



















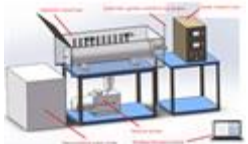
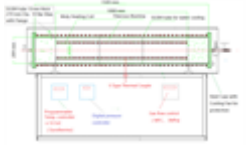

Table 1. Tabulated MTI Plasma Enhanced CVD & ALD Tube Furnaces Tube Furnaces (PECVD)

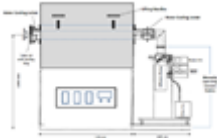
| No | Model | Working Tube Dia. | Heating Rate | Working Temperature | Features | Item Image |
|----|--------------------------|--------------------------------------|---------------|---------------------|--|---|
| 1 | OTF-1200X-HP-55 | 55 mm O.D | Max: 30°C/min | Max: 1100°C | Splittable tube furnace with Ni based super-alloy tube. Consists of aluminum heat radiator, high pressure valves, pressure sensor controlled by pressure controller, PID temperature controller, and copper gasket. 60 MPa max pressure at 600°C |  |
| 2 | OTF-1200X-S-HP-30A | 30 mm O.D | Max: 10°C/min | Max: 1100°C | OTF-1200X-S-HP-30A (updated from OTF-1200X-HP-30 with extra analog controlled pressure relief valve and pressure monitoring gauge) is a CE/UL/CSA certified compact high-pressure tube furnace featuring a Ni-based super-alloy tube vessel (30mm O.D x 12 mm I.D x 560 mm L). It can be used under ultra-highly oxidizing and inert gas atmosphere up to 1100°C to process special compounds. It is a compact HIP (hot isostatic pressure) furnace for researching a new generation of materials at a low cost. |  |
| 3 | OTF-1200X-HVHP-80(60)-SS | 80mm O.D x 70(±2) mm I.D x 1000 mm L | Max: 30°C/min | Max: 900°C | OTF-1200X series high-pressure split tube furnaces can be chosen from two kinds of alloy tubes, e.g. Stainless steel 310S refractory alloy or Ni-based superalloy, which offer a solution of heating treatment under high positive pressure with/without inert gas support to process special compound material. The furnace can be heated up to the max. 900°C or 1100°C with the optional vessel. The operating positive pressure is from 105 to 800 psi according to different heating temperatures. |  |
| | OTF-1200X-HVHP-60-GH | OD 60 x ID 52 x Length 1000 (mm) | Max: 20°C/min | Max: 1100°C | | |

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| 4 | OTF-1200X-HP-III-80 | Vessel Size: 85 mm OD x 50 mm ID x 1000 mm L | <ul style="list-style-type: none"> • 0 – 200 °C: ≤ 10 °C/min • 200 – 700 °C: ≤ 6 °C/min • 700 – 900 °C: ≤ 3 °C/min • 900 – 1100 °C: ≤ 1 °C/min | Max: 1100°C (< 1 hour) Cont: 1000°C | OTF-1200X-HP-III-80 is a high pressure / high vacuum split tube furnace with three heating zones. The processing tube is made of a Ni-based superalloy, which offers a solution for heat treatment under both high positive pressure and high vacuum pressure with/without inert gas support to process special compound materials. The furnace can be heated up to a max. 1100°C at 2.5 bar pressure (or 900°C at 80 bars). |  |
| 5 | OTF-1200X-HP-III-80-GF | Vessel Size: OD 85 x ID 50 x Length 1000 (mm) | Max: 10°C/min | Max: 1100°C (1 hour) Cont: 1000°C | OTF-1200X-HP-III-80-GF is a high-pressure tube furnace with three heating zones and gas flow control system as well as a protective frame. The processing tube is made of Ni-based superalloy with 50 mm ID, which can be heated to max. 1100°C under high-pressure of both oxygen and inert gases with controlled flow rate. The furnace originally is designed for processing Fe-based superconductive material, also can be used for exploring new generation oxide ceramic as a compact HIP. |  |
| 6 | OTF-1200X-X-85GF | Vessel Size: OD 85 x ID 45 x Length 2400 (mm) | Max: 10°C/min | Max: 1100°C (1 hour) Cont: 1000°C | OTF-1200X-X-85GF is a high-pressure tube furnace with ten heating zones and pressure & gas flow control system. The processing tube is made of Ni-based superalloy (45 mm ID x 2400mm L) which can withstand high pressure under both oxygen and inert gases upto 1000°C. Its pressure control system can maintain a stable pressure during the heating process which is critical for processing Fe-based superconductive material, or new generation oxide ceramics. |  |

