Panasonic

Electric Ovens
Dry Heat Sterilizers
MOV Series

Sterilization & Drying

Electric Ovens
Dry Heat Sterilizers

Panasonic sterilizers provide constant high-temperature conditions for dry heat sterilization. Panasonic electric ovens combine an easy-to-use design and strict safety features to facilitate a host of applications.

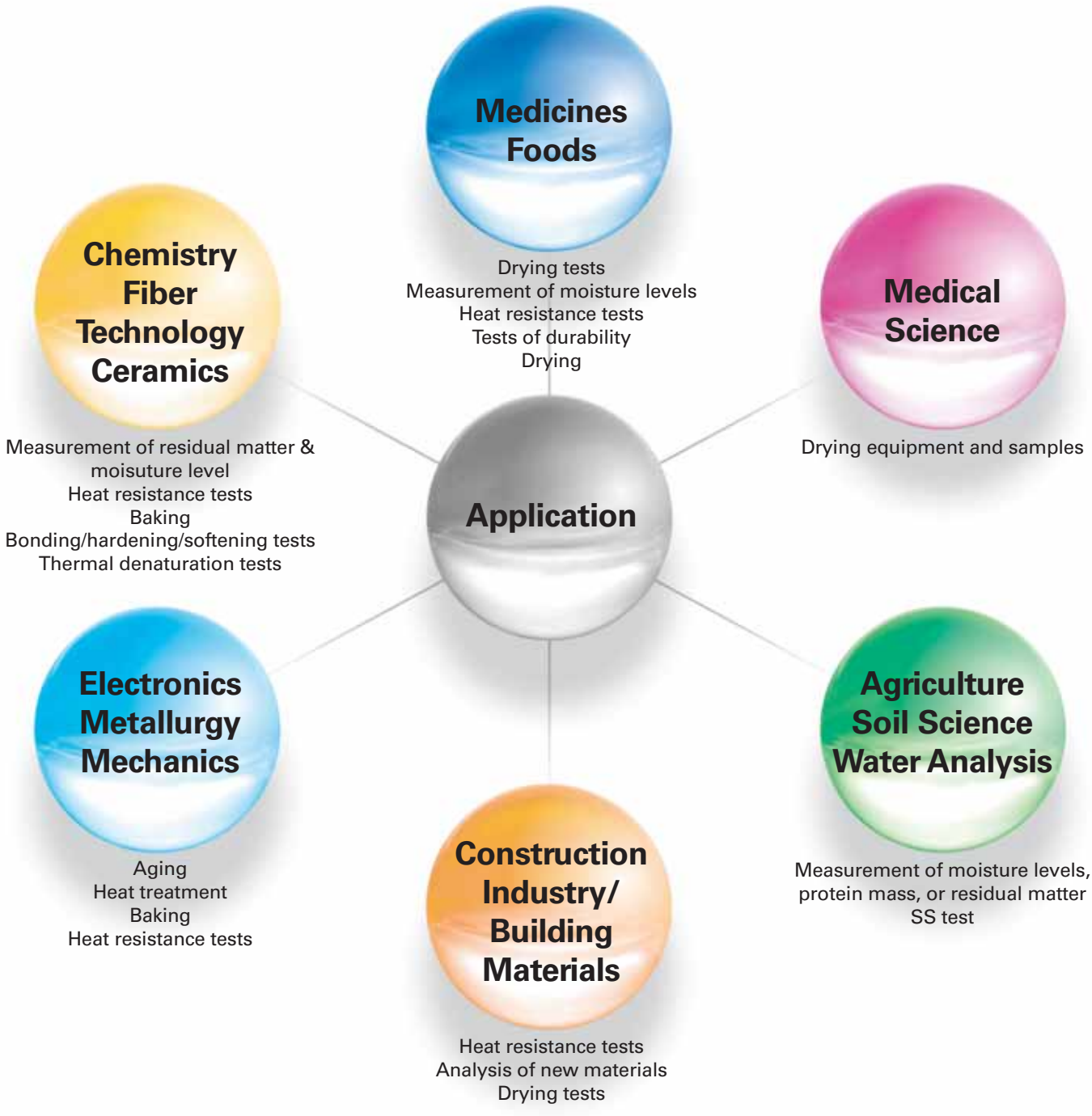
MOV-112

MOV-212

Panasonic MOV Series
Electric Ovens
and Dry Heat Sterilizers

Accurate, High-Temperature Equipment for the New Generation of Scientific Research.

Panasonic has always aimed to provide research support equipment that offers complete satisfaction to its users. Inspired by the search for even higher precision and greater flexibility of control, Panasonic presents the new MOV Series.



