QUARTZ SOLUTIONS INC.

QSI
QUARTZ SOLUTIONS INC.

OPTICAL GLASS

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OPTICAL GLASS

OUR PRODUCT AND US

Laser Optics from Quartz glass by QSI- Solutions

You are in need of protection windows or lenses for your laser applications?
We are dedicated in supporting you to find the right product for your application quickly and easily.
As a company with many years of special glass expertise, QSI convinces with optical components for laser welding and cutting systems.

QSI offers a wide range of debris shields made of high-purity synthetically fused silica as well as natural quartz glass. Due to different coating variations, we can supply suitable protective optics and lenses for nearly every common laser type and laser head.
Due to our knowledge of the special glass market and by influencing the basic material, we also create an excellent price-performance ratio.

Based on our knowledge of the special glass market and by having an influence on the basic material, we also create an excellent price-performance ratio. Whether protection discs for laser welding or cutting, scanner windows or lenses: Benefit from our many years of experience in the procurement of raw materials and processing of quartz glass.

We offer you an extensive stock range as well as customized products, individual advice and flexible delivery schedules adapted to your needs. In doing so, we guarantee you an approved and consistently high quality.

You would like individual advice? Please contact us

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PROTECTIVE WINDOWS FOR LASEROPTICS

PROTECTIVE WINDOWS FOR LASEROPTICS

OPTICAL ANTIREFLECTION-COATINGS

„Antireflective coating enhances performance !“

Each beam of light generates a back reflection during the transition from one into another medium.
Antireflective coatings are used to minimize effects like loss of power and the appearance of dangerous hot spots caused by the back reflection.

Antireflective coatings (short AR-coating) are used in a variety in optics as they reduce the reflection of glass surfaces.
The increased light transmission and a reduction of aberrations are the main advantages.

PRODUCT FEATURES

- Single layer - AR (advantageous for materials with high refractive index)
- Narrow-band AR coatings (e.g. for V-type single laser wavelength)
- Broadband AR coatings
- Multispectral AR coatings

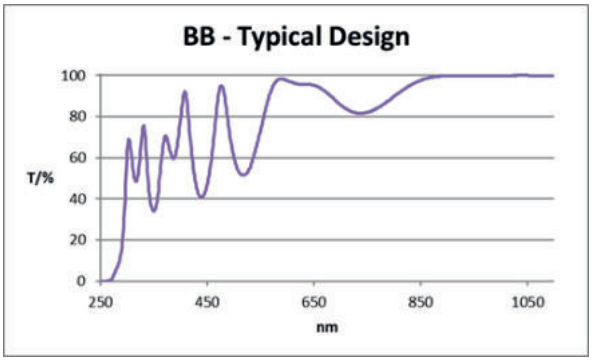
TYPICAL APPLICATIONS

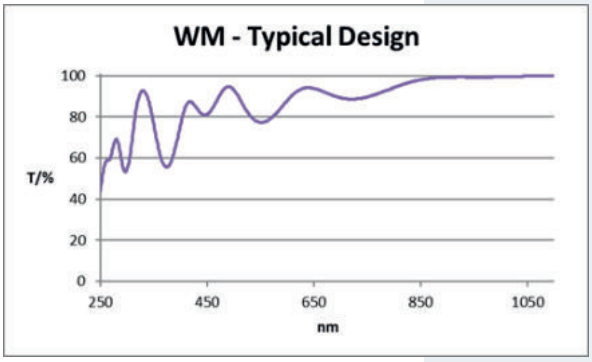
- Antireflective sight glass window to protect high-quality laser optics from splashing material
- Antireflective laser scanner window

