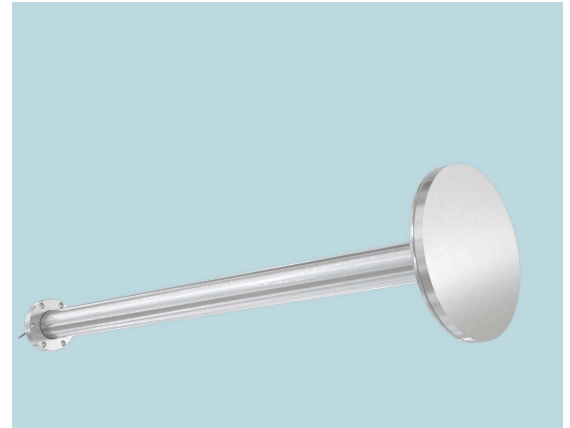


BCE APPLICATION NOTE

Vacuum Pedestal Heater – Extended Sleeve

BACKGROUND

Heating solution for an ALD Vacuum Chamber Heater testing 6" (152mm) wafers up to 450°C. There were obvious space constraints at the customer site requiring an extended sleeve of 25". The extra-long length enabled the placement of the wafer on the top surface eliminating the need to modify the existing chamber.



SCOPE:

The Vacuum Pedestal Heater needed to satisfy the following:

- Temperature 450°C
- 25" Long sleeve with 2.75 CF Flange on the bottom
- Body must pass Helium Leak rate of 1×10^{-9} cc/sec He
- 6" overall diameter for 6" (152mm) wafers
- Top surface must have a flatness of $\pm .005$ "
- Thermocouple for additional temperature measurement
- 1,000 Watt ($\pm 10\%$), 120 Volt
- Material was 304 Stainless Steel

OUTCOME

The Vacuum Pedestal Heater was ramped in atmosphere to 450°C in approximately 45 minutes. Due to the 360° weld, there was some deflection on the top surface causing it to be out of tolerance. After the 450°C ramp, the Vacuum Pedestal Heater was polished down to below $\pm .005$ ". A leak test was performed to spec and cleaned to high purity standards then shipped in clean room bags.



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