Search to the future

Microprocessor PID temperature control system guarantees accurate temperature environment

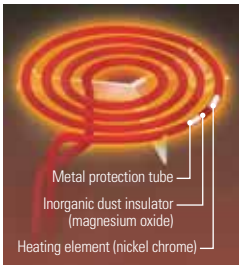
The microprocessor PID (Proportional, Integrated and Differential) temperature control system ensures accurate inside temperature.
With less offset or overshoot, exact control is possible. This system provides the high-temperature environment that exactly meets experimentation requirements.

Forced air circulation system ensures stable temperatures accurate to within ±4.0°C

Fan circulation ensures that deviations in cabinet temperature are kept within ±4.0°C (at 200°C).
The MOV Series can be widely used for basic to applied experimentation in the areas of scientific, industrial and environmental testing.

Sheathed heater ensures durability and safety

A sheathed heater is incorporated in the heater section. The heating element is wrapped in a magnesium oxide insulating material and covered with metal protection tube. With conventional wire heating elements (bare heaters), gases or dust can cause corrosion, resulting in loss of heating capacity and electrical leakage. With its durability and high chemical resistance, the sheathed heater ensures safer, more stable operation without the risk of electrical leakage.



Attractive design

Panasonic believes that laboratory equipment should be attractive as well as functional. The MOV Series features a future-oriented design, with rounded corners, door handles that blend with the main body, and a flat control panel.

User-oriented design for easy operation
The control panel has soft-touch keys and bright, green degital LED display that allows easy confirmation of temperature and remaining operation time. Other advantages of the design include a soft-latched door handle integrated with the door, an observation window for checking conditions inside the cabinet, two exhaust vents (shared with an access vent) on the top of the unit, and a stainless-steel (SUS-304) interior to guarantee durability and superior resistance to chemicals.

Alarm and safety functions
A comprehensive range of alarm and safety devices is included as standard in the MOV Series. And the built-in alarm jack allows remote control of the unit.

Alarm and safety functions	Trigger	Alarm notification method and operation
Automatic set temperature alarm	More than 10°C deviation from set temperature.	Lamp, LED, buzzer.
Independent overheating protection circuit	Abnormal temperature increase above upper limit.	While not in operation: buzzer. While in operation: lamp, LED and buzzer. Independent circuit switches off heater and fan motor.
Overtemp. safety system for control section	Ambient temperature of main part (base) of control section exceeds 65°C.	Lamp, LED, buzzer. Heater and fan motor switched off.
Keylock switch	Keylock switch on.	Key input not possible (excl. buzzer and call key).
Memory backup function	During power failure, breaker cut or when unit is not connected to power supply.	Stores operation patterns for set temperatures/times.

Malfunction Monitor (Self diagnosis function)

Should a malfunction occur, it is diagnosed and indications are given on the digital display.

Indication	Meaning
E 01	Temperature sensor open
E 02	Triac open
E 03	Triac shortcircuit
E 04	Relay shortcircuit
E 05	Relay open, fan motor shortcircuit, heater shortcircuit, independent over-heating protection circuit activated and overtemp. safety system is ON.

Electric Ovens
MOV-112F/212F
MOV-112/212

Future-oriented Ovens That Look Good and Improve Efficiency.

Four models that feature natural convection and forced air circulation systems to create environments for a wide variety of experiments. Designed for ease of use and safety.

Microprocessor timer function
Panasonic has included a microprocessor timer function, so operation times can be set up to a maximum of 99 hours and 59 minutes. The combination of auto start and auto stop provides operating patterns suited to a wide variety of applications. The auto stop operates the timer when the heater is on, or when the set temperature has been reached. A buzzer indicates the end of timer operation.

Forced air circulation system (MOV-112F/212F)
Sirocco fan circulation keeps variations in inner cabinet temperature within ±4°C at 200°C. Compared with natural convection, quicker drying is possible. And Panasonic's unique fan motor not only circulates hot air in the cabinet but also keeps the motor cool, improving the reliability and safety of the motor.

Natural convection system (MOV-112/212)
Natural convection is best for drying very small samples and fine particles which would be scattered by a fan. This system can be used for high-temperature applications up to 250°C.

Fast heat treatment possible at an even temperature.
Ambient temperature +5°C to 200°C
(Forced air circulation system)

Effective capacity **90 liters**
MOV-112F

Effective capacity **150 liters**
MOV-212F

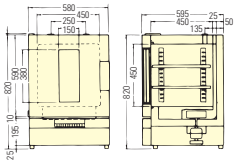
Versatile operating temperature range without damaging samples.
Ambient temperature +5°C to 250°C
(Natural convection system)

Effective capacity **97 liters**
MOV-112

Effective capacity **157 liters**
MOV-212

Dimensional Figures

MOV-112F

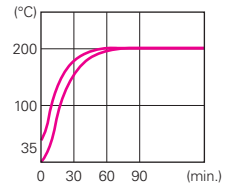


Front view Side view

Unit: mm

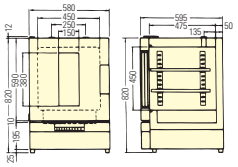
Performance Data

MOV-112F
Pull-up characteristics
No load, exhaust vent closed.



