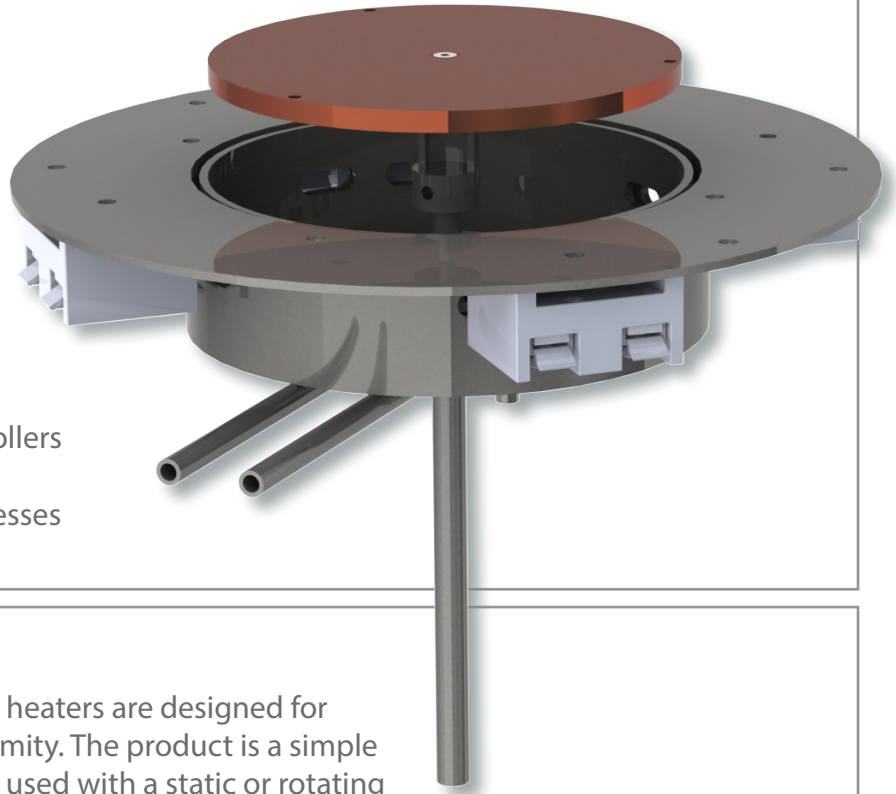


Enclosed quartz lamp substrate heaters

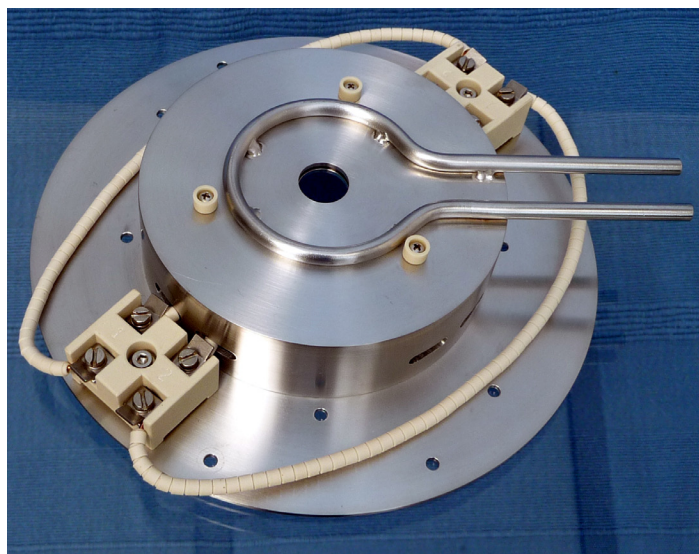
Key Features:

- 500 °C or 600 °C maximum platen temperatures
- 4" or 6" platen diameters
- High heating rates and uniformity
- High efficiency quartz halogen lamps
- Water-cooled high-emissivity reflector dome
- Double-walled heat shielding
- UHV-compatible materials
- Power supplies and temperature controllers available
- Ideal for substrate heating in PVD processes
- Modular design and easy retrofitting



