

BORN TO BE HELPMAN  
*Arctigo*



[alfa.luvegroup.com](http://alfa.luvegroup.com)



HELPMAN  
**Arctigo**

Arctigo is a wide and flexible range of  
industrial air coolers  
for both cooling and freezing applications  
in medium to large cold rooms.

# Application expertise

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, 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

Arctigo 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limits the difference between air-on and air-off temperature to a maximum of 2–3 K. This minimizes the moisture withdrawn from the product, which settles as frost on the fin coil.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 (dual fin spacing) to prolong the freezing cycle before defrosting and as a result, freezes more goods.

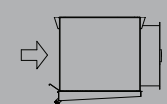


## Processing rooms

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.

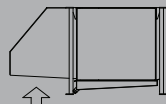
## Distribution centres

Distribution centres impose complex demands on air coolers. Arctigo units used in these areas are designed for high cooling capacities and long air throws. All Arctigo coolers are fitted with hinged driptrays 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.



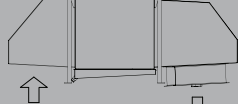
Draw-through  
Ceiling mounted

Example:  
General purpose/  
Long-term storage  
fresh produce



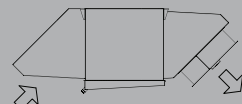
Blow-through  
Floor mounted  
Inlet hood 90°

Example:  
Large cold rooms  
high humidity



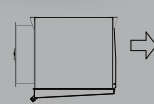
Draw-through  
Floor mounted  
Inlet hood 90°  
Fan casing 90°

Example:  
Blast freezing large slaughter  
houses



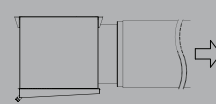
Draw-through  
Ceiling mounted  
Inlet hood 45°  
Fan casing 45°

Example:  
Shock cooling meat,  
fish and poultry



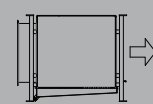
Blow-through  
Ceiling mounted

Example:  
Large air throw, carrot  
and potato storage



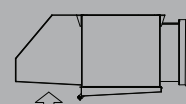
Draw-through  
Ceiling mounted  
Airsock ring

Example:  
Processing rooms



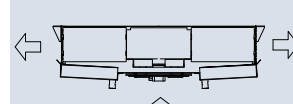
Blow-through  
Floor mounted

Example:  
Distribution centres  
fresh produce



Draw-through  
Ceiling mounted  
Inlet hood 90°  
Shutup sock

Example:  
Frozen storage  
fish and meat, distribution  
centres



Blow-through  
ceiling mounted  
Dual discharge

Example:  
Processing rooms and  
loading docks



# Arctigo at a glance

- Alfa LU-VE experience in heavy industrial refrigeration.
- Suitable for all HFC, ammonia, CO<sub>2</sub> and brine refrigerants.
- Direct expansion, pumped system and brine.
- Based on modular design.
- Only first-class coil and casing materials, resulting in a long operational product life.
- Excellent corrosion resistance thanks to galvanized steel painted casing.
- All fixing materials stainless steel.
- Application-led design.
- Full optional.
- Low sound levels for working room conditions.
- Ready for low temperatures, down to -40 °C.
- Eurovent certified\*.



Arctigo ISD  
[alfa.luvegroup.com/isd](http://alfa.luvegroup.com/isd)



Arctigo ID  
[alfa.luvegroup.com/id](http://alfa.luvegroup.com/id)

\* Check ongoing validity of certificate: [www.eurovent-certification.com](http://www.eurovent-certification.com)

# Born to be adaptive

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 LU-VE has developed Arctigo, industrial air coolers platform with high quality parts configured to deliver optimal performance by using less energy, resulting in a lower total cost of ownership.

Arctigo air coolers are built with an **application-led approach**, creating the optimal design for industrial applications.

The Arctigo range offers a **wide variety of cooler configurations** and a **long list of options**, enabling to always select the optimal model to suit any industrial refrigeration application.

This highly versatile range is designed to keep fresh and frozen goods refrigerated, with either high or low humidity content.