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| 7 | OTF-1200X-VIII-80-GF | Vessel size: OD 85 x ID 50 x Length 2000 (mm) | Max: 10°C/min | Max: 1100°C (1 hour) Cont: 1000°C | OTF-1200X-HP-VIII-80-GF is a high-pressure tube furnace with eight heating zones and a pressure control system. The processing tube is made of Ni-based superalloy (50 mm ID x 2000mm L) which can withstand high pressure (oxygen or inert gases) under 1100°C max. Its pressure control system can maintain a stable pressure during the heating process which is critical for processing Fe-based superconductive material, or new generation oxide ceramics |  |
| 8 | OTF-1200X-HP-70-V | 70 mm OD | Max: 10°C/min | Max: 1100°C (<1 hour) Cont: 1000°C | OTF-1200X-HP-70-V is a high-pressure verticle split tube furnace with two heating zones. The processing tube is made of 70 mm OD. Ni-based superalloy with 1100oC max working temperature, which is designed for growing crystal via the high-pressure hydrothermal method. |  |
| 9 | GSL-1100X-RC-NI300 | Reactor size: 70 mm OD x 35 mm ID x 326 mm H | Max: 10°C/min | Max: 1100°C (<1 hour) Cont: 1000°C | GSL-1100X-RC-NI300 is a 300 mL reactor made of Ni-based Superalloy, which has excellent creep strength and anti-oxidation. It can reach 1100 °C with a pressure up to 3 MPa under oxygen or inert gasses. It is an ideal tool for preparing advanced material by the hydrothermal method, especially for heat treatment of samples under high oxygen pressure. A solenoid valve is installed on the flange for automatic pressure relief control. Temperature control and pressure monitoring software are included for remote control. |  |
| 10 | GSL-1100X-RC series | - | Max: 10°C/min | RT - 1100°C Max | RC-Ni is reactor made of Ni-base Superalloy, which has excellent creep strength and anti-oxidation. It can reach 1100 °C with a pressure up to 4Mpa under oxygen or inert gas. It is an ideal tool for preparing advanced material by the hydrothermal method, especially heat treat samples under high oxygen pressure. A solenoid valve is installed on the flange allows auto-pressure relief control. Temp. Control and Pressure Real-time Monitoring software are also included. |  |

