



**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 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 [www.alfalaval.com](http://www.alfalaval.com).



Scan this code to learn more about Alfa Laval's industrial refrigeration solutions.

Alfa Laval partner:



# Alfa Laval Arctigo – Optimal design made real

## The Alfa Laval range of industrial air coolers





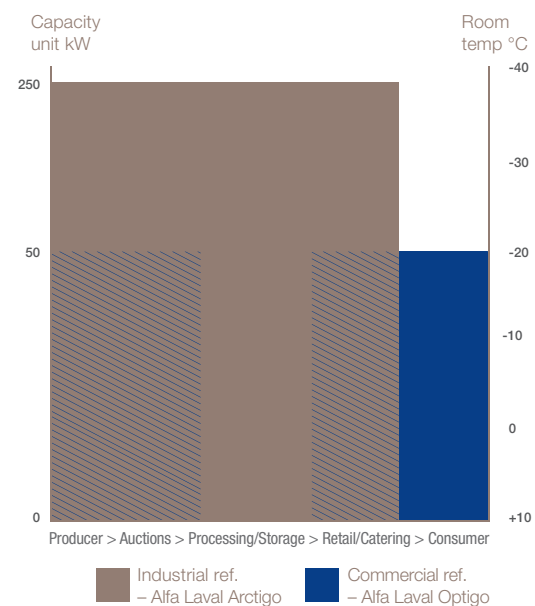


## Alfa Laval Arctigo – Optimal design made real

In industrial refrigeration, standard commercial solutions often fall short, as every application has its own unique requirements. Every product has to be perfectly customized to achieve the optimal efficiency and climate conditions.

That's why Alfa Laval has developed Arctigo, our industrial air cooler platform. Arctigo air coolers are built with an application-led approach, creating the optimal design for industrial applications like yours.

Combined with the Alfa Laval Optigo range for commercial refrigeration, we now supply a full range of the latest high efficiency air coolers for all applications.



### Main benefits

- Single and dual air discharge ranges available
- State-of-the-art technology for any refrigeration application
- Optimal energy efficiency
- Easy-to-use selection and configuration software
- Wide and versatile modular range, easy to install and maintain
- One-stop heat exchanger supplier with worldwide support and service in local languages



### Application expertise

Thanks to our application expertise, we are able to help customers find and select the right product for their cooling and heating projects. We have put all our application knowledge and customer insight into developing Alfa Laval Arctigo – an industrial air cooler with high quality parts configured to deliver optimal performance by using less energy, resulting in a lower total cost of ownership.



### Wide and versatile range

Arctigo air coolers are based on a modular concept with eight different coil block modules for single discharge models and three different coil block modules for dual discharge models. Each of them can be configured for different construction models, fan types and several other options. The result is a wide and deep range, with solutions for all industrial refrigeration applications.



### Configurator and support

Our easy-to-use configurator software, AlfaSelect Air, helps you select the most suitable solution for your specific application. Combined with worldwide sales, technical support and service in local languages we offer you total confidence throughout the entire lifetime of your product.

#### Alfa Laval Arctigo at a glance

- Suitable for all HFC, ammonia, CO<sub>2</sub> & brine refrigerants
- DX and pumped system
- Fin spacing 4 up to 12 mm
- Design pressures HFC DX 33 bar, NH<sub>3</sub> pump 27 bar, CO<sub>2</sub> 33–60 bar, brine 10 bar
- Room temperatures +10 down to -40 °C

#### Arctigo IS - single discharge air cooler

- Triangular or square pitched coil
- 1 to 8 fans, fan diameters 450 up to 1000 mm
- Blow-through or draw-through design
- Capacity range 3 up to 250 kW
- Air volumes 3000 up to 120000 m<sup>3</sup>/h

#### Arctigo ID - dual discharge air cooler

- Square pitched coil
- 1 to 5 fans, fan diameters 450, 500 and 630 mm
- Blow-through design
- Capacity range 3 up to 110 kW
- Air volumes 4000 up to 50000 m<sup>3</sup>/h





