



TSO ROTARY REACTOR TUBE FURNACE RANGE

Carbolite's versatile new TSO rotary / oscillatory reactor tube furnace range incorporates high-quality heating elements and innovative thermal insulation design to achieve first class performance while maintaining both reduced case temperatures and power consumption.

The TSO tube furnace body is split into two halves and hinged at the rear; pneumatic dampening struts at either end provide a smooth opening action. The ability to open the furnace makes it easier for operators to insert vessels, such as reactors, with end flanges that would make them difficult to insert into a non-split furnace.

The TSO rotary reactor tube furnace has been specially designed for the processing or testing of powdered or granular materials at high temperatures. A quartz vessel is fitted within the furnace into which materials are placed. A variable speed drive system rotates the vessel within the heated zone by 314° to create an oscillatory motion. Optional accessory packages offer standard or fluted vessels, and the ability to operate under either air or a modified gas atmosphere.



[Kliknutím zobrazíte video](#)

Produktové video: TSO Rotary Reactor Tube Furnace Range

OVERVIEW

Maximálna teplota
1100 °C

Reactor vessel Ø
120 mm

Vykurovacia dĺžka
400, 600, 800, 1000
mm

**Number of heated
zones**
1 zone or 3 zones

Orientation
horizontal

TSO ROTARY REACTOR TUBE FURNACE RANGE

LEADING HEAT TECHNOLOGY

Carbolite's new tube furnace range is at the pinnacle of furnace design. The culmination of over 80 years of experience in thermal engineering; combining the latest technological developments with solid construction, high-quality components and a sleek, modern aesthetic.

The oscillatory motion of the TSO rotary reactor tube furnace helps increase the surface area of the sample material exposed to the atmosphere within the vessel, helping to speed up reaction times and improve the overall yield.

HIGH QUALITY HEATING ELEMENTS

- | Excellent temperature uniformity
- | Fast heat-up and cool-down rates
- | Unsurpassed temperature uniformity along the entire heated length

HIGH QUALITY THERMAL INSULATION

- | Low energy consumption
- | Low external case temperature
- | Designed for longevity

? KLIKNĚTE NA MĚ! - AR-MODEL

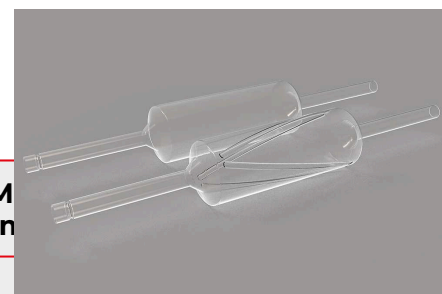
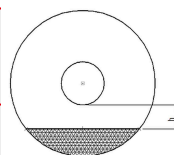


By viewing this webpage on a compatible mobile device you can click the 'cube' icon that allows you to view an augmented reality image of the product.

TSO ROTARY REACTOR TUBE FURNACE RANGE

TSO VESSEL CAPACITY

Heated length (mm)	Reaction chamber length (mm)	Capacity (ml)
400	330	620
600	530	990



M
n

2000 Rotary reactor vessel
20

800	730	1360	16%	2700	20
1000	930	1740	16%	3500	20

TSO ROTARY REACTOR TUBE FURNACE RANGE
TEMPERATURE CONTROL & COMMUNICATIONS



CC-T1 Touch Screen Controller

TSO rotary tube furnaces are equipped with ethernet communications and a programmable controller with 24 segments as standard:

- | Single zone furnaces fitted with Carbolite EPC3016P1 controller
- | Three zone furnaces fitted with Carbolite AriesPlus touch-screen controller

MOŽNOSTI

- | Over-temperature protection (recommended to protect valuable contents and for unattended operation); 1600°C models are equipped with this option as standard
- | A range of sophisticated digital controllers, multi-segment programmers and data loggers is available. These can be fitted with RS485 or Ethernet communications. Viac informácií.

TSO ROTARY REACTOR TUBE FURNACE RANGE

PRÍSLUŠENSTVO

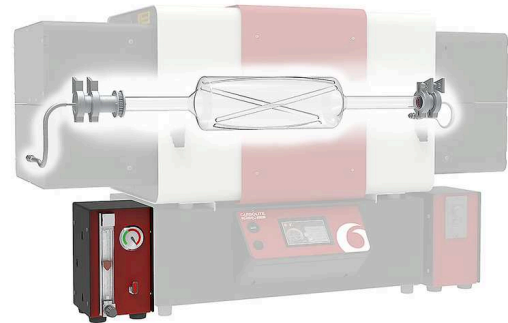
TSO ROTARY REACTOR TUBE FURNACE RANGE

MODIFIED ATMOSPHERE

The Carbolite TSO rotary reactor tube furnace range may be equipped with gas connections to accommodate modified atmosphere applications.

