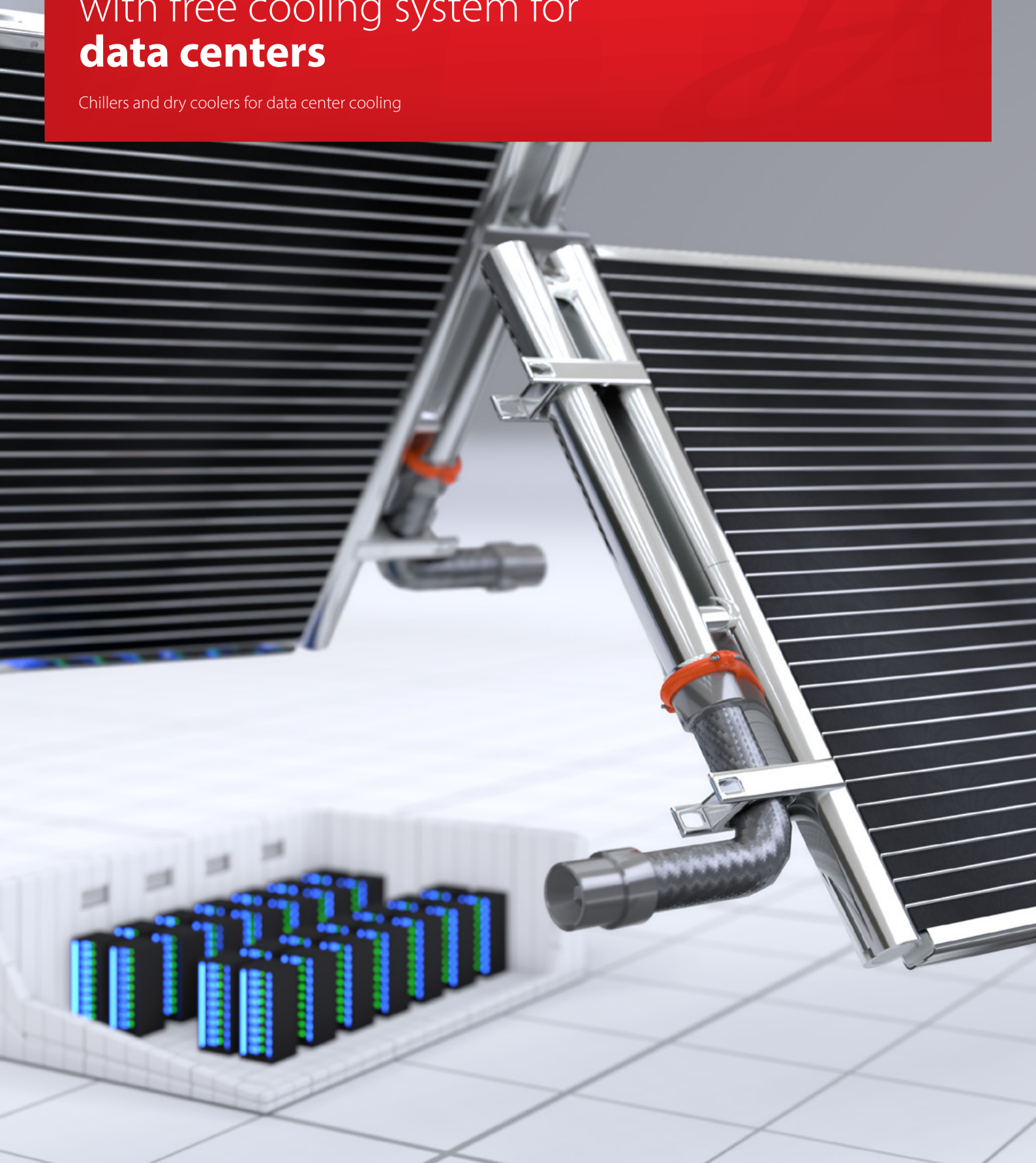
ENGINEERING
TOMORROW

Brochure | MCHE

Micro channel heat exchangers with free cooling system for **data centers**

Chillers and dry coolers for data center cooling

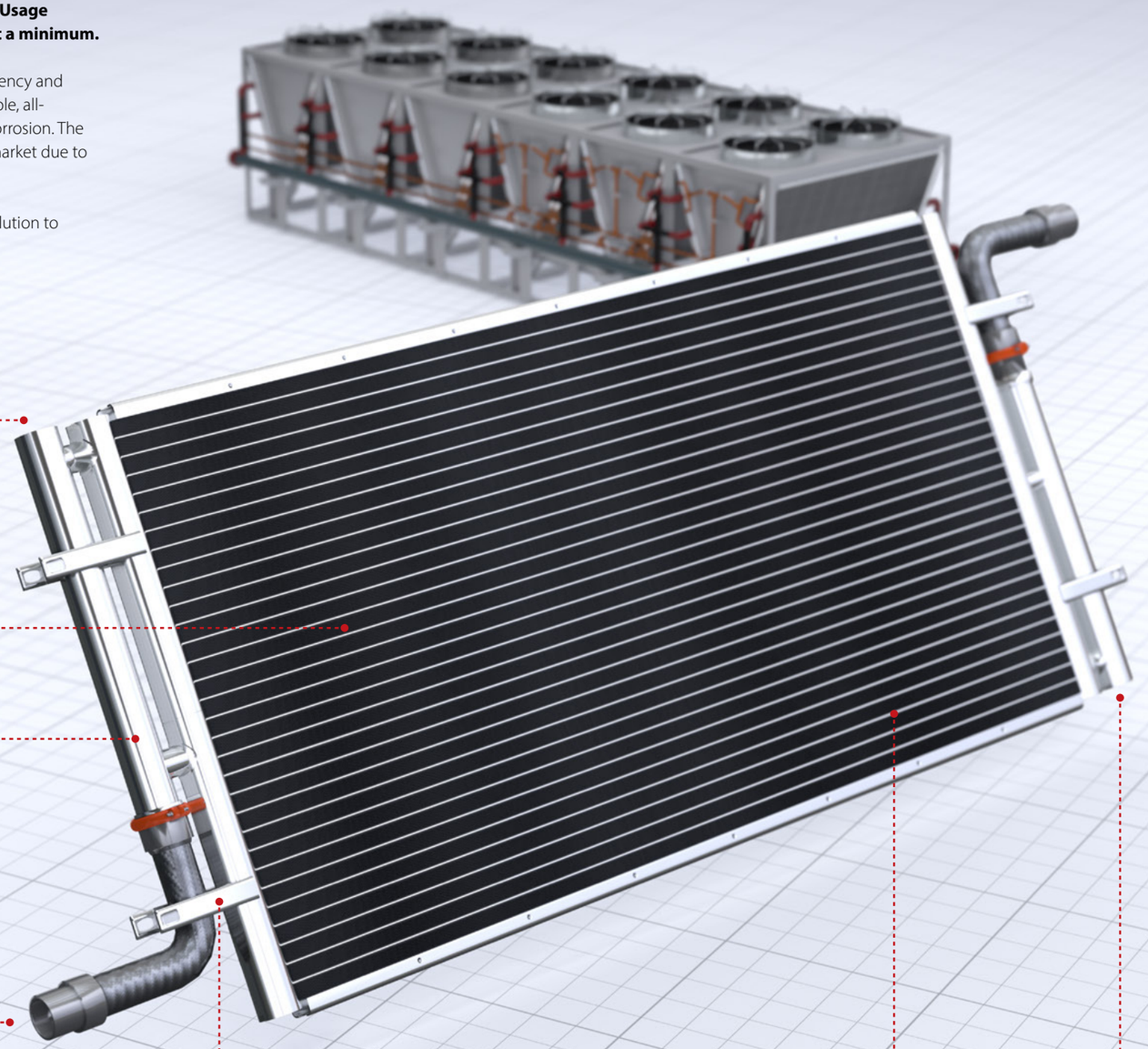


Glycol **micro channel heat exchangers** (MCHE) for chillers and dry coolers

IT cooling is key to protecting equipment and the optimal cooling solution will depend on the site size, location, and architecture. Optimizing the capacity of IT equipment and preventing expensive downtime, Danfoss solutions facilitate ideal thermal conditions around server installations while optimizing Power Usage Effectiveness (PUE), keeping energy consumption and CO2 emissions at a minimum.

The MCHE is ideal for use in data center cooling systems driven by energy efficiency and reduction of the refrigerant charge. With the MCHE you get an ingeniously simple, all-aluminum design that is not only lightweight but is also immune to galvanic corrosion. The aluminum construction makes it one of the most sustainable solutions in the market due to its high strength, sealed design and recyclable materials.

With the addition of a free cooling cycle, we offer a customizable, innovative solution to deliver highly reliable cooling and reduce energy cost in a sustainable way.



