

QS

QUARTZ SOLUTIONS INC.



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QUARTZ GLASS

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Q U A R T Z G L A S S

OUR PRODUCT AND US

Quartz glass by QS- Solutions

Are you in need of quartz glass components for your products? We are dedicated in supporting you with the right materials for your applications quickly and efficiently.

QS offers a wide range of products made of **natural quartz glass** as well as synthetic **fused silica**. You can choose between cylindrical and flat glasses in a broad variety of types.

All our materials have excellent

- chemical
- thermal
- electrical
- mechanical
- optical

Since certain specifications differ, we will be happy to advise you on the most suitable material for your application. Our team members are specialists in quartz glass: We are able to select the right glass with you and are conscious of the cost-benefit ratio.

Whether its plates for the protection of optics or as inspection windows in high-temperature applications, tubes for the production of special UV lamps, or various quartz products for chemical and industrial applications: Benefit from our many years of experience in the procurement of raw materials and processing of quartz glass. Glasses with functional coatings and doped quartz materials are also available from QSI.

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

Would you like individual advice?

Please contact our Quartz Glass Team:

PROPERTIES OF OUR QUARTZ GLASS PLATES AND TUBES

Chemical Composition (ppm)

	Al	Li	K	Na	Ca	Fe	Ti	Mg	Cu	Cr	Ni	Mn	Co	SiO2
EN09	36,20	1,88	13,70	8,87	374	4,33	1,09	0,59	0,01	0,01	0,00	0,01	0,05	99,9900
EN08Ti	15,88	1,99	0,63	3,42	0,95	0,40	99,40	0,09	0,01	0,01	0,00	0,02	0,00	
EN08	8,18	0,55	0,47	1,24	0,5	0,21	3,51	0,12	0,01	0,03	0,06	0,01	0,04	99,9950
EN07	14,00	0,90	0,60	0,90	0,40	0,23	0,60	0,05	0,05	0,03	0,00	0,24	0,61	99,9980
FN08	32,00	3,11	0,23	3,03	3,02	0,34	1,33	0,17	0,03	1,91	0,00	0,24	0,00	99,9950
FN07	9,96	0,44	0,11	0,36	0,23	0,09	0,53	0,02	0,00	0,00	0,00	0,01	0,04	99,9980
FS03	0,18	0,01	0,34	0,06	0,31	0,01	0,01	0,65	0,01	0,00	0,00	0,03	0,061	99,9995

HYDROXYL (OH) CONTENT

	UB	NB	EB	SB
EN09	<150ppm	<50ppm	<20ppm	<2ppm
EN08	<150ppm	<50ppm	<20ppm	<2ppm
EN07	<150ppm	<50ppm	<5ppm	<1ppm
FN08	<175ppm	<50ppm	--	--
FN07	<175ppm	<50ppm	--	--
FS03	<175ppm	<50ppm	--	--

THERMAL PROPERTIES

			Natural Quartz Glass	Synthetic Quartz Glass
Coefficient of Thermal Expansion	25-300°C	cm/cm°C	5.5×10^{-7}	5.4×10^{-7}
Thermal Conductivity	20°C	W/m°C	1,4	1,4
Specific Heat	20°C	J/Kg°C	670	670
Softening Point		°C	1670	1700
Annealing Point		°C	1200	1100
Strain Point		°C	1110	1000
Max. Working Temperature - Continuous		°C	1650	1700
Short Term		°C	1100	950
		°C	1240	1250

MECHANICAL PROPERTIES

Elastic Modulus	Pa	7.2×10^{10}
Density	kg/m ³	2.2×10^3
Poisson's relation number		0,17
Tensile Strength	Pa	4.8×10^7
Compressive Strength	Pa	$>1.1 \times 10^9$

