Accu-Glass Products, Inc.
End-to-end, Air-to-vacuum Solutions... Always in stock

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Vacuum Viewports

High and Ultrahigh vacuum viewports manufactured and sold by Accu-Glass Products, and Larson Electronic Glass are ideally suited as direct observation ports when mounted onto vacuum chambers. Viewports are constructed using various window materials, including Corning 7056 glass—the most common borosilicate glass used in vacuum viewport manufacturing, Fused Silica—also known as synthetic Quartz, and Sapphire (single-crystal). Depending on the mount type selected, viewports are rated for high and/or ultrahigh vacuum service with a maximum differential pressure of 15-PSIG.

Installation and Safety Precautions

- Exercise extreme caution when handling glass or crystalline components. Proper handling of these components will greatly reduce the chances of vacuum implosion hazards and/or potential injury to system operators and laboratory personnel.
- Glass and crystalline substrates are susceptible to scratching and inherently weak under point stresses.
- Never allow viewport window surfaces to come into direct contact with metal and/or other hard materials.
- Avoid any action that would scratch or mar window surfaces
- Differential pressure rating of 15 PSIG is direction-dependent, so never reverse viewport direction from its recommended installation specification.
- Never install or load (pressurize) a damaged viewport exhibiting surface imperfections such as scratches, pits, nicks, or chips.
- Damaged or flawed viewports must be removed, discarded, and replaced with brand new parts.
- Do not subject viewports to rapidly changing temperatures. Viewports must be heated/cooled uniformly and symmetrically, while adhering to a 10°C/Minute maximum thermal gradient.
- Do not subject outer rim of viewport to bakeout temperatures while window is exposed to air. Viewports must be covered with multiple layers of aluminum foil to maintain a uniform window temperature.
- Maximum viewport bakeout temperatures are... 200°C (Fused Silica or Quartz), 250°C (Corning 7056 glass), and 350°C (Sapphire).
- Nothing should touch window surfaces or the metal frame they're sealed into. Also, it is very important that nothing fall into the space/gap located between the window/frame and the vacuum flange, as this gap provides needed flexibility between a window and its rigid mounting flange.
- UHV viewports should always be installed using fully annealed copper gaskets
- When fastening a CF flanged viewport, bolts must be tightened gradually and uniformly in a crisscross bolting pattern, in multiple quarter-turns cycles. Note that it's not be necessary to bring mating flange faces metal-to-metal to achieve an ultrahigh vacuum seal.