# Air-cooled condensers
# Drycoolers

EUROPA 2

*Excellent transfer capacity/sound level ration*
*Corrosion proof quality*
*Wide range of options*

*Capacity (air-cooled condenser) :*
*30 to 800 kW (R407C)*

## Use

The **air-cooled** condensers from the **EUROPA 2** range are mainly designed for the condensation of refrigerant fluids for the cold water production units, in “Split System”. They ensure the functions of desuperheating, condensation and sub-cooling.

The **drycoolers** from the range **EUROPA 2** are mainly designed for cooling the water circuit of the cold water production units condenser, and also for cooling the thermal motors of generating sets in co-generation.

These units are designed for outdoor installation

## Description

### Optimisation

**EUROPA 2** is available with :

– Up to 14 fans (condenser), up to 16 fans (dry-cooler).

– 2 fin pitches: 2.1, 2.5 mm.

– 2, 3 or 4 rows of tubes.

– 6 rotation speeds.

This **flexibility** allows the best thermal and acoustic performance for the best price.

### Resistance to corrosion

– In the standard version, all the steel sheets are galvanised and coated with a protective lacquer (graphite grey colour RAL 7024 and light grey RAL 7035).

– Bolts are “DACROMET” coated.

– Additional options :
– For hostile environments, anticorrosion treatment of the fins (pre-enamalled aluminium or Blygold).

### Optional power regulation

– Factory wired two speed motors.

– Thermostatic and pressostatic control.

– Continuous variation of motor speed by frequency or voltage variation.

### According to their use, a large number of specific options is available :

– Double circuit (HT - BT).

– Raised feet.

– Hail protection screen (for forced draught).

– Anti-recycling hood.

– Expansion vessel (for generating sets applications).

– Flange connection.

### Easy installation

EUROPA 2 is optionally equipped with :

– Proximity switches.

– Non-wired emergency stop.

– Motor thermal cut-out connection.

– An electrical panel.

In the standard version, the motors are wired on an integral electrical terminal box.

### Quality control of the product

– Test of fan rotation under voltage and intensity control.

– Test of resistance to pressure.

– Helium leak test condensers.

# ELECTRICAL PANELS FOR EUROPA 2

***The solution for reducing the cost of your electrical connections***

The panels are positioned on the front face of the units, on the header inlet side.

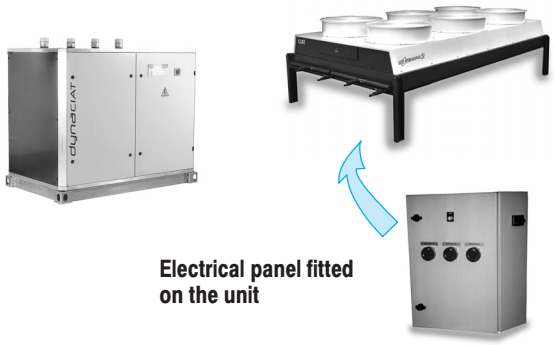
A corrosion-proof bow which withstands outdoor conditions (IP 55 min.) contains the various components.

The door, mounted on hinges, is lockable with a special key. Cable glands are at the disposal of the installer at the bottom of the cabinet.

## AIR-COOLED CONDENSER

In order to **reduce** and **simplify** the electrical connections between the chiller and the air-cooled condenser, CIAT offers a choice of electrical panels suitable for your use :

- SUMMER operation.
- YEAR AROUND operation.
- Perfect mastering of SOUND LEVEL (speed variation).



Electrical panel fitted on the unit

## DRYCOOLER

In order to **simplify** your electrical connections for drycoolers :

- Protective electrical panel.
- Control panel: staged operation of the unit.

### Independant modules supply :

– 1 for the refrigerant unit.

– 1 for the air-cooled condenser.

### Electrical connections between modules :

– Condenser remote control.

– Remote emergency stop.

## Electrical ON/OFF control panel

### Condenser's ON/OFF operation

– Main isolator (emergency stop function).

– Protection by magneto-thermic isolators.

– Remote Run/Stop control.

## Protection cabinet

### Motors individual protection

– Main isolating switch (Emergency Stop Function).

– Protection by magneto-thermic circuit breakers.

## Condensing pressure control panel

### Control of the condensing pressure

– Main isolator (Emergency Stop Function).

– Protection by magneto-thermic isolators.

– Factory mounted ventilation stages control pressostats.

In cold areas, ventilation of a stopped refrigerant circuit must be avoided, even though the other circuit is requesting ventilation. It is then recommended to use the type, "Grand Froid" pressostatic panels operating on condensers with 2 lines of fans and 2 balanced refrigerant circuits. Each line of fans is controlled by the pressostats of the associated refrigerant circuit.

## Control panel

### Motors protection and staged operation

– Main isolating switch (Emergency Stop Function).

