

SOURIAU PA&E

Endoscope Windows

- √ Hermetic Through 1,000+ Autoclave Cycles
- √ Successfully Passed Cytotoxicity Testing
- √ No Metallization Required
- √ Flexible Window Material and Frame Options
- √ Designed to Meet a Wide Range of Optical Applications and Performance Requirements



SOURIAU PA&E has pioneered the use of ceramic-to-metal sealing technology to manufacture hermetically sealed windows for endoscope applications. The unique bonding properties and polycrystalline structure of SOURIAU PA&E's Kryoflex[®] material now allow the company to produce sight windows that maintain the highest levels of hermetic integrity under the extreme environmental conditions.

SOURIAU PA&E's ceramic-sealed hermetic windows offer engineers additional advantages beyond high hermetic performance. Because Kryoflex seals at relatively low temperatures, they can now choose from a variety of optical glasses such as sapphire, quartz and BK10.

Windows produced with this new process are extremely robust and reliable because a key point of failure – solder joint fatigue – is eliminated. They provide a leak rate equal to or less than 1×10^{-9} cc/sec helium at 1 atmospheric differential pressure, even after repeated (1,000+) autoclave sterilization cycles. SOURIAU PA&E's ceramic-sealed windows have also passed cytotoxicity testing so all window materials are proven safe for use within the human body.

Unlike solder- or braze-sealed windows, SOURIAU PA&E's ceramic-sealed hermetic windows do not require metallization. Eliminating this step can reduce costs and processing time and allows anti-reflective coatings to be applied after the sealing process, ensuring that the critical A/R coating is not impacted by subsequent processing.

Laser Welding for Robust Reliability

SOURIAU PA&E utilizes the latest state-of-the-art Lasag laser welding systems to integrate windows using the radiation from a focused, energy-dense, beam of infrared light. This non-contact welding process minimizes thermal and mechanical stresses, and provides an extremely small heat-affected zone, ensuring components are exposed to the least-hostile welding environment possible.

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ISO 9001:2008/
AS9100

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