

# BCE APPLICATION NOTE

ELECTRIC HEATING  
ELEMENTS

VACUUM  
FEEDTHROUGHS

CUSTOM THERMAL  
SYSTEMS

## MEGA CLEAN FLOW HEATER: MINIMIZING TOXIC EMISSIONS FOR COGENERATION

Using a small (~25HP) lean burn natural gas motor for cogeneration, our customer wanted to mitigate toxic emissions on the exhaust. The challenge is reducing Formaldehyde and Benzene output levels as well as reducing all other toxins without air-flow exposure to ni-chrome resistors.

### SCOPE:

The MEGA CLEAN FLOW HEATER needed to satisfy the following criteria:

- Exhaust air flow rates from 15cfm to 30cfm
- Inlet 2" NPT, outlet 2" NPT
- Engine loads for 25% to 100%
- Insulation of all inlet & outlet entries as well as process chamber
- Air-flow exposure to 304 or 316 stainless steel only
- Outlet temperature must be <288°C at ALL flow rates
- BCE Controllers needed for operating temp and 50 Meg-ohm isolation at 500 VDC
- Hi-pot 2E + 1K at 3mAmp
- ALL TESTS PERFORMED AT ROOM TEMPERATURE



### OUTCOME:

The Mega Clean Flow Heater proved to be the most optimal design for Cogeneration. The temperature, watt density, and variable flow rates assured success when operating the instrument. BCE's proprietary design was essential in the application.

[Click here for more information on the Mega Clean Flow heater.](#)



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