Compact Modular 3-Zone Tube Furnace (E-Series: EHC, EVC, EZS, EVZ)

General Information

These 3-zone 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 furnaces are available with horizontal or vertical, split and non-split configuration.

The models EZS and EVZ 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.

Excellent uniformity results from division of the heated length into 3 zones each with its own controller and thermocouple.

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 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
- 450 or 600 mm heated lengths
- Provides a longer uniform zone than can be achieved in a single zone tube furnace
- 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
- Models EZS, EVZ: Furnace splits into two halves and accommodates tubes or samples fixed into a test rig
- Models EHC, EZS: Horizontal configuration
- Models EVC, EVZ: Vertical configuration (can also be used horizontally)
- Models EVC, EVZ: Control module with 2 metre conduit to furnace
- Carbolite 301 digital PID controller with single ramp to setpoint, digital display and process timer
- Outer mesh guard ensures operator safety

Options (specify these at time of order)

- EVC models: Angle adjustment option allows horizontal and multi-angle configuration
- Insulation plugs, gas tight end seals and vacuum connections available
- A range of sophisticated digital controllers, multi-segment programmers and data loggers is available. These can be fitted with RS232, RS485 or Ethernet communications

Compact Modular 3-Zone Tube Furnace (E-Series: EHC, EVC, EZS, EVZ)

- Over-temperature protection (recommended to protect valuable contents & for unattended operation)
- Wide choice of tube diameters and materials is available: eg quartz, ceramic, metal
- 'Retransmission of Setpoint' control configuration to facilitate programmed cooling

Technical Specifications

EHC 12/450

Configuration	Non-split / horizontal
Max temp (°C)	1200
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: External H x W x D (mm)	560 x 615 x 390
Quartz tube uniform length ±5°C @ 800°C (mm)	
Max power (W)	2000
Thermocouple type	N
Weight (kg)	20

EHC 12/600

Configuration	Non-split / horizontal
Max temp (°C)	1200
Heated length (mm)	600
Heat-up time (mins)	55
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 615 x 390
Quartz tube uniform length ±5°C @ 800°C (mm)	500
Max power (W)	2520
Thermocouple type	N
Weight (kg)	25

Compact Modular 3-Zone Tube Furnace (E-Series: EHC, EVC, EZS, EVZ)

EVC 12/450

Configuration	Non-split / vertical
Max temp (°C)	1200
Heated length (mm)	450
Heat-up time (mins)	58
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)	1040 x 545 x 545
Quartz tube uniform length ±5°C @ 800°C (mm)	
Max power (W)	2000
Thermocouple type	N
Weight (kg)	30

EVC 12/600

Configuration	Non-split / vertical
Max temp (°C)	1200
Heated length (mm)	600
Heat-up time (mins)	58
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)	1160 x 545 x 545
Quartz tube uniform length ±5°C @ 800°C (mm)	490
Max power (W)	2520
Thermocouple type	N
Weight (kg)	35

Compact Modular 3-Zone Tube Furnace (E-Series: EHC, EVC, EZS, EVZ)

EZS 12/450

Configuration	Split / horizontal
Max temp (°C)	1200
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: External H x W x D (mm)	560 x 615 x 390
Quartz tube uniform length ±5°C @ 800°C (mm)	
Max power (W)	2000
Thermocouple type	N
Weight (kg)	21

EZS 12/600

Configuration	Split / horizontal
Max temp (°C)	1200
Heated length (mm)	600
Heat-up time (mins)	55
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
Quartz tube uniform length ±5°C @ 800°C (mm)	500
Max power (W)	2520
Thermocouple type	N
Weight (kg)	26

Compact Modular 3-Zone Tube Furnace (E-Series: EHC, EVC, EZS, EVZ)

EVZ 12/450

Configuration	Split / vertical
Max temp (°C)	1200
Heated length (mm)	450
Heat-up time (mins)	58
Max outer ø accessory tube (mm)	60
Tube length for use in air (mm)	900
Tube length for use with modified atmosphere (mm)	900
Dimensions: External H x W x D (mm)	1040 x 545 x 545
Quartz tube uniform length ±5°C @ 800°C (mm)	
Max power (W)	2000
Thermocouple type	N
Weight (kg)	31

EVZ 12/600

Configuration	Split / vertical
Max temp (°C)	1200
Heated length (mm)	600
Heat-up time (mins)	58
Max outer ø accessory tube (mm)	60
Tube length for use in air (mm)	1050
Tube length for use with modified atmosphere (mm)	1050
Dimensions: External H x W x D (mm)	1160 x 545 x 545
Quartz tube uniform length ±5°C @ 800°C (mm)	490
Max power (W)	2520
Thermocouple type	N
Weight (kg)	36

Please note:

- Heat up rate is measured to 100°C below max, using an empty tube & insulation plugs
- Holding power is measured at continuous operating temperature
- Maximum continuous operating temperature is 100°C below maximum temperature
- Models EVC and EVZ dimensions excluding control box (225 x 570 x 360mm)

Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.

UK Office
Keison Products,
P.O. Box 2124, Chelmsford, Essex, CM1 3UP, England.
Tel: +44 (0)330 088 0560
Fax: +44 (0)1245 808399
Email: sales@keison.co.uk