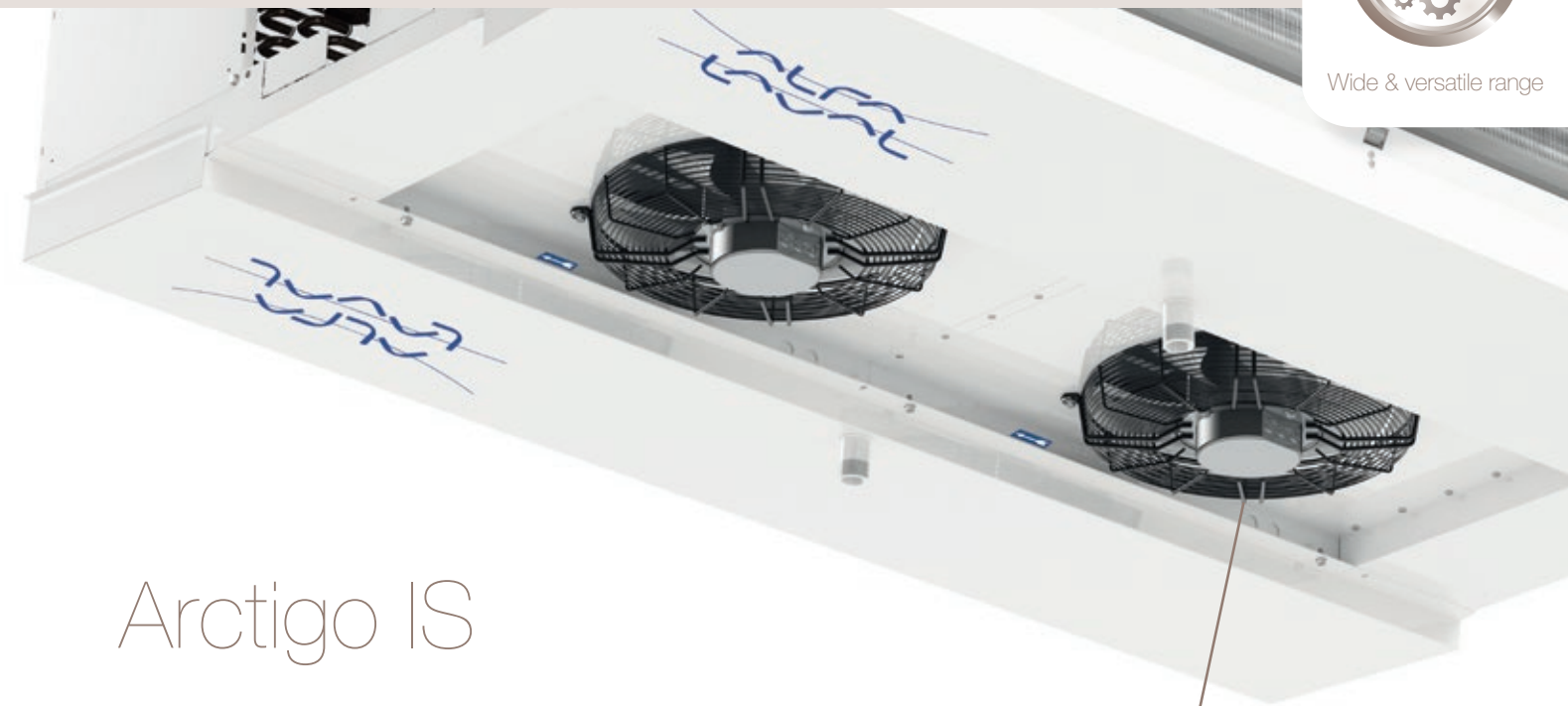
## Alfa Laval Arctigo Range

The Arctigo range consists of highly modular and flexible industrial air coolers, including the single discharge Alfa Laval Arctigo IS, and the dual discharge Alfa Laval Arctigo ID.

### Optimal model for every need

The Arctigo range offers a wide variety of cooler configurations and a long list of options, enabling contractors to always select the optimal model to suit their customer's industrial cooling application. This highly versatile range is designed to keep fresh and frozen goods refrigerated, with either high or low humidity content.

- **Application-based** air cooler design for optimal performance
- **Low sound levels** for working room conditions
- **Advanced product selection** software
- **Energy efficient and easy to install**
- **Heavy-duty coil & casing materials** for long operational product life

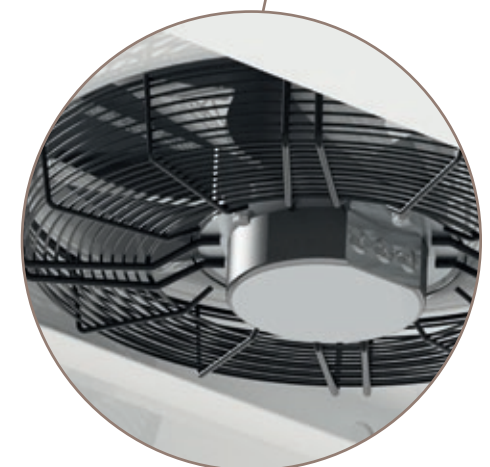


## Arctigo IS

### Single discharge air cooler

Arctigo IS is a wide and flexible range of single discharge industrial air coolers for cooling and freezing applications in medium to large cold rooms. This air cooler line is designed to keep goods refrigerated from +10 to -40 °C.

- Square or triangular pitched coil
- Standard selectable external static pressure up to 150 Pa
- Wide casing to reduce risk of spluttering and ensuring even air distribution over finned tube coil
- 1 to 8 fans, fan diameters from 450 up to 1000 mm
- Hinged fan ring as standard option



## Arctigo ID

### Dual discharge air cooler

The Arctigo ID is a range of dual discharge industrial air coolers designed for refrigeration from +20 to -40 °C.

- Low unit height for optimal cold room space
- Low sound level on standard fans
- Selectable re-heating coil
- Standard selectable external static pressure up to 125 Pa
- Hinged fan plate







# Application expertise for your industry

From freezing and cold storage in industrial premises, cooling in slaughter houses and fish and meat processing areas, to climate control in storage rooms for fresh food, Alfa Laval Arctigo provides the optimal climate for every product.

## Agricultural produce

Agricultural storage coolers are characterized by an ideal capacity to air volume ratio and a relatively low profile. Arctigo coolers for this application have been configured for air temperatures around 0°C and a small temperature difference to avoid dehydration.

## Meat, fish & poultry freezing and storage

Alfa Laval air coolers are developed to be extremely reliable and operate with a low defrosting frequency for the optimal freezing process. This minimizes loss of moisture in fresh products during freezing, which preserves the product value and quality.

Using Arctigo in shock cooling applications limits the difference between air-on and air-off temperature to a maximum of 2–3 K. This minimizes the moisture withdrawn from the product, which settles as frost on the fin coil. In addition, an extra wide fin spacing is available on the entrance side of the coil (dual fin spacing) to prolong the freezing cycle before defrosting and as a result, freezes more goods.



## Processing rooms

Processing room air coolers have to take into consideration the optimum quality of the food being processed, and yet maintain climate conditions suitable for the workers. To guarantee the health of the employees, Arctigo units used as processing room coolers have been designed with a minimal noise level and a minimal sensible draft.

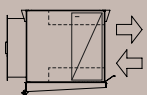
This goal is achieved through low air velocities, an extremely even airflow and small temperature gradients in the ambient air. An excellent aid is the airsock, ensuring good air distribution over the entire working space.

The Arctigo range covers models that have been specifically designed with the appropriate external pressure for airsock application.

## Distribution centres

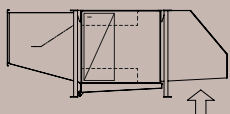
Distribution centres impose complex demands on air coolers. Alfa Laval Arctigo units used in these areas are designed for high cooling capacities and long air throws. All Arctigo coolers are fitted with hinged drip trays and can be supplied with hinged fans for easy inspection and cleaning, which is especially important in this application.

High stock turnover and movement requires these coolers to be extremely efficient in maintaining the right temperatures, and very easy to clean.



