Weinert's Specialty Optical Fibers

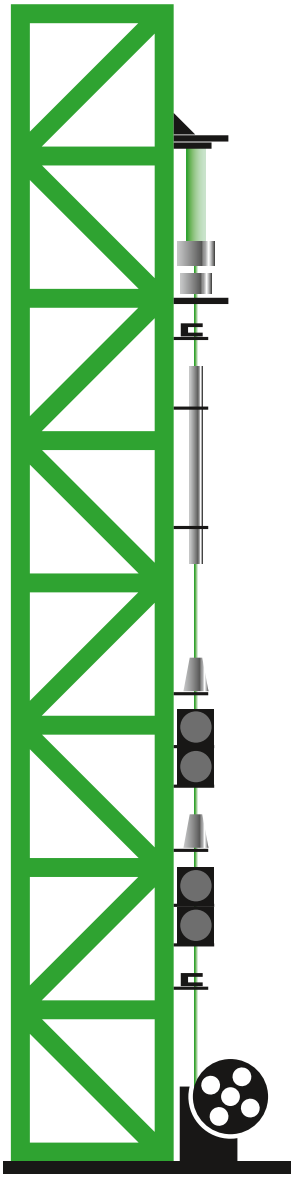
Optical fibers serve as a versatile transmission medium for light and can be tailored to meet specific customer applications. WEINERT Fiber Optics focuses on specialty fused silica fiber, with multimode and singlemode options that are available in both standard and custom options. Our fibers are designed with precise dimensional control and tight tolerances, ensuring reliable performance even in demanding environments involving high temperatures, extreme wavelengths, chemicals, or radiation. The fiber composition offers various parameters that can be individually configured to match customer needs.

Our Expertise

- Vertically integrated preform manufacturing for glass customizations
- In-house production of multimode fibers with core diameters from 20 to 2700 µm
- Custom configurations with adjustable numerical aperture, CCDR, coatings, and jackets
- Designed for the full wavelength range – UV to VIS, NIR, and IR

Our Product Portfolio

- Standard Products – Off-the-shelf fibers with proven performance
- Custom Solutions – Tailored designs to meet exact optical and mechanical requirements



Standard Products

Fiber Type	λ Range	Product Description
Step-Index Low-OH	400 – 2400 nm	Low-OH silica fibers for VIS-NIR transmission, industry standard core sizes, NA 0.22, polyimide or acrylate coating
Step-Index High-OH	200 – 1100 nm	High-OH silica fibers for UV-VIS transmission, industry standard core sizes, NA 0.22, polyimide or acrylate coating
Dual Clad Low-OH	400 – 2400 nm	Industry standard laser delivery fibers: 272, 365, 550, 940 µm core, NA 0.22/0.26, hard clad / ETFE suitable for medical applications
Hard Clad Low-OH	400 – 2400 nm	Large core, high-NA (0.37) fibers with hard cladding for high-power illumination or sensing
Square-Core Low-OH	400 – 2400 nm	Square core fibers for homogenization, beam shaping, and uniform illumination
Singlemode	1060, 1310, 1550 nm	Polyimide-coated 4.5 and 9.0 µm core for laser and telecom applications
Graded Index	850, 1300 nm	Polyimide-coated 50 and 62.5 µm core optimized for short-distance data links/multimode telecom use

(refer to fiber family data sheets for details on standard options)

Standard Quality Protocols

- 100 % proof-testing over 3 axes to 100 kpsi
- Multiple tiers of micrometer laser detection to monitor diameter over the entire length
- Optical time domain reflectometer (OTDR) to ensure fiber continuity
- Spectral attenuation for every fiber draw
- Batch traceability to raw materials in our ISO 9001 certified facility
- Custom quality protocols on request



Custom Solutions

- NA: 0.10 – 0.50
- Tunable dimensions for core, core-to-clad ratio, cladding, buffer, and jacketing
- Minimum continuous lengths (including large core fibers with long continuous length)
- Tighter tolerances available
- Different glass types and buffers available for each of the standard options (see below)
- Biocompatibility statements

Custom-Only Fiber Families

Customized Fiber Type	Product Description
Multicore	Multiple cores within one fiber diameter, side by side or in a ring structure
Radiation-Hard Fiber	Mechanically and optically stable in high radiation environments
Solarization Resistant Fiber	Suitable for deep UV wavelengths with shelf stability
AmbientFiber	Plastic and silica side-emitting fibers for aesthetic illumination
UV Emitting Fiber	Silica side-emitting fiber with specialty coatings for UV disinfection
Non-Circular Shape	Custom geometries, aspect ratios, etc.
Multi-Clad Fibers	Ring fibers with various layers of cladding at different numeric apertures
HP-SC	High power small core fibers (10/15/20/25um) for UV applications
Capillary	Silica tubing with coatings

Primary Coating Options

This is the protective layer that typically goes immediately over the glass. This layer can either be an inner layer with an additional jacket on top (often the case for silicone or hard clad), or the outermost layer (often the case with acrylate and polyimide). These coatings can serve both mechanical and optical purposes, with low index coatings being used as a light-guiding layer.

- Acrylate (A): -40°C to 85°C / single or dual layer
- High Temp. Acrylate (HTA): -40°C to 150°C (200°C intermittent) / single or dual layer
- Polyimide (PI): -190°C to 385°C, ≤ 12 µm thickness / ≤ 660 µm glass OD
- Silicone (S): -40°C to 150°C (transparent = low index coating / black color = coating only)
- Hard Clad (HC): -40°C to 190°C (low index coating)

Jacket Options

The outermost layer that typically goes on over the top of a buffer. Jackets provide mechanical robustness and allow for ease of handling.

- Nylon (N): -40°C to 100°C
- Tefzel/ETFE (T): -40°C to 150°C
- PTFE (M): -100°C to 260°C
- Open to discussing custom options

Fiber Buffering / Cabling

In addition to the above options, WEINERT has a vertically integrated cabling plant done as a secondary process for more complex designs, with many additional coating options and configurations.

Subject to technical changes without notice.

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