



Large Beam Fiber Optic Collimators



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Large Beam Fiber Optic Collimators

Description

Fiber optic collimators come in all sizes commercially. Most of them are based on the successful GRIN lenses, which find their way into many passive and active components. However, GRIN lenses are not very suitable for visible wavelengths or large beam. Our high performance collimators employ high quality aspheric lenses and achromatic doublets to achieve low wave-front distortion, low divergence, and diffraction limited beam quality.

Large-beam collimators are not only ideal for long-range target shooting but also good for pair coupling at long working distances. Some of our very large-beam (>14 mm) collimators have been used in free-space optics communications. Use these collimators with our standard laser-diode light source, pigtailed diode lasers, or receptacle laser diode modules. Princeton also produces custom retro-reflectors to pair with our collimators.

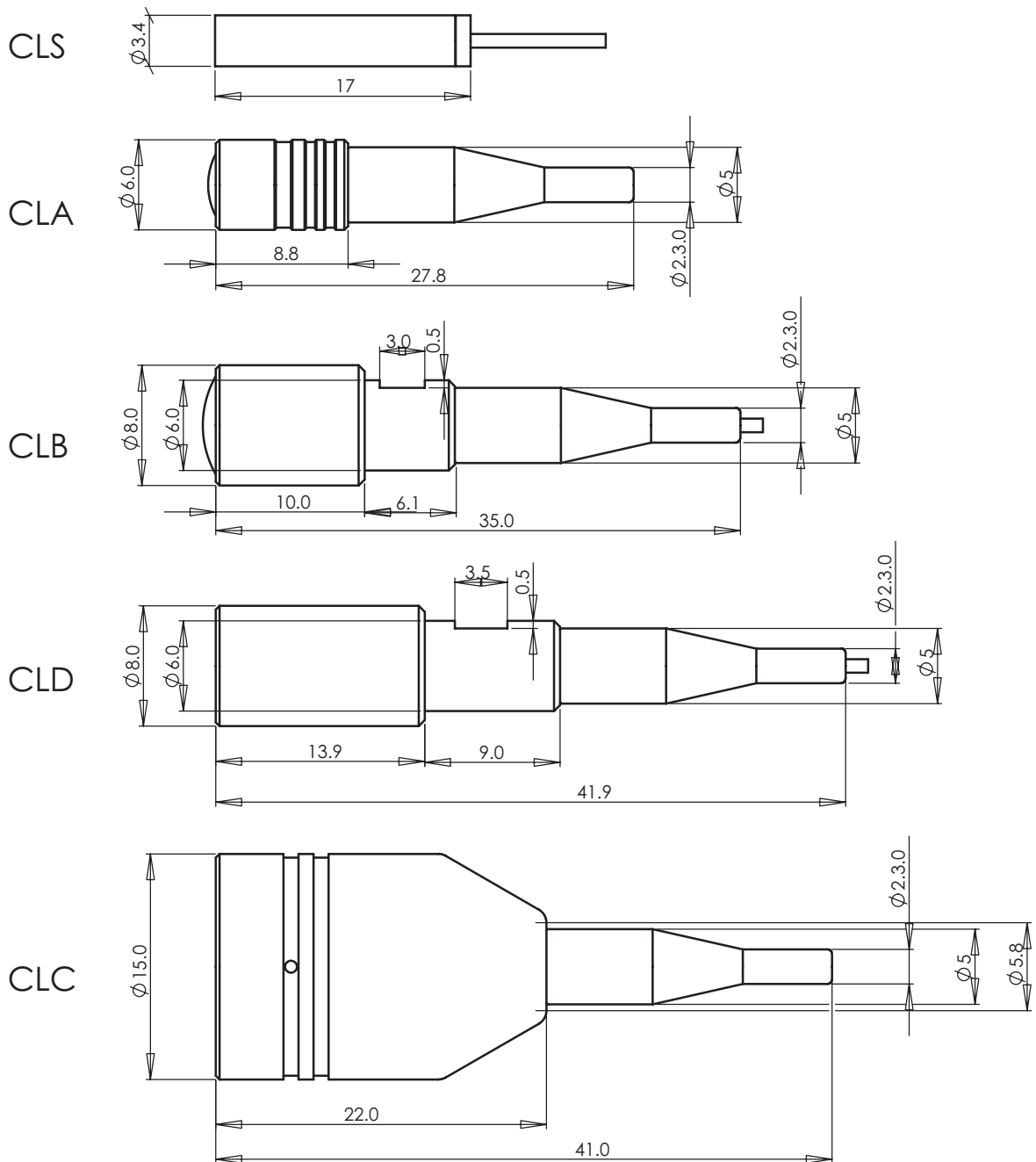
Specifications

Characteristics	Model CLA	Model CLB	Model CLD	Model CLC
Wavelength	532-1650 nm			
Beam size (1/e ² with SM fiber)	0.82 mm	2.0 mm	3.5 mm	4-10* mm
Far field divergence (1310 nm)	1 mrad	0.5 mrad	0.3 mrad	-
Focal length (mm)	4.5 (NA=0.42)	11 (NA=0.25)	19 (NA=0.15)	17 (NA=0.3)
Lens type	Asphere (AR)			PC (AR)
Insertion loss (SM pairing)	<0.5 dB (for 1310 and 1550 nm only)			-
Max pairing distance	0.25 m	1 m	4 m	-
Return loss (SM fiber)	>55 dB			
Operating temperature	-20 to 65 C			
Storage temperature	-40 to 85 C			
Package materials	Stainless steel			Anodized AL
Fiber choices	Singlemode or PM			Multimode
Fiber jackets	900 um tight buffer or loose tubing			
Connector types	FC/PC, SC/PC, ST, LC, FC/APC, SC/APC			
