

Laser Crystals

Ti:Sapphire crystals



Features

- Large gain-bandwidth
- Very large emission bandwidth
- Excellent thermal conductivity
- Short upper-state lifetime (3.2 μ s)
- High saturation power
- Relatively high laser cross-sections
- High damage threshold
- Strong Kerr effect

Applications

- Ultra-short pulse lasers
- High repetition rate oscillators
- Chirped-pulse laser amplifiers
- Multi-pass amplifiers
- Wavelength tunable CW lasers
- Pulsed X-ray generation

Orientation

Ti₂O₃ concentration

Figure of Merit (FOM)

Maximal Sizes

End configurations

Flatness

Parallelism error

Surface finishing

Wavefront distortion

Absorption @ 532 nm on crystal length

Optical axis C normal to rod axis

0.03–0.25 wt %

60–300 depending on the Ti³⁺ concentration

up to 50 mm dia and up to 50 mm length

flat/flat or Brewster/Brewster

λ / 10@632.8nm

<30 arcsec

10–5 scratch & dig

λ / 4 per inch

>90%

P/N	Aperture Dimension (mm)	End Surface	Length (mm)
3-TS-0-6605	6x6	Right-angle cut	5
3-TS-0-6610	6x6	Right-angle cut	10
3-TS-0-6615	6x6	Right-angle cut	15
3-TS-0-6620	6x6	Right-angle cut	20
3-TS-1-6605	6x6	Brewster cut	5
3-TS-1-6610	6x6	Brewster cut	10
3-TS-1-6615	6x6	Brewster cut	15
3-TS-1-6620	6x6	Brewster cut	20
3-TS-0-0605	Ø6	Right-angle cut	5
3-TS-0-0610	Ø6	Right-angle cut	10
3-TS-0-0615	Ø6	Right-angle cut	15
3-TS-0-0620	Ø6	Right-angle cut	20
3-TS-1-0605	Ø6	Brewster cut	5
3-TS-1-0610	Ø6	Brewster cut	10
3-TS-1-0615	Ø6	Brewster cut	15
3-TS-1-0620	Ø6	Brewster cut	20

Laser Crystals

Nd:YVO₄ Crystals



Standard optical axis orientation

Doping concentration

Thickness range, mm

Length tolerance, mm

Parallelism error

Surface finishing

Flatness

Chamfer

a-cut

0.5–3.0 atm. %

0.5–30

+0/–0.1

10 arcsec

10 – 5 scratch & dig

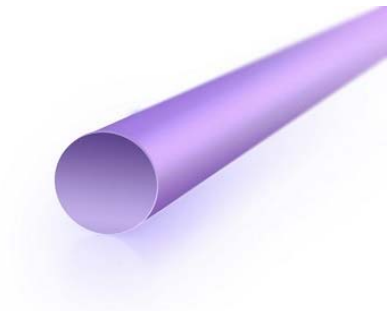
$\leq \lambda / 10$ @ 632.8 nm

<0.1 mm @ 45deg

P/N	Dimension (mm)	Material	Coating
3-ND05YVO-04	3x3x4	Nd(0.5%):YVO ₄	AR/AR@1064&808 nm
3-ND05YVO-05	3x3x6		
3-ND05YVO-06	3x3x10		
3-ND05YVO-01	3x3x4		HR@1064&532+HT@808/AR@1064&532 nm
3-ND05YVO-02	3x3x6		
3-ND05YVO-03	3x3x10		
3-ND10YVO-05	3x3x1	Nd(1%):YVO ₄	AR/AR@1064&808 nm
3-ND10YVO-06	3x3x2		
3-ND10YVO-07	3x3x3		
3-ND10YVO-08	3x3x4		
3-ND10YVO-01	3x3x1		HR@1064&532+HT@808/AR@1064&532 nm
3-ND10YVO-02	3x3x2		
3-ND10YVO-03	3x3x3		
3-ND10YVO-04	3x3x4		
3-ND20YVO-04	3x3x1	Nd(2%):YVO ₄	AR/AR@1064&808 nm
3-ND20YVO-05	3x3x2		
3-ND20YVO-06	3x3x3		
3-ND20YVO-01	3x3x1		HR@1064&532+HT@808/AR@1064&532 nm
3-ND20YVO-02	3x3x2		
3-ND20YVO-03	3x3x3		
3-ND30YVO-04	3x3x0,5	Nd(3%):YVO ₄	AR/AR@1064&808 nm
3-ND30YVO-05	3x3x1		
3-ND30YVO-06	3x3x2		
3-ND30YVO-01	3x3x0,5		HR@1064&532+HT@808/AR@1064&532 nm
3-ND30YVO-02	3x3x1		
3-ND30YVO-03	3x3x2		

