

surface  finishes  
bringing precision  
to the surface

# Optical Flats & Prisms



Specialists in Micro-Precision

SURFACE FINISHES™ specializes in

# OPTICAL FLATS AND PRISMS

Standard and Custom Shapes and Sizes Available

## EXPERT WORKMANSHIP

Surface Finishes offers a full line of standard and custom optical flats and prisms for your precision measurement needs.

Whether you need a low-cost option like borosilicate glass for your production environment or a high-quality material like Quartz or Zerodur for high precision measurements and final QC, we can help you.

We also provide resurfacing and certification services traceable to NIST standards.

One of our unique offerings is the Cartrilamp™ monochromatic light source metrology tool. This is a low-cost, dual-purpose unit that enables you to measure multiple parts at one time using an 8" to 12" flat or remove the light source and measure flatness in the optical flat

## TYPICAL DIMENSIONS

Diameter (inches)	Thickness (inches)
1 to 4	1/2 to 3/4
5 to 7	1
8 to 12	1-1/2 to 2
13 to 17	2 to 3

## PRECISION CHALLENGES?

Our experts will help you. Solving precision finishing problems is our specialty. Send details or a sample of the work to us for analysis and our recommendations.

**Other Services:** We also provide precision lapping, grinding, honing, single-point diamond machining, polishing, and metrology services. Inquiries invited.



## STANDARD REFERENCE OPTICS

We offer a full line of standard optical flats for use in your precision measurement applications ranging in flatness from 2 to 5 microinches (approximately  $\lambda/4$  to  $\lambda/10$ ). For prisms, we typically control angularity to within 1 arc second.



## CUSTOM OPTICS

Our custom flats can be made to measure surface flatness for virtually any design configuration. This includes shoulders with protruding shafts necessitating a hole in the flat or a recessed pocket where the optical flat is designed to mate with the shape of the recess. Our custom prisms are also manufactured to your particular specifications.

## OPTICAL COATINGS

We work with our partners to offer a variety of optical coatings for your flats including our Cartricoat™ high contrast coating for higher clarity viewing of light bands.

## MATERIALS OF CONSTRUCTION FOR OPTICAL FLATS

Our flats are available in Pyrex® (borosilicate), fused quartz and Zerodur®. Pyrex is the least expensive material but it also has the highest coefficient of thermal expansion ( $3.2 \times 10^{-6}$  per degree K). Fused quartz is much lower ( $5.5 \times 10^{-7}$ ) and Zerodur is the most expensive and thermally stable ( $1.0 \times 10^{-7}$ ).

Pyrex® is a registered trademark of Corning Corporation. Zerodur® is a registered trademark of Schott AG.

## REFURBISHMENT

If you have optical flats that are damaged with scratches or have hazy viewing conditions, we can resurface them to like-new condition, recalibrate and recertify them for you.

## CERTIFICATION

We provide recalibration and recertification services for your optical flats. All of our work is traceable to NIST standards.

surface finishes

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