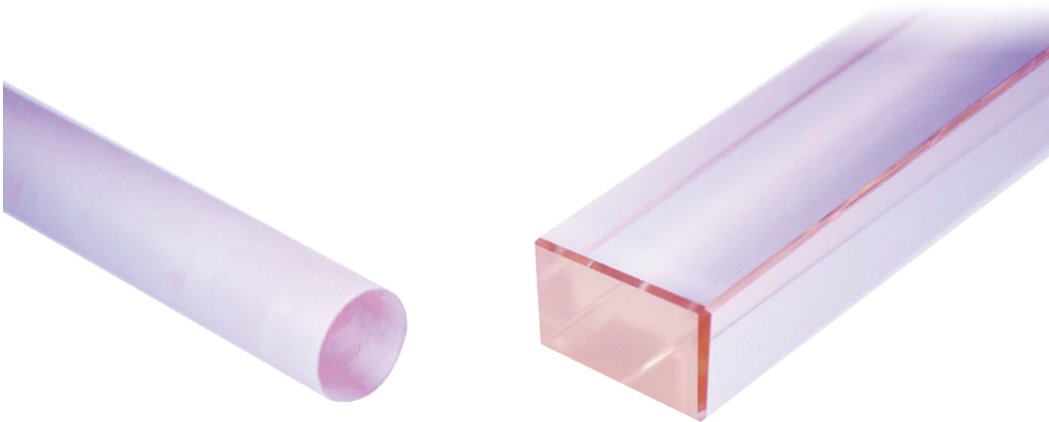
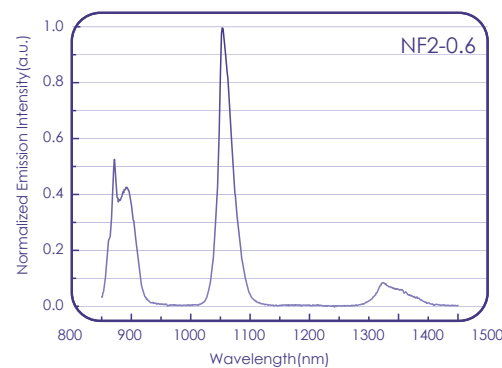
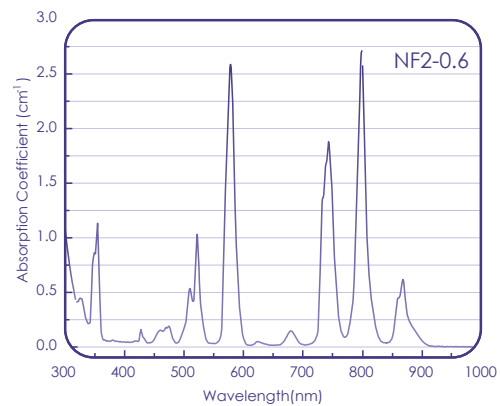
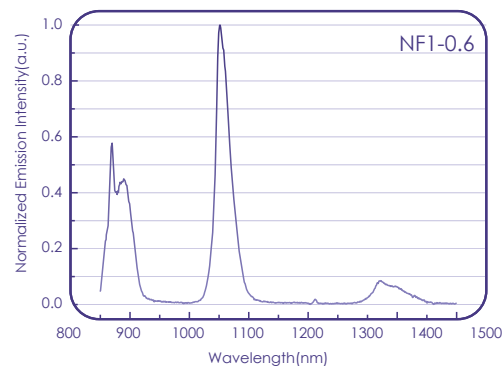
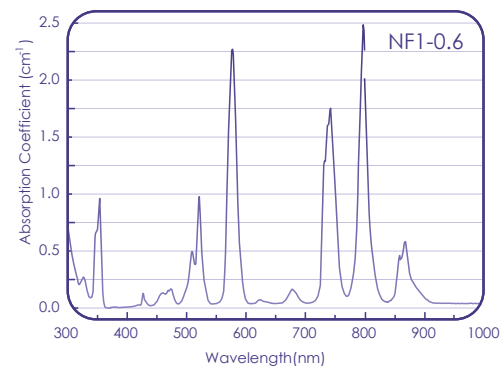


NF Nd³⁺-doped fluorophosphate glasses



NF glass is a kind of fluorophosphate based Nd³⁺ doped glass with low nonlinear refractive index, high energy storage ability, broad linewidth, good chemical stability as well as negative temperature coefficient of optical path. Two kinds of NF glass, NF1 and NF2 are available at SIOM.



	NF1	NF2
Laser Specifications NdF ₃ (wt%) Nd ³⁺ conc. (10 ²⁰ ions/cm ³) Cross section for stimulated emission (10 ⁻²⁰ cm ²)	0.88 1.2±0.1 2.7±0.1	1.07 1.2±0.1 3.4±0.1
Lifetime at 1053nm (μsec)	≥515 (NdF ₃ : 0.53wt%) ≥495 (NdF ₃ : 1.07wt%)	≥430 (NdF ₃ : 0.53wt%) ≥410 (NdF ₃ : 1.07wt%)
Effective bandwidth(nm) Fluorescence peak wavelength(nm)	32.8 1053	30.4 1053
Absorption coefficient (cm ⁻¹)	≤0.001 (1053nm) ≤0.04 (400nm) ≤0.08 (3333nm)	≤0.001 (1053nm) ≤0.04 (400nm) ≤0.08 (3333nm)
Optical Specifications Non-linear refractive index coeff.n ₂ (×10 ⁻¹³ e.s.u) Refractive index (1053nm) Abbe value dn/dT (10 ⁻⁶ /°C) (20~100°C)	≤0.6 1.464±0.003 88 -8.84	≤0.86 1.514±0.003 77 -8.6
Thermal Specifications Transformation temp.(°C) Softening temp.(°C) Coeff.of linear thermal expansion (10 ⁻⁷ /K) (50~100°C) Coeff.of linear thermal expansion (10 ⁻⁷ /K) (30~300°C) Thermal coeff. of optical path length (10 ⁻⁶ /K) (50~100°C) Thermal conductivity (25°C) (W/m K)	450 491 152 -1.86 0.865	490 528 142 -1.2
Chemical Specifications D _w (H ₂ O 98°C)(mg/(cm ² /day))	1.36	0.1
Other Specifications Density(g/cm ³) Young's modulus (G Pa) Knoop hardness (kg/cm ²) Fracture toughness (MPa·m ^{1/2})	3.65 73 343 0.35	3.68 76 423 0.58