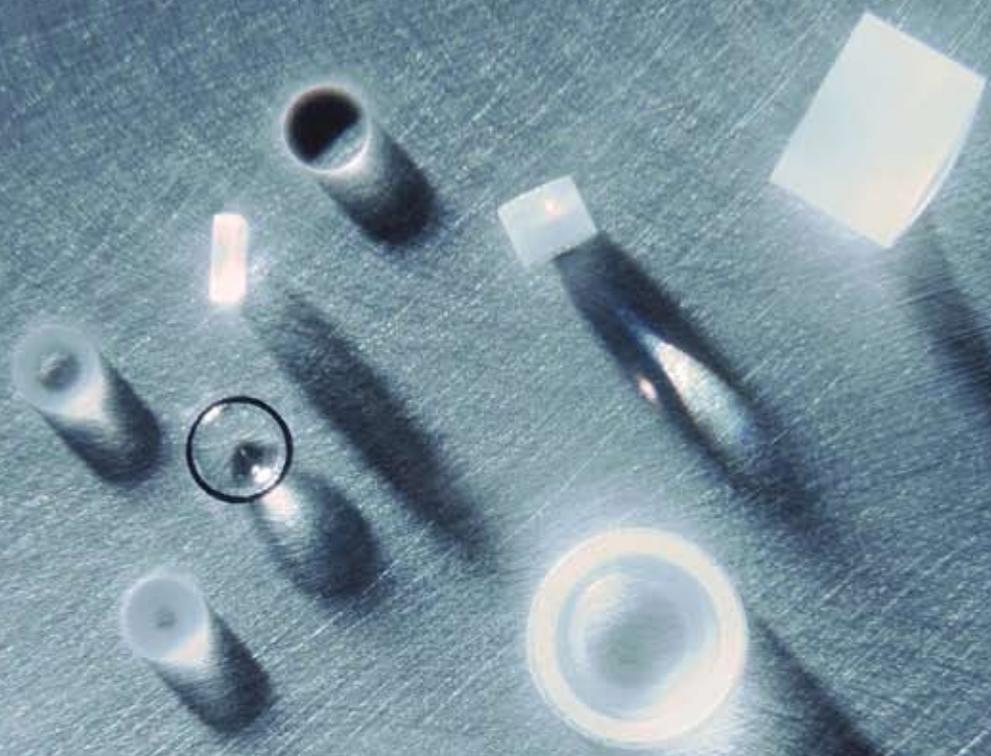


**EXCEPTIONAL EXPERTISE IN  
MANUFACTURING SUBMILLIMETER  
OPTICAL COMPONENTS**



# From prototype to volume production, standard to custom, the microscopically small elements we produce are unsurpassed in quality and precision

Don't let the fear of submillimeter size hold you back. Bern Optics has developed special expertise that enables us to produce ground and polished optical components **as small as 0.20 mm**. Our engineers have met the challenges related to centering (lenses), angle control (prisms), edge chipping and surface quality.

These tiny parts are as pretty to look at as they are to look through. They're available with custom coatings and can also be cemented into multi-element configurations. Most importantly, they are made to fulfill the unique requirements of your application and meet its exacting specifications.



LENSES

**Singlet lenses** are available in a variety of difficult configurations, including positive and negative meniscus. When producing **achromats** and **doublets** our quality control regimen verifies the centration of each element before and after cementing.

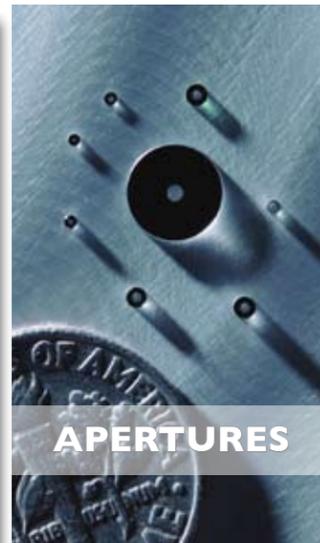
- optical or filter glasses
- spherical and cylindrical radii
- submillimeter curvatures and diameters
- custom designed anti-reflection coatings



PRISMS

Bern Optics produces a wide variety of custom designed, accurately angled and dimensioned **prisms**. Available in submillimeter dimensions with minimal edge chipping, these can be manufactured in a wide variety of configurations, materials and secondary coatings.

