

Compact Gradient Split Tube Furnaces

These compact split tube furnaces are specifically design to provide a temperature gradient along the length of the heated zones. They use free radiating wire elements embedded within the insulation of the furnace body. The benefit of this design is its flexibility; with the use of tube adapters the same furnace can be used with a variety of tube diameters.

The TG2 furnace has two independent zones and TG3 has three independent zones. They are split tube furnaces that comprise a furnace body which is hinged and split into two halves along its length. This makes exchange of work tubes easier and also enables the furnace to be used with reactors or work tubes where end flanges would make insertion into a non-split furnace difficult. The TG2 furnace includes a 25 mm long unheated zone barrier between the two heated zones and the TG3 has two 75 mm long unheated zone barriers between the three heated zones. Each heated zone has its own temperature controller and thermocouple. This range of tube furnaces does not include an integral work tube which must be selected as an additional item. Should vacuum or a modified atmosphere be required, it is necessary to use a separate slide-in work tube of adequate length needed to fit end seals. This information can be found on pages 42–43. The use of a separate work tube has the advantage of protecting the heating elements from damage or contamination.

Note: The temperature gradient achievable is influenced by work tube diameter. Larger gradients will be achieved with smaller diameter work tubes because heat transfer between zones will be less.



TG2 12/125/425



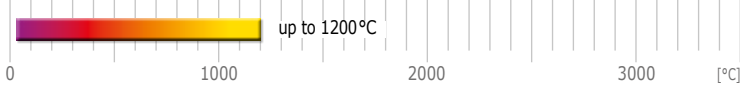
TG3 12/60/600

Standard features

- 1200°C maximum operating temperature
- Each zone has a Carbolite Gero EPC3016P1 programmable temperature controller with 24 segments
- TG3 12/60/600. Overall heated length of 600 mm divided into three 150 mm heated zones with two 75 mm unheated zone barriers
- TG2 12/125/425. Overall heated length of 425 mm divided into two 200 mm heated zones with a 25 mm unheated zone barrier
- Wire elements in high quality vacuum formed insulation ensure fast heat up, excellent temperature control and short cool down times
- Furnace splits into two halves and accommodates tubes or samples fixed into a test rig
- Furnace body detachable from the control box to allow use of optional mounting arrangements (see pages 6–7)
- Control module with 2 metre cable to furnace with plug and socket

Options (specify these at time of order)

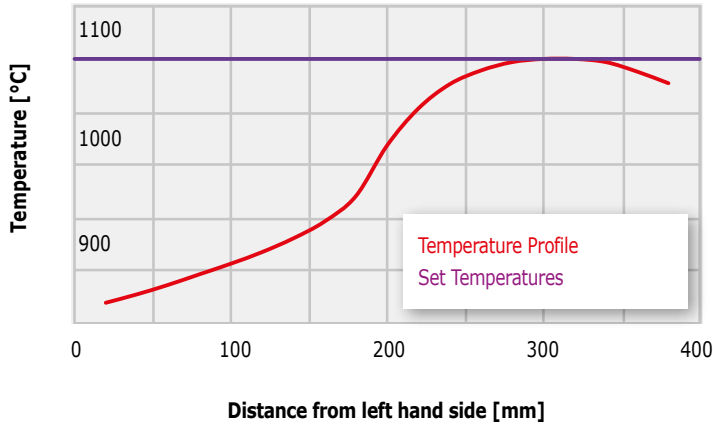
- Over-temperature protection for each heated zone (recommended to protect valuable contents & for unattended operation)
- A range of additional work tubes (page 41), end seals (page 44) and work tube packages (pages 42–43) is available for use with modified atmosphere and/or vacuum
- Vacuum packages with a choice of rotary vane pump or turbomolecular pump are available (page 46)
- Wide choice of tube diameters and materials is available.
- See page 41 for tube materials
- Insulation plugs and radiation shields to prevent heat loss
- Vertical mounting stand for the furnace body including bracket for mounting the furnace body to customer's equipment
- 4 m long extension cable to give a total 6 m length of cable between furnace body and control box
- Gas packages with manual valve (page 47)
- Gas packages with electrically operated valve for up to 2 gases (page 47)



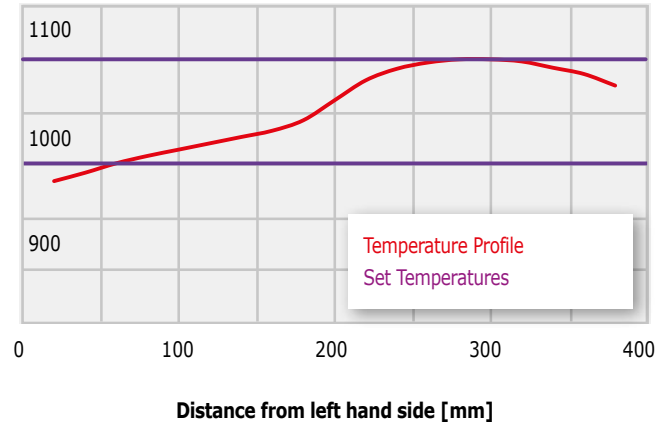
Heat treatment

A sample could be moved between two temperature zones to achieve a desired heat cycle without waiting for a single zone furnace to heat or cool.

