LIGHTGUIDE

YOUR PREMIER LIGHT DELIVERY SOLUTIONS

THE WORLD'S LEADING OPTICAL FIBER PRODUCTION LAB.

lightguide.com

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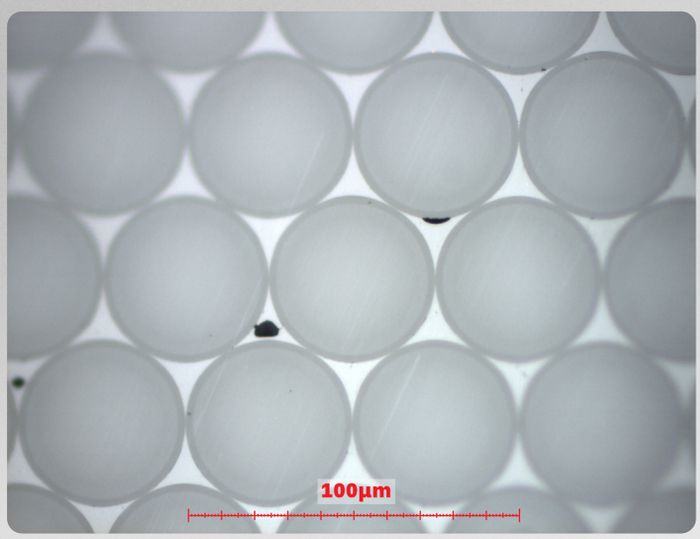
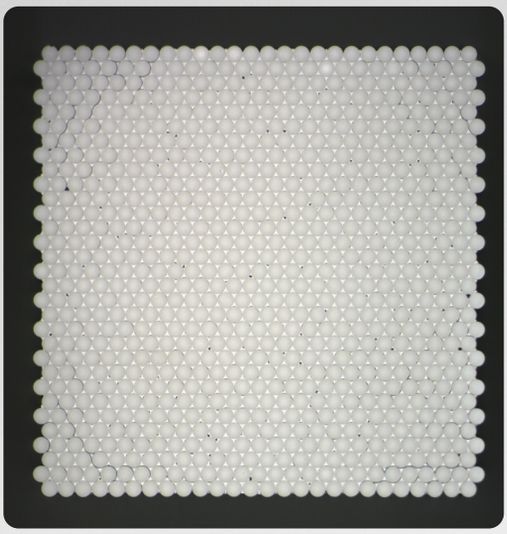
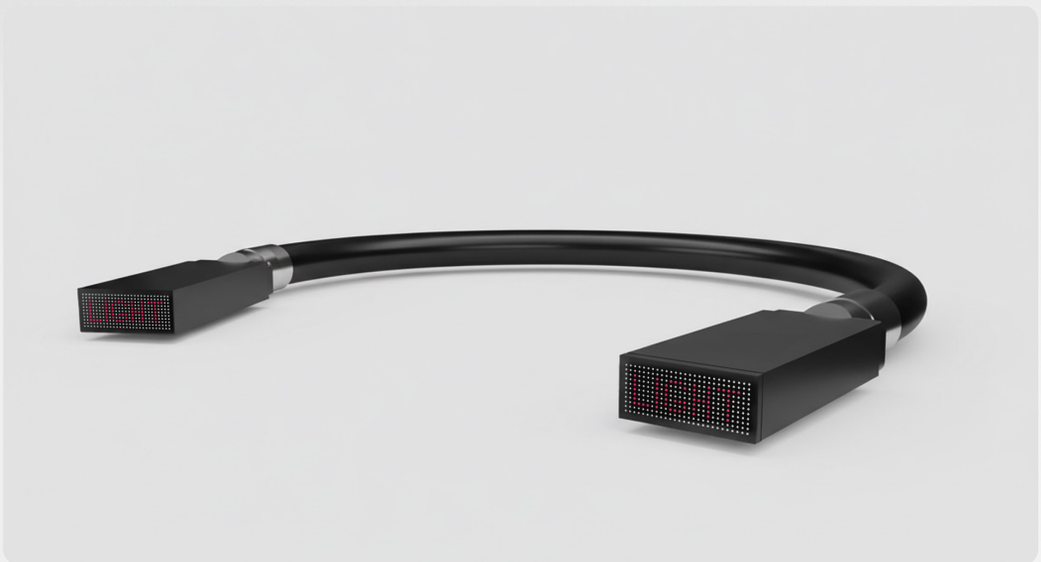
HIGHLY DENSE MULTI-MODE FIBER BUNDLES

Lightguide's high-density multi-mode fiber bundles are an excellent solution for optical data links. The high density is achieved by using specialty fiber, which can be drawn to a sub-50 µm cladding diameter. When stacked and compressed, these fibers form a tight hexagonal packing, with each individual fiber (or channel) precisely aligned to the grid. With densities of up to ~500 fibers/mm², the achievable number of fibers can reach a couple of thousand. The bundles are typically bonded with epoxy, and their size and shape can be customized to meet specific application requirements. The bundles can also be made coherent, meaning the position of each fiber or channel is maintained between both ends. Such bundles function as imaging bundles, and when fabricated from fused silica fibers optimized for transmission at specific wavelengths, they enable the creation of interconnects tens of meters long for UV, VIS, or NIR light sources.

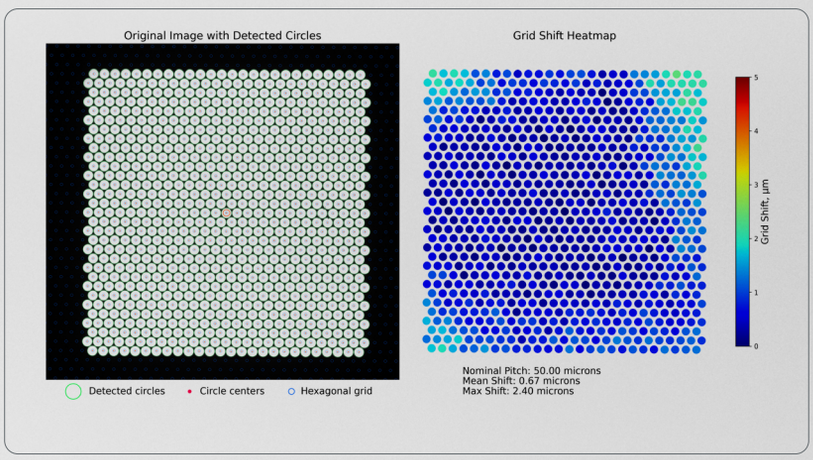






MICRON-LEVEL GRID ACCURACY

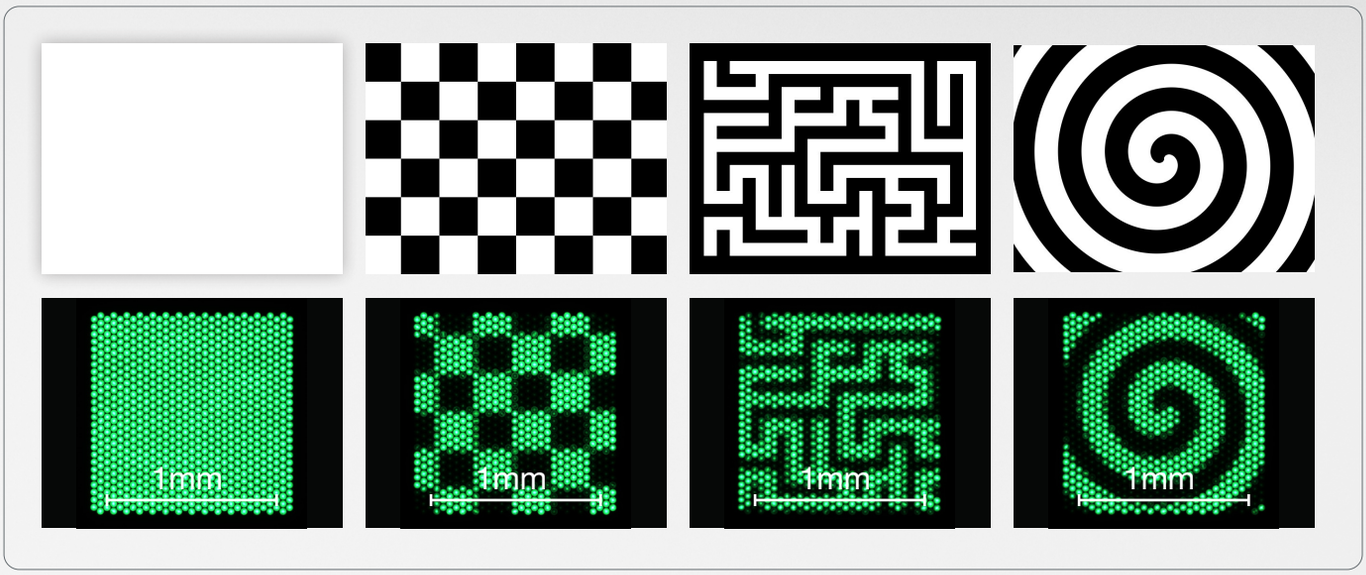
Optical interconnects require precise positioning of each fiber on a fixed grid. Any misalignment can lead to losses or light leakage to neighboring fibers (crosstalk). Lightguide's approach achieves sub-5 µm grid shifts from an ideal hexagonal grid. The heatmap illustrates individual fiber misalignments from a perfect grid for a square-shaped bundle containing 821 fibers.



Grid shift measurements for 821-fiber bundle with 50.04 µm cladding diameter fiber

COHERENT BUNDLES

Bundle coherence is an important feature in optical interconnect applications, but it does not occur naturally and requires specialized techniques—developed by Lightguide. When paired with an array-like source such as µLED display, it is easy to demonstrate the bundle's ability to transmit a perfect image. No fibers are switching places with their neighbors, allowing a precise and repeatable connection between source arrays and detector arrays with no custom mapping necessary.



Examples of coherent bundle's ability to transmit an image.

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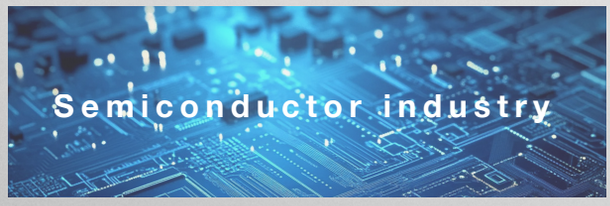
EXPANDING THE SPECTRUM OF OPPORTUNITIES



- deep UV Fibers: Enhance photolithography precision for next-gen semiconductors
- solarization-Resistant Fibers: Ensure durability in deep UV spectral range
- coherence Reduction: advanced of manufacturing semiconductor devices
- high precision: boost accuracy and efficiency in chip manufacturing

- light delivery: enhance efficiency in analytical processes
- reflection probe: enable accurate surface inspection and measurement.

- high transmission: Increase signal to noise ratio
- multi-leg bundle: facilitate versatile, multi-point analysis
- custom input/output forms: adapt to specific spectroscopy needs
- reflection probe: enable various types of surface measurements
- light delivery: Improve efficiency in optical spectroscopy

- SPR (Surface Plasmon Resonance): Improve sensitivity in surface interactions
- SERS (Surface Enhanced Raman Spectroscopy): enable high-sensitivity molecular analysis
- no cross-talk: Ensure individual signal in separate fiber in fiber bundle
- light/signal delivery: optimize performance in optical systems
- no impact from electronic noise: maintain clarity and reliability in harsh measurements

- SPR (Surface Plasmon Resonance): Enhance sensitivity in process analysis
- SERS (Surface Enhanced Raman Spectroscopy): enable precise molecular detection
- custom original equipment manufacturers (OEM) solutions: tailor equipment for specific process needs.