**All configuration and options are standardized and available in our selection software Plair, to allow quick and easy customization.**

The Arctigo industrial air coolers features:

- **Moulded fan collar:** best aeraulic efficiency possible.
- **Top covers on both sides of the cooler:** best defrost efficiency in side compartments.
- **New geometry for CO<sub>2</sub> applications:** best thermal efficiency and reduced refrigerant charge.
- **Excellent design** for extended goods conservation and robust construction.
- **Internal driptray: sloped design for all configurations** which grants excellent drainage of condensation water and optimal defrost efficiency.
- **Removable driptray:** hinge construction for extended accessibility and easy maintenance in any situation, **even with mounting feet option installed.**
- All **electrical boxes** are on the external casing of the cooler suitable for low temperatures, down to -40 °C.
- **Side-by-side transportability** for container loading.
- **RAL 9003 casing color:** the signature of LU-VE Group products.
- **Calculation software features:** fine tune your selections for EC fans units with variable speed calculations.



# The future has an ancient heart

Arctigo combines the LU-VE avant-garde technologies with the Helpman® experience in industrial refrigeration.

Arctigo has been designed using the Helpman® heritage: both construction and design take account of operational effectiveness and accessibility.

Arctigo is an aesthetic industrial design characterised by very sturdy construction and flexibility in configuration thanks to the hugeness of selectable options. As a result of their extremely flexible design concept, Arctigo air coolers can be deployed in many areas of industrial refrigeration, each with its specific feature and operating conditions.

The reliability of the Arctigo product is demonstrated by the numbers: over 35,000 Arctigo units were sold worldwide, since first version was released in 2014.

**Helpman**

**Arctigo**

HELPMAN  
**Arctigo**



Helpman Thor-D and Thor



1<sup>st</sup> generation Arctigo ID and IS



2<sup>nd</sup> generation Arctigo ID and IS

# Born to be

## Challenged

Design choices were verified through extensive laboratory tests. The research and development activities for Arctigo project were led by LU-VE's Technical Department focusing on maximising performance and reliability.

The test campaign has been realized aimed to:

- **Maximise performance and reliability**
- **Ensure heavy-industrial construction robustness**

Test campaign included:

- Aeraulic test to optimise aerodynamic design
- Thermal test to maximise thermal capacities and software reliability
- Anemometric test for the best air distribution
- Vibration and fatigue test to assess the strength of mechanical design
- Splattering test to prevent dripping even in the toughest environments
- Lifting test to assess the strength of the units
- Defrost test to optimise defrost systems

**4 testing laboratories** (2 internal and 2 external) were involved.



## Flawless

**Arctigo units do not miss a beat!**



The air flow curve used in the calculation software has been confirmed and calibrated with the results of several aereulic tests. Collected data were useful also for the optimisation of aerodynamic design.

## Cool

**Arctigo: its natural environment is the Arctic.**

Plair calculation results were confirmed by several thermal tests performed with different fan diameters and under different test conditions according to standard EN 328). Measured data were used to confirm design choices aimed to maximise thermal capacity.



## Efficient

**You can trust Arctigo air coolers.**

Optimal air distribution is guaranteed for all models. Air flow distribution was measured over the entire coil through anemometric tests. Results suggested the adoption of the deep fan plate solution to ensure optimal plenum size for models with largest coils.



## Shipped

**Arctigo units are on the road!**

A large plenum allows an excellent air distribution throughout the coil and reduces splattering effects. The Arctigo ISD standard design guarantees a large plenum and allows side-by-side container transportability.

## Strong

**Arctigo units are even stronger than you can imagine!**



Lifting tests of overloaded unit demonstrated the strength of Arctigo construction. A unit equipped with mounting feet (MF) was loaded progressively through ballasts and checked for any damage or plastic deformation. No deformation or damage was observed.

## Shaken

**Robust construction is a signature of Arctigo.**



The behaviour of the unit in the presence of vibrations was assessed by the vibration test performed according to ISO 14694. Once the resonance point was identified, the behaviour of mechanical structure was analyzed. Test results were useful to enhance design.

## Stressed

Fatigue test was done to simulate the behaviour of the unit with unbalanced ice on the fan blade. Units were tested at extreme conditions with unbalanced AC fan for several hours. Design was updated to withstand even these extreme test conditions.