MOŽNOSTI

- | Standard or fluted reactor vessels
- | Gas connection kit to enable operation under modified atmospheres
- | Inert gas package modules allow for the use of up to 3 non-reactive gases (available with either manual or automatic control)



Rotary reactor inside of TSO furnace

TSO ROTARY REACTOR TUBE FURNACE RANGE

MOUNTING CONFIGURATIONS



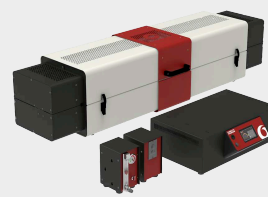
FURNACE BODY ON TOP OF CONTROL BOX

Configuration for heated lengths up to 600 mm



DETACHABLE FURNACE BODY

Easy conversion to optional mounting arrangements



FURNACE BODY AND SEPARATE CONTROL BOX

Configuration for heated lengths of 800 mm and above



OPTION: 4 M CABLE EXTENSION

4 m long extension results in a total of 6 m between furnace body and control box (125 mm Ø models include plug and socket)

TSO ROTARY REACTOR TUBE FURNACE RANGE

TECHNICKÉ ÚDAJE

	TSO1 11/400	TSO1 11/600	TSO1 11/800
Maximálna teplota (°C)	1100	1100	1100
Počet vykurovacích zón	1	1	1
Rozmery reakčnej komory (mm)	ø 120 x 330	ø 120 x 530	ø 120 x 730
Objem reakčnej komory (ml)	620	990	1360
Oscilačná frekvencia za minútu	1 až 8	1 až 8	1 až 8
Rotácia v každom smere	314°	314°	314°
Rozmery: Vonkajšie V x Š x H (mm) so zatvoreným vekom	665 x 1115 x 575	665 x 1315 x 575	445 x 1515 x 575*
Rozmery: Vonkajšie V x Š x H (mm) s otvoreným vekom	930 x 1115 x 655	930 x 1315 x 655	705 x 1515 x 655*
Maximálny výkon (W)	1860	2510	3160
Váha (kg)	88	106	119

	TSO1 11/1000	TSO3 11/600	TSO3 11/800
Maximálna teplota (°C)	1100	1100	1100
Počet vykurovacích zón	1	3	3
Rozmery reakčnej komory (mm)	ø 120 x 930	ø 120 x 530	ø 120 x 730
Objem reakčnej komory (ml)	1740	990	1360
Oscilačná frekvencia za minútu	1 až 8	1 až 8	1 až 8
Rotácia v každom smere	314°	314°	314°
Rozmery: Vonkajšie V x Š x H (mm) so zatvoreným vekom	445 x 1715 x 575*	665 x 1315 x 575	445 x 1515 x 575*
Rozmery: Vonkajšie V x Š x H (mm) s otvoreným vekom	705 x 1715 x 655*	930 x 1315 x 655	705 x 1515 x 655*
Maximálny výkon (W)	3810	2510	3160
Váha (kg)	137	106	119

TSO3 11/1000

Maximálna teplota (°C)	1100
Počet vykurovacích zón	3
Rozmery reakčnej komory (mm)	∅ 120 x 930
Objem reakčnej komory (ml)	1740
Oscilačná frekvencia za minútu	1 až 8
Rotácia v každom smere	314°
Rozmery: Vonkajšie V x Š x H (mm) so zatvoreným vekom	445 x 1715 x 575*
Rozmery: Vonkajšie V x Š x H (mm) s otvoreným vekom	705 x 1715 x 655*
Maximálny výkon (W)	3810
Váha (kg)	137

VEZMITE PROSÍM NA VEDOMIE

- | Maximum continuous operating temperature is 1100 °C
- | All furnaces are equipped with thermocouple type N
- | * Furnace with separate control box

MODEL NAMES EXPLAINED

TSO 1 11/ 600	Number of heated zones: 1 zone or 3 zones
TSO1 11 /600	Maximálna teplota: 1100 °C
TSO1 11/ 600	Vykurovacia dĺžka: 400, 600, 800, 1000 mm

www.carbolite.com/tso