

Why OptiCool?

Up to 120kW of heat extraction per rack

Modular & scalable cooling capacity from low-density hosting to GPU clusters. No need to have different zones for different applications/heat loads.

Over 7,000 RDHx deployed

An elegant design using few moving parts results in a very low maintenance system. The proof? With over 7,000 RDHx deployed, our return and repair rates are the lowest in the industry. Various system redundancy configurations are supported for mission-critical operation.

1.02 PUE Power Usage Effectiveness

Our high-efficiency systems can lower the overall site PUE to improve ESG metrics.

>50% Cost Savings

Compared to DTC or traditional air cooled CRAC/CRAH units, our system reduces operational expenditures and increases return on investment.

Faster Deployment Up to 14 Weeks Sooner

We've built a responsive supply chain that allows us to ship 30% - 50% faster than our competitors.



Our Customers

OptiCool's cooling solutions are deployed in data centers, telecom central offices, and enterprise IT rooms to remove the heat generated by servers.

Our Technology

Our Delta 4T patented technology maximizes cooling efficiency by exploiting endothermic phase change.

The heat from servers converts the refrigerant from a liquid to a gas at the boiling point, instead of raising its temperature. Operating at the phase change boundary offers enormous heat extraction capacity.

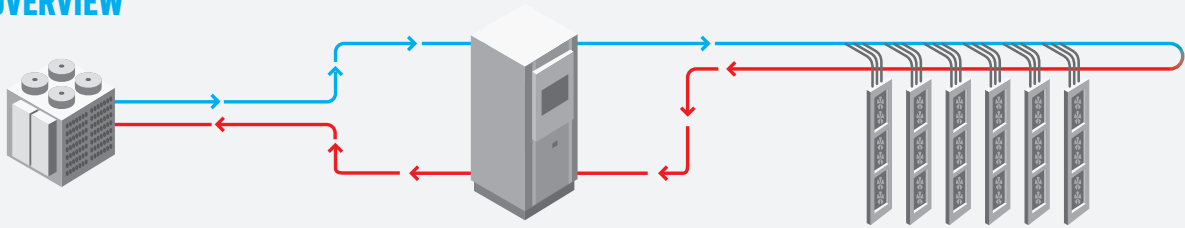
Further efficiencies are provided by the rear door heat exchanger (RDHx) architecture. A pump circulates the refrigerant, via copper pipes, directly to heat EXTRACTION COILS at the rear of the racks. The heat is removed from the rack and redistributed back into the data center at the desired temperature setpoint, ensuring that the heat from the electronics does not affect the entire room. Each rack can have a different heat load profile, adding modularity to the design.

OptiCool is the only manufacturer that offers precision heat extraction with 2-Phase Refrigerant Cooling.

The benefits of our technology include:

- Refrigerant eliminates 30x more heat than a water-based solution
- Endothermic phase change physically extracts heat rather than just inserting cold air into the space
- Compact system with minimal footprint, weight and very few moving parts for enhanced reliability
- Helps qualification for energy incentive and subsidy programs

SYSTEM OVERVIEW



External Heat Rejection

- Facilitates chilled water
- Outdoor DX

Refrigerant Pump

- Can be mounted to end of row or up to 185' from the area of deployment
- Primary Loop: Chilled Water or Outdoor DX
- Secondary Loop: R513A or CO2

AHX units (RDHx)

- Active Heat eXchange units are located on rack rear doors, or above racks for aisle containment
- Up to 120kW per rack

CDU (Coolant Distribution Unit)



The CDU decouples facilities water from IT cooling infrastructure, providing a controlled, contaminant-free coolant to cooling systems and 1.5MW of heat rejection.

Refrigerant Pumps (RP)



- 30" x 82" x 40"
- 1,300 lb
- 480V or 208/230V
- Modbus, BACnet, and SNMP management

Refrigerant pumps are the heart of the system, and transfer the heat extracted by AHX units to an external heat rejection loop. Each pump supports up to 40 AHX units and 230kW of heat extraction.

AHX units



This is where the magic happens: our Delta 4T patented technology pulls in the hot air over evaporator coils to extract the heat generated by servers and networking equipment. Redundant power and coolant feeds ensure maximum uptime. These rear door units are mounted directly to the back of any rack using door transition kits that maintain internal rack space with the lowest profile of any rear door cooling unit available.

AHX-30 | AHX-60 | AHX-120

Integrated Aisle Containment



This solution integrates AHX units into the containment structure instead of rear doors and supports hot or cold aisles. It is scalable up to 40kW of heat removal per rack.

Chilled water heat rejection and R-513A refrigerant

RPW-060 | RPW-120 | RPW-230

Outdoor DX heat rejection and R-513A refrigerant

RPC-060 | RPC-120 | RPC-230

Chilled water heat rejection and CO2 refrigerant:

RPO-060 | RPO-120 | RPO-230



Fan only 30 kW 60 kW 120 kW



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