Aircold

Energy efficient **data centre** cooling

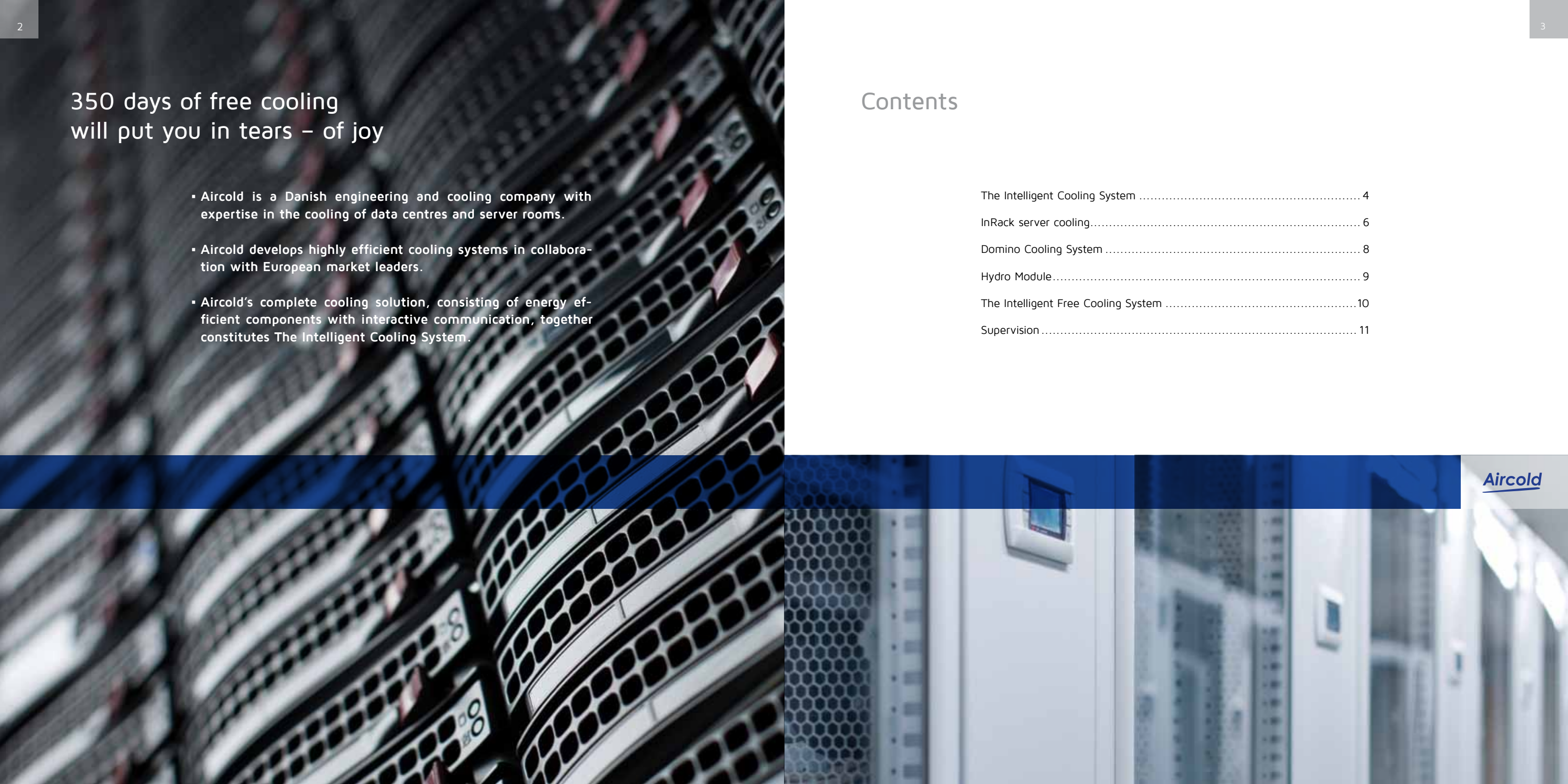# InRack Cooling &
The Intelligent Cooling System

aircold.dk

350 days of free cooling
will put you in tears – of joy

- Aircold is a Danish engineering and cooling company with expertise in the cooling of data centres and server rooms.