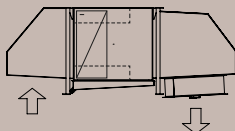
Draw-through/  
Blow-through  
ceiling mounted

**Example:**  
General purpose/  
Long-term storage  
fresh produce



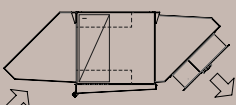
Blow-through  
Floor mounted  
Inlet hood 90°  
Diffusor + defrost valve

**Example:**  
Large cold rooms  
high humidity



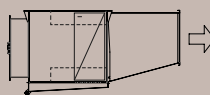
Draw-through  
Floor mounted  
Inlet hood 90°  
Fan casing 90°

**Example:**  
Blast freezing large  
slaughter houses



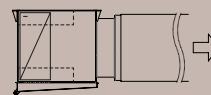
Draw-through  
Ceiling mounted  
Inlet hood 45°  
Fan casing 45°

**Example:**  
Shock cooling meat,  
fish and poultry



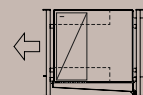
Blow-through  
Ceiling mounted  
Diffusor

**Example:**  
Large air throw, carrot  
and potato storage



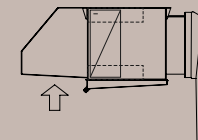
Draw-through  
Ceiling mounted  
Airsock ring

**Example:**  
Processing rooms



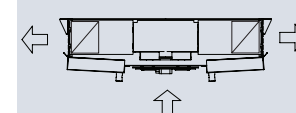
Blow-through  
Floor mounted

**Example:**  
Distribution centres  
fresh produce



Draw-through  
Ceiling mounted  
Inlet hood 90°  
Shutup sock

**Example:**  
Frozen storage  
fish and meat



Blow-through  
ceiling mounted  
Dual discharge

**Example:**  
Processing rooms and  
distribution centers





# Alfa Laval Arctigo standard features

Arctigo is a wide and flexible range of single and dual discharge air coolers for cooling and freezing applications in medium to large cold rooms. The range provides optimal conditions for fresh and frozen goods, at a temperature range down to -40°C.

### Refrigerants

Arctigo units can be configured for all common refrigerants in both direct expansion and pumped systems. Circuiting is optimized according to the refrigerant and application.

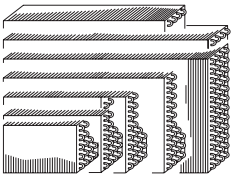
Refrigerant application	Design pressure
HFC	33 bar
Ammonia	27 bar
CO <sub>2</sub>	30–60 bar
Brine	10 bar

### Coil

- Tubing: copper ripple, copper smooth (brine) or stainless steel, tube diameter 16 mm
- Corrugated fins 0.3 mm in aluminium, pre-coated aluminium or seawater-resistant aluminium
- Fin spacing: 4, 5, 6, 7, 8, 10, 12 mm or dual fin spacing

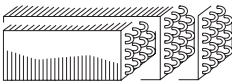
### Arctigo IS

- 8 basic coil block modules
- 3, 4, 6, 8 or 10 tube rows in air direction



### Arctigo ID

- 3 basic coil block modules
- 3, 4, 6 or 8 tube rows in air direction



Each heat exchanger coil is leak tested with dry air and subsequently supplied with a dry air pre-charge.

### Fans

- Two speed fan motors: 400-460/50-60/3 or 230/50-60/1 (ø450 mm only)
- Two sound levels (Δ/Y connection)
- Fan motors with dynamically and statically balanced external rotor, protection class IP54 class F
- Integrated thermo contacts provide reliable protection against thermal overload

### Arctigo IS

- 1 to 8 fans
- Diameters (both AC and EC): 450, 500, 630, 710, 800 or 1000 mm
- Air direction: drawing or blowing through coil

### Arctigo ID

- 1 to 5 fans
- Diameters (both AC and EC): 450, 500 or 630 mm
- Air direction: blowing through coil

Arctigo IS Modules						
Arctigo type	max no. of fans/unit		fan diameter mm	unit dimensions		
	coil type			height mm	L min mm	L max mm
	triang.	square				
IS 1	7	8	450	610	1475	7075
IS 2	6	6	450	710	1675	6675
			500			
IS 3	5	5	630	910	1875	6675
			710			
IS 3S	6	6	630	910	1675	6675
			710			
IS 4	3	4	710	1110	2275	7075
			800			
IS 5	3	3	1000	1310	2675	6675
IS 6	3	3	1000	1510	2675	6675
IS 7	3	4	1000	1710	2275	7075

Arctigo ID Modules					
Arctigo type	max no. of fans/unit	fan diameter mm	unit dimensions		
			height mm	L min mm	L max mm
ID 1	5	450	499	1438	4638
ID 2	5	500	599	1638	5638
ID 3	5	630	599	1838	6638





Frame and casing

- Heavy-duty material, coil frame and casing in pre-galvanized sheet steel, epoxy coated RAL 9002
- Hinged side panels
- Corrosion-resistant fixing materials
- Sufficient space for piping, valves and control devices inside casing



Delivery in mounting position

Arctigo coolers are mounted on wooden beams using special transport feet for ceiling mounted coolers (to be removed after installation). Can be installed using a forklift.

Drip tray

Hinged drip tray, drain(s) with 1 1/2" threaded connection.

On Arctigo IS drainage is inclined by 45° to optimize piping layout. On Arctigo ID, the drain connection is vertical. Both models feature specially designed holes between internal and external drip trays, and the ideal number of drains.



Refrigerant connections (Arctigo IS) **L** **R**

Refrigerant connections can be configured on both sides of the cooler to suit your application. Default position is on the left side (fan view).

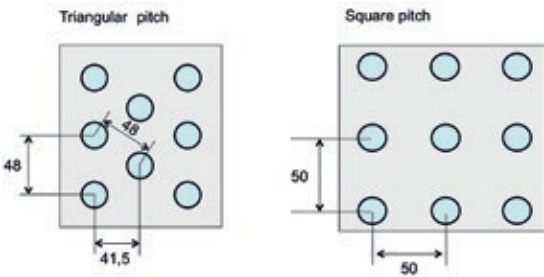


Triangular or square tube pitch

Arctigo IS units can be configured with square or triangular pitched coils. Arctigo ID units are configured with square pitched coils.

