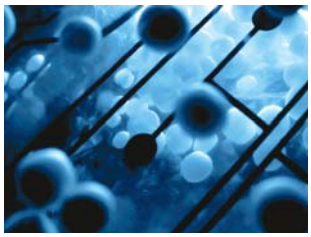
Wisd
LABORATORY INSTRUMENTS

Innovative Technology to Improve the Quality of Human Life

Features of DAIHAN Ovens



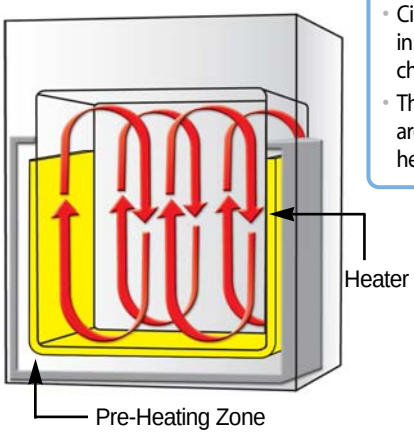
High Performance Heating Mechanism of DAIHAN accomplishing world's best temperature accuracy and uniformity

The new types of Oven of DAIHAN are outfitted with high performance heating mechanism that is optimized respectively for capacity of chamber, power of heating element and air circulation type (Gravity Convection or Forced Convection).

The temperature displayed on the controller is accurately consistent with the actual temperature in the very center of the chamber or the average temperature in the entire area of the chamber, which maintains precisely within fluctuation specification. In addition, the temperature in the entire area of the chamber shows a very high stability keeping within a very slight variation specification in terms of temperature uniformity. Simultaneously, through the optimization of Fuzzy-PID controller, the 'heat-up time' to reach the Set Temperature after operating and the 'recovery time' to get back to the set temperature after opening and closing of the door are very short.

The newly developed high performance heating mechanism has achieved high degree of temperature accuracy and uniformity in the chamber. This is achieved by the heating elements installed on three sides - that is, the left, right and bottom parts of a chamber - which directly heat the stainless-steel chamber. This either enhances its material thermal conductivity to maximum (in case of the Incubator) or the heated air from the pre-heating zone in air-jacket type that is built in the three sides outside a chamber circulates first (in case of the Oven).

Oven

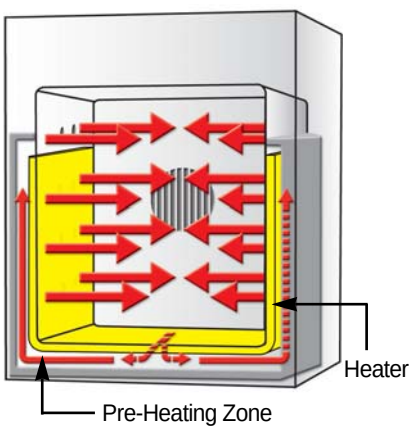


Gravity Convection

- Circulation is made by heating elements that first heat the air in the pre-heating zone which surrounds the three sides of the chamber.
- The effects of both three-side heating and gravity convection are to be maximized via providing the heated air from the pre-heating zone restrictively into the chamber.

Forced Convection

- The same three-side heating elements and pre-heating zone as Gravity Air-Flow model.
- The strong fan installed in the back of the chamber sucks the air inside the chamber, which is provided to the pre-heating zone, while the heated air is uniformly and quickly provided into the chamber through its specially designed side and bottom structure.



High Performance Heating Mechanism

The world's best performance and quality coming true via innovative heating mechanism !!

Minimum

Fluctuation !
Minimization of Fluctuation in Temperature

Variation !
Minimization of spatial variation in temperature inside the chamber

Heat-up Time !
Minimization of reaching the set temperature

Overshoot !
Minimization of overshooting at the time of reaching the set temperature

Perfect Door Lock by Double Latch

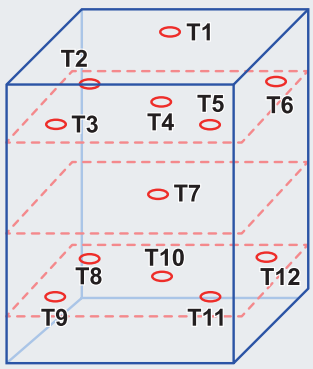
The up-and-down double latch structure pushes the door as closely to the chamber as possible, which leads to the minimization of temperature interference inside the chamber by the outside air.

