

Thin Film metals are high-performance, high-purity, vapor-deposited or sputtered metalizations on Alumina, Beryllium Oxide, Aluminum Nitride, and specialty ceramics. Designed for complex and fine features

# Thin Film Capabilities

**STELLAR INDUSTRIES CORP.**

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## Basic Thin Film Capabilities

### Available Ceramic Materials:

- **Al<sub>2</sub>O<sub>3</sub>**: Contact us for a complete list of compositions available
- **AlN**: 170W, 200W and 230W
- **BeO**: 280W and 325W BeO
- **Diamond**

### Ceramic Information:

**A. Surface Finish:** A lapped finish will have a matte look. Polished will have a glossy look.

- **96% Al<sub>2</sub>O<sub>3</sub>**: **Lapped**: 18 $\mu$ -in Nominal, **Polished**: 2 $\mu$ -in Nominal
- **99.5%/99.6% Al<sub>2</sub>O<sub>3</sub>**: **Lapped**: 10 $\mu$ -in Nominal, **Polished**: 2 $\mu$ -in Nominal
- **AlN**: **Lapped**: 18 $\mu$ -in Nominal, **Polished**: 2 $\mu$ -in Nominal
- **BeO**: **Lapped**: 25 $\mu$ -in Nominal, **Polished**: 4 $\mu$ -in Nominal

**B. Standard Sub Sizes and Tolerance:**

- **Al<sub>2</sub>O<sub>3</sub>**: **Length & Width**: 2" Sq, 2.25" Sq, 4" Dia and 6" Dia, **Thicknesses**: 0.010" – 0.050"
- **Sapphire**: **Length & Width**: 2.0" Sq
- **AlN**: **Length & Width**: 2" Sq, 2.25" Sq and 3.0" Sq, **Thicknesses**: 0.010" – 0.050"
- **BeO**: **Length & Width**: 2.06" Sq, 2.3" X 2.9" and 3.7" Sq, **Thicknesses**: 0.010" – 0.050"
- **Stellar offers finished parts at custom sizes and thicknesses**
- **Finished Part Length & Width Tolerance (Dicing)**: Standard:  $\pm 0.002$ ", Special:  $\pm 0.001$ "
- **Thickness Tolerance**: Standard:  $\pm 0.001$ ", Special:  $\pm 0.0005$ ", As Fired:  $\pm 10\%$

### Available Metals and Standard Thicknesses:

- A. Ti:1000-2000Å (Adhesion)
- B. NiCr:1000-2000Å (Adhesion)
- C. Pt:2000-3000Å (Barrier)
- D. Ni:2000-3000Å (Barrier)
- E. Au: 1500-10,000Å
- F. Cu: 20,000Å MIN.
- G. Stellar offers custom metallization thicknesses and plating options
- H. Stellar offers Physical Vapor Deposition and Sputtering options

### Available Finishes:

- I. ENIG and ENIG (Electroless Nickel and Gold)
- II. Electrolytic nickel and gold plating – design dependent
- III. Selective Au/Sn coating
- IV. Laser Ablated Solder Dams

### Other Available Options:

- V. Dicing to final size
- VI. Laser machine to final size
- VII. Laser scribe & snap to final size
- VIII. Laser Thru-holes/metalized laser thru-holes/Laser chamfers

*Custom criteria, in depth details and Stellar's inspection criteria available upon request*