drying oven with natural convection for food industry

Drying oven is a kind of equipment widely used in the field of laboratory, industrial production and research development, specializing in drying, heating and constant temperature treatment of samples.

Drying Oven

The drying oven creates an efficient and safe working environment with precise temperature control and versatile operation modes. Widely used in chemical, biological, pharmaceutical, food, and electronic industries, it is essential for sample drying and heating processes.

Main Features

1. **Convenient Operation:** Simple design with fixed value, timed operation, and automatic stop for easy use.
2. **Accurate Temperature Setting:** Special function keys ensure precise temperature adjustment for reliable process control.
3. **Strong Safety:** Built-in over-rise alarm, deviation correction, and menu lock prevent errors and temperature overruns, protecting equipment and samples.

4. **High-Temperature Insulation Door:** Outer door remains cool even during high-temperature use, preventing burns and extending equipment durability.
5. **Easy Sample Access:** Pull-out tray compartment design allows quick and efficient access to samples.
6. **Anti-Over-Rise Protection:** Over-rise alarm and protection mechanisms maintain temperature stability.
7. **Wide Temperature Range:** Room temperature +10 °C to 300 °C.
8. **Natural Convection Air Circulation:** Gentle heating by natural convection, ideal for sensitive samples.

Working Principle

Utilizing natural convection, the oven's electric heating element warms the air, which then circulates naturally throughout the chamber. This ensures uniform heating around the samples, with gentle temperature changes ideal for sensitive items. The system automatically stops heating once the set temperature is reached, ensuring constant conditions and minimizing fluctuations.

Advantages

1. **High Efficiency & Energy Saving:** Natural convection reduces energy consumption and maintains stable temperatures without fan interference.
2. **Easy Operation:** One-touch temperature and timing settings with automatic stop make operation simple for all users.

3. **High Safety:** Over-rise alarms and protective design prevent overheating and equipment damage.
4. **Durability:** Insulation door technology keeps the outer surface cool, prolonging equipment life and preventing deformation.

Application Areas

1. Chemical & Biological Research: Drying and preservation of reagents, samples, and culture media in labs.
2. Pharmaceutical Industry: Herb drying, curing, and raw material pretreatment during drug production.
3. Food Industry: Drying food samples, seasonings, and herbs for quality and stability.
4. Electronics Industry: Drying circuit boards and components to avoid moisture damage.
5. Material Science: Heating and drying polymers and metals.

Optional Configurations

1. **Partition:** Flexible internal space for samples and items of various sizes.
2. **RS485 Interface:** Communication with external equipment for automation and remote monitoring.
3. **Printer & Recorder:** Real-time temperature data logging for long-term monitoring and analysis.
4. **External Communication & Remote Control:** Supports remote operation and real-time feedback.
5. **Programmed Temperature Control:** Programmable controller for process-specific drying tasks.
6. **Wireless SMS Alarm:** Alerts operators to abnormal conditions for safe equipment management.
7. **U Disk Data Storage:** Convenient data archiving and later analysis via USB storage.

Model	ND30	ND45	ND65	ND85	ND125
Air flow method	natural convection				
Temperature range	ambient+10°C to 300°C				
Temperature resolution	0.1°C				
Temperature Accuracy	±1.0°C				
Temperature uniformity	±3%				
Temperature control method	PID				
Internal material	mirror polished stainless steel plate				
External Material	cold rolled steel plate, surface sprayed with plastic				
Insulation material	aluminum silicate fiber				
Heating element	nickel-chromium alloy heating wire				

Model	ND30	ND45	ND65	ND85	ND125
Rated power	0.8kw	1.0kw	1.5kw	2.0kw	2.5kw
Exhaust port	Inner diameter 28mm,top				
Display screen	LCD				
Timer	0 to 9999 minutes, with timed delay function				
Operating function	Constant value operation, timed operation, auto stop				
Additional functionality	Deviation correction, menu key lock, power failure compensation, power failure memory, overshoot preventer				
Safety device	overlift alarm				
Internal dimensions	310x310x310mm	350x350x350mm	400x360x450mm	500x450x550mm	500x450x550mm
External dimensions	428x505x710mm	468x538x753mm	518x550x860mm	567x640x853mm	617x639x953mm
Volume	30L	45L	65L	85L	125L
shelf load bearing	15kg				

Model	ND30	ND45	ND65	ND85	ND125
Number of shelf layers	5	6	8	8	11
Shelf spacing	40mm				
Power supply	220Vac, 50Hz, 3.6A	220Vac, 50Hz, 5.5A	220Vac, 50Hz, 7.2A	220Vac, 50Hz, 8.2A	220Vac, 50Hz, 10.5A
Weight	37kg	37kg	43kg	50kg	60kg
Additional configurations available	shelf, RS485 interface, printer, recorder, external communication, remote control, program temperature controller, wireless SMS alarm, U disk data storage				