

# ROENEST

HEAT EXCHANGERS NATURALLY



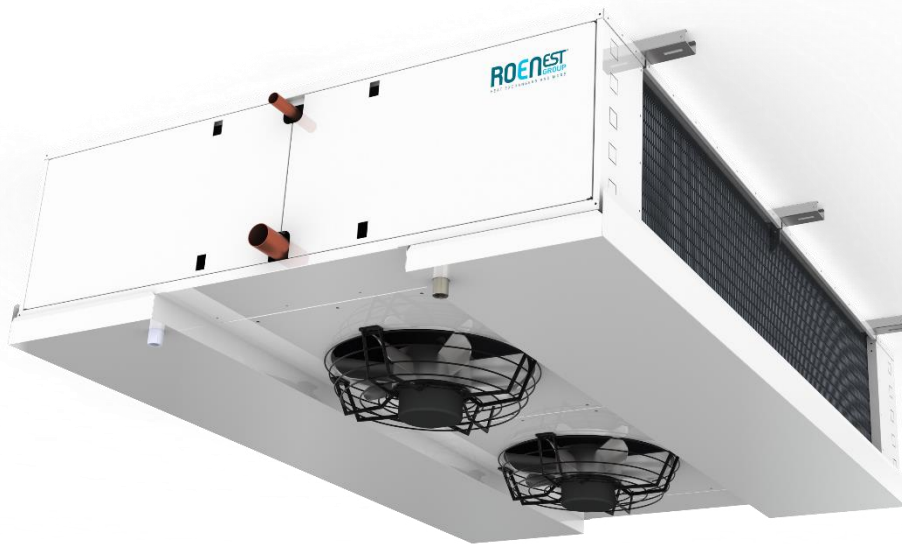
AN ENEX TECHNOLOGIES COMPANY

Release June 2022

## REFRIGERATION

# UNIT COOLERS

The complete range of unit coolers designed to work both in Direct Expansion or Brine systems offering flexible application field and wide range of capacities from 10 to 320 kW



ROEN EST presents its wide range of UNIT COOLERS, which ranks among the most complete in Europe, suitable for all industrial and commercial refrigeration applications, with particular fitting to food conservation and process sector. 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 WIDEST OFFERING FOR COMMERCIAL & INDUSTRIAL REFRIGERATION

The indoor cooling solutions needed in the Commercial and Industrial refrigeration require a strong attitude to supply the specific cooling solution for different kind of requirements coming from the general contractor, the end user or the professional installation company.

ROEN EST is specialized in this field and created along the years a very complete range that can suits even the most challenging requirements and specifications, that is why ROEN EST ranges of "Unit Coolers" allow to satisfy all customer needs regarding performance, size and operation. In addition to the "Evaporator" version, the "Brine" version is also available.

Present document is fully dedicated to the wide offering of UNIT COOLERS which can be segmented into 4 main types:

Target	Product	Versions available	
		Evaporator	Brine
Small dimensions	SLANTED	✓	✓
Maximum simplicity	CUBIC	✓	✓
Cool both sides	DOUBLE FLOW	✓	✓
Quick cooling	BLAST FREEZER	✓	✓

## 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):

- ❖ Coil geometries with the best "Performance / Internal volume" and "Performance / Cost" ratio;
- ❖ Fins spacing from 3mm up to 11mm to work in all conditions;
- ❖ Compatible with all synthetic refrigerants (including A2L) and propane;
- ❖ Cat. II PED certification available;
- ❖ Different thickness of tubes according to the design pressure required;
- ❖ Maximum pressure up to 45 bars;
- ❖ Fins with dedicated holes for heaters to obtain the maximum efficiency from the coil;
- ❖ Wide customization possibilities thanks to:
  - Different materials available for the fins;
  - Different materials available for the frame;
  - Optimization of the number of circuits;
- ❖ EC and AC fans available;
- ❖ Many options available;
- ❖ 10 surface treatments available, to increase the life of the product in aggressive environments.

## MATERIALS & FINISHING

### Coils

The coils of the unit coolers consist of corrugated aluminium fins and copper tubes. The supporting side plates are made of aluminium or stainless steel. The units are designed and assembled according to strict company specifications regarding production and quality, in order to prevent tube damages. Tubes are tested at 1,43 times the PS per Pressure Equipment Directive 2014/68/EU and pre-charged with nitrogen, to ensure the absence of leaks, humidity and debris in the refrigeration circuit.

