

Tube Furnace up to 1600°C - STF / TZF

General Information

The Carbolite Gero STF single zone and TZF 3-zone high temperature tube furnace range is available at 1500 °C and 1600 °C with both models using silicon carbide heating elements.

This range of tube furnaces does not include an integral work tube and one must be selected as an additional item. The work tube length is dependent on the application eg for use with modified atmosphere or vacuum.

The TZF 3-zone high temperature tube furnace has heated lengths of 450 and 610 mm. An extended uniform zone in the mid-section of the work tube is achieved with the use of end zone controllers which track the centre zone temperature and compensate for the loss of heat from the tube ends.



Standard features

- 1500°C & 1600°C maximum operating temperatures
- Single zone models fitted with Carbolite Gero 301 PID controller with single ramp to setpoint and process timer
- 3-zone models fitted with 1 x programmable 3216P1 and 2 x 3216CC end zone controllers, with retransmission of setpoint
- Accepts work tubes up to 60 or 90 mm outer diameter depending on model
- Heated lengths, single zone 180, 450 or 610 mm (STF)
- Heated lengths, 3-zone 450 or 610 mm (TZF)
- Silicon carbide heating elements
- Horizontal configuration

Options (specify these at time of order)

- A range of sophisticated digital controllers, multi-segment programmers and data loggers is available. These can be fitted with RS232, RS485 or Ethernet communications
- Over-temperature protection (recommended to protect valuable contents & for unattended operation)
- Alternative mounting options are available
- Optionally configured for 2 phase or 3 phase electrical supply (depending on model)
- A range of additional work tubes, end seals and work tube packages is available for use with modified atmosphere and/or vacuum
- Vacuum packages with a choice of rotary vane pump or turbomolecular pump are available for furnaces with tube inner diameters of 60 mm and above
- Wide choice of tube diameters and materials is available: eg quartz, ceramic, metal
- Insulation plugs & radiation shields to prevent heat loss & improve uniformity
- Control module with 2 meter conduit to furnace (TZF)
- Hook and strap work tube support

Tube Furnace up to 1600°C - STF / TZF

Technical Specifications

STF 15/180

Max temp (°C)	1500
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	60
Dimensions: Heated length (mm)	180
Tube length for use in air (mm)	600
Tube length for use with modified atmosphere (mm)	900
Dimensions: External H x W x D (mm)	625 x 600 x 375
Dimensions: Furnace body length (mm)	600
Uniform length ±5°C (mm)	80
Max power (W)	1500
Thermocouple type	R
Weight (kg)	29
Power supply required per phase	200-240V single phase 12A, 110-120V single phase 24A

STF 15/450

Max temp (°C)	1500
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	90
Dimensions: Heated length (mm)	450
Tube length for use in air (mm)	900
Tube length for use with modified atmosphere (mm)	1200
Dimensions: External H x W x D (mm)	655 x 875 x 430
Dimensions: Furnace body length (mm)	875
Uniform length ±5°C (mm)	350
Max power (W)	5500
Thermocouple type	R
Weight (kg)	34
Power supply required per phase	200-240V single phase 39A, 380-414V 2 phase + N 19.5A, 208V 3 phase + N 25A

Tube Furnace up to 1600 °C - STF / TZF

STF 15/610

Max temp (°C)	1500
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	90
Dimensions: Heated length (mm)	610
Tube length for use in air (mm)	1200
Tube length for use with modified atmosphere (mm)	1500
Dimensions: External H x W x D (mm)	655 x 1080 x 430
Dimensions: Furnace body length (mm)	1080
Uniform length ±5 °C (mm)	400
Max power (W)	6000
Thermocouple type	R
Weight (kg)	45
Power supply required per phase	220-240V single phase 32A, 200-208V single phase 44A, 380-415V 2 phase + n 19.5A, 380-415V 3 phase + N, 19.5A, 200-240V 3 phase delta 34A

STF 16/180

Max temp (°C)	1600
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	60
Dimensions: Heated tube length (mm)	180
Recommended tube length for use in air (mm)	600
Recommended tube length for use with modified atmosphere (mm)	900
Dimensions: External H x W x D (mm)	625 x 600 x 375
Dimensions: Furnace body length (mm)	600
Uniform length ±5 °C (mm)	80
Max power (W)	2500
Thermocouple type	R
Weight (kg)	29
Power supply required per phase	200-240V single phase 23A