05

ELECTRICAL PROPERTIES

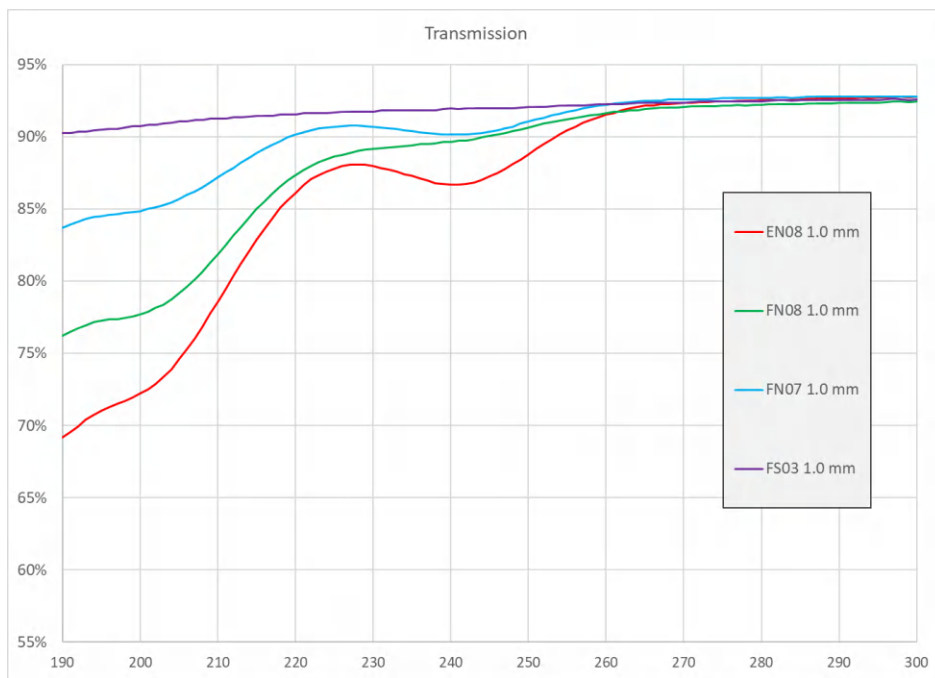
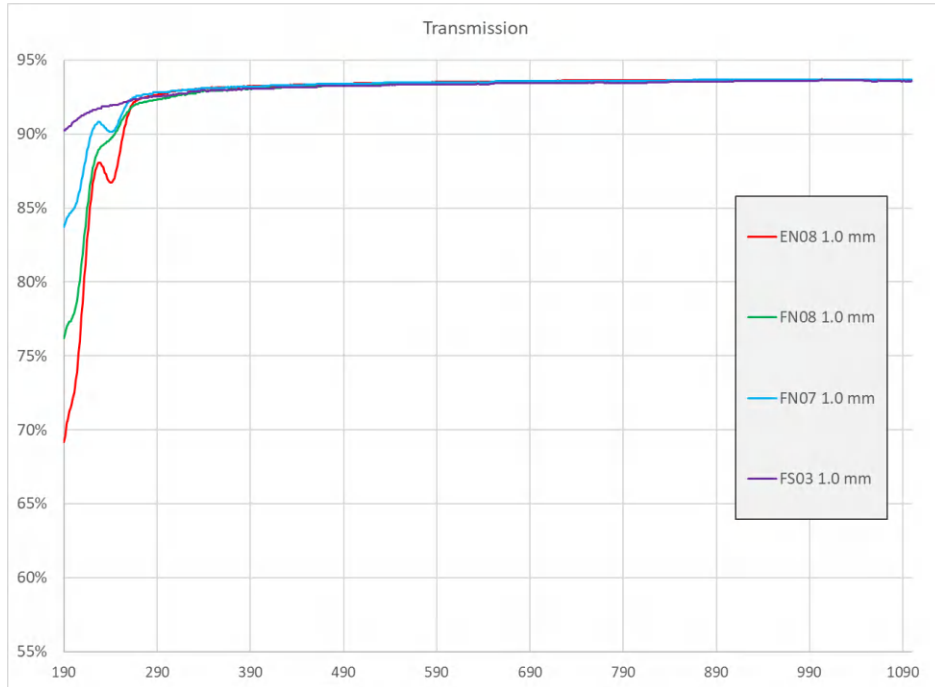
Loss Tangent	20°C and 1MHz		$<2 \times 10^{-4}$
Dielectric Constant	20°C and 1MHz		3.75
Resistivity	350	$\Omega \cdot \text{cm}$	7.0×10^9
Insulation Strength		V/m	5.0×10^7

