

UNDOPED YVO4 CRYSTALS

Undoped YVO 4 crystal is widely used in many beam displace online_orderings because of its large birefringence. It also has good physical and favorable mechanical properties than thers birefringent crystals, which make YVO 4 well suited for compact fiber optical components, such as isolators, circulators and interleaver etc.

Physical and Optical Properties:

Properties	Values
Transparency Range	400-5000nm
Crystal Symmetry	Zircon tetragonal, space group D4h
Crystal Cell	A=b=7.12 °, c=6.29 °
Density	4.22 g/cm 2
Hygroscopic Susceptibility	Non-hygroscopic
Mohs Hardness	5 glass like
Thermal Optical Coefficient	Dn a /dT=8.5x10 -6 /K; dn c /dT=3.0x10 -6 /K
Thermal Conductivity Coefficient	C: 5.23 w/m/k; ⊥C:5.10w/m/k
Crystal Class	Positive uniaxial with no=na=nb, ne=nc
Refractive Indices, Birefringence (D n=ne-no) and Walk-Off Angle at 45 deg(ρ)	No=1.9929, ne=2.2154, D n=0.2225, ρ=6.04°, at 630nm No=1.9500, ne=2.1554, D n=0.2054, ρ=5.72°, at 1300nm No=1.9447, ne=2.1486, D n=0.2039, ρ=5.69°, at 1550nm
Sellmeier Equation (l in mm)	n o 2 =3.77834+0.069736/(l2 -0.04724)-0.0108133 l 2 n e 2 =24.5905+0.110534/(l2 -0.04813)-0.0122676 l 2

Our Manufacture Technical Capabilities:

Properties	Values
Diameter :	max. 25mm
Length:	max. 30mm
Surface Quality:	better than 20/10 scratch/dig Per MIL-0-13830A
Beam Deviation:	<3 arc min
Optical Axis Orientation:	+/-0.2°
Flatness:	< l /4 @633nm
Transimission Wavfront Distortion:	<l /2 @633nm
Coating:	upon customer's Specification

Standard YVO4 Wedge:

Material	X(mm)	Y(mm)	Z(mm)	θ	φ	AR@(nm)	Product Number
YVO4	0.5	1.4	1.4	5°	22.5°	1550	UQT-OCYOW0101
YVO4	0.5	1.4	1.4	9°	22.5°	1550	UQT-OCYOW0102
YVO4	0.5	1.4	1.4	5°	22.5°	1310	UQT-OCYOW0103
YVO4	0.5	1.4	1.4	9°	22.5°	1310	UQT-OCYOW0104

Standard YVO4 beam displacer:

Material	Dimension(mm)	θ	ϕ	d(mm)	AR@(nm)	Product Number
YVO4	2.6 x 2.6 x 7	45°	0°	0.70	1550	UQT-OCYOB0201
YVO4	2.6 x 2.6 x 10	45°	0°	1.00	1550	UQT-OCYOB0202
YVO4	2.6 x 2.6 x 12	45°	0°	1.20	1550	UQT-OCYOB0203
YVO4	2.6 x 2.6 x 15	45°	0°	1.50	1550	UQT-OCYOB0204
YVO4	2.6 x 2.6 x 7	45°	45°	0.70	1550	UQT-OCYOB0205
YVO4	2.6 x 2.6 x 10	45°	45°	1.00	1550	UQT-OCYOB0206
YVO4	2.6 x 2.6 x 12	45°	45°	1.20	1550	UQT-OCYOB0207
YVO4	2.6 x 2.6 x 15	45°	45°	1.50	1550	UQT-OCYOB0208

Please Contact ultiQuest for other dimensions in prototype and production quantities.

NOTES!

- ➔ Be sure to wear laser safety goggles when checking optical path and adjusting optical axis.