

# TOPR® UV, TOPR® WF Quartz/Quartz Fiber

## Specification Datasheet · TopRays Optical Fiber

Excellent performance and fiber characteristics from ultraviolet to infrared: TOPRAYS TOPR® UV / WF fibers are available in a range of core diameters and assembly formats and can be customized to your specific application needs.



### Technical Parameters

- OH-content grades: < 0.25 ppm and < 0.1 ppm available on request
- Operating temperature: -190 to +350 °C
- Core diameter: 25 to 2000 µm available
- Standard core/cladding ratios: 1 : 1.04 | 1 : 1.06 | 1 : 1.1 | 1 : 1.15 | 1 : 1.2 | 1 : 1.25 | 1 : 1.4, or custom
- OH content: TOPR® UV: high (> 700 ppm); TOPR® WF: low (< 1 ppm); fibers with OH content < 0.25 ppm and < 0.1 ppm available on request
- Standard proof test: 100 kpsi (nylon, ETFE, acrylate jackets) | 70 kpsi (polyimide jacket)
- Minimum bending radius: 50 × cladding diameter (short-term mechanical stress); 150 × core diameter (when used with high-power lasers)
- Numerical aperture (NA): 0.12 ± 0.02 | 0.22 ± 0.02 | 0.28 ± 0.02, or custom

| Item       | TOPR® UV      | TOPR® WF      |
|------------|---------------|---------------|
| Wavelength | 190 – 1200 nm | 300 – 2400 nm |

### Advantages

- Pure synthetic fused silica core
- High laser-damage resistance
- Step-index profile
- Special jackets available for high-temperature, high-vacuum and highly corrosive chemical environments
- Extremely low NA expansion
- Biocompatible materials
- Sterilization by ethylene oxide (ETO) and similar methods is possible

Construction: quartz glass core · fluorine-doped quartz cladding · buffer (if any: silicone, hard polymer) · jacket

### Jacket Options

| Jacket         | Operating Temperature |
|----------------|-----------------------|
| Polyimide      | -190 to +350 °C       |
| ETFE (Tefzel®) | -40 to +150 °C        |

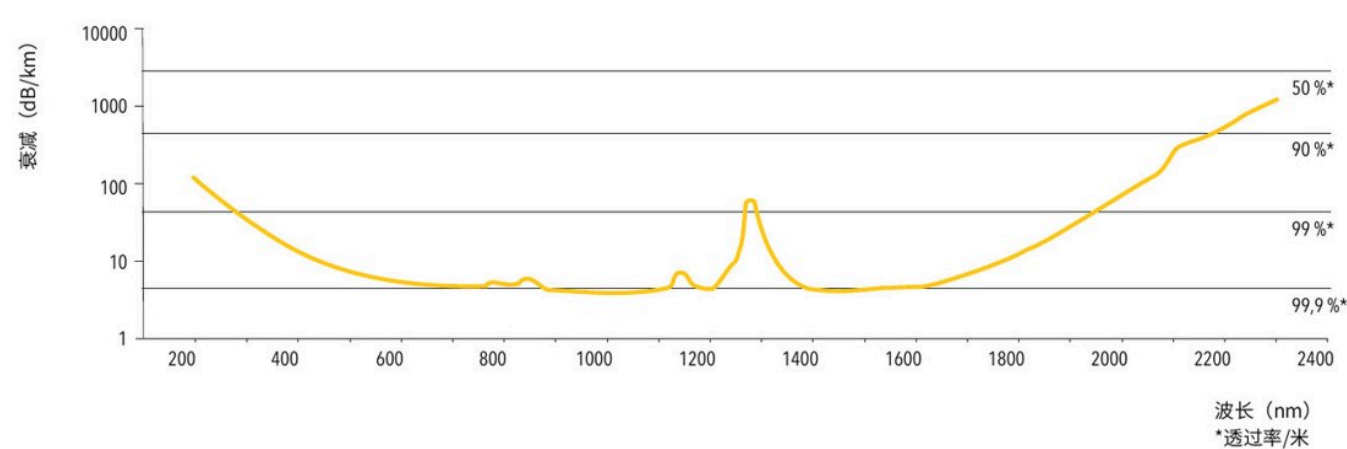
| Jacket                     | Operating Temperature |
|----------------------------|-----------------------|
| Nylon                      | -40 to +100 °C        |
| Acrylate                   | -40 to +85 °C         |
| DuPont Hytrel® 7246        | -40 to +140 °C        |
| Acrylate DeSolite® DF-0009 | -40 to +150 °C        |
| PFA Fluon®                 | -200 to +260 °C       |

## Product Code Description

| No. | Item                         | Code description                                                                                                                                                                             |
|-----|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Fiber type                   | UV = TOPR® UV   WF = TOPR® WF   WFGE = TOPR® WFGE   HUV = TOPR® HUV   HWF = TOPR® HWF                                                                                                        |
| 2   | Standard Core/Cladding Ratio | Core diameter $\phi$ ( $\mu\text{m}$ ) / cladding diameter $\phi$ ( $\mu\text{m}$ )                                                                                                          |
| 3   | Buffer layer                 | H = hard-polymer buffer   unmarked = silicone buffer                                                                                                                                         |
| 4   | Colour                       | B = black   BL = blue   W = white   Y = yellow   R = red   G = green   unmarked = transparent                                                                                                |
| 5   | Jacket material              | A = acrylate jacket (no buffer)   F = PFA Fluon®   N = nylon jacket (silicone or hard-polymer buffer)   T = ETFE jacket (silicone or hard-polymer buffer)   P = polyimide jacket (no buffer) |
| 6   | Numerical Aperture (NA)      | 12 = 0.12   28 = 0.28   unmarked = 0.22 (standard)                                                                                                                                           |

Example: WF 300/330 (H)(B)N (28)

## Attenuation



The chart below summarizes attenuation at different wavelengths (right scale: transmittance per metre).

## Applications

The preferred choice for many applications, including spectral analysis, medical diagnostics, medical technology and laser delivery systems.