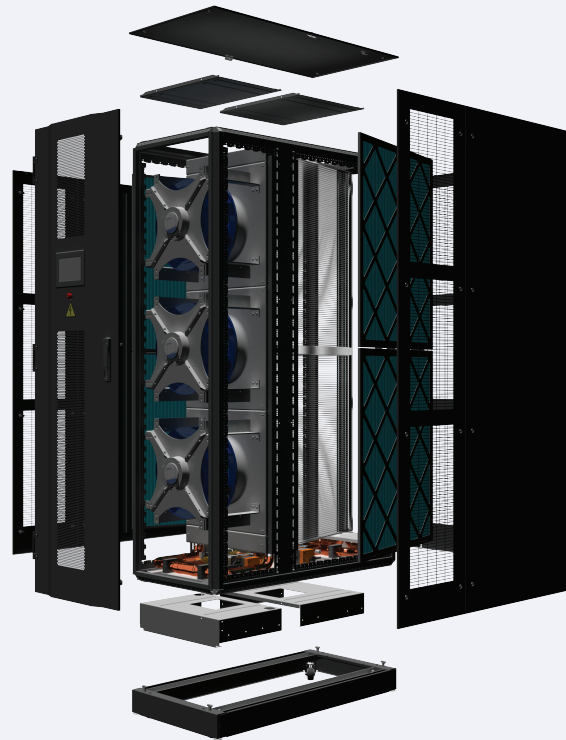


More power in the same footprint



- ▶ **Cooling capacity** of 90 kilowatt
in a footprint of standard server rack: 125kW per square meter
- ▶ **Air volume** margin
ensures cooling capacity at partial heat load
- ▶ **Microchannel** heat exchangers
in V-form with overall heat transfer surface of 41m²

Lambda **In-Row CW**

In-row chilled water cooling units for data center applications



MICROCHANNEL



EC FANS



CHILLED WATER



FREECOOLING



SIDE FLOW

The vast array of options and accessories available

New milestone in the data

Server rack density is permanently increasing with advanced technology and computing power requirements. In the same time, data centers are not expanding at the same progression as their computing power and this lead to significant load density growth that will continue into the foreseeable future. Today's data centers require an effective high density cooling system in order to function while allowing for growth, and Lambda In-Row is an answer.

1 EC-Fans

New radial fans with unique blade geometry developed by Ziehl-Abegg offers more airflow by smaller size and wide efficiency range. In combination with EC-motors, these fans provide unbeatable energy efficiency.

2 Controls

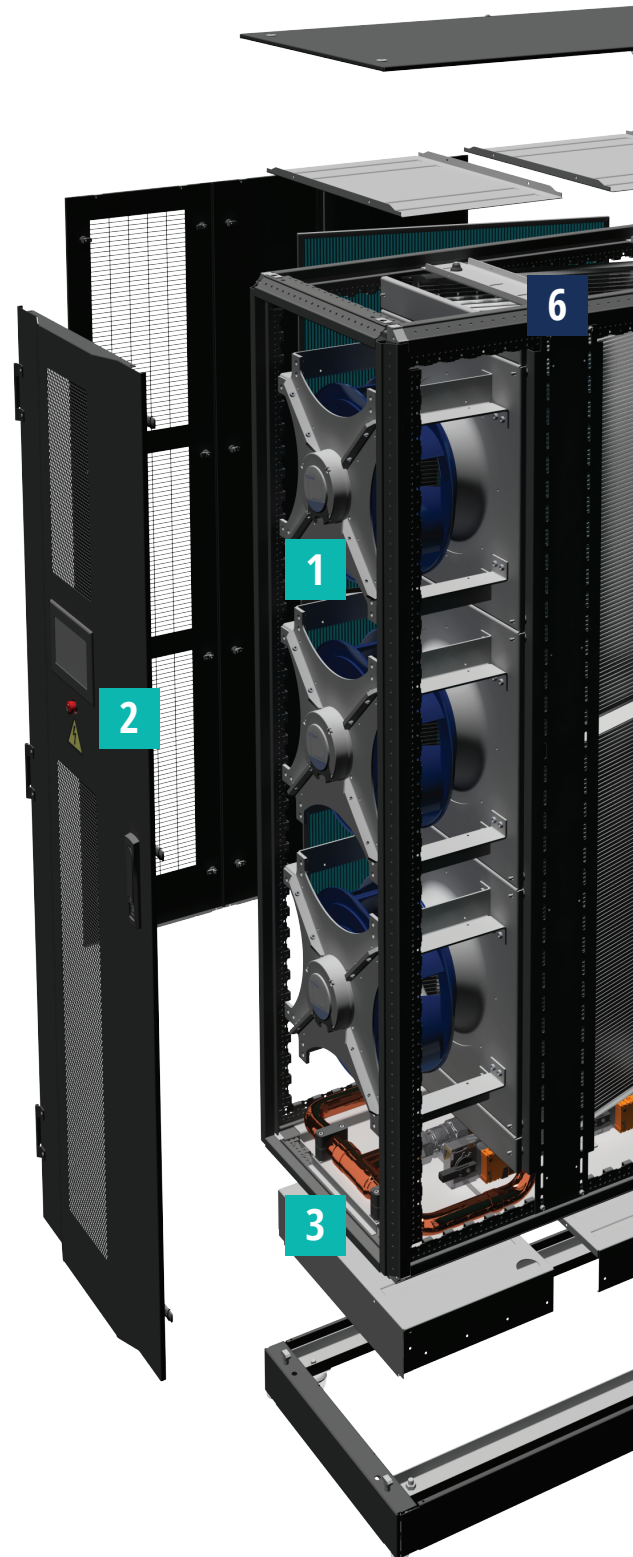
The control hub of Lambda In-Row is a sophisticated microprocessor with control logic specially developed for row-based cooling units. The customer can manage and optimise the unit's performance either locally or remotely. Users can deploy various control strategies based on either continuous temperature control, or on-demand airflow control (optional), or continuous pressure control by maintaining a pressure differential between the cold and hot aisles (optional).

