SCHOTT® Light guide rods

Extremely customizable

SCHOTT's high-performance single-core or multi-core glass rods can be shaped according to your needs. Whether straight, 3D-shaped, double-tapered, multi-bent or the combination of various shapes – create your individual light guide design.

Our light guides rods are not only long-term RoHS-compliant but also fully autoclavable, biocompatible and chemically resistant. This ensures a safe, robust and hygienic device throughout the complete product life cycle.

Technical data					
Description	**Single Core Rod (SCR)**		**Multi Core Rod (MCR)**		
Core type	single		multi		
Glass fibers Material	conventional	PURAVIS®	conventional		PURAVIS®
Fiber diameter Depending on the application	1-19 mm		25 – 400 µm		
Typical numerical aperture λ = 587 nm	0.60	0.64	0.60	0.63	0.64
Typical acceptance angle 2α, V(λ)-Filter According to DIN 58 141 Part 3 Theoretical value at λ = 546nm	73 °	85 °	73 °	78 °	85 °
Eco-friendliness	lead-free	fully RoHS-compliant	lead-free		fully RoHS-compliant
Color Outer clad	clear, brown or black				
Shape	straight or custom shape (e.g. round, half-round, oval / flat, kidney-shaped)				
Biocompatibility According to DIN ISO 10993-5	Yes (certificate available upon request)				
Temperature operational Glass rod only	- 20 °C / - 4 °F ... + 350 °C / 662 °F				
Applicable wave length	350 – 900 nm				
Typical application	light homogenizer		dental illumination and dental curing caries detection and oral cancer screening diode laser applications (medical / industrial) beam detector and sensing tip		

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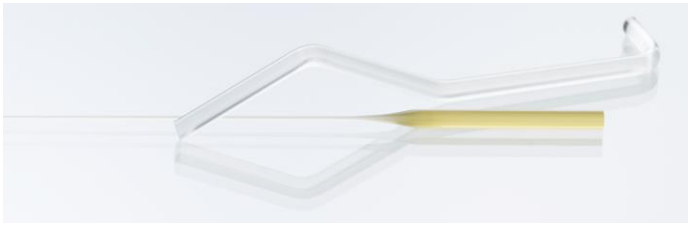
SCHOTT
glass made of ideas

Endless design options for light guide rods

Create your individual light guide design:
- straight,
- tapered
- multi-bent (2D / 3D)

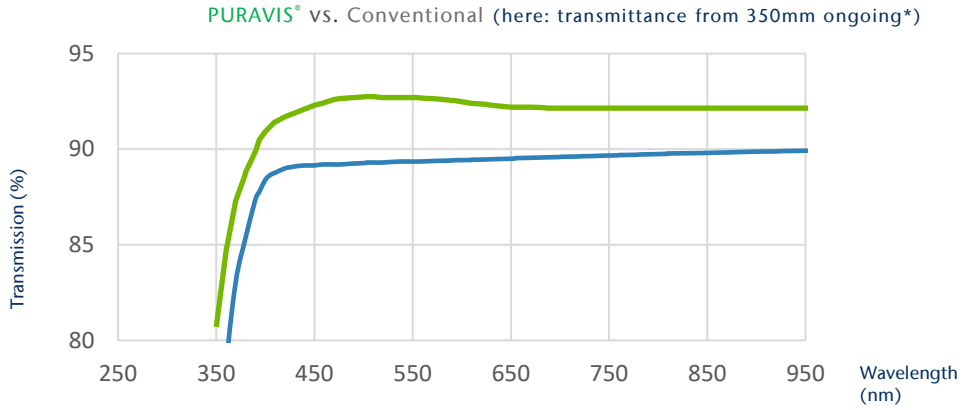
Combination of tapering and bending possible

Extremely high bending angle tolerance



Typical transmission (Measured in accordance with DIN 58 141 Part 2)

The transmission curves displayed below represent the typical manufacturing level for SCHOTT light guide rods.

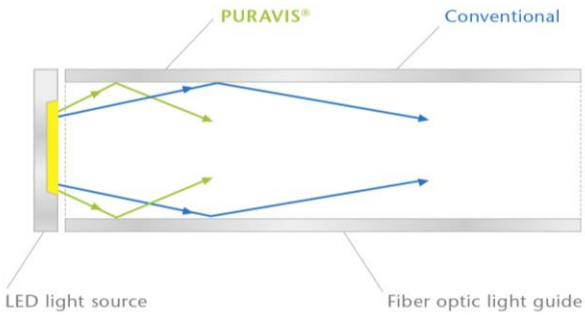


*More data upon request

Please note:
There is a minimal loss in transmission with blackened rods. The transmission of a Light Guide Rod changes after bending/shaping.

Numerical aperture (Measured in accordance with DIN 58 141 Part 3)

The numerical aperture (NA) of an optical system is a dimensionless number that characterizes the range of angles over which the system can accept or emit light. When all angles are equal or smaller than the acceptance angle, light is transmitted within the fiber.



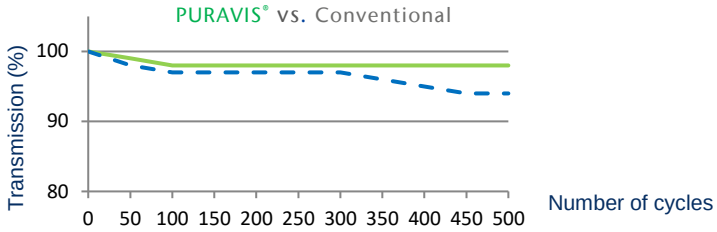
Light guide rods made of PURAVIS® fibers feature a larger numerical aperture (NA) and thus a larger acceptance angle than light guide rods made from conventional fibers (see data on page 1). This allows for a solid angle benefit and thus a better utilization of LED beam characteristics.

Long-term stability of SCHOTT PURAVIS®

SCHOTT PURAVIS® fibers feature excellent chemical stability. Core and cladding glasses have high chemical resistance which ensure long-term stability over lifetime under repeated autoclave cycles.

Validation of long-term stability by optical measurement

- Relative transmission measured in accordance with DIN 58 141 Part 2
- Aperture of light beam: 0.1
- Measurement wavelength: λ = 535 nm
- Prior to each measurement: cleaning of end surface with acetic acid 5%



Chemical resistance classes	Conventional	PURAVIS®
Acid resistance class SR (acc. to ISO 8424: 1996 [2])	1.0 - 2.2	**1.0**
Alkaline resistance class AR (acc. to ISO 10629: 1996[3])	1.0	**1.0**
Climatic resistance class CR (acc. to proposed standard ISO/CD13384 [1])	1.0 – 2.0	**1.0**
Stain resistance class: FR	0	**0**

Certification

SCHOTT offers high quality products and services along tight regulatory directives, including **ISO 13485, ISO 50001 and ISO 9001 / 14001**.

Outstanding optical performance

Chemical stability

Temperature resistance

Mechanical robustness

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SCHOTT AG, Hattenbergstrasse 10, 55122 Mainz, Germany
Phone: +49 (0) 6131/66-0, lightingimaging@schott.com

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