

RRCC

REFRION **CLIMATIC** **CHAMBER**

THE FIRST LABORATORY IN EUROPE SPECIALISING
IN PERFORMANCE TESTING OF DRY COOLERS.



REFRION
a better innovation



REFRION

MARKET LEADER IN EUROPE FOR AIR-COOLED EQUIPMENT THANKS TO RESEARCH, QUALITY AND INNOVATION.

The Refrion Group is a market leader in Europe for industrial air-cooled equipment, with a decidedly sustainable approach. Founded in 2002 under the brand name X-Change, today it has a staff of over 100 employees in four Italian and Austrian manufacturing plants strategically located in the heart of the “cooling district”. The Group comprises various companies that work together in a coordinated effort to produce Dry Coolers and Condensers, but also offer their services on the market as ideal partners for the production of components including heat exchangers and sheet metal parts. Refrion has grown continuously during its lifetime, basing its success on the continuing search for ever more advanced solutions that meet all requirements in terms of efficiency, quality and respect for the environment.

TOTAL SURFACE AREA:

15.000 MQ

4 MANUFACTURING PLANTS:

2 FLUMIGNANO DI TALMASSONS (UD)

1 VILLA SANTINA (UD)

1 HERMAGOR (A)

3 PRODUCT CATEGORIES:

- **DRY COOLERS**

- **CONDENSERS**

- **HEAT EXCHANGERS**

PRODUCTION:

**OVER 60.000
PRODUCTS
ON SALE**



2015 TURNOVER:

23 MILLION EURO

DISTRIBUTION

Refrion's main market development has been in Europe, where it is supported by commercial branches in Switzerland, Germany and Russia, and by a sales office in France. The company is now ready to expand its business in North America, where it has already started to export, installing a prestigious plant for an important IBM Data Centre in Canada. Refrion products can also be found throughout the world, with installations in Japan, South America, Mexico, Australia, South Africa and various other countries.



RESEARCH AND DEVELOPMENT

The features that distinguish Refrion's Research and Development Department are innovation and dynamism. Some of the major Refrion innovations include the exclusive "oval tube", patented by Refrion, used in the production of finned heat exchangers. These tubes ensure higher performance by reducing friction, which leads to lower air side pressure drops. The **Digital Intelliboard** control panel, developed by the company to regulate Electronic Commutation (EC) fans, offers energy savings and noise control, while **Ecooler**, a patented liquid-cooler, uses an industrial adiabatic system to humidify intake air with a recirculation system that minimises water consumption.

2005
OVAL TUBE

2010
DIGITAL
INTELLIBOARD



2014
ECOOLER

2016
WEB
SELECTOR



REFERENCES

Flexibility and the ability to customise the offer, service quality and fast response times have given Refrion a bigger and bigger share of the market, with customers finding the ideal partner in Refrion for units that suit their needs, offering significant energy savings. Refrion has installed units in prestigious buildings and structures all over Europe such as the **European Parliament in Brussels**, the **Hilton hotel and Musikverein concert hall in Vienna**, and the **Warsaw National Stadium**.



A NEW LABORATORY FOR TESTING THE PERFORMANCE OF EVEN THE LARGEST AND MORE POWERFUL VENTILATED UNITS.

Refrion, a leading manufacturer in Europe in the field of industrial air-cooled equipment, has designed and created its own climatic chamber that has few equals in Europe.

Since 2014, the performance of all the Refrion dry coolers and air-cooled condensers has been guaranteed through the Eurovent certification program. Now, with the climatic chamber, Refrion can certify the units' performance not only under standard test conditions (EN 1048), but in particular under the exact operating conditions defined by the customer.

It will also be possible to test all units not covered by the certification program, such as for example units equipped with adiabatic saturation systems, centrifugal fans, or with power supply at 60 Hz frequency. The climatic chamber can be divided crosswise to adapt quickly to the size of the unit under test. One particular area will also be dedicated to testing prototypes to speed up and validate the activity of the Refrion Research and Development Department.

RCC

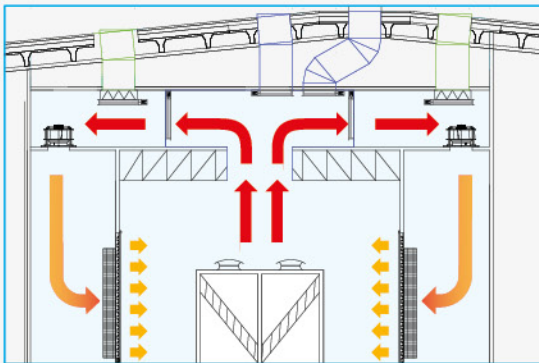
**REFRION
CLIMATIC
CHAMBER**



UNITS SUBJECT TO TEST: THE WHOLE RANGE OF REFRIGERANT LIQUID COOLERS



The climatic chamber has been built on the site of the Talmassons (UD) headquarters and will be able to reproduce both the operating (temperatures, flow rates and pressure loss of refrigerant fluids) and the environmental conditions (temperature and relative air humidity) defined by our customers in the scale design phase of the unit. The intake and outflow temperatures and pressures of the operating fluids and their flow rate, the temperature, relative humidity and air flow inside the chamber are measured directly, as well as the electrical power and current consumed. Therefore, it is possible to accurately calculate the thermal exchange capacity and the energy efficiency coefficient. It is also possible to perform measurements of the noise level of the units through a sound intensity sensor (ISO 9614-1).



CHAMBER DIMENSIONS

LENGTH: 20 m
HEIGHT: 6 m
WIDTH: 12,5 m

MAX SIZE OF TESTABLE UNITS

LENGTH: 14 m
HEIGHT: 3,5 m
WIDTH: 3 m

PERFORMANCE TESTING AND ASSESSMENT

- Thermal exchange capacity according to Eurovent standards (EN 1048)
- Thermal exchange capacity under customer-defined conditions
- Thermal exchange capacity under free cooling conditions
- Thermal exchange capacity under high-temperature conditions
- Electrical power / current consumed
- Liquid side pressure drops
- Sound level (ISO 9614-1)

OPERATING RANGE (*)

- Air temperature: 0°C to +45°C (**)
- Relative air humidity: 40% to 70%
- Max intake liquid temperature: 50°C (with capacity up to 400m³/hr), 100°C (with capacity up to 30 m³/hr)
- Maximum measurable exchange capacity: 2.2 MW
- Maximum air flow processed: 700,000 m³/hr

(*) the test conditions must be validated by the Refrion technical office

(**) a maximum variation in temperature of 25K on the same test day is tolerated.

CERTIFICAZIONI

Refrion is one of just two Italian companies and 11 European companies participating in the Eurovent certification programme. The Eurovent mark guarantees that the refrigeration capacity, electrical absorption and noise levels of equipment manufactured for industrial applications comply with the regulations in force and energy classes for correct use and low environmental impact, even in extreme conditions.



Refrion participates in the ECP programme for Dry Coolers and Air Cooled Condensers. Check ongoing validity of certificate: www.eurovent-certification.com



Ecooler
Industrial Adiabatic System
Spray Adiabatic System



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