

# BCE APPLICATION NOTE

ELECTRIC HEATING  
ELEMENTS

VACUUM  
FEEDTHROUGHS

CUSTOM THERMAL  
SYSTEMS

## Heated Cube

### BACKGROUND

An analytical company approached BCE for their small space and high temperature heated gas requirement. They needed to reduce the length and diameter of the current heat source to be able to fit into a more compact design for their next generation mass spectrometry tool.

### SCOPE:

The Heated Cube needed to satisfy the following:

- Temperature up to 500°C
- Small, compact footprint
- Insulate heat source to retain heat and reduce outer temperature
- Reduce size from a 36" long cylinder to a 2" square cube
- 120-Volt 200-Watt
- Must pass all electrical safety and Meg-Ohm requirements
- Air path must be clean and free from ni-chrome wire exposure (chromium flaking)



### OUTCOME

BCE produced a highly effective high temperature clean gas electric air heater with a major reduction in size. A stainless steel gas heating package with a footprint of 2" x 1 1/2" x 1" was the result. This heater is compact and has an inlet of 1/8" BSPP and a 1/16" NPT outlet with a 36" long heated path that maximizes heat transfer to the fullest.

There are two zones of heat each at 100 watt with two sensors, one to control and one to monitor the temperature. The outlet temperature can reach up to 500°C.

The Heated Cube comes complete with insulation and a SST jacket. It can be mounted in an extremely tight space for most OEM tools that put a premium on space and performance. Liquid and gas medium can be processed with this design. Call BCE today for more information.



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