



AC series
electronic digital fan-assisted
sterilizers

TO series
electronic thermostatic digital fan-
assisted ovens



APPARECCHI SCIENTIFICI

KW®

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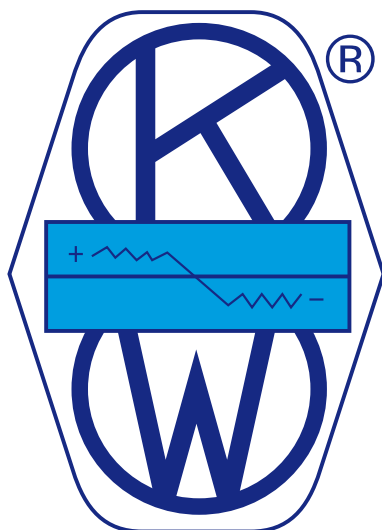
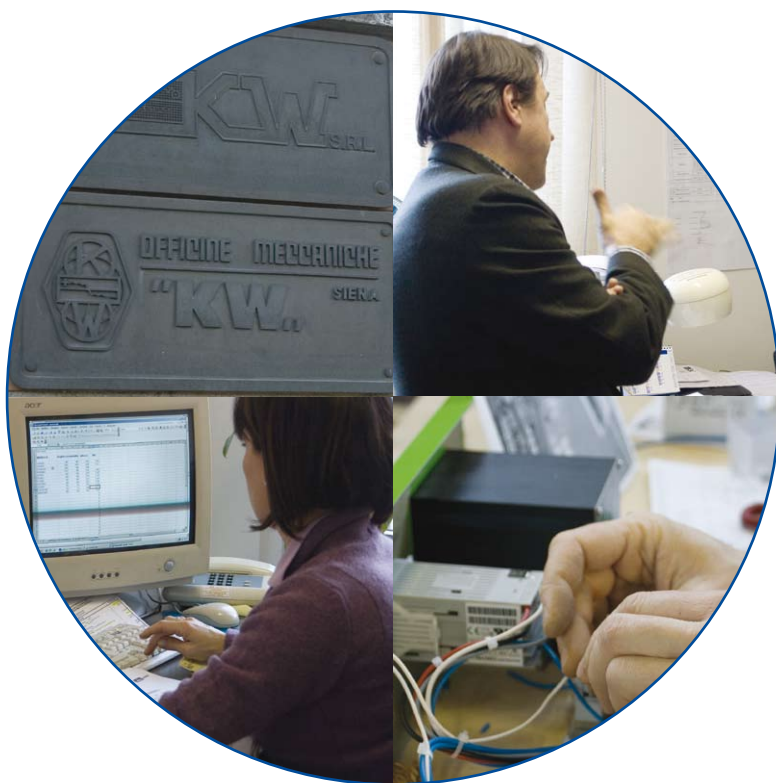
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We work to build a better future





AC series electronic digital fan-assisted sterilizers



W108 AC



W107 AC
with potentiometric strip-chart recorder

TO series electronic thermostatic digital fan-assisted ovens



W104 TO
open

series panel **TO**



AC AUTOCYCLE® series

fan-assisted digital electronic sterilizers

Model	External dimensions (WxDxH)	Internal dimensions (WxDxH)	Capacity	shelves n.	Nominal power	Empty weight	Nominal T (°C)	Max T (°C)	Nominal voltage (V/50 Hz)
W104 AC	cm. 82x67x103 h	cm. 60x46x50 h	138 l.	2	W 2600	Kg. 100	+200	+300	230
W106 AC	cm. 132x74x113 h	cm. 110x60x60 h	396 l.	2	W 3600	Kg. 150	+200	+300	230
W107 AC	cm. 134x78x163 h	cm. 110x60x110 h	726 l.	3	W 5000	Kg. 235	+200	+300	230/400
W108 AC	cm. 134x83x198 h	cm. 110x65x145 h	1030 l.	4	W 5600	Kg. 250	+200	+300	400

