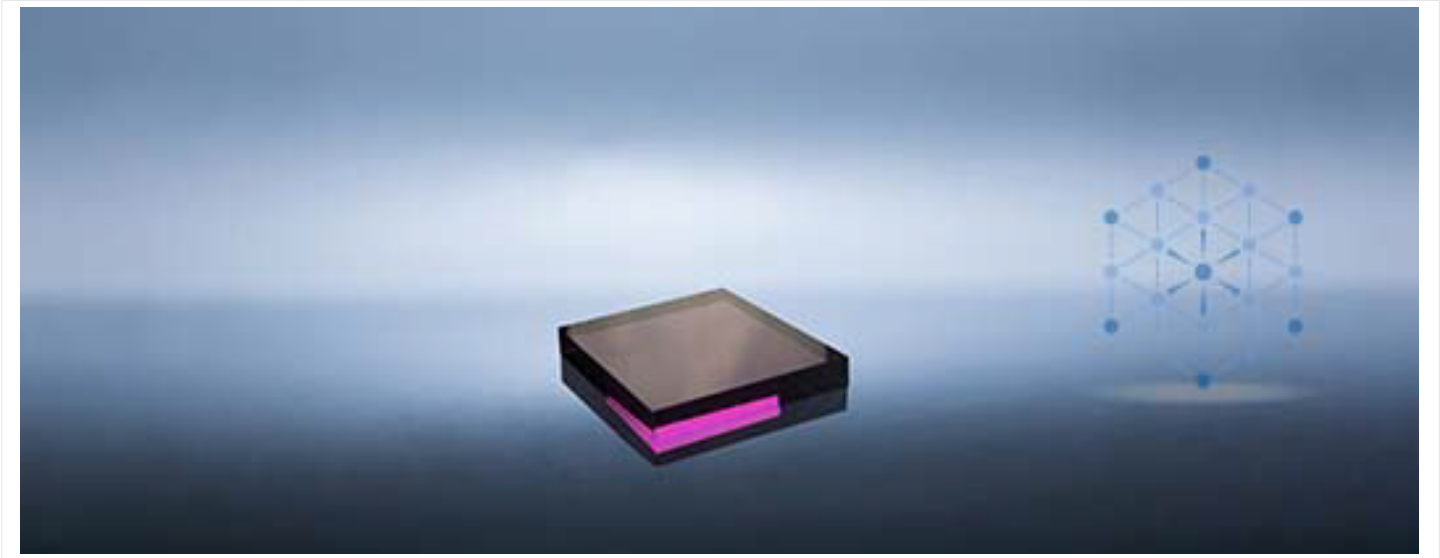


NF Nd:Glass



DESCRIPTION

Nd-doped Fluorophosphate glass has the characteristics of low nonlinear coefficient, high fluorescence lifetime, easy large-scale preparation, excellent glass forming performance and good crystallization stability, and meets the requirements for energy storage and amplification of high-energy laser systems. Two kinds of NF glass.

APPLICATIONS

- Laser amplifiers
- Microstructured optical fiber laser(MOF)
- High average power laser
- High-energy laser fusion system

PARAMETERS

Laser Specifications

	NF1	NF2
NdF ₃ (wt%)	0.88	1.07
Nd ³⁺ conc.(10 ²⁰ ions/cm ³)	0.2±0.1	1.2±0.1
Cross section for stimulated emission(10 ⁻²⁰ cm ²)	2.7±0.1	3.4±0.1
Lifetime at 1053nm(μsec)	≥515 (NdF ₃ :0.53wt%)	≥430 (NdF ₃ :0.53wt%)
	≥495 (NdF ₃ :1.07wt%)	≥410 (NdF ₃ :1.07wt%)
Effective bandwidth(nm)	32.8	30.4
Fluorescence peak wavelength(nm)	1053	1053
Absorption coefficient(cm ⁻¹)	≤0.001(1053nm)	≤0.001(1053nm)
	≤0.04(400nm)	≤0.04(400nm)
	≤0.08(3333nm)	≤0.08(3333nm)

FEATURES

- Low nonlinear coefficient
- High fluorescence lifetime
- Good glass forming performance
- Good crystallization stability
- High coefficient of thermal expansion



NF Nd:Glass

Optical Specifications

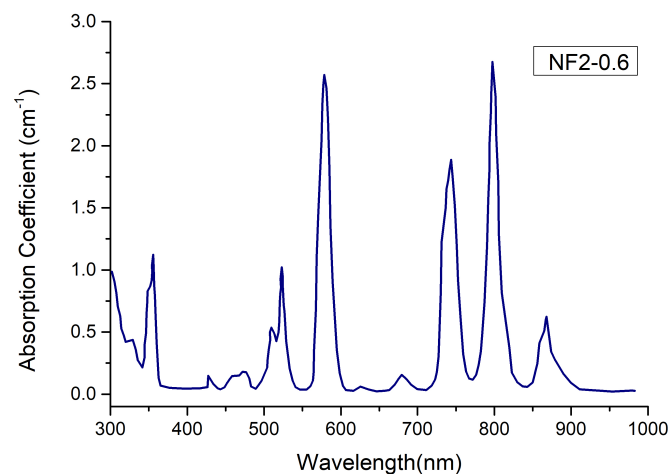
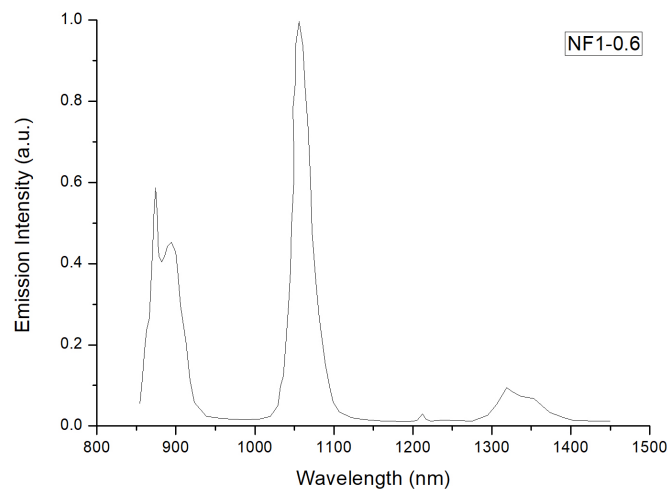
	NF1	NF2
Non-linear refractive index coeff. $n_2(\times 10^{-13} \text{e.s.u})$	≤ 0.6	≤ 0.86
Refractive index(1053nm)	1.464 ± 0.003	1.514 ± 0.003
Abbe value	88	77
d_n/d_t	-8.84	-8.6

Thermal Specifications

	NF1	NF2
Transformation temp.($^{\circ}\text{C}$)	450	490
Softening temp.($^{\circ}\text{C}$)	491	528
Coeff.of linear thermal expansion ($10^{-7}/\text{K}$)(50~100 $^{\circ}\text{C}$)	152	142
Coeff.of linear thermal expansion ($10^{-6}/\text{K}$)(50~100 $^{\circ}\text{C}$)	-1.86	-1.2
Thermal conductivity(25 $^{\circ}\text{C}$)(W/mK)	0.865	

Other Specification

	NF1	NF2
Density(g/cm^3)	3.65	3.68
Young's modulus(Gpa)	73	76
Knoop hardness(kg/cm^2)	343	423
Fracture toughness($\text{Mpa}\cdot\text{m}^{1/2}$)	0.35	0.58



SPECTRA

