Er: Glass Erbium Ytterbium Co-doped Phosphate Glass

Er:Glass erbium -ytterbium co - doped phosphate glass is a kind of rare earth-doped laser material based on phosphate glass . The 1.5 μm spectral range provides a useful coherent source that is relatively safe for the human eye . Mainly used for laser ranging and tracking, optical fiber communication, photoelectric countermeasures, strong laser damage, laser medical treatment, laser beauty, with the characteristics of optical waveguide amplification and high-gain optical fiber amplification .

Main features :

High laser efficiency
Low laser threshold
eye safety
highlight conversion

Material properties:

Material	Cr14	CrE5
Orientation	[100] , [110]±0.5°	[100] , [110]±0.5°
Mass density	3.10 g/ cm^3	2.95 g/ cm^3
Moh's hardness	8.5	8.5
Young's modulus	57.6 GPa	57.6 GPa
Tensile strength	2 GPa	2 GPa
Melting point	1970°C	1970°C
Thermal Conductivity	0.7	0.8
Specific heat/(J g^{-1} K^{-1})	0.59	0.59
Thermal Shock Resistance Parameters	800 W/m	800 W/m
Thermal Coefficient Optical Path Length (10 -7 /ºC) (20~100ºC)	3.6	
Linear thermal expansion coefficient (10 -7 / K) (20~100℃)	103	80.5
Linear thermal expansion coefficient (10 -7 / K) (100~300℃)	127	87
Softening temperature (Celsius)	493	519
Transition Temperature (Celsius)	455	476
Chemical durability (weight loss rate in distilled water at 100ºC) (μg/hr.cm^2)	103	
dn/dT (10-6 / ºC) (20~100ºC)	-5.2	-6.8
Refractive Index @ 1535 nm	1.53	1.533
Refractive index (d 589.3nm)	1.539	1.541
Abbe value	64	63.6

Product parameters:

Orientation Tolerance	< 0.5°

Thickness/Diameter Tolerance	±0.05mm
Surface roughness	<λ/8@632nm
Wavefront distortion	<λ/4@632nm
Surface Quality	10-5 (MIL-O-13830A)
Parallelism	10"
Perpendicularity	15'
Clear aperture	>90%
Chamfer	<0.1×45°