

# Passive High Power Triple Clad Fibers

## Lumentum Advanced Specialty Optical Fiber Family

### Key Features

- **Exceptional Beam Quality:** Engineered for low beam parameter product (BPP) and a high threshold for nonlinear effects
- **Reliable Pump Guidance:** An all-silica inner cladding combined with high-power-compatible outer coating ensures optimal pump transmission at elevated power levels
- **Low-Loss Signal Transmission:** Minimizing efficiency losses and preserving excellent signal power quality
- **Photosensitivity:** Suitable for inscription of Bragg gratings using traditional methods
- **Stringent Quality Checks:** 100% inspection for glass and coating imperfections guarantees consistency and long-term stability
- **Customization:** Core NA, geometry, and absorption levels can be tailored to specific application needs.

Lumentum's advanced germanium-doped triple-clad passive fibers are specifically engineered for high-power fiber laser systems and beam-delivery applications. The triple-clad structure and superior coating quality ensure reliable transmission of pump power, while the optimized core geometry supports low-loss signal transmission at powers up to 15 kW, maintaining optimal beam brightness.

Each high-power fiber undergoes meticulous inspection for glass and coating imperfections, ensuring dependable performance under the most demanding conditions.

For specialized requirements, Lumentum offers custom fiber designs tailored to specific core numerical apertures (NAs) and geometric properties, enabling seamless integration across a wide range of industrial, scientific, and research applications.



| GENERAL INFORMATION               |  |
|-----------------------------------|--|
| Mode properties                   | Single mode, few-mode, multimode   |
| Core material                     | Ge-doped fused silica  |
| 1 <sup>st</sup> cladding material | Pure fused silica  |
| 2 <sup>nd</sup> cladding material | Fluorine doped fused silica  |
| Coating type                      | Primary: high temperature and low RI; secondary: high-temperature protective |
| Typical application               | CW lasers, beam delivery, FBG inscription                                    |

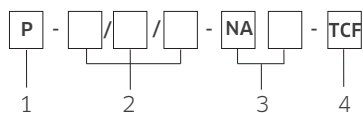
| PERFORMANCE CHARACTERISTICS |             |                      |
|-----------------------------|-------------|----------------------|
| <i>Parameter</i>            | <i>Unit</i> | <i>Typical value</i> |
| Core attenuation @ 1200nm   | dB/km       | < 5                  |
| Thermal slope @ 920nm       | °C/kW       | < 3                  |

| OPTICAL CHARACTERISTICS                     |             |                      |
|---|-------------|----------------------|
| <i>Parameter</i>                            | <i>Unit</i> | <i>Product range</i> |
| Core numerical aperture                     | -           | 0.055 - 0.12         |
| 1 <sup>st</sup> cladding numerical aperture | -           | 0.21 - 0.28          |
| 2 <sup>nd</sup> cladding numerical aperture | -           | 0.48 or 0.51         |

| PHYSICAL CHARACTERISTICS          |             |                      |
|-----------------------------------|-------------|----------------------|
| <i>Parameter</i>                  | <i>Unit</i> | <i>Product range</i> |
| Core diameter                     | µm          | 12 - 125             |
| 1 <sup>st</sup> cladding diameter | µm          | 200 - 660            |
| 2 <sup>nd</sup> cladding diameter | µm          | 220 - 700            |
| Secondary coating diameter        | µm          | 330 - 820            |

### Ordering Information

For more information on this or other products and their availability, please contact your local Lumentum account manager or Lumentum directly at [customer.service@lumentum.com](mailto:customer.service@lumentum.com).



|   |  |
|---|--|
| 1 | Type: Passive  |
| 2 | Dimensions in $\mu\text{m}$ : Core / 1 <sup>st</sup> cladding / 2 <sup>nd</sup> cladding |
| 3 | NA of the core<br>(/ optionally also NA of the 1st and 2nd cladding)                     |
| 4 | Additional info: TCF - triple clad fiber   |



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