OPTICAL PROPERTIES

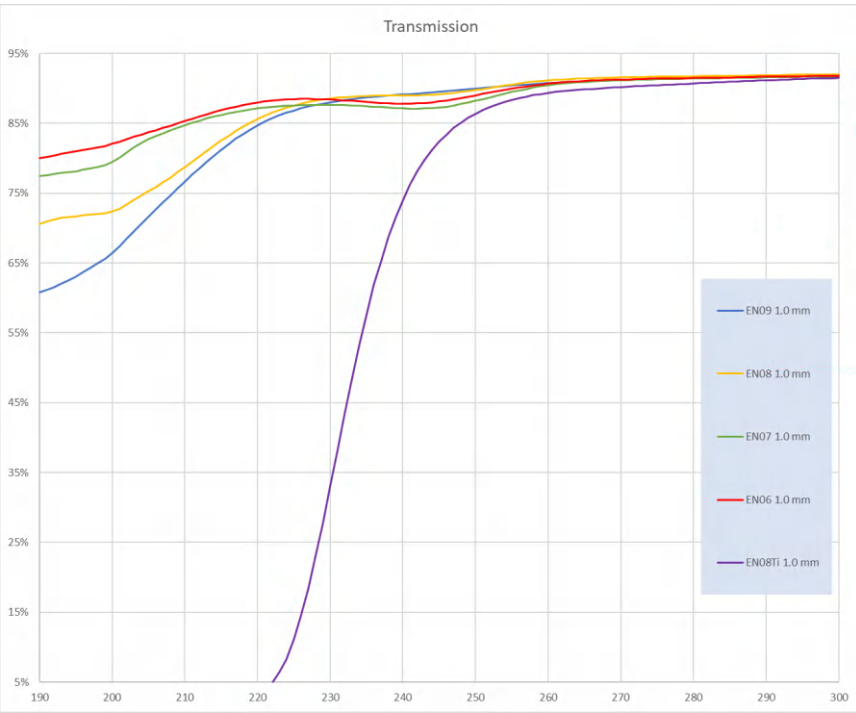
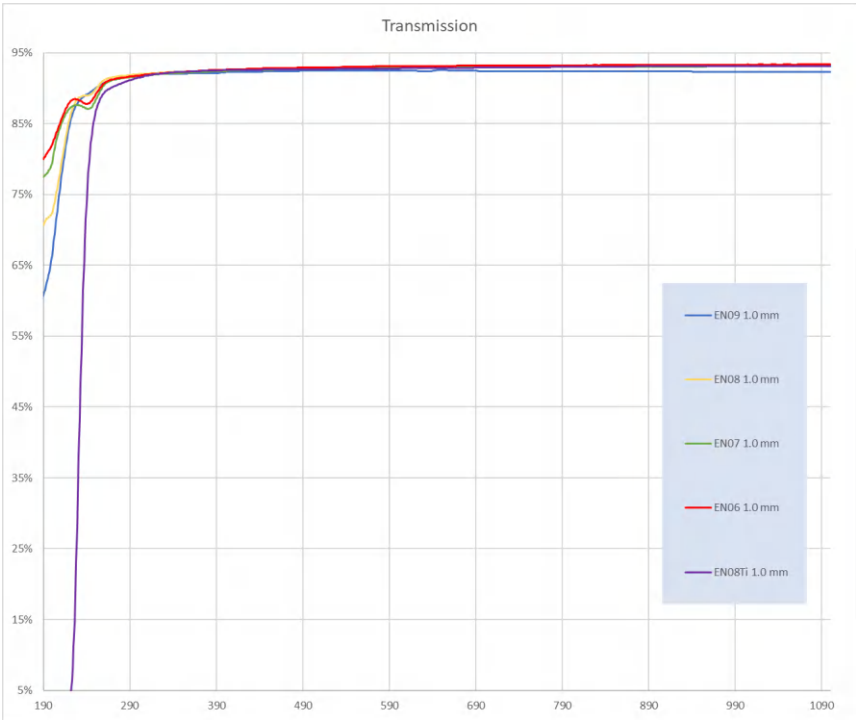
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SPECTRAL TRANSMITTANCE PLATES