- polyimide-coated fibers: withstand high temperatures
- carbon-coated fibers: excellent for deep UV application
- no Impact from electronic noise: maintain signal clarity and reliability

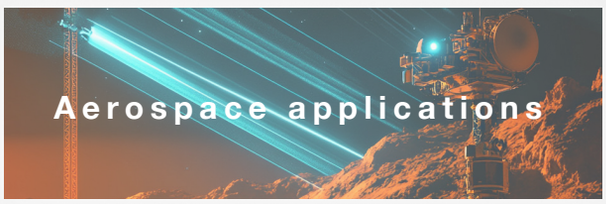
FIND A SOLUTION FOR YOUR APPLICATIONS

- high power capabilities
- kW range fiber bundle solution for the application:CFB
- despeckle: solution using laser as light source

- light delivery: improve efficiency in UV applications
- reflection probe: enable accurate surface processing
- deep UV fibers

- targeted light delivery: directs light precisely where needed in the process
- broad spectral range: supports diverse applications with wide-range spectral transmission
- high precision: enhances manufacturing accuracy and efficiency
- reflecting probes: Improves measurement accuracy and process control

- SPR (Surface Plasmon Resonance): boost sensitivity in inspection systems
- SERS (Surface Enhanced Raman Spectroscopy): enable detailed molecular analysis
- no cross-talk: ensure clear, accurate in each fiber in fiber bundle
- light/signal delivery: optimize inspection system performance
- no impact from electronic noise: maintain signal signal to noise ratio



- quality control: ensure precision and reliability in aerospace components
- typical products: support various aerospace technologies.
- LIDAR: enhance navigation and mapping
- telescope: Improve observational capabilities
- harsh environment: withstand extreme conditions
- military Industry: meet rigorous defense standards and applications
- vacuum compatibility

- military: ensure secure and reliable communication
- high-speed data transmission: facilitate fast and efficient data exchange

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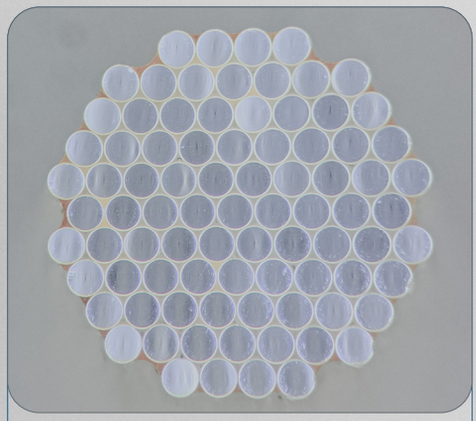
5 DIFFERENT BUNDLE END-TREATMENT TECHNOLOGIES

GLUED BUNDLE (GB)



GENERAL PROPERTIES:

- fill factor around 0.85
- circular, slit, rectangular active areas possible
- NA values 0.12, 0.22, 0.26, 0.36
- low transsmision, 75% as max
- max operating temperature determined by epoxy, max 260°C
- high absorption of miscoupled light
- max operating power in order of magnitude of 10W
- suitable for low optical power sources

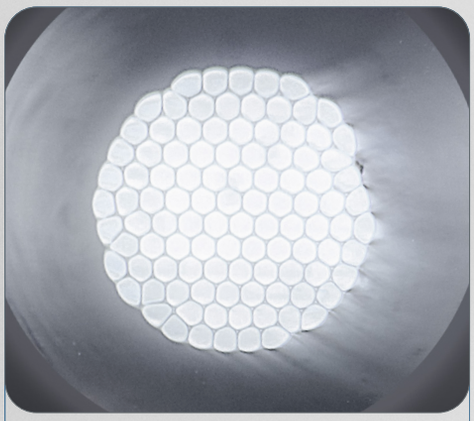
BENEFITS:

- input output shape transformation
- defined or equal energy distribution for furcated options
- low costs

APPLICATIONS:

- laser & light delivery
- AI & data
- analytical & sensing
- scientific
- medical diagnostics & biophotinics
- aerospace & defense

HEXAGON FUSED BUNDLES (HFB)



GENERAL PROPERTIES:

- fill factor around 0.93
- circular or inscribed in circle active ares possible due to technical capillary
- NA values 0.12 and 0.22
- high transmission, 90% max
- max operating temperature of bundle for tip ~2000°C, for ferulle 600°C
- high absorption of miscoupled light because of capillary
- max operating power in order of magnitude of 100W

BENEFITS:

- improved transmission efficiency
- harsh environment compatibility
- medium optical power compatibility
- defined or equal energy distribution for furcated options
- medium costs

APPLICATIONS:

- laser & light delivery
- harsh environment
- analytical & Sensing
- UV/IR curring
- scientific
- medical diagnostics & biophotinics
- aerospace & defense

CLAD FUSED BUNDLES (CFB)

GENERAL PROPERTIES:

- fill factor around 1
- freedom of shapes starting with circular and rectangular areas, while mixture of positive, negative angles and curvatures are possible
- NA values up to 0.37
- high transmission, 92-94% max
- max operating temperature of bundle for tip ~2000°C, for ferulle 600°C
- low absorption of miscoupled light, heat dissipation possible
- max operating power in order of magnitude of kW

BENEFITS:

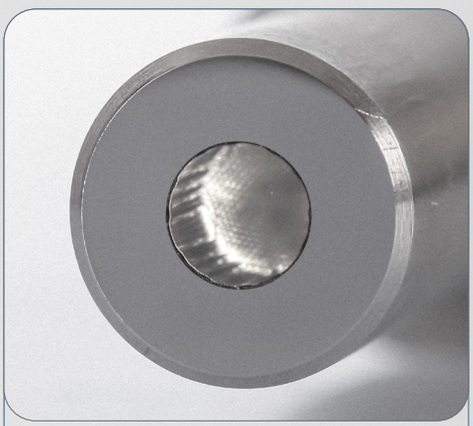
- high optical power compatibility
- freedom of active area shapes
- imaging bundle options
- harsh environment compatibility
- high transmission efficiency
- defined or equal energy distribution for furcated options

APPLICATIONS:

- high optical power laser & light delivery
- harsh environment
- analytical & Sensing
- UV/IR curring
- scientific
- medical diagnostics & biophotinics
- aerospace & defense

FIND A SOLUTION FOR YOUR APPLICATIONS

MONOLITH FUSED BUNDLES (MFB)



GENERAL PROPERTIES:

- fill factor 1
- fredom of shapes starting with circular and rectangular ares, while mixture of positive, negative angles and curvatures are possible
- NA value 0.37
- high transmission, 92-94% max
- max operating temperature of bundle for tip ~2000°C, for ferulle 600°C
- low absorption of miscoupled light, heat dissipation possible
- max operating power in order of magnitude of 100W

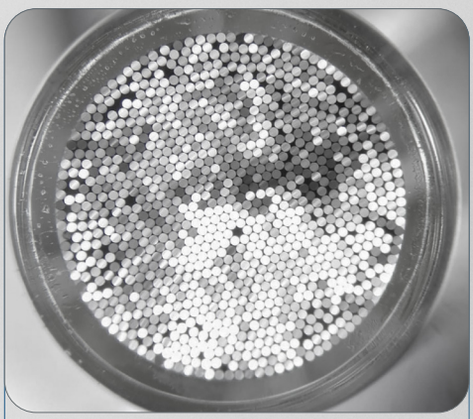
BENEFITS:

- near field homogenization (Top-Hat)
- medium optical power compatibility
- harsh environment compatible
- high transmission efficiency
- defined or equal energy distribution for furcated options
- medium costs

APPLICATIONS:

- laser & light delivery
- UV/IR curring
- scientific
- medical diagnostics & biophotinics
- aerospace & defense

STACKED FIBER BUNDLE (SFB)



GENERAL PROPERTIES:

- fill factor around 0.85
- circular active areas possible
- NA values 0.12 and 0.22
- low transsmision, 75% as max
- max operating temperature of bundle for tip ~120°C
- high absorption of miscoupled light
- max operating power TBD

BENEFITS:

- optimized tansmission efficiency at DUV, especially harmonics of Nd:YAG
- de-speckling
- solarization (photodarkening) resistance
- harsh environment compatible
- medium costs

APPLICATIONS:

- high power DUV light delivery systems
- semiconductors

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HYDROGEN SATURATED FIBER

UV 190–1200nm | DUV 190–1200nm | ACS: UV 190–1200nm; FW 300–2400nm | **DUV...CPH 190–800nm**

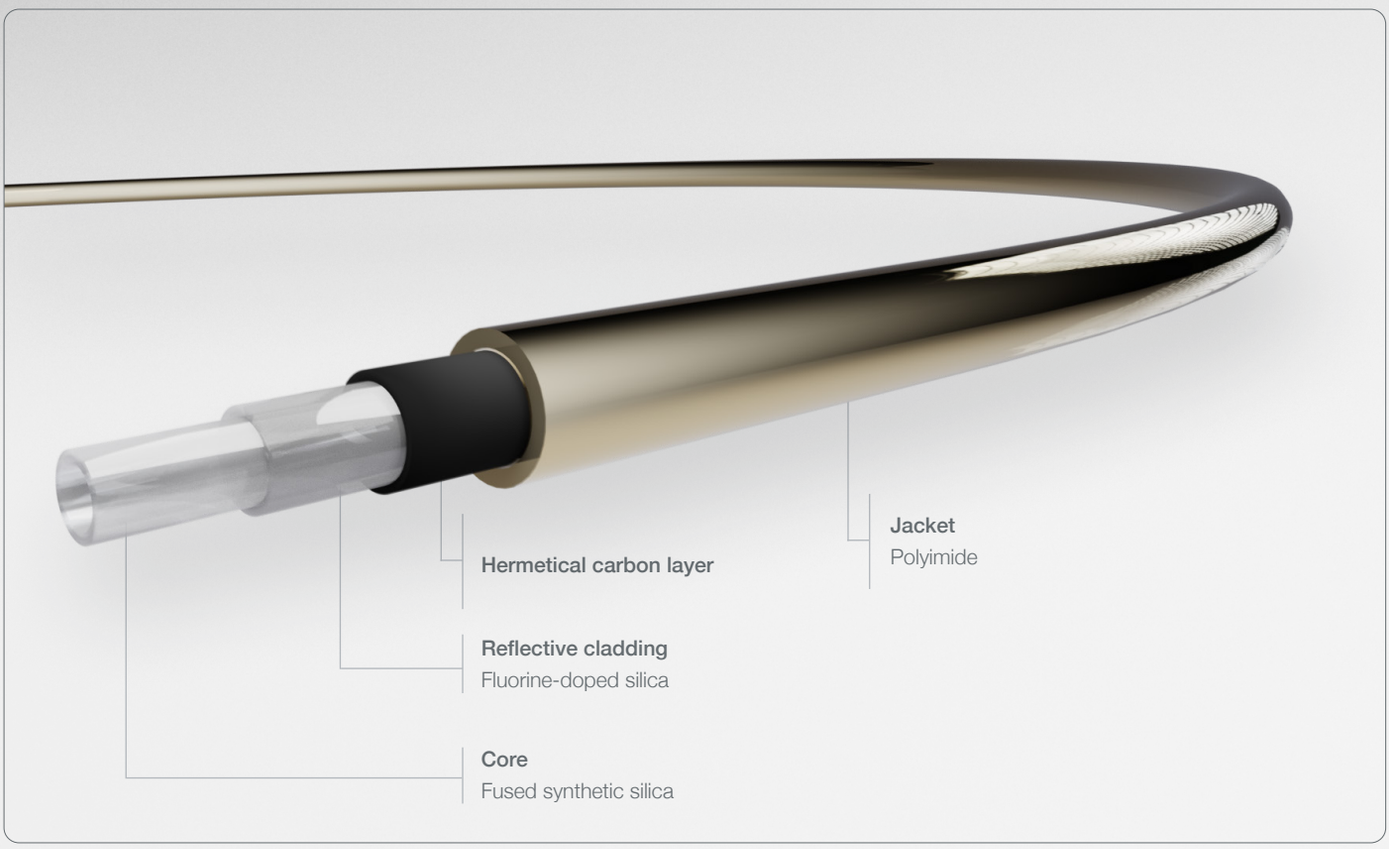
XUV 308nm | CO2 9.6–10.6µm | WF 400–2400nm | HWF 350–2200nm | UVWF 350–2200nm | WFGe 400-2400nm