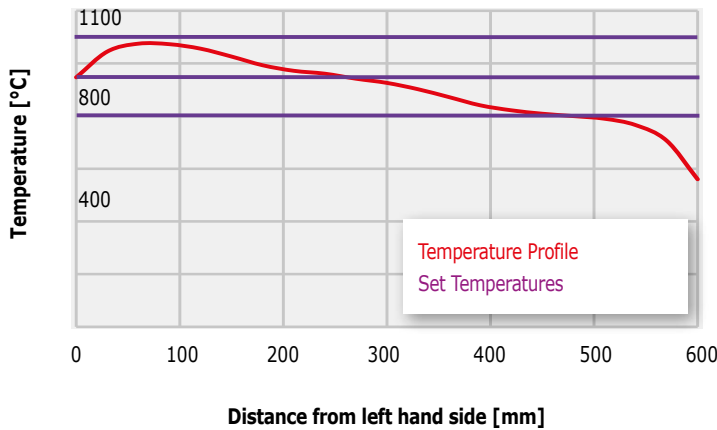
Temperature Gradient, Horizontal TG2 12/125/425.
80 mm OD worktube.
Setpoints: **zone 1: off, zone 2: 1100°C**



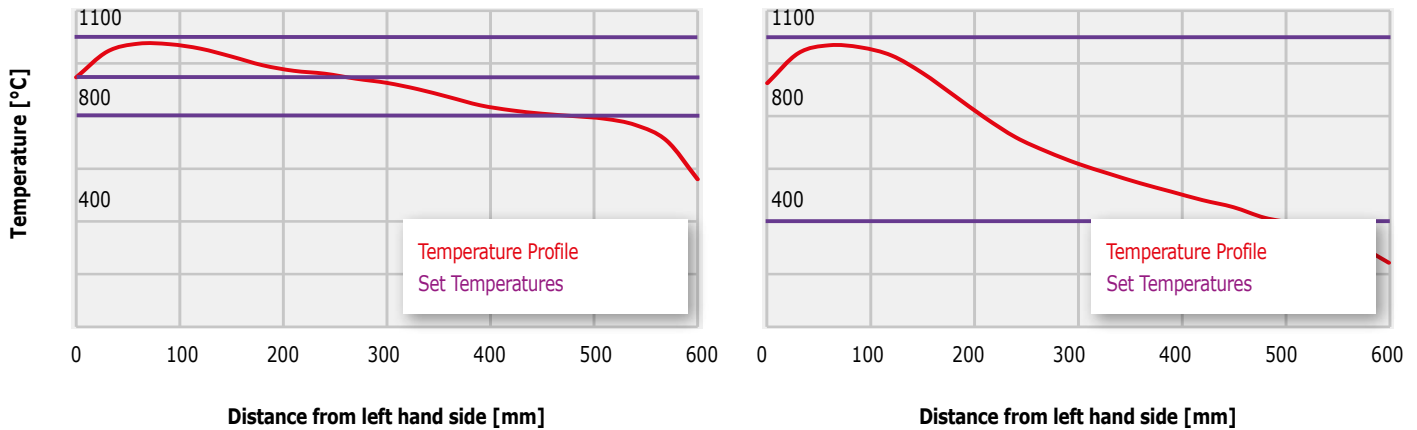
Temperature Gradient, Horizontal TG2 12/125/425.
80 mm OD worktube.
Setpoints: **zone 1: 1000°C, zone 2: 1100°C**



Temperature Gradient, Horizontal TG3 12/60/600.
60 mm OD worktube.
Setpoints: **zone 1: 1100°C, zone 2: 950°C, zone 3: 800°C**



Temperature Gradient, Horizontal TG3 12/60/600.
60 mm OD worktube.
Setpoints: **zone 1: 1100°C, zone 2: off, zone 3: 400°C**



Technical data

Model	Max. temp. [°C]	Heat-up time [mins]	Dimensions: Max. outer Ø accessory tube [mm]	Dimensions: Overall heated length [mm]	Recommended tube length		Dimensions: External Furnace H x W x D [mm]	Dimensions: Control module H x W x D [mm]	Max. power [W]	Thermo-couple type	Weight [kg]
					for use in air [mm]	for use with modified atmosphere [mm]					
TG3 12/60/600	1200	-	60	600	880	1050	560 x 795 x 480	220 x 785 x 480	2000	N	56
TG2 12/125/425	1200	134	125	425	750	1000	645 x 665 x 575	220 x 655 x 480	1860	N	71

i Please note:

- Heat up time is measured to 100°C below max, using an empty quartz tube & insulation plugs
- Heat up rate when using an optional ceramic work tube must be limited to 5°C/min
- Holding power is measured at continuous operating temperature

- Temperature gradients are measured with insulation plugs fitted
- Maximum continuous operating temperature is 100°C below maximum temperature



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Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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