SPECTRAL TRANSMITTANCE TUBES

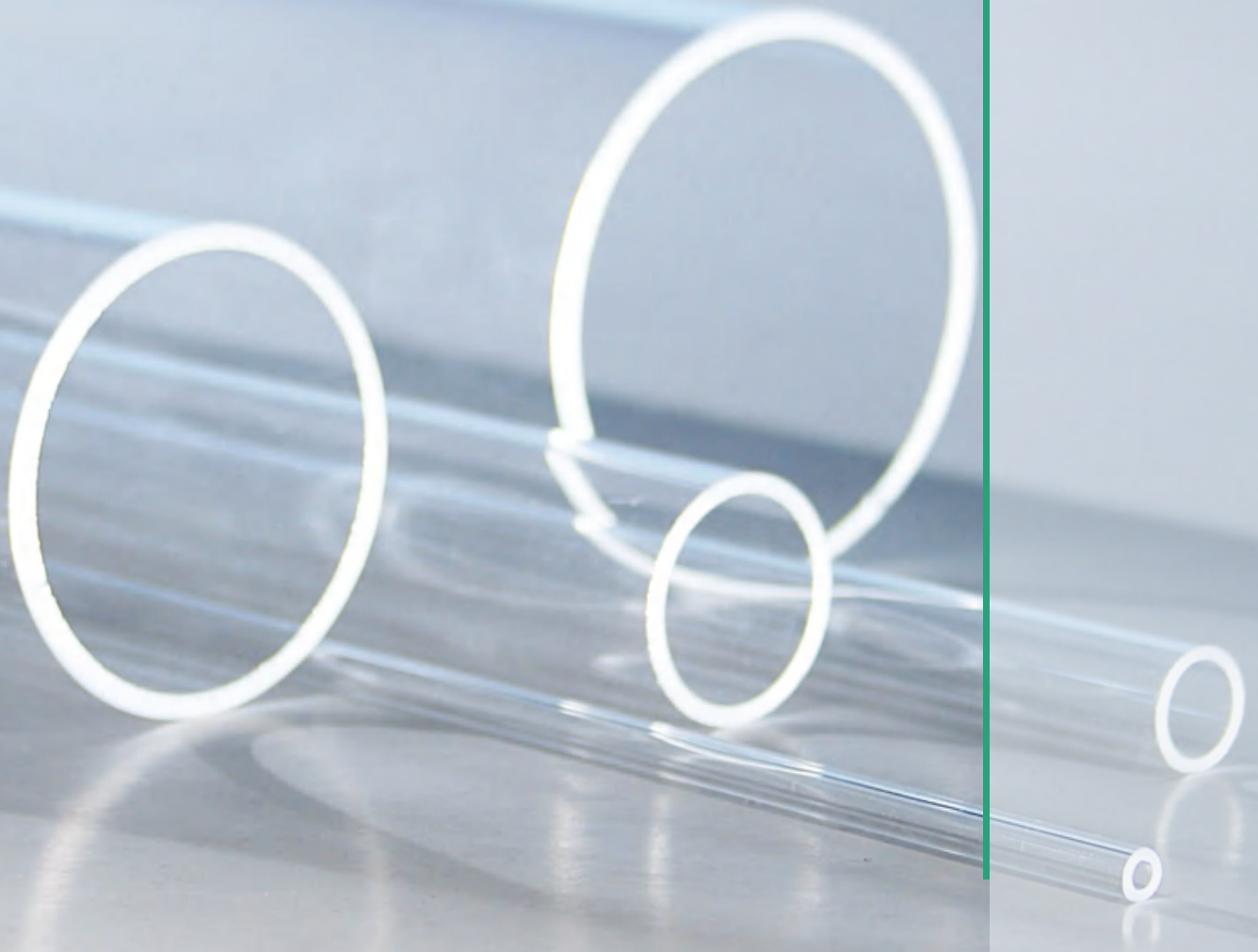


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T
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B
E
S



TUBES

STOCK TUBES

Outer Diameter



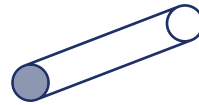
mm

Wall Thickness



mm

Length



mm

Material Code

Nr.

