



Quarzglas Platten
Fused Quartz Plates

Electrically Fused Quartz Glass EN08 (Standard quartz glass)

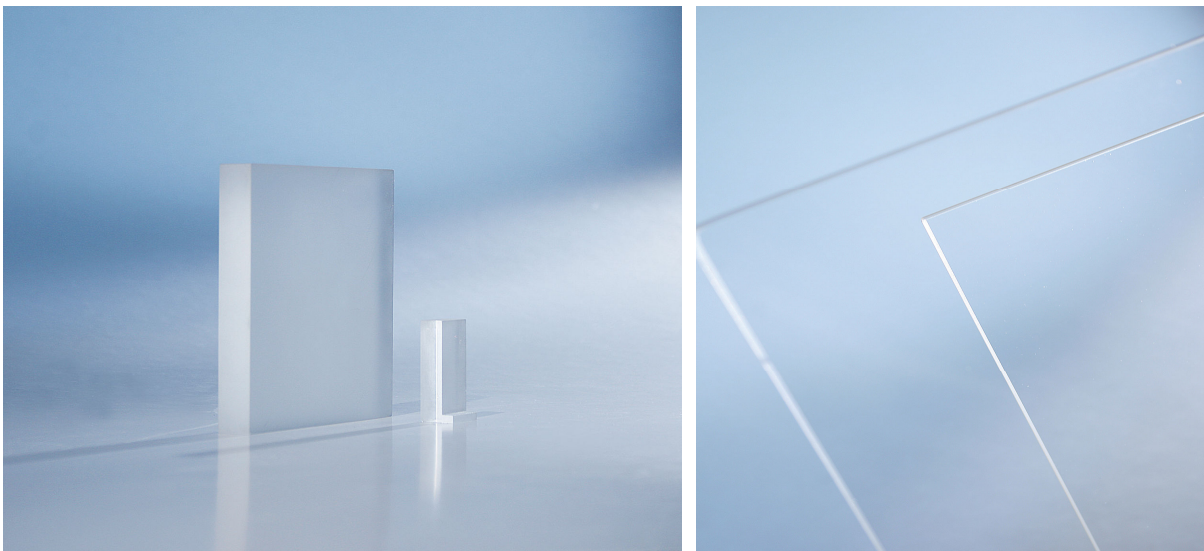
1. Description:

EN08 is mechanically drawn electrically fused clear quartz glass. It uses natural quartz as raw material with $\text{SiO}_2 \geq 99.99\%$. EN08 can be drawn as tube, rod and plate. The tube can also be cut and then rolled into plate. The directly drawn plate is currently limited to the size of 1240x140x5mm.

In semiconductor and photovoltaic (PV) industry, the tubes, rods and plates are used in quartz washing tanks and quartz boats for wafer cleaning and so on where the working temperature is below 800°C . Due to the elevated sodium (Na), EN08 glass can not be employed in high-temperature semiconductor and photovoltaic (PV) industry where the temperature is over 800°C , or the sodium will cause the glass devitrification.

In lighting:

Because of its high purity, EN08 has an excellent transmission in both deep UV range of 100-200nm wavelength and UVC range of 200-280nm wavelength. By vacuum annealing, the OH of EN08 can be lowered below 20ppm. So this item is a good material in ozone producing and UVC disinfection field.



Manufacturing of the plates:

Plates with a thickness up to 4mm are manufactured from quartz glass tubes.
Plates with a thickness of 5mm are produced from quartz blocks/ingots.

Attention!

It is also possible to draw plates directly. The directly drawn plate is currently limited to the size of 1240x140x5mm. The plates are ideal as protective windows for high temperature applications or as a very good base material for further processing.

2. Chemical Composition:

SiO ₂	Al	Fe	Ca	Mg	Ni	Li
99,98%	18,5ppm	1,0ppm	1,0ppm	0,5ppm	0,05ppm	1,0ppm
Mn	K	Na	B	Co	Cu	OH
0,02ppm	1,6ppm	2,3ppm	0,19ppm	0,02ppm	0,3ppm	100ppm

3. Hydroxyl (OH) Content: unit: ppm

	UB	NB
EN08	≤150ppm	≤ 30ppm

4. Thermal Properties

coefficient of expansion	25-300°C	cm/cm·°C	5.5 x 10 ⁻⁷
thermal conductivity	20°C	W/m·°C	1.4
specific heat	20°C	J/Kg·°C	670
softening point		°C	1670
strain point		°C	1110
annealing point		°C	1200
max.working temperature continuous short-term		° C	800 1100

5. Mechanical Properties

Young's modulus		Pa	7.2 x 10 ¹⁰
density		kg/m ²	2.2 x 10 ³
tensile strength		Pa	4.8 x 10 ⁷
compressive strength		Pa	>1.1 x 10 ⁹
Poisson's ratio			0.17

