VERTRIEB DURCH:

RIEGER
Industrievertretungen GmbH

Ihr Anbieter für Geräte im Bereich Labor, Mikrobiologie und Industrie.

Wir sind für Sie da:

E-Mail: office@rieger-iv.at
Telefon: +43(1) 728 00 52
Fax: +43(1) 728 69 16
Rustenschacher Allee 10, 1020 Wien, Austria

www.rieger-iv.at

(picture of cod. 12885, EKOCHL 1500 with all doors open)

EKOCHL series
Stability Test and Plants Growth chambers Light - Temperature – Humidity controls

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

Main features of EKOCHL chambers

TEMPERATURES RANGE:
- **from -10°C to +60°C with light OFF,**
- **from +10°C to +50°C with light ON.**

TEMPERATURE UNIFORMITY:
- **+ / - 1.5 °C with light OFF,**
- **+ / - 3.0 °C with light ON.**

HUMIDITY RANGE:
- **from 20% to 90% (+ / - 5%) in the temperature range from +10 °C to +50 °C,**
- **DEW POINT: + 5 °C**

LIGHT RANGE:
- **from 0 to 20.000 Lux**

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 (only EKOCHL 900P and 1500P), 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 EKOCHL 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.**

LIGHTS
By high-density fluorescent tubes **OSRAM 36W tone 954** and by fluorescent tubes **OSRAM 36W lights tone 77** for up to 20.000 Lux radiation (measured with probe oriented towards the lamps and centrally positioned at 30 cm from the light source). Lighting tubes are vertically oriented on the two lateral sides and are separated from the chamber by two temperate glasses. Service doors for lights replacement are standard. On request (to specify what), others lighting tubes can be ordered with different light tones to get any available spectrum of light radiation.

CONTROLLERS
The models **EKOCHL 700 and EKOCHL 1500** are equipped with two standard electronic controllers, one for Temperature and one for Humidity (P.I.D. controller) and one manual "clock-type" controller for ON /OFF all the lamps at once. The controllers use one Pt100 probe for Temperature and one capacitive probes for RH measurements. As option (see OPTIONALS), they can be equipped with an extra controller for completely back-upping the main temperature controller in case of failure.

The models **EKOCHL 900P and EKOCHL 1500P**, instead than the standard controllers, have one programmable ramps generator (PLC) to set humidity, temperature and lighting 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,
- **For each working segment programmed inside one cycle, the lamps can be turned ON/ OFF using six different levels, approximately with the following value:**
    1. **800 Lux**
    2. **1500 Lux**
    3. **5500 Lux**
    4. **9500 Lux**
    5. **15000 Lux**
    6. **2000 Lux (max)**
- 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:
    1. ON/OFF chamber.
    2. ON/OFF climate.
    3. SET switches for Temperature and Humidity,

4. Visualization of current Temperature and Humidity,
5. Visualization of alarms for high pressure or chamber lock.

ORDERING INFORMATION AND AVAILABLE MODELS

Code 12884 – EKOCHL 700 *700 litres*

Net sizes & weight

- External: 840W x 940D x 2100H mm
- Internal: 590W x 600D x 1500H mm
- Weight 190 kg

Number of doors:	1 + 2 laterals
Number of inner door:	1
Number of wire shelves	4
Mean energy consumption	1.6 KWh(with park lamps ON),3.6Kw (with park lamps OFF)
Voltage	208 – 252 VAC, 50 Hz (60Hz optional)
Amperage	11A
VA	2530/3600
Kcal/h emission	1600/2000
Noise level	<65 dB

OPTIONAL ONLY for code 12884 – EKOCHL 700:

Code	Description
17138	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 12885 – EKOCHL 1500 *1500 litres*

Net sizes & weight

- External: 1580W x 940D x 2100H mm
- Internal: 1330W x 600D x 1500H mm
- Weight 270 kg

Number of doors:	2 + 2 laterals
Number of inner doors:	2
Number of wire shelves	6
Mean energy consumption	1.6 KWh(with park lamps on),3.6Kw(with park lamps off)
Voltage	208 – 252 VAC, 50 Hz (60Hz optional)
Amperage	11A
VA	2530/3600
Kcal/h emission	1600/2000
Noise level	<65 dB

OPTIONAL ONLY for code 12885 – EKOCHL 1500:

Code	Description
17033	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 13413 – EKOCHL 900P (with T, RH and lights ramps generator) *900 litres*

Net sizes & weight

- External: 910W x 1135D x 2100H mm
- Internal: 660W x 800D x 1500H mm
- Weight 220 kg

Number of doors:	1 + 2 laterals
Number of inner doors:	1
Number of wire shelves	4
Mean energy consumption	1.6 KWh (with park lamps ON),3.6Kw (with park lamps OFF)
Voltage	208 – 252 VAC, 50 Hz (60Hz optional)
Amperage	11A
VA	2530/3600
Kcal/h emission	1600/2000
Noise level	<65 dB

OPTIONAL ONLY for code 13413 – EKOCHL 900P:

Code	Description
12095	Angelantoni Winkratos™ software (Windows based) for remote control and complete recording of chambers' parameters.
13415	Additional grid steel shelf
17139	Wooden cage for safe transportation

****

Code 13302 – EKOCHL 1500P (with T, RH and lights ramps generator) *1500 litres*

Net sizes & weight

- External: 1580W x 940D x 2100H mm
- Internal: 1330W x 600D x 1500H mm
- Weight 270 kg

Number of doors:	2 + 2 laterals
Number of inner doors:	2
Number of wire shelves	6
Mean energy consumption	1.6 KWh (with park lamps ON),3.6Kw (with park lamps OFF)
Voltage	208 – 252 VAC, 50 Hz (60Hz optional)
Amperage	11A
VA	2530/3600
Kcal/h emission	1600/2000
Noise level	<65 dB

RIEGER Industrievertretungen GmbH
www.rieger-iv.at
Wir sind für Sie da:
E-Mail: office@rieger-iv.at
Telefon: +43(1) 728 00 52
Fax: +43(1) 728 69 16
Rustenschacher Allee 10
1020 Wien, Austria

OPTIONAL ONLY for code 13302 – EKOCHL 1500P:

Code	Description
12095	Angelantoni Winkratos™ software (Windows based) for remote control and complete recording of chambers' parameters.
13085	Additional wire shelf
17033	Wooden cage for safe transportation

****

OPTIONAL ACCESSORIES APPLICABLE TO ALL CHAMBERS OF EKOCHL SERIES

Code	Description
13570	Two channels recorder (T and RH)
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 buffer battery : *over/under temperature *minimum and maximum U.R. *acustic and visual power failure indicator
23005	Container of water softened complete with float level, pump for vapor generator and contact to signal the minimum water level

OTHERS TECHNICAL DATA

Product Name :	**EKOCHL 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)

Images herein provide are intended for illustration purpose only. The specifications can change without notice.