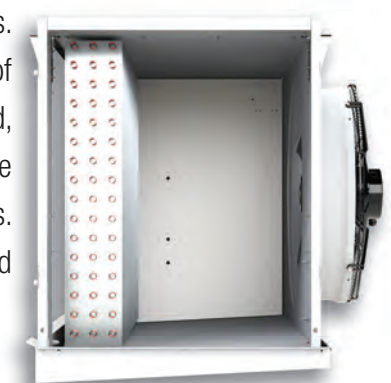
## Protective

**Arctigo coolers preserve product quality.**



Drip tray is designed to eliminate the risk of splattering. Splattering test were useful to identify the air speed range limits for splattering-free operation and to enhance the drip tray design. Tests were performed in calorimetric chamber

under SC1 wet conditions. During the test, the state of the plenum was checked, in particular the distance reached by the drops. Several tests were carried out at different air speeds.



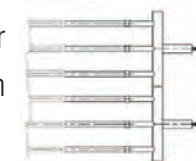
## Frost-proof

Frost accumulation over coil and fans can compromise the performace, unbalance the fan and even make the units unusable.

**Arctigo defrost systems are the solution!**

Several cycles were performed to monitor and find the best match between power consumption and electric defrost efficiency.

Hot-glycol defrost circuit design is enhanced with headers to extend the covered area. Special frame design applied on internal drip tray to increase thermal contact between hot spiral tubes and external drip tray.



# Arctigo line-up

## Arctigo ISD

- Single discharge air coolers
- Air direction: draw-through
- Operating temperature from +10 to -40 °C
- External static pressure up to 150 Pa
- 10 coil block modules
- 3, 4, 6, 8 or 10 tube rows in air direction
- 1 to 6 fans
- Fan Ø: 400, 450, 500, 630, 710, 800, 910 mm
- Drains inclined by 45° ø 1½" BSP ext.



## Arctigo ISB

- Single discharge air coolers
- Air direction: blow-through
- Operating temperature from +10 to -40 °C
- External static pressure up to 150 Pa
- 8 coil block modules
- 3, 4, 6, 8 or 10 tube rows in air direction
- 1 to 8 fans
- Fan Ø: 450, 500, 630, 710, 800, 1000 mm
- Drains inclined by 45° ø 1½" BSP ext.



## Arctigo IDB

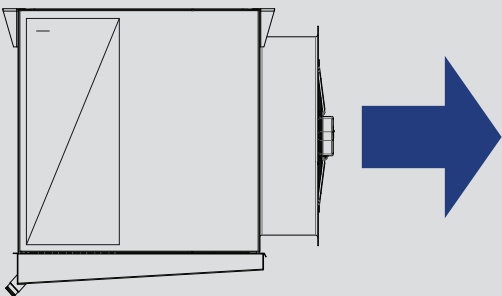
- Dual discharge air coolers
- Air direction: blow-through
- Operating temperature from +20 to -40 °C
- External static pressure up to 125 Pa
- 3 coil block modules
- 3, 4, 6 or 8 tube rows in air direction
- 1 to 5 fans
- Fan Ø: 450, 500 or 630 mm
- Vertical drains ø 1½" BSP ext.



## Draw-through vs. blow-through

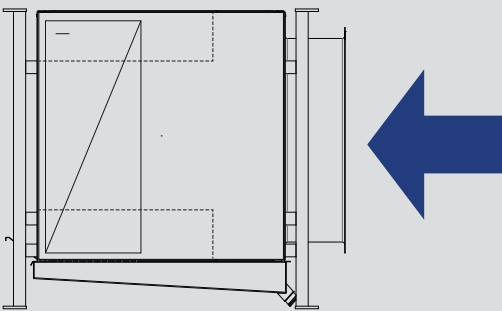
### Draw-through air direction

- 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)



|     |    |   |   |    |   |   |   |   |   |    |    |    |   |    |    |    |   |    |    |   |    |    |
|-----|----|---|---|----|---|---|---|---|---|----|----|----|---|----|----|----|---|----|----|---|----|----|
| ISD | 71 | 1 | - | 20 | S | A | C | E | A | 33 | AL | 7  | - | AB | 5  | 4  | - | AB | D  | - | L  | *  |
| 1   | 2  | 3 |   | 4  | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |   | 13 | 14 | 15 |   | 16 | 17 |   | 18 | 19 |