MEDICAL LASER / INDUSTRIAL LASER / HIGH POWER LASER DELIVERY / UV DELIVERY SYSTEMS / ANALYTICAL SENSING / SPECTROSCOPY

FIBER TYPE:
SILICA/SILICA, STEP INDEX, MULTIMODE, SOLARIZATION RESISTANT

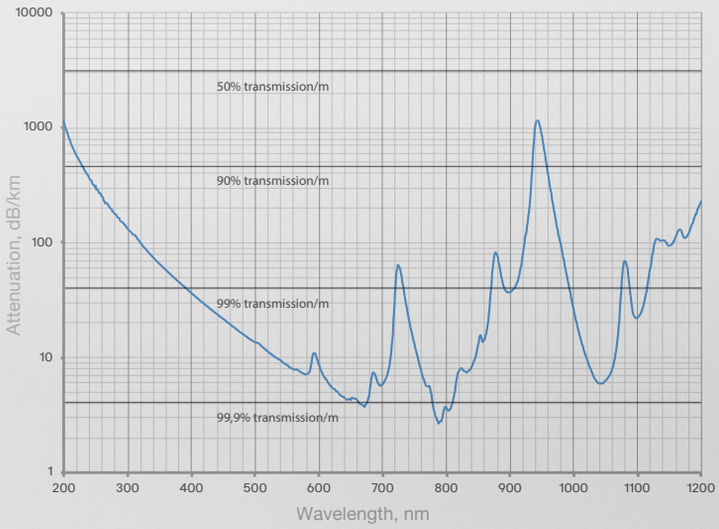
Outstanding purity of High OH content fused silica material guaranties excellent transparency at UV-VIS wavelengths making Lightguide DUV...CPH fibers first choice for unlimited applications. Silica/silica structure of this fiber type provide the highest optical performance all through number of parameters - from transmission to damage threshold level. THIS FIBER IS HYDROGEN SATURATED and COATED WITH HERMETICAL CARBON LAYER. Hydrogen reacts with defects coused by UV exposure ensuring superior transmission.

FIBER STRUCTURE

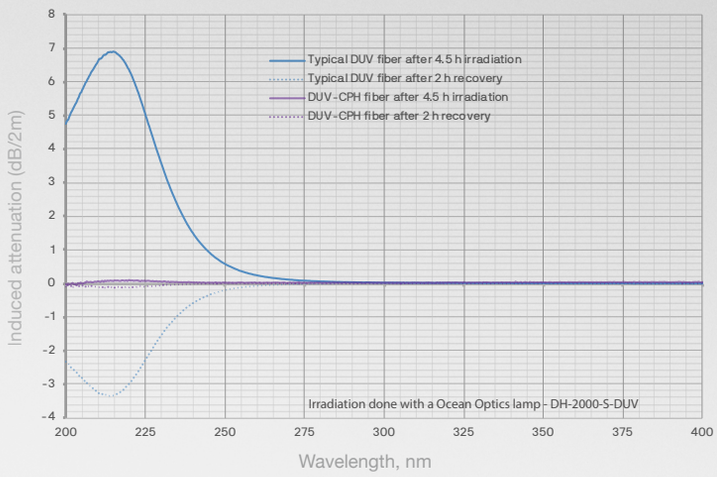


OPTICAL DATA

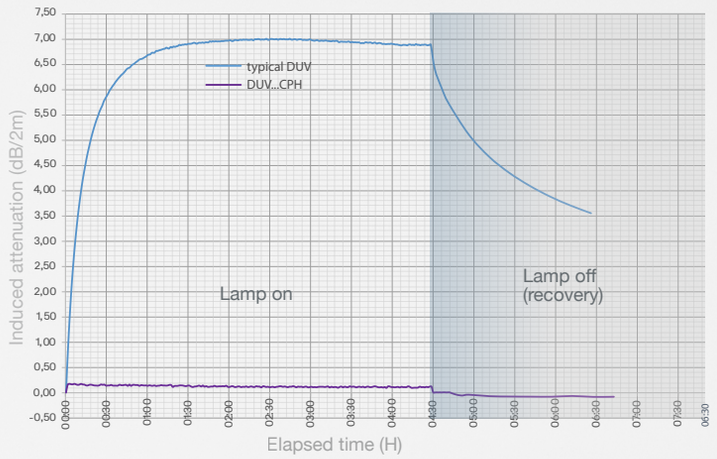
Graph no. 1—Spectral attenuation of typical DUV…CPH fiber (200 µm)



Graph no. 2—Induced Attenuation spectra for typical DUV and DUV..CPH fibers (200 µm)



Graph no. 3—Induced Attenuation at 214 nm for typical DUV and DUV..CPH fibers (200 µm)



Solarization resistant fiber

Hydrogen loading does not affect (lower) initial UV attenuation spectra

Hydrogen loading reduce solarization by one order of magnitude

DUV…CPH fibers reach solarization saturation within minutes (based on measurement using specific lamp)

SPECIFICATIONS

PHYSICAL

Available core Ø:
70 - 600 µm, larger upon a request

Core shapes:
circular (standard)

Standard Ø tolerances of fiber layers:
Core ± 2%
Reflecting cladding ± 2%
Jacket ± 5%

Operating t°:
-190 to +150°C

CCDR (clad to core ratio):
1.10, customized

Proof test:
100 or 70 kpsi

Bending radius, mm
Momentary: 50 x glass diameter, mm
Long term: 120 x glass diameter, mm

CHEMICAL

Core material:
Fused synthetic silica

OH content in core material:
600...800 ppm

Reflective cladding material:
Fluorine-doped silica

OPTICAL

Spectral attenuation data (graph no. 1)

UV induced transmission changes at 214 nm and attenuation (graph no. 3)

Operating wavelength range:
190 – 800 nm

NA (numerical aperture):
0.22 ± 0.02 as standard others upon request

LOW OH FIBER FOR VIS-NIR

UV 190–1200nm | DUV 190–1200nm | ACS: UV 190–1200nm; FW 300–2400nm | DUV...CPH 190–800nm

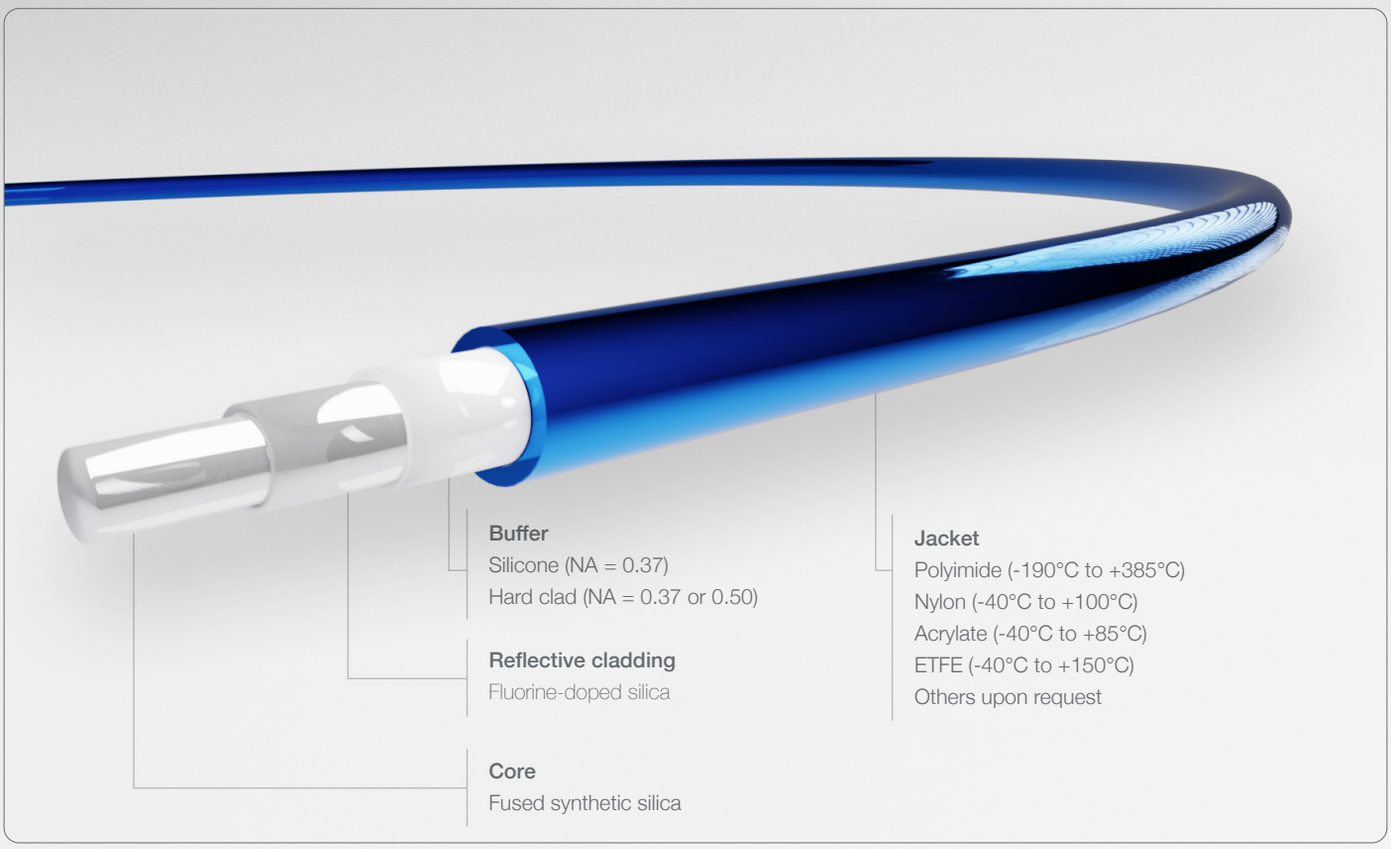
XUV 308nm | CO2 9.6–10.6µm | **WF 400–2400nm** | HWF 350–2200nm | UVWF 350–2200nm | WFGe 400-2400nm