Square pitches enhance the surface area for less frequent defrosting, longer cooling periods, lower air drop pressure and lower fan power consumption. This is more suitable for applications that require keeping the relative humidity high.

Triangular pitches result in a lower fin temperature and more capacity per m<sup>2</sup> coil surface. This allows for a more compact cooler design for a specific duty.

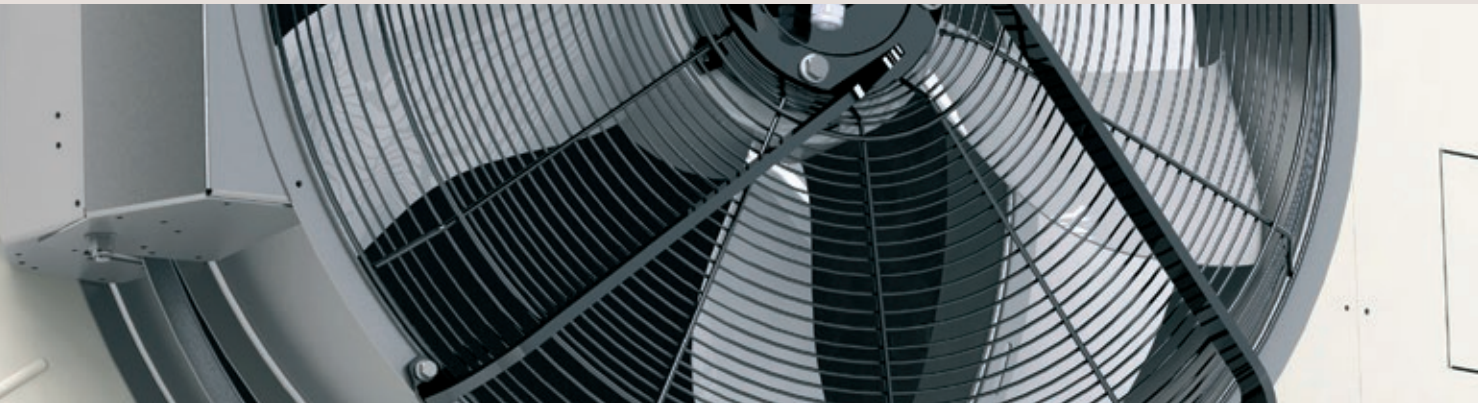


Code description

All Arctigo models are labelled according to the following code type. This allows easy reference to the products' specifications.

ISB	3	5	2	s	H	8	CU	E	50	AL	7.0	2H	5	L	FA29A	D	FRH
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<div>1 Arctigo industrial air cooler - single discharge</div> <div>2 Air direction (B=blow-through, D=draw-through)</div> <div>3 Cooler module size (1 to 7)</div> <div>4 Number of fans (1 to 8)</div> <div>5 Coil geometry (1=triangular, 2=square)</div> <div>6 Short coil module (s)</div> <div>7 Fan speed (H=high pressure fans)</div> <div>8 Tube rows in air direction (3, 4, 6, 8 or 10 rows)</div> <div>9 Tube material (CU=copper, SS= stainless steel)</div> <div>10 Refrigerant system (E=direct expansion, X=CO<sub>2</sub>, W=brine, PB=pumped bottom feed, PT=pumped top feed)</div> <div>11 Maximum working pressure</div> <div>12 Fin material (AL=aluminium, EP=precoated aluminium, SWR=sea water resistant aluminium)</div> <div>13 Fin spacing (4, 5, 6, 7, 8, 10 and 12 mm)</div> <div>14 Circuiting code</div> <div>15 Refrigerant connection side (R=right, L=left - fan side view)</div> <div>16 Fan motor code</div> <div>17 Fan connection (D=delta, Y=star)</div> <div>18 Option code</div>																	

ID	B	3	5	2	8	CU	E	50	AL	7.0	2H	5	FA04A	D	FRH
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1 Alfa Laval Arctigo industrial air cooler - dual discharge															
2 Air direction (B=blow-through)															
Draw-through execution (D) available on special request.															
3 Cooler module size (1, 2, 3)															
4 Number of fans (1 to 5)															
5 Coil geometry (2=square)															
6 Tube rows in air direction (3, 4, 6 or 8 rows)															
7 Tube material (CU=copper, SS=stainless steel)															
8 Refrigerant system (E=DX, W=brine, X=CO <sub>2</sub> , PB=pumped bottom feed, PT=pumped top feed)															
9 Maximum working pressure															
10 Fin material (AL=aluminium, EP=precoated aluminium, SWR=sea water resistant aluminium)															
11 Fin spacing (4, 5, 6, 7, 8, 10 and 12 mm)															
12 Circuiting code (2H, 1H, 1/2H ... 2D, 1D, 1/2D...)															
13 Fan motor code															
14 Fan connection (D=delta, Y=star)															
15 Option code (see option list)															



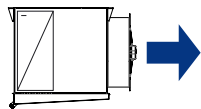
# Fan technology

The type of fans depends on the application area. Air coolers from Alfa Laval are equipped with premium quality fans and motors that comply with the highest industry standards.

### Draw-through vs. blow-through

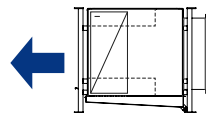
Draw-through air direction

- Better air distribution over the coil, hence higher coil efficiency
- Longer air throw
- Frost build-up visible on air inlet side



Blow-through air direction

- Higher DTML, higher cooling capacity
- Large air outlet surface, more even airflow
- Higher RH in air outlet (less product dehydration)



### AC and EC fans

Both options are available for all Alfa Laval Arctigo units.

Alfa Laval EC motors are direct current motors where collector and brushes have been replaced with electronics. EC fan motors are equipped with integrated Electronic Commutation speed control. The result is a highly efficient and extremely compact speed controlled fan.

