

Silica-silica fibers visible to near-IR

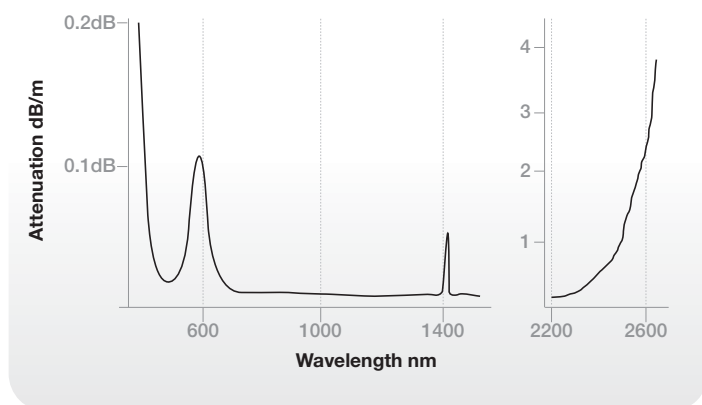
HPSIR Series



OXFORD ELECTRONICS

Manufacture and supply of specialised optical fibers

- Wide spectrum-IR and visible
- High power transmission
- Radiation resistant



These multimode step-index silica-silica fibers have a pure silica core and doped silica cladding. They will transmit light from 500-2600 nm. For general use an acrylate coating is recommended. Acrylate coated fibers are available in sizes from 200 μm to 1.0 mm core diameter. For optical fiber light guides or higher temperatures, polyimide coated fibers are available in core diameters up to 300 μm . They have a very low fluorescence and are recommended for spectroscopy. These fibers are suitable for use across a wide wavelength range. They can be used for high power transmission and have good radiation resistance.

These fibers are available as cables or patchcords.

Fiber specification

Fiber type

Step-index multimode

Core material

High purity synthetic silica

Cladding material

Doped silica

Numerical aperture

0.22 \pm 0.02

Minimum bend radius (short term)

100 times fiber radius

Minimum bend radius (long term)

500 times fiber radius

Typical spot values of attenuation

1.06 μm (Nd:YAG laser) <0.01 dB/m

HPSIR Series acrylate coated

	HPSIR 200P	HPSIR 400P	HPSIR 600P	HPSIR 1000P
Core diameter μm	200	400	600	1000
Cladding diameter μm	224	424	636	1060
Coating diameter μm	360	700	1000	1600

The minimum cladding thickness to avoid losses due to tunnelling is approximately 12 μm . For this reason the 200 μm fiber has a 224 μm cladding diameter. For larger diameters the standard core/cladding ratio for HPSIRP fibers is 1:1.06. Other core cladding ratios are available to special order.

Operating temperature

-40°C to +85°C

Maximum intensity of transmitted power*

CW up to 100 kW/cm².

For pulsed lasers (<1 μs) 500kW/cm

*These figures refer to threshold of damage and assume a circular spot with linear power distribution. Many real lasers are less than ideal and so these figures must be used with caution. Our technical sales department will be pleased to advise on selection of fibers for high-powered lasers.

HPSIR Series polyimide coated

	HPSIR 951	HPSIR 2001	HPSIR 3001
Core diameter μm	93	200	300
Cladding diameter μm	117	224	318
Coating diameter μm	123	240	335

The HPSIR931 is recommended for fiber bundles (light guides) as it allows small bend radii to be used.

Operating temperature: -190°C to +350°C

Step-index silica-silica fibers are also available with metal coatings.