MEDICAL LASER / INDUSTRIAL LASER / HIGH POWER LASER DELIVERY / NIR DELIVERY SYSTEMS / ANALYTICAL SENSING / SPECTROSCOPY

FIBER TYPE:
SILICA/SILICA, STEP INDEX, MULTIMODE

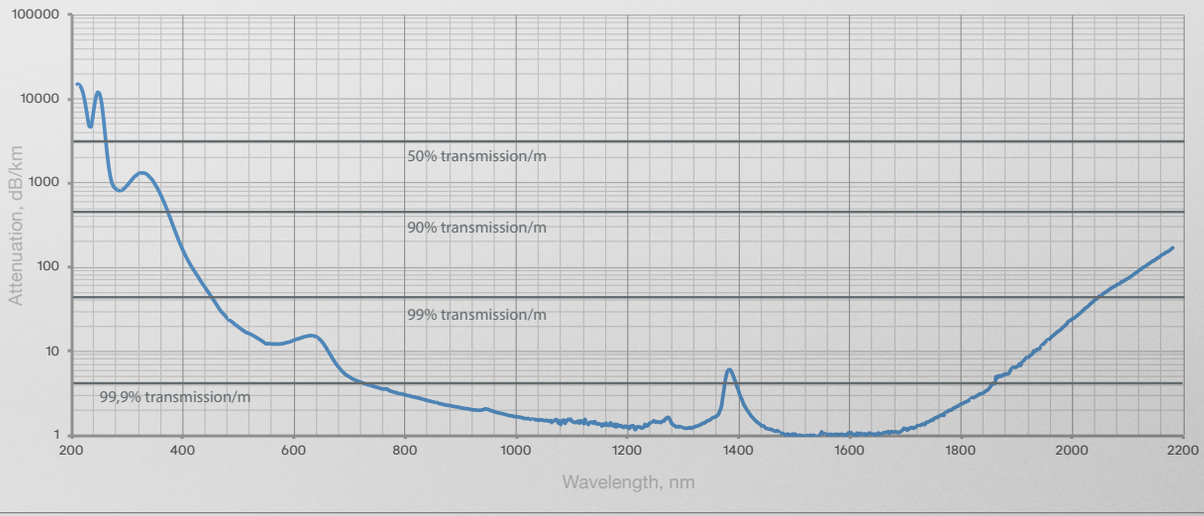
Outstanding purity of Low OH content fused silica material guaranties excellent transparency at VIS-NIR wavelengths making Lightguide WF fibers first choice for unlimited applications. Silica/silica structure of this fiber type provide the highest optical performance all through number of parameters - from transmission to damage threshold level. Fiber drawing capabilities allows produce different diameter custom-made fibers and select perfect fit for your application.

FIBER STRUCTURE



OPTICAL DATA

Graph no. 1—Spectral attenuation attenuation of WF fiber.



SPECIFICATIONS

PHYSICAL

Available core Ø:
70 - 2200 µm

Core shapes:
circular (standard), rectangular, hexagonal, octagonal, non-circular

Standard Ø tolerances of fiber layers:
Core ± 2%
Cladding ± 2%
Buffer ± 3%
Jacket ± 5%

Operating t°:
-190 to +385°C (depend on selected buffer and jacket materials)

CCDR (clad to core ratio):
1.05, 1.10, 1.20, 1.25, 1.4, customized

Proof test:
100kpsi for (ETFE, Acrylate, Nylon jacket)
100 or 70 kpsi (for Polyimide jacket)

Bending radius, mm
Momentary: 50 x glass diameter, mm
Long term: 120 x glass diameter, mm

OPTICAL

Spectral attenuation and transmission data (graph no. 1)

Operation wavelength range:
400-2400nm

NA (numerical):
0.12, 0.22, 0.27, 0.37, 0.50

NA tolerance:
± 0.02

CHEMICAL

Core material:
Fused synthetic silica

OH content in core material:
<0.7ppm, typical 0.1ppm

Cl content in core:
≤2500ppm

Reflective cladding material:
F-doped silica

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HIGH OH FIBER FOR UV-VIS

UV 190–1200nm | DUV 190–1200nm | ACS: UV 190–1200nm; FW 300–2400nm | DUV...CPH 190–800nm

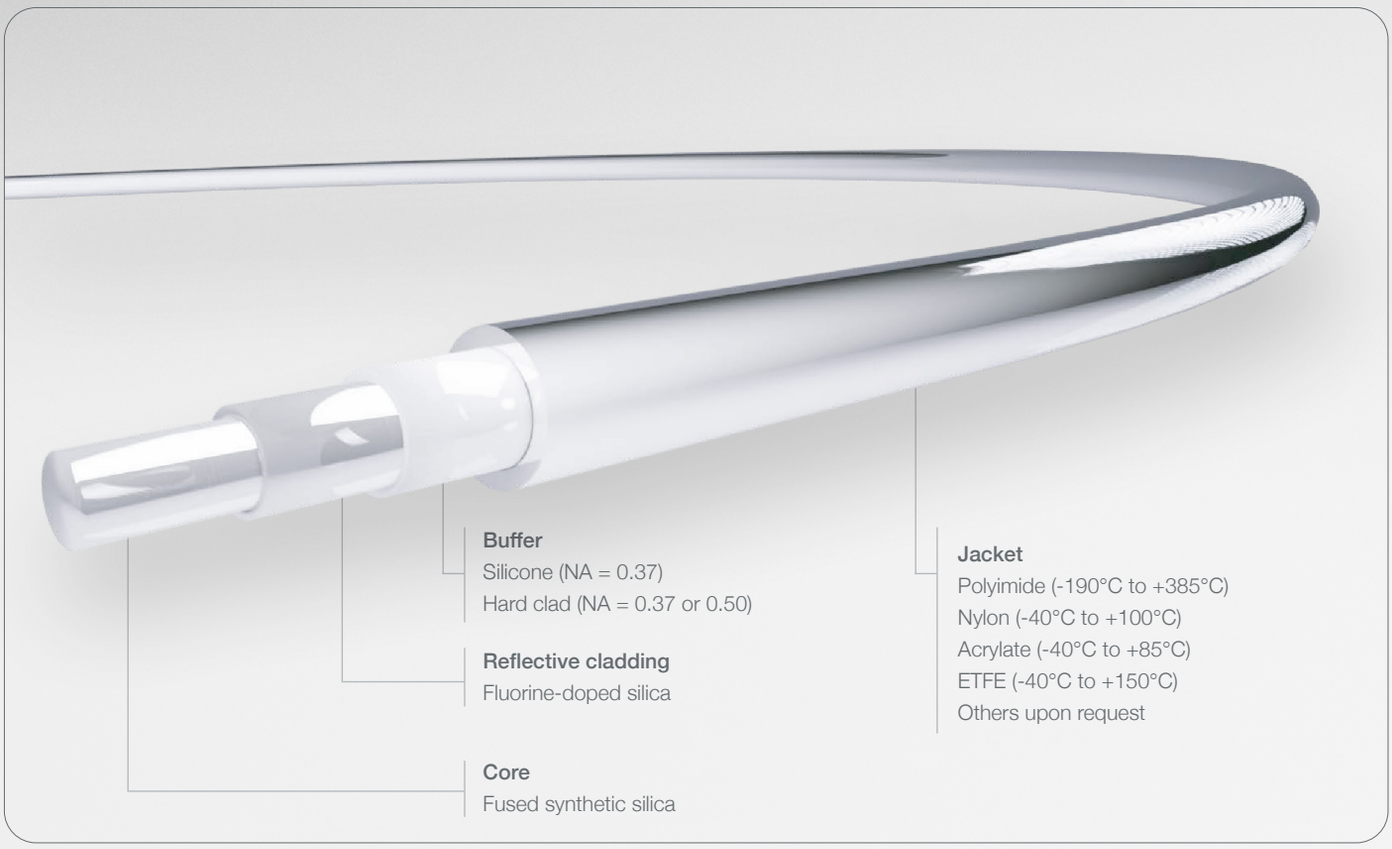
XUV 308nm | CO2 9.6–10.6µm | WF 400–2400nm | HWF 350–2200nm | UVWF 350–2200nm | WFGe 400-2400nm

MEDICAL LASER / INDUSTRIAL LASER / HIGH POWER LASER DELIVERY / UV DELIVERY SYSTEMS / ANALYTICAL SENSING / SPECTROSCOPY

FIBER TYPE:
SILICA/SILICA, STEP INDEX, MULTIMODE

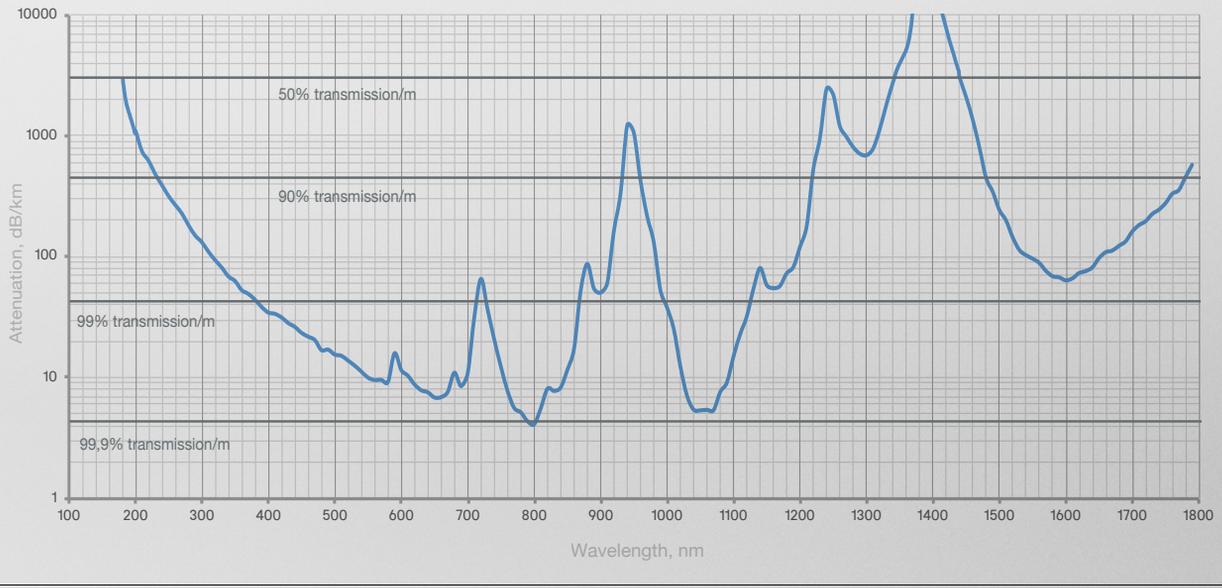
Outstanding purity of High OH content fused silica material guaranties excellent transparency at UV-VIS wavelengths making Lightguide UV fibers first choice for unlimited applications. Silica/silica structure of this fiber type provide the highest optical performance all through number of parameters - from transmission to damage threshold level. Fiber drawing capabilities allows produce different diameter custom-made fibers and select perfect fit for your application.

FIBER STRUCTURE



OPTICAL DATA

Graph no. 1—Spectral attenuation of typical UV fiber.



