



Cool air.



Air heat-exchanger solutions from Alfa Laval.





Air. The perfect way to cool anything anywhere.

If your business is to keep things perfectly cool – whether it's food in a supermarket, people in a shopping mall or produce in a cold store – air is your element.

Cooling and conditioning the ambient air inside a cold room, can give sensitive fresh foods an optimal environment for retaining their freshness – and value. And releasing excess heat to the ambient air outside can bring down indoor temperatures to comfortable levels.

It's all in the air. And it's all thanks to air heat exchangers – indoor and outdoor units capable of capturing, conditioning and distributing the right air in the right place with the right efficiency.

In other words, air heat exchangers from Alfa Laval.

Industrial refrigeration

In industrial refrigeration, every application has its own unique requirements. Project conditions are never the same. Consequently, standard solutions rarely fit the bill. Component suppliers – and even installers – are not always fully aware of this.

Alfa Laval's success in this market is founded on an application-led approach – benefiting both the builders and users of cooling plants.

The food industry is a major user of Alfa Laval air heat exchangers – highly efficient air coolers that can be combined with plate heat exchangers. The applications range from shock-freezing fresh fish onboard fishing vessels to cooling slaughter houses and meat-processing areas, to keeping large fresh-food storage rooms at appropriate temperatures.

In the agricultural world of vegetables, potatoes and fruit, Alfa Laval air coolers deliver a perfectly balanced capacity/air flow ratio and an optimal climate for every type of produce. A particular specialty is banana ripening – using Alfa Laval banana ripening coolers to optimize each phase of the of the sensitive process taking place in ripening rooms.

Horticulture is another promising industrial application area. Modern flower-growing installations use special Alfa Laval air heat exchangers for cooling and heating the air inside the greenhouse. These systems considerably improve both the quantity and the quality of production – while consuming less energy and reducing operating costs.





Commercial refrigeration

Closer to the end of the supply chain, the food retail business is one more major user of Alfa Laval air heat exchangers – highly efficient, often standardized ranges of unit coolers, air-cooled condensers and dry coolers.

Air heat exchangers for direct-expansion as well as indirect systems are available. The future belongs to indirect systems – they are becoming more commonplace, especially in Northern Europe, thanks to their energy efficiency and low refrigerant volumes, as well as their close control of refrigerant temperature and defrosting.

Supermarkets, with a combination of walk-in cold rooms, reach-in freezers and cold displays – all operating at different temperatures – are taking advantage of sophisticated cascaded systems using HCFC and CO₂ in the different circuits. And in other refrigerated storage and transit areas throughout the food distribution chain, Alfa Laval's versatile ranges of com-

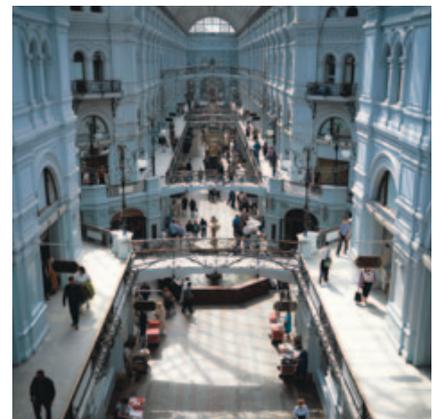
mercial and industrial air coolers offer energy-efficient, low-noise solutions on every capacity level.

HVAC cooling

Keeping people comfortably cool wherever they work, play or relax is the most widespread cooling application. Thousands of buildings around the world are cooled by Alfa Laval's HVAC solutions, based on a number of sophisticated technologies – separately or in combination.

Shopping malls, public buildings, hotels, office complexes, sports arenas, skating rinks – even indoor ski slopes – all pose their own climate challenges. The solution in each case could involve different types of refrigerants, configurations and air-conditioning equipment. In addition to the rigorous performance and efficiency requirements for such systems, their environmental impact is emphasized more and more.

As a leading supplier to the air conditioning industry, Alfa Laval offers a complete line of dry coolers and condensers for indoor cooling. In combination with our brazed and gasketed plate heat exchangers, they live up to all of these demands.





Commercial air coolers.

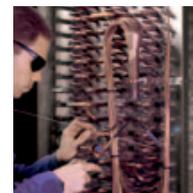
Alfa Laval's commercial air coolers are highly standardized ranges suitable for broad applications, such as cold storage of packaged products. Typically used in commercial cooling and supermarket applications – walk-in cold rooms, reach-in cooling and freezing cabinets – they are ideal for small to medium-sized cold rooms and evaporating temperatures between -40°C and $+5^{\circ}\text{C}$.

Alfa Laval's portfolio includes a wide choice of unit air coolers, dual discharge models and sleek ceiling- or wall-mounted units, ideal for small fresh-food cold rooms. These coolers are suitable for all halogen refrigerants such as R507C, R404A, R134A (R22) and for CO_2 in a wide range of applications, especially involving packed goods. Clever finned coils and circuiting designs guarantee efficient refrigeration, with prolonged cooling cycles and brief defrosting stops.