Special end cap design
Allows for easy air purging

Various configurations for different applications
We offer a wide range of configuration options that are optimzed for different applications.

We are agile and flexible and work closely together with OEM engineers to deliver fast and efficient solutions for their customers.

Special manifolds
The manifold is designed to reduce the pressure drop and ensure perfect fluid distribution across the entire heat transfer area of the micro channel heat exchanger.

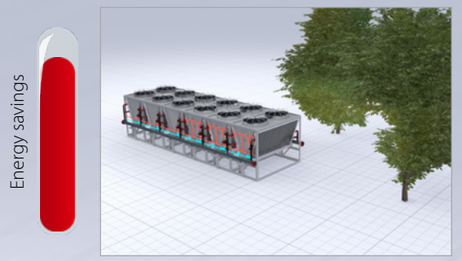
Elegant and efficient design for a more accessible, less cluttered unit.

Highly customizable connections
Danfoss micro channel heat exchangers are available with highly customizable connections designed for plug-and-play. Easy to unpack, fast and easy to install, easy to connect, easy to clean and safer to handle for personell.

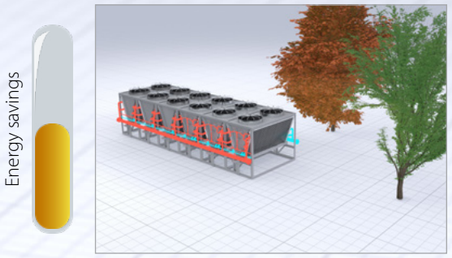
Unique bracket design
Allows for secure fixation of the connections and makes the coil easy and simple to fix to the unit frame.

Optimized tube design
The tubes are designed to perfectly balance the heat transfer and pressure drop on the refrigerant side.

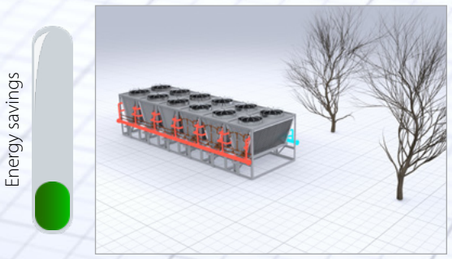
Special end cap design
Allows for easy water purging.
2 design options are available.



Summer configuration
Refrigerant cycle only. During high ambient seasons, the cooling is provided by the MCHE refrigerant system.



Fall/spring configuration
Refrigerant and free cooling cycles. The water is partially chilled by the refrigerant cycle. The free cooling cycle operates without a compressor, which can save energy consumption.



Winter configuration
Free cooling cycle only. During the low ambient season, the water is completely chilled by the free cooling cycle. This yields significant savings due to low energy consumption.

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Technical **specification overview**

	Glycol MCHE (Radiator)	225 (4G25)	Glycol MCHE (Standard)	Glycol MCHE (High performance)
Tube width	25.4 mm	25.4 mm	**32 mm**	**32 mm**
Thickness	2.0 mm	2.0 mm	**2.0 mm**	**2.0 mm**
Port number	3	20	**6**	**6**
Fin height	8.1 mm	8.1 mm	**11.4 mm**	**8.1 mm**
Fin density	18 / 23 FPI	18 / 23 FPI	**18 FPI (±2)**	**21 FPI (±2)**
Manifold	32 / 38 mm	32 / 38 mm	**38 / 43.5 mm**	**43.5 mm**
Design pressure	6 bar (87 psi)	45 bar (653 psi)	**10 bar (145 psi)**	**10 bar (145 psi)**
Burst pressure	30 bar (435 psi)	135 bar (1960 psi)	**50 bar (725 psi)**	**50 bar (725 psi)**

	Corrosive atmosphere[1] equivalent aluminum corrosion rate				
	Very low to low (C1, C2) Negligible	**Medium (C3) 2 g/m²**	**High (C4) 5 g/m²**	**Very high (C5) 10 g/m²**	**Very high to extreme (CX) >10 g/m²**
MCHE SLA[2]	✓	✓	✗	✗	✗
MCHE LLA[3]	✓	✓	✗	✗	✗
Top coating	✓	✓	✓	✗	✗
E-coating	✓	✓	✓	✓	✗
Double coating	✓	✓	✓	✓	✓

1) Defined corrosivity categories refer to ISO9223
2) Danfoss Standard Life Alloy (SLA)
3) Danfoss Long Life Alloy (LLA)

Read more about our micro channel heat exchangers on:

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