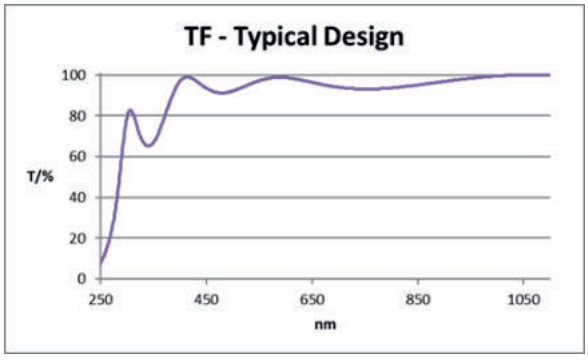
THE FOLLOWING SPECIFICATION IS NECESSARY FOR A QUOTATION

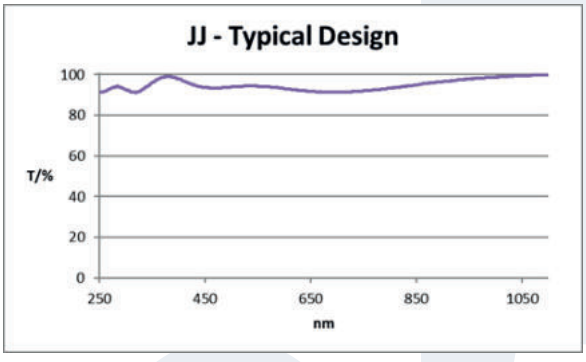
- Required wavelength range
- Substrate material
- (Fused Silica, BK7, Borosilicate glass 3.3, Float glass, Sapphire and more)
- Dimension tolerances
- Transmission output and/or reflection
- Angle of incidence in degrees
- Laser power density in W/cm^2 (cw)
- Energy density in J/cm^2 (pulsed laser)

EXAMPLE CURVES FOR COMMON ANTI-REFLECTIVE COATINGS









PROTECTIVE WINDOWS FOR DIODE-, DISC-, ND:YAG- AND FIBER-LASERS

Used as the last optic to be placed before the working area to protect the high-class laser optics from material spilling during the laser welding and cutting process.

COATING RANGE

All AR-Coatings can be offered with a wavelength range between 200-3000nm.
Due to different coating materials and designs we are able to influence the broad band coating.

TRANSMISSION MEASUREMENTS

Our spectral transmission tests are made for example in cooperation with the laser centrum Hannover.

STANDARD SPECIFICATION FOR LASER PROTECTION WINDOWS

- Standard substrate: Fused Silica (for lasers with higher output power)
- Standard tolerances: Ø±0,1mm or +0/-2,0mm
- Thickness: ±0,1mm or +0/-0,2mm
- Edges grinded with facettem(f.e. 0.3 mm x 45°)
- Both sides mechanically polished λ/4-λ/6
- Scratch/dig 60/40 or 40/20
- Typical Standard Coatings: @1064nm T≥99,6% & @633nm T≥95% or broad band coating: for example, @900-1080nm T≥99.5%
- Smudge-proof and scratch-resistant, adhesive peeling test, cleaning with alcohol mixture in a dust-free chamber ultrasonic cleaning

OVERVIEW ABOUT QUARTZ GLASS MATERIALS WHICH WERE QUALIFIED BY GVB AND PARTNERS FOR LASER APPLICATIONS

- Natural quartz glass EN08, EN07
- Synthetic quartz glass FS03 & Viosil SQ

For more information concerning the different properties of the materials, please visit our homepage

WE ARE ALSO ABLE TO OFFER YOU LASER DISCS WITHOUT ANTI-REFLECTIVE COATING!

Please feel free to contact us, if your need laser disc is not stated in the list and let us have your specification (diameter, coating and so on), that we can arrange an individual offer for you

