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QUBE -AI SUPER POD

Modular Prefabricated AI Super POD

Modular Prefabricated AI Super POD
For GB300 NVL72-Class

Product Description

The AI Super POD is a prefabricated, high-density modular infrastructure platform engineered to deploy AI and GPU compute capacity faster than conventional data centre construction. It integrates resilient power distribution, liquid-assisted cooling, structured connectivity, containment, monitoring provisions and scalable rack architecture in one repeatable POD environment.

Designed for AI factories and GPU clusters

Built to support high rack densities, direct-to-chip liquid cooling, air-cooled networking loads and the utility interfaces required for mission-critical operation.

Marketing positioning

A compact, scalable and repeatable AI infrastructure block for organizations that need GPU capacity quickly, without compromising resilience, thermal performance or future expansion.

Customer value without site-built complexity

Speed

Factory integration compresses installation and site coordination activities

Density

Designed around rack-scale AI infrastructure, not conventional low-density IT rooms

Serviceability

Utility systems are visible, accessible and segregated from the main compute hall

Scalability

Repeatable POD blocks can be deployed as standalone or multi-POD capacity rollouts.

AI Super POD

What It Brings Together

A factory-integrated, two-level modular AI facility engineered for NVIDIA GB200 / GB300 NVL72-class rack deployments.

Designed for:

- High-density power
- Hybrid cooling
- Rapid site deployment
- Scalable infrastructure



- High-density AI compute rack readiness
- Networking and support rack zones
- Internal busway & distribution architecture
- Closed-loop liquid cooling & CDU interface
- Hot aisle containment & airflow management
- Defined network and fibre entry points

PRODUCT ARCHITECTURE Of Modular Super POD Adoption

The facility is a compact prefabricated AI infrastructure block: compute is isolated in the lower data hall while dense utility systems are placed in the upper service module for cleaner routing, easier maintenance and faster deployment.

GB200/GB300 adoption design basis

Rack-scale compute

Eight GB300 NVL72-class racks, with supporting storage, management and network racks.

Hybrid thermal backbone

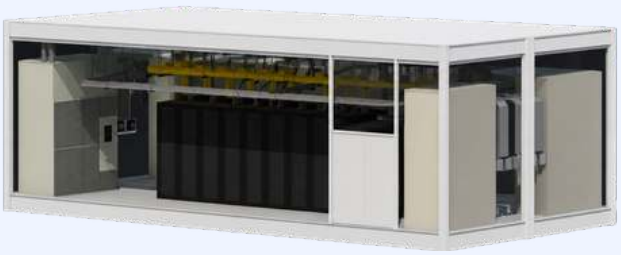
Predominantly liquid cooling for high-density CPU load plus air-side cooling for room, network and auxiliary equipment.

A/B power and service access

Independent power paths, busway distribution, tap-offs, distribution boards and serviceable overhead containment.

Lower data hall module

Dedicated rack environment with hot aisle containment, return air plenum strategy, CPUs, fan wall units, rack power interfaces and structured fiber/data routing. It keeps high-density compute in a controlled and serviceable operating zone.



Upper service module

Overhead service layer for chilled-water headers, busways, power cable trays, network trays, distribution boards and access clearances. The service layer reduces congestion in the compute hall and simplifies inspection.



KEY FEATURES

AI & GPU-Ready Infrastructure	**Purpose-built for high-density AI, GPU, HPC, cloud and edge workloads, with rack densities aligned to GB200/GB300 NVL72 GPU - class AI compute requirements**
Prefabricated Modular Deployment	**Factory-built POD architecture reduces site work, speeds deployment and creates a repeatable infrastructure block for single-site or multi-site rollout**
Resilient A/B Power Distribution	**Two independent incoming power paths connect to A and B distribution routes, feeding internal busway systems and distribution boards.**
Liquid-Assisted Cooling Architecture	**Closed-loop cooling design supports liquid-to-liquid CDU integration, chilled-water or heat-rejection interfaces, and fan-wall assisted air cooling**
Structured Network & Fibre Connectivity	**Defined network entry points, including upper network connections and lower fibre optic entries, support organised data connectivity**
Site-Ready Integration	**Designed to connect with site electrical supply, UPS-backed power interfaces, cooling-water or heat-rejection systems, data connectivity and support services.**

Modular by design
Factory prefabricated for quality, consistency and rapid deployment.

Scalable capacity
Add modules as demand grows—without disrupting operations.

Simplified operations
Clear separation of compute and services streamlines maintenance and upgrades.

