Technical Overview of Fiber Optics

How Fiber Optics Work

Fiber optic systems consist of three main components: the optical fiber, a light source (transmitter), and a detector (receiver). The optical fiber acts as a waveguide to transmit the light between the two ends of the fiber.

# Types of Fiber Optics

There are two primary types of fiber optics: single-mode fibers and multi-mode fibers.  
- Single-mode fiber: Used for long-distance communication, it has a small core that allows only one mode of light to propagate, minimizing signal attenuation.  
- Multi-mode fiber: With a larger core, it supports multiple light modes, making it suitable for shorter distances due to higher signal dispersion.