



# GreenLine

## **W-LAB and WR-LAB series INCUBATORS forced air circulation incubators**



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W86 RF inox



W85/86



W96



W94

## W-LAB and WR-LAB series INCUBATORS

### forced air circulation incubators

**FORCED AIR CIRCULATION INCUBATORS  
FOR THE MODERN BIOMEDICAL AND SCIENTIFIC  
LABORATORY WITH COMPLETE PID CONTROL**

KW offers one of the widest selections in microbiological incubators and thermostatic chambers for biomedical applications, for scientific research and for industry.

These are meant for conservation of biological material at controlled temperatures and are indispensable every time a constant ambient temperature must be created for the growth of microorganisms.

Therefore they are used in all hospital laboratories, laboratories for scientific research, agriculture, veterinary medicine, chemicals and in controls for the pharmaceutical, cosmetic and food industry.

KW interprets the needs of the various users, with this reliable and technically advanced line, supported by a competitive know-how and by accurate choices of building materials.

W-WR-LAB incubators are the result of technological innovation, quality in manufacturing and the continuous attention towards the client, all in KW tradition, matured in over 50 years in business.

All models are designed and built according to the ISO 9001:2000 International Quality System and created in accordance with Mark European safety standards and UNIEN-61010 for laboratory equipment.

KW releases a calibration certificate at +37°C in the centre of the chamber, or others more complex (on specific request).

The WR-LAB series refrigerator groups are built using HFC refrigerants (CFC and HCFC free) for the protection of the environment.

The microprocessor control with exclusive PID action and the DIN 12 880 class 3 .1 overtemperature regulator ensure a precise and uniform incubation temperature in conditions of maximum operating security.

A wide range of models, capacities and accessories allow the user to choose the ideal solution.







# W-LAB series INCUBATORS

## forced air circulation incubators

### STRUCTURE AND SYSTEM:

External structure and door in sheet steel prepainted or plastic-coated in zinc; insulation in natural mineral fibres; internal chamber and shelves in AISI 304 stainless steel; the shelves can be positioned as desired through mobile supports on racks; these are placed on the internal walls.

All models are equipped with a transparent internal door (in plexiglass or in tempered glass), fitted with a sealing gasket. This allows observation of the samples, without alteration of the internal temperature. The door has a magnetic gasket in PVC.

W-LAB incubators are easy to clean and decontaminate. The heating is obtained with special low thermal density tubular elements (finned), for maximum temperature stability; these are placed in an area separate from the internal chamber, in order to create a very uniform temperature control (with the internal chamber walls) in the working volume. The temperature control flow is driven by a high efficiency helical fan; the speed – in the working volume – is close to the laminarity, and in any case can be regulated with a variable speed drive of the fan itself. Each incubator is equipped with a vent aerator, with adjustable opening.

### THERMOREGULATION AND CONTROLS INCLUDE:

- lighted general ON/OFF switch
- digital electronic  $\mu$ P controller, with LED display, with Set value and Process indication RTD Pt 100  $\Omega$  probe and PID regulation (proportional, integral, derivative) for maximum stability of T parameter; use of SSR static relays (zero crossing). Regulation parameters optimizable by keyboard, to minimize heating times and avoid temperatures dangerously exceeding the set temperature
- optional adjustable overtemperature controller, in conformity with DIN 12880 with separate sensor (protection class 3.1) and with on-panel visual alarm indication and heating exclusion, in case of failure; for maximum security.

### ACCESSORIES:

- Support base for W94-W95-W96 models, with wheels
- Pivoting and/or fixed wheel kit for W85-W86 models
- Additional shelf in AISI 304 stainless steel
- Control panel closure, in plastic
- Lock with key
- Internal – external opening, with rubber cap
- Internal fan variable speed drive
- Internal electric socket (5/10 A)
- RS485 serial port
- RS485-RS232 converter
- Interface management software
- On-disc recorder with weekly cycle with autonomous power supply by means of 1.5Vdc battery
- Strip-chart electronic recorder with V230/1/50 power supply
- 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
- BIO-AS-KW, digital electronic device for general surveillance, 12Vdc self-powered, inclusive of all the alarms (T min/max, etc.), including power failure alarm, with automatic test of battery status and constant status indicator (internal self-diagnostic); complete with contacts for remote alarm setup
- V115/1/60 power supply, on request