6. Electrical Properties

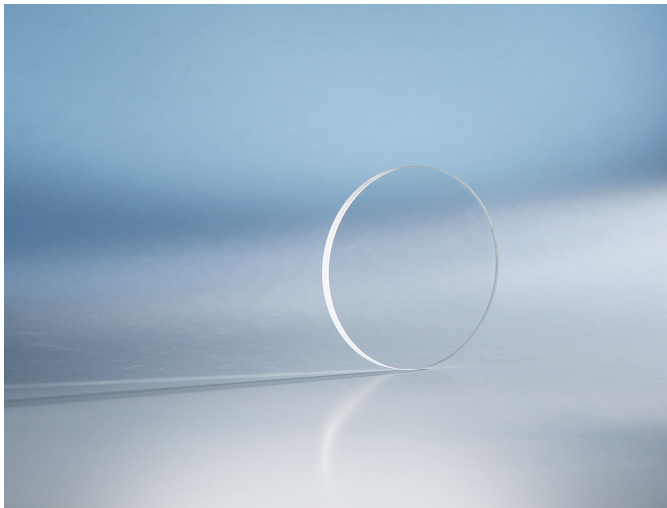
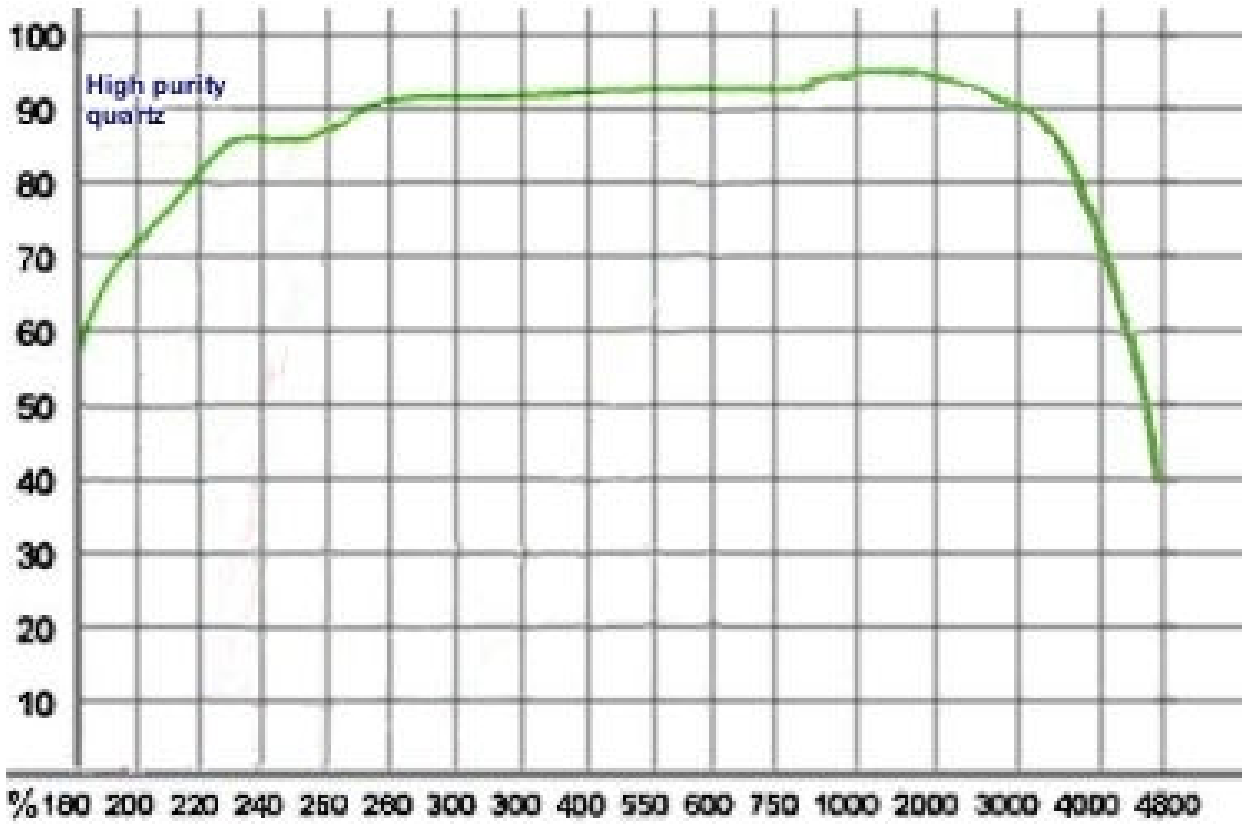
loss tangent	20°C and 1MHz		<2 x 10 ⁻⁴
dielectric constant	20°C and 1MHz		3.75
resistivity	350°C	Ω·cm	7.0 x 10 ⁹
insulation strength		V/m	5.0 x 10 ⁷

7. Optical Properties

index of refraction		1.459
transmittance	wall thickness 1.5mm	see below form

nm	185	200	220	245	254	320	340	500	800
%	64.8	67.5	84.3	89.8	90.4	92.3	92.4	92.5	92.5

8. Spectral Transmission (nm):



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 non-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.

Subject to change without prior notice, errors excepted!