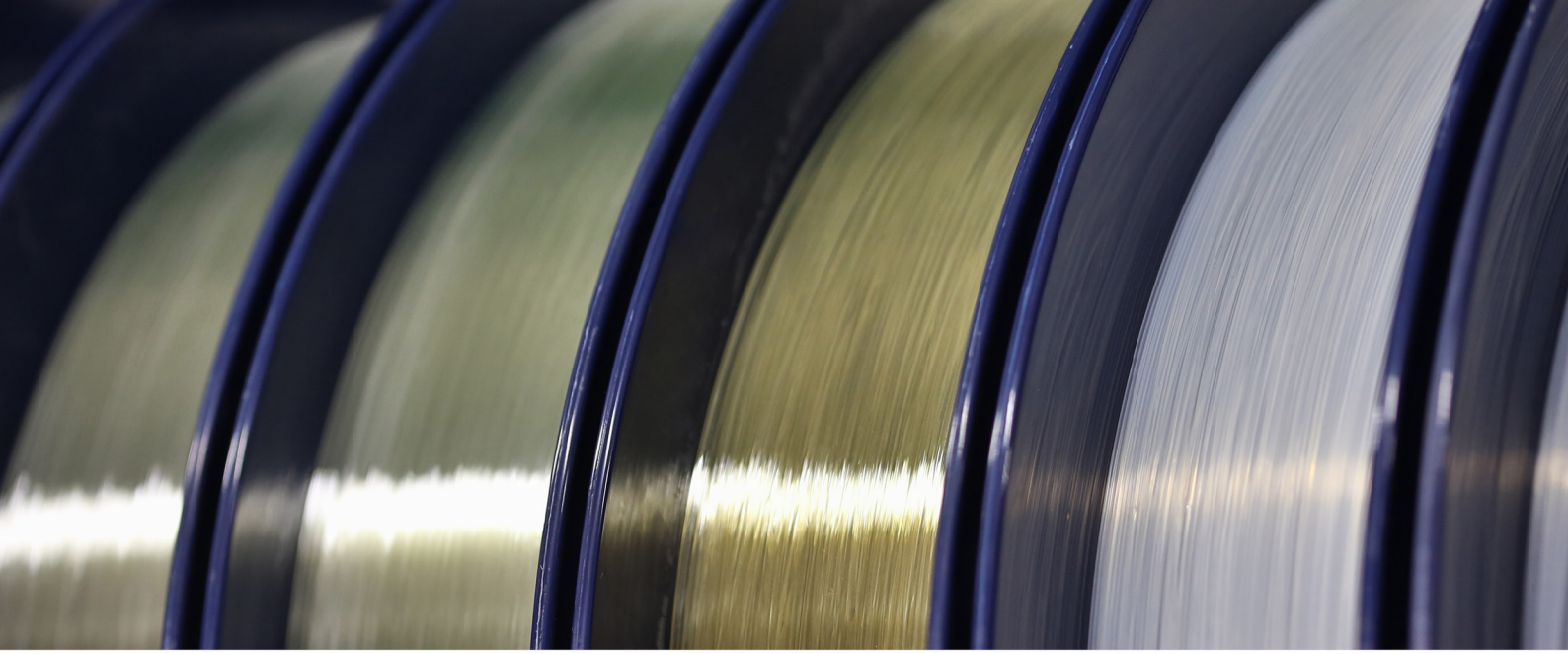

# Glass Cladding Multi-mode Fibre

## Graded Index Multi-mode Fibre (GIMM)

YOFC silica-cladding multimode fibres with graded index profile are comprehensively optimized at both 850nm and 1300nm operating wavelengths. At both wavelengths, extremely low attenuation and high bandwidth could be achieved. To satisfy the demand of client to the most extent, a series of silica-cladding graded index multimode fibres can be customized with different fibre designs, including core diameter, cladding diameter, fibre diameter and NA.

YOFC fibres are manufactured with the advanced Plasma Activated Chemical Vapor Deposition (PCVD) process. Due to the inherent advantages of the process, YOFC fibres have extremely precise refractive index profiles (RIPs), which could provide excellent geometrical, optical, environmental and mechanical properties.

## Customization Information

- Flexible numerical aperture (NA): 0.14 - 0.3
- Flexible core-cladding diameter ratio (CCDR): 1.05-2.0
- Core diameter: 50μm-1000μm

## Characteristics

- High coupling efficiency to LED and laser sources
- High power transmission
- Good stripping performance
- Low attenuation and high bandwidth

## Applications

- Fibre sensor and laser transmission
- Data communications, local area networks and CATV
- Medical apparatus
- Optical devices and connectors