- optical or filter glasses
- optical wedges (of any given angle)
- beam splitter cubes
- parallel plates
- cemented, multi-element prisms
- custom coatings engineered for your application



APERTURES

**Apertures** are available in circular or custom shapes. These can be precisely located on your component.

- optical or filter glasses
- submillimeter apertures
- antireflective coatings
- cementing of apertures to plano convex lenses



MIRRORS

Bern Optics precision ground **mirrors** are available in a wide variety of shapes, with curved or plano surfaces.

- dielectric coatings
- metallic coatings
- hybrid coatings
- first or second surface reflectors



WINDOWS

Exceptionally accurate instrument **windows** are available in a variety of configurations, including custom shapes and submillimeter sizes.

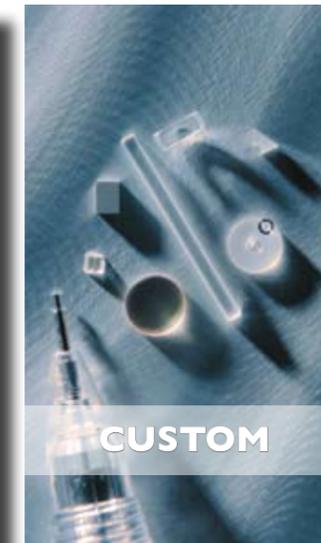
- optical or filter glasses
- custom coatings
- no minimum order



BALLS

Bern Optics produces optically polished **spheres** from a variety of optical and filter glasses.

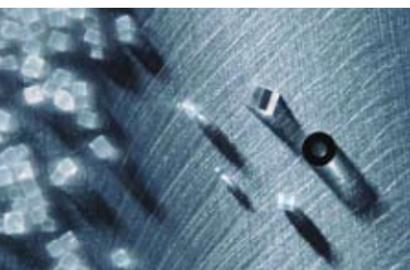
- large or small quantities
- no minimum order
- expedited delivery



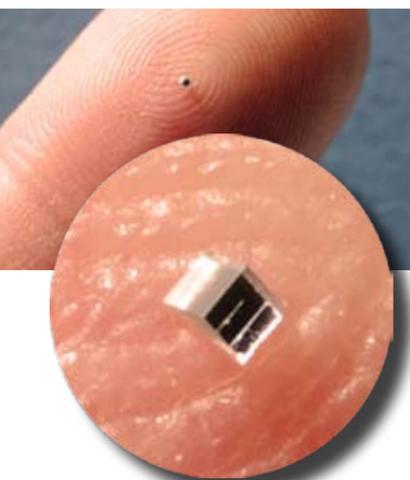
CUSTOM

Bern Optics has extensive experience producing **customized optics** from a variety of optical and filter glasses, with or without specialized coatings, to meet the needs of your unique application:

- axicons
- filters
- domes
- modified catalog items
- special components with combinations of plano, spherical and cylindrical surfaces

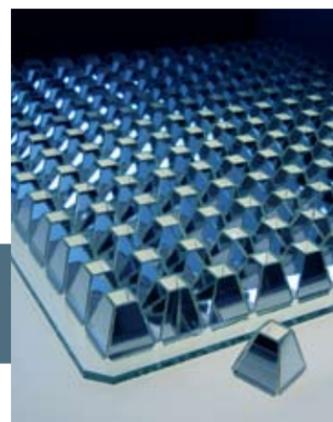


*Don't take our capabilities with a grain of salt, even if you might mistake our products for one!*



MICRON TOLERANCES

## PROTOTYPE OR PRODUCTION QUANTITIES



### COMPONENT ASSEMBLY

Bern Optics is a full-service optics manufacturer. In addition to the smallest, highest quality submillimeter optics, the following secondary assembly services are also available:

- doublets and triplets
- multielement prisms
- mounting optics in cells
- custom assemblies
- prototype and production



**Can't find what you need in a standard optics catalog?**

Then contact the experts at Bern Optics via telephone, fax or use one of the specialized forms under the "Contact Us" menu on our web site:

[www.bernoptics.com](http://www.bernoptics.com)

tel: 413/568-6800

fax: 413/568-4800

**WITH OR WITHOUT CHAMFERS**

**QUALITY ASSURANCE** Because of the fragile nature of optical products as well as their often-critical tolerances, quality control is one of the most important considerations. Bern



Optics customizes a specific testing and inspection program for each project to help ensure the highest quality product possible. If you are looking for extensive experience and attention to detail, look no further. You can rely on Bern Optics to supply you with consistently high quality optical components.



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