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# TENCAN

## Product Brochure



**SINTERING SERIES**

# Microwave vacuum drying oven

**WBGZ**

Efficient microwave vacuum dryer for food, pharma, and chemicals. Enables rapid, low-temp drying and sterilization with uniform heating.

<https://www.planetaryballmills.com/products/sintering-series/microwave-vacuum-drying-oven.html>



— TENCAN POWDER —

## Product Overview

Efficient microwave vacuum dryer for food, pharma, and chemicals. Enables rapid, low-temp drying and sterilization with uniform heating.



### Microwave Vacuum Drying Oven

Models: WBGZ-1  
WBGZ-3

Uniform Heating  
Extends Shelf Life

Energy Saving & Efficient  
Compact Equipment Size  
Easy Installation & Maintenance



### Microwave Vacuum Dryer

Model: WBGZ-1  
WBGZ-3

Uniform Heating  
Extends Shelf Life

Energy-Saving & Efficient  
Compact Equipment Size  
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## Product Introduction

Microwave vacuum dryer is a new generation of new, efficient drying and sterilization equipment successfully developed for food engineering, pharmaceutical engineering, bioengineering, chemical engineering, material engineering and deep processing of agricultural and sideline products by utilizing the mature microwave energy application technology. It has significant advantages such as fast drying speed, small energy consumption efficiency ratio, and uniform drying and sterilization effect of materials. It can directly replace the traditional dryer for material dehydration and drying. ; The sterilization capability of microwave energy can also be used to sterilize Chinese medicinal materials, Chinese medicinal powders and other materials. It is mainly used for dehydration, drying and sterilization of high value-added and heat-sensitive agricultural and sideline products, health products, food, medicinal materials, fruits and vegetables, chemical raw materials, etc. ; Used for low-temperature concentration of chemical products, removal of crystallization water, drying of enzyme preparations, etc. Microwave vacuum dryers are suitable for laboratories in scientific research institutions.