Forced air convection operation

Working range: from +5°C above ambient T to +300°C

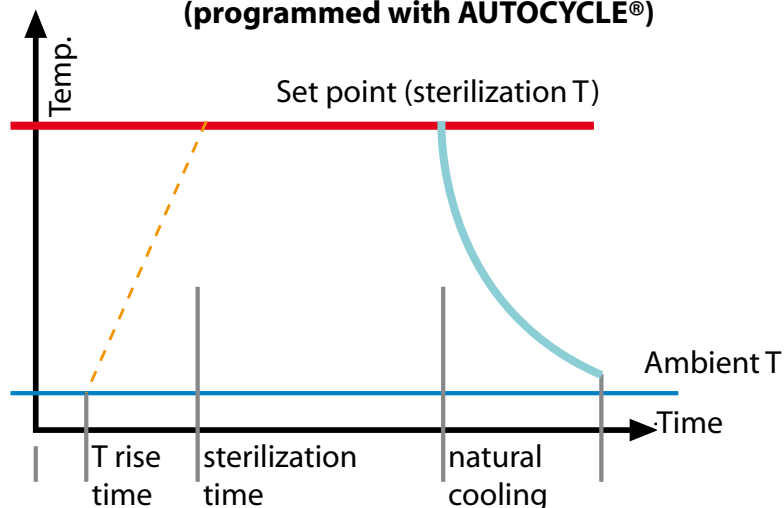
MAXIMUM TEMPERATURE +300°C

T stability: $\leq \pm 1^\circ\text{C}$

compared to all set point values.

For all AC models, KW offers D/version, or with double door, complete with frame for sterile area – technical area division. Structural and functional characteristics are similar to those of all AC series models. Designation example: W107AC/D.

Example of sterilizing cycle with hot air (programmed with AUTOCYCLE®)



TO THERMOSTATIC OVEN series

electronic thermostatic digital fan-assisted ovens

Model	External dimensions (WxDxH)	Internal dimensions (WxDxH)	Capacity	shelves n.	Nominal power	Empty weight	Nominal T (°C)	Max T (°C)	Nominal voltage (V/50 Hz)
W104 TO	cm. 82x67x103 h	cm. 60x46x50 h	138 l.	2	W 2600	Kg. 100	+200	+300	230
W106 TO	cm. 132x74x113 h	cm. 110x60x60 h	396 l.	2	W 3600	Kg. 150	+200	+300	230
W107 TO	cm. 134x78x163 h	cm. 110x60x110 h	726 l.	3	W 5000	Kg. 235	+200	+300	230/400
W108 TO	cm. 134x83x198 h	cm. 110x65x145 h	1030 l.	4	W 5600	Kg. 250	+200	+300	400

Forced air convection operation

Work range: from +5°C above ambient T to +100°C

MAXIMUM TEMPERATURE +300°C

T stability: $\leq \pm 1^\circ\text{C}$

compared to all set point values.



AC AUTOCYCLE® series

fan-assisted digital electronic sterilizers

W104 AC - W106 AC - W107 AC - W108 AC SERIES

This sterilizer is recommended for all laboratories dealing with devices and products sterilized with hot air: hospitals, analysis laboratories, food and pharmaceutical industries, research centres, etc.

STRUCTURE:

Internal chamber and shelves in glossy AISI 304 stainless steel, external cabinet in brushed AISI 304 stainless steel sheet. Therefore, high mechanical characteristics, good resistance to corrosion and extremely easy cleaning. Each appliance is equipped with racks to position AISI 304 perforated stainless steel shelves (therefore height-adjustable). Internal architecture suitable for creation of a controlled air flow, by means of centrifugal blower: this ensures an optimum internal T distribution inside the chamber and therefore an optimum temperature uniformity, as well as accelerating drying operations. Door equipped with closure with lock and key. Sealing in silicone rubber, for high temperatures, long lasting and easy to clean and replace. W107AC and W108AC models have wheels (front wheels with brake) equipped standard. Insulation with special reinforced mineral fibre panels for high temperatures. Asbestos free. The efficiency of the thermal insulation ensures low temperatures on the outer surfaces and low energy consumption.

THERMOREGULATION AND CONTROLS:

Thermal stability is obtained through a PID (proportional, integral, derivative) digital electronic microprocessor programmer/regulator, with RTD Pt 100 Ohm input; function paired with specific SSR, suited to the power consumption load of the heating resistors: this ensures an optimum temperature stability, without T overshoot or undershoot. The programmer/regulator has password, process alarms (optional) and diagnostics available and an excellent human-machine interface, by means of LED display and very few function keys:

- parameter selection / display
- cycle time and temperature set point setup
- sterilization program activation.

