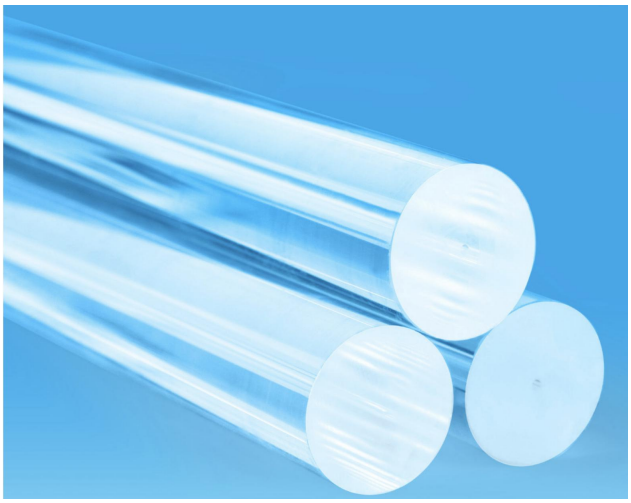
# Germanium and Fluorine co-doped NA Series Core Rod

## Product Introduction

The core rod of optical fiber preform is the key raw material of optical fibers. The precise design of its numerical aperture (NA) determines the efficiency of optical transmission and application adaptability. The numerical aperture NA is determined by the refractive index difference between the core and cladding layers, typically ranging from 0.065 to 0.14. By accurately controlling the concentration of dopants such as germanium and fluorine, core rods with different NA values are manufactured to meet diversified application requirements.



## Product Features

- High NA core rods have a wide optical acceptance angle, high coupling efficiency, a large refractive index difference between the core and cladding, and strong bending resistance.
- Medium NA core rods have balanced bandwidth and transmission stability, low inter-modal dispersion, and strong resistance to environmental interference.
- Low NA core rods have ultra-low attenuation and dispersion, excellent single-mode transmission performance, and long-distance signal fidelity.
- By combining different core rod parameters, the best cladding structure design can be achieved to ensure compatibility with subsequent optical fiber drawing processes and achieve the optimal configuration of optical communication performance.

## Product Applications

- Short distance and high capacity transmission (multi-mode fibers in data centers), laser processing equipment, and high density optical interconnection system.
- Industrial fiber optic sensing, medical laser devices, medium and short distance communication networks.
- Ultra-long-distance communication scenarios such as undersea optical cables, transoceanic trunk lines, and 5G backbone networks.

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| Core Rod Parameters | | |
|---|---|---|
| Characteristics | Data | Unit |
| Numerical aperture NA | 0.065~0.14 | |
| Core refractive index | 1.4577~1.4630 | |
| Cladding refractive index | 1.4563~1.4573 | |
| Length | ＞800 | [mm] |
| Core rod diameter | 25~35 | [mm] |
| Concentricity | ＜0.15 | [mm] |
| Non-circularity of the core rod | ≤0.5 | [%] |
| Bow | ＜1 | [mm/m] |