Laser Crystals

Nd:YAG Crystals

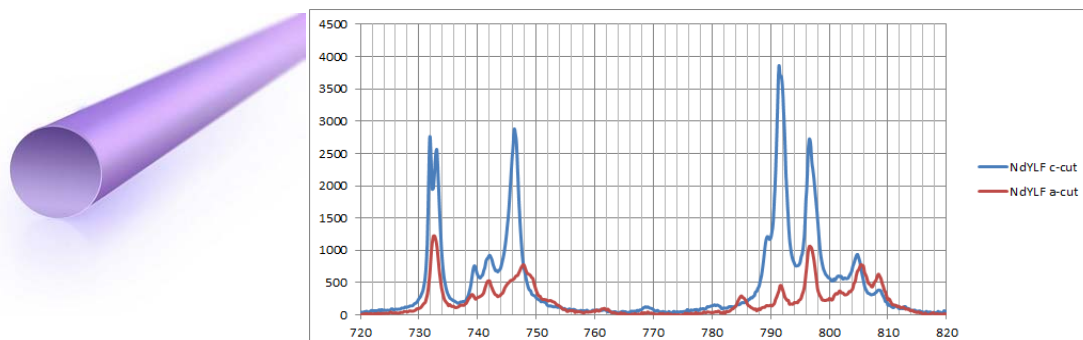


Doping concentration	0.5 – 1.1 atm. %
Orientation	[111]
Wavefront distorton	$\leq \lambda / 10$ @ 632.8nm
Extinction Ratio	≥ 28 dB
Dimensional Tolerances	Diameter: +0.0 mm, -0.05 mm, Length: +0.0 mm, -0.10 mm
Parallelism error	≤ 10 arcsec
Perpendicularity	≤ 10 arcmin
Flatness	$\leq \lambda / 10$ @632.8nm
Surface Quality	10 – 5 scratch & dig

P/N	Dimension (mm)	Material	Coating
3-ND06YAG-01	Ø3x60	Nd(0,6%):YAG	AR/AR@1064 nm
3-ND06YAG-02	Ø4x80		
3-ND06YAG-03	Ø5x90		
3-ND06YAG-04	Ø6x110		
3-ND06YAG-05	Ø7x125		
3-ND06YAG-06	Ø8x130		
3-ND06YAG-07	Ø9x150		
3-ND06YAG-08	Ø10x160		
3-ND11YAG-10	3x3x2		HR@1064+HT@808/AR@1064 nm
3-ND11YAG-01	Ø3x60	Nd(1,1%):YAG	AR/AR@1064 nm
3-ND11YAG-02	Ø4x80		
3-ND11YAG-03	Ø5x90		
3-ND11YAG-04	Ø6x110		
3-ND11YAG-05	Ø7x125		
3-ND11YAG-06	Ø8x130		
3-ND11YAG-07	Ø9x150		
3-ND11YAG-08	Ø10x160		
3-ND11YAG-14	3x3x2		AR/AR@1064&808 nm
3-ND11YAG-15	3x3x3		
3-ND11YAG-16	3x3x4		
3-ND11YAG-17	3x3x5		HR@1064+HT@808/AR@1064 nm
3-ND11YAG-11	3x3x3		
3-ND11YAG-12	3x3x4		
3-ND11YAG-13	3x3x5		