- Aircold develops highly efficient cooling systems in collaboration with European market leaders.

- Aircold's complete cooling solution, consisting of energy efficient components with interactive communication, together constitutes The Intelligent Cooling System.
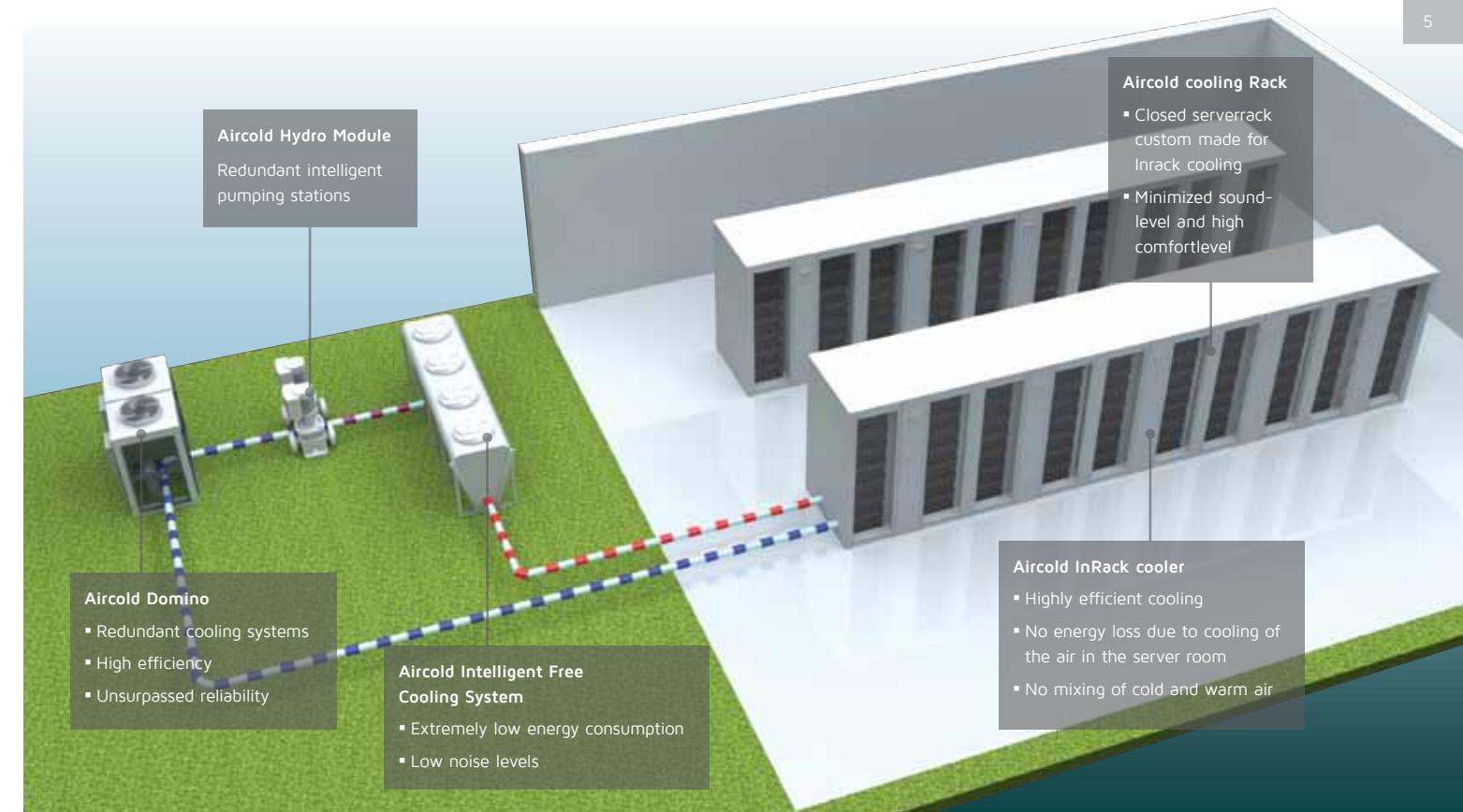
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The Intelligent Cooling System

The Intelligent Cooling System is a complete cooling system developed specifically for the cooling of server rooms and data centres.