Cycle check occurs with the following methods:

- cycle time counter begins only when set point is reached and stabilized
- with AUTOCYCLE® we have an AUTOMATIC REPETITION OF THE ENTIRE CYCLE (**guaranteed cycle execution without interruption, for the exact time and temperature values as those set by the user**) in case of deviation of process value from set point, caused by any form of incorrect operation.
- with the continuous display of the process value, visible from a distance, with 1°C resolution.

This appliance therefore ensures perfect sterilization, without continuous personnel supervision and allows the use of the sterilizer even during machine resting time. The control panel is complete with specific general switch (O/I), warning lights to signal that power is on, and SAFETY THERMOSTAT FOR OVERTEMPERATURE (DIN 12880 class 3.1) with probe independent from that of the main controller; it intervenes by disconnecting the appliance from the power supply when, due to main regulator breakdown, T exceeds max safety value (adjustable and preset by the user): this device protects the sterilizer's content, the sterilizer itself, and the surrounding environment therefore allowing running in maximum security conditions. Intervention will be signalled by means of a red light.

D/models, with double door, are equipped with door interlock device, in order to prevent one of the two doors from opening when the other one is being opened; this guarantees complete separation between sterile area and technical area.

HEATING:

Electrical, with specific tubular heating elements, in stainless steel, finned for air operation, with low thermal density, ensuring an uniform and gradual heating; such heating elements can be switched with a deviator (ECONOMY SWITCH), in order to obtain three different heating levels, according to the desired thermostating temperature (set point) to obtain maximum stability of the controlled parameter (thermostating temperature) and for minimum energy consumption; internal centrifugal blower provides an uniform thermal distribution.

NATURAL COOLING AND USE OF STERILE FILTER:

when thermal cycle of sterilization finishes, during internal air natural cooling, a light depression might occur inside; a specific sterile filter with cartridge (optional) prevents any form of pollution and/or contamination.

ACCESSORIES:

- Adjustable opening valve for steam elimination
- Tubular support (for W104 AC-W106 AC models)
- Tubular support with wheels (for W104 AC-W106 AC models)
- Additional perforated shelf
- Digital electronic microprocessor recorder with 1 strip-chart track
- Digital electronic microprocessor recorder with from 2 to 6 strip-chart tracks
- Supplementary RTD Pt 100 Ohm probe, for connection to external acquisition system and T recorder, such as T-GUARD® and SensiNet®, or similar systems
- Additional RTD Pt 100 Ohm probe, complete with 4-20 mA converter, mounted on DIN rails, for connection to external recording system
- RS485 output for connection to PC
- Audio-visual T module alarm, for deviations from set point
- Lateral wall access hole, for passage of probes, diameter 25 mm, in order to carry out IQ-OQ and validation activities and/or periodical calibration
- Digital electronic regulator application, for regulation and safety against overtemperature, with possibility of digital setting, RTD Pt 100 Ohm input completely independent from the main control system, with predisposition for activation of remote alarm device.
- Cartridge sterile filter.

An I.Q. (Installation Qualification) and O.Q. (Operational Qualification) can be carried out on this series of equipment; for an evaluation of the costs of these activities, consult the KW commercial office. KW is also available for ISO calibration certification services for SIT sample comparisons.

TO THERMOSTATIC OVEN series

electronic thermostatic digital fan-assisted ovens

W104 TO - W106 TO - W107 TO - W108 TO SERIES

This thermostatic oven is particularly recommended for heating and drying tests, thermal treatments and tests of samples of various dimensions.

STRUCTURE:

Internal chamber and shelves in glossy AISI 304 stainless steel, external cabinet in brushed AISI 304 stainless steel sheet metal. Therefore high mechanical characteristics, good resistance to corrosion and extremely easy cleaning. Each appliance is equipped with racks to position AISI 304 perforated stainless steel shelves (therefore height-adjustable). Internal architecture suitable for creation of a controlled air flow, by means of centrifugal blower: this ensures an optimum internal T distribution inside the chamber and therefore an optimum T uniformity, as well as accelerating drying operations. Door equipped with closure with lock and key. Sealing in silicone rubber, for high temperatures, long lasting and easy to clean and replace. W107TO and W108TO models have wheels (front wheels with brake) equipped standard. Insulation with special reinforced mineral fibre panels for high temperatures. Asbestos free.

The efficiency of the thermal insulation ensures low temperatures on the outer surfaces and low energy consumption.