Laser Crystals

Nd:YLF Crystals



Material	Nd:LiYF ₄
Doping concentration	0.4 ~ 2 atm. %
Surface Quality	10 – 5 scratch & dig
Flatness	$\lambda / 10 @ 632.8\text{nm}$
Wavefront distorton	up to $\lambda / 8 @ 632.8\text{nm}$
Extinction Ratio	$\geq 28 \text{ dB}$
Dimension	Diameter: +0.0 mm, -0.05 mm, Length: +0.0 mm, -0.10 mm
Parallelism error	$\leq 10 \text{ arcsec}$
Perpendicularity	$\leq 10 \text{ arcmin}$

P/N	Dimension (mm)	Material	Coating
3-ND11YLF-4412	4 x 4 x 12	Nd(1,1%):YLF	AR/AR@(790-810)&(1047-1053) nm
3-ND11YLF-6670	6 x 6 x 70	Nd(1,1%):YLF	AR/AR@(790-810)&(1047-1053) nm

Laser Crystals

Nd:YLF Crystals



Doping concentration	3-10 atm. %
Orientation	[010]
Wavefront distorton	$\leq \lambda / 10$ @ 632.8nm
Dimension	Diameter: +0.0 mm, -0.05 mm, Length: +0.0 mm, -0.10 mm
Parallelism error	≤ 10 arcsec
Perpendicularity	≤ 10 arcmin
Flatness	$\lambda / 10$ @632.8nm
Surface Quality	10 - 5 scratch & dig
Chamfer	< 0.1 mm @ 45 deg

P/N	Dimension (mm)	Material	Coating
3-ND30KGW-01	Ø3x60	Nd(3%):KGW	AR/AR@1067 nm
3-ND30KGW-02	Ø4x80		
3-ND30KGW-03	Ø5x90		
3-ND30KGW-04	Ø6x110		
3-ND30KGW-10	3x3x2		AR/AR@1067&808 nm
3-ND30KGW-11	3x3x3		
3-ND30KGW-12	3x3x4		
3-ND30KGW-13	3x3x5		
3-ND50KGW-01	Ø3x60	Nd(5%):KGW	AR/AR@1067 nm
3-ND50KGW-02	Ø4x80		
3-ND50KGW-03	Ø5x90		
3-ND50KGW-04	Ø6x110		
3-ND50KGW-10	3x3x1		AR/AR@1067&808 nm
3-ND50KGW-11	3x3x2		
3-ND50KGW-12	3x3x3		
3-ND50KGW-13	3x3x5		

Laser Crystals

Yb:KGW AND Yb:KYW Crystals



Material	Yb:KGW/ Yb:KYW
Doping cor	0.5 – 5 atm. % for Yb:KGW 0.5 – 100 atm. % for Yb:KYW
Orientation	b-cut: Nm-axis is parallel to input/ output faces. Other orientations also available.
Perpendicularity	≤ 10 arcmin
Parallelism error	≤ 10 arcsec
Flatness	$\lambda / 10 @ 632.8 \text{nm}$
Chamfer	< 0.1 mm @ 45 deg

