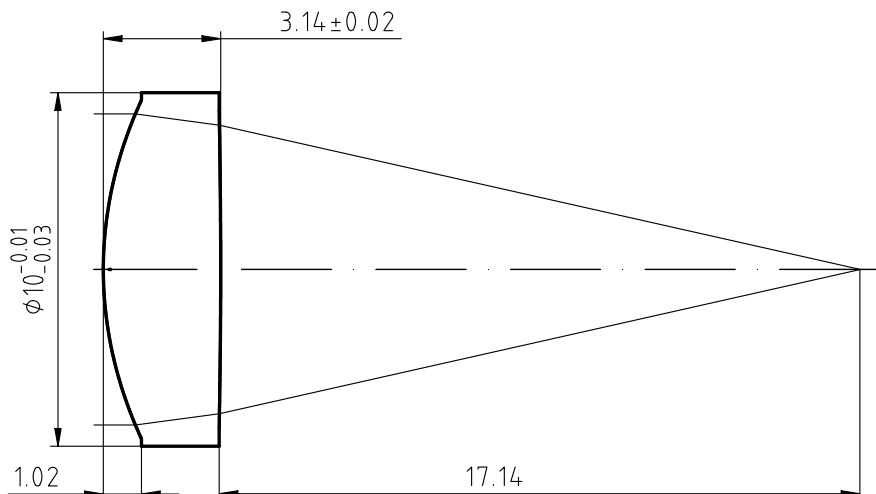
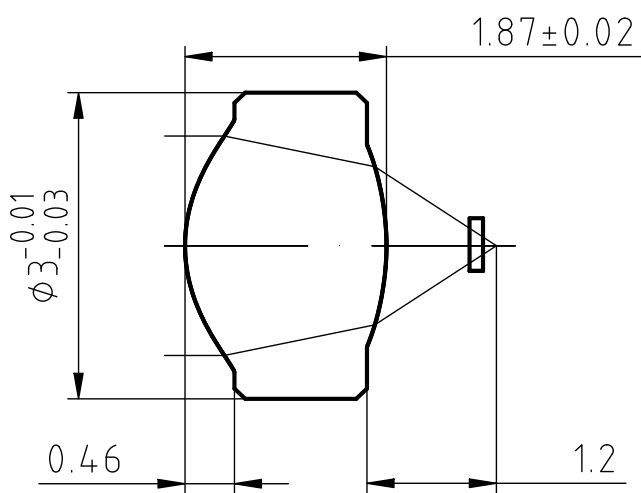


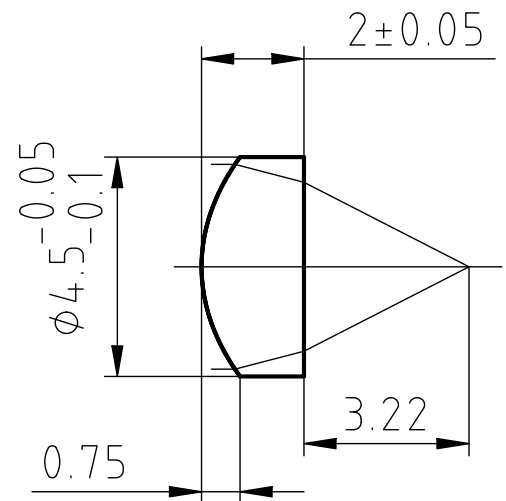
LD Collimating Lenses

Lens Codes:		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		915	nm
		Clear Aperture (CA)	Left Side	8.80	mm
			Right Side	8.16	mm
		Numerical Apertue (NA)		0.23	—
		Effective Focal Length (EFL)		19.00	mm
		Objective Distance		∞	mm
		Working Distance		17.14	mm
		Laser Window	Thickness	\	mm
			Material	\	SCHOTT
		Outer Diameter (OD)		ø10	mm
		Center Thickness (CT)		3.14	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