Overview:

Moorfield enclosed quartz lamp substrate heaters are designed for high efficiency, longevity and good uniformity. The product is a simple retrofit to existing equipment and may be used with a static or rotating platen. A high emissivity reflector housing with a multiple quartz lamp array is encircled by a water-cooled heat shield which mounts onto a vacuum chamber top or baseplate flange. The heat shielding and water-cooling (optional, but required for 600 °C models) ensure minimal IR leakage to ambient thus protecting chamber pressure levels. The platen is designed to be retracted into the dome via an optional Z-shift in order to reduce edge-effect heat losses.



Above: View of enclosed halogen lamp substrate heater showing ceramic terminal blocks for lamp power connections and water-cooling channels.

Insulated power cables and thermocouple cable are connected to a multi-pin feedthrough whilst water-cooling is via a single flow/return feedthrough. NW40CF and 1" bolt feedthroughs are available.

For sensitive applications, or where high heating rates are required, it is recommended that a substrate shutter be fitted in close proximity to the heater platen. The shutter, when in the closed position, will enhance temperature ramp rates whilst also reducing IR transmission to other in-chamber hardware.

Enclosed quartz lamp substrate heaters

Models:

QLD-4-500C: Substrate heater module, 4" diameter platen, 500 °C maximum temperature.

QLD-6-500C: Substrate heater module, 6" diameter platen, 500 °C maximum temperature.

QLD-4-600C: Substrate heater module, 4" diameter platen, 600 °C maximum temperature. Water-cooled.

QLD-6-600C: Substrate heater module, 6" diameter platen, 600 °C maximum temperature. Water-cooled.

Custom configurations together with power supplies and temperature controllers are available — please call for details.

Associated Products from Moorfield:

- Heater module power supplies and temperature controllers
- Shutter assemblies and controllers
- Substrate annealing systems
- *MiniLab* automatic/manual physical vapour deposition (PVD) systems

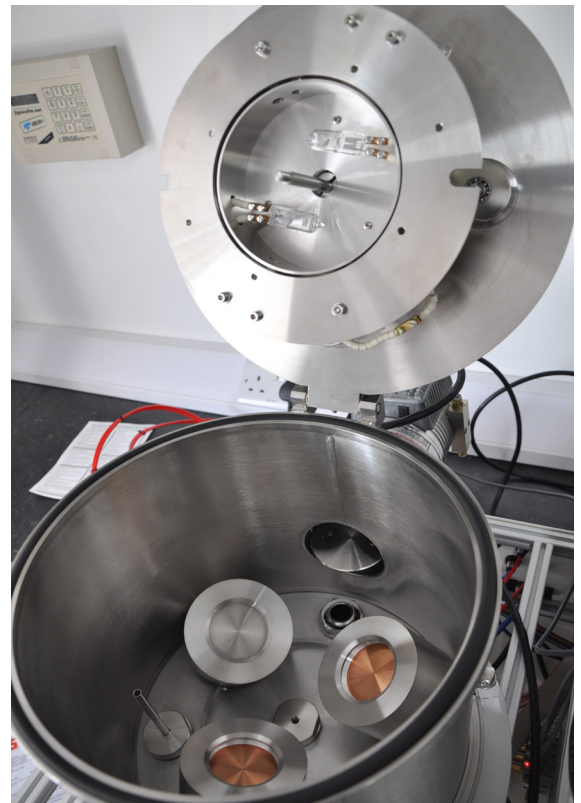
Applications:

- Substrate heating for PVD tools
- Material and device annealing
- Education, pure research and product R&D



Above: Rack-mount combined power supply and temperature controller (1 °C resolution) for quartz lamp substrate heater module.

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Above: Enclosed quartz lamp heater module installed in Moorfield nanoPVD S10A benchtop magnetron sputtering system. The platen has been removed from its rotation shaft to reveal the inner quartz lamps. Here, heating is employed to improve film characteristics resulting from PVD processes.

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