



HIGH-PERFORMANCE CERAMICS

MIRRORS FOR ASTRONOMICAL INSTRUMENTS

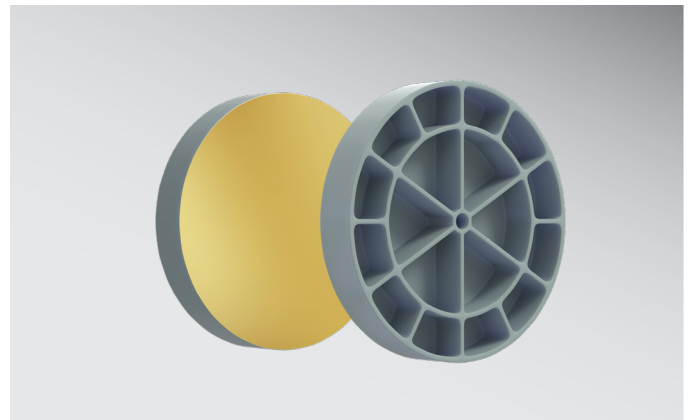
Application:

Mechanically assembled all-cordierite reflective optical system for cryogenic applications

Material:

Cordierite

Although a reflective optical system for space and astronomical fields can theoretically realize ideal optical designs, it is not always the optimal choice compared with a refractive one because of the difficulty in achieving high wavefront accuracy. A promising solution is to build reflective optical systems by mechanically assembling all the optical and structural components made of Kyocera Fine Cordierite, which is a ceramic with a very low thermal expansion coefficient with a higher stiffness compared to the low CTE glass material. Interferometric evaluations of an experimental product demonstrated that diffraction-limited performance in the visible wavelength was achieved and maintained even after cooling to 80 K. This new technique may be the most cost-effective method for utilizing reflective optical systems, especially for cryogenic applications.



- ▶ Minimal temperature deformation
- ▶ Approx. 70% weight reduction when compared to low CTE glass
- ▶ For structural parts

KYOCERA Fineceramics Europe GmbH

E-Mail: info@kyocera-fineceramics.de · www.kyocera-fineceramics.de

© 2023 KYOCERA Fineceramics Europe GmbH. We reserve the right to make changes without prior notice.