

# Standard & Custom Cylindrical Lenses

Today's advanced technologies require precise optical components. Cylindrical optics are used in a variety of laser and imaging applications to focus light one-dimensionally, forming a line image from a parallel incident beam.

The focal length of a cylindrical lens can be positive or negative. Positive cylinders have one flat surface and one convex surface. Negative cylinders have one flat surface and one concave surface. Rod lenses are similar to cylinders in performance in that collimated light passing through the diameter of the rod is focused into a line.

## Supporting Diverse Applications

Cylindrical lenses can improve the performance of complex systems in a range of applications. For example, they are often used to shape a light beam for aperture illumination, converge light for a line scan detector, or stretch a point of light into a line, as in a laser level.

**Laser Scanning** – used to focus collimated light into one-dimensional lines

**Microscopy** – used to create the two-dimensional light planes used in confocal light-sheet microscopes

**Imaging** – used to correct astigmatism for improved image quality

**Spectroscopy** – used to illuminate slit apertures

**Beam Shaping** – used to shape the output of a laser diode into a circular beam

**Medicine** – used to diagnose and measure astigmatism for vision correction

## Customization

Your original product might require optics with unique characteristics. Ross Optical not only provides a variety of standard cylindrical components, but we can also fabricate custom lenses to customer specification. From design through specification, we'll help you choose the best custom solution for your precision optics system or application.

## Polishing & Coating

Ross Optical has the capability to polish cylindrical optics to meet your requirements. We also offer a full range of coatings down to 220 nm, such as broadband anti-reflection, single wavelength AR, Rmax, beam splitters and more.

## Quality Inspection

Ross technicians use an array of test and measurement equipment to ensure that quality specifications are met, giving customers the confidence they need to go directly to manufacture.

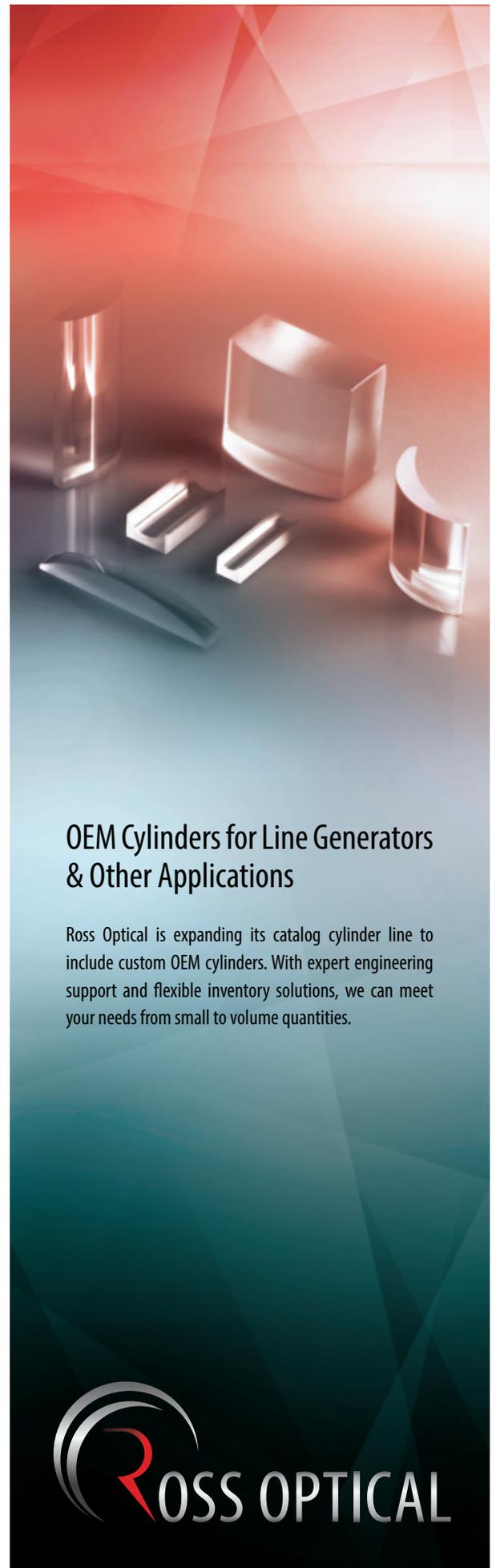
## Unparalleled Service

Ross Optical delivers with exceptional service that is well-suited to the needs of our OEM customers. Using our years of optics experience, we help customers get the best quality and performance for their investment.

At Ross Optical, service continues beyond the sale. We're particularly proud of our inventory control management processes and work to provide an ongoing flow of parts that keep our OEM customers moving, without supply chain headaches and without the added cost of maintaining huge parts inventories.

**Ross Optical is ISO 9001:2008 Certified.**

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## OEM Cylinders for Line Generators & Other Applications

Ross Optical is expanding its catalog cylinder line to include custom OEM cylinders. With expert engineering support and flexible inventory solutions, we can meet your needs from small to volume quantities.



# Technical Specifications

Ross Optical provides standard and custom optical components in various dimensions.

## Positive Cylinders

<b>Glass Type</b>	N-BK7
<b>Focal Length</b>	+/- 2%
<b>Surface Accuracy</b>	Y-Direction: 1/2 wave X-Direction: 1/2 wave per 25 mm
<b>Length Tolerance</b>	+/- 0.10 mm
<b>Width Tolerance</b>	+/- 0.14 mm
<b>Center Thickness</b>	+/- 0.50 mm
<b>Surface Quality</b>	60-40
<b>Centration</b>	< 3 arc minutes
<b>Clear Aperture</b>	90%
<b>Coating</b>	Coated or uncoated

## Negative Cylinders

<b>Glass Type</b>	N-BK7
<b>Focal Length</b>	+/- 2%
<b>Surface Accuracy</b>	Y-Direction: 1/2 wave X-Direction: 1/2 wave per 25 mm
<b>Flat Annulus</b>	0.50 +0 / -0.40
<b>Length Tolerance</b>	+/- 0.10 mm
<b>Width Tolerance</b>	+/- 0.14 mm
<b>Center Thickness</b>	+/- 0.50 mm
<b>Surface Quality</b>	60-40
<b>Centration</b>	< 3 arc minutes
<b>Clear Aperture</b>	90%
<b>Coating</b>	Coated or uncoated

## Rod Lenses

<b>Glass Type</b>	N-BK7
<b>Edge Bevel</b>	None
<b>Length Tolerance</b>	+ 0.00 / -0.10
<b>Diameter Tolerance</b>	+ 0.00 / -0.03
<b>Surface Quality</b>	40-20
<b>Clear Aperture</b>	90%
<b>Coating</b>	Uncoated

## Custom Cylinders

<b>Diameter</b>	2.0 to 100.0 mm
<b>Wedge</b>	< 3'
<b>Surface Quality</b>	≥ 20/10
<b>Irregularity</b>	≥ λ/4
<b>Coating</b>	Coated or uncoated