P/N	Dimension (mm)	Material	Coating	End surface
3-YB1KGW-01	5 x 5 x 2	Yb(1%):KGW	Ar/AR@980-1080	Right-angle cut
3-YB1KGW-02	5 x 5 x 3			
3-YB1KGW-03	5 x 5 x 5			
3-YB1KGW-04	5 x 5 x 2		---	Brewster-angle cut
3-YB1KGW-05	5 x 5 x 3			
3-YB1KGW-06	5 x 5 x 5			
3-YB10KYW-01	5 x 5 x 1	Yb(10%):KYW	Ar/AR@980-1080	Right-angle cut
3-YB10KYW-02	5 x 5 x 2			
3-YB10KYW-03	5 x 5 x 3			
3-YB10KYW-04	5 x 5 x 1		---	Brewster-angle cut
3-YB10KYW-05	5 x 5 x 2			
3-YB10KYW-06	5 x 5 x 3			
3-YB20KYW-01	5 x 5 x 1	Yb(20%):KYW	Ar/AR@980-1080	Right-angle cut
3-YB20KYW-02	5 x 5 x 2			
3-YB20KYW-03	5 x 5 x 3			
3-YB20KYW-04	5 x 5 x 1		---	Brewster-angle cut
3-YB20KYW-05	5 x 5 x 2			
3-YB20KYW-06	5 x 5 x 3			
3-YB3KGW-01	5 x 5 x 1	Yb(3%):KGW	Ar/AR@980-1080	Right-angle cut
3-YB3KGW-02	5 x 5 x 3			
3-YB3KGW-03	5 x 5 x 5			
3-YB3KGW-04	5 x 5 x 1		---	Brewster-angle cut
3-YB3KGW-05	5 x 5 x 3			
3-YB3KGW-06	5 x 5 x 5			
3-YB5KGW-01	5 x 5 x 1	Yb(5%):KGW	Ar/AR@980-1080	Right-angle cut
3-YB5KGW-02	5 x 5 x 2			
3-YB5KGW-03	5 x 5 x 3			
3-YB5KGW-04	5 x 5 x 1		---	Brewster-angle cut
3-YB5KGW-05	5 x 5 x 2			
3-YB5KGW-06	5 x 5 x 3			

Laser Crystals

Yb:YAG Crystals



Doping concentration	0.2–25 atm. %
Wavefront distorton	$\leq \lambda / 8$ @ 633nm
Extinction Ratio	≥ 28 dB
Dimensional Tolerances	Diameter: +0.0 mm/–0.05 mm, Length: +0.0 mm/–0.10 mm
Dimensional Tolerances	Length: ± 1 mm
Parallelism error	≤ 10 arcsec
Perpendicularity	≤ 10 arcmin
Flatness	$\leq \lambda / 10$ @ 633nm
Surface Quality	10–5 S–D

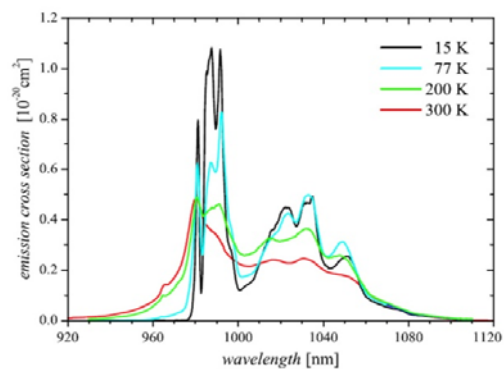
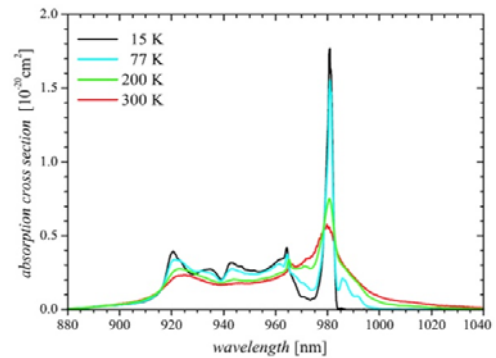
P/N	Dimension (mm)	Material	Coating	End surface
3-YB10YAG-01	5x5x1	Yb(10%):YAG	AR/AR@940+1030 nm	Right-angle cut
3-YB10YAG-02	5x5x2			
3-YB10YAG-03	5x5x3			
3-YB10YAG-04	5x5x1			
3-YB10YAG-05	5x5x2		HR@1030+HT@940/AR@1030 nm	
3-YB10YAG-06	5x5x3			
3-YB10YAG-07	5x5x1		---	
3-YB10YAG-08	5x5x2			
3-YB10YAG-09	5x5x3			
3-YB20YAG-01	5x5x0,5	Yb(20%):YAG	AR/AR@940+1030 nm	Right-angle cut
3-YB20YAG-02	5x5x1			
3-YB20YAG-03	5x5x2			
3-YB20YAG-04	5x5x0,5			
3-YB20YAG-05	5x5x1		HR@1030+HT@940/AR@1030 nm	
3-YB20YAG-06	5x5x2			
3-YB20YAG-07	5x5x1		---	
3-YB20YAG-08	5x5x2			
3-YB20YAG-09	5x5x3			
3-YB05YAG-01	5x5x2	Yb(5%):YAG	AR/AR@940+1030 nm	Right-angle cut
3-YB05YAG-02	5x5x3			
3-YB05YAG-03	5x5x5			
3-YB05YAG-04	5x5x2			
3-YB05YAG-05	5x5x3		HR@1030+HT@940/AR@1030 nm	
3-YB05YAG-06	5x5x5			
3-YB05YAG-07	5x5x2		---	
3-YB05YAG-08	5x5x3			
3-YB05YAG-09	5x5x5			