## Specifications-1

| Fibre Type | | GI 50/125-20/250 | GI 80/125-30/250 | GI 100/125-29/250 | GI 100/140-29/250 | GI 105/125-30/250 | GI 100/125-14/250 |
|---|---|---|---|---|---|---|---|
| **Part No.** | | GI2012-E | GI2017-C | GI2016-F | GI2016-H | GI2017-A | GI2011-A |
| **Optical Properties** | | | | | | | |
| Numerical Aperture | | 0.20 ± 0.015 | 0.30 ± 0.02 | 0.29 ± 0.02 | 0.29 ± 0.02 | 0.30 ± 0.02 | 0.14 ± 0.02 |
| Attenuation | @850nm (dB/km) | ⩽ 2.45 | ⩽ 3.5 | ⩽ 3.5 | ⩽ 3.2 | ⩽ 4.0 | ⩽ 20.0 |
| | @1300nm (dB/km) | ⩽ 0.6 | ⩽ 0.7 | ⩽ 0.7 | ⩽ 0.8 | ⩽ 1.2 | - |
| Bandwidth | @850nm (MHz·km) | ⩾ 100 | ⩾ 100 | ⩾ 100 | ⩾ 100 | ⩾ 100 | - |
| | @1300nm (MHz·km) | ⩾ 200 | ⩾ 200 | ⩾ 200 | ⩾ 200 | ⩾ 200 | - |
| **Geometrical Properties** | | | | | | | |
| Core Diameter (μm) | | 50.0 ± 2.0 | 80.0 ± 3.0 | 100.0 ± 3.0 | 100.0 ± 3.0 | 105.0 ± 3.0 | 100.0 ± 3.0 |
| Cladding Diameter (μm) | | 125.0 ± 2.0 | 125.0 ± 2.0 | 125.0 ± 2.0 | 140.0 ± 2.0 | 125.0 ± 2.0 | 125.0 ± 2.0 |
| Coating Diameter (μm) | | 250.0 ± 10.0 | 250.0 ± 10.0 | 250.0 ± 10.0 | 250.0 ± 10.0 | 250.0 ± 10.0 | 250.0 ± 10.0 |
| Core/Cladding Concentricity (μm) | | ⩽ 3.0 | ⩽ 3.0 | ⩽ 3.0 | ⩽ 3.0 | ⩽ 3.0 | ⩽ 3.0 |
| Core Non-circularity (%) | | ⩽ 2.0 | ⩽ 5.0 | ⩽ 2.0 | ⩽ 3.0 | ⩽ 2.0 | ⩽ 3.0 |
| Cladding Non-circularity (%) | | ⩽ 1.0 | ⩽ 1.0 | ⩽ 1.0 | ⩽ 1.0 | ⩽ 1.0 | ⩽ 1.0 |
| **Material Composition** | | | | | | | |
| Core | | Ge/F Doped Silica Glass | | | | | |
| Cladding | | Pure Silica Glass | | | | | |
| Coating | | Dual-layer UV-acrylate | | | | | |
| **Mechanical Properties** | | | | | | | |
| Proof Test (kpsi) | | 100 | 100 | 100 | 100 | 100 | 100 |

## Specifications-2

| Fibre Type | | GI 105/125-24/250 | GI 50/80-29/165 | GI 300/330-25/500 | GI 200/220-22/500 | GI 230/250-22/500 |
|---|---|---|---|---|---|---|
| **Part No.** | | GI2014-J | GI2016-C | GI2014-B | GI2013-N | GI2013-P |
| **Optical Properties** | | | | | | |
| Numerical Aperture | | 0.24 ± 0.02 | 0.29 ± 0.02 | 0.25 ± 0.02 | 0.22 ± 0.02 | 0.22 ± 0.02 |
| Attenuation | @850nm (dB/km) | ⩽ 3.5 | ⩽ 4.0 | ⩽ 7.0 | ⩽ 6.0 | ⩽ 5.0 |
| | @1300nm (dB/km) | ⩽ 1.5 | ⩽ 2.0 | - | - | - |
| Bandwidth | @850nm (MHz·km) | ⩾ 100 | ⩾ 100 | - | - | - |
| | @1300nm (MHz·km) | ⩾ 200 | ⩾ 200 | - | - | - |
| **Geometrical Properties** | | | | | | |
| Core Diameter (μm) | | 105.0 ± 3.0 | 50.0 ± 3.0 | 300.0 ± 10.0 | 200.0 ± 4.0 | 230.0 ± 5.0 |
| Cladding Diameter (μm) | | 125.0 ± 2.0 | 80.0 ± 2.0 | 330.0 ± 5.0 | 220.0 ± 3.0 | 250.0 ± 5.0 |
| Coating Diameter (μm) | | 250.0 ± 10.0 | 165.0 ± 8.0 | 500.0 ± 20.0 | 500.0 ± 20.0 | 500.0 ± 20.0 |
| Core/Cladding Concentricity (μm) | | ⩽ 3.0 | ⩽ 3.0 | ⩽ 3.0 | ⩽ 3.0 | ⩽ 3.0 |
| Core Non-circularity (%) | | ⩽ 2.0 | ⩽ 2.0 | - | - | - |
| Cladding Non-circularity (%) | | ⩽ 1.0 | ⩽ 1.0 | - | - | - |
| **Material Composition** | | | | | | |
| Core | | Ge/F Doped Silica Glass | | | | |
| Cladding | | Pure Silica Glass | | | | |
| Coating | | Dual-layer UV-acrylate | | | | |
| **Mechanical Properties** | | | | | | |
| Proof Test (kpsi) | | 100 | 100 | 100 | 100 | 100 |

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