- 1 Arctigo industrial air cooler single discharge - air direction draw-through
- 2 Fan diameter (40=400, 45=450, 50=500, 63=630, 71=710, 80=800, 91=910 mm)
- 3 Number of fans (1 to 6)
- 4 Tubes per row
- 5 Coil module (blank=standard coil module, S=short coil module)
- 6 Tube rows code (A=3, B=4, C=6, D=8, E=10)
- 7 Tube material (C=copper, SS=stainless steel)
- 8 Application (E=direct expansion, PB=pumped bottom feed, PT=pumped top feed, blank for brine units)
- 9 Refrigerant system (H=HFC, A=ammonia, W=brine, X=CO<sub>2</sub>)
- 10 Maximum working pressure
- 11 Fin material (AL=aluminium, EP=precoated aluminium, SWR=seawater resistant aluminium)
- 12 Fin spacing (4=4.0, 5=5.0, 6=6.0, 7=7.0, 8=8.0, 0=10.0, 2=12.0 mm)
- 13 Number of circuits (2 digits)
- 14 Capillary diameter (1 digit: for brine and pump there is X, for DX there is 4, 5 or 6)
- 15 Orifice diameter (mm, only for ammonia units)
- 16 Fan motor code (2 digits)
- 17 Fan type (D or Y for AC 3ph, S for AC 1ph, E for EC)
- 18 Refrigerant connection side (L=left, R=right-fan side view)
- 19 Options

|     |   |   |   |   |   |   |   |    |   |    |    |    |    |   |     |   |    |   |    |   |    |    |
|-----|---|---|---|---|---|---|---|----|---|----|----|----|----|---|-----|---|----|---|----|---|----|----|
| ISB | 3 | 5 | - | 2 | s | H | 8 | CU | E | X  | 60 | AL | 7  | - | 2H5 | - | *  | - | D  | - | L  | *  |
| 1   | 2 | 3 |   | 4 | 5 | 6 | 7 | 8  | 9 | 10 | 11 | 12 | 13 |   | 14  |   | 15 |   | 16 |   | 17 | 18 |

- 1 Arctigo industrial air cooler single discharge - air direction blow-through
- 2 Cooler module size (1 to 7)
- 3 Number of fans (1 to 8)
- 4 Coil geometry (1=triangular, 2=square)
- 5 Short coil module (s)
- 6 Fan speed (H=high pressure fan)
- 7 Tube rows in air direction (3, 4, 6, 8, 10)
- 8 Tube material (CU=copper, SS=stainless steel)
- 9 Application (E=direct expansion, PB=pumped bottom feed, PT=pumped top feed)
- 10 Refrigerant system (H=HFC, A=ammonia, W=brine, X=CO<sub>2</sub>)
- 11 Maximum working pressure
- 12 Fin material (AL=aluminium, EP=precoated aluminium, SWR=seawater resistant aluminium)
- 13 Fin spacing (4=4.0, 5=5.0, 6=6.0, 7=7.0, 8=8.0, 10=10.0, 12=12.0 mm)
- 14 Circuiting code (2H, 1H, 1/2H ... 2D, 1D, 1/2D...)
- 15 Fan motor code
- 16 Fan connection
- 17 Refrigerant connection side (R=right, L=left-fan side view)
- 18 Options

|     |    |   |   |   |   |   |   |   |    |    |    |    |    |   |    |    |    |
|-----|----|---|---|---|---|---|---|---|----|----|----|----|----|---|----|----|----|
| IDB | 45 | 1 | - | A | C | - | E | X | 33 | AL | 7  | *  | 5  | - | *  | D  | *  |
| 1   | 2  | 3 |   | 4 | 5 |   | 6 | 7 | 8  | 9  | 10 | 11 | 12 |   | 13 | 14 | 15 |