Laser Crystals

Yb:YAG Crystals



Crystal structure cubic
 Pointing group m3m
 Lattice parameters $a = 5.462 \text{ \AA}$
 Thermal expansion $18 \times 10^{-6} / ^\circ \text{C}$
 Thermal conductivity 9.7 W/mK
 Density 3.18 g/cm^3
 Mohs hardness 4
 Melting temperature $1418 ^\circ \text{C}$
 Refractive indices ($l=1,06\text{mm}$) $n_o = 1.4$
 $dn/ dT -10.00 \times 10^{-6} / ^\circ \text{K}$



P/N	Dimension (mm)	Material	Coating
3-YB03CSF-01	6 x 6 x 5	Yb(3%):CaF2	AR / AR @ 1030 + 940 nm
3-YB05CSF-01	6 x 6 x 5	Yb(5%):CaF2	AR / AR @ 1030 + 940 nm

Passive Q-Switch crystals

Cr⁴⁺:YAG Crystals

Wavelength range	800 – 1200 nm
Absorption cross-section	$5 \times 10^{-18} \text{ cm}^2$ @1064 nm
Wavefront Distortion	$\leq \lambda / 10$ @ 632.8 nm
Dimensional Tolerances	+0.0 mm/-0.2 mm
Parallelism error	$\leq 10 \text{ arcsec}$
Perpendicularity	$\leq 10 \text{ arcmin}$
Surface Quality	10-5 S-D (per MIL-O-13830A)
Chamfer	<0.1 mm @ 45deg
AR Coating Reflectivity	$\leq 0.2\%$ @ 1064 nm

P/N	Initial transmission @1064nm	Dimension (mm)	coating
3-CRYAG-30-05	T0=30%	Ø5	AR/AR@1064 nm
3-CRYAG-30-33		3x3	
3-CRYAG-30-55		5x5	
3-CRYAG-40-05	T0=40%	Ø5	
3-CRYAG-40-33		3x3	
3-CRYAG-40-55		5x5	
3-CRYAG-50-05	T0=50%	Ø5	
3-CRYAG-50-33		3x3	
3-CRYAG-50-55		5x5	
3-CRYAG-60-05	T0=60%	Ø5	
3-CRYAG-60-33		3x3	
3-CRYAG-60-55		5x5	
3-CRYAG-70-05	T0=70%	Ø5	
3-CRYAG-70-33		3x3	
3-CRYAG-70-55		5x5	
3-CRYAG-80-05	T0=80%	Ø5	
3-CRYAG-80-33		3x3	
3-CRYAG-80-55		5x5	
3-CRYAG-85-05	T0=85%	Ø5	
3-CRYAG-85-33		3x3	
3-CRYAG-85-55		5x5	
3-CRYAG-90-05	T0=90%	Ø5	
3-CRYAG-90-33		3x3	
3-CRYAG-90-55		5x5	
3-CRYAG-95-05	T0=95%	Ø5	
3-CRYAG-95-33		3x3	
3-CRYAG-95-55		5x5	
3-CRYAG-97-05	T0=97%	Ø5	
3-CRYAG-97-33		3x3	
3-CRYAG-97-55		5x5	