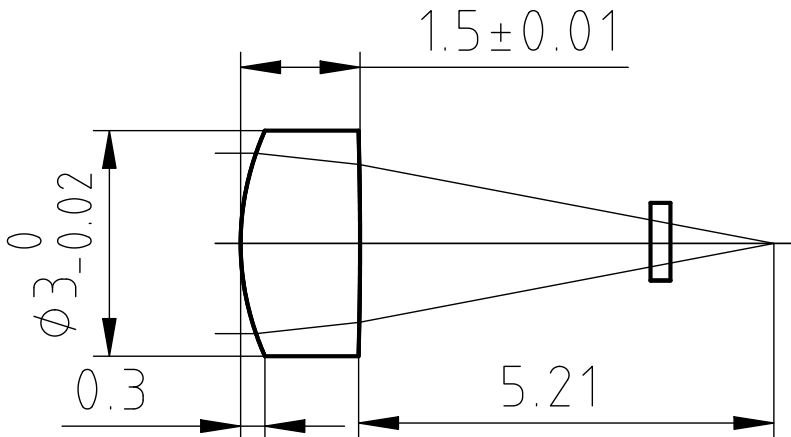
LD Collimating Lenses

Lens Codes:J015		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		650	nm
		Clear Aperture (CA)	Left Side	2.15	mm
			Right Side	1.55	mm
		Numerical Apertue (NA)		0.54	—
		Effective Focal Length (EFL)		2.00	mm
		Objective Distance		∞	mm
		Working Distance		1.20	mm
		Laser Window	Thickness	0.25	mm
			Material	BK7	SCHOTT
		Outer Diameter (OD)		ø3	mm
		Center Thickness (CT)		1.87	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

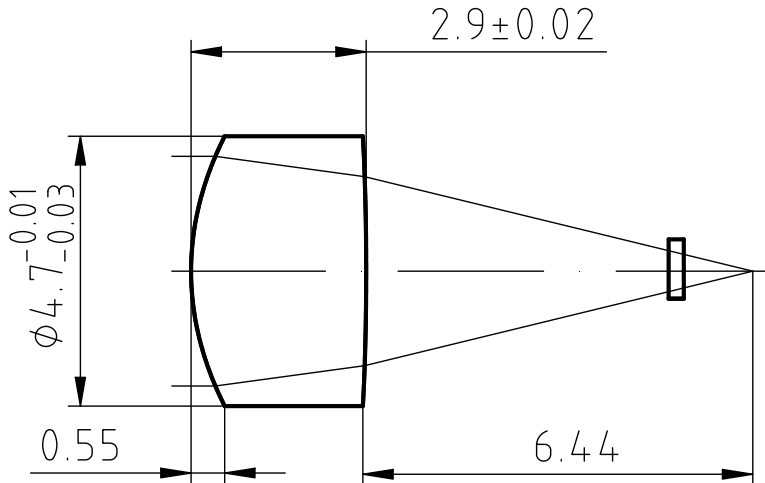
LD Collimating Lenses

Lens Codes:J013		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		635	nm
		Clear Aperture (CA)	Left Side	4.20	mm
			Right Side	3.47	mm
		Numerical Apertue (NA)		0.48	—
		Effective Focal Length (EFL)		4.33	mm
		Objective Distance		∞	mm
		Working Distance		3.22	mm
		Laser Window	Thickness	\	mm
			Material	\	SCHOTT
		Outer Diameter (OD)		ø4.5	mm
		Center Thickness (CT)		2	mm
		Optical Glass Material		D-ZLaF52La	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

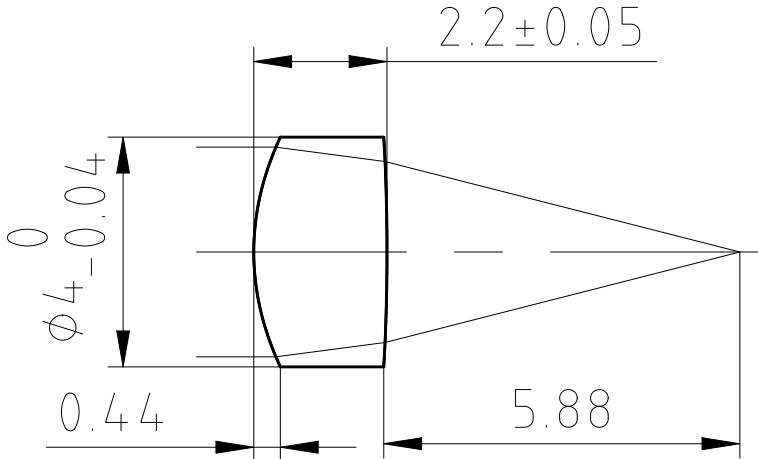
LD Collimating Lenses

Lens Codes:J012		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		530	nm
		Clear Aperture (CA)	Left Side	2.40	mm
			Right Side	2.10	mm
		Numerical Apertue (NA)		0.20	—
		Effective Focal Length (EFL)		6.00	mm
		Objective Distance		∞	mm
		Working Distance		5.21	mm
		Laser Window	Thickness	0.25	mm
			Material	BK7	SCHOTT
		Outer Diameter (OD)		ø3	mm
		Center Thickness (CT)		1.5	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