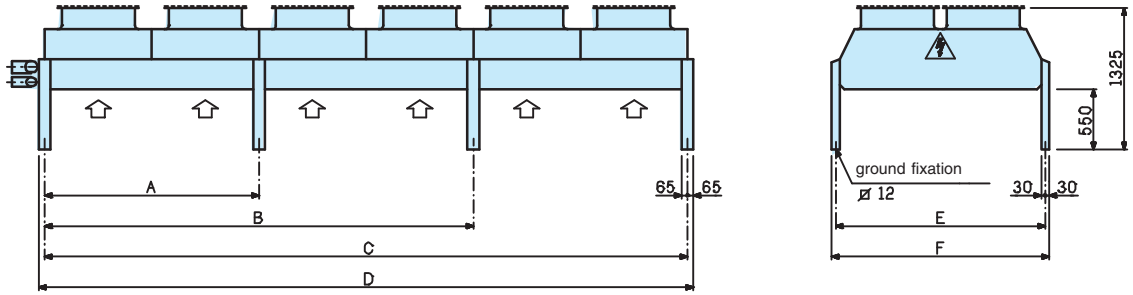
– Protection by magneto-thermic circuit breakers.

– Control of ventilation stages by thermostat.

## DIMENSIONS

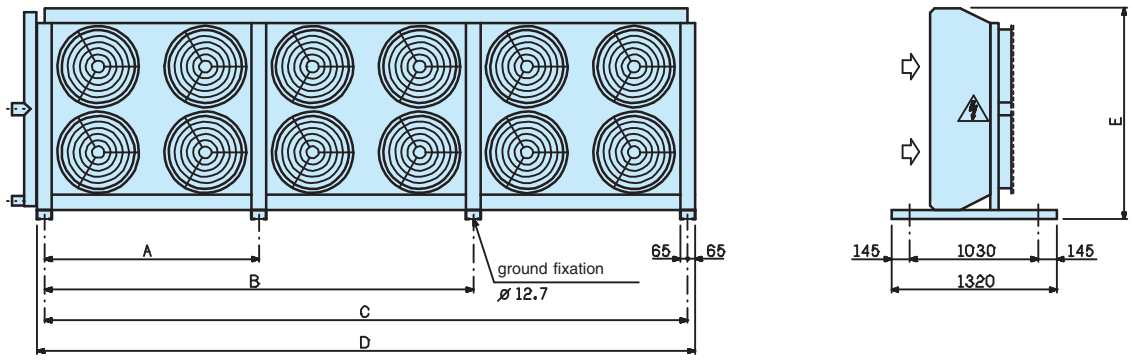
### Horizontal units

EUROPA 2




| EUROPA 2 | 9010 | 9020 | 9030 | 9040 | 9050 | 9K40 | 9060 | 9080 | 9100 | 9120 | 9140 | 9160 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | - | - | - | - | - | - | - | - | - | 2880 | 2880 | 2880 |
| B | - | - | - | 2880 | 2880 | - | - | 2880 | 2880 | 5760 | 7200 | 8640 |
| C | 1440 | 2880 | 4320 | 5760 | 7200 | 2880 | 4320 | 5760 | 7200 | 8640 | 10080 | 11520 |
| D | 1570 | 3010 | 4450 | 5890 | 7330 | 3010 | 4450 | 5890 | 7330 | 8770 | 10210 | 11650 |
| E | 1310 | 1310 | 1310 | 1310 | 1310 | 2340 | 2340 | 2340 | 2340 | 2340 | 2340 | 2340 |
| F | 1370 | 1370 | 1370 | 1370 | 1370 | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 |

### Vertical units




| EUROPA 2 | 9010 | 9020 | 9030 | 9040 | 9050 | 9K40 | 9060 | 9080 | 9100 | 9120 | 9140 | 9160 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | - | - | - | - | 2880 | - | - | - | 2880 | 2880 | 2880 | 2880 |
| B | - | - | - | 2880 | 5760 | - | - | 2880 | 5760 | 5760 | 7200 | 8640 |
| C | 1440 | 2880 | 4320 | 5760 | 7200 | 2880 | 4320 | 5760 | 7200 | 8640 | 10080 | 11520 |
| D | 1570 | 3010 | 4450 | 5890 | 7330 | 3010 | 4450 | 5890 | 7330 | 8770 | 10210 | 11650 |
| E | 1340 | 1340 | 1340 | 1340 | 1340 | 2430 | 2430 | 2430 | 2430 | 2430 | 2430 | 2430 |

## DESCRIPTION (EXAMPLE)

### EUROPA 2 C9102 HI 320 RESIDENTIAL

| C9 | 10 | 2 | H | I | 330 |
|---|---|---|---|---|---|
| Model 9000 (C for Condenser) | Number of fans (from 01 to 16) | Number of rows (2, 3 or 4) | H = Horizontal position<br>V = Vertical position | I = Induced draught<br>F = Forced draught (only for drycoolers) | Rotation speed (rpm)<br>Standard 6 poles 920/750<br>Silent 8 poles 690/560<br>Residential 12 poles 450/330 |

