

Data Sheet

Sintox™ AL

Description

High purity porous alumina ceramic of **99.7% Al₂O₃** content, used extensively for long-life laser reflectors. This material is sintered at high temperatures to achieve a controlled porosity.

Prime Features:

- 98.0% reflectance efficiency at 1064nm
- Reflectance efficiency exceeds 96% across the wavelength range 500-2000nm (see Figure 1).
- Controlled porosity.
- Good thermal conductivity.
- High electrical resistivity.
- Highly cost effective alternative to metal coated reflectors

Typical Applications:

- Pumping chambers for flash lamp and continuous wave lasers using media such as Nd:YAG lasers, Alexandrite — low to high power, single or multiple lamp designs used for welding, cutting, marking and in medical lasers.
- Layered and segmented pumping chambers for diode pumped lasers
- Intense Pulse Light (IPL) applications for cosmetic surgery

Specifications

- Quality Assurance to ISO 9001:2008.

Physical Properties

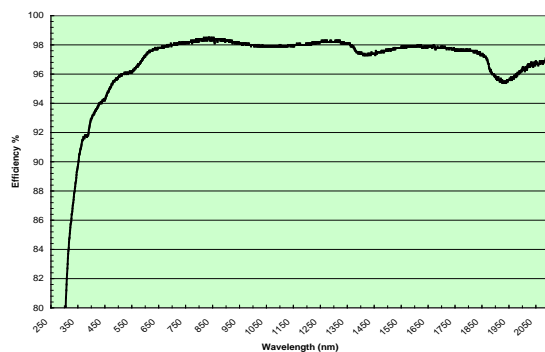
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|--|-------------------------|
| Colour | White |
| Bulk Density (fired) | 3.2 Mg/m ³ |
| Porosity (apparent) % nominal | 20% |
| Flexural Strength (ASTM C1161) (3-point) | 150 MPa |
| Thermal Expansion Coefficient | |
| 200-500C | 7.9 10 ⁻⁶ /C |
| 200-1000C | 9.0 10 ⁻⁶ /C |

Please note that all values quoted are based on test pieces and may vary according to component design. These values are not guaranteed in anyway whatsoever and should only be treated as indicative and for guidance only.

Production Capabilities

- Components up to 250mm long and 80mm wide/diameter manufactured as standard
- Larger components manufactured to development contracts.
- One-piece or split-cavity designs
- Prototype, batch and volume production
- Round, oblong, tear-shaped and custom design cavities available
- Surfaces can be sealed and coated with a solarization-resistant glaze to give high bulk strength of the part
- Glazing / Coatings available include our Standard ("Sintox AL - GSO") glaze (see Figure 2).
- UV wavelength cut-off glaze ("Sintox AL - GSY") which cuts off Wavelength upto 500nm (see Figure 2). Advantage of this is that it reduces heating of the components

Figure 1: Reflectance curve for Unglazed Sintox AL



(Efficiency : Wavelength, from independent tests carried out at Labsphere, USA - NIST accredited)

Figure 2: Reflectance curves for Glazed Sintox AL: Sintox AL - GSO and Sintox AL - GSY