	Outer Diameter	Wall Thickness	Length	Material Code
4	± 0,08	1,0±0,08	1500±10	EN07
5	± 0,10	1,0±0,08	1500±10	EN07
6	± 0,10	1,0±0,08	1500±10	EN07
7	± 0,11	1,0±0,08	1500±10	EN07
8	± 0,12	1,0±0,08	1500±10	EN07
9	± 0,12	1,0±0,08	1500±10	EN07
10	± 0,12	1,0±0,08	1500±10	EN07
11	± 0,17	1,0±0,08	1500±10	EN07
12	± 0,12	1,0±0,08	1500±10	EN07
13	± 0,20	1,0±0,08	1500±10	EN07
14	± 0,21	1,0±0,08	1500±10	EN07
15	± 0,23	1,2±0,10	1500±10	EN07
16	± 0,24	1,2±0,10	1500±10	EN07
17	± 0,26	1,2±0,10	1500±10	EN07
18	± 0,27	1,2±0,10	1500±10	EN07
19	± 0,29	1,5±0,12	1500±10	EN07
20	± 0,30	1,5±0,12	1500±10	EN07
22	± 0,33	1,5±0,12	1500±10	EN07
24	± 0,36	1,5±0,12	1500±10	EN07
25	± 0,40	1,5±0,12	1500±10	EN07
26	± 0,39	1,5±0,12	1500±10	EN07
28	± 0,48	1,5±0,12	1500±10	EN07

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STOCK TUBES

Outer Diameter



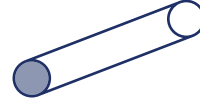
mm

Wall Thickness



mm

Length



mm

Material Code

Nr.

30	$\pm 0,45$	$1,7\pm 0,14$	1500 ± 10	EN07
32	$\pm 0,64$	$1,7\pm 0,17$	1500 ± 10	EN07
34	$\pm 0,68$	$1,7\pm 0,17$	1500 ± 10	EN07
36	$\pm 0,72$	$1,7\pm 0,17$	1500 ± 10	EN07
38	$\pm 0,76$	$1,7\pm 0,17$	1500 ± 10	EN07
40	$\pm 0,80$	$2,0\pm 0,20$	1500 ± 10	EN07
45	$\pm 1,35$	$2,2\pm 0,22$	1500 ± 10	EN07
50	$\pm 1,00$	$2,5\pm 0,25$	1500 ± 10	EN07
55	$\pm 0,50$	$2,5\pm 0,25$	1500 ± 10	EN07
60	$\pm 0,80$	$2,5\pm 0,25$	1500 ± 10	EN07
65	$\pm 0,85$	$2,5\pm 0,25$	1500 ± 10	EN07
70	$\pm 1,00$	$2,5\pm 0,25$	1500 ± 10	EN07
75	$\pm 1,00$	$2,5\pm 0,25$	1500 ± 10	EN07
80	$\pm 1,20$	$2,5\pm 0,25$	1500 ± 10	EN07
85	$\pm 0,80$	$2,0\pm 0,30$	1500 ± 10	EN07
90	$\pm 1,00$	$2,5\pm 0,30$	1500 ± 10	EN07
95	$\pm 1,00$	$2,5\pm 0,30$	1500 ± 10	EN07
100	$\pm 0,80$	$2,5\pm 0,30$	1500 ± 10	EN07

Further products available on request.

POSSIBLE APPLICATIONS

Material Code

EN09UB -Sleeves of ozone free Lamps for 254 nm application.

EN08NB -As Lamp Tubes of low pressure ozone producing for UV disinfection
-Long life lamp tube for IR heating, UV curing, printing etc.
-Glass apparatus

EN07EB -Sleeves of medium pressure UV germicidal Lamps
-Lamp Tubes of ozone producing Lamps
-Low cost Product for semiconductor Application
-Several UV and high Temperature
-Fiber Optics
-Furnace Tubes, Vacuum Tubes

EN08TiEB -Low pressure ozone free UV germicidal Lamp Tubes for 185 nm applications.



