

Optics

Optical Systems

Free Space Isolators

E-O Devices

Spherical Singlets

Multi-Element Lenses

Cylindrical Lenses

Aspheric Lenses

Mirrors

Diffusers & Lens Arrays

Windows

Prisms

Gratings

Polarization Optics

Beamsplitters

Filters & Attenuators

Gas Cells

350350 f = 4.5mm and 0.42 NA

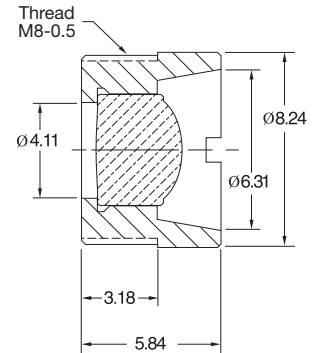
Geltech™ Molded Glass Aspheric Lens

Optical Design Specifications

- Design Wavelength: 980nm
- Numerical Aperture: 0.42
- Clear Aperture: 3.7mm
- Effective Focal Length: 4.5mm

- Magnification: Infinite
- RMS WFE (Axial @ 632.8nm)¹: <Diffraction Limit
- Scratch-Dig: 40-20
- Glass (Corning): C0550

¹ Averaged over full aperture
Geltech™ lenses are manufactured LightPath® Technologies



C350TM
Mounted Lens

Aspheric Coefficients

	R	k	A ₄	A ₆	A ₈	A ₁₀
ASP (2)	2.88	-0.6415948	3.1482762E-04	-2.5464705E-05	-2.8143576E-06	-3.3073358E-07
ASP (1)	-19.14	-	-	-	-	-

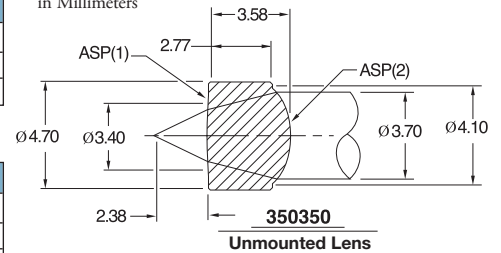
Unmounted AR Coated Aspheric Lenses

ITEM #	\$	£	€	RMB	DESCRIPTION
350350-A	\$ 75.00	£ 47.30	€ 69,80	¥ 716.30	Lens, AR Coated 400- 600nm
350350-B	\$ 75.00	£ 47.30	€ 69,80	¥ 716.30	Lens, AR Coated 600-1050nm
350350-C	\$ 75.00	£ 47.30	€ 69,80	¥ 716.30	Lens, AR Coated 1050-1600nm

Mounted AR Coated Aspheric Lenses

ITEM #	\$	£	€	RMB	DESCRIPTION
C350TM-A	\$ 79.00	£ 49.80	€ 73,50	¥ 754.50	Mounted Lens, AR Coated 400 - 600nm
C350TM-B	\$ 79.00	£ 49.80	€ 73,50	¥ 754.50	Mounted Lens, AR Coated 600-1050nm
C350TM-C	\$ 79.00	£ 49.80	€ 73,50	¥ 754.50	Mounted Lens, AR Coated 1050-1600nm

All Dimensions Are in Millimeters



350350
Unmounted Lens

350230 f = 4.51mm and 0.55 NA

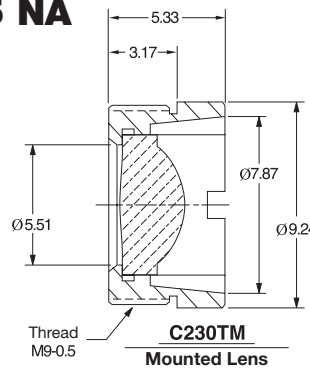


Geltech™ Molded Glass Aspheric Lens

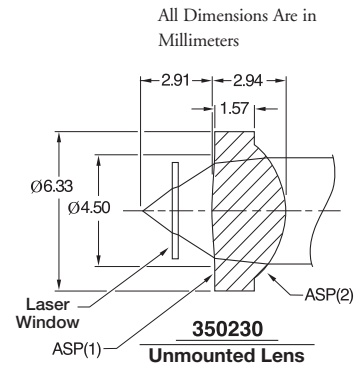
Optical Design Specifications

- Design Wavelength: 780nm
- Numerical Aperture: 0.55
- Clear Aperture: 4.95mm
- Effective Focal Length: 4.51mm
- Magnification: infinite
- Laser Window Thickness: 0.25mm
- Laser Window Material/Index: BK7/1.51
- RMS WFE (axial @ 632.8nm)¹: <Diffraction Limit
- Scratch-Dig: 40-20
- Glass (Corning): C0550

