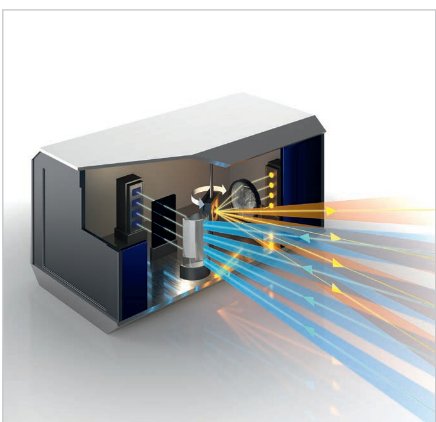
SCHOTT MEMpax® for MEMS mirror

Background Information

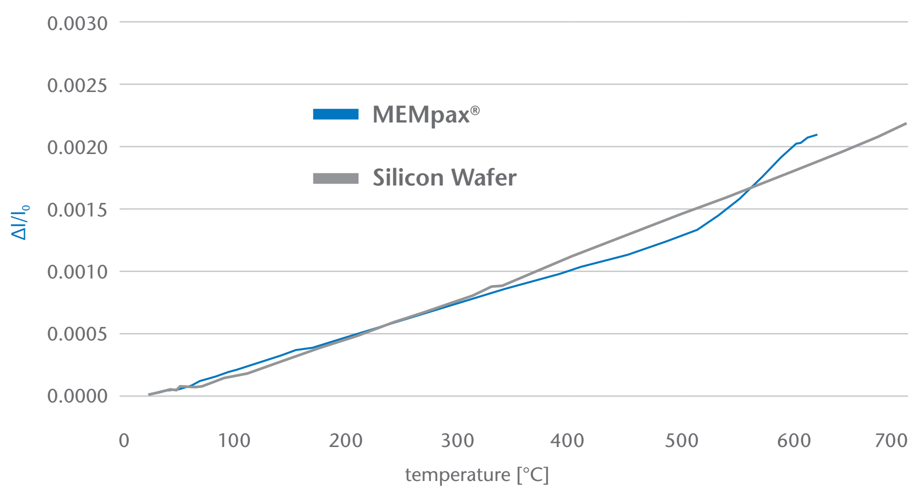
Some of the main criteria to build a high quality and durable MEMS mirror are depending on the used materials. One of these criteria refers to the physical properties of the glass. Most commonly, glass and silicon are jointly used, as they can be strongly bonded via anodic bonding.
In order to minimize stresses created through thermal differences at the bonding interfaces, it is necessary that both materials have the same coefficient of thermal expansion (CTE).
MEMS mirror require substrates that are suitable for both reflective and anti-reflective coatings to allow for optimum functionality.

Our solution: MEMpax®

Precise match in thermal expansion with Si	Suited for **anodic bonding**	Exceptionally **high transparency**	Excellent **thermal and mechanical resistance**	**Optimal coating** substrate for both reflective and anti-reflective coatings	No **surface or subsurface** damages as no grinding or polishing of the substrate is needed



Dynamical elongation based on initial length $\Delta l/l_0$ with a heat-up rate of 5 K/min



Technical Data of SCHOTT MEMpax®	
Dimensions	2" to 12", round or rectangular
Surface roughness R_a	< 0.5 nm
Thicknesses*	0.07 mm to 0.55 mm
Standard thicknesses*	0.2 mm, 0.3 mm, 0.4 mm, 0.5 mm
Luminous transmittance τ_{VD65} (thickness = 0.5 mm)	92.9%
Coefficient of mean linear thermal expansion α (20°C; 300°C) (statistic measurement)	3.3 x 10^{-6}/K

*other thicknesses available upon request

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