## Sound level

SOUND POWER LEVELS*/SOUND PRESSURE LEVELS** dB(A)

| Rotation speed (rpm) | 920 | 750 | 690 | 560 | 450 | 330 |
|---|---|---|---|---|---|---|
| 9010 | 86/53 | 81/48 | 80/47 | 73/40 | 66/33 | 60/27 |
| 9020 | 89/56 | 84/51 | 83/50 | 76/43 | 69/36 | 63/30 |
| 9030 | 91/58 | 86/53 | 85/52 | 78/45 | 71/38 | 65/32 |
| 9040 & 9K40 | 92/59 | 87/54 | 86/53 | 79/46 | 72/39 | 66/33 |
| 9050 | 93/60 | 88/55 | 87/54 | 80/47 | 73/40 | 67/34 |
| 9060 | 94/61 | 89/56 | 88/55 | 81/48 | 74/41 | 68/35 |
| 9080 | 95/62 | 90/57 | 89/56 | 82/49 | 75/42 | 69/36 |
| 9100 | 96/63 | 91/58 | 90/57 | 83/50 | 76/43 | 70/37 |
| 9120 | 97/64 | 92/59 | 91/58 | 84/51 | 77/44 | 71/38 |
| 9140 | 98/65 | 93/60 | 92/59 | 85/52 | 78/45 | 72/39 |
| 9160 | 98/65 | 93/60 | 92/59 | 85/52 | 78/45 | 72/39 |

(*) Only the sound power level is characteristic of the unit. These values are obtained in conformity with the ISO 3744 standard.
(**) Values measured at 10m for horizontal units in free field, directivity 2, in the bundle axis. Tolerance ±3dB.
The difference between the sound power level and the sound pressure level depends on the site. To know the sound pressure level of the installation, re-calculate it from the sound power level of the unit and the site characteristics (the advice of a sound technician might be necessary)
The sound emission of the unit not being uniform in all directions, for a point from 10 m in the fans axis, the re-calculation pressure value must be increased by approximately 4 dB.

## Recommendation for assembly

- These units are designed for outside operation.

When starting, snow and frost can be harmful for the correct operation of the horizontal units.

In general, take all necessary steps for avoiding air recycling risks, in particular, when the installation includes several units.

It is not advisable to install the units at a hot air extraction duct outlet or close to deciduous vegetation (take the fouling factor into account).

- **A horizontal unit** will be positioned with a free space of 1.5m all around.

In the case where anti-vibration mounts are required, use a rigid chassis keeping the feet interdependent.

- **A vertical unit** will be positioned parallel to the prevailing wind direction. Its use is not recommend for fan low rotation speeds. Furthermore, we recommended stabilising these units with struts connecting the 2 upper ends to fixed supports (wall or frame).

- If using speed variators other than the ones recommended by CIAT, their compatibility with the electrical motors must be checked.

- In the case of air-cooled condensers, the calculation of the capacity to be discharged by the air-cooled condenser will be made according to the rules of art, and namely as a function :

– of the installation compressor type (hermetic, semi-hermetic or open type)

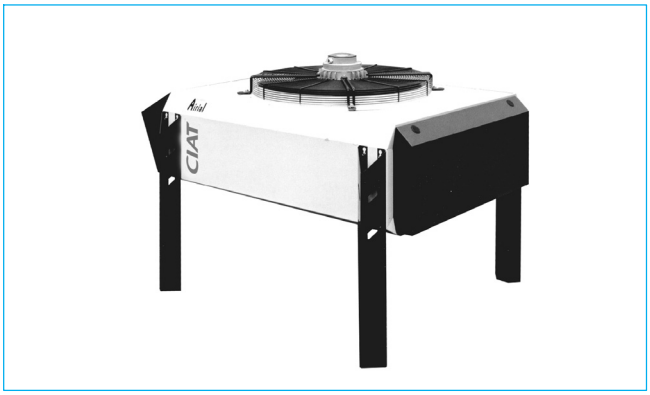
– of the horizontal and vertical lengths of the connecting pipings, and their diameter.

- **Starting and maintenance**: consult the installation, operation and maintenance guide.

- These units **conform to the European directives.** The installer is responsible for the conformity of the unit. He will supervise the positioning and the accessibility of the protection and safety devices (emergency stop, isolating valves, lightening protection).

## Other ranges and applications

For capacity lower than those of the EUROPA 2 range, we propose the AIRIAL range in drycooler and air cooled condenser versions.




## Other products

- **Exchanger coils**

Large range, from the standard coil on stock to the coil on request according to client's specifications.