Natural Quartz glass

for sight glass fittings, round/elongated/rectangular/

Natural quartz glass



Our transmission calculator is located under „Tools“ in the navigation on www.aci24.com

USAGE

Sight glasses made of quartz glass are ideal for reliable visual process control under extreme thermal and chemical conditions. Manufactured from highly pure, natural quartz glass with an SiO_2 content of 99.98%, they provide excellent optical transmittance across an exceptionally wide spectral range. They allow a clear and precise view of process operations and are particularly distinguished by their excellent UV transmission. This makes them suitable for applications that require high light transmission in the ultraviolet spectral range.

In addition, quartz glass impresses with its exceptional chemical resistance, low thermal expansion, high temperature resistance and excellent thermal shock resistance. Even under rapid and severe temperature fluctuations, the material offers high stability. Quartz glass sight glasses are therefore especially suited for demanding applications in process engineering, the chemical industry, analytics, as well as in laboratory and high-temperature installations.

APPLICATION PROPERTIES

Optical applications and research

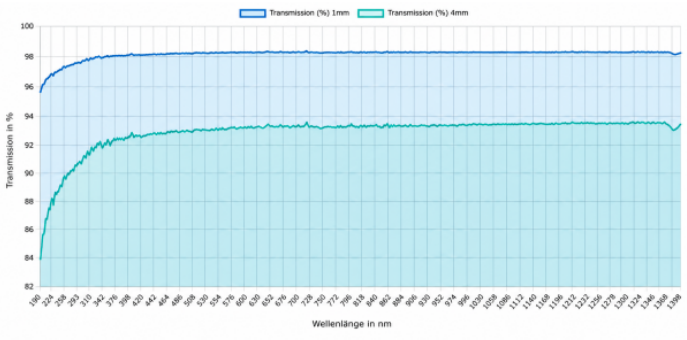
Natural quartz glass offers a wide range of applications in research, development and industrial technology due to its excellent optical properties. In addition to laser technology, the material is suitable for spectroscopic investigations, UV-assisted analytical methods, fluorescence measurements and optical sensing. Further application areas include semiconductor technology, photochemistry, photonics and high-temperature diagnostics. As a transparent optical window or functional interface, quartz glass enables the use of optical measurement and analysis techniques under demanding environmental conditions. This makes the material an appealing option for the development of tailored measurement systems, experimental setups and specialized technical installations.

CHEMICAL RESISTANCE

Chemical resistance:	
Water resistance according to DIN ISO 719/720	Hydrolysis class 1 - highest class for very low ion release under neutral conditions
Acid resistance according to DIN 12116[1]	Acid class 1 - almost completely resistant to acid attack
Alkali resistance according to DIN ISO 695 (alt DIN 52322)	Alkali class A1 - highest resistance class, slight attack by the test solution

1) Quartz glass is attacked by hydrofluoric acid. Hot, concentrated alkaline media can also attack quartz glass.

The following diagram illustrates the spectral transmission of natural Quartz glass in the wavelength range from 200 to 1.388 nm at a material thickness of 1 mm. The calculation is based on our transmission calculator, with 4 mm used as the reference material thickness.



DELIVERY FORMS AND DIMENSIONS

Manufacturing options

We offer sight glasses made of Quartz glass in a wide variety of geometric designs, individual dimensions and customer-specific shapes. Our manufacturing program includes, in addition to classic round and rectangular sight glass plates, elongated and tongue-shaped designs, glass rings, as well as Quartz glass tubes. Furthermore, we enable the production of more complex geometries that are specifically adapted to the structural requirements and installation conditions of the respective application.

For special installation situations and individual design solutions, sight glass plates can be manufactured with holes, cutouts and different contours. Stepped designs are also part of our manufacturing capabilities. These include both round sight glass plates in stepped form and elongated sight glass plates with stepped geometries. These allow adaptation to different mounting, support and installation situations.

In addition to the geometric design, the finishing of the glass edges also plays an important role. Depending on the technical requirements and the desired design, different edge treatments are possible. These include rounded edges with defined radii, chamfered edges, as well as finely ground and polished edges. The respective processing can be carried out in accordance with the structural specifications and the requirements for surface quality.
Manufacturing is carried out according to individual dimensional specifications, technical drawings or customer-specific specifications. **Custom-made products according to customer specifications or provided technical drawings are also possible, provided that the desired geometry and processing are technically feasible.**

TECHNICAL INFORMATION

Properties and operating conditions	
Density	2,20 g/cm³
Hardness	580 KHN 100
Thermal expansion	0,55 × 10^{-6} K^{-1}
Thermal conductivity	1,4 W/(m·K)
Specific heat capacity	670 J/(kg·K)
Softening point	1.700 °C
Annealing point	1.215 °C
Temperature resistance	1.000 °C permanently; 1.100 °C short-term

QUICK OVERVIEW



heat-resistant up to 1000 °C



for liquid media



for gaseous media



Custom-made designs available

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