SPECIFICATIONS

PHYSICAL

Available core Ø:
70-2200 µm

Core shapes:
circular (standard), rectangular, hexagonal, octagonal, non-circular

Standard Ø tolerances of fiber layers:
Core ± 2%
Cladding ± 2%
Buffer ± 3%
Jacket ± 5%

Operating t°:
-190°C to +385°C (depend on selected buffer and jacket materials)

CCDR (clad to core ratio):
1.05, 1.10, 1.20, 1.25, 1.4, customized

Proof test:
100kpsi for (ETFE, Acrylate, Nylon jacket)
100 or 70 kpsi (for Polyimide jacket)

Bending radius, mm
Momentary: 50 x glass diameter, mm
Long term: 120 x glass diameter, mm

OPTICAL

Spectral attenuation data (graph no. 1)

Operating wavelength range:
190-1200 nm

NA (numerical aperture):
0.12, 0.22, 0.27, 0.37, 0.50

NA tolerance:
± 0.02

CHEMICAL

Core material:
Fused synthetic silica

OH content in core material:
700 ppm typically

Cl content in core:
200...300 ppm

Reflective cladding material:
F-doped silica

HIGH OH FIBER FOR DUV

UV 190–1200nm | **DUV 190–1200nm** | ACS: UV 190–1200nm; FW 300–2400nm | DUV...CPH 190–800nm

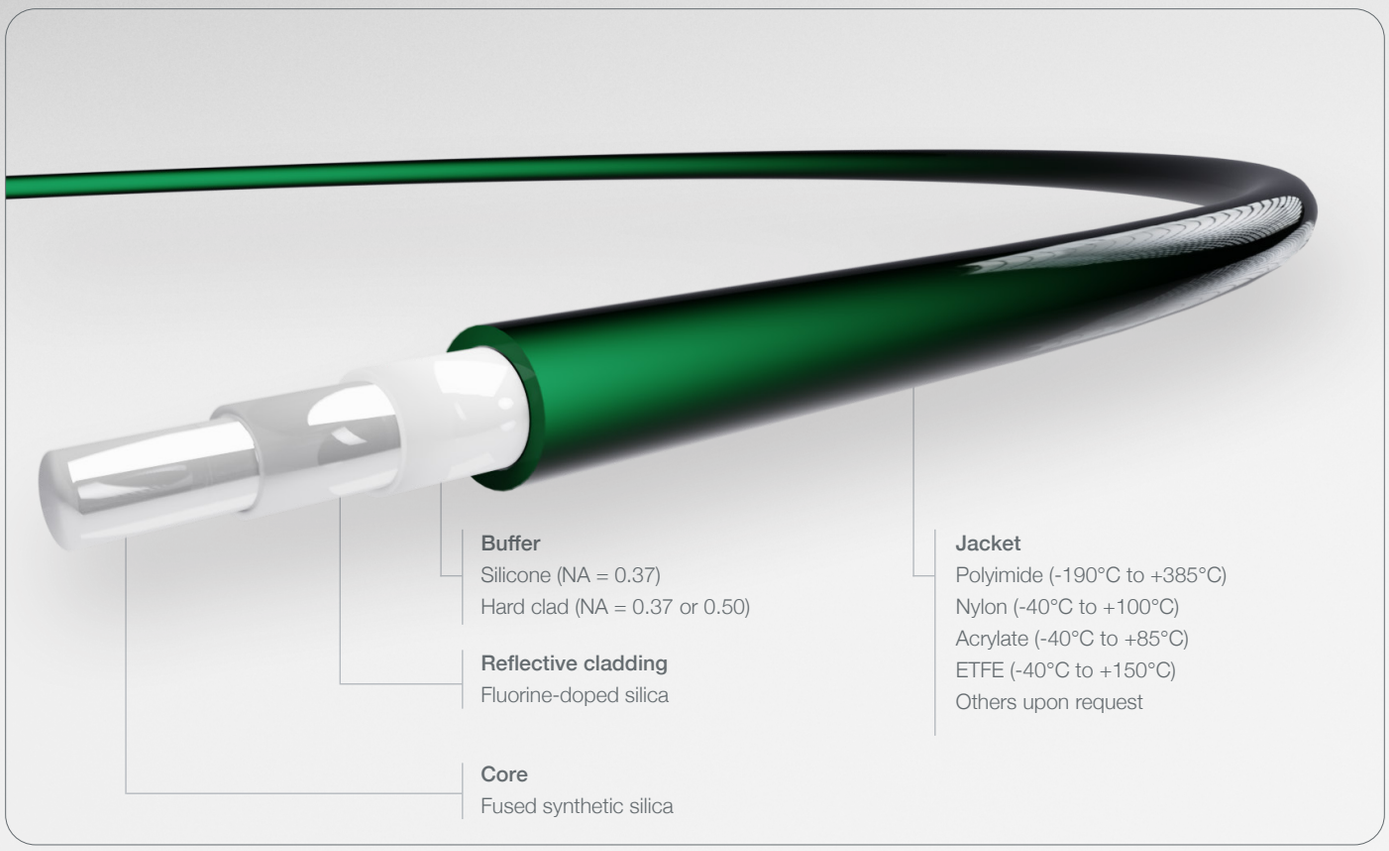
XUV 308nm | CO2 9.6–10.6µm | WF 400–2400nm | HWF 350–2200nm | UVWF 350–2200nm | WFGe 400-2400nm

MEDICAL LASER / INDUSTRIAL LASER / HIGH POWER LASER DELIVERY / UV DELIVERY SYSTEMS / ANALYTICAL SENSING / SPECTROSCOPY

FIBER TYPE:
SILICA/SILICA, STEP INDEX, MULTIMODE, IMPROVED SOLARIZATION RESISTANCE

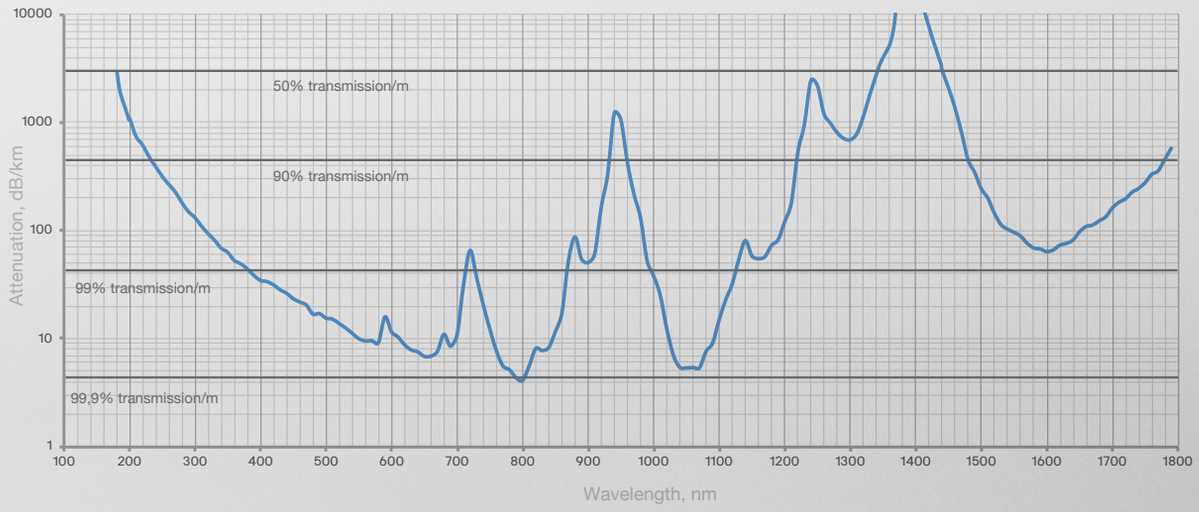
Outstanding purity of High OH content fused silica material guaranties excellent transparency at UV-VIS wavelengths making Lightguide DUV fibers first choice for unlimited applications. Special meterial of DUV fiber shows improved solarization resistance properties, it compared with standart UV grade fiber. Silica/silica structure of this fiber type provide the highest optical performance all through number of parameters - from transmission to damage threshold level.

FIBER STRUCTURE



OPTICAL DATA

Graph no. 1—Spectral attenuation of typical DUV fiber.



SPECIFICATIONS

PHYSICAL

Available core Ø:
70-2200 µm

Core shapes:
circular (standard), rectangular, hexagonal, octagonal, non-circular

Standard Ø tolerances of fiber layers:
Core ± 2%
Cladding ± 2%
Buffer ± 3%
Jacket ± 5%

Operating t°:
-190°C to +385°C (depend on selected buffer and jacket materials)

CCDR (clad to core ratio):
1.05, 1.10, 1.20, 1.25, 1.4, customized

Proof test:
100kpsi for (ETFE, Acrylate, Nylon jacket)
100 or 70 kpsi (for Polyimide jacket)

Bending radius, mm
Momentary: 50 x glass diameter, mm
Long term: 120 x glass diameter, mm

OPTICAL

Spectral attenuation data (graph no. 1)

Operating wavelength range:
190-1200 nm

NA (numerical aperture):
0.12, 0.22, 0.27, 0.37, 0.50

NA tolerance:
± 0.02

CHEMICAL

Core material:
Fused synthetic silica

OH content in core material:
600...800 ppm typically

Reflective cladding material:
F-doped silica

BROADBAND OPTICAL FIBER

UV 190–1200nm | DUV 190–1200nm | ACS: UV 190–1200nm; FW 300–2400nm | DUV...CPH 190–800nm

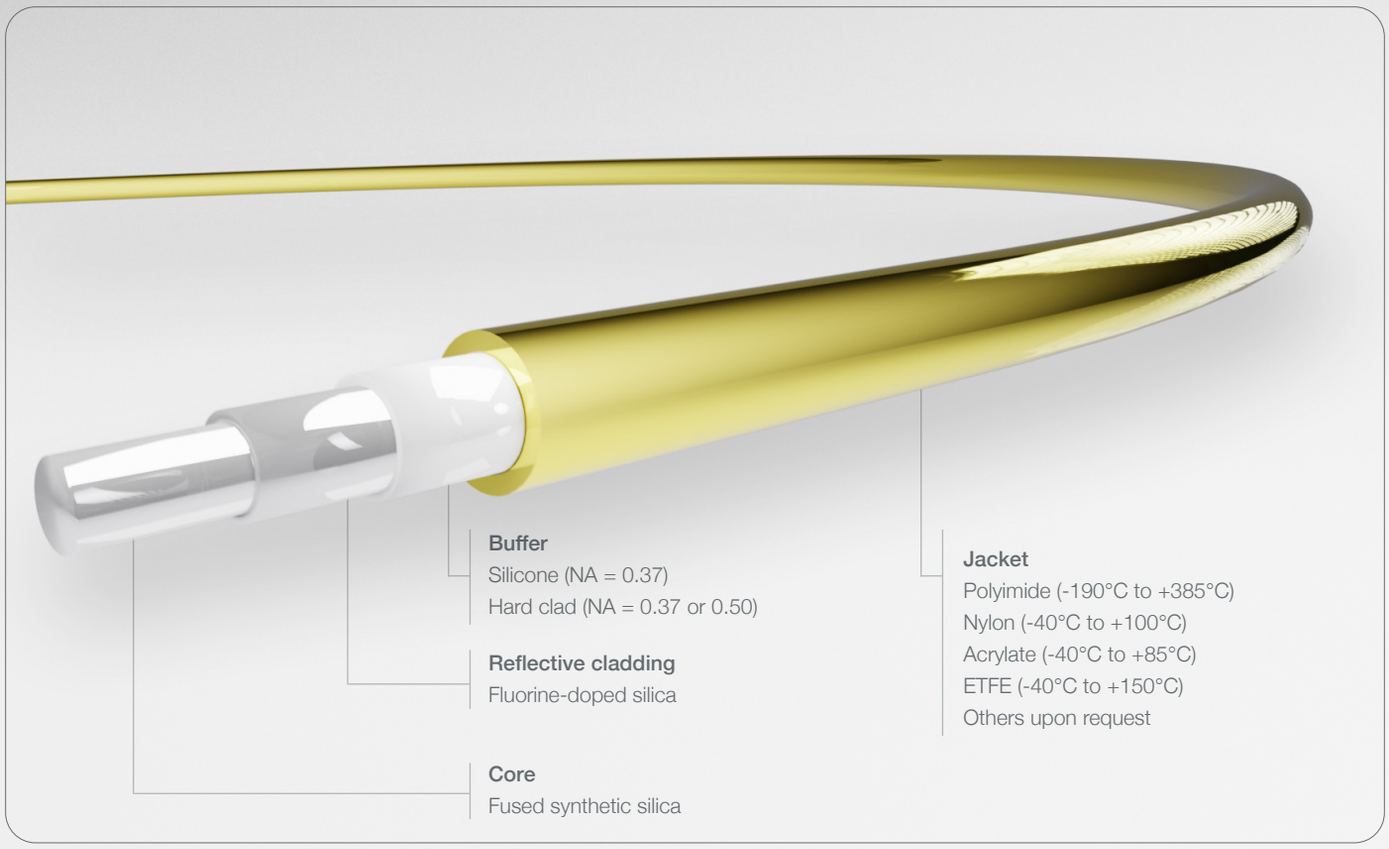
XUV 308nm | CO2 9.6–10.6µm | WF 400–2400nm | HWF 350–2200nm | **UVWF 350–2200nm** | WFGe 400-2400nm