- 1 Arctigo industrial air cooler dual discharge - air direction blow-through
- 2 Fan diameter (45=450, 50=500, 63=630 mm)
- 3 Number of fans (1 to 5)
- 4 Tube rows code (A=3, B=4, C=6, D=8)
- 5 Tube material (C=copper, SS=stainless steel)
- 6 Application (E=direct expansion, PB=pumped bottom feed, PT=pumped top feed)
- 7 Refrigerant system (H=HFC, A=ammonia, W=brine, X=CO<sub>2</sub>)
- 8 Maximum working pressure
- 9 Fin material (AL=aluminium, EP=precoated aluminium, SWR=seawater resistant aluminium)
- 10 Fin spacing (4=4.0, 5=5.0, 6=6.0, 7=7.0, 8=8.0, 0=10.0 and 2=12.0 mm)
- 11 Number of circuits
- 12 Capillary diameter (brine and pump: X; DX: 4, 5 or 6)
- 13 Fan motor code
- 14 Fan type (D or Y for AC 3ph, S for AC 1ph, E for EC)
- 15 Options

# Standard features

## 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.

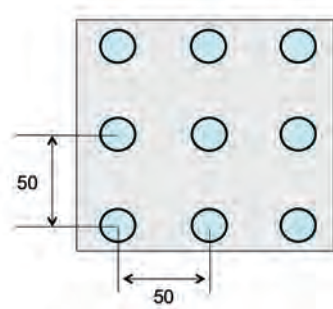
| Refrigerant application | Design pressure |
|-------------------------|-----------------|
| HFC                     | 33 bar          |
| Ammonia                 | 30 bar          |
| CO <sub>2</sub>         | 33-40-60-80 bar |
| Brine                   | 10 bar          |

## Coil

- Tubing: copper rippled, copper smooth for brine or stainless steel.
- Tube diameter: 12 mm for CO<sub>2</sub>, 16 mm for other refrigerants.
- Corrugated fins in aluminium, pre-coated aluminium or seawater-resistant aluminium.
- Fin spacing: 4, 5, 6, 7, 8, 10, 12 mm.

## Square tube pitch

Arctigo 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.



## Frame and casing

- Coil frame and casing pre-galvanized sheet steel, epoxy coated RAL 9003. Magnelis for unpainted sheets.
- All fixing materials stainless steel.
- Hinged side panels.
- Sufficient space for piping, valves and control devices inside casing.



## Driptray

Hinged driptray, drain(s) with 1½" threaded connection. All models feature specially designed holes between internal and external driptrays and the suitable number of drains.



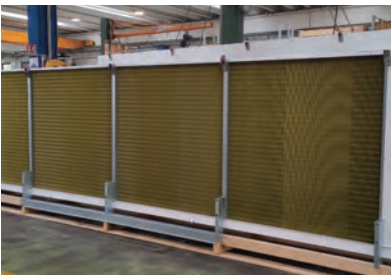
## Refrigerant connections (Arctigo ISD and ISB)

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



## Delivery in mounting position

Arctigo coolers are delivered in mounting position on a reinforced pallet and supported by special transport feet. Can be easily installed using a forklift.



## Cooling or freezing application

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

## Fan motors

- EC or AC fan motors: 400-460V/50-60Hz/3ph or 230V/50-60Hz/1ph (for Ø 400 and 450 mm)
- Two sound levels ( $\Delta$ /Y connection) for AC 3ph fans
- Fan motors with dynamically and statically balanced external rotor, protection class IP54 class F or IP55 (for ID)
- Integrated thermo contacts provide reliable protection against thermal overload

The type of fans depends on the application area.

Alfa LU-VE **EC fan 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. Excellent electromagnetic compatibility (EMC) according to EN 50082-2, no shielded motor cabling required.