**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.**

Model	External dimensions (WxDxH)	Internal dimensions (WxDxH)	Capacity	Shelves	T stability	T uniformity	Power (installed)	Weight
W94	cm. 63x60x95 h	cm. 45x45x45 h	90 litres	n.2	$\pm 0,1^{\circ}\text{C}$	$< \pm 0,5^{\circ}\text{C}$	W 250	Kg. 70
W95	cm. 63x80x95 h	cm. 45x65x45 h	130 litres	n.2	$\pm 0,1^{\circ}\text{C}$	$< \pm 0,5^{\circ}\text{C}$	W 250	Kg. 75
W96	cm. 98x65x115 h	cm. 80x50x65 h	260 litres	n.2	$\pm 0,1^{\circ}\text{C}$	$< \pm 0,5^{\circ}\text{C}$	W 250	Kg. 100
W85	cm. 110x75x200 h	cm. 75x55x105 h	430 litres	n.5	$\pm 0,1^{\circ}\text{C}$	$< \pm 0,5^{\circ}\text{C}$	W 350	Kg. 200
W86	cm. 110x75x200 h	cm. 86x58x153 h	763 litres	n.6	$\pm 0,1^{\circ}\text{C}$	$< \pm 0,5^{\circ}\text{C}$	W 350	Kg. 200

*T range: from  $+5^{\circ}\text{C}$  above ambient temperature to  $+70^{\circ}\text{C}$   
V230/1/50 power supply.*

# WR-LAB series INCUBATORS

## refrigerated forced air circulation incubators

### STRUCTURE AND SYSTEM:

External structure and door in sheet steel prepainted or plastic-coated in zinc; insulation in natural mineral fibres; internal chamber and shelves in AISI 304 stainless steel; the shelves can be positioned as desired through mobile supports on racks; these are placed on the internal walls. All models are equipped with a transparent internal door (in plexiglass or in tempered glass), fitted with a sealing gasket. This allows observation of the samples, without alteration of the internal temperature. The door has a magnetic seal in PVC. WR-LAB incubators are easy to clean and decontaminate. The heating is obtained with special low thermal density tubular elements (finned), for maximum temperature stability; cooling is achieved by a special KW designed tubular evaporator for exchange at low  $\Delta t$ ; all heat exchangers are placed in an area separate from the internal chamber, in order to create (with the internal walls) a very uniform temperature control in the working volume. The temperature control flow is driven by a high efficiency helical fan; the speed – in the working volume – is close to the laminarity, and in any case can be regulated by a variable speed drive of the fan itself. Each incubator is equipped with a vent aerator with adjustable opening. The refrigeration system is composed of an air condensing unit, with expansion by means of a capillary tube, and a hermetic compressor. The system is completely sealed and low noise. There is plenty of condensing surface to allow it to function correctly even at very high ambient temperatures ( $> +32^{\circ}\text{C}$ ) and/or in environments with little ventilation and poor air exchange. There is a device that collects and evaporates the condensation water. The refrigerants used are non-toxic, non-flammable, non-explosive and above all eco-friendly (ODP=0).

### THERMOREGULATION AND CONTROLS INCLUDE:

- lighted general ON/OFF switch
- lighted button for activation of refrigerating system
- digital electronic  $\mu\text{P}$  controller, with LED display, with Set value and Process indication. RTD Pt 100  $\Omega$  probe; PID regulation (proportional, integral, derivative) for maximum stability of T parameter; use of SSR static relays (zero crossing) both for heating and for refrigeration. Regulation parameters optimizable by keyboard, in order to minimize heating times and to avoid temperatures dangerously exceeding the set temperature

- pressure safety switch against maximum overpressure in condensation, manually reactivated, with visual alarm indication on panel
- optional adjustable overtemperature controller, in conformity with DIN 12880 with separate sensor (protection class 3.1) and visual alarm indication on panel or with heating exclusion, in case of alarm either for the product, the equipment, or the environment.