MEDICAL LASER / INDUSTRIAL LASER / HIGH POWER LASER DELIVERY /BROADBAND DELIVERY SYSTEMS/ ANALYTICAL SENSING / BROAD RANGE SPECTROSCOPY / RADIATION RESISTANCE

FIBER TYPE:
SILICA/SILICA, STEP INDEX, MULTIMODE, BROADBAND, RADIATION HARDENED

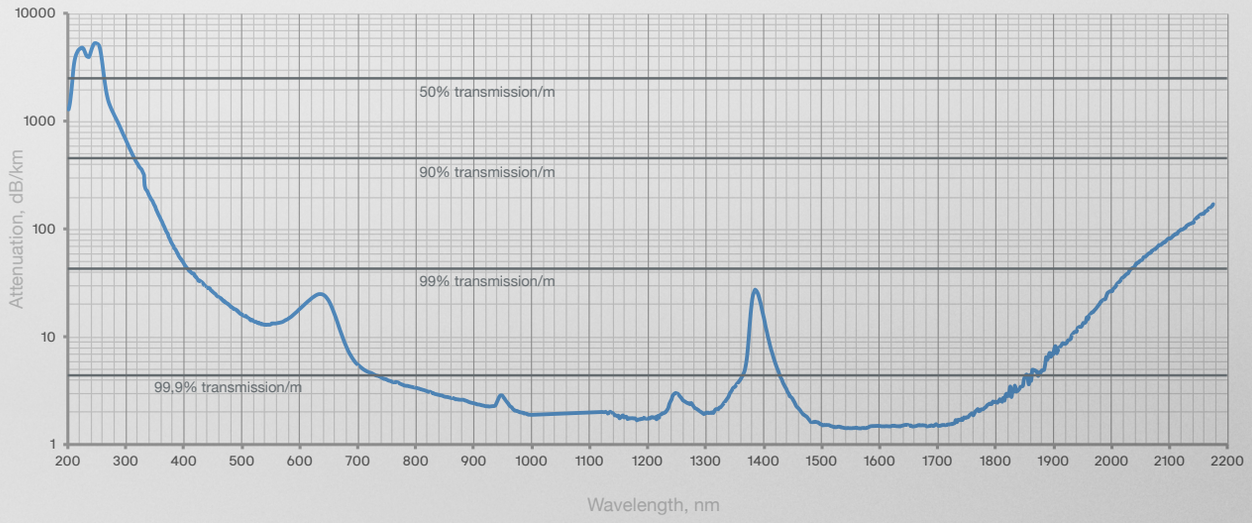
Outstanding purity of special fused silica material guaranties excellent transparency at UV-VIS-NIR wavelengths making Lightguide UVWF fibers first choice for unlimited applications. Silica/silica structure of this fiber type provide the highest optical performance all through number of parameters - from transmission to damage threshold level.

FIBER STRUCTURE



OPTICAL DATA

Graph no. 1—Spectral attenuation of typical UVWF fiber.



SPECIFICATIONS

PHYSICAL

Available core Ø:
70-2200 µm

Core shapes:
circular

Standard Ø tolerances of fiber layers:
Core ± 2%
Cladding ± 2%
Buffer ± 3%
Jacket ± 5%

Operating t°:
-190 to +385°C (depend on selected buffer and jacket materials)

CCDR (clad to core ratio):
1.05, 1.10 1.20, 1.25, 1.4, customized

Proof test:
100kpsi for (ETFE, Acrylate, Nylon jacket)
100 or 70 kpsi (for Polyimide jacket)

Bending radius, mm
Momentary: 50 x glass diameter, mm
Long term: 120 x glass diameter, mm

OPTICAL

Spectral attenuation and transmission data (graph no. 1)

Operating wavelength range:
350-2200 nm

NA (numerical aperture):
0.22, ± 0.02

CHEMICAL

Core material:
Fused synthetic silica

OH content in core material:
≤ 1 ppm

Cl content in core:
≤ 200 ppm

F content in core:
3000...4000 ppm

Reflective cladding material:
F-doped silica

SPECIAL FIBER FOR 308NM

UV 190–1200nm | DUV 190–1200nm | ACS: UV 190–1200nm; FW 300–2400nm | DUV...CPH 190–800nm

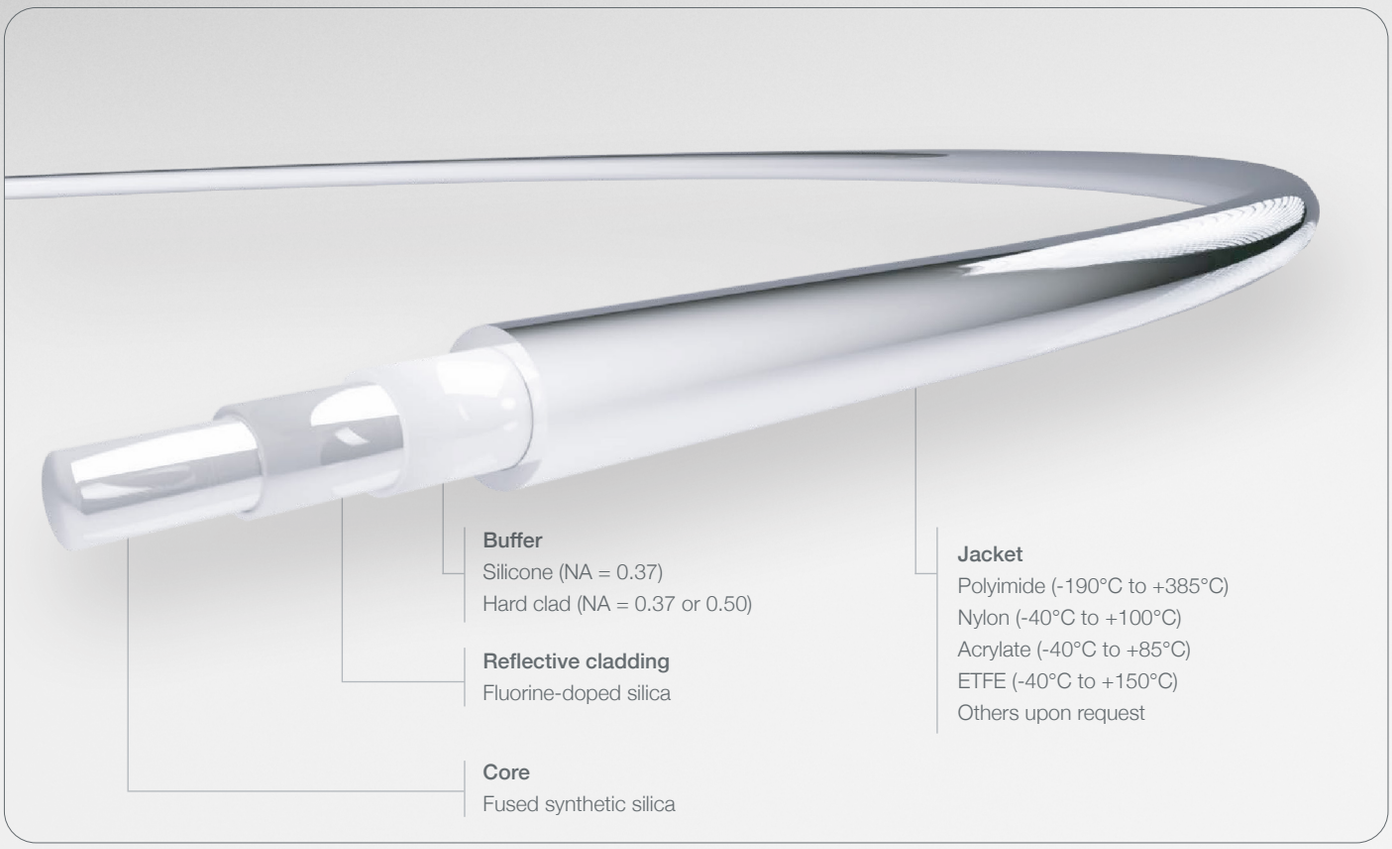
XUV 308nm | CO2 9.6–10.6µm | WF 400–2400nm | HWF 350–2200nm | UVWF 350–2200nm | WFGe 400-2400nm

MEDICAL LASER / INDUSTRIAL LASER / HIGH POWER LASER DELIVERY / UV DELIVERY SYSTEMS / ANALYTICAL SENSING / SPECTROSCOPY

FIBER TYPE:
SILICA/SILICA, STEP INDEX, MULTIMODE, LOW SOLARIZATION

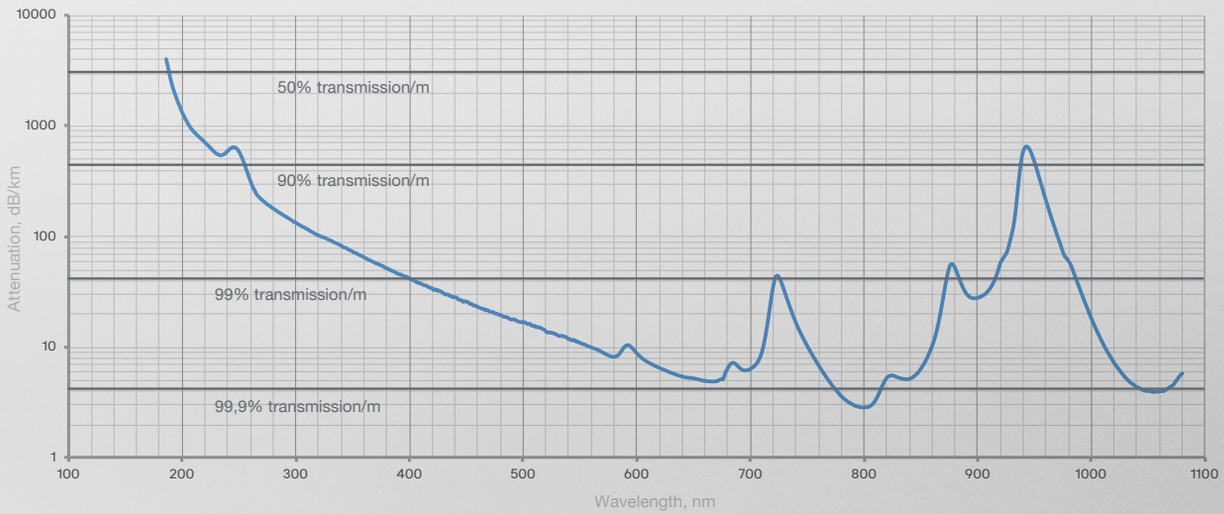
Outstanding purity of special fused silica material guaranties excellent transparency at UV-VIS wavelengths making Lightguide XUV fibers first choice for unlimited applications, it is specialy optimized for best performance at 308 nm. Silica/silica structure of this fiber type provide the highest optical performance all through number of parameters - from transmission to damage threshold level. Fiber drawing capabilities allows produce different diameter custom-made fibers and select perfect fit for your application.

