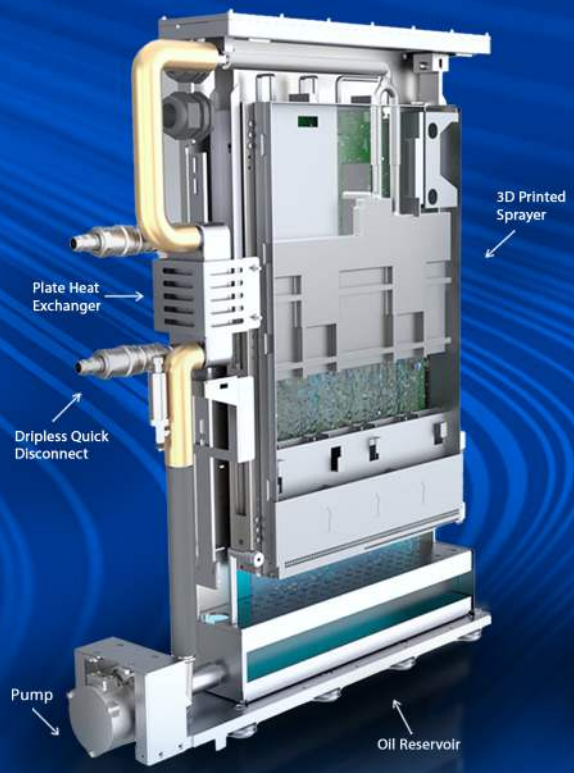
AIRSYS
Balance the Environment

Liquid Rack™

Next-Generation Liquid Cooling

LiquidRack™ is an advanced liquid cooling solution engineered for a wide range of digital infrastructures, including cloud services, cryptocurrency mining, and telecommunications facilities. By moving beyond traditional immersion cooling and adopting innovative spray-based technology for CPU/GPU cooling, LiquidRack™ significantly increases heat transfer efficiency while minimizing dielectric fluid usage.Its ability to run at higher liquid temperatures without compromising CPU junction temperature makes year-round free-cooling possible, eliminating the need for mechanical chilling and optimizing energy efficiency.



High Cooling Capacity - No CDU Required
Delivers high performance through rack-level liquid design that eliminates the need for a CDU

Low Fluid Charge
Reduces dieletric fluid requirements by up to 80% compared to immersion cooling

Server Based Spray Liquid Cooling
Integrates CDU and control while increasing power compute effectiveness (PCE) to maximize data center footprint efficiency

Easy Maintenance and Service
Auto-lift system simplifies maintenance, eliminating concerns about inaccessible hardware

Modular Server Cases and Pump Box
Provides flexibility for various hardware configurations

Quick Delivery and Deployment
Integrates CDU and control while increasing power compute effectiveness (PCE) to maximize data center footprint efficiency

LiquidRack™
Technical Specifications

AIRSYS

Product Specification

Server Space	20U
Server Cassette Space	2U
Number of Server Cassette per Rack	10
Cooling Capacity (per Rack)	Up to 175kW with 15°C chilled water Up to 83kW with dry cooler and 45°c ambient temperature
Mechanical PUE	~1.03
Rack Dimensions (l × w × h)	850 mm × 1070 mm × 2385 mm
Rack Floor Loading (dry weight)	990 kg/m²
Coolant Type	Dielectric Oil

Water Specification

Final Heat Rejection Options	• Adiabatic/evaporative cooling tower • Dry cooler • Chilled water loop
Heat Reuse Options	• Hot water • Heat-driven chiller
Water Requirements	Recirculating water flow rate10.3 m³/hr at 120kW Connections G2" female thread or 2" hose barb

Control and Monitoring

Interface	Touch Screen
Protocols	Modbus, BACnet
Sensors	Temperature (Water and coolant) Coolant pressure (Each server) Pump status (Each) Coolant flow rate (Each server) Coolant liquid level (Each server)
Alarm	Local, remote

Heat Exchanger Specification

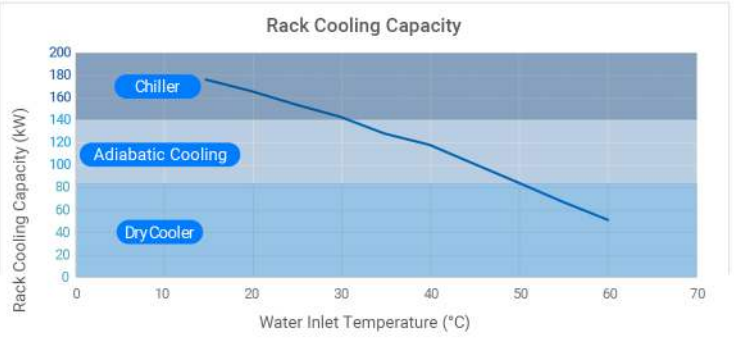
Heat Exchanger Type	Plate heat exchangers
Max Particulate Size	0.8 mm diam. Absolute
Flow at Rating	10.3 m³/hr

Components

Name	Qty
Controller	1
Server Cassette (2U)	10
Pumps	10 (One for each server cassette)
Rail Set	10
PDUs	1+1
Plate Heat Exchangers	10 (One for each server cassette)

Electrical Specification

Maximum Power	Maximum Power
Power Supply	• 200~240Vac 1P 50/60Hz • 380~480Vac 3P 50/60Hz
Max. Continuous Amps	• 16A • 5.1A



* Regarding the design temperature differential for the dry cooler at 5°C, the ambient temperature will be 45°C to ensure the 50°C water inlet temperature.

Patent by Advanced Liquid Cooling Technologies, ALCT Tech Center