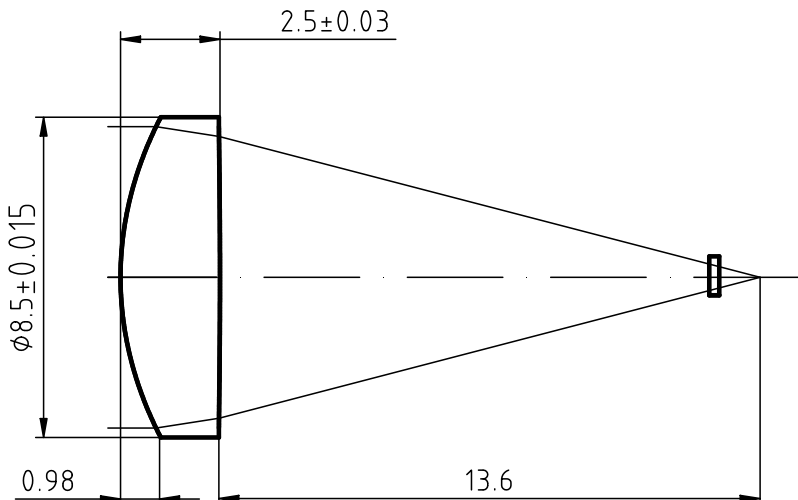
LD Collimating Lenses

Lens Codes:J011		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		530	nm
		Clear Aperture (CA)	Left Side	4.00	mm
			Right Side	3.29	mm
		Numerical Apertue (NA)		0.25	—
		Effective Focal Length (EFL)		8.00	mm
		Objective Distance		∞	mm
		Working Distance		6.44	mm
		Laser Window	Thickness	0.25	mm
			Material	BK7	SCHOTT
		Outer Diameter (OD)		ø4.7	mm
		Center Thickness (CT)		2.9	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

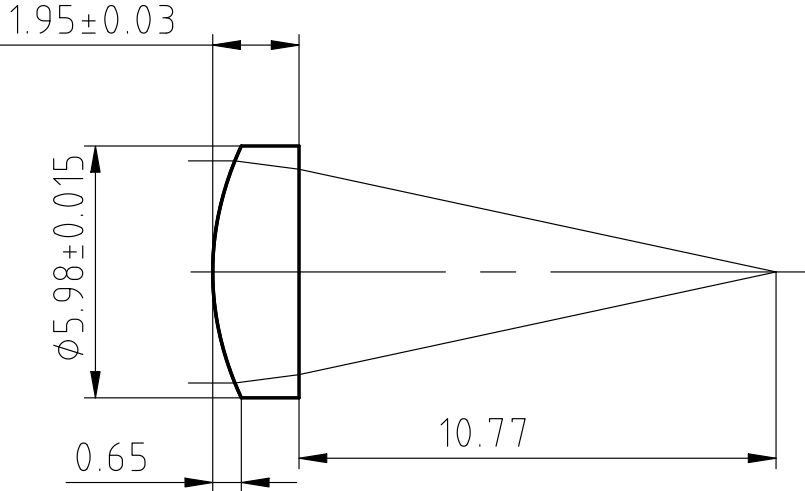
LD Collimating Lenses

Lens Codes:J010		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		635	nm
		Clear Aperture (CA)	Left Side	3.65	mm
			Right Side	3.15	mm
		Numerical Apertue (NA)		0.26	—
		Effective Focal Length (EFL)		7.10	mm
		Objective Distance		∞	mm
		Working Distance		5.88	mm
		Laser Window	Thickness	\	mm
			Material	\	SCHOTT
		Outer Diameter (OD)		ø4.0	mm
		Center Thickness (CT)		2.2	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

