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Online Inquiry

Contact: *

Company:

Subject: Nd:GdVO4

Tel:

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Content: *

Code: 4720

*(marked *should be filled)

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ND:GDVO4

Strongly - polarized laser output. Neodymium doped Gadolinium Vanadate (Nd:GdVO4 Crystals) is an excellent ideal laser host material for the DPSS (Diode pumped Solid State) micro/mini lasers due to its good physical, optical and mechanical properties.

Nd:GdVO4 has the additional advantage over Nd:YVO4 of a much higher thermal conductivity. For CW lasing at 1.06 um and 1.34 um and intracavity doubling with KTP and LBO, the gadolinium vanadate have produced a higher slope efficiency or optical conversion than Nd:YVO4.

Physical and Optical Properties

Mohs Hardness	Glass-like, ~ 5
Refractive Index @1064	$n_o=1.972; n_e=2.192$
Thermal Conductivity	11.7 W/m/K <110>
Thermal Expansion Coefficient	$a_a=1.5 \times 10^{-6}/K, a_c=7.3 \times 10^{-6}/K$
Lasing Wavelength	912.6 nm, 1063.1 nm, 1341.3nm
Stimulated Emission Cross Section	$7.60 \times 10^{-19} \text{cm}^2 @ 1064 \text{nm}$
Fluorescent Lifetime	95 ms (1 atm% Nd doped)@808nm
Intrinsic Loss	Less 0.1% $\text{cm}^{-1} @ 1064 \text{nm}$
Absorption Coefficient	$74 \text{ cm}^{-1} @ 808 \text{nm}$ (1.2%)
Linewidth	0.6nm
Polarized Emission	p parallel to optic axis (c-axis)
Diode Pumped Optical to Optical Efficiency	>60%
Sellmeier Equation (for pure GdVO4 crystals, λ in um)	$n_e^2=4.734369+0.1216149/(\lambda^2 - 0.0523664) - 0.013927\lambda^2$ $n_o^2=3.8987165+0.05990622/(\lambda^2 - 0.0514395) - 0.011319\lambda^2$

Featured

Large stimulated emission cross section at laser where

High absorption coefficient and wide bandwidth at pump the where

Low dependency on pump the where

Good thermal conductivity

Low lasing threshold and high slope efficiency

High laser induced damage threshold

Specifications

Nd-dopant	0.1atm%~ 3.0atm%
Orientation	A-cut/C-cut +/-0.5deg
Dimensional tolerance	+/-0.1mm
Wavefront Distortion	$<\lambda/8 @ 633 \text{nm}$
Surface flatness	$<\lambda/10 @ 632.8 \text{nm}$
Parallelism	<10 arc seconds
Perpendicularity	<5 arc minutes

Surface quality	better than 20/10 Scratch/Dig per MIL-O-1380A
Clear aperture	95%
Chamfer	0.15x45°
Coating	AR/HR/PR coating upon customer's request
Damage threshold	>700MW/cm ² (coated)

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WARRANTY

All products are guaranteed to be in specifications in material and workmanship for a period of 12 months after shipment.

We do not assume liability for installation, labor or consequential damages.

This warranty is not suitable for failure of the products due to misuse, abuse, accident, or neglect.

CONTACTS

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