Dimensional Figures

MOV-112

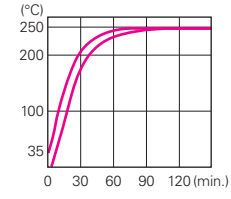


Front view Side view

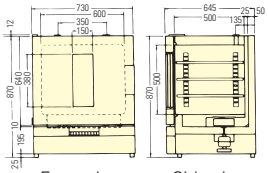
Unit: mm

Performance Data

MOV-112
Pull-up characteristics
No load, exhaust vent closed.



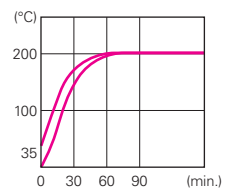
MOV-212F



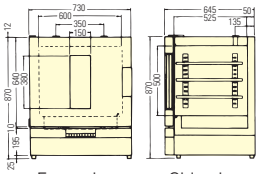
Front view Side view

Unit: mm

MOV-212F
Pull-up characteristics
No load, exhaust vent closed.



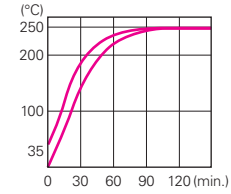
MOV-212



Front view Side view

Unit: mm

MOV-212
Pull-up characteristics
No load, exhaust vent closed.



Dry Heat Sterilizers
MOV-112S/212S

Constant Temperature Environments for Dry Heat Sterilizing and Efficient Laboratory Work.

MOV Series models provide many advantages:
PID precision temperature control is adjustable to within ±1°C; Forced air circulation keeps cabinet temperaturs even to within ±4°C; The new microprocessor timer helps correct sterilizing time.

The microprocessor PID control system guarantees accurate sterilizing temperatures.

The built-in sheathed heater offers superior durability and safety.

Forced air circulation with quick pull-up and precise temperature distribution

The time needed to reach the set temperature is shorter with a forced air circulation system compared with natural convection. The temperature is even throughout the cabinet-deviations are kept within ±4°C at 200°C. And the fan motor is specially designed to circulate the air in the cabinet and prevent the motor from overheating at the same time.

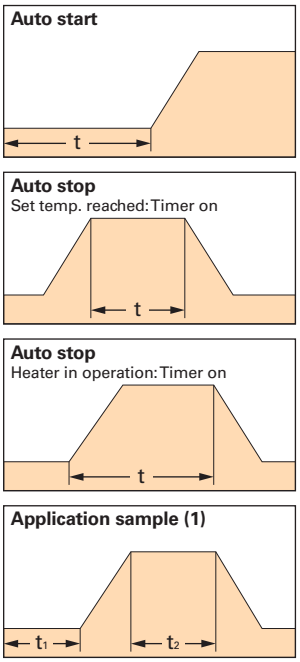
Built-in microprocessor timer guarantees accurate sterilization time

The built-in microprocessor timer (max. setting 99 hours and 59 minutes) accurately adjusts sterilization time. A consecutive display of the inner cabinet temperature is provided for quick confirmation of the time when samples should be removed. And a buzzer sounds at the end of timer operation. In combination with auto start and auto stop, operation patterns can be set for a wide range of applications.

Standard dry heat sterilizing times (as indicated by the Japanese Pharmacopoeia)

135°C – 145°C	3 – 5 hours
160°C – 170°C	2 – 4 hours
180°C – 200°C	0.5 – 1 hours

Microprocessor timer setting patterns:



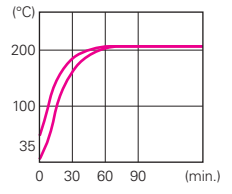
Accurate temperature and time — essential for dry heat sterilization.
Ambient temperature +5°C to 200°C

Effective capacity **90 liters**
MOV-112S

Effective capacity **150 liters**
MOV-212S

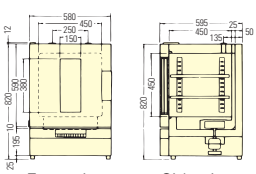
Performance Data

MOV-112S
Pull-up characteristics
No load, exhaust vent closed.



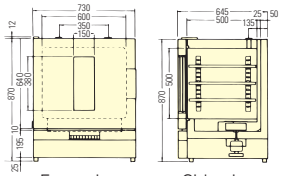
Dimensional Figures

MOV-112S



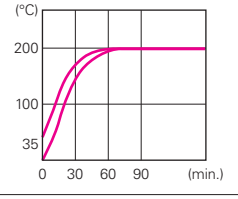
Unit: mm

MOV-212S



Unit: mm

MOV-212S
Pull-up characteristics
No load, exhaust vent closed.