Efficient & sustainable
Optimized thermal design delivers lower PUE and reduced total cost of ownership.

Reference Configuration Summary

The AI Super POD can be positioned as a configurable product family: from a compact 1.2 MW-class POD module to larger multi-MW AI cluster deployments.

~1.3 MW
POD-class AI module

143 kW
AI rack density class

18 racks
Example compact layout

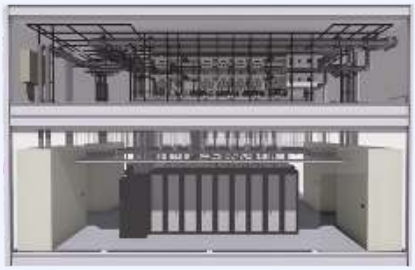
96 racks
Large-scale reference hall

7.392 MW
Multi-MW IT capacity benchmark

Tier III
Availability design target

Modular AI POD Configuration

IT load: 1.3 MW class
Rack mix: 8 AI racks + 10 network/storage racks
Cooling split: Majority liquid, residual air
Cooling topology: Direct-to-chip + fan wall
Deployment: Prefabricated modular units



Multi-MW AI Hall Benchmark

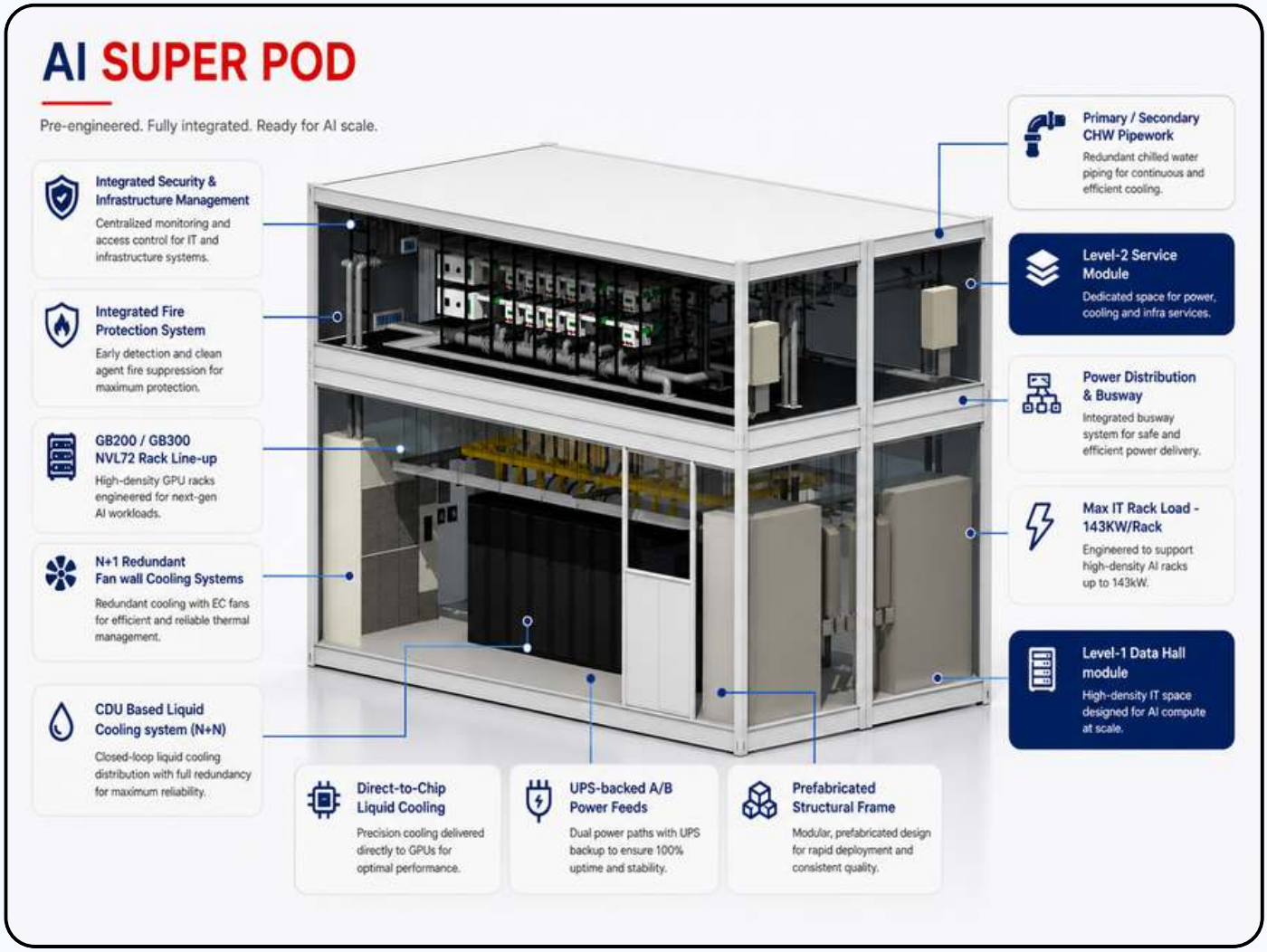
IT capacity: 7.392 MW
Racks: 48 AI racks + 48 networking racks
Density: Up to 143 kW/rack AI
Cooling: Liquid-to-liquid CDUs + high-temp loop
Power: Distributed redundant power paths



