

Ultra-High Vacuum Compatible Waveguide

Mega Industries produces an array of Ultra High Vacuum (UHV) and Thermal Vacuum Chamber (TVAC) compatible waveguide and coaxial components. Our products are custom-tailored to provide high electrical performance in the Ultra High Vacuum Environment down to 1×10^{-11} Torr. All of these components are constructed using vacuum rated materials such as OFHC copper, non-magnetic stainless steel (304, 316L, 316LN), and ceramics such as alumina, sapphire and quartz. Our manufacturing process uses advanced welding and vacuum brazing techniques, and all Ultra High Vacuum Products are cleaned, assembled, tested and stored in our clean room facility.

Services Provided

- Test and verify vacuum levels to 1.0×10^{-11} Torr.
- Vacuum leak-checker measures Helium (He) He leak rates to 5×10^{-11} mBar l/s
- Perform high heat bake-out procedures
- Unique vacuum packaging protocols
- UHV-compatible gaskets, flanges and tubing
- Ultrasonic clean: three-stage chemical cleaning
- Heat deionized rinse system



Vacuum Furnace

- Precise control of temperature profiles
- Four additional survey thermocouples
- Deep-working heat zone horizontal or vertical orientation
- Capable of ambient to $2,400^{\circ}\text{F}$
- Braze from atmosphere to high vacuum (10^{-6} Torr)



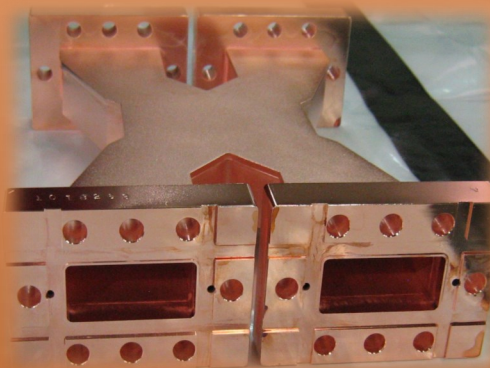
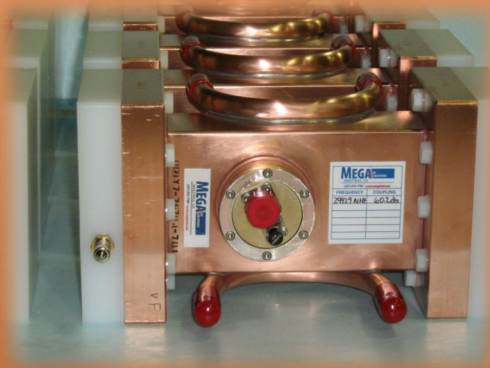
Clean Room Facility

- Monitored, tracked and maintained for ISO 14644-1 Compliance
- Four progressively pressurized areas for specific operations
 - Center Room : Assembly & RF Testing (ISO Class 5)
 - Outer areas : Vacuum brazing, cleaning, packaging, vacuum testing (ISO Class 6)
 - Entry : Dressing / Gowning area
- Airflow system designed for 40 room exchanges per hour
- Induction vacuum-brazing system
- Equipped with RF Network Analyzer



Custom Solutions

MEGA has years of experience, innovation and ability to take on concepts from sketch to delivered solutions. We fabricate intricate shapes, incorporate uncommon materials, and are well-versed in non-standard waveguide and coax sizes. We offer an array of solutions for elevated power levels.



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