### Benefits of EC fans compared to AC fans

- Absence of slip and friction losses
- Less noise and heat generation
- Higher efficiency at any speed
- Decrease of power consumption
- Longer lifespan
- Fan speed independent of power supply frequency and number of poles
- Excellent electromagnetic compatibility (EMC) according to EN 50082-2, no shielded motor cabling required

Arctigo IS Fans					
Arctigo type	max no. of fans/unit		fan diameter mm	fan speed rpm	power per fan W
	coil type				
	triang.	square			
IS 1	7	8	450	1280	350
				1350	540
IS 2	6	6	450	1350	540
			500	1300	770
IS3 / IS3S	5/6	5/6	630	900	620
				1310	1970
			710	970	1970
				1330	2600
IS 4	3	4	710	1330	2600
			800	910	1570
IS 5	3	3	1000	690	1550
				870	3100
IS 6	3	3	1000	690	1550
				870	3100
IS 7	3	4	1000	690	1550
				870	3100

Arctigo ID Fans				
Arctigo type	max no. of fans/unit	fan diameter mm	fan speed rpm	power per fan W
ID 1	5	450	1110	340
			1360	480
		450	875	200
ID 2	5	500	1250	340
			1180	550
			1390	720
ID 3	5	630	1330	1250
			1070	840
		630	890	600
			690	400

### ErP

All Alfa Laval Arctigo fans comply with the Energy-related Products (ErP) directive, which aims to increase the total share of renewable energy by 20% by 2020 while increasing energy efficiency by 20%.



### External pressure

Using our standard fan range, additional external static pressures of between 40 and 150 Pa (40 and 125 Pa Arctigo ID) are available for different cooler configurations and for instance, airsock applications.

### AC dual fan speed



All AC fan motors for Arctigo are dual fan speed type.

Connecting the fan motors in either star or delta allows for two different fan speeds and cooler operation at two sound pressure levels.

### Power supply

Fan motors for all common power supplies 400/460V-50/60Hz-3ph or 230V-50/60Hz-1ph are available. Special fan motors for other power supplies are available on request.

### Fan configuration

Based on the following input, the fan is automatically selected during configuration of Arctigo:

- Cooling capacity
- Static pressure
- Air direction
- Unit dimensions
- Fin spacing
- Freezing/cooling application
- AC/EC
- Delta/star connection

### Cooling or freezing application

All Arctigo models can be optimized for either cooling or freezing conditions depending on the fan type selected.

### You can trust Alfa Laval's sound data

#### Complete units

Air cooler sound power values are often supplied per fan. Alfa Laval, however, supplies reliable sound power data for the complete air cooler unit.

Sound specification is crucial for air coolers, since they are often used in environments with human presence, and adequate sound levels are required for the workplace to be safe and suitable for workers.

There are a few methods used in the refrigeration industry to calculate sound values, each with different specific advantages or disadvantages. The basic issue is whether to refer to sound power ( $L_WA$ ) or sound pressure ( $L_PA$ ).

#### Sound power $L_WA$

Sound power is the sound energy that is generated per time unit ( $W=Nm/s$ ). Sound power is not dependent on the distance to the sound source and other situational circumstances, which makes it the only correct value to compare different sound sources. Sound power cannot be measured directly (we measure the pressure  $P$ ) so sound power is the result of a complex calculation involving many different parameters. Sound power values are usually given in dB(A).

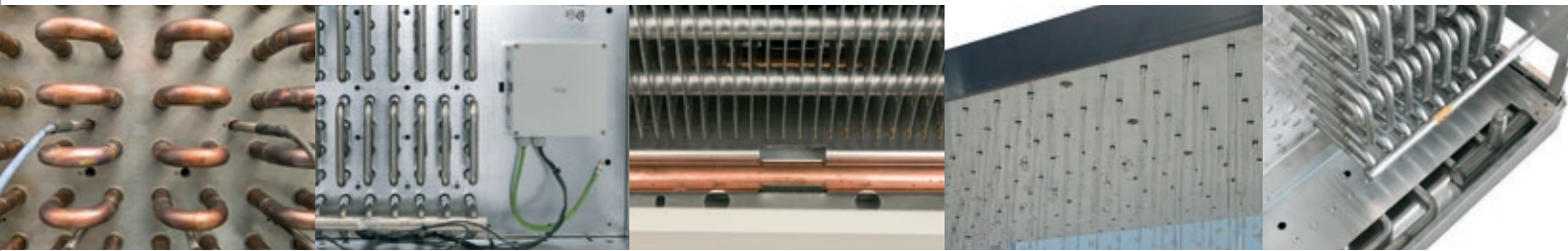
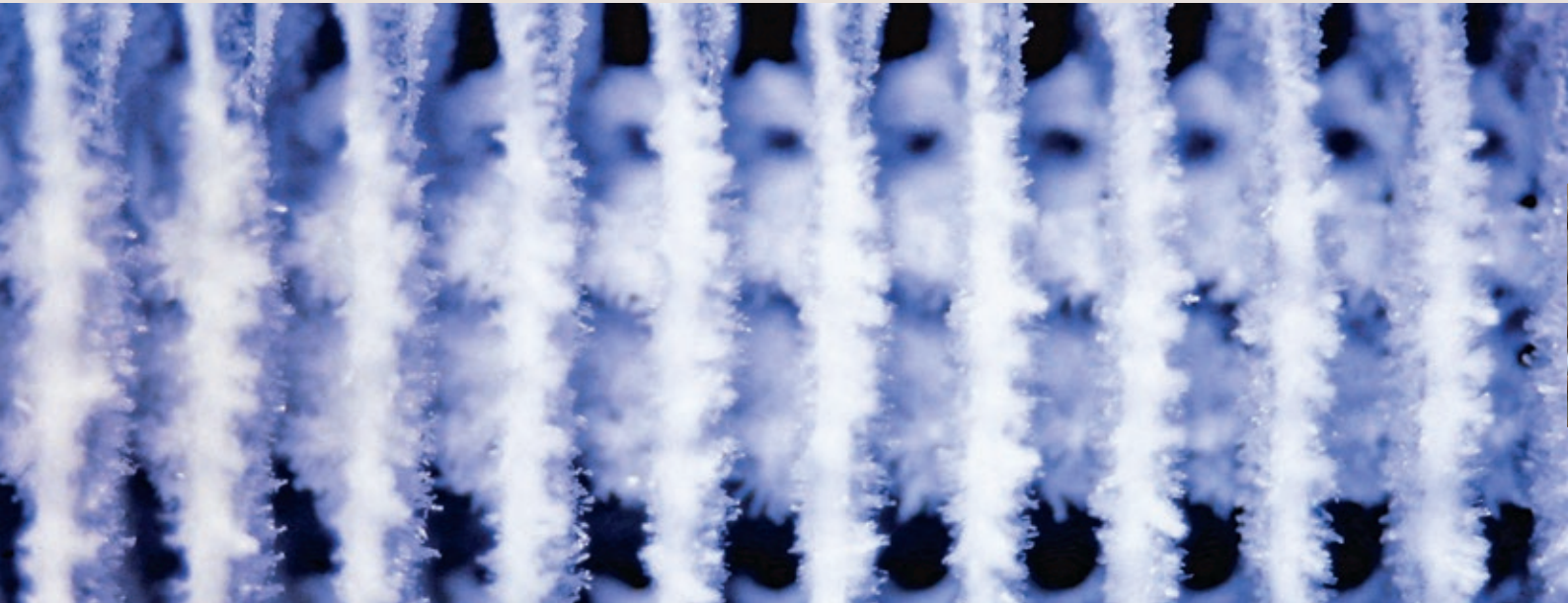
#### Sound pressure $L_PA$