AN EXCERPT OF OUR STOCK ASSORTMENT

ARTICLE-ID	SIZE/mm	COATING-RANGE
NQG 19×3,0 mm SB2A	Ø19×3,0mm	900-1100 nm 650 & 785 nm
NQG 26,8×2,0 mm JZ2A	Ø26,8×2,0mm	1064/1070 nm 633 nm
NQG 27×2,0 mm JZ2A	Ø27×2,0mm	1064/1070 nm 633 nm
NQG 27×2,0 mm SB2A	Ø27×2,0mm	900-1100 nm 650 & 785 nm
NQG 30×1,5 mm WM6Z	Ø30×1,5mm	900-1080 nm 630-650 nm
NQG 30×1,6 mm SB2A	Ø30×1,6mm	900-1100 nm 650 & 785 nm
NQG 38×2,0 mm VL2A	Ø38×2,0mm	1064/1070 nm 450-650 nm
NQG 38×3,0 mm VL2A	Ø38×3,0mm	1064/1070 nm 450-650 nm
NQG 39×2,0 mm AB2A	Ø39×2,0mm	1070 nm
NQG 50×1,5 mm JZ2A	Ø50×1,5mm	1064/1070 nm 633 nm
NQG 50×2,0 mm SB2A	Ø50×2,0mm	900-1100 nm 650 & 785 nm
NQG 50×2,0 mm ZZ2A	Ø50×2,0mm	1064/1070 nm
NQG 50×3,0 mm JB2A	Ø50×3,0mm	1030-1090 nm 630 nm
NQG 50×3,0 mm SB2A	Ø50×3,0mm	900-1100 nm 650 & 785 nm
NQG 55×1,5 mm BB2A	Ø55×1,5mm	900-1090 nm 635 nm
NQG 55×1,5 mm JJ4M	Ø55×1,5mm	1064/1070 nm 633 nm
NQG 55×1,5 mm	Ø55×1,5mm	uncoated
NQG 60×3,0 mm VL2A	Ø60×3,0mm	1064/1070 nm 450-650 nm
NQG 21,5×2,0 mm WM6Z	Ø21,5×2,0mm	900-1080 nm 630-650 nm

AN EXCERPT OF OUR STOCK ASSORTMENT

ARTICLE-ID	SIZE/mm	COATING-RANGE
NQG 22,35×4,0 mm WM6Z	Ø22,35×4,0mm	900-1080 nm 630-650 nm
SQG 24×5,0 mm TF6I	Ø24×5,0mm	1030-1090 nm 650 nm
SQG 24×1,5 mm WM6Z	Ø25,4×1,5mm	900-1080 nm 630-650nm
SQG 25,4×4 mm WM6Z	Ø25,4×4,0mm	900-1080 nm 630-650 nm
SQG 25,4×5 mm WM6Z	Ø25,4×5,0mm	900-1080 nm 630-650 nm
SQG 25,4×5 mm WM6Z	Ø25,4×5,0mm	900-1080 nm 630-650 nm
SQG 27,9×4,1 mm WM6Z	Ø27,9×4,1mm	900-1080 nm 630-650 nm
SQG 30×1,5 mm WM6Z	Ø30×1,5mm	900-1080 nm 630-650 nm
SQG 30×5,0 mm WM6Z	Ø30×5,0mm	900-1080 nm 630-650 nm
SQG 32×6,35×mm HY6L	Ø32×6,35mm	1025-1080 nm
SQG 33,3×33,3×1,5 mm WM6Z	Octagonal 33,3×33,3×1,5mm	900-1080 nm 630-650 nm
SQG 34×5,0 mm SD6L	Ø34×5,0mm	1030-1070 nm 650-670 nm
SQG 35×1,5 mm WM6Z	Ø35×1,5mm	900-1080 nm 630-350 nm
SQG 35×5,0 mm WM6Z	Ø35×5,0mm	900-1080 nm 630-650 nm
SQG 37×7,0 mm WM6Z	Ø37×7,0mm	900-1080 nm 630-650 nm
SQG 38,1×5,0 mm WM6Z	Ø38,1×5,0mm	900-1080 nm 630-650 nm
sQG 55×1,5 mm HY6L	Ø55×1,5mm	1025 -1080 nm
SQG 50×1,5 mm WM6Z	Ø50×1,5mm	900-1080 nm 630-650 nm
SQG 95,8×3,0 mm HY6L	Ø95,8×3,0mm	1025 -1080 nm

