

FASTCAL 3000

500 to 3000°C

FastCAL 3000 is a high temperature blackbody source with a capacity to produce high temperature using high emissivity emitter (graphite tube) and at the same time stabilize at the required temperature within a few minutes. It is mainly used to calibrate non-contact temperature sensors. Step change in temperature is achievable within seconds. The graphite tube has an emitter diameter of 25mm (1.00") and an emissivity of $+0.995 \pm 0.005$. Target temperature is sensed by a non-contact temperature sensor/Pyrometer which gives a feedback to PID controller to regulate the cavity temperature precisely to the desired set points. Remote set point is achieved via RS-232 C communication port.

All safety features to protect equipment and operator are easily accessible.

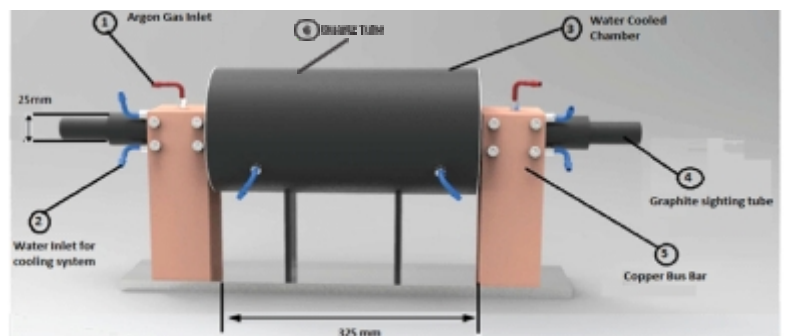


ASSEMBLY

FastCAL 3000 heating element assembly utilizes two water cooled copper bus bars between which the heating element is mounted. Water cooling of the bus bars is necessary to maintain physical integrity.

FastCAL 3000 has movable copper bus bar which can be used for replacement of graphite cavity. As graphite is easily oxidized, so inert gas is purged into each side of tubular assembly, part of which eventually exist as a purging shield at the both end. Purge gas is also routed into the graphite felt and graphite top insulation which surrounds the outside of the tubular heating element.

It is enclosed in a transparent quartz tube that is hanged on both ends. A re-circulation cooling system is recommended to minimize contamination of the system and conserve cooling system.



SAFETY INTERLOCK FEATURES

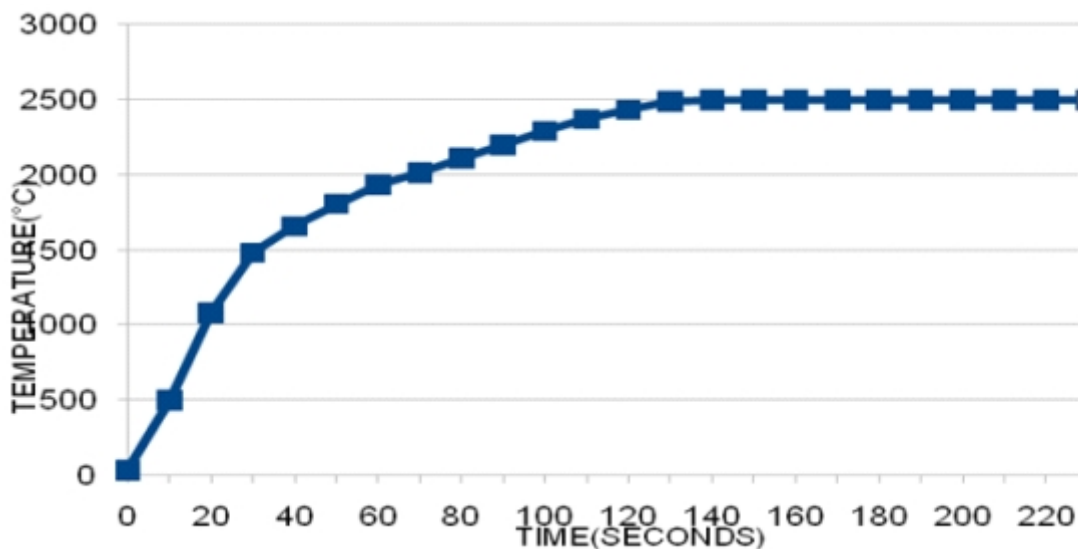
System will switch off in case of

- Water flow failure
- Increase in water temperature
- Argon gas flow failure
- Over current

TECHNICAL SPECIFICATIONS

Temperature Range	500°C to 3000°C (932°F - 5432°F)
Wavelength	1000 nm or 1600 nm (Pyrometer)
Cavity Temp. Accuracy	± 0.25 % of set temperature ±1°C
Temperature Resolution	0.1°C
Temperature Stability	±1°C
Emissivity	0.995 ±0.005
Cavity	Closed end graphite tube Length - 292mm Heated Length - 127mm
Heating Aperture/Cavity Dia	Graphite tube with argon gas purge dia 25mm
Cooling	Water cooled, recommended re-circulation system. All units include water cooled reflector around the blackbody to reduce the heat load to the room. A Chiller unit will be provided with the system.
Purge Gas	Dry Argon gas flow with 7-10 LPM
Heating Time	Approx 5 Minute from ambient to 3000°C
Safety Interlocks	Cooling water over temperature, Low purge gas flow, low cooling water flow rate, over current and over temperature protection.
Controlling Sensor	Pyrometer
Method of Control	PID controller Eurotherm make (Option - HMI & Data Logging)
Remote Controller	Set Point control and temperature monitoring by RS-232/RS-485
Ambient Temperature	0°C to 50°C
Power	230 VAC ±10°C 50Hz (Three phase/Two Phase/Single Phase)
Dimension	1700mm(H) x 900mm(W) x 1200mm(D)
Weight	300 Kg

WARM-UP TIME OF FASTCAL 3000



Tempsens Instruments (I) Pvt. Ltd. U# II

A-190, Road No.5, M.I.A., Udaipur-313003 (Rajsthan) INDIA

Ph.:+91-294-3052900, Fax.:+91-294-3052950

Email: info@tempsens.com