### Casing & finishing

The unit cooler's casing consists of an internal self-supporting frame made of aluminium 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. Units are supplied with protective films on all pre-painted surfaces. These production materials make the product:

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

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

### Fan motors

All units are supplied with standard 50 Hz fan motors, single or three-phase, 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.

### Electric defrost

The standard electric defrost system consists of stainless steel electric heaters fitted inside the finned block and on the internal drip tray. The layout of the heaters is designed to guarantee an adequate distribution of heat inside the unit, proportionate to its different critical areas. The high thermal conductivity of the production materials ensures proper heat distribution in the entire unit. All of the defrost water is uniformly conveyed and channeled from the (ROEN EST-designed) drip tray to a collection tray, which is equipped with a threaded connection enabling the water to drain freely.

### Electrical components

Electric heaters, 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

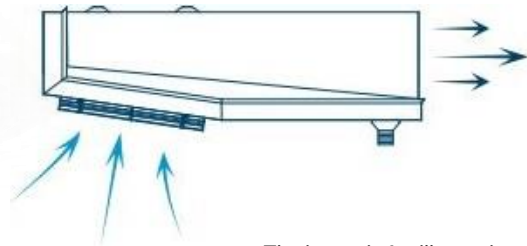
All unit coolers are packed individually in fully enclosed wooden crates. Industrial unit coolers are also packed with an internal self-supporting frame designed to simplify and expedite ceiling installation. All units are supplied with label and technical specifications, user and maintenance manual, certificate of inspection, manufacturer's statement, and cable wiring sheet.

## PRODUCT RANGE OVERVIEW

### Slanted

ROEN EST "Slanted" unit coolers are designed to be installed in all conditions where space is limited. Thanks to the compact design it can be installed close to the cold room wall without creating space and air draft problems. Main characteristics are:

- ❖ Capacity range: from 0.2 kW up to 11 kW;
- ❖ Fans diameter 200 mm, 250 mm, 315 mm;
- ❖ From 1 up to 5 fans for each diameter;
- ❖ Fan motor voltage 230 V / 1 ph. / 50 & 60 Hz;
- ❖ Fan motor protection class IP42 and IP44;
- ❖ Fins spacing from 3 mm up to 4/8 mm (alternating).

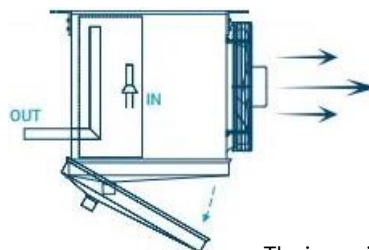


The image is for illustrative purpose and it is referred to a Slanted unit

### Cubic

ROEN EST "Cubic" unit coolers are the best-selling units of the unit 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 1 kW up to 320 kW;
- ❖ Fans diameter 250 mm, 300 mm, 350 mm, 500 mm, 630 mm, 800 mm, 900 mm;
- ❖ From 1 up to 5 fans for each diameter;
- ❖ Fan motor voltage 1 & 3 ph., 50 & 60 Hz;
- ❖ Fins spacing from 3 mm up to 10 mm.

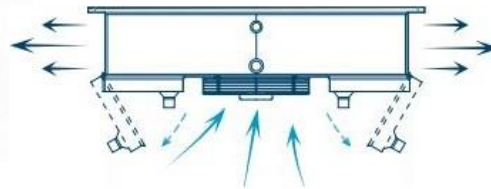
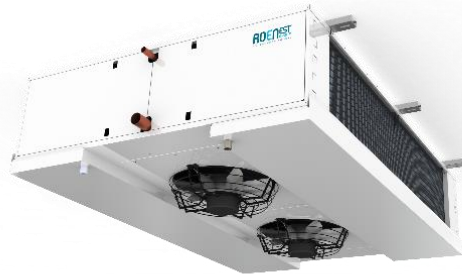


The image is for illustrative purpose and it is referred to a Cubic unit

## Double Flow

ROEN EST "Double flow" are products designed to cool on two sides. They can be installed between two shelves or in the center of a cold room when a cubic evaporator doesn't allow to cover the entire volume of the room. Its flat design takes up little space in height and the careful internal design prevents drops of condensation from escaping from the mouthpiece. Main characteristics are:

- ❖ Capacity range: from 1 kW up to 100 kW;
- ❖ Fans diameter 250 mm, 350 mm, 500 mm;
- ❖ Fan motor voltage 1 & 3 ph., 50 & 60 Hz;
- ❖ Size optimized design to reduce costs;
- ❖ Fins spacing from 3 mm up to 10 mm.