AN EXCERPT OF OUR STOCK ASSORTMENT

ARTICLE-ID	SIZE/mm	COATING-RANGE
SQG 96×3,0 mm DB6C	Ø96×3,0mm	1030-1090 nm 800-820 nm
SQG 134×3,0 mm DZ2A	Ø134×3,0mm	1030-1090 nm 800-820 nm
SQG 134×3,0 mm TF6I	Ø134×3,0mm	1030-1090 nm 650 nm
SQG 140×4,0 mm TF6I	Ø140×4,0mm	1030-1090 nm 650 nm

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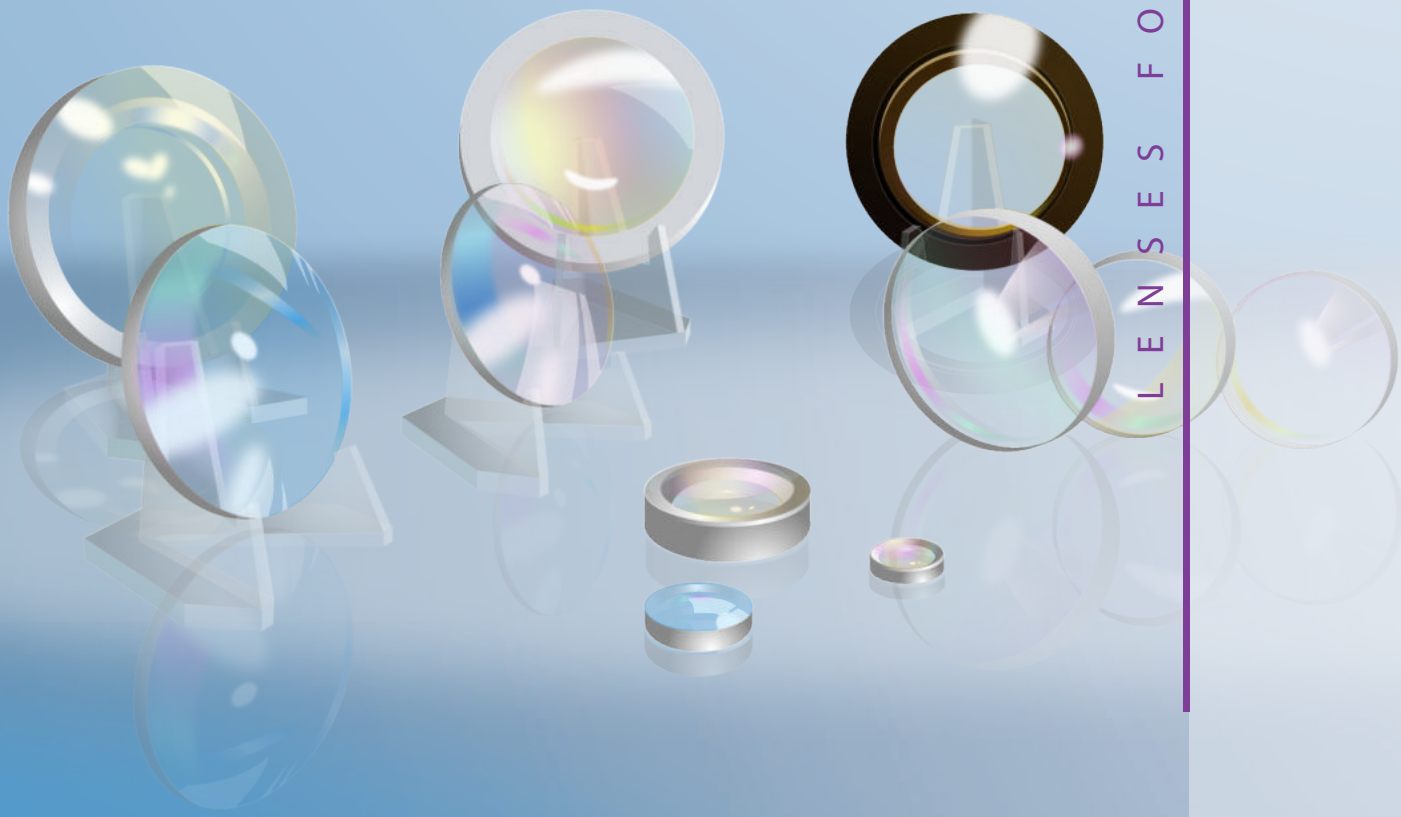
LENSES FOR LASER APPLICATIONS



