ZUTACORE

LAUNCH PARTNER
Munters



WATERLESS REFERENCE ARCHITECTURE

ZutaCore Z_2O^{TM}

Zero H_2O. near-Zero cooling energy.

The cooling architecture for next-generation AI.

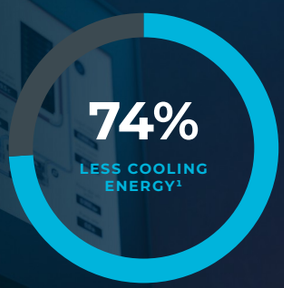
1.03	WUE 0	~97%
ANNUALIZED COOLING pPUE[1] vs 1.115 for chilled water	**ZERO WATER FOR COOLING** liquid and air-cooled load	**OF SECURED POWER** reaches the IT[1]

What ZutaCore Z_2O^{TM} changes for your data center.

ENERGY

Less energy on cooling.

Just 3% of IT power goes to cooling, versus 11.5% for best-in-class chilled water in the same model.[1]



WATER

Zero water. Zero compromise.

No cooling-water consumption for the liquid or the air-cooled load. Build where water is a barrier.

SPEED

Simple, fast deployment.

Repeatable building blocks and no cooling plant to build on site, so capacity comes online sooner.

Less on your critical path.

Fewer permits
Fewer systems to permit and sign off on site.

Fewer trades on site
Less mechanical plant to install and coordinate.

Faster time to tokens
Fewer systems to commission before go-live.

Easier to say yes to
No water draw or tower plume to object to.

More tokens per second, per dollar, per megawatt.

01 MORE TOKENS
More power to compute.
The power you secure goes to computing, not to chillers.

02 CAPITAL COST
Less to buy and install.
No chillers, cooling towers or facility water loop to buy and install.

03 OPERATING COST
Less to run.
No cooling water to buy and near-Zero cooling energy, every year the site runs.

Munters

LAUNCH PARTNER

Brought to market with Munters.

Munters SyCool dry cooling closes the Z_2O^{TM} loop, rejecting heat to outdoor air instead of water.

[1] Modeled on the launch reference design with Munters (ASHRAE 2026 results brief): annualized cooling pPUE 1.03 vs 1.115 for best-in-class chilled water (air-cooled chiller + liquid-to-liquid distribution units), hour-by-hour Dulles, VA data, 80/20 liquid/air split, 100% IT load. 74% = 1 − (1.030 − 1) / (1.115 − 1): cooling-energy savings, not total IT or facility energy. Modeled results, not a site guarantee; proof of concept planned for Q1 2027.

A unified loop, from chip to outdoor air.

ZutaCore Z_2O™ runs one two-phase loop from ZutaCore® direct-to-chip cold plates to Munters SyCool rooftop heat rejection.

One architecture for the whole server heat load

Most of the heat leaves through the two-phase loop. A separate waterless air path handles the rest. Neither needs facility water.

80% LIQUID / 500 kW

ZutaCore cold plates

Heat boils the heat transfer fluid at one constant temperature

Vapor carries heat

OUTDOOR HEAT REJECTION

Munters SyCool

Compressors off up to 43.5°C*
Direct expansion assist if needed

Liquid supply

Coolant Circulation Unit (CCU)

Liquid inventory and pump assistance

Liquid return

20% AIR / 125 kW

Residual server heat

Heat remaining in the air

Waterless air unit

Air-to-fluid heat transfer

Munters SyCool

Dedicated air-load path

100%

of IT heat captured, with ~4× lower server flow²

- No facility water loop
- No water-based cooling towers
- No chiller plant
- No liquid-to-liquid heat exchanger
- No glycol mix in the loop
- No water treatment

A repeatable deployment block

Reference IT load	625 kW: 500 kW liquid + 125 kW air
Liquid heat rejection	5 × 125 kW modules, N+1
Liquid circulation	Three pumps, N+1 capacity
Scale out	Replicate independent blocks

What ZutaCore provides: the cold plates. Delivered through specialist partners.

Built for the next decade.

ANY SERVER VENDOR

Standard racks, swappable IT.

Swappable IT from any vendor†, on the same loop.

ANY COLD-PLATE GENERATION

ZutaCore HyperCool® today, OmniTherm™ next.

Upgrade the cold plate as chips change. Keep the loop.

GO DEEPER

Get the full Z_2O™ reference architecture.

Sizing, loop design and scale-out detail for your site. Scan to request it from our team.

REQUEST MORE INFORMATION

² Source 500 kW comparison: 51 GPM vs 197 GPM PG25 (3.86×). WUE = 0 applies to the cooling architecture only. Capacity and redundancy require project engineering. The 80/20 liquid/air split is a reference assumption; actual allocation depends on the selected servers and workload. Liquid and air paths are sized separately.

*Free-cooling capability depends on system configuration, operating conditions, and thermal requirements. Actual performance may vary by deployment.

†First server partner: ASRock Rack's NVIDIA HGX B300 server, running ZutaCore HyperCool cold plates. OmniTherm™, Two-Phase Matrix Flow Boiling™ and HyperCool® are trademarks of ZutaCore, Inc. Munters® and SyCool® are registered trademarks of Munters.