### ACCESSORIES:

- Support base for W94RT-W95RT-W96RT models, with wheels
- Pivoting and/or fixed wheel kit for W94RF - W95RF - W96RF - W85RF - W86RF models
- Additional shelf in AISI 304 stainless steel
- Control panel closure, in plastic
- Lock with key
- Internal – external opening, with rubber cap
- Internal fan variable speed drive
- Internal electric socket (5/10 A)
- RS485 serial port
- RS485-RS232 converter
- Interface management software
- On-disc recorder with weekly cycle and autonomous power supply by means of 1.5Vdc battery
- Strip-chart electronic recorder with V230/1/50 power supply
- 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
- BIO-AS-KW, digital electronic device for general surveillance, 12Vdc self-powered, including all alarms (T min/max, etc.), including power failure alarm, with automatic test of battery status and constant status indicator (internal self-diagnostic); complete with contacts for remote setup of alarm signal
- Multifunctional digital electronic  $\mu\text{P}$  programmer for thermal cycles: various programmes each with many segments, all storable: duration and temperature can be programmed for each segment
- Run-stop timer
- V115/1/60 power supply, on request

Model	External dimensions (WxDxH)	Internal dimensions (WxDxH)	Capacity	Shelves	T stability	T uniformity	Power (installed)	Weight
W94RT	cm. 63x60x105 h	cm. 45x45x45 h	90 litres	n.2	$<\pm 0,5^{\circ}\text{C}$	$\pm 0,5^{\circ}\text{C}$	W 650	Kg. 80
W94RF	cm. 63x60x165 h	cm. 45x45x45 h	90 litres	n.2	$<\pm 0,5^{\circ}\text{C}$	$\pm 0,5^{\circ}\text{C}$	W 650	Kg. 90
W95RT	cm. 63x80x105 h	cm. 45x65x45 h	130 litres	n.2	$<\pm 0,5^{\circ}\text{C}$	$\pm 0,5^{\circ}\text{C}$	W 650	Kg. 85
W95RF	cm. 63x80x165 h	cm. 45x65x45 h	130 litres	n.2	$<\pm 0,5^{\circ}\text{C}$	$\pm 0,5^{\circ}\text{C}$	W 650	Kg. 95
W96RT	cm. 98x65x105 h	cm. 80x50x65 h	260 litres	n.2	$<\pm 0,5^{\circ}\text{C}$	$\pm 0,5^{\circ}\text{C}$	W 700	Kg. 140
W96RF	cm. 98x65x170 h	cm. 80x50x65 h	260 litres	n.2	$<\pm 0,5^{\circ}\text{C}$	$\pm 0,5^{\circ}\text{C}$	W 700	Kg. 150
W85RF	cm. 110x75x200 h	cm. 75x55x105 h	430 litres	n.5	$<\pm 0,5^{\circ}\text{C}$	$\pm 0,5^{\circ}\text{C}$	W 850	Kg. 230
W86RF	cm. 110x75x200 h	cm. 86x58x142 h	708 litres	n.6	$<\pm 0,5^{\circ}\text{C}$	$\pm 0,5^{\circ}\text{C}$	W 850	Kg. 240

T = table operated  
F = floor operated  
T range: from  $+5^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$   
V230/1/50 power supply.

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.

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= Min. / max. temperature alarm



= Internal light



= Power failure alarm



= Open door alarm



= Lock



= Temperature programmer for thermal cycling



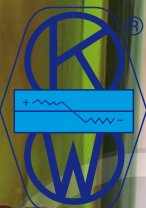
= Graphic temperature recorder



= Wheels

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**KW**



- **GreenLine** Introduction
- **W-LAB WR-LAB** series legend
- **WI** series  
natural guided convection incubators
- **WPL** series **INCUBATORS**  
table and floor incubators
- **WPLR** series **INCUBATORS**  
refrigerated table and floor incubators
- **W-LAB** series **INCUBATORS**  
forced air circulation incubators
- **WR-LAB** series **INCUBATORS**  
forced air circulation  
refrigerated incubators
- **WRC** series  
forced air circulation  
thermal refrigerator  
for modern scientific  
and industrial laboratories
- **W 90 - 102** series  
thermostatic chambers / precision incubators  
with water jacket

DATA LOG

- **WR 90 - 102** series  
thermostatic chambers / precision incubators  
refrigerated with water jacket
- **W.80 - W.82** series  
precision water bath
- **W.82/O - W.84/O** series  
precision water bath  
with linear and/or orbital shaking
- **W180CCI.IR** model **CO2** Incubator series
- **WRS 96 - 85** series  
thermal refrigerating chambers with photoperiod  
control for environmental simulation
- **WR UR700C** model Climate Chamber series  
for pharmaceutical stability tests  
and environmental simulation
- **KW 20/B-100/B KW 6/B-12/B-18/B** series  
modular glass or plastic bottle rollers ø80-120mm
- **Walk-in incubator**
- **Walk-in stability chamber**