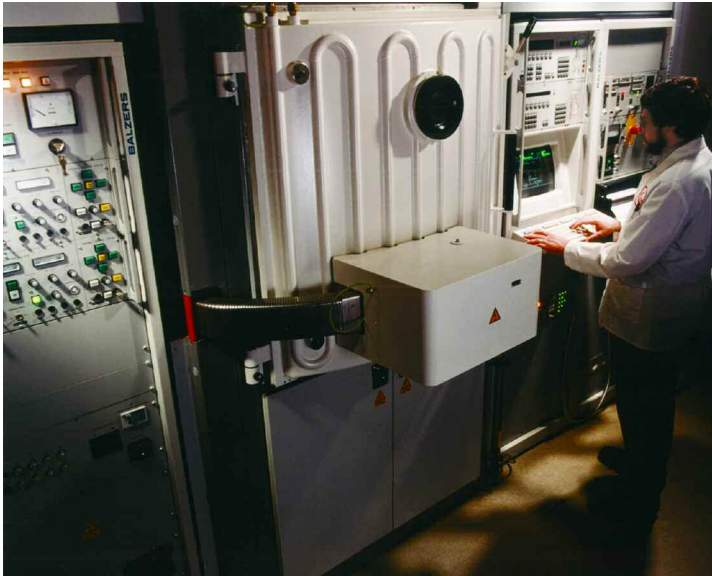
Milestones - Franklin

- Established in 1967
- Acquired Ditric Optics in 1991
- Acquired by Thermo Electron in 1996
- Acquired OCA in 1998
- Merged with Spectra-Physics in 2002
- Acquired by Newport in 2004

Coating Technologies

Stabilife® Technology

Stabilife® is the choice for the most demanding filter applications. Two different coating processes are used to manufacture Stabilife® coatings: Reactive Ion Plating (RIP) and Hybrid Plasma Deposition (HPD). Both of these processes produce highly dense, environmentally stable and durable thin films, composed predominantly of refractory metal oxides.



Balzers BAP800 Reactive Ion Plating Deposition System

Ion Beam Sputtering

We use our Ion Beam Sputtering (IBS) coating technology predominantly for applications requiring environmentally stable and durable thin films with very low loss. This technology is also well suited many non-laser applications requiring dense, stable films. Our ion beam sputtered films are composed predominantly of refractory metal oxides.

Ion-Assisted E-beam

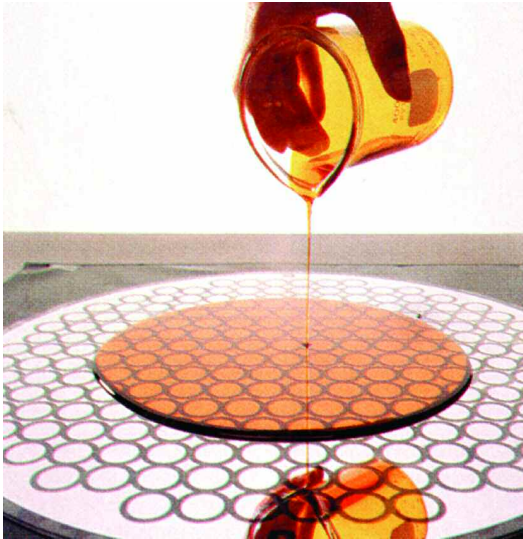
For applications where the film characteristics of the Stabilife® or IBS processes are not required, but where exposed film durability and stability are still a requirement, we employ our Ion-assisted E-beam process. This process yields highly durable films, composed predominantly of refractory metal oxides, with excellent resistance to spectral shift due to humidity absorption.

E-beam

Many applications for exposed hard coatings do not require the spectral stability provided by our Stabilife®, IBS, and Ion-Assisted E-beam processes. These are the applications for unassisted E-beam deposition. E-beam deposited refractory metal oxide coatings are extremely durable and can be designed to meet the spectral needs of optical components ranging from bar code reader filters to dental lighting mirrors.