Sound pressure is the sound force/surface ( $P=N/m^2$ ), the force  $N$  being the alternating pressure generated by acoustic oscillation of the air. Sound pressure values can be directly measured under laboratory conditions according to strictly formalized standards (free field conditions, fixed distances etc.). Sound pressure values are also given in dB(A). Sound pressure values for Alfa Laval air coolers are given according to EN13487 in free field conditions.

Sound pressure values given in a brochure or data sheet are no clear indication of the actual sound characteristics in the working situation. There are numerous acoustic determinants to consider during actual operation of air coolers, such as the number of reflection planes, the presence of additional air coolers, and cold room content and construction. This needs to be calculated based on the provided sound power values in combination with all relevant situational parameters. This is primarily a responsibility of the contractor or plant designer.







# Defrost systems

Alfa Laval Arctigo’s defrost systems are developed to deliver the highest possible efficiency at the lowest operating costs. Each defrost system is optimized for specific applications and conditions. Even user behavior, such as the frequency of door opening, and the position of the air coolers, will be taken into consideration during installation to ensure optimal operation of the air cooler.

### Recommended defrost system

The recommended defrost system depends on different factors such as the air-on temperature required.

Air-on temperature °C		+5	0	-5	-10	-15	-20	-25	-30	-35	-40
Hot gas defrost	HG1										
	HG2										
	HG1 + I2										
	HG2 + I2										
Electrical defrost	E1										
	E1 + I2*										
	E2										
	E2 + I2										
	E4										
Water defrost	W1										
	W2 (+I2/FRH)										
Hot water defrost	HW1										
	HW2										

\* In combination with hot gas defrost in the coil.

### Electric defrost **E**

Stainless steel heater elements placed in additional tubes between the evaporator tubes. The elements for the drip tray are fitted to the bottom of the inner tray. Both coil and drip tray have the same elements. All defrost elements are connected in a central connection box.

- E1 – Electric defrost drip tray**  
Air-on temperatures down to -25°C.  
Electric stainless steel defrost elements in the drip tray. For use in combination with, for example, hot gas defrost in the coil block. In combination with drip tray insulation (I2) suitable for air-on temperatures down to -40°C.
- E2 – Electric defrost heavy**  
Air-on temperature down to -25°C. Electric stainless steel defrost elements in coil block and drip tray. Recommended for general use. In combination with drip tray insulation (I2) suitable for air-on temperatures down to -40°C.
- E4 – Electric defrost light**  
Air-on temperatures down to -10°C. Electric stainless steel defrost elements in the coil block and drip tray.
- E5 – Electric defrost for defrost valve (Arctigo IS)**  
Defrost element for the defrost valve (DO). Available for blow-through models only.

### Hot gas defrost **HG** **HGC**

The drip tray can be fitted with a copper or stainless steel defrost coil (HG) to rapidly increase temperatures by means of hot gas.

- HG1 – Hot gas defrost light with defrost coil mounted under the coil block
- HG2 – Hot gas defrost heavy with defrost coil mounted in the drip tray

The hot gas defrost coil system can be supplied with (HGC) or without connection to the cooler coil (HG). In combination with drip tray insulation (I2), hot gas defrost is suitable for air-on temperatures down to -40°C.

### Hot water/glycol defrost **HW**

This is one of the best defrost systems for CO<sub>2</sub> applications. The condensation heat can be used as an energy source for greater energy savings. Defrost circuits (copper or stainless steel tubes) are placed in both coil and drip tray.

- HW1 – Hot glycol defrost light for air-on temperatures down to -5°C
- Hot glycol defrost heavy for air-on temperatures down to -25°C

### Water defrost **W**

Water defrost requires only pump energy and a sufficient water volume to function. Alfa Laval Arctigo’s water defrost systems have been designed based on the results of field tests in Korea and Japan, ensuring that only the most efficient systems are employed. Suitable for air-on temperatures down to -5°C (W1). In combination with drip tray insulation and fan ring heater, suitable for air-on temperatures down to -30°C (W2).

### Keeping your defrost system in optimal condition

Arnold Leistra, Service Specialist Air, shares his experience of defrost challenges:

"About 75% of issues raised with regards to malfunctioning of air coolers are related to defrost problems. Common problems encountered include ice buildup in the drip tray and bottom plate, bad refrigeration distribution caused by uneven frost or ice buildup in the coil, and reduced airflow.

These happen due to possible errors, such as stopping the defrost period too early, too many defrost periods per day, inefficient time settings of the defrost process, and irregular checks on the remaining frost or ice in the air cooler.

Such problems can be avoided by regularly monitoring the defrost results in the first period after commissioning and changing the settings if there is still frost remaining in the heat exchanger."





# Optional features

By adding optional features to the Arctigo cooler, the performance of the specific installation can easily be optimized during the design process.

## Electrical options

### Fan ring heater **FRH**

Fan ring heater connected to a central connection box.