Drying Series

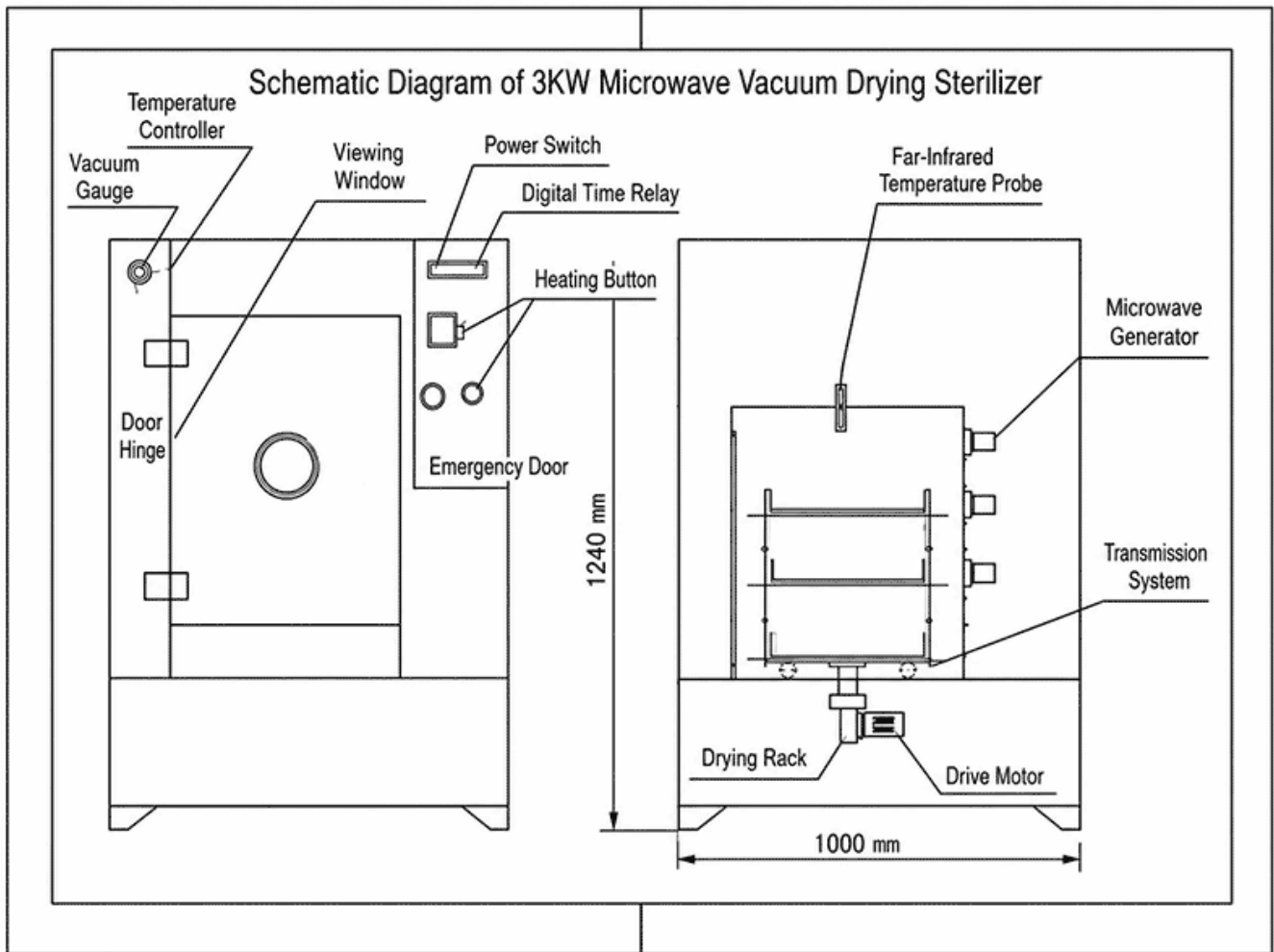
# Product Details



## Technical parameters

model	<b>WBGZ-1</b>	
power supply	Three-phase four-wire 380V±5% 50Hz±1% separately grounded	
The total installed power of the equipment is approximately	1.2Kw	
Microwave power	1Kw	Microwave power is automatically and steplessly adjusted, and can be adjusted manually
microwave frequency	2450MHz±25MHz	
Microwave leakage	<math>\leq 2\text{MW}/\text{cm}^2</math>	National standard <math>\leq 5\text{MW}/\text{square centimeter}</math>
Equipment dimensions	Length×width×height	850×560×700mm
Studio size	Length×width×height	340×320×240mm
drying capacity		1-1.5kg/batch
ambient temperature	-10-40°C	Relative humidity≤80%
environment	No corrosive gas, no explosive gas	
Microwave heating box	The box is equipped with a large opening screen door (convenient for maintenance and cleaning)	
Microwave feed method	The microwave generator is fed from the side to ensure the uniformity of the equipment.	
Microwave dedicated power supply	Microwave dedicated power module	
Magnetron cooling method	air cooling	The magnetron is equipped with an independent fan design to ensure the service life of the magnetron.
Temperature measurement range and accuracy	German Optics far infrared thermometer, temperature measurement range: 0-300°C	
Control method	Button operation, temperature control instrument control (optional PLC control, touch screen operation)	
Equipment microwave leakage standards	Implementation: GB10436-89 standard □□GB 5959.6-2008 Safety regulations for industrial microwave heating equipment	
Equipment electrical safety standards	GB 5226.1-2008 Mechanical and electrical safety Mechanical and electrical equipment Part 1: General technical conditions	