The system's highly efficient components communicate interactively in order to provide an accurate cooling service and overall energy consumption is kept to a minimum. This is crucial when you need to think green IT and low PUE (power usage effectiveness).

Aircold's Intelligent Cooling System constantly adapts to a minimal energy consumption. The system guarantees free cooling for about 350 days a year, which is more than double the free cooling of traditional systems.

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Aircold Hydro Module
Redundant intelligent pumping stations

Aircold cooling Rack
▪ Closed serverrack custom made for Inrack cooling
▪ Minimized sound-level and high comfortlevel

Aircold Domino
▪ Redundant cooling systems
▪ High efficiency
▪ Unsurpassed reliability

Aircold Intelligent Free Cooling System
▪ Extremely low energy consumption
▪ Low noise levels

Aircold InRack cooler
▪ Highly efficient cooling
▪ No energy loss due to cooling of the air in the server room
▪ No mixing of cold and warm air

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The combination of InRack server coolers that cool in closed server cabinets without mixing cold and warm air and The Intelligent Cooling System ensures minimal energy consumption for up to 350 days a year (Danish climate). Scalable, modular and redundant system design results in a high degree of f lexibility and reliability.

Your guarantee for reliable operation is supported by Aircold's 24 hour supervision 365 days a year. You are guaranteed 100% monitoring of your system, and should it malfunction, you will automatically receive a notification via email, telephone or SMS.

Aircold – the most efficient system on the market!

InRack
– Efficient cooling without energy loss to the server room

InRack
– Integrated cooling in server rack

Aircold Cooling Rack and Aircold InRack cooling consist of an ingenious concept that provides a high degree of flexibility and huge energy savings.

- Aircold cooling Rack has a robust construction
- Supplied for both 42U and 47U for 19" equipment.
- Closed rack cabinets prevent draughts and ensure low noise levels in the server room, maintaining a pleasant working environment.
- Cooling-Rack and InRack can be coupled together in modules.
- Scalable expansion.
- Large cooling capacity with up to 40kW per InRack cooler.
- Step-free capacity regulation.

Why waste energy to cool the entire server room when it is only the servers that need to be cooled? The solution is Cold zone.

The server room is contructed with cooling racks and InRack coolers coupled together according to the Lego principle. This system allows for a flexible structure in the data centre and for maximum utilisation of the area.

Cooling takes place internally in closed rack cabinets. Noise levels therefore significantly lower in relation to open server racks and draughts are prevented. The system has unsurpassed reliability, with the InRack units working together as after solidaric unit principle.

Even in the event of malfunction, hotspots and shutdowns of the server can be avoided. Rack cabinets and InRack coolers are customised so that ineffiency due to mixing of cold and warm air does not occur. The system is suitable for high density loads with high cooling needs per server rack.

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- Cooling capacity up to 40kW per InRack.
- 19" rack system
- Robust construction
- EC fans with low energy consumption
- Intelligent control
- Cooperation between units
- Flexible infrastructure
- Step-free capacity regulation
- No mixing of cold and warm air
- No loss to the server room

No mixing of cold and warm air

Warm zone

Cold zone

Closed Racks custom made for Inrack cooling

No loss of space

	B (mm)	D (mm)	H 42U (mm)	H 47U (mm)
InRack Cooler	300	1200	2000	2200
Cooler-rack 60	600	1200	2000	2200
Cooler-rack 80	800	1200	2000	2200

Domino Cooling system
– Modular cooling system

Redundant cooling system with high efficiency factors, inverter controlled technology, low energy motors and electronic injection system.