### Repair switch **SW**

Fan motor on/off switch.

### Central connection box **CB** **CB1**

All fan motors internally wired to a central connection box (CB) or central internal connection box wired to a single external switch (CB1). Default positioning opposite to refrigerant connections side.

## Mechanical options

### Drip tray insulation **I2**

Double drip tray, insulated with 13 mm styropor. Other insulating materials are available on request.

### Fin protection **EP** **SWR**

Pre-coated aluminium fins (EP) or seawater resistant aluminium AlMg2.5 (SWR) for even more aggressive climate conditions.

### Flanges **F**

Slip-on flanges for brine applications (aluminium PN16 or stainless steel PN).

### Hinged fans **HF**

Hinged fan rings for Arctigo IS and hinged fan plates for Arctigo ID. Unique to Alfa Laval Arctigo, hinged fan rings enable easier cleaning operations and reduces the weight of the entire unit compared to traditional hinged fans, resulting in time and cost savings.

### Stainless steel casing and frame **SSC**

All casing and frame material stainless steel AISI 304

## Mechanical options (Arctigo IS)

### Diffusor **D**

Discharge diffusor to increase air throw.

### Diffusor with defrost valve **DO**

Diffusor with integrated defrost valve to improve defrost efficiency (shortens defrost time by up to 30%). The defrost valve closes automatically when the fans are stopped during the defrost cycle to keep the defrost heat within the cooler casing. Available for blow-through models only.

### Drip tray connection kit

Adaptor set to change the drip tray connection from threaded to click connection.

### Hood **H1** **H2**

Hoods 45° (H1) or 90° (H2) can be fitted on both coil and fan side of the cooler. Hoods on the air inlet side can be used to enhance defrost efficiency in combination with a shutup sock (S) or defrost valve (DO) on the discharge side. Hoods on the discharge side are used to guide the cold airflow in the required direction.

### Streamer **ST**

Fan streamer to increase air throw by more than 50%. For draw-through units only.

### Shutup sock **S**

Polyester shutup sock for improved air throw, shorter defrost time by up to 30%, and lower power consumption. For draw-through units only.

### Fan casing **FC1** **FC2**

Fan casing 45° (FC1) or 90° (FC2) for uniform temperature and air distribution for shock cooling applications. For draw-through units only.

### Air sock adaptor ring **SR**

Adaptor ring for air sock application.

### Dual fin spacing **DF**

Dual fin spacing is available on request.

### Mounting feet **MF**

Hot-dip galvanized steel mounting feet (stainless steel in combination with SSC).







# Alfa Laval – always close to you

Alfa Laval offers worldwide support from product and application specialists via 103 sales offices in 53 countries. Our offer is comprehensive and consists of a wide portfolio of services such as high quality spare parts, reconditioning, on-site services, performance agreements, exclusive stock, upgrades, consulting services, training, etc.

Spare parts are available through Alfa Laval e-business tools, 24/7, for our partners.

Our service package is tailored to meet your performance and process needs and guarantees that operational design conditions are met. It also supports cost control by allowing specific settings of air ventilation, defrost cycles etc.



### Commissioning support

Alfa Laval service specialists can, on a project basis, support installers and end-users to ensure Arctigo coolers are installed properly and perform consistently with their intended application.

- Equipment (pre) start-up procedures
- System settings & testing
- Development of standard operating procedures and operational training such as defrost cycle setting

# 360° service offering

At Alfa Laval, we're dedicated to ensuring your Arctigo equipment performs at its optimum throughout its lifetime. This is why we have a 360° service offering anytime, anywhere.

### Start-up

Our commissioning support team ensures your equipment goes into production as smoothly and safely as possible. Our staff will ensure that global guidelines and instructions are met and will consider the start-up complete only when your process is optimized.

### Maintenance

The normal and continuous operation of the air cooler will inevitably lead to it getting dirty or ice-clogged (improper defrost). Such situations can lead to the reduction of the heat exchanger's performance. Cleaning services, parts exchange, or repair are services that might be appropriate in this case.

### Support

Spare part selection and ordering is made simpler with our e-business tools, accessible via our sales offices or service partners.

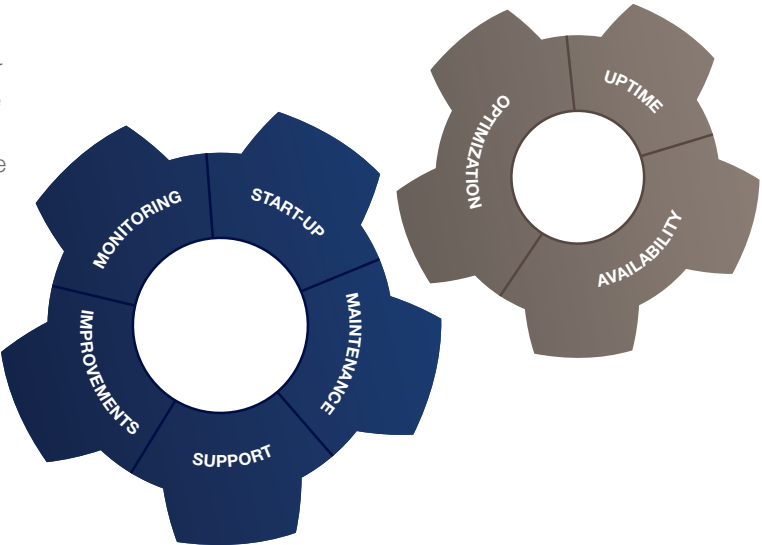
### Improvements

When your equipment needs to be replaced, Alfa Laval specialists can assist you in making the best choice. Our replacement and retrofit services ensure that your

production lines can continue to operate without disruption. Alfa Laval specialists can replace your equipment with identical units or help you find the correct contact person who can help address your specific needs.

### Monitoring

Equipment must be monitored on a regular basis. Self-inspection can be done on site, without the supervision of Alfa Laval staff. Visually inspect the units and listen for any signs of mechanical wear, deposits, need for degreasing, and frost buildup at least once a month. Perform cleaning or degreasing accordingly.