<b>model</b>	<b>WBGZ-3</b>	
<b>power supply</b>	Three-phase four-wire 380V±5% 50Hz±1% separately grounded	
<b>The total installed power of the equipment is approximately</b>	3Kw+1.1Kw	
<b>Microwave power</b>	3Kw	Microwave power is automatically and steplessly adjusted, and can be adjusted manually
<b>microwave frequency</b>	2450MHz±25MHz	
<b>Microwave leakage</b>	<2MW/cm <sup>2</sup>	National standard <5MW/square centimeter
<b>Equipment dimensions</b>	Length×width×height	1000*650*1200mm
<b>Baking tray size</b>	Length×width×height	250*250*50mm
<b>Drying and sterilizing ability</b>		2-4.5kg/batch
<b>ambient temperature</b>	-10-40℃	Relative humidity≤80%
<b>workshop environment</b>	No corrosive gas, no explosive gas	
<b>Microwave heating box</b>	The box is equipped with a large opening screen door (convenient for maintenance and cleaning)	
<b>Microwave feed method</b>	Microwave generator is fed from both sides to ensure equipment uniformity	
<b>Microwave dedicated high voltage driver</b>	Separately design the power supply rack, and install an independently controlled microwave generator on each driver	
<b>Magnetron cooling method</b>	Air-cooled, the magnetron is equipped with an independent fan design to ensure the service life of the magnetron.	
<b>Temperature measurement range and accuracy</b>	German Optics far infrared thermometer, temperature measurement range: 0-300℃	
<b>Control method</b>	Button operation, temperature control instrument control, (optional PLC control, touch screen operation)	
<b>Equipment microwave leakage standards</b>	Implementation: GB10436-89 standard □□GB 5959.6-2008 Safety regulations for industrial microwave heating equipment	
<b>Equipment electrical safety standards</b>	GB 5226.1-2008 Mechanical and electrical safety Mechanical and electrical equipment Part 1: General technical conditions	



## Product Features

- 1. Energy saving and high efficiency:** Conventional vacuum drying equipment, because in vacuum conditions, it is very difficult to transfer heat through convection and can only be conducted by conduction, the heating speed is slow, the drying cycle is long, and the energy consumption is large. Microwave vacuum drying equipment uses radiation energy transfer to heat the medium as a whole without the need for other heat transfer media. It avoids the above shortcomings, so it is fast, efficient, the drying cycle is greatly shortened, and energy consumption is reduced. Compared with conventional drying technology, the efficiency can be improved by more than four times.
- 2. Uniform heating:** Since microwave heating heats the inside and outside of the material at the same time, the temperature difference between the inside and outside of the material is small, and the inconsistent heating between the inside and outside that occurs in conventional heating will not occur, greatly improving the drying quality.
- 3. Easy to control:** Due to the rapid adjustment of microwave power and the characteristics of no inertia, it is easy to control in time and facilitate the adjustment and determination of process parameters. The microwave power can be continuously adjusted as the temperature of the material changes. The human-machine interface and PLC can be used to perform programmable automatic control of the heating process and heating process specifications.
- 4. The equipment is small in size and easy to install and maintain.**
- 5. Extended shelf life:** The biological effect of microwave energy can sterilize and prevent mildew at lower temperatures. Due to the fast heating speed and short heating time, the activity, vitamins, original color and nutrients of the material can be preserved to the maximum extent.
- 6. Environmental protection:** Microwave vacuum equipment does not produce "three wastes". Since the microwave energy is controlled in the heating chamber and waveguide made of metal, there is very little microwave leakage and can be controlled at  $2.0\text{mw}/\text{cm}^2$ , no radioactive hazards and harmful gas emissions, no waste heat and dust pollution, neither polluting materials nor the environment.
- 7. Significant economic benefits.**

Microwave vacuum equipment has significant economic and social benefits in terms of energy saving, consumption reduction, product quality improvement, safety and hygiene, and low equipment investment cost.

## Accessories & Customization

### Accessories

Grinding jars, heating elements, sample holders, control modules and other matching accessories can be selected according to the product configuration.

### Customization

For voltage, capacity, chamber size, process temperature or application requirements, please contact TENCAN for a suitable configuration.