Passive Q-Switch crystals

V³⁺:YAG Crystals



Wavelength range, nm	1000–1450
Absorption cross-section, cm ²	7.3×10^{-18} @ 1340 nm
Wavefront Distortion	$\leq \lambda / 10$ @ 632.8 nm
Dimensional Tolerances	+0.0 mm / -0.2 mm
Parallelism error	≤ 10 arcsec
Perpendicularity	≤ 10 arcmin
Surface Quality	10 – 5 scratch & dig
Chamfer	<0.1 mm @ 45deg
AR Coating Reflectivity	$\leq 0.2\%$ @ 1340 nm

P/N	Initial transmission @1340nm	Dimension (mm)	coating
3-VYAG-30-05	T0=30%	Ø5	AR/AR@1340nm
3-VYAG-30-33		3x3	
3-VYAG-30-55		5x5	
3-VYAG-40-05	T0=40%	Ø5	
3-VYAG-40-33		3x3	
3-VYAG-40-55		5x5	
3-VYAG-50-05	T0=50%	Ø5	
3-VYAG-50-33		3x3	
3-VYAG-50-55		5x5	
3-VYAG-60-05	T0=60%	Ø5	
3-VYAG-60-33		3x3	
3-VYAG-60-55		5x5	
3-VYAG-70-05	T0=70%	Ø5	
3-VYAG-70-33		3x3	
3-VYAG-70-55		5x5	
3-VYAG-80-05	T0=80%	Ø5	
3-VYAG-80-33		3x3	
3-VYAG-80-55		5x5	
3-VYAG-85-05	T0=85%	Ø5	
3-VYAG-85-33		3x3	
3-VYAG-85-55		5x5	
3-VYAG-90-05	T0=90%	Ø5	
3-VYAG-90-33		3x3	
3-VYAG-90-55		5x5	
3-VYAG-95-05	T0=95%	Ø5	
3-VYAG-95-33		3x3	
3-VYAG-95-55		5x5	
3-VYAG-97-05	T0=97%	Ø5	
3-VYAG-97-33		3x3	
3-VYAG-97-55		5x5	

Passive Q-Switch crystals

Co: SPINEL (Co²⁺:mgAl₂O₄) Crystals



Wavelength range, nm	1200–1600
Absorption cross-section, cm ²	3,5x10 ⁻¹⁹ @ 1540 nm
Wavefront Distortion	≤ λ / 10 @ 632.8 nm
Dimensional Tolerances	+0.0 mm / -0.2 mm
Parallelism error	≤ 10 arcsec
Perpendicularity	≤ 10 arcmin
Surface Quality	10 – 5 scratch & dig
Chamfer	<0.1 mm @ 45deg
AR Coating Reflectivity	≤0,2% @ 1540 nm

P/N	Initial transmission @1540nm	Dimension (mm)	coating
3-COSP-30-05	T0=30%	Ø5	AR/AR@1540nm
3-COSP-30-33		3x3	
3-COSP-30-55		5x5	
3-COSP-40-05	T0=40%	Ø5	
3-COSP-40-33		3x3	
3-COSP-40-55		5x5	
3-COSP-50-05	T0=50%	Ø5	
3-COSP-50-33		3x3	
3-COSP-50-55		5x5	
3-COSP-60-05	T0=60%	Ø5	
3-COSP-60-33		3x3	
3-COSP-60-55		5x5	
3-COSP-70-05	T0=70%	Ø5	
3-COSP-70-33		3x3	
3-COSP-70-55		5x5	
3-COSP-80-05	T0=80%	Ø5	
3-COSP-80-33		3x3	
3-COSP-80-55		5x5	
3-COSP-85-05	T0=85%	Ø5	
3-COSP-85-33		3x3	
3-COSP-85-55		5x5	
3-COSP-90-05	T0=90%	Ø5	
3-COSP-90-33		3x3	
3-COSP-90-55		5x5	
3-COSP-95-05	T0=95%	Ø5	
3-COSP-95-33		3x3	
3-COSP-95-55		5x5	
3-COSP-97-05	T0=97%	Ø5	
3-COSP-97-33		3x3	
3-COSP-97-55		5x5	