FIBER STRUCTURE



OPTICAL DATA

Graph no. 1—Spectral attenuation of typical XUV fiber.



SPECIFICATIONS

PHYSICAL

Available core Ø:
70-2200 µm

Core shapes:
circular (standard), rectangular, hexagonal, octagonal, non-circular

Standard Ø tolerances of fiber layers:
Core ± 2%
Cladding ± 2%
Buffer ± 3%
Jacket ± 5%

Operating t°:
-190 to +385°C (depend on selected buffer and jacket materials)

CCDR (clad to core ratio):
customized

Proof test:
100kpsi for (ETFE, Acrylate, Nylon jacket)
100 or 70 kpsi (for Polyimide jacket)

Bending radius, mm
Momentary: 50 x glass diameter, mm
Long term: 120 x glass diameter, mm

OPTICAL

Spectral attenuation and transmission data (graph no. 1)

Operating wavelength range:
260-400 nm, low solarization at 308nm

NA (numerical aperture):
0.12, 0.22, 0.27, 0.37, 0.50

NA tolerance:
± 0.02

CHEMICAL

Core material:
Fused synthetic silica

OH content in core material:
400 ppm typically

Cl content in core:
200...300 ppm typically

Reflective cladding material:
F-doped silica

POLYMER CLAD FIBER

UV 190–1200nm | DUV 190–1200nm | ACS: UV 190–1200nm; FW 300–2400nm | DUV...CPH 190–800nm

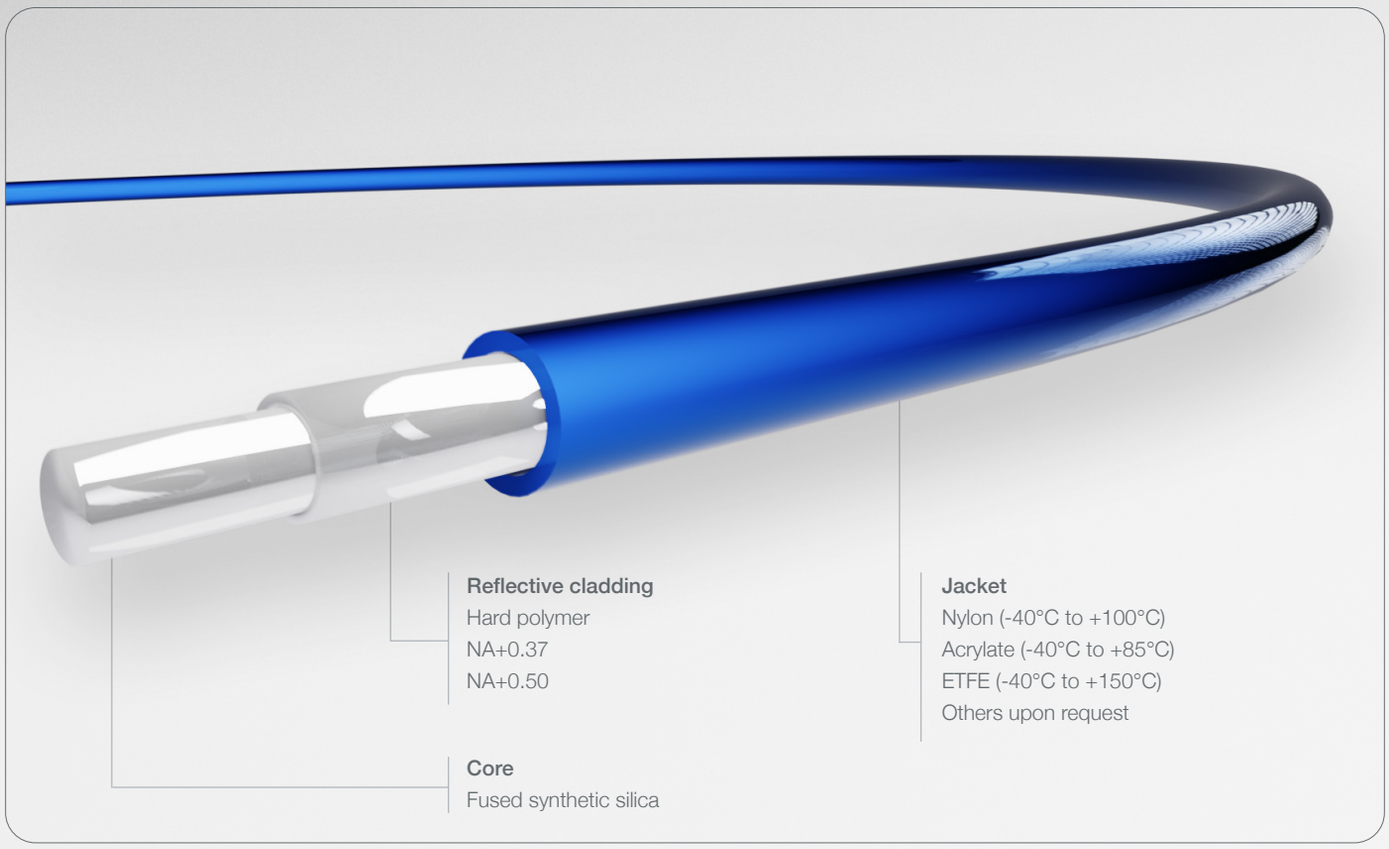
XUV 308nm | CO2 9.6–10.6µm | WF 400–2400nm | **HWF 350–2200nm** | UVWF 350–2200nm | WFGe 400-2400nm

MEDICAL LASER / INDUSTRIAL LASER / HIGH POWER LASER DELIVERY / ANALYTICAL SENSING / SPECTROSCOPY

FIBER TYPE: SILICA/POLYMER, STEP INDEX, MULTIMODE

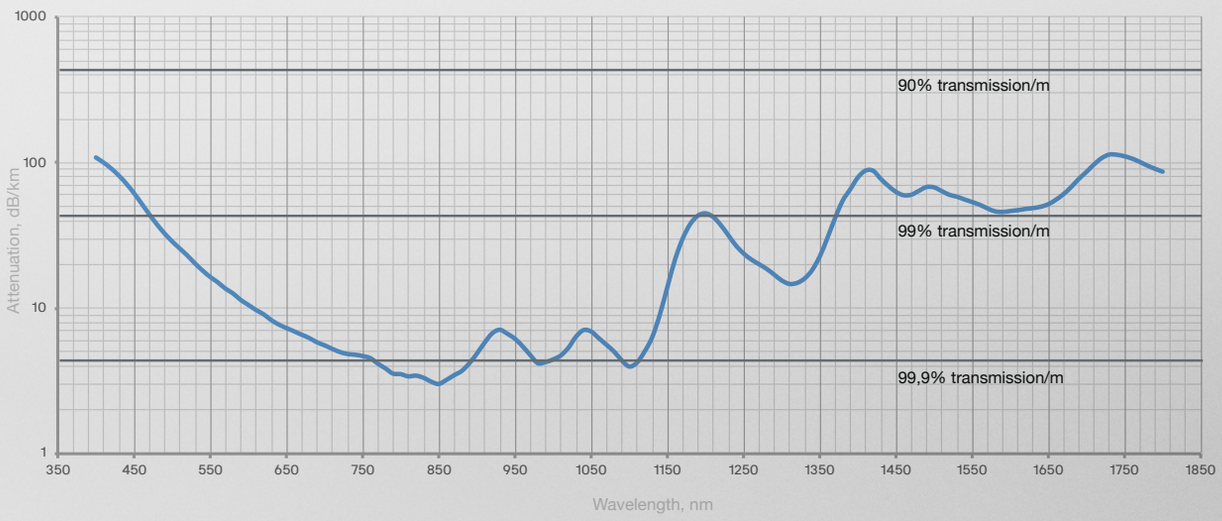
Silica/polymer structure of this fiber type provide benefits of high NA, while outstanding purity of Low OH content fused silica core material guaranties excellent transparency at VIS-NIR wavelengths making Lightguide HWF fibers first choice for numerous applications.

FIBER STRUCTURE



OPTICAL DATA

Graph no. 1—Spectral attenuation of typical HWF fiber.



SPECIFICATIONS

PHYSICAL

Available core Ø:
200-1500 µm, larger upon a request

Core shapes:
circular (standard)

Standard Ø tolerances of fiber layers:
Core ± 2%
Cladding ± 2%
Jacket ± 5%

Operating t°:
-40 to +150°C (depend on selected buffer and jacket materials)

Proof test:
100 kpsi

Bending radius, mm
Momentary: 50 x glass diameter, mm
Long term: 120 x glass diameter, mm

OPTICAL

Spectral attenuation data (graph no. 1)

Operating wavelength range:
350-2200 nm

NA (numerical aperture):
0.37 ± 0.02
0.50 ± 0.02

CHEMICAL

Core material:
Synthetic silica, Low OH

OH content in core material:
<0.7 ppm, typical 0.1 ppm

Reflective cladding material:
Hard polymer

Ge-DOPED CORE FIBER

UV 190–1200nm | DUV 190–1200nm | ACS: UV 190–1200nm; FW 300–2400nm | DUV...CPH 190–800nm

