



Application Note

Attenuator for Nonstandard (e.g. 4.5 μm core) Fiber

Keywords

Attenuator, Fiber optics, Splice

Summary

When we received our new Ericsson 995 Fusion Splicer (March 2001), Fiberdyne became capable of a wider variety, of fixed attenuators.

Scenario

Customer is using a fiber, which is specially made for single-mode operation, at 650 nm wavelength. The customer needs an attenuator for their circuit.

Question

Can we make an attenuator for 4.5 μm (micron or micrometer) core fiber?

Notes/Answer

Probably. Our new fiber-splicing equipment can produce "offset" splices in single-mode (9 μm core), and multimode (50 and 62.5 μm core) fiber. It can also splice several other types of fiber. The question becomes, "is it worthwhile to our business strategy?"

There are other techniques for producing fixed attenuators. One technique splices a section of a smaller-core fiber into a normal fiber (e.g. 8 μm fiber spliced into 9 μm fiber). Another technique splices special, *attenuation* fiber into the normal fiber. We do not have such alternate fibers for a seldom-used size, like 4.5 μm core fiber.

Offset attenuation splice: two fibers are fused, but their optical axes are not aligned (see diagram, below). The offset distance sets the attenuation value.