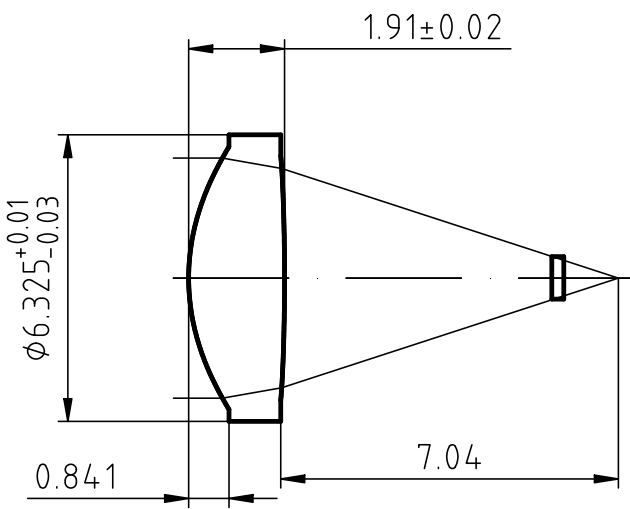
LD Collimating Lenses

Lens Codes:J009		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		530	nm
		Clear Aperture (CA)	Left Side	8.00	mm
			Right Side	7.48	mm
		Numerical Apertue (NA)		0.27	—
		Effective Focal Length (EFL)		15.00	mm
		Objective Distance		∞	mm
		Working Distance		13.60	mm
		Laser Window	Thickness	0.25	mm
			Material	BK7	SCHOTT
		Outer Diameter (OD)		ø8.5	mm
		Center Thickness (CT)		2.5	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

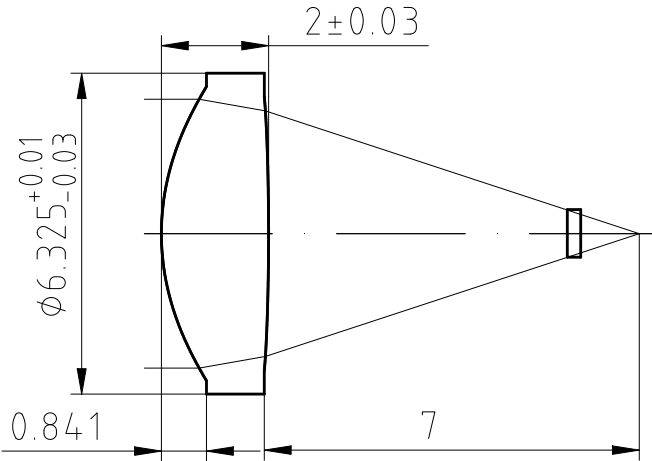
LD Collimating Lenses

Lens Codes:J008		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		530	nm
		Clear Aperture (CA)	Left Side	5.30	mm
			Right Side	4.90	mm
		Numerical Apertue (NA)		0.22	—
		Effective Focal Length (EFL)		12.00	mm
		Objective Distance		∞	mm
		Working Distance		10.77	mm
		Laser Window	Thickness	\	mm
			Material	\	SCHOTT
		Outer Diameter (OD)		ø5.98	mm
		Center Thickness (CT)		1.95	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

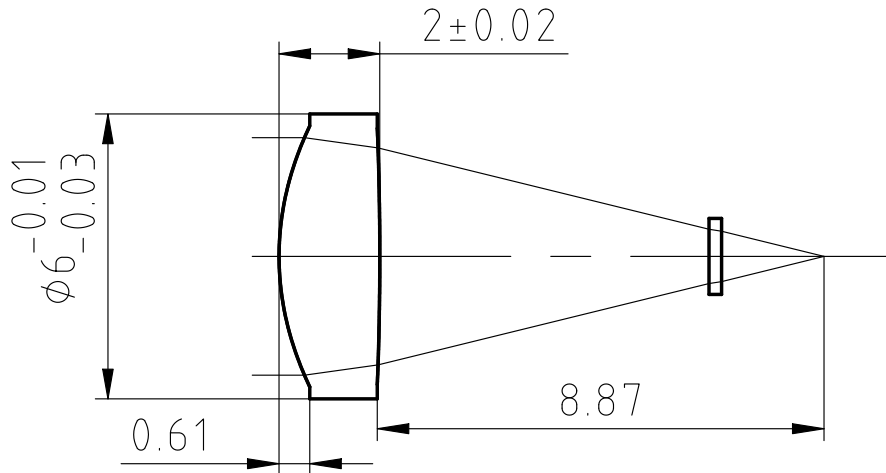
LD Collimating Lenses

Lens Codes:J007		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		530	nm
		Clear Aperture (CA)	Left Side	5.30	mm
			Right Side	4.87	mm
		Numerical Apertue (NA)		0.33	—
		Effective Focal Length (EFL)		8.00	mm
		Objective Distance		∞	mm
		Working Distance		7.04	mm
		Laser Window	Thickness	0.25	mm
			Material	BK7	SCHOTT
		Outer Diameter (OD)		ø6.325	mm
		Center Thickness (CT)		1.91	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

