

## ● Topics

### Development of Bend-Insensitive PANDA Fiber

Fujikura has developed PANDA fibers (BISM15-PX series) that suffer less deterioration of characteristics caused by bending with a small radius. The BISM15-PX series are designed to have a minimum allowable bending radius of 7.5 mm, a half of that of conventional Bend-Insensitive PANDA fibers (SRSM15-PX series) with a minimum allowable bending radius of 15 mm. The fibers have less than 0.1 dB of bending loss and less than -30 dB of polarization crosstalk at 1550 nm with a winding condition of 7.5 mm-bending radius and 10 turns.

As optical transceiver modules have recently been miniaturized, there have been growing demands for PANDA fibers that maintain their existing characteristics while bending with a small radius. Fujikura succeeded in designing the BISM15-PX series with a trench index profile by applying the technology of FutureGuide®-BIS-B\* for small-radius bending. Consequently, the product achieved to have opposing characteristics of low bending loss and low splice loss.

In addition, the product's bending polarization crosstalk characteristic has been improved by the adoption of the design which brought stress applying parts nearer to the core than a conventional PANDA fiber.

The BISM15-PX series has two types of fibers, one coated with UV resin with 245 μm outer diameter and the other jacketed with Hytrel® with a 500 μm outer diameter in response to customer demand.

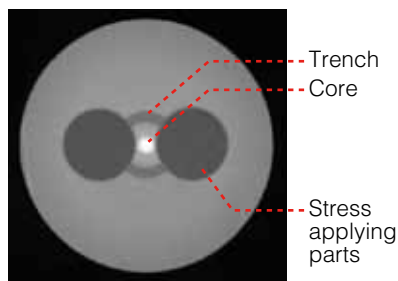
\* FutureGuide®-BIS-B (ITU-T G.657.B2) is a single mode fiber and has a bending loss of less than 0.5 dB/turn at 1.55 μm with a bend of 7.5 mm radius.

**Table 1. Fiber specifications.**

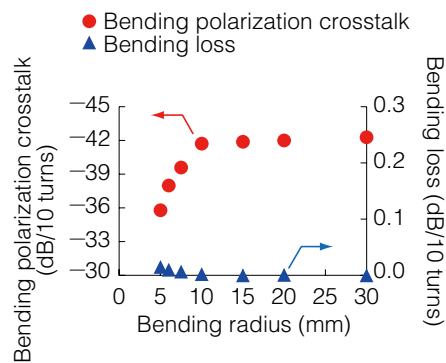
Item	Specification
Bending polarization crosstalk [dB] (Radius = 7.5 mm, 10 turns at 1550nm)	≤ -30
Attenuation [dB/km] at 1550nm	≤ 3.0
Cutoff wavelength [μm]	≤ 1.44
Mode field diameter [μm]	9.0 ± 0.4
Cladding diameter [μm]	125 ± 1
Coating diameter [μm]	245 ± 15 <sup>*1</sup> 500 ± 50 <sup>*2</sup>

\*1 : BISM15-PX-U25D-H

\*2 : BISM15-PX-H50D-H



Cross-section of  
BISM15-PX series



Bending polarization crosstalk and  
bending loss at 1550nm

[Information]

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