All 3ph **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

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
- $\Delta$ /Y connection

| Arctigo ISD |        |      |     |                 |      |                   |
|-------------|--------|------|-----|-----------------|------|-------------------|
| Model       | Fans   |      |     | Unit dimensions |      |                   |
|             | number | Ø mm | 3ph | 1ph             | H mm | L min mm L max mm |
| ISD 40x-10  | 1-4    | 400  | •   | •               | 573  | 1614 4014         |
| ISD 45x-12S | 1-6    | 450  | •   | •               | 673  | 1614 5614         |
| ISD 45x-12  | 1-6    | 450  | •   |                 | 673  | 1814 6814         |
| ISD 50x-14  | 1-6    | 500  | •   |                 | 773  | 1814 6814         |
| ISD 63x-16S | 1-5    | 630  | •   |                 | 873  | 1814 5814         |
| ISD 63x-16  | 1-5    | 630  | •   |                 | 873  | 2014 6814         |
| ISD 71x-20  | 1-5    | 710  | •   |                 | 1073 | 2014 6814         |
| ISD 80x-24  | 1-4    | 800  | •   |                 | 1073 | 2414 7214         |
| ISD 91x-24  | 1-4    | 910  | •   |                 | 1273 | 2414 7214         |
| ISD 91x-32  | 1-4    | 910  | •   |                 | 1673 | 2414 7214         |

| Arctigo ISB |        |      |     |                 |      |                   |
|-------------|--------|------|-----|-----------------|------|-------------------|
| Model       | Fans   |      |     | Unit dimensions |      |                   |
|             | number | Ø mm | 3ph | 1ph             | H mm | L min mm L max mm |
| ISB 1       | 1-8    | 450  | •   | •               | 610  | 1475 7075         |
| ISB 2       | 2-6    | 450  | •   | •               | 710  | 1675 6675         |
|             |        | 500  | •   |                 |      |                   |
| ISB 3       | 1-5    | 630  | •   |                 | 910  | 1875 6675         |
|             |        | 710  | •   |                 |      |                   |
| ISB 3S      | 1-6    | 630  | •   |                 | 910  | 1675 6675         |
|             |        | 710  | •   |                 |      |                   |
| ISB 4       | 1-4    | 710  | •   |                 | 1110 | 2275 7075         |
|             |        | 800  | •   |                 |      |                   |
| ISB 5       | 1-3    | 1000 | •   |                 | 1310 | 2675 6675         |
| ISB 6       | 1-3    | 1000 | •   |                 | 1510 | 2675 6675         |
| ISB 7       | 1-4    | 1000 | •   |                 | 1710 | 2275 7075         |

| Arctigo IDB |        |      |     |                 |      |                   |
|-------------|--------|------|-----|-----------------|------|-------------------|
| Model       | Fans   |      |     | Unit dimensions |      |                   |
|             | number | Ø mm | 3ph | 1ph             | H mm | L min mm L max mm |
| IDB 45x     | 1-5    | 450  | •   | •               | 487  | 1438 4721         |
| IDB 50x     | 1-5    | 500  | •   | •               | 587  | 1721 5721         |
| IDB 63x     | 1-5    | 630  | •   | •               | 587  | 1921 6721         |

## 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

# Optional features

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

The result is a wide and deep range, with solutions for all industrial refrigeration applications.

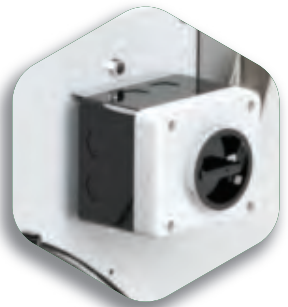
## Electrical accessories

### FRH - Fan ring heater



Fan ring heater connected to a central connection box.

### SW - On/off switch



Fan motor on/off switch.  
One switch for fan.

### CB / CB1 - Central connection box



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

## Mechanical options

### EP / SWR - Fin protection

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

### SSC - Stainless steel casing and frame

Stainless steel casing and coil frame. Standard materials for underplate (aluminium) and fan grid (black painted steel).

### I2 - Drip tray insulation

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

### F / FL - Flanges

Flanges for brine applications.

### HF - Hinged fans

Hinged fan rings for Arctigo ISB and hinged fan plates for Arctigo ISD and ID.

Hinged fans enable easier cleaning operations resulting in time and cost savings.



## Mechanical options for Arctigo IS

### H1 / H2 / IH1 / IH2 - Suction hood

Hoods 90° (H1) or 45° (H2) can be fitted on both coil (*draw-through units*) and fan side (*blow-through units*) of the cooler. Hoods on the air inlet side can be used to enhance defrost efficiency in combination with a shutup sock (S). Suction hoods are also available with insulation with 20 mm styropore (IH1 and IH2).

