

# ROENEST

HEAT EXCHANGERS NATURALLY



AN ENEX TECHNOLOGIES COMPANY

Release June 2022

## HEAT REJECTION

# DRY COOLERS

The complete range of dry coolers designed for all types of heat rejection required in Air Conditioning & Refrigeration, offering a wide range of capacities from 10 to 1140 kW



ROEN EST presents its wide range DRY COOLERS, which ranks among the most complete in Europe, suitable for all commercial, industrial and process, air conditioning and refrigeration applications. ROEN EST is the solution provider for the design, manufacturing and supply of heat exchangers and complete units with particular focus in HVAC&R.

Founded in 1983 for the production of finned pack coils, today the company is a reference point for technology and capacity for solutions in air conditioning, refrigeration, heating and cogeneration. The Group's production structure is divided into two locations in Italy and Slovakia: two complementary and strategic factories, centers of excellence for the production of specific products. The Italian headquarters represents the heart of the company and is the driving force of innovation and technological development.

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# LEADING IN THE HEAT REJECTION PROFESSIONAL SOLUTIONS

The term “dry cooler” is normally associated to a ventilated unit which operates by heat transfer through a surface that separates the working fluid from ambient air, normally fin and tube (individual or multiple) heat exchangers, utilizing convective heat transfer, without using evaporation effect. ROEN EST “dry cooler” ranges are designed to be suitable for any application also with different kinds of fluids even if in the most cases they are used with water and glycoled water. The indicated air flows and power consumptions are verified at our manufacturing plants as per EN327 normative. Present document is fully dedicated to ROEN EST Dry Coolers range which can be segmented into 3 main types:

Type	Fans diameter
	[mm]
COMMERCIAL SERIES	450, 500, 630
INDUSTRIAL SERIES	800, 900
V-SHAPE	800, 900

## MAIN FEATURES

ROEN EST offers to customers a wide spectrum of benefits coming from an history of design, production and distribution of more than 35 years in over 50 countries, consolidated in the following main features (non-exhaustive list):

- ❖ Compatible with all aqueous fluids, fluid mixtures and oils;
- ❖ PS standard 16 bars, tested at 18 bars;
- ❖ Dedicated geometry to reduce fluid pressure drop in heavy conditions as for example high flow rate, viscous liquids, etc.;
- ❖ Louvered fins version available for maximum performances;
- ❖ Wide customization possibilities thanks to different materials available for the fins and for the frame;
- ❖ Optimization of the number of circuits to obtain maximum performance based on the working conditions;
- ❖ EC fans available as option;
- ❖ Many options available;
- ❖ 10 surface treatments available, to increase the life of the product in aggressive environments.

**ROEN EST: Dry Coolers solutions for all Commercial & Industrial applications: Cooling, Refrigeration & Air Conditioning**

# MATERIALS & FINISHING

## Coils

The heat exchange coils, used in the Dry Cooler range of ROEN EST, offer geometries suitable for all applications and temperatures, with a 1/2" and 5/8" tube. Fin spacing ranges from 1.6 mm to 6 mm, and fins can be either corrugated or high-efficiency. Such production versatility offers customers interesting technical solutions, as well as an excellent €/kW ratio on all models. ROEN EST can develop adequate circuits to guarantee medium-high outputs with high-viscosity fluids even with the 1/2" tube, enabling a broad range of applications.

## Casing & finishing

The Dry Cooler's casing consists of an internal self-supporting frame made of galvanized or stainless steel, while all of the visible parts and finishing are made of white pre-painted aluminium (color code RAL9010), which gives the unit a clean and polished look. Dry Coolers are supplied with protective films on all pre-painted surfaces. Supports and floor brackets can be assembled on both sides of the Dry Cooler, enabling connections on either right or left side. These production materials make the product:

- light in weight;
- non-toxic and devoid of polluting particles;
- highly resistant to mechanical stress and corrosion.

	Copper	Aluminium	Alu. Prepaint	Stainless steel
Tubes	✓			
Fins	✓	✓	✓	
Frame		✓	✓	✓

## Fan motors

All models are supplied with standard fan motors, certified by our suppliers and tested at our plants. The fan guards and fasteners are made of black painted steel (color code RAL9005) and are manufactured according to the strictest safety standards.

## Electrical components

Fan motors and casing are fitted for grounding. All electrical components, cables, terminals, and junction boxes are selected and wired according to European standards.

## Packing

All Dry Coolers are packed individually in fully enclosed wooden crates. All units are supplied with label and technical specifications, user and maintenance manual, certificate of inspection, manufacturer's statement, and cable wiring sheet.

## Certifications

ROEN EST, depending on the country of destination of the goods, has several certifications and homologations available such as (non-exhaustive list): UL, PED, GOST, TÜV SÜD, etc.