Configuration values are indicative and subject to project-specific engineering confirmation. Power module is separate from the Module.

Indicative rack configuration per module

CATEGORY	QTY	RATING BASIS	COOLING APPROACH	COMMERCIAL PURPOSE
Facility / sGB300 NVL72-class high-density compute system	**8**	143 kW per rack basis used in project drawings	Hybrid: high liquid capture + room air share	AI training, inference, reasoning and GPU-intensive workloads
High-performance storage	**1**	22 kW	Air cooled	Data staging and high-throughput storage support
Management node rack	**1**	22 kW	Air cooled	Cluster management & orchestration support
Network racks	**8**	14 kW each	Air cooled	Scale-out network, switching and connectivity



Indicative rack configuration per module

Power Architecture

The AI Super POD is designed around resilient power paths that can connect to site-provided UPS-backed incoming electrical supplies, external power modules and generator-backed infrastructure as required by the project redundancy philosophy.

Total 4nos power paths (with N+1)

Independent incoming power sources feed separate from Each Power distribution systems.

Internal busway

Busway and tap-off architecture supports organised, scalable power delivery to racks.

UPS-backed interface

POD is intended to receive protected power from site UPS/power modules as part of the overall facility design.

Monitoring ready

Electrical metering, alarms and integration provisions can support predictive maintenance and operational visibility.

Cooling Architecture

High-density AI compute requires a coordinated thermal design. The POD combines liquid cooling for GPU rack heat removal with air cooling for residual heat, networking racks and support zones.

Closed-loop cooling

Interface with chilled-water or heat-rejection connection.

CDU-ready liquid loop

Supports direct-to-chip cooled AI racks.

Air cooling support

Fan-wall/perimeter cooling manages residual and network heat loads.

Containment ready

Hot aisle containment supports controlled airflow and efficient return air management.

PRODUCT SPECIFICATIONS

ITEM	Specification	NOTES
Facility / system	Super Pod Data Centre - prefabricated AI infrastructure facility	Hybrid cooling: air + direct-to-chip liquid cooling.
Target IT load	Approximately 1300 kW	High-density AI / GPU compute workloads.
IT rack line-up	1 x high-performance storage rack at 22 kW; 1 x management node rack at 22 kW; 8 x network racks at 14 kW each; 8 x GB300 NVL72-class GPU racks at 143 kW each.	GPU racks represent the primary heat load. Rack mix is project-specific.
High-density rack capability	Up to 143 kW per GPU rack	Basis for GB300 NVL72-class racks
Module architecture	Two-level prefabricated facility: lower data module + upper service module	Data hall below; service, piping, power and network distribution above.
Indicative footprint	Approx. 12,340 - 12,344 mm length x 6,723 mm width	Based on current architectural drawing set.
Indicative vertical envelope	GF floor 0; FF floor 4,563 mm; FF roof 7,468 mm; data module approx. 4,633 mm; service module approx. 3,303 mm	Final height depends on transport, structural and local authority constraints
Structural / enclosure system	Structural framing with insulated sandwich panels, cement-fiber board, corrugated external cladding, MS sheet elements and grating floor system	Designed as a prefabricated modular enclosure for factory integration and site assembly.
Cooling approach	Hybrid: liquid cooling primary + air cooling secondary	No dynamic switching between cooling modes; coordinated control of operating parameters.
Heat-load split for GPU racks	Direct-to-chip liquid cooling 78%; air cooling residual 22%	Liquid removes heat at source via CDU loop; air handles residual and non-liquid-cooled loads.
Environmental / thermal basis	Rack inlet 22-26 C; cold aisle 24 C +/- 1 C; 24/7 continuous operation	Operating limits subject to final OEM and customer requirements.
Air cooling equipment	4 x Fan Wall Units, approx. 146 kW each; 3 duty + 1 standby; EC variable-speed fans; modulating CHW control valve	FWU control basis: return-air temperature.
Liquid cooling equipment	2 x Coolant Distribution Units; 1 duty + 1 standby; plate heat exchanger; variable-speed secondary pumps; rack supply temperature 30-35 C	CDUs interface between facility chilled water and IT-side liquid loop.
Chilled water primary circuit	Facility CHW supply 18-20 C; Delta-T 8-10 C; serves FWUs and CDU primary side	Elevated supply-temperature basis for energy-efficient operation.

