PLASTIC COLLIMATING LENSES

Precision Molded Plastic Aspheric Collimating Lenses for Laser Diodes

For nearly all applications, nothing beats plastic molded aspherics for optimal collimating and focusing of laser diodes. Molded collimating lenses from Diverse Optics offer excellent performance in a thermal range that exceeds the upper limit of most laser diodes. Mass production by injection molding of aspheric surfaces offers an inexpensive substitute compared to traditional glass elements. Dual aspheric surfaces reduce aberrations and eliminate the expense of multiple elements in optical systems. Less elements equals less cost and reduced weight for your system. Polymer collimating lenses are optimized to work for any single wavelength between 400 – 1100 nm. Optional thin-film coating may be applied to optimize for any wavelength between the 400 – 1100 nm range. All lenses and housings are RoHS and REACH compliant.

Middle man? Who needs him? Buy factory direct and save!

Diverse Optics, the industry leader in custom polymer optics, has been producing precision molded "off-the-shelf" plastic collimating lenses for over 25 years. We specialize in high volume series production of polymer optics to offer an OEM pricing structure that saves you money by eliminating costly layers of distribution mark ups.

Don't see a lens that works for your application? Then we'll make one for you.

You'll be surprised to learn that a custom molded optic solution is much less than you think. If you have some volume requirements and one of our stock plastic collimating lenses won't work, then go for a custom design. We'll prototype the design using single point diamond turning (SPDT) first to ensure the design works in your system. Then we'll make a mold to support your volume requirements and meet your budget! Call today to find out more about custom precision molded optics.



Collimating Lens for Laser Diodes 6.1 mm f₀-5001		5001 Series Collimating Lenses	
Wavelength Range (nm)Numerical ApertureF-NumberExit Pupil Diameter (mm)EFL (mm)Object Field Diameter (mm)RMS WFE (axial)Beam Diameter (mm)Number of ElementsMagnificationSurfaces	400 to 1100 0.28 1.8 3.73 6.138 .10 <0.01λ 3.4 1 Infinite Dual Aspherics	$\begin{array}{c} & \begin{array}{c} & \begin{array}{c} & \begin{array}{c} & \begin{array}{c} & 146 \pm .002 \\ & \begin{array}{c} & \end{array} \\ & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \end{array} \\ & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \end{array} \\ & \end{array} \\ \\ & \end{array} \\ & \begin{array}{c} & \end{array} \\ & \end{array} \\ \\ & \end{array} \\ & \end{array} \\ \\ & \end{array} \\ \\ & \end{array} \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \end{array} \\ \\ \\ \\ \end{array} \\ \\ \\ \end{array} \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \\ \end{array} \\ \\ \\ \\ \\ \\ \\ \\ \end{array} \\$	
Material	Acrylic (PMMA)	all dimensions in inches	
Optional Coating Design	MgF ₂ Anti-reflective	Part Number Description	
	single element dual	5001-001 Lens Only	
	asphere with flange	5001-003 Lens w/housing	
RoHS & REACH	Compliant	Lens withreaded housing	

5002 Series Collimating Lenses



Collimating Lens for Laser Diodes 4.5 mm f_o-5002

Wavelength Range (nm)	400 to 1100
Numerical Aperture	.37
F-Number	1.332
Exit Pupil Diameter (mm)	4.08
EFL (mm)	4.505
Object Field Diameter (mm)	.10
RMS WFE (axial)	<0.01λ
Beam Diameter (mm)	3.4
Number of Elements	1
Magnification	Infinite
Surfaces	Dual Aspherics
Material	Acrylic (PMMA)
Optional Coating Design	MgF ₂ Anti-reflective
	single element dual
	asphere with flange
RoHS & REACH	Compliant

Laser Diodes 4.5 mm	Small Format f₀-8001 Series
Wavelength Range (nm)	400 to 1100
Numerical Aperture	.50
F-Number	1.0
Exit Pupil Diameter (mm)	4.5
EFL (mm)	4.49
Spot Size (microns)	<1.0
Beam Diameter (mm)	4.5 / 12.5
Conjugate (nm)	150 to Infinity
Material	Acrylic (PMMA)
Optional Coating Design	MgF ₂ Anti-reflective
	single element dual
	asphere with flange
RoHS & REACH	Compliant

8001-001 Collimating Lens



8001-002 Collimating Lens



*With this lens, the housing is built into the lens when ordered with a housing. It is not a separate attachment as it is with other collimating lenses.

Collimating Lens for Small Format Laser Diodes 4.5 mm f_o-8001 Series

Wavelength Range (nm)	400 to 1100
Numerical Aperture	.50
F-Number	1.0
Exit Pupil Diameter (mm)	4.5
EFL (mm)	4.49
Spot Size (microns)	<1.0
Beam Diameter (mm)	4.5 / 12.5
Conjugate (nm)	150 to Infinity
Material	Acrylic (PMMA)
Optional Coating Design	MgF ₂ Anti-reflective
	single element dual
	asphere with flangee
RoHS & REACH	Compliant

Collimating Lens for Laser Diodes 4.5 mm f_o-8002 Series

Wavelength Range (nm)	400 to 1100
Numerical Aperture	.60
F-Number	.61
Exit Pupil Diameter (mm)	5.48
EFL (mm)	4.49
Wavefront Error (peak, axial)	< .01λ
(peak, 50µ∆x,y)	< .50λ
Beam Diameter (32°, 1/e ²)	4.9 mm
(32°, FWHM)	2.5 mm
Conjugate	Optimized for 250mm
	(1/4 λ WFE from 200 to 350 mm)
Material	Acrylic (PMMA)
Optional Coating Design	MgF ₂ Anti-reflective
	single element dual
	asphere with flange
RoHS & REACH	Compliant

8002 Collimating Lens



Part Number 8002-001 8002-003 Description Lens Only Lens w/std housing

8003 Collimating Lens



Part Number

8003-001 8003-003

Description

Lens Only Lens w/std housing

Collimating Lens for Laser Diodes 6.1 mm f_o-8003 series

Wavelength Range (nm)	400 to 1100
Numerical Aperture	.60
F-Number	.62
Exit Pupil Diameter (mm)	7.45
EFL (mm)	6.14
Wavefront Error (peak, axial)	< .02λ
(peak, 50µ∆x,y)	< 2λ
Beam Diameter (32°, 1/e ²)	6.5 mm
(32°, FWHM)	3.4 mm
Conjugate	Optimized for 10 mm
	(1/4 λ WFE from 1.5m to ∞)
Material	Acrylic (PMMA)
Optional Coating Design	MgF ₂ Anti-reflective
	single element dual
	asphere with flange
RoHS & REACH	Compliant

Housings 5000 Series



Threaded Housing (7/16-40 Thread) 5001/5002 Series Lenses





Housing for the 8003 Series Lenses



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When you're looking for consistently repeatable precision polymer optics to reduce cost, trim system weight, simplify design, and improve performance, come to Diverse Optics. Our breadth of polymer optics knowledge is unsurpassed and our experience with every type of polymer optic application is our namesake – Diverse. Let us show you how our experience and obsession with polymer optics can transform your optical system from expensive, heavy, and complicated to commercially viable, light weight, and wonderfully simple. Let Diverse Optics show you how polymer optics are perfected.



Diverse Optics Inc.

10310 Regis Court Rancho Cucamonga, CA 91730

- **Call Us:** +1 (909) 593-9330
- @ E-mail Us: info@diverseoptics.com
- Website: diverseoptics.com

