



***EKOCH series
Stability Test and
Plants Growth chambers
Temperature & Humidity
controls***

(picture of cod. 12880, EKOCH 700 a side of 13383 EKOCH 1500)

The chambers of EKOCH series are designed to control the internal temperature in the range -10/-20°C to +60/+70°C and humidity between 20 to 90% RH (lowest dew point is at +5°C inside at the range 10°C/50°C). They are available with three volumes: 700, 900 and 1500 litres. The versions EKOCH 900P and EKOCH 1500P are supplied as standard with a programmable microprocessor to generate T and RH ramps while all others models have standard controllers only.

Main features of EKOCH chambers

TEMPERATURE UNIFORMITY:

- **+ / - 1.5 °C**

FRAME

Exterior is in steel plate pre-painted in grey with self-closing door/s equipped with magnetic & key lock and specific rubber gasket and heater to prevent water condensation.

Interior is in stainless steel AISI 304 with one or two inner glass door/s and a porthole with diameter of 50 mm with rubber cap.

The chamber has internal rounded corners, a basin floor for liquid collecting and a courtesy light.

Adjustable front levelling feet.

Internal grid steel shelves.

THERMAL INSULATION

By high density expanse – injected polyurethane foam: **insulation size 75 mm.**

COOLING SYSTEM:

By totally sealed compressor located in the upper part of the chambers with air condensing unit.

Internal evaporator is air ventilated.

REFRIGERANT

Standard R134a or R404A, both allowed by the Montreal Convention and accepted as “environment friend gas” under the London amendment too.

Humidity

Positive humidity is created by a low pressure vapour generator made of a softened water bowl with self-adjusting heater and water level controls.

Negative humidity is controlled by the cooling system that acts as water trap.

IMPORTANT NOTES FOR THE WATER SUPPLY:

- **all EKOCH chambers must be feed with softened water for the humidifier,**
- **max hardness of the water must be of 1°f and with a max electric conductivity of 10 µS/cm**
- **inlet water pressure must be between 0.3 to max 1.5 bar**
- **it is responsibility of the buyer to provide for clean / softened / pressurized water within the range of parameters herein described.**

CONTROLLERS

The models **EKOCH 700 and EKOCH 1500** are equipped with two standard electronic controllers: one for Temperature and one for Humidity (P.I.D. controller), respectively equipped with Pt100 and capacitive probes. As option, they can be equipped with an extra controller for completely back-upping of main temperature controller in case of failure (see options).

The models **EKOCH 900P and EKOCH 1500P**, instead than the standard controllers, have one programmable ramps generator (PLC) to set humidity and temperature cycles (to simulate sunrise, day light and sunset).

- equipped with a battery back-up to provide energy for up to 24-48 hours in case of main black-out (parameters only, NOT for alarms, see OPTIONAL ACCESSORIES for alarms battery back-up),
- Possibility to store up to 1000 cycles of 350 segments,
- Unlimited possibility to register temperature and humidity levels variations,
- Log of alarms with recording of displaying time, number of total interventions, stored cycles (can be exported by a Compact Flash card or a Pen drive directly through the USB door on the controls panel)
- Temperature and humidity graphic available on display,
- Visualization of functioning synoptic graphs,
- Predisposition for 4-20mA signals for temperature and humidity,
- Remote alarms for temperature and humidity (normally open / normally closed contact),
- RS232 serial port,
- Membrane controls panel with full-color display and with the following functions:
 - o ON/OFF chamber.
 - o ON/OFF climate.
 - o SET switches for Temperature and Humidity,
 - o Visualization of current Temperature and Humidity,
 - o Visualization of alarms for high pressure or chamber lock.

ORDERING INFORMATION AND AVAILABLE MODELS

Code 12880 – EKOCH 700 700 litres

Net sizes & weight

- External: 740W x 940D x 2020H mm
- Internal: 590W x 600D x 1500H mm
- Weight 150 kg

Number of doors: 1
Number of SS shelves 4

Mean energy consumption 1.6 KWh
Voltage 208 – 252 VAC, 50 Hz (60Hz optional)
Amperage 11A
VA 2530
Kcal/h emission 1600
Noise level <65 dB

OPTIONAL ONLY for code 12880 – EKOCH 700:

Code	Description
17031	Wooden cage for safe transportation
13085	Additional grid steel shelf
11874	Electronic back-up controller. In case of failure of the main controller, this option acts as back-up controller limiting the T variation inside a specific min and max values (settable): particularly useful to protect at 100% any high value material present in the chamber.

