



High precision Schlieren optics for aerodynamic testing

Optical Surfaces Ltd.

is a leading producer of **high precision mirrors** and **windows** for **Schlieren imaging** applications in the **Aerospace industry**.

Supersonic wind tunnels

are commonly used by engineers to test and improve the aerodynamic performance of aircraft designs and engine components. During a test, the aircraft model is placed in the test section of a wind tunnel and air is made to flow past the model. Schlieren imaging is a trusted method for visualising density variations in these 'invisible' air flows. In one of the most common types of Schlieren imaging system - a source directs light onto a spherical mirror, which collimates the light and redirects it onto a second identical mirror. The resultant image may be captured by an imaging camera or on a screen.

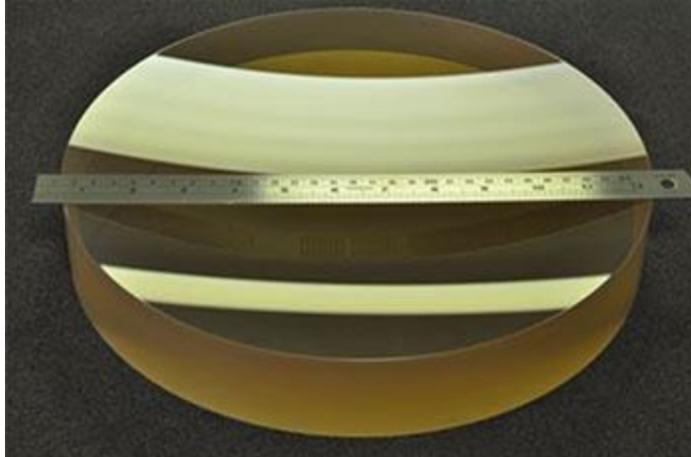


Image Captions: A: Large diameter, high precision concave spherical mirror (courtesy: Optical Surfaces Ltd).

Drawing upon decades of experience

- Optical Surfaces Ltd has developed an international reputation for producing **high precision concave spherical mirrors** (up to 800mm diameter) for Schlieren imaging systems in a range of materials including Pyrex, Zerodur and ULE. Using proprietary production techniques, the company's skilled optical craftsmen routinely produce high precision spherical mirrors with surface accuracy of better than $\lambda/10$. Combining this ultra-high precision surface finish with durable optical coatings ensures these mirrors deliver superior image quality.



Benefiting from an ultra-stable

production environment and proprietary polishing techniques – Optical Surfaces Ltd. is also able to routinely produce **ultra smooth optical windows** up to 600mm in diameter with typical wavefront error of $\lambda/10$ and surface finish of 40/20 to 10/5. This precision manufacturing capability in optical materials including BK-7 and fused silica, which offer good homogeneity and transmission from the UV to the Near-IR, combines to provide the perfect wind tunnel optical window to ensure superior Schlieren image quality.

For further information

on high precision mirrors and windows for wind tunnel aerodynamic testing please visit <https://optisurf.com/spherical-mirrors/> and www.optisurf.com/windows/ or contact Optical Surfaces Ltd. on +44-208-668-6126 / sales@optisurf.com.

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Optical Surfaces Ltd

has been producing optical components and systems for nearly 60 years and is today accepted as one of the world's leading manufacturers of high precision mirrors and optics for aerospace research and development.

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Image Captions: B: Large diameter, high precision optical window (courtesy: Optical Surfaces Ltd)