Specifications

Type		Electric Ovens				Dry Heat Sterilizers	
Model No.	110V, 60Hz	MOV-112F-PT	MOV-212F-PT	MOV-112-PT	MOV-212-PT	—	MOV-212S-PT
	220V, 50/60Hz	MOV-112F-PK	MOV-212F-PK	MOV-112-PK	MOV-212-PK	MOV-112S-PK	MOV-212S-PK
	230V, 50Hz (CE)	MOV-112F-PE	MOV-212F-PE	MOV-112-PE	MOV-212-PE	MOV-112S-PE	MOV-212S-PE
	240V, 50Hz	MOV-112F-PU	MOV-212F-PU	MOV-112-PU	MOV-212-PU	MOV-112S-PU	MOV-212S-PU
External dimensions (W x D x H)*1		580 x 595 x 820 (mm) 22.8 x 23.4 x 32.3 (inch)	730 x 645 x 870 (mm) 28.7 x 25.4 x 34.3 (inch)	580 x 595 x 820 (mm) 22.8 x 23.4 x 32.3 (inch)	730 x 645 x 870 (mm) 28.7 x 25.4 x 34.3 (inch)	580 x 595 x 820 (mm) 22.8 x 23.4 x 32.3 (inch)	730 x 645 x 870 (mm) 28.7 x 25.4 x 34.3 (inch)
Internal dimensions (W x D x H)		450 x 450 x 450 (mm) 17.7 x 17.7 x 17.7 (inch)	600 x 500 x 500 (mm) 23.6 x 19.7 x 19.7 (inch)	450 x 475 x 450 (mm) 17.7 x 18.7 x 17.7 (inch)	600 x 525 x 500 (mm) 23.6 x 20.7 x 19.7 (inch)	450 x 450 x 450 (mm) 17.7 x 17.7 x 17.7 (inch)	600 x 500 x 500 (mm) 23.6 x 19.7 x 19.7 (inch)
Effective capacity		90 liters (3.2 cu.ft.)	150 liters (5.3 cu.ft.)	97 liters (3.4 cu.ft.)	157 liters (5.5 cu.ft.)	90 liters (3.2 cu.ft.)	150 liters (5.3 cu.ft.)
Exterior finish		Painted steel					
Interior finish		Stainless steel plate					
Insulation		Glass wool					
See-through window		Reinforced triple-glass window (t = 5 mm)					
Shelves		Stainless-steel plate, stainless-steel wire (adjustable)					
		2	3	2	3	2	3
Air exhaust vent		Two on top plate (23 mm inside dia.)					
Heating system		Forced air circulation system		Natural convection system		Forced air circulation system	
Temperature control system		Microprocessor PID control					
Sensor		Thermo couple					
Temperature setting		Digital setting (adjustable range: ±1°C)					
Timer		Auto start, Auto stop 00:00 – 99:59					
Temperature/Timer display		Digital LED display					
Heater (Sheathed heater)		1.1kW	1.2kW	1.1kW	1.3kW	1.1kW	1.2kW
Interior fan		Sirocco fan dia. 149 mm		—		Sirocco fan dia. 149 mm	
Exterior fan		Propeller fan 107 mm		—		Propeller fan 107 mm	
Power source		50/60Hz, cord approx. 2m					
Max. power consumption		Approx. 1.1kW	Approx. 1.2kW	Approx. 1.1kW	Approx. 1.3kW	Approx. 1.1kW	Approx. 1.2kW
Temperature range		Ambient temperature +5°C to 200°C		Ambient temperature +5°C to 250°C		Ambient temperature +5°C to 200°C	
Temperature controllability		±1 deg.				—	
Temperature uniformity		±4°C (at 200°C)		±10°C (at 200°C)		±4°C (at 200°C)	
Weight		50kg (110.2 lbs.)	66kg (145.5 lbs.)	47kg (103.6 lbs.)	63kg (138.9 lbs.)	50kg (110.2 lbs.)	66kg (145.5 lbs.)
Alarm and safety function		Overcurrent breaker, automatic set temperature alarm (set point +10°C), independent overheat protection circuit, overtemperature safety system at control section (triggered at 65°C), self diagnosis.					

Appearance and specifications are subject to change without notice.
When the setting value is below 100°C, large deviations in cabinet temperature will occur.
*1 Exterior dimensions of main cabinet only - see dimension drawings showing handles and other external projections.

Panasonic Healthcare Co., Ltd., Biomedical Business Unit is certified for:
Quality management system: ISO9001
Medical devices quality management system: ISO13485

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Environmental management system: ISO14001

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