Code 12881 – EKOCH 1500 1500 litres

Net sizes & weight

- External: 1480W x 940D x 2020H mm
- Internal: 1330W x 600D x 1500H mm
- Weight 230 kg

Number of doors: 2
Number of SS grid shelves 6

Mean energy consumption 1.6 KWh
Voltage 208 – 252 VAC, 50 Hz (60Hz optional)
Amperage 11A
VA 2530
Kcal/h emission 1600
Noise level <65 dB

OPTIONAL ONLY for code 12881 – EKOCH 1500:

Code	Description
17035	Wooden cage for safe transportation
13085	Additional grid steel shelf
11874	Electronic back-up controller. In case of failure of the main controller, this option acts as back-up controller limiting the T variation inside a specific min and max values (variable): particularly useful to protect at 100% any high value material present in the chamber.

Code 13379 – EKOCH 900P (with T and RH ramps generator) 900 litres

Net sizes & weight

- External: 810W x 1135D x 2020H mm
- Internal: 660W x 800D x 1500H mm
- Weight 180 Kg

Number of doors: 1
Number of SS grid shelves 4

Mean energy consumption 1.6 KWh
Voltage 208 – 252 VAC, 50 Hz (60Hz optional)
Amperage 11A
VA 2530
Kcal/h emission 1600
Noise level <65 dB

OPTIONAL ONLY for code 13379 – EKOCH 900P:

Code	Description
12095	Angelantoni Winkratos™ software (Windows based) for remote control and complete recording of chambers' parameters.
13415	Additional grid steel shelf
17037	Wooden cage for safe transportation

Code 13383 – EKOCH 1500P (with T and RH ramps generator) 1500 litres

Net sizes & weight

- External: 1480W x 940D x 2020H mm
- Internal: 1330W x 600D x 1500H mm
- Weight 230 kg

Number of doors: 2
Number of SS grid shelves 6

Mean energy consumption 1.6 KWh
Voltage 208 – 252 VAC, 50 Hz (60Hz optional)
Amperage 11A
VA 2530
Kcal/h emission 1600
Noise level <65 dB

OPTIONAL ONLY for code 13383 – EKOCH 1500P:

Code	Description
12095	Angelantoni Winkratos™ software (Windows based) for remote control and complete recording of chambers' parameters.
13085	Additional grid steel shelf
17035	Wooden cage for safe transportation

OPTIONAL ACCESSORIES APPLICABLE TO ALL CHAMBERS OF EKOCH SERIES

Code	Description
13570	Two channels recorder (T and RH)
12939	Internal electrical panel: 2 plugs, 1 switch, 1 safety switch 6A (magneto thermic)
11676	Standard additional Pt100 Temperature probe
12132	Pt100 T probe Class A with 3 calibration points
12850	Additional porthole diam. 23 mm
12851	Additional porthole diam. 50 mm
11631	Additional capacitive probe for remote RH alarm. Includes electronics for 4 – 20 mA signal generation.
11340	Visual and acoustic temperature electronic alarm system complete with battery back-up: *over/under temperature *minimum and maximum U.R. *acoustic and visual power failure indicator *remote alarm contacts supplied for connection to remote alarm system
23005	Container for water softened complete with float level, pump for vapor generator and contact to signal the minimum water level.

OTHERS TECHNICAL DATA

Product Name :	EKOCH series – stability tests and plant growth chambers
Manufacturer:	Angelantoni Life Science S.r.L. Loc. Cimacolle, 464 06056 Massa Martana (PG) - Italy
Ambient conditions of use:	Temperature: +10° ~ +30° C Relative humidity: 30 ~ 80% without condensation
Stocking condition:	Temperature: +0° ~ + 40° C Relative humidity: 20 ~ 80% without condensation
Alarms types:	Acoustic and Optical
In case of power black-out:	Compressors OFF (Controller is powered for 24-48h by a battery back-up)