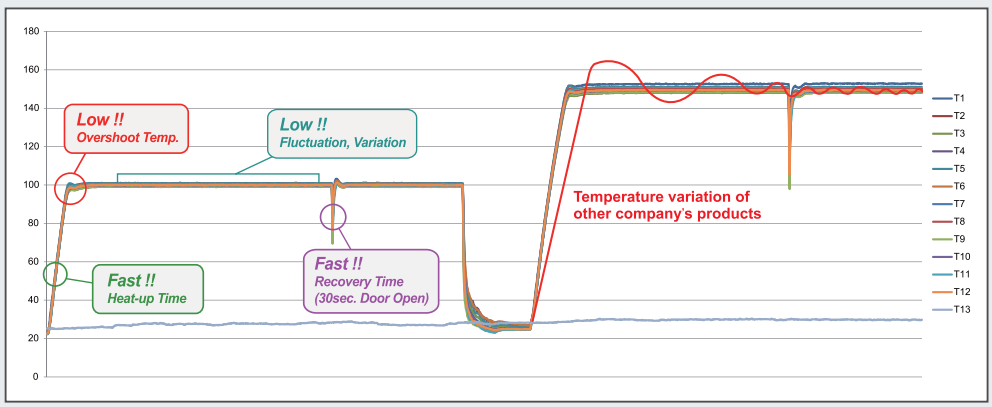
The structure allows the door to adhere firmly and closely to the chamber on both upper and lower sides in a balanced way

- High-performance thermal insulation
- Minimization of thermal losses from heat leak inside the chamber
- Enhancement of temperature accuracy and uniformity

Temperature Uniformity Completely Tested by ASTM Standards

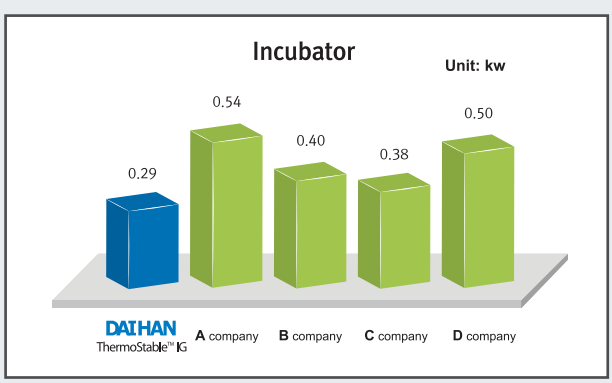
All the units supplied by DAIHAN Scientific are thoroughly tested, using 12 temperature sensors and the latest instruments to obtain validation, which corresponds to international standards. That is, Fluctuation and Variation (Uniformity) standards described in catalogues are actually guaranteed as the same.

