



TECHNICAL DATA SHEET
IsoSphere[®]
AR Coated Ball Lenses

PRODUCT DESCRIPTION

The *IsoSphere*[®] AR coated ball lens represents a breakthrough in the technology of ball lenses. Previous coating methods yielded soft, non-uniform single layer AR coatings on ball lenses. DSI's exclusive *IsoDyn*[™] low pressure chemical vapor deposition (LPCVD) process provides a uniform, highly durable, high performance AR coating over the entire surface of the lens. *IsoSphere* ball lenses bring the following benefits:

- Orientation of lens in your device is not required (uniform coating over entire lens surface), reducing device assembly costs
- Multilayer coating capability provides dual and broad band AR coatings (e.g., 1310/1550 dual band); dual band coatings allow one lens to be used for either wavelength, reducing lens inventories
- Wide choice of lens materials with indices from 1.44 to 2.15 at 1550 nm allows maximum freedom of optical design and minimizes cost
- Wide choice of lens sizes (0.25 mm to 10 mm) allows freedom of optical design; small lens sizes minimize cost
- Hard, scratch resistant coatings (passes 20 eraser rub)
- Bondable by a wide variety of methods

APPLICATIONS

DSI's *IsoSphere* ball lenses are an inexpensive, mechanically compact optical method for collimating the output of an optical fiber or laser diode; they can also be used for fiber to fiber, diode to fiber, and fiber to detector coupling when access to the beam is required. Ball lenses are a mechanically simple and economically attractive optical solution to a number of fiber optic coupling and collimating problems

STANDARD SPECIFICATIONS

Optical: Single wavelength coating insertion loss < 0.022dB (T > 99.5%) at wavelength of interest.
Dual wavelength coating insertion loss, 0.044dB (T > 99%) at wavelengths of interest.

Physical: Grade 10 lens (Diameter Tolerance: $\pm 2.5 \mu\text{m}$)
(Sphericity Tolerance: $\pm 0.25 \mu\text{m}$)