



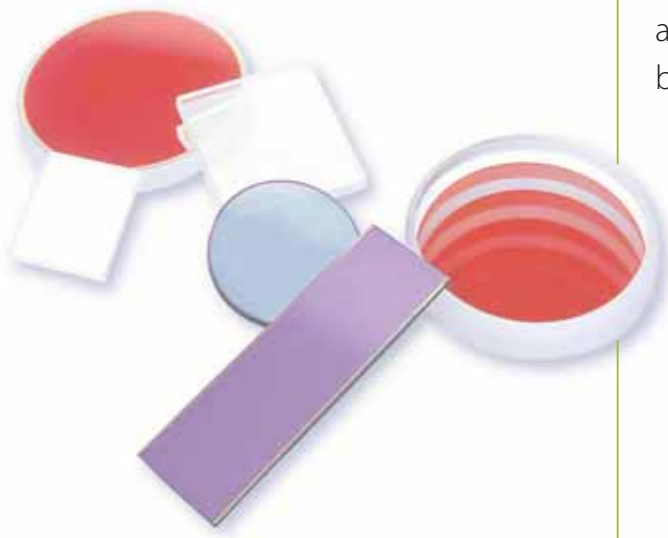
### Recipient

"U.S. Government  
Small Business of  
the Year Award"

For nearly 25 years Precision Optics Corporation (POC) has been a leader in the design, development, and realization of advanced optical applications and in the volume production of specialized optical systems. POC developed and has manufactured the industry standard optical image couplers for endoscopic surgery since 1983, and for micro-endoscopic (sub-millimeter) fiber optic based medical systems since 1989.

- Domestic OEM manufacturer
- FDA registered, ISO 9001, 13485 registered
- Products are approved for **CE** marking
- Optical, thin film, and mechanical components
- Turnkey supplier from design to production
- Endoscopes, Endocouplers, FiberOptic Adapter and Eyepieces, BeamSplitters, Camera Adapters, Thin Film Coatings, Stereo Endoscopes
- Proprietary patent pending micro-precision™ optics technology
- Rapid prototyping and state-of-the-art optical testing

*Selected areas of expertise include the production of components and integrated systems for optical scanners, precision optical registration devices, UV, visible and IR laser instrumentation, surgery, biomedical microscopy, fluorescence devices and single-molecule microscopy.*



# Precision Optics Capabilities

## DESIGN CAPABILITIES

- Integrated design of complex systems including optical / electro-optical elements, thin films, mechanical / electrical hardware
- Design for optimal performance, "produceability" & production cost
  - Diffraction limited (if appropriate)
  - > 95% of all POC lens designs have been realized in hardware
- State-of-the-art computer based design tools including CodeV, Zemax, AutoCAD, Filmstar, TFCalc, Essential MacLeod



## PROTOTYPE CAPABILITIES

- Rapid prototyping due to comprehensive onsite capabilities
- Extensive communication with the customer for efficient, accurate prototyping reduces cost and development time
- Extensive experience (> 20 years) in proof of concept & prototypes



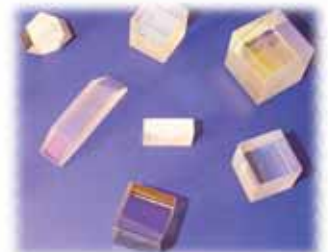
## OPTICAL FABRICATION

- Scratch/dig: <math>< 10/5</math> (10/5 typical)
- Flatness:  $\lambda/20$ ; Parallelism: <math>< 5</math> arc sec. (1–3 arc mins. typical)
- Diameter:  $\pm 0.01$  mm; Thickness:  $\pm 0.02$  mm
- Sizes: <math>< 1\text{ mm} - 150\text{ mm}</math>; as thin as 0.2 mm
- Specialize in complex prisms and micro-optics
  - Lenses with <math>< 1\text{ mm}</math> diameter; prisms with <math>< 1\text{ mm}</math> sides
  - Diffraction limited assemblies with multiple components typical
- Off-shore resources for very high volumes of multi-element optics



## THIN FILM FABRICATION

- Prototype to high volume production: historically up to 1000s / week
- Interference filters / coatings for most applications
  - In-house design for custom requirements
  - Coatings for stand-alone filters, or optical system components
- IAD deposition for durable coatings
- Simple to complex coatings for cube beamsplitters and prisms
- Proprietary process for robust (autoclavable) AR coatings
- Metal dielectric enhanced mirror coatings
- Narrow bandwidths ( $\leq 2$  nm); wavelength range 250nm – 3 $\mu\text{m}$  typical
- Diameters <math>< 1</math> millimeter to 1.3 meters



## PRECISION ASSEMBLY

- Simple & multi-element, complex assemblies
- Integrated optical, electro-optical, thin film, mechanical
- Prototype to production volumes (1000s / month)
- Class 100 assembly facilities
- Extensive Quality Control: FDA registered, ISO 9001:2000 registered, ISO 13485:2003 (CMD CAS) registered. Products are approved for CE mark.

