The mechanical three-ring polarization controller

Product description

The mechanical three-ring polarization control is based on the principle of Birefringence produced by optical fiber under external force. The three rings are equivalent to λ/4, λ/2 and λ/4 wave plates, respectively. The light waves passing through λ/4 wave plates are converted into linearly polarized light, and the polarization direction is adjusted by/2 wave plates. Finally, the polarization state of linearly polarized light is changed into arbitrary polarization state by/4 wave plates. The delay effect produced by the birefringence effect is mainly determined by the cladding radius of the fiber, the fiber ring radius and the wavelength of the light, the adjusted polarization state can cover the entire poincare sphere.
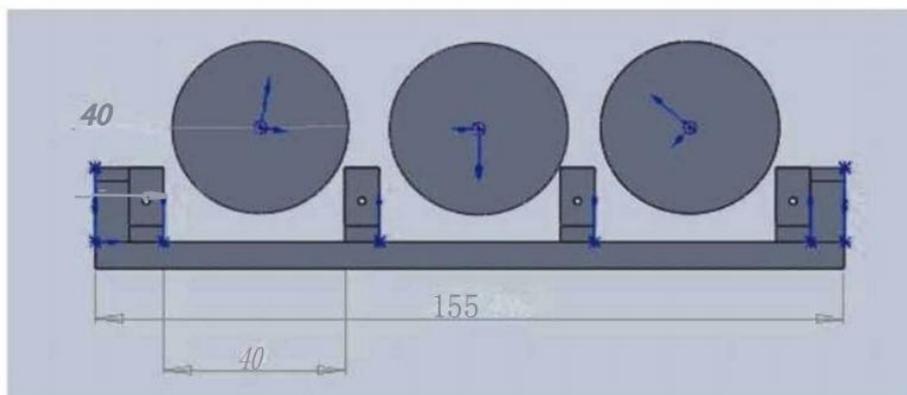
Product characteristics

◆ Low insertion loss
◆ Wide wavelength range
◆ Easy disassemble,self-replacement,winding fiber

Application area

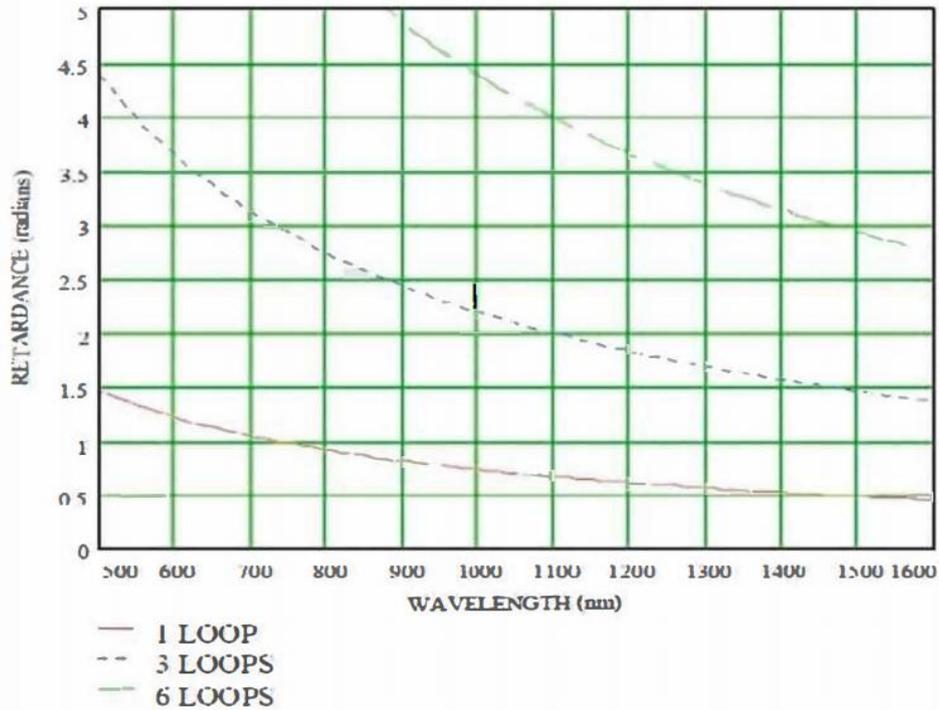◆ Single mode to polarization-maitaining fiebr
◆ Polarization-related loss measurement.
◆ Polarization-sensitive device application
◆ Fiber lasers
◆ Fiber interferometers

Product structure diagram

Schematic diagram of polarization controller

Relationship between single-loop delay and wavelength , number of loops in polarization controller.(Test unit: fiber loop diameter 40mm, fiber cladding diameter 900μm)
For example: Polarization controller fiebr loop fixed diameter of 40 mm, the cladding diameter of 900μm of tight-sheathed fiber around in the ghost.
When λ＝1550nm , and loop number =1 , the ring is equivalent to λ/2 wave plate.
When λ＝1550nm , and loop number =3, the ring is equivalent to 3λ/2 wave plate.