AlfaCubic is a line of draw-through unit coolers.

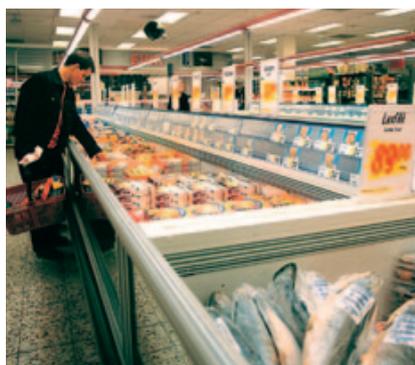
Alfa Laval commercial air coolers meet the highest quality standards, thanks to premium materials and advanced manufacturing techniques. They are also designed to comply with strict hygienic requirements and regulations, such as the HACCP. And to protect the environment from pollution, they are powder-coated rather than painted.



Cu/Al coil soldering.



Italy's famous Parma ham is kept in perfect condition with Alfa Laval air coolers.



An dual-circuit cooling system keeps cold cabinets and freezer cabinets at the right temperature for each.



Every cheese matures at the perfect pace when the storage room is evenly cooled.



Helpman LEX range of blow-through unit coolers.



Low-silhouette dual-discharge air coolers.

Alfa Laval Optigo CS air cooler.



Main benefits:

- Highly standardized ranges of air coolers available in a multitude of configurations.
- Heavy-duty materials, ensuring long operational life.
- Eflo® refrigerant circuiting for higher effective cooling capacity.
- Large heat-transfer surface saving energy and minimizing dehydration of goods.
- Reliable fan motors from market-leading suppliers, available in a variety of versions.
- Energy efficient, low power consumption.
- Hygienic design, meeting food-related legislation and regulations.
- Reliable performance, certified by Eurovent.
- Easily integrated with liquid-cooled evaporators (plate heat exchangers or shell & tube).
- Easy to install.
- Low total cost of ownership.
- Readily available from stock.

eflo®

The optional AlfaStreamer clips onto the protective grill. It minimizes dirt deposits and creates a uniform air flow through the cold room.





Industrial air coolers.

Important application areas for industrial air coolers are shock cooling, freezing, cold storage, frozen storage and processing-area cooling. Alfa Laval has a wealth of knowledge and experience in all of these areas. The result is a series of well-designed, efficient products – each optimized for specific application.

Alfa Laval offers industrial air coolers for HCFC as well as natural refrigerants – typically ammonia and carbon-dioxide, with zero Global Warming Potential and zero Ozone Depletion Potential. Although direct-expansion and pumped-refrigerant systems are still common, indirect systems are becoming more widely used.

Alfa Laval industrial air coolers are available in a variety of tube pitches and coil configurations. Material options include stainless-steel and copper tubing, as well as hot-dip galvanized steel coils.

Special “blast freezers” are unit coolers with horizontal airflows. They are ideal for shock-freeze applications where rapid conservation is critical – for example for freezing meat, fish, bakery, dairy and ready-to-serve meals.



HELPMAN

In addition to the many standard ranges, Alfa Laval also produces special air coolers, designed directly to customer specifications. Four basic coil types and a great number of accessories and design options are available for customizing these air coolers.

Other units are ceiling-mounted and combine low noise levels with low air velocity. This makes them well suited for processing and packaging areas, where people work for long periods of time.

A standard feature on all unit coolers is an inner drip tray just below the coil block to improve the air flow through the coil.



The right combination of temperature and humidity retains the value of the produce.



Greenhouse cooling using Alfa Laval air coolers.



Helpman banana-ripening coolers for both tarp & airbag-system ripening rooms.



Helpman THOR/TYR and AirMax II are exceptionally wide and versatile ranges of industrial air coolers, with a multitude of options and accessories.



AlfaBlast is a unit cooler with horizontal air flow, optimized for shock-freeze applications.

Main benefits:

- Application-based design to ensure optimal performance in all operating environments.
- Exceptionally wide and versatile cooler range with a multitude of options and accessories.
- Advanced product selection software available.
- Heavy-duty materials, ensuring long operational life.
- Reliable performance, certified by Eurovent.
- Easy to install.
- Reliable fan motors from market-leading suppliers, available in a variety of versions.
- High cooling capacity thanks to a large heat-transfer surface, saving energy and minimizing dehydration of goods.
- Energy-efficient, low power consumption.
- Low defrost frequency thanks to innovative design
- Low total cost of ownership.
- Easily integrated with liquid-cooled evaporators (plate heat exchangers or shell & tube).



Stainless steel tubing.



Airbag-system ripening room.



Air-cooled condensers and dry coolers.

Alfa Laval's air cooled condensers and dry coolers are made with cross-fin copper tubes and advanced corrugated aluminum fins, which results in a combination of compact dimensions and high capacity. They are available with both copper and stainless-steel tubing (for ammonia refrigerant applications).