Tube Furnace up to 1600°C - STF / TZF

STF 16/450

Max temp (°C)	1600
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	90
Dimensions: Heated tube length (mm)	450
Recommended tube length for use in air (mm)	900
Recommended tube length for use with modified atmosphere (mm)	1200
Dimensions: External H x W x D (mm)	655 x 875 x 430
Dimensions: Furnace body length (mm)	875
Uniform length ±5°C (mm)	350
Max power (W)	6000
Thermocouple type	R
Weight (kg)	40
Power supply required per phase	200-240V single phase 47A, 380-415V 2 phase + N 24A, 380-415V 3 phase + N 21A, 220-240V 3 phase delta 39A,380-415V 3 phase no N 21A,

STF 16/610

Max temp (°C)	1600
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	90
Dimensions: Heated tube length (mm)	610
Recommended tube length for use in air (mm)	1200
Recommended tube length for use with modified atmosphere (mm)	1500
Dimensions: External H x W x D (mm)	655 x 1080 x 430
Dimensions: Furnace body length (mm)	1080
Uniform length ±5°C (mm)	400
Max power (W)	7000
Thermocouple type	R
Weight (kg)	50

Tube Furnace up to 1600°C - STF / TZF

Power supply required per phase	200-240V single phase 50A, 380-415V 2 phase + N 25A, 380V 3 phase + N 25A, 400-415V 3 phase + N 27A, 200-220 3 phase delta 43A, 230-240V 3 phase delta 46A
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TZF 15/450

Max temp (°C)	1500
Number of heated zones	Three zone
Dimensions: Max outer diameter accessory tube (mm)	90
Dimensions: Heated length (mm)	450
Heat-up time (mins)	--
Tube length for use in air (mm)	900
Tube length for use with modified atmosphere (mm)	1200
Dimensions: External H x W x D (mm)	655 x 875 x 430
Dimensions: Furnace body length (mm)	875
Uniform length ±5°C (mm)	375
Max power (W)	5060
Holding power (W)	3000
Thermocouple type	R
Weight (kg)	39

TZF 15/610

Max temp (°C)	1500
Number of heated zones	Three zone
Dimensions: Max outer diameter accessory tube (mm)	90
Dimensions: Heated length (mm)	610
Heat-up time (mins)	75
Tube length for use in air (mm)	1200
Tube length for use with modified atmosphere (mm)	1500
Dimensions: External H x W x D (mm)	655 x 1080 x 430
Dimensions: Furnace body length (mm)	1080
Uniform length ±5°C (mm)	450
Max power (W)	8000
Holding power (W)	4000
Thermocouple type	R

Tube Furnace up to 1600°C - STF / TZF

Weight (kg)	70
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TZF 16/450

Max temp (°C)	1600
Number of heated zones	Three zone
Dimensions: Max outer diameter accessory tube (mm)	90
Dimensions: Heated length (mm)	450
Heat-up time (mins)	78
Tube length for use in air (mm)	900
Tube length for use with modified atmosphere (mm)	1200
Dimensions: External H x W x D (mm)	655 x 875 x 430
Dimensions: Furnace body length (mm)	875
Uniform length ±5°C (mm)	393
Max power (W)	6800
Holding power (W)	3300
Thermocouple type	R
Weight (kg)	39

TZF 16/610

Max temp (°C)	1600
Number of heated zones	Three zone
Dimensions: Max outer diameter accessory tube (mm)	90
Dimensions: Heated length (mm)	610
Heat-up time (mins)	
Tube length for use in air (mm)	1200
Tube length for use with modified atmosphere (mm)	1500
Dimensions: External H x W x D (mm)	655 x 1080 x 430
Dimensions: Furnace body length (mm)	1080
Uniform length ±5°C (mm)	450
Max power (W)	8000
Holding power (W)	4500
Thermocouple type	R
Weight (kg)	70

Please note:

- Heat up rate when using a ceramic work tube must be limited to 5 °C/min
- Heat up rate is measured to 100°C below max, with no work tube fitted and with plugs fitted

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- Maximum continuous operating temperature is 100°C below maximum temperature
- Uniform length measured with insulation plugs fitted