ITEM	Specification	NOTES
Chilled water secondary circuit	CDU loop supply 23-25 C; Delta-T 8-10 C; serves direct-to-chip GPU racks	Secondary loop is coordinated with rack liquid-cooling requirements.
Power architecture	A/B power-distribution philosophy with segregated distribution paths to high-density racks, cooling equipment and support loads	Final upstream source count and UPS topology are project-specific.
Service-module distribution	SMDB-A and SMDB-B, 800A busbar sections, 63A 3-phase tap-off boxes, distribution-board locations and organized cable entry points	Designed to keep major power distribution accessible in the upper service module.
Busway system	Multiple 800A busbar paths identified for rack-scale power distribution; busbars arranged as 1A/1B/1C/1D and 2A/2B/2C/2D groups	Supports structured power delivery to IT rack line-up.
Power cable trays	300 x 50 mm, 600 x 50 mm and 750 x 50 mm power cable trays depending on location and routing level	Segregated routing basis for service module and data hall.
Local isolation	63A isolators for CDUs; 32A isolators for Fan Wall Units; rack-level distribution coordinated through busway / tap-off arrangement	Supports maintenance isolation and safe service access.
Network distribution	500 x 100 mm network wire basket trays in service module; network cable entry points 1 and 2	Final cabling design depends on switch / rack vendor architecture
Fiber distribution	500 x 100 mm fiber runner trays in data hall with defined fiber cable entry provisions	Supports organized fiber routing above rack environment.
Chilled-water routing	Primary and secondary CHWS/R pipework with main tap-in points and service-level routing; rack branches coordinated to CDU / rack interfaces	Drawings identify primary and secondary CHW pipe networks.
Monitoring / controls readiness	BMS / DCIM-ready monitoring for RAT, cold-aisle/rack inlet temperatures, CDU status, FWU status, valve / pump feedback, CHW temperature, pressure and flow, leak detection and alarms	Monitoring points to be finalized in controls points schedule.
Power monitoring readiness	Provision for monitoring power-source health, busway status, tap-off health, distribution-board alarms, energy / demand metering and critical equipment alarms	ustomer analytics, billing-grade metering and branch-level metering are optional scope items.
Safety interfaces	Fire alarm interface, emergency shutdown interface, leak detection under liquid-cooling network, door / access status, alarm annunciation and cause-effect integration	Life-safety design is subject to local code and authority requirements.
Maintainability	Dedicated upper service layer for inspection of power, network and chilled-water systems; lower data hall kept focused on compute operations	Improves service separation and reduces congestion around racks.
Site interfaces	Independent power feeds, chilled-water supply/return, network, fiber, foundation, lifting path, external monitoring and security interfaces	Site survey finalizes entry points, orientation and installation constraints
Scalability	Standalone POD or repeatable multi-POD deployment model	Supports phased AI capacity expansion.

Applications & Configuration Options

AI Super POD is suitable for organisations that need fast, scalable and resilient AI-ready infrastructure in controlled modular environments.

AI model training

GPU clusters for large language models, computer vision and simulation workloads.

Inference & edge AI

Regional compute capacity closer to users, factories and distributed operations.

Cloud & enterprise

Rapid expansion of high-density capacity inside or adjacent to existing facilities.

Research & HPC

Dense compute infrastructure for universities, labs and industrial R&D.

Configurable Options

Power

4 Power Leg concept +1 power distribution; external UPS/power module interface; busway, PDU and tap-off sizing.

Cooling

CDU configuration; fan-wall or CRAH/perimeter cooling; chilled-water or heat-rejection integration.

IT space

AI rack and network rack mix; OCP/open architecture rack options; containment and service zone layout.

Ideal for rapid deployment of high-density AI infrastructure where speed, density, reliability and repeatability are critical.



CONTACT US

Reach out to us for inquiries or support. We're here to help.

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