3 Fluid circuit

Fluid circuit equipped with smart balancing system based on continuous pressure drop measurements on return and bypass lines. Depending on these measurements, the unit control system adjusts two-way valves and maintains necessary cooling media flow thru the cooling coils, thus avoiding manual fluid circuit balancing.

Lambda's automatic balancing system fits ideally for variable-flow chilled water systems.

Fluid circuit with 3-way regulating valve for constant flow chilled water systems available as an option.



center cooling architecture

The conventional approach to data center cooling using room-based cooling has practical limitations in high density data centers. Row-based cooling strategy make it possible to address high operating densities while maintaining redundancy characteristics. For users with high density server technologies, Lambda In-Row cooling solution will provide the excellent balance of high predictability, high power density, adaptability, and the best overall TCO.



4 Heat exchangers

The heart of Lambda In-Row cooling units is microchannel heat exchangers combined in V-form.

Unique geometry of ultra low pressure manifolds allows balanced cooling media distribution within the coils, while large heat-exchanging surface in combination with high-efficient fins enable low airside pressure drop, resulting in extraordinary heat exchanger performance.

5 Air filtration

Ultra-thin G2 grade air filters have been engineered for high-velocity applications and deliver excellent air quality and extremely low air resistance throughout the life of the filter. The filter panels feature fibers which do not absorb moisture and will not support microbial growth.

6 Enclosure

Lambda In-Row housed in standard 1200mm depth enclosure and can be easily inserted into the rack row to transmit the airflows across the front of the server racks located on both sides of cooling unit to provide even cooling over the height of the server racks.

The internal construction is designed to allow easy maintenance with quick access to any component.

The unit enclosure allow bottom or top (optional) fluid connections and cable entry.

Technical specifications

Model	Width mm	Depth mm	Height mm	Cooling capacity kW	EER kW/kW	Fans qty.	Air flow m³/h	Max air flow m³/h	Ext. static pressure Pa	Fans engaged power kW	Fluid flow m³/h	Delta T °C
Cooling media temperature: 15/20°C; Air inlet temperature/humidity: 35°C/25%												
In-Row CW	600	1200	2000	90.1	56.7	3	18000	22500	20	1.59	15.4	15.6
Cooling media temperature: 7/12°C; Air inlet temperature/humidity: 24°C/25%												
In-Row CW	600	1200	2000	74.8	47.0	3	18000	22500	20	1.59	12.9	12.5

Package & options

Features	Features
Fluidside	
2-way regulating valve + 2-way balancing valve on bypass	<input checked="" type="checkbox"/> Pressure transmitters on fluid inlet/outlet <input checked="" type="checkbox"/>
3-way regulating valve + manual balancing valve on bypass	<input type="checkbox"/> Temperature probes on fluid inlet/outlet <input type="checkbox"/>
2-way regulating valve w/o bypass	<input type="checkbox"/> Test connections on fluid inlet/outlet <input checked="" type="checkbox"/>
MCHE epoxy e-coating	<input type="checkbox"/> Brazed connections <input checked="" type="checkbox"/>
MCHE thermoguard	<input type="checkbox"/> Grooved connections <input type="checkbox"/>
Y-Strainer w/ sieve size .25mm (supplied loose)	<input type="checkbox"/> Threaded connections <input type="checkbox"/>
Dew point control	<input checked="" type="checkbox"/> Leak isolation valve <input type="checkbox"/>
Drain valves on water inlet/outlet	<input type="checkbox"/> Isolating valves for water inlet/outlet (supplied loose) <input type="checkbox"/>
Airside	
EC-fans w/ enh. functionality & MODBUS comm.	<input checked="" type="checkbox"/> Diff. pressure switch <input type="checkbox"/>
Air intake/discharge temperature probes	<input checked="" type="checkbox"/> Temperature/humidity probe <input type="checkbox"/>
Continuous temperature control	<input checked="" type="checkbox"/> G2 air filtration w/ filter change switch <input checked="" type="checkbox"/>
Aisle pressure control	<input type="checkbox"/> G4 air filtration w/ filter change switch <input type="checkbox"/>
Continuous airflow control	<input type="checkbox"/> Smoke/fire detection <input type="checkbox"/>
Power & Controls	
Dual power supply changeover switch	<input type="checkbox"/> BMS connectivity <input checked="" type="checkbox"/>
Controller backup power supply	<input type="checkbox"/> SNMP connectivity <input type="checkbox"/>
Phase monitoring relay	<input type="checkbox"/> Energy management <input type="checkbox"/>
General	
Steam humidification system	<input type="checkbox"/> Thermal/noise-reduction insulation <input checked="" type="checkbox"/>
Dehumidification system	<input type="checkbox"/> IP55-rated enclosure <input type="checkbox"/>
Multi-stage electric heater w/ thyristor control	<input type="checkbox"/> Mobility plinth <input type="checkbox"/>
Condensate discharge system	<input type="checkbox"/> Enclosure panels quick release <input type="checkbox"/>
Fluid leak detection	<input checked="" type="checkbox"/> Hot-swappable fans with backdraft damper <input type="checkbox"/>

- Standard feature
- Option

The development of Kaltra products and services is continuous and the information in this document may not be up to date. It is important to check the current position with Kaltra at the address stated below:

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