



**Custom Flat-Surfaced, Parallel
& Wedged Optics Manufacturing**

**Our World
is flat™**
sydor.com

Manufacturing Limits

Wafers

Specifications	Measurements
Diameter	≤ 450mm
Thickness	≥ 0.1mm
Thickness Tolerance	± 0.003mm
Bow / Warp	≥ 3μm
TTV	≤ 1μm
Surface Roughness	≥ 5 Å rms
Parallelism	≥ 1 arc seconds
Scratch/Dig	60-40 to 10-5
Clear Aperture	≥ 3mm
TWE	≥ λ/10 over 25mm sub-aperture
RWE	≥ λ/10 over 25mm sub-aperture

Windows

Specifications	Measurements
Diameter	≤ 750mm
Length / Width	≤ 600mm x 450mm
Thickness	≤ 100mm
Thickness Tolerance	± 0.01mm
Scratch/Dig	60-40 to 10-5
Surface Roughness	≥ 3 Å rms
Parallelism	≥ 1 arc second
RWE	≥ λ/20 over clear aperture
TWE	≥ λ/20 over clear aperture
Clear Aperture	≤ 95%

Filters

Specifications	Measurements
Linear Dimensions	material dependent
Diameter Tolerance	± 0.1mm
Thickness Tolerance	± 0.01mm
Scratch/Dig	60-40 to 20-10
Surface Roughness	≤ 10 Å rms
Parallelism	≥ 1 arc second
TWE	≥ λ/20 over clear aperture
OD Tolerance (uncoated)	± 0.01 OD
OD Tolerance (coated)	± 0.03 OD
Clear Aperture	≤ 95%

Mirrors

Specifications	Measurements
Diameter	≤ 750mm
Length / Width	≤ 600mm x 450mm
Thickness	≤ 100mm
Thickness Tolerance	± 0.01mm
Scratch/Dig	60-40 to 10-5
Surface Roughness	≥ 3 Å rms
RWE	≥ λ/20 over clear aperture
Clear Aperture	≤ 95%

Optical Flats

Specifications	Measurements
Diameter	≤ 400mm
Thickness	≤ 100mm
Thickness Tolerance	± 0.1mm
Scratch/Dig	60-40 to 10-5
Surface Roughness	≥ 3 Å rms
RWE	≥ λ/20 over clear aperture
Clear Aperture	≤ 95%

*Manufacturing limits depend upon the part size and substrate material and should be used as a general reference.

Specifications	Measurements
Diameter	≤ 360mm
Length / Width	≤ 300mm x 200mm
Thickness	≤ 50mm
Thickness Tolerance	± 0.01mm
Scratch/Dig	60-40 to 10-5
Surface Roughness	≥ 3 Å rms
RWE	≥ λ/20 over clear aperture
Wedge Angle Tolerance	± 10 arc seconds
Clear Aperture	≤ 95%

Specifications	Measurements
Diameter	≤ 300mm
Length / Width	≤ 225mm x 200mm
Thickness	≤ 100mm
Thickness Tolerance	± 0.01mm
Reflection/Transmission (R:T)	90:10 – 10:90
Scratch/Dig	60-40 to 20-10
Surface Roughness	≥ 5 Å rms
RWE	≥ λ/20 over clear aperture
TWE	≥ λ/20 over clear aperture
Clear Aperture	≤ 95%

Specifications	Measurements
Length / Width	≤ 450mm x 150mm
Thickness	≤ 100mm
Thickness Tolerance	≤ ± 0.01mm
Scratch/Dig	60-40 to 10-5
Surface Roughness	≥ 3 Å rms
Wedge Angle	≥ 1 arc minute
Parallelism	≥ 1 arc minute
Perpendicularity	≥ 1 arc minute
RWE	≥ λ/20 over clear aperture
TWE	> λ/2 over clear aperture
Clear Aperture	≤ 95%

Common Glass & Crystal Substrates

- Fused Silica
- Fused Quartz
- Borofloat
- N-BK7
- B 270
- Zerodur
- ULE
- ClearCeram-Z
- Color Filter Glass
- Silicon
- CaF2
- MgF2

Industries Served

- Aerospace
- Industrial
- Military & Defense
- Biomedical
- Semiconductor
- Entertainment

Consult with a Sydor Optics Sales Engineer to discuss your IR, VIS or UV optics needs!

Precision Optical Products

Sydor Optics is the global leader in custom, flat optics fabrication. With a strong commitment to innovation and a dedication to a pioneering legacy, Sydor Optics continues to attract the brightest minds and expert engineers to deliver world-class products.

Custom Manufacturing

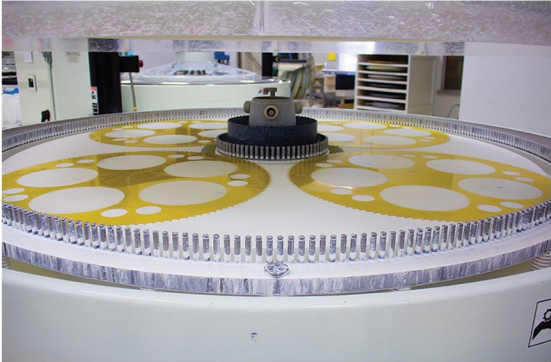
With the largest collection of double-sided grinding and polishing machines in North America, Sydor Optics can handle your precision optics manufacturing needs. From prototyping to high-volume production, our engineers and technicians are here to help meet your most challenging specifications every step of the way.

Metrology & Inspection

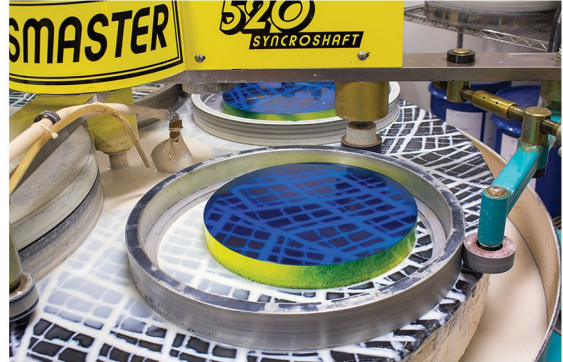
Whether you need to verify parallelism, surface roughness, TTV, bow, warp, reflected wavefront, transmission or cosmetics, our Metrology & Inspection specialists will measure and report on various tolerances and aspects of your precision optical components to your exact specifications.

Manufacturing Capabilities

Double-Sided Polishing



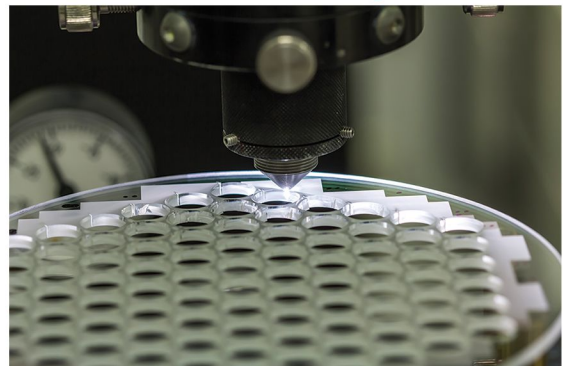
Continuous Pad & Pitch Polishing



CNC Machining



Laser Cutting



Laser Marking



Ultrasonic Cleaning



Cleanroom Packaging



Metrology & Inspection



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