### FC1 / FC2 - Fan casing

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



### S - Shutup sock

Polyester sock for improved air throw, shorter defrost time by up to 30%, and lower power consumption.

*For draw-through units only.*

### SR - Air sock ring

Adaptor ring for air sock application.

*For draw-through units only.*

### ST - Streamer

Fan streamer to increase air throw by more than 50%.

*For draw-through units only.*

### DF - Dual fin spacing

Dual fin spacing is available on request.

### AVA - Top connections

Standard for brine models, on request for other applications. Standardized top connections allow easier selection and shorter delivery times.



### MF - Mounting feet

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



# Defrost systems

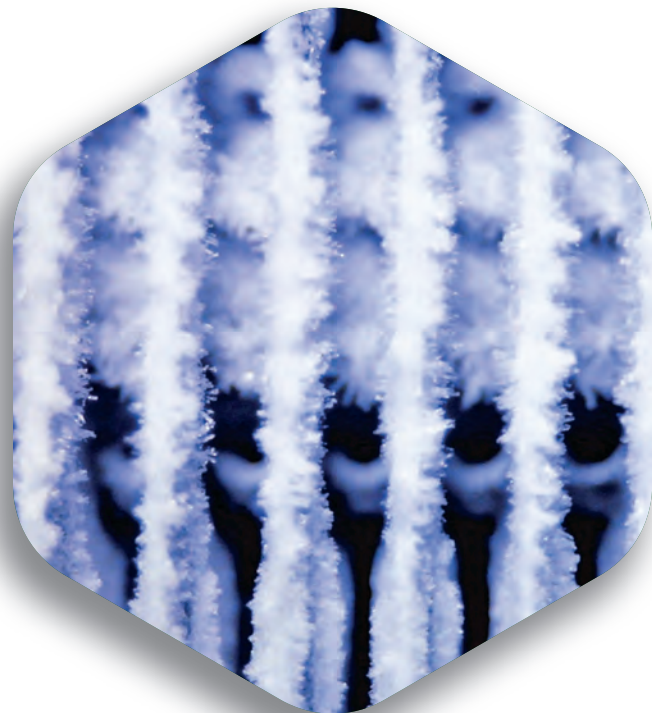
Arctigo's defrost systems are developed to deliver the highest possible efficiency at the lowest operating costs. Each defrost system is optimized for specific applications and conditions. Even user behavior, such as the frequency of door opening, and the position of the air coolers, shall be taken into 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          |    |   |    |     |     |     |     |     |     |     |
|                            | HG/HG2       |    |   |    |     |     |     |     |     |     |     |
|                            | HG1 + I2     |    |   |    |     |     |     |     |     |     |     |
|                            | HG/HG2 + I2  |    |   |    |     |     |     |     |     |     |     |
| Electrical defrost         | E1*          |    |   |    |     |     |     |     |     |     |     |
|                            | E1 + I2*     |    |   |    |     |     |     |     |     |     |     |
|                            | E2           |    |   |    |     |     |     |     |     |     |     |
|                            | E2 + I2      |    |   |    |     |     |     |     |     |     |     |
|                            | E4           |    |   |    |     |     |     |     |     |     |     |
| Water defrost              | W1           |    |   |    |     |     |     |     |     |     |     |
|                            | W2 (+I2/FRH) |    |   |    |     |     |     |     |     |     |     |
| Hot-glycol circuit defrost | HW           |    |   |    |     |     |     |     |     |     |     |

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



### Keeping your defrost system in optimal condition

Our Service Specialist Air Arnold Leistra 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."

### Hot gas defrost

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.  
*For blow-through units only.*
- **HG / HG2** – hot-gas defrost heavy.