¹ Averaged over full aperture
Geltech™ lenses are manufactured by LightPath® Technologies



C230TM
Mounted Lens



350230
Unmounted Lens

Aspheric Coefficients

	R	k	A ₄	A ₆	A ₈	A ₁₀
ASP (2)	2.94	-0.4811040	-2.8909400E-05	-3.7628200E-05	3.2644200E-06	-1.1757200E-06
ASP (1)	-19.92	-	4.2371000E-03	-6.3484000E-04	3.4652600E-05	-

Unmounted AR Coated Aspheric Lenses

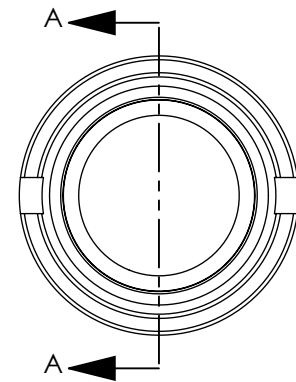
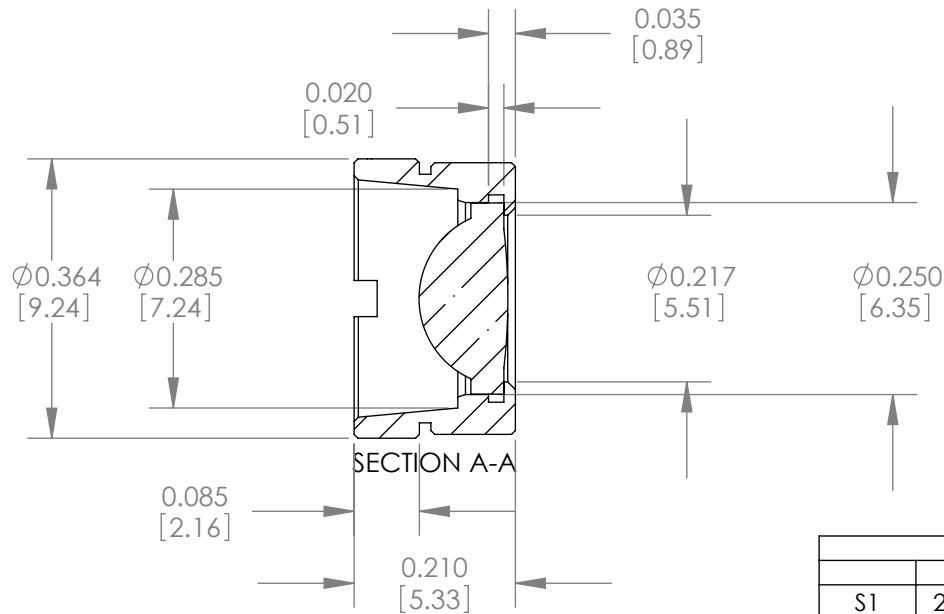
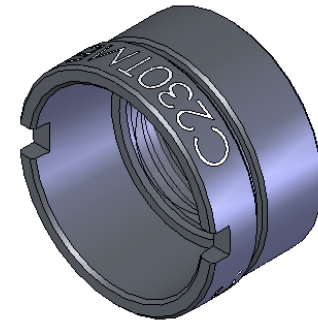
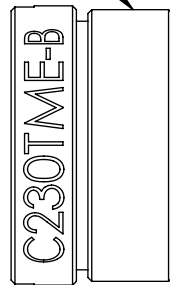
ITEM #	\$	£	€	RMB	DESCRIPTION
350230-A	\$ 84.00	£ 52.90	€ 78,10	¥ 802.20	Lens, AR Coated 400-600nm
350230-B	\$ 84.00	£ 52.90	€ 78,10	¥ 802.20	Lens, AR Coated 600-1050nm
350230-C	\$ 84.00	£ 52.90	€ 78,10	¥ 802.20	Lens, AR Coated 1050-1600nm

Mounted AR Coated Aspheric Lenses

ITEM #	\$	£	€	RMB	DESCRIPTION
C230TM-A	\$ 89.00	£ 56.10	€ 82,80	¥ 850.00	Mounted Lens, AR Coated 400-600nm
C230TM-B	\$ 89.00	£ 56.10	€ 82,80	¥ 850.00	Mounted Lens, AR Coated 600-1050nm
C230TM-C	\$ 89.00	£ 56.10	€ 82,80	¥ 850.00	Mounted Lens, AR Coated 1050-1600nm