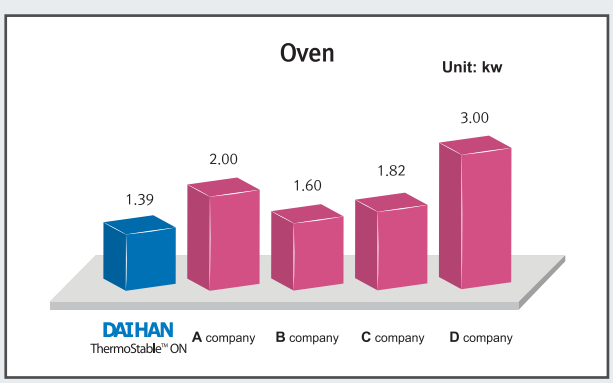




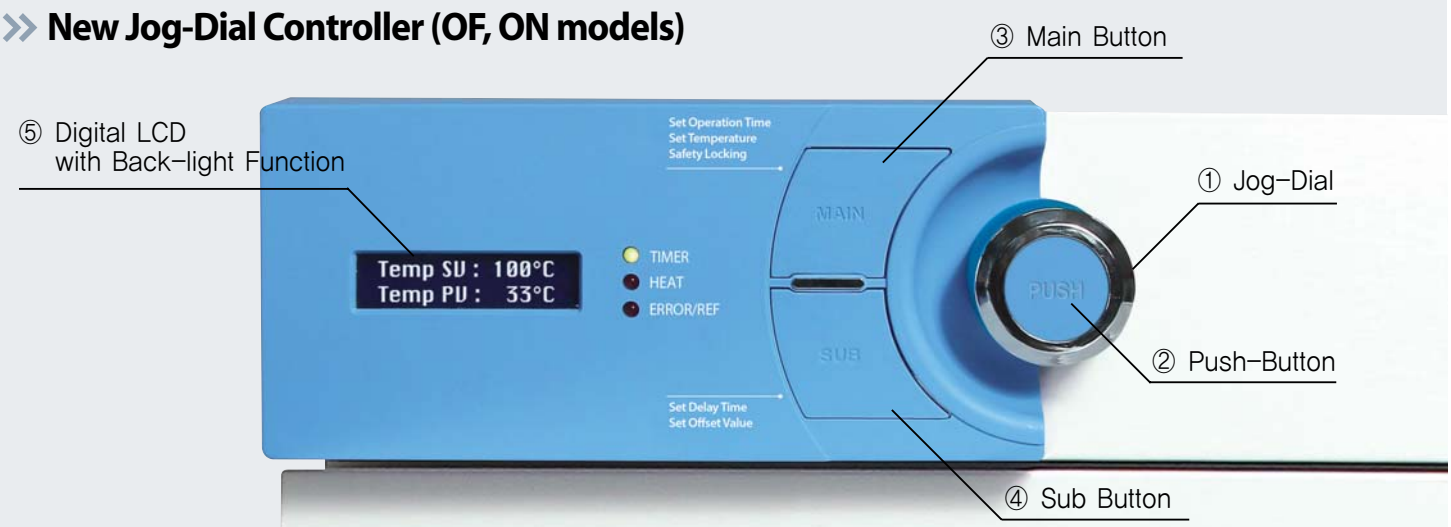
Green Product

This is an environment-friendly product that achieves minimum power consumption by using heating element consuming minimum power for the capacity and temperature of the chamber, high-quality insulator and insulation structure, and complete door structure that guarantees shielding.





New Jog-Dial Controller (OF, ON models)



- Provides the user interface with an ergonomic design for users to operate in an easy and convenient way.
- A new 2-way Jog-Dial Knob (Jog Dial + Push Button) and presents excellent durability and mobility.
- High-quality LCD with Back-light function.
- A durable Main Button and a Sub Button that features superb and user-friendly operation.

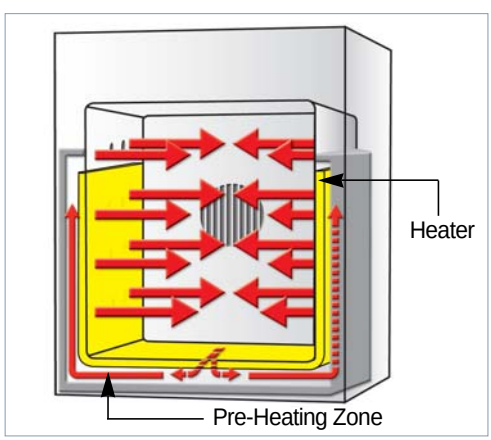
DAIHAN ThermoStable™ OF Ovens, Forced Convection-type, 50-/105-/155-Lit., with Certi. & Traceability NEW

with Wire Shelves, Digital Fuzzy Control, Jog-Dial with Push Button, Digital LCD with Backlight, up to 250℃, ±0.3℃

Standard Model, "ThermoStable OF-50"

- **with Certificate & Traceability : Controlled by Serial Number, Certificate, Delivery-information, and Traceable Data Base System**
- **Digital Fuzzy Control System Implementing Superior Temperature Accuracy**
- **Optimized Air Flow by Forced Convection Mechanism**
- **Patented Jog-Dial Control System**
- **UL / CUL Certified**
- **CE Certified**
- **GD(Good Design)-mark**
- **PL (Product Liability) Insurance**

✻ Suitable for Drying, Baking, Conditioning, Curing, Pre-Heating and Aging
✻ The Best Temp. Uniformity & Accuracy by High Performance Heating Mechanism: 3-Side Heating
✻ Optimized Air Flow by Forced Convection Mechanism
✻ Digital Fuzzy Control System Implementing Superior Temperature Accuracy
✻ New Jog-Dial with Push Button
✻ Compact New Body Design
✻ 2ea of Stainless steel Wire Shelves Included
✻ Alarm Function : Error status and Timer-end
✻ RS232C Interface for Monitoring and Controlling with PC
✻ Ambient +5℃ to 250℃ Range with Fluctuation of ±0.3℃ at 100℃
✻ Storage Function of Temperature and Timer setting values
✻ Locking Mode Supported for Experimental Safety (Input to Jog-Dial can be disabled)
✻ Corrosion Resistant 304 Stainless steel Chamber
✻ Over Temperature & Over Current Protection, Sensor Error Detection



The Best Temp. Uniformity & Accuracy by
High Performance Heating Mechanism
(Forced Convection-type)