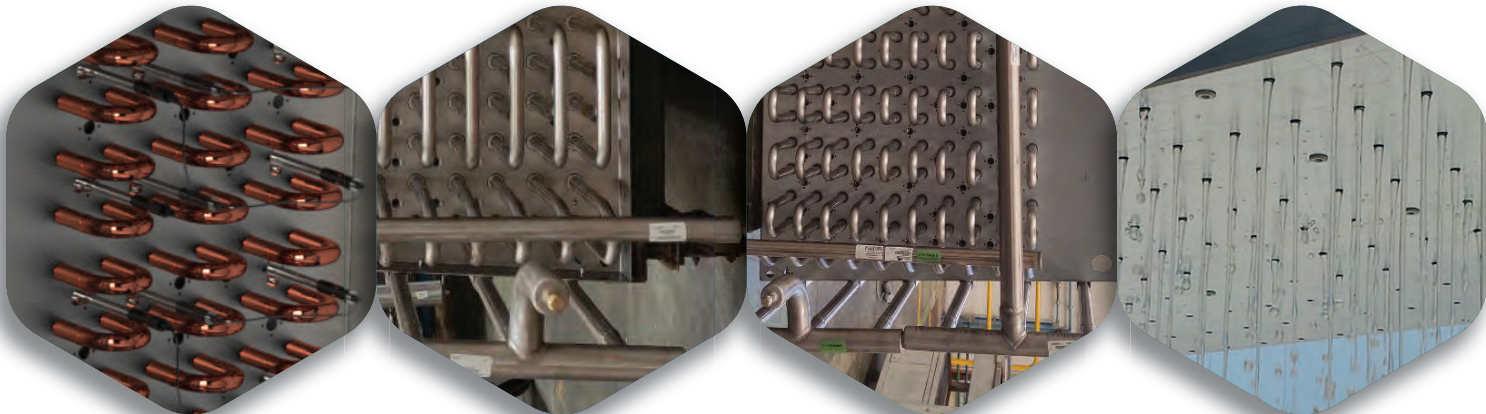
The hot-gas defrost coil system can be supplied with (HGC) or without connection to the cooler coil (**HG**). In combination with drip tray insulation (I2), hot-gas defrost is suitable for air-on temperatures down to -40 °C. Standardized connection diameters are Ø 35 mm for copper tubes or Ø 33.7 mm for stainless steel tubes.

### Hot-glycol circuit defrost - HW

This is one of the best defrost systems for CO<sub>2</sub> applications. Thanks to heat recovery and low temperature glycol, great energy savings can be achieved. Defrost circuits (copper tubes) are placed in both coil and drip tray. Hot-glycol circuit defrost for air-on temperatures down to -25 °C.

### Water defrost - for blow-through units only

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**).



### Electric defrost

Stainless steel heater elements into dedicated tubes to improve defrost efficiency. 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.

# Product selection and information

## Plair

Our easy-to-use configurator software **Plair** helps you select the most suitable solution for your specific application. **All Arctigo models can be selected using Plair.**

Selection output includes all relevant technical data, dimensional drawings and pricing.

Combined with worldwide sales, technical support and service in local languages we offer you total confidence throughout the entire lifetime of your product.



plair.it

## Product information

Comprehensive product information is available at [alfa.luvegroup.com](http://alfa.luvegroup.com)

including product leaflets, manuals, certificates and brochures.

Our website also offers CAD drawings, high-resolution images and electrical connections available for download.



alfa.luvegroup.com

## Certifications

The Group uses management systems that comply with international ISO standards to monitor the impacts generated by its activities and systematically seek efficient and sustainable improvements: UNI EN ISO 50001:2018 Energy Management Systems; UNI EN ISO 14001:2015 Environmental Management Systems; UNI EN ISO 9001:2015 Certified Quality System.

## Eurovent

For over 20 years LU-VE Group has been a voluntary adopter of the certification programme issued by Eurovent, the European association for heating, ventilation, air conditioning, process cooling and food cold chain technology. Specifically, the Eurovent Certified Performance (ECP) certificate

verifies product compliance with precise standards relating to product performance in terms of power, air flow, energy consumption, noise levels and construction characteristics.



The Group believes that subjecting its products to tests and controls by a recognised third party such as Eurovent allows it to monitor product performance in a concrete and precise manner and to ensure reliable solutions and transparent communication for its business partners.

**Eurovent certified performance applies to Arctigo models included in the scope of the programme**, both for HFC and CO<sub>2</sub> application. Ongoing validity of certificate can be checked on: [www.eurovent-certification.com](http://www.eurovent-certification.com).