Characteristics	Model CLE	Model CLF	Model CLS	
Wavelength	532-1650 nm			
Beam size (1/e ² with SM fiber)	6 mm	14 mm		450 um
Far field divergence (1310 nm)	-	-		2.5 mrad
Focal length (mm)	35 (NA=0.38)	75 (NA=0.32)		1.9 (NA=0.46)
Lens type	Achromatic doublet (AR coated)			GRIN (AR)
Insertion loss (SM pairing)	<1 dB (for 1310 and 1550 nm only)			-
Max pairing distance	5 m	8 m		-
Return loss (SM fiber)	>55 dB			
Operating temperature	-20 to 65 C			
Storage temperature	-40 to 85 C			
Package materials	Anodized AL			Stainless
Fiber choices	Singlemode, multimode, or PM			
Fiber jackets	900 um tight buffer w/3 mm jacket			900 um
Connector types	FC/PC, SC/PC, ST, LC, FC/APC, SC/APC			
Fiber focal distance tuning range	+/- 1 mm	+/- 0.5 mm		



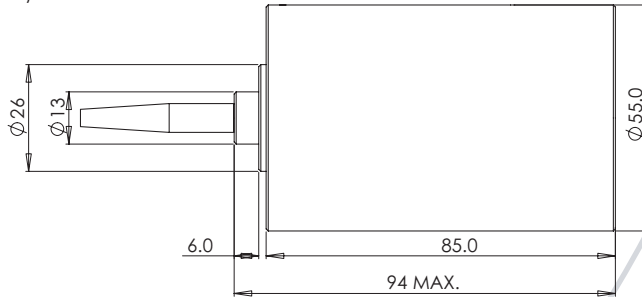
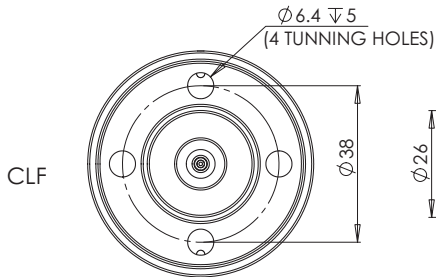
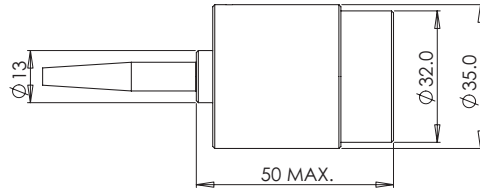
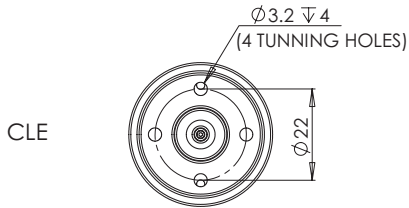
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Mechanical





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Part Number



- A=1 mm beam*
- B=2 mm beam*
- D=3.5 mm beam*
- C=4-13 mm beam**
- E=6 mm beam*
- F=14 mm beam

Wavelength
155=1550 nm

Fiber
28=SMF28

FC=FC
FA=FCAPC

* Beam size based on SM fiber ** NA related

Wavelength and Fiber Code

Wavelength	Fiber
165=1625 nm	28=Corning SMF28 (1290=1650 nm)
162=1625 nm	
159=1590 nm	13=Fujikura SM13 PANDA fiber
155=1550 nm	15=Fujikura SM15 PANDA fiber
153=1530 nm	56=3M FS-SN5624 (980 nm)
148=1480 nm	42=3M FS-SN4224 (850 nm)
131=1310 nm	32=3M FS-SN3224 (635 nm)
980=980 nm	46=Nufern 460HP
850=850 nm	50=50/125 multimode
780=780 nm	62=62.5/125 multimode
670=670 nm	10=100/140 multimode
650=650 nm	20=200/240 multimode
635=635 nm	40=400/425 multimode
532=532 nm	60=600/630 multimode