



SCHOTT®

Luminous cylindrical diffusers

Glass-based laser light delivery components for medical applications

SCHOTT® Luminous cylindrical diffusers deliver highly homogeneous, reproducible illumination and high optical efficiency across visible and near-infrared wavelengths, supporting predictable laser light delivery in demanding PDT, PIT, and LITT system designs.

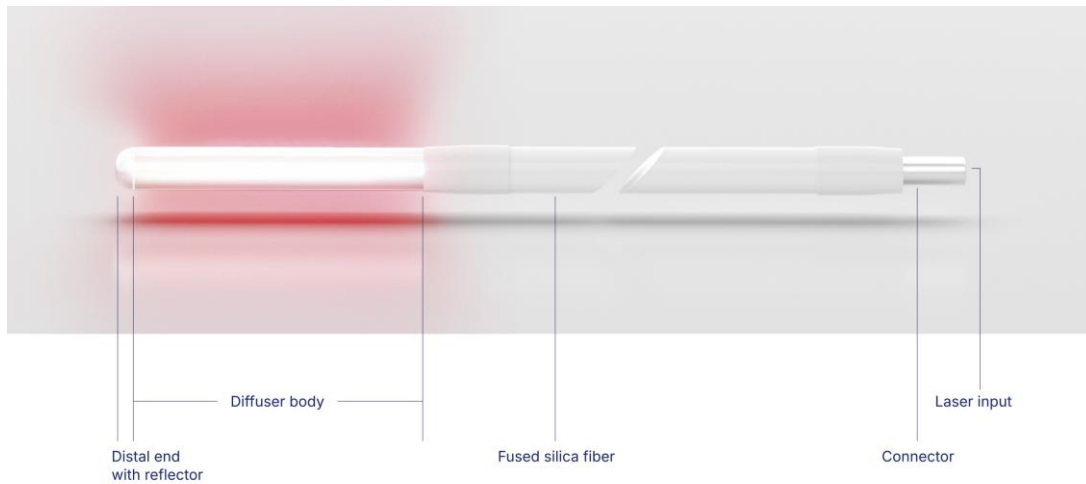
Description	SCHOTT® Luminous cylindrical diffuser
Diffuser body	SCHOTT optical glass with embedded scattering elements with integrated reflective termination Typical diffuser glass diameter: approx. 500 µm Typical diffuser length up to ~ 40 mm
Dimensions	Outer diameter at distal end (including diffuser assembly) < 1 mm Total assembly length typically between 1000 mm to 3500 mm
Connector	SMA905, E2k, FC Additional connector types available upon request
Fiber	Fused silica fiber with core diameter of typically 400 µm and NA 0.22
Optical performance	
Operating wavelength	Wavelength selective diffuser with consistent performance at visible and NIR up to 2 µm, e.g. red light applications 600-750 nm as well as infrared illumination 980 and 1064 nm
Transmission efficiency	> 80 %
Homogeneity	Typical output homogeneity along the active diffuser length: +/- 10 %
Power settings	High power resistant of up to several watts, typical power density 0.5 W/cm
Biocompatibility and sterilization	The diffuser component is intended for use in medical devices and is compatible with ethylene oxide (EtO) sterilization processes. Biocompatibility data for patient-contact materials can be provided upon request.

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Schematic drawing



General diffuser properties



High homogeneity

Uniform radiation characteristics optimize performance in demanding applications.



High optical efficiency

More than 80 % of laser light is transferred.



High power

Throughput of up to 20 W is supported.



Low heat emissions

Heat emissions are kept to a minimum.



Broad wavelength range

Consistent performance is achieved at visible and NIR wavelengths up to 2,000 nm.

Your benefits in working with SCHOTT

• Full range of service capabilities

From early-stage development, component design and prototyping, through application engineering and customization, to high-volume serial production.

• Clean room manufacturing

Product assembly and quality control in ISO 7/8 certified clean room with bioburden monitoring at medical production facilities with ISO 13485 certification.

• Regulatory

Our products are designed to fulfill relevant requirements for medical device development.

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