Alfa Laval dry coolers are typically used for cooling water, brine, oil and cooling agents. They are common in air conditioning systems and systems with secondary refrigeration circuits - as well as in free-cooling systems in process industries and total-energy installations.

Dry coolers present an excellent alternative to conventional cooling towers. Because there is no water consumption, the risk for Legionella bacterial growth is virtually zero. The energy consumption is also generally lower.



AlfaBlue air-cooled condenser.

All Alfa Laval dry coolers are easily integrated with Alfa Laval's liquid-cooled plate heat exchangers. Especially in free-cooling systems, brazed or gas-keted models are recommended.

Air-cooled condensers and dry coolers from Alfa Laval are available in three basic configurations – single fan row, dual fan row and V-shaped. They

all combine an eye-pleasing appearance with a robust, highly corrosion-resistant design. They are intended for heavy-duty operation in temperatures between -30°C and +50°C. To minimize the pressure drop, they are fitted with smooth copper tubes. Noise levels and energy consumption are remarkably low, thanks to variable-speed EC fan motors.



Special heavy-duty air-cooled condensers and dry coolers for use in adverse conditions.



AlfaSolar condenser.



AlfaBlue dry cooler.



The V-shaped design of Alfa V dry coolers design results in large capacity and compact dimensions.



Main benefits:

- High cooling efficiency thanks to optimized heat-transfer surfaces.
- Wide range of options and accessories for increased versatility.
- Variable-speed EC fan technology, reducing noise levels and energy consumption.
- Reliable performance, certified by Eurovent
- Robust and corrosion-resistant design, suitable for heavy industrial duties.
- Low maintenance costs and long operational life.
- Energy Efficiency Class certified.
- Compact dimensions, securing high capacity per sqm of footprint.

Stainless-steel flange connections are standard on Alfa V and dual fan-row AlfaBlue dry coolers.



Variable-speed EC fan motors combine efficiency with low power consumption. They are available in many sizes and options.



The optional safety switch.





e-Support for refrigeration and HVAC specialists.



Selection software with fully integrated cold-room calculation module.

With Alfa Laval Air Online, all this valuable information is right at your fingertips.

State-of-the-art selection software

To help you to make the right choices from our broad range of commercial and industrial air heat exchangers, Alfa Laval provides state-of-the-art selection software.

The software is available in all of 14 languages. It includes a selection tool for spare parts and a fully integrated cold-room calculation module.

e-Commerce

Ordering distribution units & spare parts will be even more easy with Alfa Laval e-commerce. This on-line ordering service will bring our business directly to your desktop.

Air Online

Alfa Laval Access is a convenient information tool on the Internet. Here, a wealth of product information is available for refrigeration and HVAC specialists, including:

- Full technical documentation
- Concise product leaflets
- Installation manuals
- CAD drawings
- Technical bulletins
- Electrical specifications
- Stock levels and delivery times

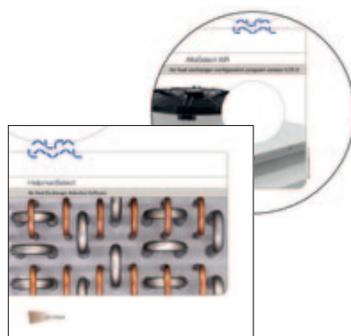
Certifications and reliability:

All standard range Air Heat Exchangers are certified by the Eurovent "Certify All" program. The Alfa Laval quality system is in accordance with ISO9001.



All products are manufactured according to the CE and PED rules. The design and the manufacturing process are certified according to ISO1400.

All products are approved by GOST notified body.





Your complete air cooling partner.

Why complicate your business when you can get all you need from one supplier?

You probably know that Alfa Laval offers some of the best products in the world when it comes to heat transfer – including air cooling. Our experience goes back almost a century, our know-how is based on thousands of installations globally. And as a world market leader, we continue to push technology forward.

But Alfa Laval is first and foremost about solutions. Our worldwide organization is there for you all the way. From planning and design, through installation and operation, to our Nonstop-Performance service concept. Our single-minded goal is to achieve maximum uptime and low life-cycle cost in every project we are involved in.

So, if you are in an industry where you need efficient, reliable cooling, optimized to your applications, Alfa Laval can make it easy for you. Time and again, anywhere in the world.

Globally local.

Alfa Laval's business activities focus on facilitating our customers' operations.

We provide you with technologies and solutions that will help you optimize your operations and processes and keep them running smoothly year after year.

With our global network of sales companies, we are always close to you, regardless of where in the world you do business. That's how we can offer you fast and reliable deliveries and ensure non-stop performance.



Spare-part service

Alfa Laval's resources for spare-part service are second to none – ensuring a timely turn-around virtually anywhere in the world. Thanks to a truly worldwide organization, customer support and trouble-shooting are available on local, regional and global levels.



Alfa Laval has 103 sales offices in 55 countries. Shown here are national and regional headquarters.



Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