▪ High efficiency and low energy usage in a compact and modular system with 40-120 kW per module.
▪ Flexible system with many possible combinations
▪ Linking of up to 12 modules

Modules work together and complement each other in the event of malfunction, which ensures unsurpassed reliability.

Aircold Hydro Module
– Redundant intelligent pumping stations
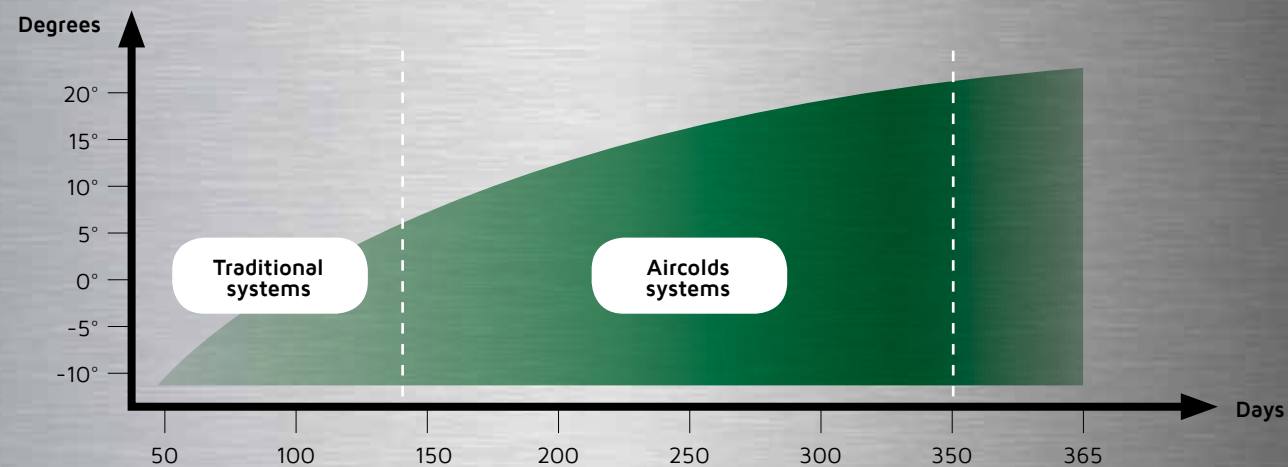
▪ Aircold Domino

▪ Redundant pumping stations with controlled flow on demand

▪ High efficiency

▪ Unsurpassed reliability

▪ Modular system
▪ Cooling capacity of up to 120 kW per module
▪ Combination of up to 14 modules
▪ EC fans low energy usage
▪ Electronic injection
▪ Inverter control
▪ Cooperation between units
▪ Flexible installation
▪ Scalable cooling
▪ Reliable system
▪ n + 1 solution

	Cooling capacity kW	L (mm)	B (mm)	H (mm)
Domino 140	20-60	1100	1100	1900
Domino 160	30-80	1100	1100	1900
Domino 180	40-120	1100	2100	2090

The Intelligent Free Cooling System
– Free cooling 350 days a year*

- Aircold Intelligent Free Cooling minimises energy costs.

- Aircold's system is designed to utilize the Danish (northern European) climate.

- For over 350 days a year, natural cooling is used with air from outside.

- The Aircold system provides free cooling and thus energy savings with outside temperatures of up to 22°C.

* Danish Climate

Aircold Supervision
– Surveillance and monitoring

- Aircold Supervision provides online surveillance and full monitoring of the system.
- Aircold supplies a unique service concept with constant surveillance of the server room and the cooling system.
- Surveillance 24 hours a day, 365 days a year to ensure accurate and reliable cooling at all times.
- Direct connection to Aircold alarm and monitoring centre means maximum protection.

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Reliable cooling 24/7/365

Degrees

20°
15°
10°
5°
0°
-5°
-10°

Traditional systems

Aircolds systems

Days

50   100   150   200   250   300   350   365

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Energy efficient **data centre** cooling

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