Nonlinear crystals

BBO Crystals



Transparency range, nm	189–3500 nm
Length tolerance, mm	+0/-0.1
Aperture tolerances, mm	+0/-0.1
Orientation accuracy of cut angle	< 30 arcmin
Surface Quality	10 – 5 scratch & dig
Surface Flatness	L/8 @ 632.8 nm
Parallelism error	<20 arcsec
Perpendicularity	<5 arcmin
Optical damage threshold	>0.5 GW/cm for 10 ns pulses @ 1064 nm

P/N	Aperture (mm)	Length (mm)	Application	AR coating S1/S2 (nm/nm)	Orientation θ / ϕ , deg
4-BBO-0605-2	6 x 6	0.5	SHG@1030nm	515 – 1030 / 515 – 1030	23.4/90
4-BBO-0610-2		1			
4-BBO-0615-2		1.5			
4-BBO-0620-2		2			
4-BBO-0805-2	8 x 8	0.5			
4-BBO-0810-2		1			
4-BBO-0815-2		1.5			
4-BBO-0820-2		2			
4-BBO-1005-2	10 x 10	0.5			
4-BBO-1010-2		1			
4-BBO-1015-2		1.5			
4-BBO-1020-2		2			
4-BBO-1205-2	12 x 12	0.5			
4-BBO-1210-2		1			
4-BBO-1215-2		1.5			
4-BBO-1220-2		2			
4-BBO-2005-2	20 x 20	0.5			
4-BBO-2010-2		1			
4-BBO-2015-2		1.5			
4-BBO-2020-2		2			
4-BBO-0601-0	6 x 6	0.1	SHG@800nm	400 – 800 / 400 – 800	29.2/90
4-BBO-0602-0		0.2			
4-BBO-0605-0		0.5			
4-BBO-0610-0		1			
4-BBO-0620-0		2			
4-BBO-1001-0	10 x 10	0.1			
4-BBO-1002-0		0.2			
4-BBO-1005-0		0.5			
4-BBO-1010-0		1			
4-BBO-0601-1	6 x 6	0.1	THG@800nm	400 – 800 / 266	44.3/90
4-BBO-0602-1		0.2			
4-BBO-0605-1		0.5			
4-BBO-0610-1		1			

Nonlinear crystals

LBO Crystals

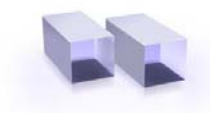


Transparency range, nm	160–2800 nm
Length tolerance, mm	+0.0, -0.1
Aperture tolerances, mm	+0.0, -0.1
Orientation accuracy of cut angle	< 30 arcmin
Surface Quality	10 – 5 scratch & dig
Surface Flatness	L/8 @ 632.8 nm
Parallelism error	<20 arcsec
Perpendicularity	<5 arcmin
Optical damage threshold	>10 GW/cm ² for 10 ns pulses @ 1064 nm