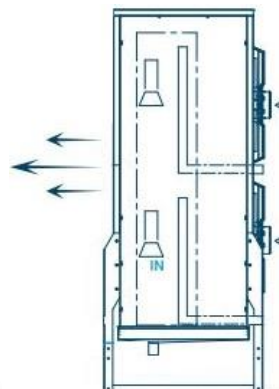


The image is for illustrative purpose and it is referred to a Double Flow unit

## Blast Freezer

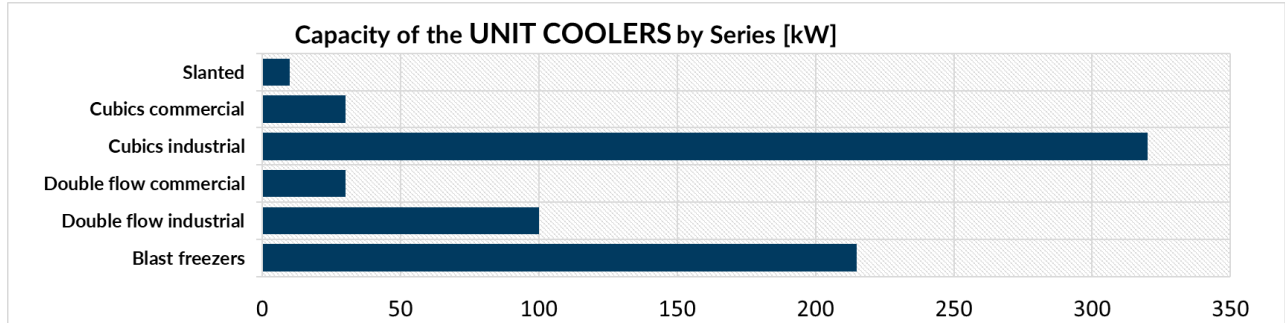
ROEN EST "Blast freezer" unit coolers are designed to very rapidly bring down the temperature of the contents to ensure that flavour, texture and condition of food remains at its best. While standard freezers are usually kept at 0°C, Blast Freezers operate at an air temperature of -30°C to -40°C. Compared to the 6-12 hours it may take for a normal freezer to freeze food, the much colder temperature in a blast freezer decreases the freezing process to a time of approximately 3 hours. Main characteristics are:

- ❖ Capacity range: from 15 kW up to 215 kW;
- ❖ Fans diameter 500 mm, 630 mm;
- ❖ Fan motor voltage 3 ph., 50 & 60 Hz;
- ❖ Legs that can be lowered for transport;
- ❖ Fins spacing from 3 mm up to 10 mm.



The image is for illustrative purpose and it is referred to a Blast Freezer unit

# PRODUCT LINE-UP BY CAPACITY & RANGES

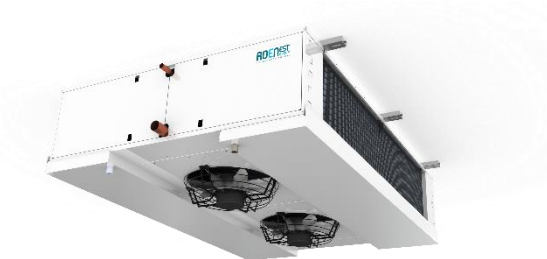


## Slanted



## Cubic Commercial & Industrial

## Double Flow Commercial & Industrial



## Blast Freezer

## OPTIONS

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

	Slanted	Cubic commercial	Cubic industrial	Double flow commercial	Double flow industrial	Blast freezer
EC fans	✓	✓	✓	✓	✓	✓
Wiring	✓	✓	✓	✓	✓	✓
Speed controller	✓	✓	✓	✓	✓	✓
Stronger defrost	✓	✓	✓	✓	✓	✓
Blowing fans	✓ Standard	✓	✓	✓ Standard	✓ Standard	✓ Standard
Water defrost		✓	✓			
Casing AISI304	✓	✓	✓	✓	✓	✓
Tray double insul.		✓	✓	✓	✓	✓
Hot gas defrost	✓	✓	✓	✓	✓	✓
Post heating	✓	✓	✓	✓	✓	✓
Fins material free	✓	✓	✓	✓	✓	✓
Coil surface tratment	✓	✓	✓	✓	✓	✓
Dust filter		✓	✓			
Texile duct		✓	✓			
Legs for floor fixing		✓	✓			✓ Standard

## 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 finguard
- ❖ Blygold



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