THERMOREGULATION:

Is obtained with electronic digital PID (proportional, integral, derivative) regulator, RTD Pt 100 Ohm input; with set value and process value display; function paired with specific SSR, suited to the power consumption load of the heating resistors: this ensures an optimum internal T stability, without T overshoot or undershoot. The regulator allows an excellent human-machine interface, by means of LED display and very few function keys:

- parameter selection / display
- temperature setting (set point)

The control panel is complete with specific general switch (O/I), warning lights to signal that power is on, and SAFETY THERMOSTAT FOR OVERTEMPERATURE (DIN 12880 class) with probe independent from that of the main controller; it intervenes and disconnects the appliance from power supply, when, due to main regulator breakdown, T exceeds max safety value (adjustable and preset by the user): this device protects the oven's content, the oven itself, and the surrounding environment therefore allowing running in maximum security. Its intervention will be signalled by means of a red light.

With these models, thermal cycle check is also possible, or a programming of the temperature – time diagram.

Cycle check (**optional**) occurs with the following methods:

- with the continuous display of the process value, visible from a distance, with 1°C resolution.
- time is controlled by a specific timer (0-24 hours), switched on by the operator by means of panel switch, or
- time is controlled by an ON – OFF timer (0-24 hours or 1-7 days) that starts and stops the oven according to the desired preset programme, or
- by means of a LFTKW programming controller with different operative methods: continuous running, running depending on preset T programmer (with possibility of wait-phase), multiple repetition of the entire preset programme.

This KW oven therefore guarantees a perfect thermal cycle, even without continuous personnel supervision and allows, in case of ON – OFF timer or LFTKW, the use of the oven even during machine resting time.

HEATING:

Electrical, with specific tubular heating elements, in stainless steel, finned for air operation, with low thermal density, ensuring an uniform and gradual heating; such heating elements can be switched with a deviator (ECONOMY SWITCH), in order to obtain three different heating levels, according to the desired sterilization T value (set point) for maximum stability of the controlled parameter (sterilization temperature) and for minimum energy consumption; internal centrifugal blower provides an uniform thermal distribution.

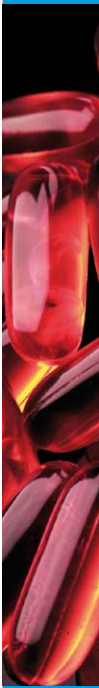
ACCESSORIES:

- Adjustable opening valve for possible steam elimination
- Tubular support (for W104TO-W106TO models)
- Tubular support with wheels (for W104TO-W106TO models)
- Additional perforated shelf
- Cycle execution timer
- ON – OFF timer for cycle execution
- LFTKW controller - programmer
- Digital electronic microprocessor recorder with 1 strip-chart track
- Digital electronic microprocessor recorder with from 2 to 6 strip-chart tracks
- Supplementary RTD Pt 100 Ohm probe, for connection to external acquisition system and T recorder, such as **T-GUARD®** and **SensiNet®**, or similar systems
- Additional RTD Pt 100 Ohm probe, complete with 4-20 mA converter, mounted on DIN rails, for connection to external recording system
- RS485 output for connection to PC
- Audio-visual T alarm module, for deviations from set point
- Wall lateral access hole, for passage of probes, diameter 25 mm., in order to carry out IQ-OQ and validation activities and/or periodical calibration
- Digital electronic regulator application, for regulation and safety against overtemperature, with possibility of digital setting, RTD Pt 100 Ohm input completely independent from main control system, prearranged for activation of remote alarm device.

An I.Q. (Installation Qualification) and O.Q. (Operational Qualification)

can be carried out on this series of equipment; for evaluation of costs for these activities, please refer to KW commercial office.

KW is also available for ISO calibration certification services for SIT sample comparisons.



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= Min/max temperature alarm



= Power failure alarm



= Broken probe alarm



= Open door alarm



= Lock



= Temperature programmer for thermal cycling



= Graphic temperature recorder



= Wheels

APPARECCHI SCIENTIFICI

KW



- RedLine Introduction
- **AC AUTOCYCLE**® series legend digital fan-assisted electronic sterilizers
- **WS** series natural guided convection laboratory ovens/sterilizers
- **AC AUTOCYCLE**® series digital fan-assisted electronic sterilizers
- **TO THERMOSTATIC OVEN**® series digital fan-assisted thermostatic electronic ovens
- **KW.86/AV** series dryer-desiccator cabinet
- **KW.86** series cabinet for sterile storage

DATA LOG

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