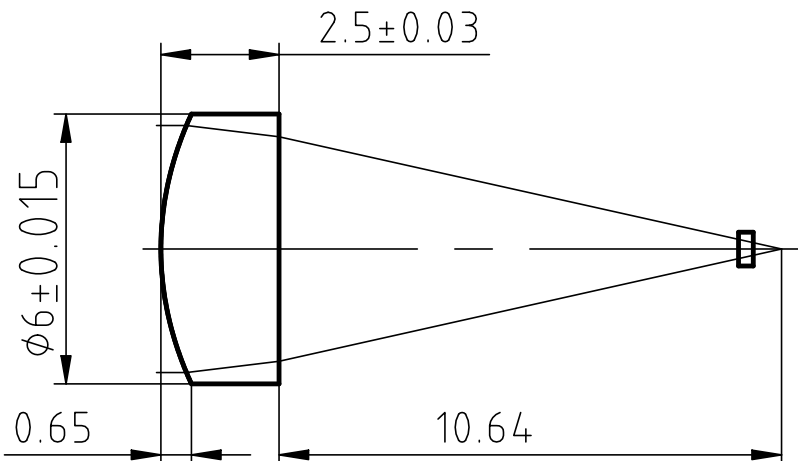
LD Collimating Lenses

Lens Codes:J006	Optical Design Specifications			
Drawing	Item	Design Value	Unit	
	Design Wavelength	635	nm	
	Clear Aperture (CA)	Left Side	5.30	mm
		Right Side	4.84	mm
	Numerical Apertue (NA)	0.33	—	
	Effective Focal Length (EFL)	8.00	mm	
	Objective Distance	∞	mm	
	Working Distance	7.00	mm	
	Laser Window	Thickness	0.25	mm
		Material	BK7	SCHOTT
	Outer Diameter (OD)	ø6.325	mm	
	Center Thickness (CT)	2	mm	
	Optical Glass Material	D-ZK3	CDGM	
	Wave Front Aberration	Diffraction Limited	λ RMS	

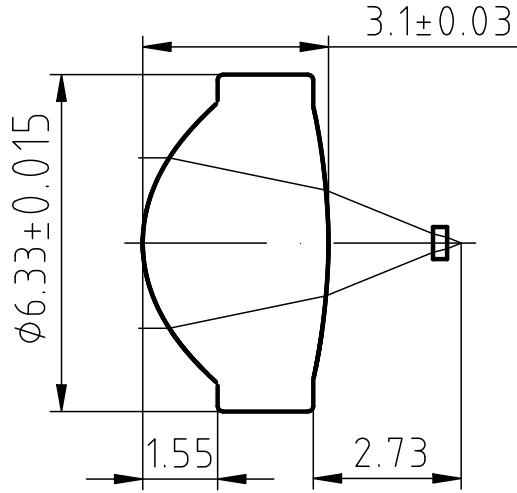
LD Collimating Lenses

Lens Codes:J005		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		530	nm
		Clear Aperture (CA)	Left Side	5.00	mm
			Right Side	4.57	mm
		Numerical Apertue (NA)		0.25	—
		Effective Focal Length (EFL)		9.91	mm
		Objective Distance		∞	mm
		Working Distance		8.87	mm
		Laser Window	Thickness	0.25	mm
			Material	BK7	SCHOTT
		Outer Diameter (OD)		ø6	mm
		Center Thickness (CT)		2	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