LENSES FOR LASER APPLICATIONS

LENSES FOR LASER APPLICATIONS

(SOLID STATE LASERS)

In addition to protective lenses for almost all common laser heads, we also supply our customers with a variety of lenses (focus lenses, collimator lenses) made of high-quality materials.

MATERIALS

- Fused Silica: Viosil SQ / Corning 7980 etc
- Special optical glass: B270 / BK7 etc

REFRACTIVE INDEX

- Fused Silica: n=1.4585
- BK7: n= 1.5168

CLEAR APERTURE

- 85 % of surface when Ø ≥ 10mm
- 83 % of surface when Ø < 10mm

COATING

- AR-Coating

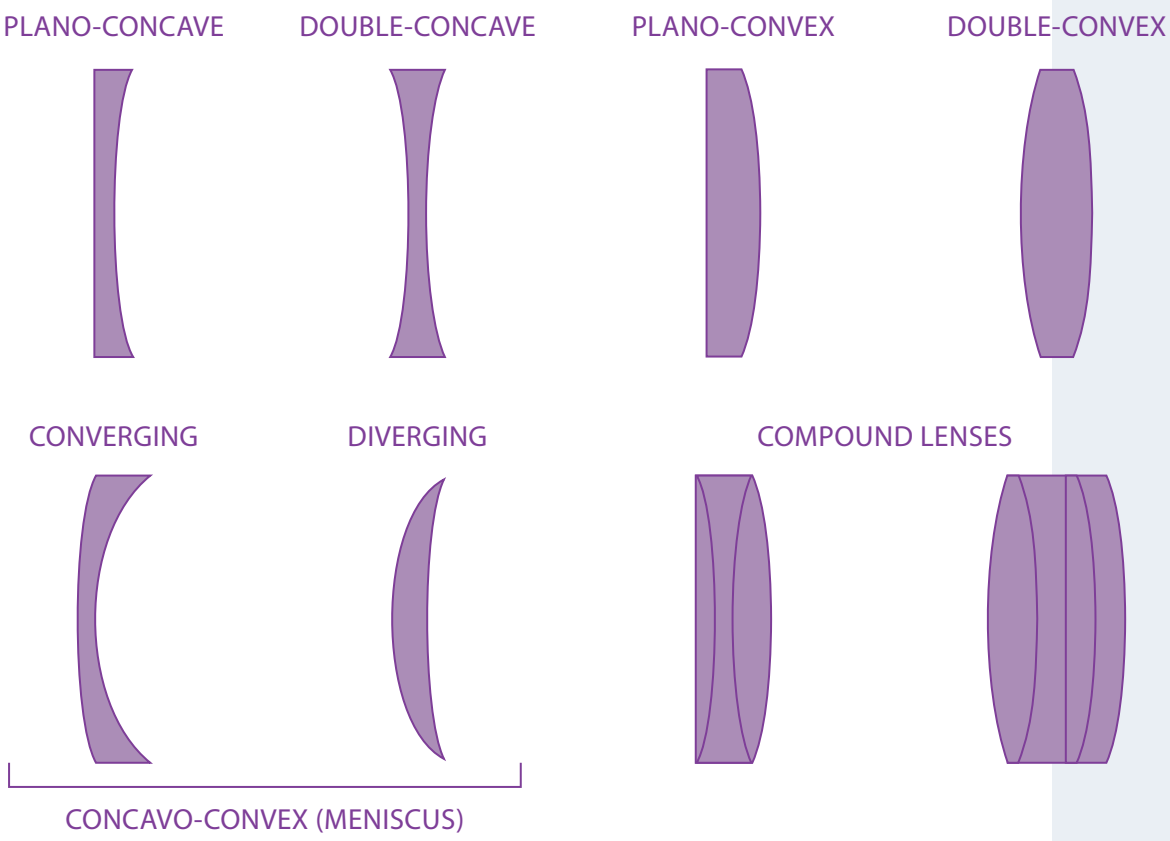
LIDT

- AR-Coating: ≥ 8J/cm2

SURFACEQUALITY

- S/D 20/10

LENS SHAPES


PLANO-CONCAVE
DOUBLE-CONCAVE
PLANO-CONVEX
DOUBLE-CONVEX
CONVERGING
DIVERGING
COMPOUND LENSES
CONCAVO-CONVEX (MENISCUS)

AN EXCERPT FROM OUR STOCK

ARTIKEL-Nr.	TYPE	EQUIPMENT TYPE
Lens PCX Ø38,1mm ET7mm FL127	Fiber (FS)	Prima Power
Lens PCX Ø38,1mm ET7mm FL190	Fiber (FS)	Prima Power