P/N	Aperture (mm)	Length (mm)	Application	AR coating S1/S2 (nm/nm)	Orientation θ / ϕ 、deg
4-LBO-1009-2	10 x 10	0.9	SHG@1030nm	515 + 1030 / 515 + 1030	90/13.8
4-LBO-1019-2		1.9			
4-LBO-1028-2		2.8			
4-LBO-1037-2		3.7			
4-LBO-1209-2	12 x 12	0.9			
4-LBO-1219-2		1.9			
4-LBO-1228-2		2.8			
4-LBO-1237-2		3.7			
4-LBO-2009-2	20 x 20	0.9			
4-LBO-2019-2		1.9			
4-LBO-2028-2		2.8			
4-LBO-2037-2		3.7			
4-LBO-3310-0	3 x 3	10	THG@1064nm, Type II (e-oe)	1064 + 532 / 355	42.2/90
4-LBO-3310-1		10	SHG@1064nm, Type I (e-oo)	1064 + 532 / 1064 + 532	90/11.6
4-LBO-3315-0		15	THG@1064nm, Type II (e-oe)	1064 + 532 / 355	42.2/90
4-LBO-3315-1		15	SHG@1064nm, Type I (e-oo)	1064 + 532 / 1064 + 532	90/11.6
4-LBO-3315-2		15	SHG@1064nm, NCPM I Type		90/0
4-LBO-3320-0		20			
4-LBO-5515-0	5 x 5	15	THG@1064nm, Type II (e-oe)	1064 + 532 / 355	42.2/90
4-LBO-5515-1		15	SHG@1064nm, Type I (e-oo)	1064 + 532 / 1064 + 532	90/11.6
4-LBO-0609-2	6 x 6	0.9	SHG@1030nm	515 + 1030 / 515 + 1030	90/13.8
4-LBO-0619-2		1.9			
4-LBO-0628-2		2.8			
4-LBO-0637-2		3.7			
4-LBO-0809-2	8 x 8	0.9			
4-LBO-0819-2		1.9			
4-LBO-0828-2		2.8			
4-LBO-0837-2		3.7			

Nonlinear crystals

KTY Crystals



Transparency range, nm	350–4400 nm
Length tolerance, mm	+0.0, -0.1
Aperture tolerances, mm	+0.0, -0.1
Orientation accuracy of cut angle	< 30 arcmin
Surface Quality	10 – 5 scratch & dig
Surface Flatness	L/8 @ 632.8 nm
Parallelism error	<20 arcsec
Perpendicularity	<5 arcmin
Optical damage threshold	>500 MW/cm ² for 10 ns pulses @ 1064 nm

P/N	Aperture (mm)	Length (mm)	Application	AR coating S1/S2 (nm/nm)	Orientation θ / ϕ , deg
4-KTP-3305	3 x 3	5	SHG@1064nm	1064+532/1064+532	90/23.5
4-KTP-3310	3 x 3	10			
4-KTP-4406	4 x 4	6			
4-KTP-7709	7 x 7	9			

KDP、DKDP Crystals



Transparency range, nm	160–2800 nm
Length tolerance, mm	0
Aperture tolerances, mm	0
Orientation accuracy of cut angle	< 30 arcmin
Surface quality	20–10 S–D
Surface Flatness	L/8 @ 632.8 nm
Parallelism error	<20 arcsec
Perpendicularity	<5 arcmin
Optical damage threshold	>10 GW/cm ² (for KDP) and >0.5 GW/cm ² (for DKDP)

P/N	Crystal	Aperture x L (mm)	Application	AR coating S1/S2 (nm/nm)	Orientation θ / ϕ , deg
4-DKD-1250-0	DKDP	12 x 12 x 20	SHG@1064nm, Type II	1064/1064+532	53.5/0
4-DKD-1250-1		12 x 12 x 20	THG@1064nm, Type II	1064+532/355	59.3/0
4-DKD-1513-0		15 x 15 x 13	SHG@1064nm, Type II	1064+532/1064+532	53.5/0
4-DKD-1513-1		15 x 15 x 13	SHG@1064nm, Type I	1064+532/1064+532	36.5/45
4-DKD-1520-0		15 x 15 x 20	SHG@1064nm, Type II	1064/1064+532	53.5/0
4-DKD-1520-1		15 x 15 x 20	THG@1064nm, Type II	1064+532/355	59.3/0
4-KDP-1250-0	KDP	12 x 12 x 5	SHG@532nm, Type I	532+266/532+266	76.5/45
4-KDP-1570-0		15 x 15 x 7	SHG@532nm, Type I	532+266/532+266	76.5/45