Thermally Deposited Soft-Films

Soft Coating Technology encompasses the widest range of coating materials and deposition methods of all of the technologies currently in use for the manufacture of optical coatings and is perhaps the most flexible in terms of ability to achieve extreme technical requirements. It is the most seasoned of all of the technologies and as such, methods of protection of soft films are so highly evolved that in many environments, the difference in product life between a protected soft coating and an exposed hard coating is imperceptible.



Lamination of a scribed soft-film component using dye-resin system

Products

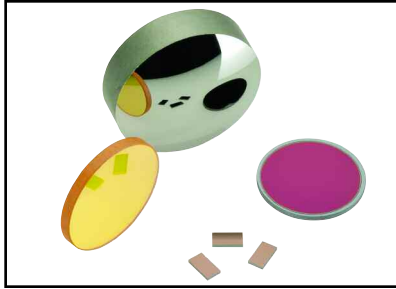
We manufacture a wide variety of products based upon thin-film coating technology. Our products span the spectrum from 150 nm to 16 μm . Our major product families include:

- Anti-reflection
- Bandpass
- Beamsplitter
- Conformal
- Dichroic
- Fluorescence
- Long/Short wave pass
- Metallic reflector
- Neutral density
- Notch

Applications

Our custom filters are the enabling optical technology in instruments ranging from DNA Analyzers to Desktop Printers. We collaborate with OEM instrument design engineers to define filters & coatings that will deliver optimum performance in their application. Below are just a few of the many applications where Newport filters and coatings are the preferred choice:

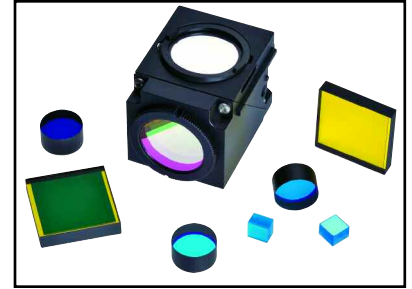
- Clinical Chemistry Systems
- DNA Analysis Systems
- Rangefinders
- Laser Safety Eyewear
- Paint Color Matching Systems
- Thermal Imaging Systems
- Confocal Microscopy Systems
- Flow Cytometers
- Environmental Monitoring Systems
- Endoscopes
- Moisture Measurement Systems



Filters & coatings for mid-wave and long-wave infrared applications



Filter wheels for clinical chemistry analyzers



Filters for fluorescence detection

Manufacturing / Inspection

We process orders for quantities as large as one million and as small as one and we maintain one of the highest customer satisfaction ratings in the process. We have coating chambers that coat 1 – 6" square plate at a time and chambers that coat 16 – 6" squares at a time. We coat a wide variety of substrates including optical glasses, semiconductors, and crystals in a full range of shapes containing plano, spherical, and aspherical surfaces. To insure that our products perform to the high standards required by today's sophisticated technologies, we maintain inspection capabilities that allow us to perform high precision spectral measurements from 150 nm to 30 μ m, as well as measurements of physical, optical and environmental parameters ranging from humidity resistance to transmitted wavefront error.

Precision Optics

Newport's precision optics manufacturing operation, located in Irvine, CA, provides a comprehensive fabrication capability for plano, spherical and aspherical optics in a wide variety of transmissive materials ranging from Fused silica to Ultraviolet optics to II-IV materials for infrared optics, as well as metals for reflective optics. Our fabrication processes include traditional grinding and polishing, diamond machining, and MagnetoRheological Finishing. To support our optics fabrication, we maintain a large array of optical metrology equipment which allows us to test for wavefront distortion, focal length, MTF, wedge, and surface roughness. We fabricate optics ranging from 10 mm to 250 mm in size, from 80/50 to 10/5 in surface quality, and from commercial flatness to $\lambda/40$. In addition to providing a wide variety of optics for our catalog product offering, high precision laser optics for our laser manufacturing, and large volume OEM optics, Newport's precision optics operation is the principal provider of spherical and aspherical optics for the Franklin coating operation.



Germanium and Zinc Selenide optics

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