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| 11 | IMCS-1700H | - | - | Max: 1700°C (<1 hour) | IMCS-1700HP is a High-Pressure induction melting/casting furnace, which can granulate various alloys up to 2 kg at Max. 1700°C under high-pressure Ar gases up to 10 bars, and also can be used to separate melt from slag (infiltrating) for metallurgical processing research. |  |
| 12 | OTF-800X-III-R2 | Quartz tube size: 52mm ID x 60 mm OD x 1400mm L | Max: 10 °C/min | Max: 900°C (<1 hour) Cont: 800°C | OTF-800X-III-R2 is a three zones rotary tube furnace designed for use with strong corrosive gases such as HCL and CH4. The processing tube is made of the double-layer structure of quartz and SS310S and the flange is made of PETF and anti-corrosive rotation fixture, which allows the rotary furnace working at max. 800oC at 3 bar pressure. |  |
| 13 | GSL-1100X-Ti100 | - | - | RT - 400 °C Max | GSL-1100X-Ti100 is a mini reactor made of pure titanium metal. It can reach pressure up to 4 Mpa max. And it is an ideal tool for preparing advanced material, especially bio-material by the hydrothermal method. |  |
| 14 | OTF-1200X-HPR-III | Tube dimension: OD 60 x ID 52 x Length 1000 mm | Max: 10°C/min | Max: 1100°C (< 1 hr) Cont: 1000°C | OTF-1200X-HPR-III is a high-pressure rocking tube furnace with three heating zones. The processing tube is made of a Ni-based superalloy. It is designed for heat treatment materials under both high-pressure gas and high temperature up to 1100°C. It is designed for melting alloy or compound which is easy to evaporate under atmosphere. |  |
| 15 | OTF-800X-III-R2 | Quartz Tube size: 52 mm ID x 60 mm OD x 1400 mm L | Max: 10°C/min | Max: 900°C (< 1 hr) Cont: 800°C | OTF-800X-III-R2 is a three zones rotary tube furnace designed for use with strong corrosive gases such as HCL and CH4. The processing tube is made of the double-layer structure of quartz and SS310S and the flange is made of PETF and anti-corrosive rotation fixture, which allows the rotary furnace working at max. 800oC at 3 bar pressure. |  |

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| 16 | CM-HIP-2 | 80IDx130H mm | - | - | CM-HIP-2 is a compact internal heated isostatic pressing (HIP) with 80 ID x 130 H mm vertical heating zone. The furnace can operate under the maximum working temperature of 1200°C and a maximum pressure of 20 Mpa with both inert and oxygen gas. |  |
| 17 | CM-HIP-3-II | 205 m x 310 mm x 250 mm (Chamber) | Max: 5°C/min | - Max: 1200°C max. at 10MPa - Max: 1100°C at 10 MPa | CM-HIP-3-II is a swingable two heating zones, High-Pressure Furnace up to 10 MPa @ 1200oC. It can be used as a HIP furnace and also for crystal growth by flux, ammonia-thermal method, or LPE method for GaN or YIG. |  |
| 18 | HPV-LH | - | - | Max: 300°C | HPV-LH is a high-pressure vessel (Autoclave) with a heating jacket, which can reach pressure up to 20 MPa and working temperature up to 300°C. The vessel has a standard 3-liter volume and optional vessels are available with higher volumes. |  |
| 19 | GSL-1500X-20B | 2" ID x 20" L | - | Max: 1500°C at 20 bar pressure | GSL-1500X-20B is a customized high-pressure furnace for CH4 gas flow. It uses a graphite tube (2"ID x 20"L) as the heater with max. working temperature 1500oC at 20 bar pressure. The explosion-proof case is built-in the outside heating vessel and remote control is available via laptop computer. |  |
| 20 | SL-1500X-10A-4 | - | - | - | GSL-1500X-10A is a customized high-pressure tube furnace for inert gas flow at 10 Bar up to 1500°C. 4" diameter Moly heating coil is built inside SS 304 tube (219 mm with vacuum flange. The explosion-proof case is built-in the outside heating vessel and remote control is available via laptop computer. |  |
| 21 | EQ-BGP-R8-D | Chamber size: 520 x 450 x 550 mm | - | Max: 250°C | BGP-R8-D is a multi-vessel rotary mixer in the oven up to 250°C and 130 Mpa pressure for high-temperature mixer, ball milling, and homogeneous hydrothermal processing with various vessel or jar from 50ml to 200ml. |  |

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| 22 | OTF-1150X-III-100 | 100 ID x 110 OD x 1400 mm L | - | Max: 1150°C under high vacuum | OTF-1150X-III-Ni100 is a customized ultra-high vacuum tube furnace up to 10 ⁻⁶ torr and 1150°C Max. working temperature. The processing tube is made of Ni-based superalloy with 100 mm ID x 110mm OD x1400 mm L. Furnace is 3 zone heating with 600 mm heating length with large turbopump and water cold flange |  |
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