FURTHER PRODUCTS AVAILABLE ON REQUEST



RINGS



LAMP BULBS



TWIN TUBES



SLEEVES



SPIRALS

P L A T E S A N D B L O C K S

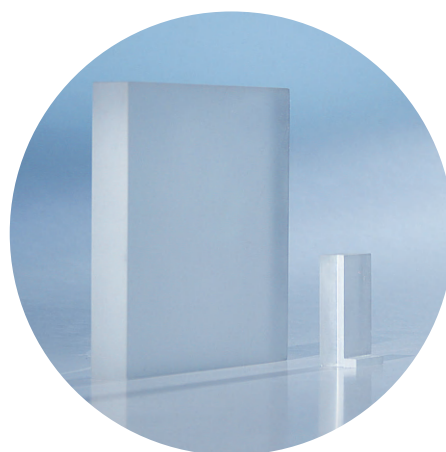


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PLATES AND BLOCKS

POSSIBLE APPLICATIONS

Material Code	Definition	Field of application
EN08	Electric fused Natural Quartz Glass	Protective glass for UV-, infrared- or camera- applications, good transmission
EN07	Electric fused Natural Quartz Glass	Protective glass for optical applications, filter discs, good transmission incipient from 220nm.
FN08	Flame fused Natural Quartz Glass	Viewing window for high temperature ovens, used in water disinfection applications, good transmission incipient from 254nm wavelength.
FN07	Flame fused Natural Quartz Glass	Filter disc, protective glass for UV- and infrared applications, good transmission incipient from 220nm wavelength.
FS03	Flame fused Synthetic Quartz Glass	Filter disc, very good transmission in the UVC area.



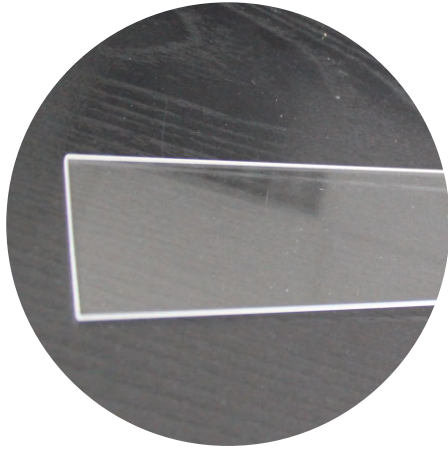
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STOCK PLATES

Material code	Dimensions and Tolerances in mm
EN08	100±0,5×100±0,5×1±0,3
EN08	100±0,5×100±0,5×2±0,3
FN08	100±0,5×100±0,5×3±0,3
EN08	150±0,5×150±0,5×1±0,3
EN08	150±0,5×150±0,5×2±0,3
EN08	200±0,5×200±0,5×2±0,3
FN08	200±0,5×200±0,5×3±0,3
FN08	200±0,5×200±0,5×4±0,4
FN08	200±0,5×200±0,5×5±0,5
FN08	200±0,5×200±0,5×6±0,5
FN08	350±1,0×350±1,0×3±0,3
FN08	350±1,0×350±0,1×4±0,4
FN08	350±1,0×350±1,0×5±0,5
FN08	500±2,0×500±2,0×2±0,3
FN08/EN08	500±2,0×500±2,0×3±0,3
FN08	500±2,0×500±2,0×4±0,5
FN08	500±2,0×500±2,0×5±0,5
FN08	500±2,0×500±2,0×6±0,5
FN08	500±2,0×500±2,0×8±0,5
FN08	500±2,0×500±2,0×10±0,5
FN08	600±2,0×600±2,0×10±0,5