Easy to work with – a customer's experience

*"With the numerous improvements that have been made to AlfaSelect Air, we now have a single piece of software that integrates all manually customized designs. We can also directly configure our options in relation to price."*

– Simon, Consultant

## Rediscover the AlfaSelect Air selection tool

To facilitate your Arctigo product configuration, we offer access to our state-of-the-art selection software, AlfaSelect Air. This user-friendly program can be easily downloaded via the internet.

### AlfaSelect Air

Our computer selection software, AlfaSelect Air, offers separate modules for mechanical and thermal configuration, as well as instant access to selection and pricing of optional extras. It also offers a fully sortable selection output, and an interface that offers multiple language options.

### Data sheets

The AlfaSelect data sheet printout provides all relevant technical specifications for the selected cooler model, including detailed dimensional drawings.

- Thermal and air flow specification
- Mechanical configuration
- Pricing information
- Detailed dimensional drawings

### Selection features in AlfaSelect Air

To optimize cooler configuration, AlfaSelect offers different Arctigo-specific selection parameters:

- Application at freezing or cooling conditions
- Maximum unit dimensions
- Fan external pressure
- Coil material
- Tube pattern
- EC or AC fans
- Air direction: blowing or drawing
- Power supply
- Single units selectable up to 230 kW

### Cold room calculator

In the thermal configuration module of AlfaSelect Air, it is also possible to estimate the required cooling capacity for a specific cold room and application. Once you have the estimated cooling capacity, it can be used to define the right air cooler.

### Product information

Comprehensive product information is available at [www.alfalaval.com/arctigo](http://www.alfalaval.com/arctigo) including product leaflets, manuals, certificates and brochures. Our website also offers CAD drawings, high-resolution images and electrical connections available for download.

### Freezing conditions

Thanks to the 'Freezing conditions' button in AlfaSelect Air, a higher cooler capacity calculation is now possible. The mean air velocity over the air cooler coil is limited to a value that, under cooling conditions, ensures that water droplets that build up in the coil due to condensation are not blown into the cold room. Negative air temperature causes the water drops to freeze, creating a layer of frost on the fins. By pressing the 'freezing conditions' button, real freezing conditions (allowing higher air velocity) are simulated.

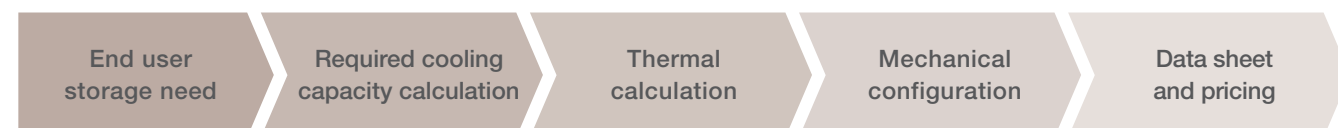
## Improved functions for greater efficiency

As a result of the continuous development of AlfaSelect software over the last five years, and the introduction of the Arctigo product family, AlfaSelect Air offers a host of new features for greater functionality.

### Additional new features:

- Configuration of cooling or freezing conditions for optimal design
- Configuration alternatives for both square and triangular coil geometry, for optimal design (Arctigo IS only)
- ESP (Fan external static pressure) selectable
- Possibility to select multiple items and save in a complete project with the ability to open and revise configurations

Fully customized units from initial need to specification





# One stop for all applications



Application expertise



Wide & versatile range



Configurator & support



## Alfa Laval commercial air heat exchangers

The Alfa Laval Optigo range contains the following models: low silhouette (Optigo CS), dual discharge (Optigo CD) and single discharge (Optigo CC and CCB) air coolers for general application in cooling, freezing, storage, working and processing rooms. A wide range of models are fitted with energy efficient EC fans (as standard on the single discharge range Optigo CS), making them especially suitable for refrigerated working, processing and storage rooms.

Optigo also offers dedicated ranges for HFC refrigerants, brine and CO<sub>2</sub> applications. We also offer outdoor condenser units, the Alfa Laval Blue Junior range. Our wide range is available from stock.



## Semi/fully welded and fully gasketed plate heat exchangers

Alfa Laval's semi-welded heat exchangers are available in seven models. The refrigerant flows in laser-welded, sealed plate channels, and the brine in gasketed channels. Fully welded plate heat exchangers are perfect for heat recovery in corrosive operating environments and for handling aggressive, high-temperature fluids of all kinds.

The fully gasketed plate heat exchanger range includes versions to cope with heat transfer between pure, corrosive, fouling or hygienic fluids. Gaskets between each plate offer a very flexible solution that is possible to expand and easy to maintain.



## Brazed and fusion-bonded plate heat exchangers

Alfa Laval is the market leader for all kinds of brazed plate heat exchangers for applications such as refrigeration, HVAC, heat pumps etc. The different types of heat exchangers support a wide variety of synthetic and natural refrigerants. AXP and CBX models meet the high working pressure demands of CO<sub>2</sub>.

Alfa Laval AlfaNova is our unique fusion-bonded plate heat exchanger made of 100% stainless steel. It is well suited to applications that put high demands on cleanliness, where ammonia is used, or where copper or nickel contamination is unacceptable. It is particularly suitable as an NH<sub>3</sub> chiller compressor oil cooler.



## Shell-and-tube heat exchangers

Optimized for HFC condensation and evaporation, this unique range of shell-and-tube heat exchangers ensures efficient and reliable performance with all HFC refrigerants, HFO (also with new R1234ze), ammonia and propane.

Alfa Laval's optimized single pass dry expansion or flooded designs provide the range, which is typically used as dry expansion evaporators for air conditioning, refrigeration process cooling, condensers, and de-superheaters, with an extra high level of efficiency.



# A full range for your application

As a market leader in heat transfer technologies, our mission is to optimize the performance of our customers' processes, time and time again. Alfa Laval offers a full range of air heat exchanger products for the Refrigeration and HVAC industry. In addition to Arctigo industrial air coolers our portfolio includes:

- Commercial air cooler, condenser and dry cooler ranges
- Fully customized coils and coolers
- Air-cooled condensers
- Air-cooled liquid coolers
- Air-cooled gas coolers
- Adiabatic liquid cooler