REV. #	DESCRIPTION:	NAME/DATE:

THREAD 9 mm X 0.5 mm PITCH
CLASS 2



ASPHERIC COEFFICIENT						
	R	k	A4	A6	A8	A10
S1	2.94500	-4.81104x10-1	-2.89094x10-5	-3.76282x10-5	-3.26442x10-6	-1.17572x10-6
S2	-19.9223	-	4.2371x10-3	-6.3484x10-4	-3.46526x10-5	-

SPECIFICATIONS:

EFFECTIVE FOCAL LENGTH = 4.51 mm
 NUMERICAL APERTURE = 0.55
 CLEAR APERTURE = 4.95 mm
 WORKING DISTANCE = 2.91 mm
 DESIGN WAVELENGTH = 780nm
 COATING = 600 - 1050nm

THIS DRAWING IS FOR INFORMATION ONLY
 NOT INTENDED FOR MANUFACTURING

TOLERANCES

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
LINEAR TOLERANCES:
 TWO PLACE DECIMAL: ±0.010
 THREE PLACE DECIMAL: ±0.005
 ANGULAR: ±30'
 SURFACE FINISH: 32 MICROINCHES
 PARALLELISM: 0.002
 FLATNESS: 0.002
 STRAIGHTNESS: 0.002
 CONCENTRICITY: 0.002
 PERPENDICULARITY: 0.002
 THREAD: CLASS 2 FIT

	NAME	DATE
DRAWN	DP	05/16/2007
ENG APPR.	KMS	05/16/2007
MFG APPR.	TO	05/16/2007

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THORLABS INC. PO BOX 366
 NEWTON NJ

TITLE: B COATED MOUNTED ASPHERIC LENS f = 4.51 mm NA = 0.55

MATERIAL: 303 STAINLESS STEEL AND C0550 GLASS SIZE REV. A B

SCALE: 4:1 SHEET 1 OF 1

DWG. NO. 17817-E01 PART NO. C230TME-B

Laser Diode Technologies

Collimation Tubes With Optics: 5.6mm & 9mm Laser Packages

- Precision Mount for Standard 9mm and 5.6mm Laser Packages
- Threaded Retaining Ring for Holding Laser
- Easily Replaces Laser Diodes
- Lens Mount With Adjustable Focus

COLLIMATION & FOCUSING TUBE

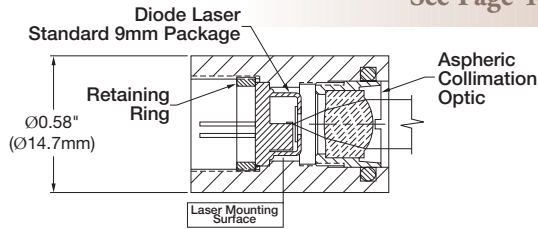
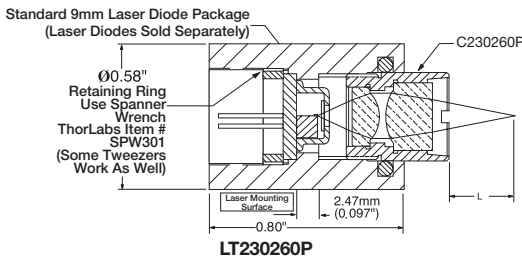
For 5.6mm & 9mm Packages
Adapter for 5.6mm Lasers Included



INCLUDES OPTIC

Thorlabs' line of collimation and focusing tubes with optics offer precision mounts for standard 9mm and 5.6mm laser packages. Lasers can be easily replaced, and the lens mounts have an adjustable focus. The packages include a main tube, an optic, a retaining ring, a rubber O-ring, and an adapter (for the 5.6mm packages). The collimation tubes feature a diffraction-limited aspheric optic with a multilayer broadband AR coating.

Lasers Sold Separately
See Page 465



SPW301 SPANNER WRENCH
For Focus Adjustment of Our Collimation Package

Magnification: 3.41, Image NA: 0.16 Max.