Specification

Model		Standard Model		
		ThermoStable OF-50	ThermoStable OF-105	ThermoStable OF-155
			Window Model	
			ThermoStable OF-W105	ThermoStable OF-W155
Capacity		50Lit	105Lit	155Lit
Dimension (w×d×h)	Interior (mm)	370×345×420	485×415×535	550×480×600
	Exterior (mm)	518×647×724	653×712×882	718×777×947
Heater Power		650 W	1.4 kW	1.6 kW
Temp.	Range	Ambient Temperature +5℃ to 250℃		
	Fluctuation	±0.3℃ at 100℃, ±0.5℃ at 150℃		
	Variation	±1℃ at 100℃, ±1.8℃ at 150℃		±1℃ at 100℃, ±2℃ at 150℃
	Sensor	PT 100		
Control Resolution		±0.1℃		
Heat-up Time		25 min. to 100 ℃, 45 min. to 150℃		25 min. to 100 ℃, 40 min. to 150℃
Recovery Time (Door open 30sec)		8 min. to 100 ℃, 8 min. to 150℃	6 min. to 100 ℃, 6 min. to 150℃	
Controller		Digital Fuzzy Control by Advanced Microprocessor Jog-Dial with Push Button		
RS232 Port		Available to connect with PC		
Display		Digital LCD with Back Light		
Timer		99hr 59 min (delay/continuous function)		
Material	Internal	Stainless steel (#304)		
	External	Powder Coated steel		
	Insulation	Glass Wool		
Shelves		2ea of Stainless steel Wire Shelves included, Load per Shelf : 16 kg		
Ventilation		Ventilation hole with Stainless steel Cap, Hole Diameter 40mm		
		1ea	2ea	
Circulation		Forced Air Convection Type		
Safety device		Over Temp. and Over Current Protector, Sensor Error Detector		
Others		UL/CUL Certified, CE Certified, GD-mark Storage Function (Temp. and Time) Locking Mode (Jog-Dial Input Disabled) Alarm (Error Status and Timer-end)		
Net Weight (kg)		44	69	78
Packing Size (w×d×h) (mm)		622×754×807	743×819×1,068	808×884×1,133
Shipping Weight (kg)		59	79	92
Power Consumption		674 W	1390 W	1566 W
Energy Consumption, at 100°C		117 Wh	187 Wh	204 Wh
, at 150°C		230 Wh	337 Wh	398 Wh
Power Supply		1Phase 120V, 60Hz or 230V, 50/60Hz		

✻ Other Specifications are available upon Customer's Request.

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<Continued from... DAIHAN ThermoStable™ OF Ovens, Forced Convection-type **>**

Ordering Information

Standard Model, Forced Convection, with Wire Shelves

DH.WOF05050	Oven, Standard, **230V, 50 Lit., "ThermoStable OF-50"**
DH.WOF05105	**, 105 Lit., "ThermoStable OF-105"**
DH.WOF05155	**, 155 Lit., "ThermoStable OF-155"**
DH.WOF06050	Oven, Standard, **120V, 50 Lit., "ThermoStable OF-50"**
DH.WOF06105	**, 105 Lit., "ThermoStable OF-105"**
DH.WOF06155	**, 155 Lit., "ThermoStable OF-155"**

Built in Viewing Window Model, Forced Convection, with Wire Shelves

DH.WOF07105	Oven, Window, **230V, 105 Lit., "ThermoStable OF-W105"**
DH.WOF07155	**, 155 Lit., "ThermoStable OF-W155"**
DH.WOF08105	Oven, Window, **120V, 105 Lit., "ThermoStable OF-W105"**
DH.WOF08155	**, 155 Lit., "ThermoStable OF-W155"**

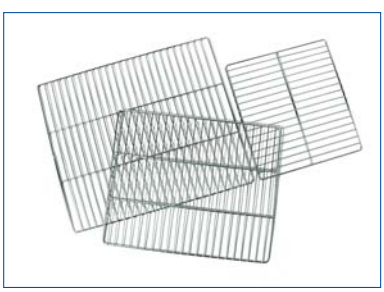
Spare Wire Shelves, Stainless steel

DH.WOF11050	Wire Shelf, for **50 Lit., "OFS050",** w340×d310mm
DH.WOF11105	, for **105 Lit., "OFS105",** w455×d375mm
DH.WOF11155	, for **155 Lit., "OFS155",** w520×d440mm

Validation (IQ, OQ) Service

DH.WOF31050	Validation Service(IQ, OQ), **"OFV1050",** for **"ThermoStable OF-50"**
DH.WOF31105	, **"OFV1105",** for **"ThermoStable OF-105"**
DH.WOF31155	, **"OFV1155",** for **"ThermoStable OF-155"**
DH.WOF32105	, **"OFV2105",** for **"ThermoStable OF-W105"**
DH.WOF32155	, **"OFV2155",** for **"ThermoStable OF-W155"**

Window Model, "ThermoStable OF-W105"



Wire Shelves, Stainless steel (Included)

WiseRemote® Remote Control Software

Connection of Wisd Temperature Devices with Interface RS232C to a PC Export Recorded Data (Excel Spreadsheet)

Main Screen

RS232C Cable & Software