

## Compact Horizontal Split Tube Furnace - EST / EZS

### General Information

These compact universal split tube furnaces 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 single zone EST and 3-zone EZS split tube furnaces 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 3-zone EZS furnaces provide excellent uniformity resulting from division of the heated length into 3 zones with its own controller and thermocouple. This range of tube furnaces does not include an integral work tube which must be selected as an additional item. The work tube length is dependent on the application, for example, for use with modified atmosphere or vacuum.

The use of a separate work tube has the advantage of protecting the heating elements from damage or contamination.



### Standard features

- 1200 °C maximum operating temperature
- Carbolite Gero 301 controller, with single ramp to set-point & process timer
- Heated lengths, single zone 150, 300, 450 or 600 mm (EST)
- Heated lengths, 3-zone 450 or 600 mm (EZS)
- Accepts work tubes with outer diameters up to 60 mm
- Wire elements in high quality vacuum formed insulation ensure fast heat up, excellent temperature uniformity and short cool down times
- Furnace splits into two halves and accommodates tubes or samples fixed into a test rig
- Outer mesh guard ensures operator safety

### 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)
- 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

## Compact Horizontal Split Tube Furnace - EST / EZS

### Technical Specifications

#### EST 12/150

Max temp (°C)	1200
Number of heated zones	Single zone
Heated length (mm)	150
Heat-up time (mins)	46
Max outer ø accessory tube (mm)	60
Tube length for use in air (mm)	300
Tube length for use with modified atmosphere (mm)	600
Dimensions: External H x W x D (mm)	560 x 370 x 390
Uniform length ±5°C (mm)	80
Max power (W)	750
Thermocouple type	N
Weight (kg)	16

#### EST 12/300

Max temp (°C)	1200
Number of heated zones	Single zone
Heated length (mm)	300
Heat-up time (mins)	34
Max outer ø accessory tube (mm)	60
Tube length for use in air (mm)	450
Tube length for use with modified atmosphere (mm)	750
Dimensions: External H x W x D (mm)	560 x 465 x 390
Uniform length ±5°C (mm)	185
Max power (W)	1480
Thermocouple type	N
Weight (kg)	18

## Compact Horizontal Split Tube Furnace - EST / EZS

### EST 12/450

Max temp (°C)	1200
Number of heated zones	Single zone
Heated length (mm)	450
Heat-up time (mins)	44
Max outer ø accessory tube (mm)	60
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)	560 x 615 x 390
Uniform length ±5°C (mm)	300
Max power (W)	2000
Thermocouple type	N
Weight (kg)	20

### EST 12/600

Max temp (°C)	1200
Number of heated zones	Single zone
Heated length (mm)	600
Heat-up time (mins)	45
Max outer ø accessory tube (mm)	60
Tube length for use in air (mm)	750
Tube length for use with modified atmosphere (mm)	1050
Dimensions: External H x W x D (mm)	560 x 765 x 390
Uniform length ±5°C (mm)	460
Max power (W)	2520
Thermocouple type	N
Weight (kg)	24

### EZS 12/450

Max temp (°C)	1200
Number of heated zones	Three zone
Heated length (mm)	450
Heat-up time (mins)	55
Max outer ø accessory tube (mm)	60
Tube length for use in air (mm)	600
Tube length for use with modified atmosphere (mm)	900
Dimensions:	560 x 615 x 390

## Compact Horizontal Split Tube Furnace - EST / EZS

External H x W x D (mm)	
Quartz tube uniform length $\pm 5^\circ\text{C}$ @ 800°C (mm)	--
Max power (W)	2000
Thermocouple type	N
Weight (kg)	21

### EZS 12/600

Max temp ( $^\circ\text{C}$ )	1200
Number of heated zones	Three zone
Heated length (mm)	600
Heat-up time (mins)	55
Max outer $\varnothing$ accessory tube (mm)	60
Tube length for use in air (mm)	750
Tube length for use with modified atmosphere (mm)	1050
Dimensions: External H x W x D (mm)	560 x 765 x 390
Quartz tube uniform length $\pm 5^\circ\text{C}$ @ 800°C (mm)	500
Max power (W)	2520
Thermocouple type	N
Weight (kg)	26

### Please note:

- Heat up rate when using an optional ceramic work tube must be limited to 5  $^\circ\text{C}/\text{min}$
- Heat up rate is measured to 100  $^\circ\text{C}$  below max, using an empty tube & insulation plugs
- Holding power is measured at continuous operating temperature
- Maximum continuous operating temperature is 100  $^\circ\text{C}$  below maximum temperature