Further products available on request

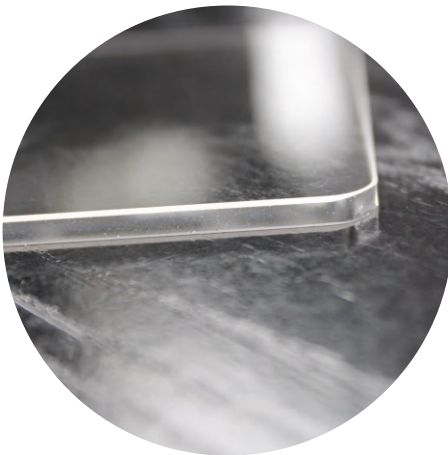




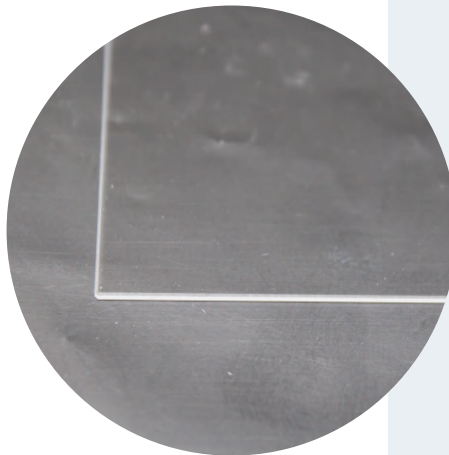
2500mm PLATE



ROUND DISC



ROUNDED POLISHED CORNERS



FILTER DISC 222 nm



OPAQUE QUARTZ GLASS

TREATMENT AND CLEANING OF QUARTZ GLASS

A thorough and appropriate cleaning and treatment of quartz glass products is essential to maintain the properties. The following recommendations should be noticed:

RECOMMENDATIONS FOR CLEANING

- Do not clean parts of quartz glass with alkali detergents.
- Contaminations with fat can be removed with alcohol.
- Acids in 5 % hydrofluoric acids for 2-3 minutes.
- Subsequent cleaning in distilled or deionised water.
- After cleaning, touch the quartz glass only with clean gloves.
- If possible, process quartz glass only after cleaning or pack it carefully.

Quartz glass should always be touched only with gloves. You should also take care that the rooms, tools and machines meet high cleanness demands.

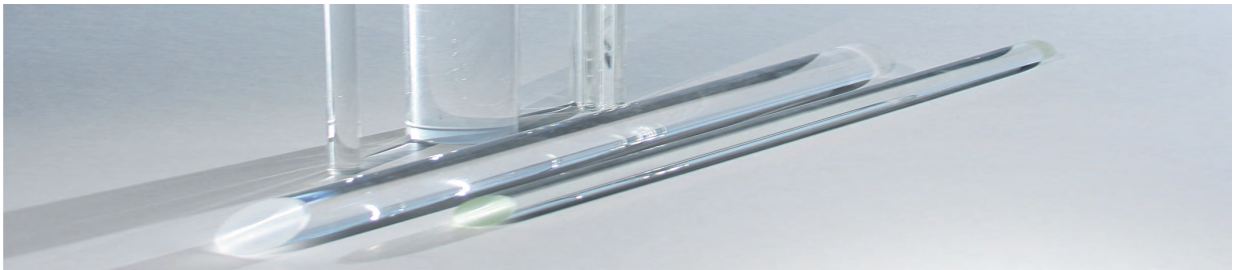


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TUBES



RODS

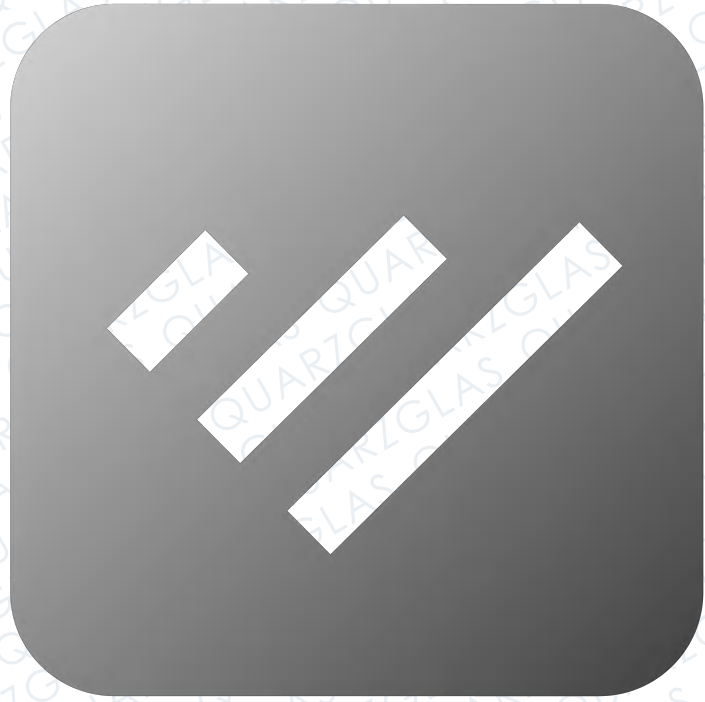


PLATES AND BLOCKS



OPTICAL GLASS





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