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Therefore, all our employees are highly qualified after rigorous product training and working principles learning.

Drawell is specialized in R&D research. Our products include laboratory and medical instruments, such as Spectrophotometer, Refractometer, Microscope, Centrifuge, Chromatograph, Incubator, Drying Oven, Polarimeter, Balance, Homogenizer, AAS,Autoclave, Deep Freezer, XRF, XRD, Ultrasonic Cleaner, Freeze Dryer, Elisa Reader,Lab Furniture, FTTR, Water Bath, and etc. They are widely used in Pharmaceutical and food QC, Educational research, Environmental science, Chemical industry and other areas.



To keep sharp on the international market, we are committed to attending overseas

exhibitions, such as Arablab, PICCTON, Analytica Russia, Lab Africa, Analytica Munich, Analytica Latin America, Lab Thailand and etc. Now Drawell already has established business relationships with customers from more than 50 countries, and enjoyed a good reputation through reliable quality, competitive price and good service. Speaking of service, for all cooperated customers, we provide online installation guide, training and operation instructions to our customers. We're also capable of sending our professional engineers to customers' offices or factories to give local support, as our aim is to build and maintain long-term partnerships.

Drawell always warmly welcome your visit!

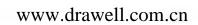
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## **Industrial Box Furnace**

1200°C STD series	P1-2
1400°C STD series	P3-4
1700°C STD series	P5-6





# **1200°C STD series Industrial Box Furnace**

1200°C industrial furnace (box type resistance furnace) mainly provides high temperature heat treatment environment for industrial, research institutes, factories and other industrial laboratories, and is applied to new materials such as metal materials, ceramic materials, nano materials, and semiconductor materials.

#### **Features**

#### **Furnace Shell**

- 1. High quality Q235 low carbon steel, corrosion resistant.
- 2. Sturdy metal frame shell structure, low surface temperature, safe to use.
- 3. Side-opening door structure, the door opens to the right, easy to operate.

#### **Chamber material**

- 1. Multi-layer thermal insulation design.
- 2. Consisting of lightweight mullite ceramic material and high-quality alumina heat-insulating board backing.
- 3. Ceramic fiber insulation for fast heat-up and reduced energy consumption—rise time to 1100°>C takes only 50 minutes.
- 4. Vertical heating elements evenly distributes on two sides of the chamber which give an ideal temperature uniformity.

#### **Heating System**

1. High quality HRE alloy resistance wire heaters, safe and solidly embedded in the furnace surface, free thermal radiation heating in the furnace cavity, energy saving and efficient.

- 2. Three-side heating (left and right sides and the bottom of the furnace), so as to realize the good uniformity in the furnace.
- 3. Silicon carbide base plate covers and protects the bottom heating element.

#### **Temperature control panel**

- 1. PID with SSR control mode, accurate temperature control.
- 2. Intelligent microcomputer PID controller can program 30 segments.
- 3. With open door power failure safety protection switch.

#### **Safety precautions**

- 1. Overheating & Broken thermocouple protection.
- 2. Leakage circuit breaker.
- 3. Automatic power off when furnace door opens (optional function).
- 4. Over-temperature protection and alarm allow for operation without attendant(s).



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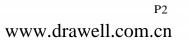


### **Parameters**

Model	STD-45-12	STD-64-12	STD-80-12	STD-96-12	STD-100-12	STD-100-12		
Chamber size(WxLxH)mm	300×500×300	400×400×400	400×500×400	400×600×400	400×530×460	450×530×590		
Chamber volume	45L	64L	80L	96L	100L	100L		
Power supply	380V/12KW	380V/15KW	380V/15KW	380V/18KW	380V/18KW	380V/18KW		
Model	STD-200-12	STD-300-12	STD-450-12	STD-660-12	STD-1000-12	STD-1000-12		
Chamber size(WxLxH)mm	500×530×720	550×700×780	600×750×1000	600×1100×1000	800×1000×1250	900×1200×1400		
Chamber volume	200L	300L	450L	660L	1000L	1000L		
Power supply	380V/27KW	380V/45KW	380V/50KW	380V/60KW	380V/80KW	380V/80KW		
Max temperature	1200°C							
Working temperature	1100°C							
Temperature precision	±1°C							
Thermocouple	N type (Temperature measurement range! 0-1300°C)							
Heating rate	$\leq$ 25°C/min ( suggest 15°C/min for longer life using of furnace )							
	1.Paperless recorder							
Optional accessories	2.Stainless steel exhaust chimney							
optional accessories	3.Alumina crucible							
	4.Electric lifting structure							



temperature controller manual





# 1400°C STD series Industrial Box Furnace

1400°C industrial furnace (box type resistance furnace) mainly provides high temperature heat treatment environment for industrial, research institutes, factories and other industrial laboratories, and is applied to new materials such as metal materials, ceramic materials, nano materials, and semiconductor materials.

#### **Features**

#### **Furnace shell**

- 1. High quality Q235 low carbon steel, corrosion resistant,CNC processing.
- 2. Sturdy metal frame shell structure, low surface temperature, safe to use.
- 3. Side-opening door structure, the door opens to the right, easy to operate.
- 4. Energy efficient insulation keeps exterior safe to touch.

#### **Chamber material**

1. Furnace Lining: Furnace material is 1400°C high-purity Light Mullite bricks.

2. Thermal Insulation Material: The furnace is insulated by polycrystalline alumina ceramic fibers with temperature resistance of 1260°C.

3. Adopt high quality alumina polycrystalline fiber with good insulation and durability properties.

4. Vertical heating elements evenly distributes on two sides of the chamber which give an ideal temperature uniformity.

#### Heating System

1. High quality SIC heaters, safely and securely installed on both sides of the furnace chamber, free thermal radiation heating in the furnace cavity, energy efficient.