Lens BCX Ø30mm FL56,5 (F75/1)	Fiber (FS)	
Lens MSC Ø30mm FL274 (F75/2)	Fiber (FS)	Precitec Light Cutter
Lens BCX Ø30mm ET2,9mm FL200 (F100/1)	Fiber (FS)	Precitec Light Cutter
Lens MSC Ø30mm ET5,5mm FL-679 (F100/2)	Fiber (FS)	Precitec Light Cutter
Lens BCX Ø30mm ET3,1mm FL90,5 (F125/1)	Fiber (FS)	Precitec Light Cutter
Lens MSC Ø30mm ET5,6mm FL343 (F125/2)	Fiber (FS)	Precitec Light Cutter
Lens BCX Ø30mm ET2,45mm FL200	Fiber (FS)	Precitec Light Cutter
Lens BCX Ø30mm FL250	Fiber (FS)	Precitec Light Cutter
Lens PCX Ø25mm FL200	Fiber (FS)	Trumpf
Lens PCX Ø30mm FL150	Fiber (FS)	Trumpf
Lens PCX Ø40mm FL150	Fiber (FS)	Trumpf
Lens PCX Ø30mm FL150	Fiber (FS)	Adige
Lens PCX Ø38,1mm FL210	Fiber (FS)	Salvagnini
Lens PCX Ø55mm FL250	Fiber (FS)	LaserLine

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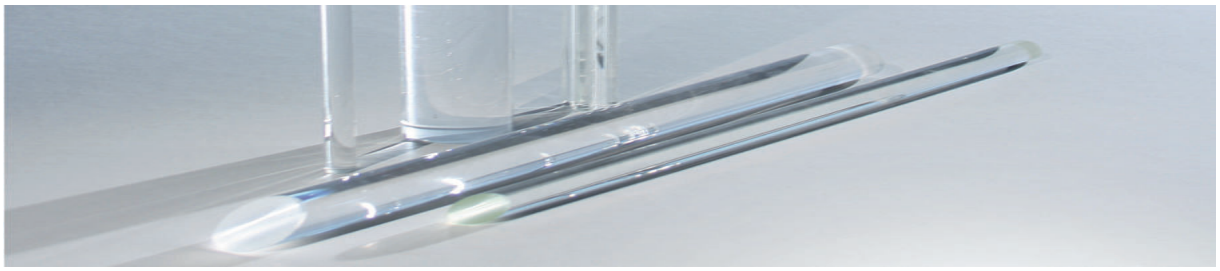
TUBES

RODS



PLATES AND BLOCKS

GROUND JOINTS

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