# PRODUCT RANGE OVERVIEW

## Commercial Series

ROEN EST dry coolers "Commercial series" are the best-selling units of dry coolers range. They are designed to ensure maximum performance with minimum costs. Thanks to the many options available it is possible to customize the product according to your needs. Main characteristics are:

- ❖ Capacity range: from 5 kW up to 460 kW;
- ❖ Fans diameter 450 mm, 500 mm, 630 mm;
- ❖ Single and double fan rows;
- ❖ Fan motor voltage 1 & 3 ph., 50 & 60 Hz;
- ❖ Fins spacing from 2.1 mm as standard;
- ❖ Available vertical and horizontal versions;
- ❖ Turbo version available for maximum performances (louvered fins).



The image is for illustrative purpose and it is referred to a Commercial Series unit

## Industrial Series

ROEN EST dry coolers "Industrial series" are the models that allow to meet the needs of large plants. They are designed to ensure maximum capacity while remaining within the available space. The high mouthpiece design ensures maximum fan efficiency and minimum possible noise.

Main characteristics:

- ❖ Capacity range: from 40 kW up to 715 kW;
- ❖ Fans diameter 800 mm, 900 mm;
- ❖ Single and double fan rows;
- ❖ Fan motor voltage 3 ph., 50 & 60 Hz;
- ❖ Reinforced external and internal frame;
- ❖ Available vertical and horizontal versions;
- ❖ Turbo version available for maximum performances (louvered fins).



The image is for illustrative purpose and it is referred to a Industrial Series unit

## V-Shape

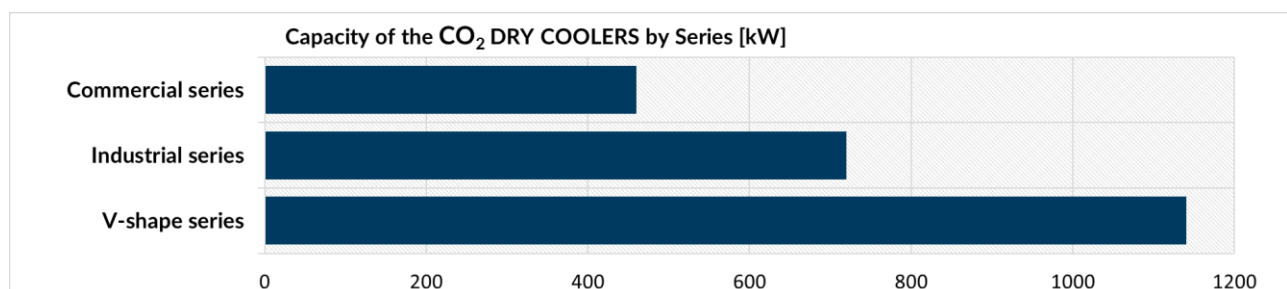
ROEN EST dry coolers "V-shape" are the largest products in the range of dry coolers. Thanks to the "V" configuration they allow to obtain all the necessary capacity from the heating coils with a reduced footprint of the unit. The ratio between air flow and secondary surface is shifted towards the second factor in order to obtain thermal exchanges also in situations of very low  $\Delta T$ . Main characteristics are:

- ❖ Capacity range: from 150 kW up to 1140 kW;
- ❖ Fans diameter 800 mm, 900 mm;
- ❖ Fan motor voltage 3 ph., 50 & 60 Hz;
- ❖ Up to 16 fans;
- ❖ Turbo version available for maximum performances (inner grooved tubes and louvered fins);
- ❖ Structure designed for naval container transport.



The image is for illustrative purpose and it is referred to a V-Shape unit

## PRODUCT LINE-UP BY CAPACITY & RANGES



## OPTIONS

What makes ROEN EST range of "Dry Coolers" extremely appreciated by customers is for sure the high flexibility of the range due to unlimited combinations of options and accessories.

	Commercial Series	Industrial Series	V-Shape Series
EC fans	✓	✓	✓
Wiring	✓	✓	✓
EC Speed controller	✓	✓	✓
Inverter	✓	✓	✓
Phase cut regulator	✓	✓	✓
Motor protection	✓	✓	✓
Service switch	✓	✓	✓
Casing AISI304	✓	✓	✓
Surface treatments	✓	✓	✓
Extended legs	✓	✓	
Spray system		✓	✓
No fans	✓	✓	✓

## SURFACE ANTICORROSION PROTECTIONS & TREATMENTS

Strong attention is devoted to anticorrosion protections available to cover all customer requirements, such as (non-exhaustive list):

- ❖ Heresite
- ❖ Heresite + UV
- ❖ Epoxy painting – Pulver
- ❖ Epoxy painting – Cataphoresis
- ❖ Epoxy painting – Cataphoresis + UV
- ❖ Electrofin
- ❖ Electrofin + UV
- ❖ Thermoguard fanguard
- ❖ Blygold



# RANGE OVERVIEW

## Commercial Series



## Industrial Series



## V-Shape Series



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