2. Two-side heating (left and right sides) to realize the good uniformity in the furnace.

3. Silicon carbide base plate covers and protects the bottom heating element, with high mechanical strength and good thermal conductivity, and also provides horizontal bearing.

#### **Temperature controller**

1. High quality HRE alloy resistance wire, Excellent temperature uniformity.

2. Control system integrated in the furnace base, Defined application within the constraints of the operating instructions.

3. LED displays the actual temperature v.s the setting parameters.

4. Intelligent microcomputer PID controller can program 30 segments.



#### **Safety precautions**

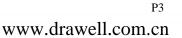
1. Overheating & Broken thermocouple protection.

2. Leakage circuit breaker.

3. Automatic power off when furnace door opens (optional function).

4. Over-temperature protection and alarm allow for operation without attendant(s).

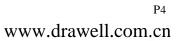
5. Microprocessor-based PID control with self-tuning capability to prevent overshooting of set temperature.





### **Parameters**

Model	STD-64-14	STD-80-14	STD-96-14	STD-150-14			
Chamber size(WxLxH)mm	400×400×400	400×500×400	400×600×400	450×530×590			
Chamber volume	64L	80L	96L	150L			
Power supply	380V/18KW	380V/20KW	380V/21KW	380V/25KW			
Model	STD-200-14	STD-288-14	STD-640-14	STD-1200-14			
Chamber size(WxLxH)mm	500×530×720	600×800×600	800×1000×800	1000×1200×1000			
Chamber volume	200L	288L	640L	1200L			
Power supply	380V/28KW	380V/30KW	380V/50KW	380V/100KW			
Max temperature	1400°C						
Working temperature	1300°C						
Temperature precision	±1°C						
Thermocouple	Stype (Temperature measurement range: 0-1600°C)						
Heating rate	≤15°C/min (suggest 10°C/min for longer life using of furnace)						
	1.One furnace body						
	2. One set of temperatur						
Configuration	3. Three-meter power line						
Configuration	4. One thermocouple						
	5. One pair of crucible stongs						
	6. One pair of high temperature furnace gloves						
	7. An instruction book						
<b>Optional Accessory</b>	1. Alumina boats						
Optional Accessory	2. paperless recorder						
	3. exhaust chimney						





# **1700°C STD series Industrial Box Furnace**

1700°C industrial furnace (box type resistance furnace) mainly provides high temperature heat treatment environment for industrial, research institutes, factories and other industrial laboratories, and is applied to new materials such as metal materials, ceramic materials, nano materials, and semiconductor materials.





### Features

#### **Furnace shell**

- 1. High quality cold-rolled steel sheets CNC processing.
- 2. Energy efficient insulation keeps exterior safe to touch.
- 3. Side-opening door structure, the door opens to the right, easy to operate.

#### Chamber material

- 1. Furnace material is 1400°C high-purity Light Mullite bricks.
- 2. Adopt high quality alumina polycrystalline fiber with good insulation and durability properties.
- 3. High quality 1800 degree fiber alumina as refractory lining.
- 4. Ceramic fiber insulation for fast heat-up and reduced energy consumption—rise time to 1100°>C takes only 50 minutes.
- 5. Vertical heating elements evenly distributes on two sides of the chamber which give an ideal temperature uniformity.

#### **Heating System**

1. High quality MoSi2 heating body, safely and firmly installed on both sides of the furnace chamber, free thermal radiation heating in the furnace cavity, energy saving and efficient.

2. Two-side heating (left and right sides), so as to realize good uniformity in the furnace.

3. Can be customized for the highest temperature of 1750 °C and 1800 °C high-temperature furnace, applied to ceramic materials sintering.

#### **Temperature controller**

1. High quality HRE alloy resistance wire, Excellent temperature uniformity.

- 2. Control system integrated in the furnace base, Defined application within the constraints of the operating instructions.

3. Feature single setpoint digital control, LED display of actual temperature v.a set point.

4. Intelligent microcomputer PID controller can program 30 segments.

#### Safety precautions

1. Overheating & Broken thermocouple protection.

2. Leakage circuit breaker.

3. Automatic power off when furnace door opens (optional function).

4. Over-temperature protection and alarm allow for operation without attendant(s).

5. Microprocessor-based PID control with self-tuning capability to prevent overshooting of set temperature.

P5



### **Parameters**

Model	STD-64-17	STD-96-17	STD-150-17	STD-200-17	STD-288-17	STD-640-17	STD-1200-17	
Chamber size(WxLxH)mm	400×400×400	400×600×400	450×530×590	500×530×720	600×800×600	800×1000×800	1000×1200×100	
Chamber volume	64L	96L	150L	200L	288L	640L	1200L	
Power supply	380V/18KW	380V/25KW	380V/30KW	380V/40KW	380V/50KW	380V/80KW	380V/150KW	
Max temperature	1700°C							
Working temperature     1600°C								
Temperature precision	±1°C							
Thermocouple	Btype (Temperature measurement range : 50-1800°C)							
Heating rate $\leq 15^{\circ}$ C/min (suggest 10°C/min for longer life using of furnace)								
Configuration	<ol> <li>One furnace body</li> <li>One set of temperature controller system</li> <li>Three-meter power line</li> <li>One thermocouple</li> <li>One pair of crucible stongs</li> <li>One pair of high temperature furnace gloves</li> <li>An instruction book</li> </ol>							
Optional Accessory	<ol> <li>Alumina cru</li> <li>Paperless re</li> <li>Exhaust chi</li> </ol>	corder						