(Magnification: 2.44, Image NA: 0.22 Max. for LT230220P)

ITEM #	\$	£	€	RMB	DESCRIPTION
SPW301	\$ 13.70	£ 8.60	€ 12,70	¥ 130.80	Spanner Wrench for LT110P, LT220P, and LT230P
SPW302	\$ 14.20	£ 8.90	€ 13,20	¥ 135.60	Spanner Wrench for LT240P
AD15F	\$ 29.90	£ 18.85	€ 27,80	¥ 285.50	Adapter for Collimation Tubes to SM1 Thread

Collimation Tubes & Optics

ITEM #	\$	£	€	RMB	WAVELENGTH RANGE	PACKAGE LENGTH	ASPHERIC OPTIC	NUMERICAL APERTURE	f(mm)
LT110P-B	\$111.00	£ 69.90	€103,20	¥1,060.10	600-1050nm	0.85"	A110TM-B	0.40	6.24
LT220P-B	\$111.00	£ 69.90	€103,20	¥1,060.10	600-1050nm	1.00"	A220TM-B	0.25	11.0
LT230P-B	\$111.00	£ 69.90	€103,20	¥1,060.10	600-1050nm	0.75"	A230TM-B	0.55	4.5
LT240P-B	\$143.00	£ 90.10	€133,00	¥1,365.70	600-1050nm	0.95"	A240TM-B	0.50	8.0

AD15F

Mounting adapter for integrating our collimation tubes into our SM1 family of mechanical components.



Focusing Tubes and Optics

ITEM #	\$	£	€	RMB	DESCRIPTION	L
LT230220P-B	\$ 228.00	£ 143.60	€ 212.00	¥2,177.40	Laser Tube with C230220P-B Optic Pair	0.241"
LT230260P-B	\$ 228.00	£ 143.60	€ 212.00	¥2,177.40	Laser Tube with C230260P-B Optic Pair	0.551"

*Compatible with SPW301 & AD15F shown above



C230220P-B

Details on these molded glass aspheres as well as our entire selection of these products can be found on pages 737-768.

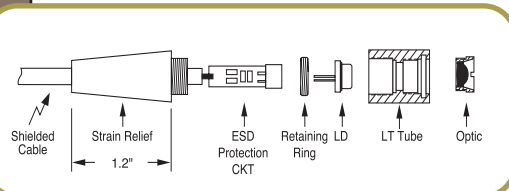
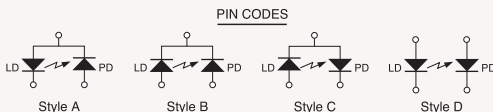
- Includes Laser Socket and 2' of Shielded Cable
- Threads Into LT Housing, Secures Laser Socket
- Includes Clamping and Reverse Protection Diodes to Suppress ESD
- Available With DB9 Connector for Mating Directly With LDC200C Series Laser Controllers

The SR9 Series of strain relief and ESD protection products offer a convenient and safe means for connecting 5.6mm or 9mm laser diodes to our line of Laser Diode Controllers.

Each model comes with a laser socket mounted to a small printed circuit board. The PCB contains a Schottky diode to clamp any reverse voltages that might appear across the laser diode as well as a Zener diode to shunt any excessive voltages or ESD away from the diode.



Optional DB9 Connector for the LDC200C Series



Strain Relief & ESD Protection for LT Series Tubes

ITEM #	\$	£	€	RMB	CODE	DESCRIPTION
SR9A	\$ 42.00	£ 26.50	€ 39,10	¥ 401.10	A	ESD Protection and Strain Relief
SR9A-DB9	\$ 45.00	£ 28.40	€ 41,90	¥ 429.80	A	ESD Protection and Strain Relief w/ DB9
SR9B	\$ 42.00	£ 26.50	€ 39,10	¥ 401.10	B	ESD Protection and Strain Relief
SR9B-DB9	\$ 45.00	£ 28.40	€ 41,90	¥ 429.80	B	ESD Protection and Strain Relief w/ DB9
SR9C	\$ 42.00	£ 26.50	€ 39,10	¥ 401.10	C	ESD Protection and Strain Relief
SR9C-DB9	\$ 45.00	£ 28.40	€ 41,90	¥ 429.80	C	ESD Protection and Strain Relief w/ DB9
SR9D	\$ 42.00	£ 26.50	€ 39,10	¥ 401.10	D	ESD Protection and Strain Relief
SR9D-DB9	\$ 45.00	£ 28.40	€ 41,90	¥ 429.80	D	ESD Protection and Strain Relief w/ DB9

*Compatible with all LT Tubes

- Benchtop Drivers
- Platform Drivers
- OEM Drivers
- Laser Diode Mounts
- Laser Diodes
- Pigtails Lasers
- Laser Modules
- Accessories