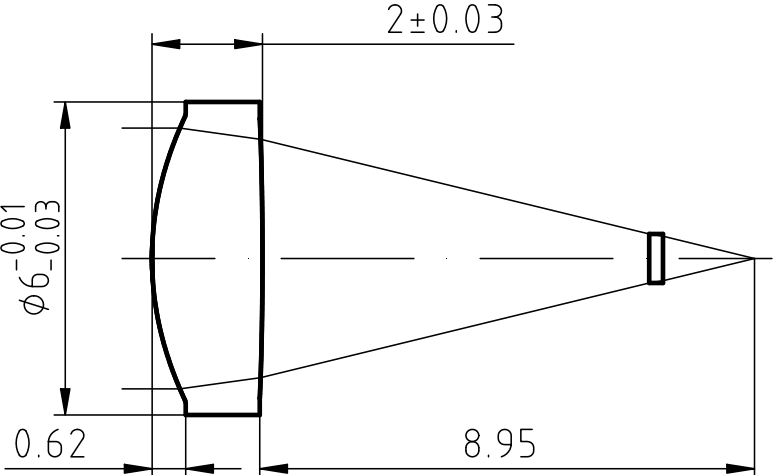
LD Collimating Lenses

Lens Codes:J004	Optical Design Specifications			
Drawing	Item		Design Value	Unit
	Design Wavelength		530	nm
	Clear Aperture (CA)	Left Side	5.50	mm
		Right Side	4.93	mm
	Numerical Apertue (NA)		0.23	—
	Effective Focal Length (EFL)		12.00	mm
	Objective Distance		∞	mm
	Working Distance		10.64	mm
	Laser Window	Thickness	0.25	mm
		Material	BK7	SCHOTT
	Outer Diameter (OD)		ø6.0	mm
	Center Thickness (CT)		2.5	mm
	Optical Glass Material		D-ZK3	CDGM
	Wave Front Aberration		Diffraction Limited	λ RMS

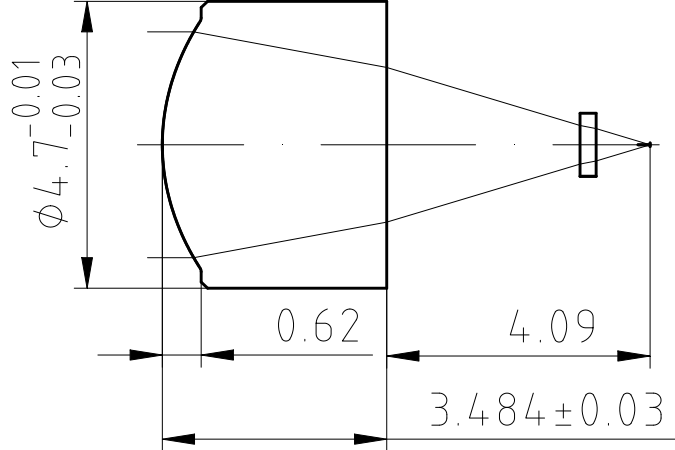
LD Collimating Lenses

Lens Codes:J003		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		445	nm
		Clear Aperture (CA)	Left Side	3.20	mm
			Right Side	2.09	mm
		Numerical Apertue (NA)		0.40	—
		Effective Focal Length (EFL)		4.02	mm
		Objective Distance		∞	mm
		Working Distance		2.73	mm
		Laser Window	Thickness	0.25	mm
			Material	BK7	SCHOTT
		Outer Diameter (OD)		ø6.33	mm
		Center Thickness (CT)		3.1	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

LD Collimating Lenses

Lens Codes:J002		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		635	nm
		Clear Aperture (CA)	Left Side	5.00	mm
			Right Side	4.58	mm
		Numerical Apertue (NA)		0.25	—
		Effective Focal Length (EFL)		10.00	mm
		Objective Distance		∞	mm
		Working Distance		8.95	mm
		Laser Window	Thickness	0.25	mm
			Material	BK7	SCHOTT
		Outer Diameter (OD)		ø6	mm
		Center Thickness (CT)		2	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS

LD Collimating Lenses

Lens Codes:J001		Optical Design Specifications			
Drawing		Item		Design Value	Unit
		Design Wavelength		633	nm
		Clear Aperture (CA)	Left Side	3.70	mm
			Right Side	2.55	mm
		Numerical Apertue (NA)		0.30	—
		Effective Focal Length (EFL)		6.20	mm
		Objective Distance		∞	mm
		Working Distance		4.09	mm
		Laser Window	Thickness	0.25	mm
			Material	BK7	SCHOTT
		Outer Diameter (OD)		$\phi 4.7$	mm
		Center Thickness (CT)		3.484	mm
		Optical Glass Material		D-ZK3	CDGM
		Wave Front Aberration		Diffraction Limited	λ RMS