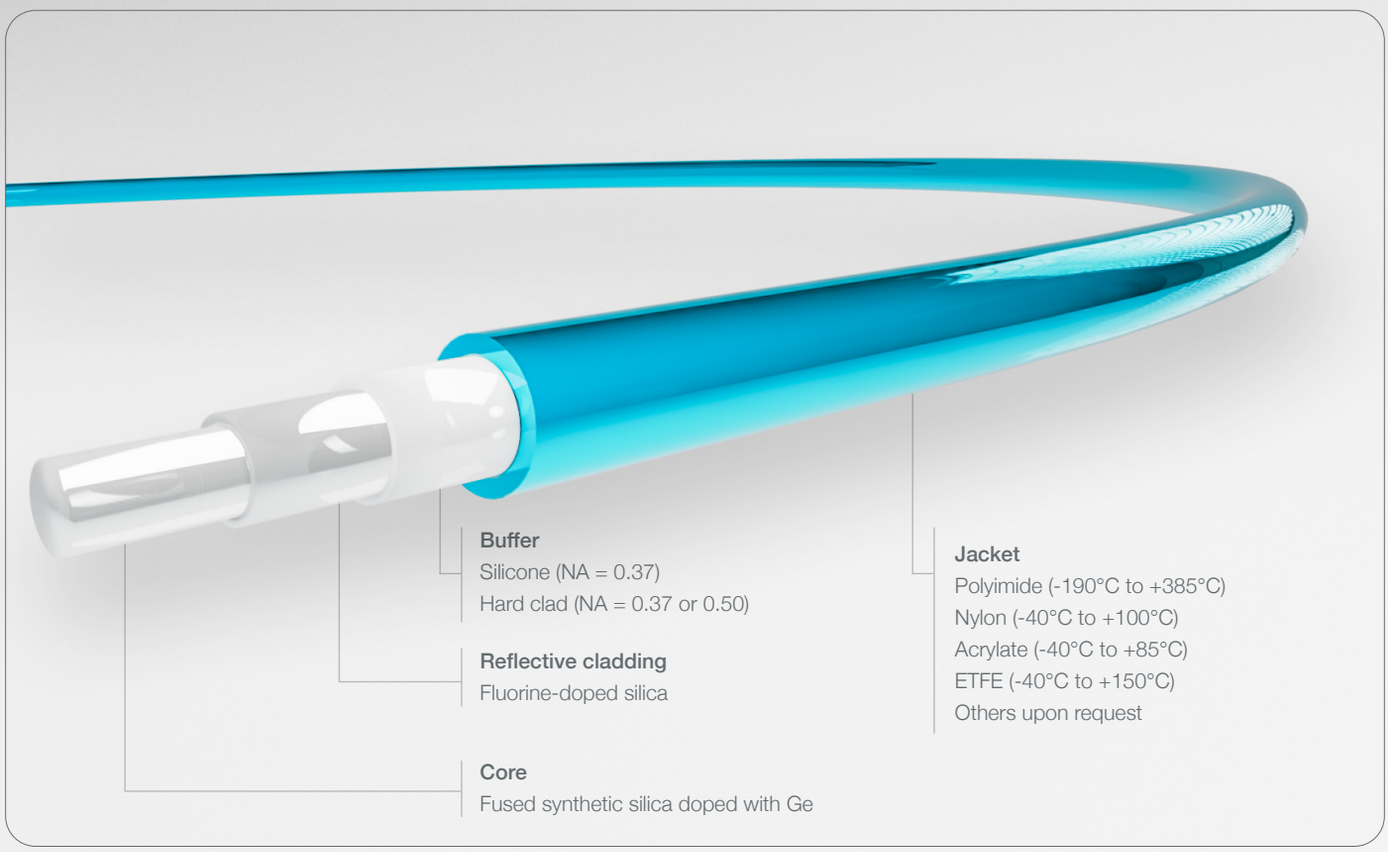
XUV 308nm | CO2 9.6–10.6µm | WF 400–2400nm | HWF 350–2200nm | UVWF 350–2200nm | **WFGe 400-2400nm**

CORE FIBER MEDICAL LASER / INDUSTRIAL LASER / HIGH NA DELIVERY SYSTEMS / ANALYTICAL SENSING / SPECTROSCOPY

FIBER TYPE:
SILICA/POLYMER, STEP INDEX, MULTIMODE

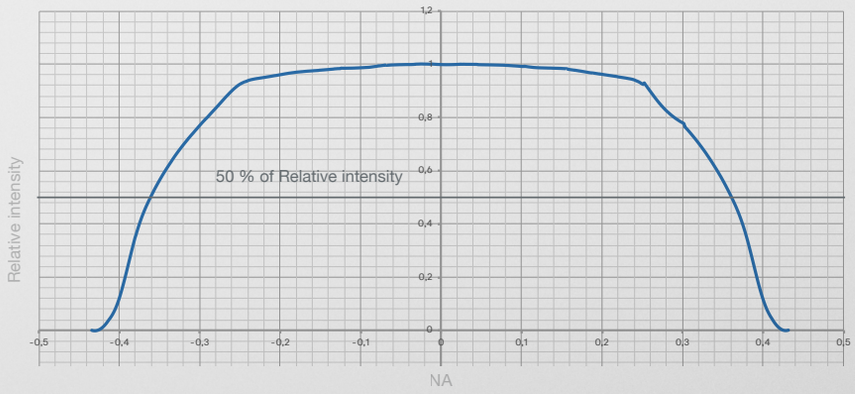
Unicality of this silica/silica structure fiber is NA=0.36±0.02. Low OH content, slightly Ge-doped fused silica core and F-doped silica reflective cladding ensures excellent transparency in spectral range 400-2400nm, while F-doped silica cladding allows utilize this type of fibers at high power applications and harsh environments. Silica/silica structure of this fiber type provide the highest optical performance all through number of parameters - from transmission to damage threshold level. Fiber drawing capabilities allows produce different diameter custom-made fibers and select perfect fit for your application.

FIBER STRUCTURE

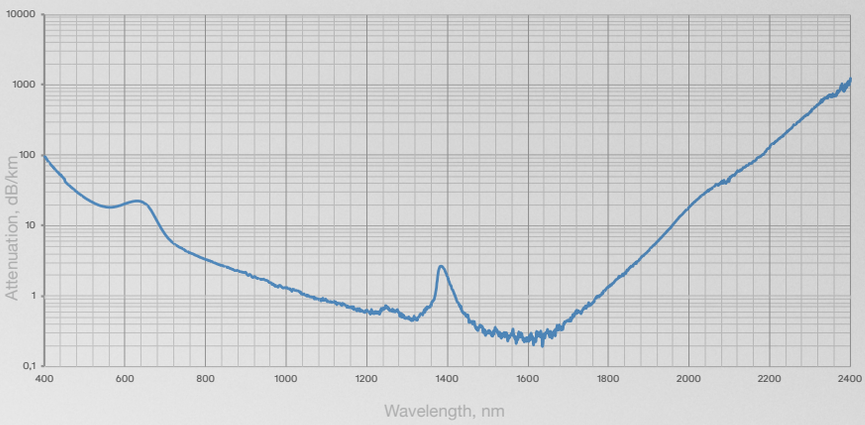


OPTICAL DATA

Graph no. 1—Output Light Intensity vs Numerical Aperture (Far-Field Pattern)



Graph no. 2—Spectral attenuation of typical WFGe fiber



SPECIFICATIONS

PHYSICAL

Available core Ø:
70-2200 µm

Core shapes:
circular

Standard Ø tolerances of fiber layers:
Core ± 2%
Cladding ± 2%
Buffer ± 3%
Jacket ± 5%

Operating t°:
-190 to +385°C (depend on selected buffer and jacket materials)

CCDR (clad to core ratio):
1.10

Proof test:
100kpsi for (ETFE, Acrylate, Nylon jacket)
100 or 70 kpsi (for Polyimide jacket)

Bending radius, mm
Momentary: 50 x glass diameter, mm
Long term: 120 x glass diameter, mm

OPTICAL

Spectral attenuation data (graph no. 2)

Operating wavelength range:
400-2400 nm

NA (numerical aperture) (graph nr.1)
0.36

NA tolerance:
± 0.02

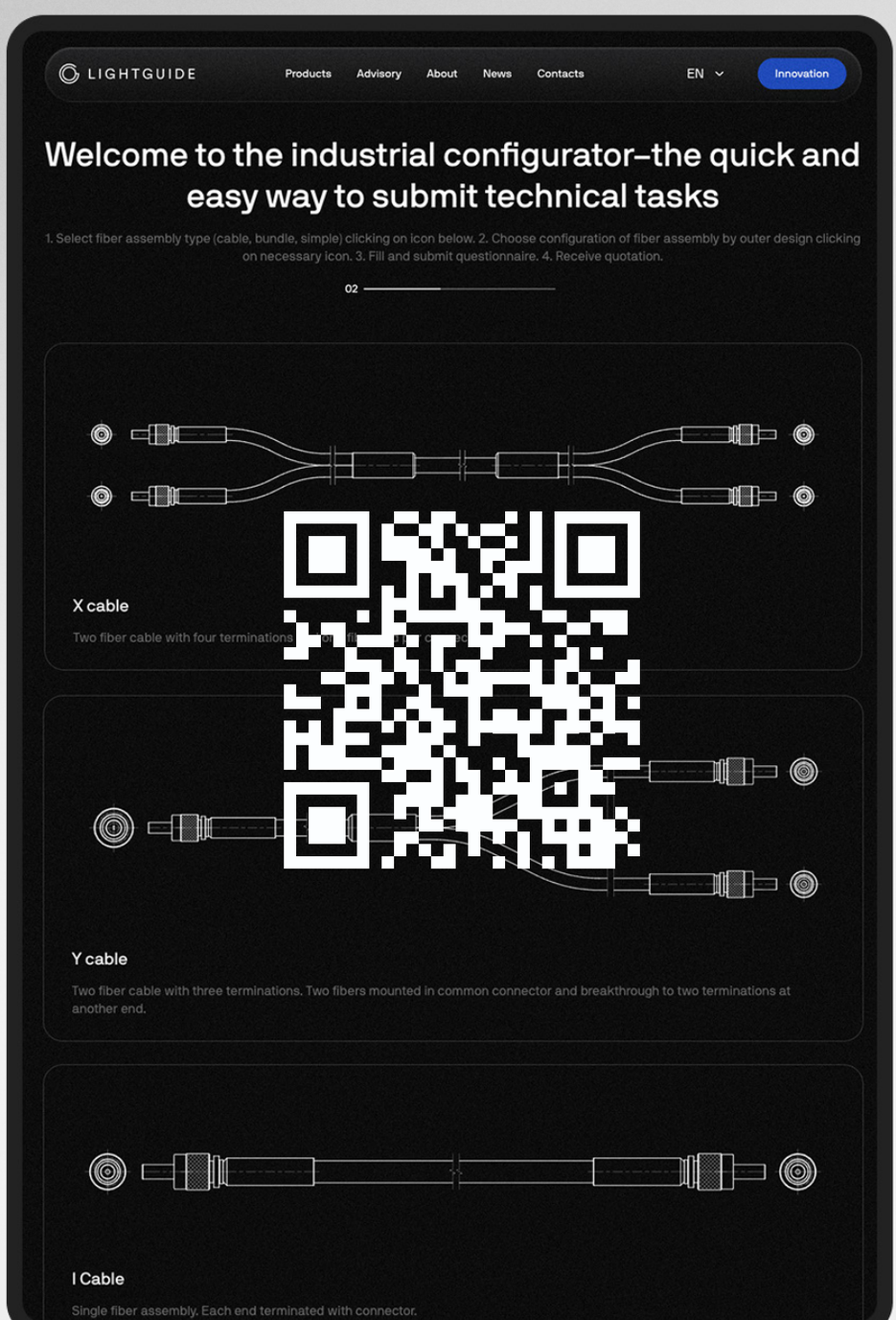
CHEMICAL

Core material:
Ge-doped fused synthetic silica

Reflective cladding material:
F-doped silica

LIGHTGUIDE

Create your own bundle



02/2026