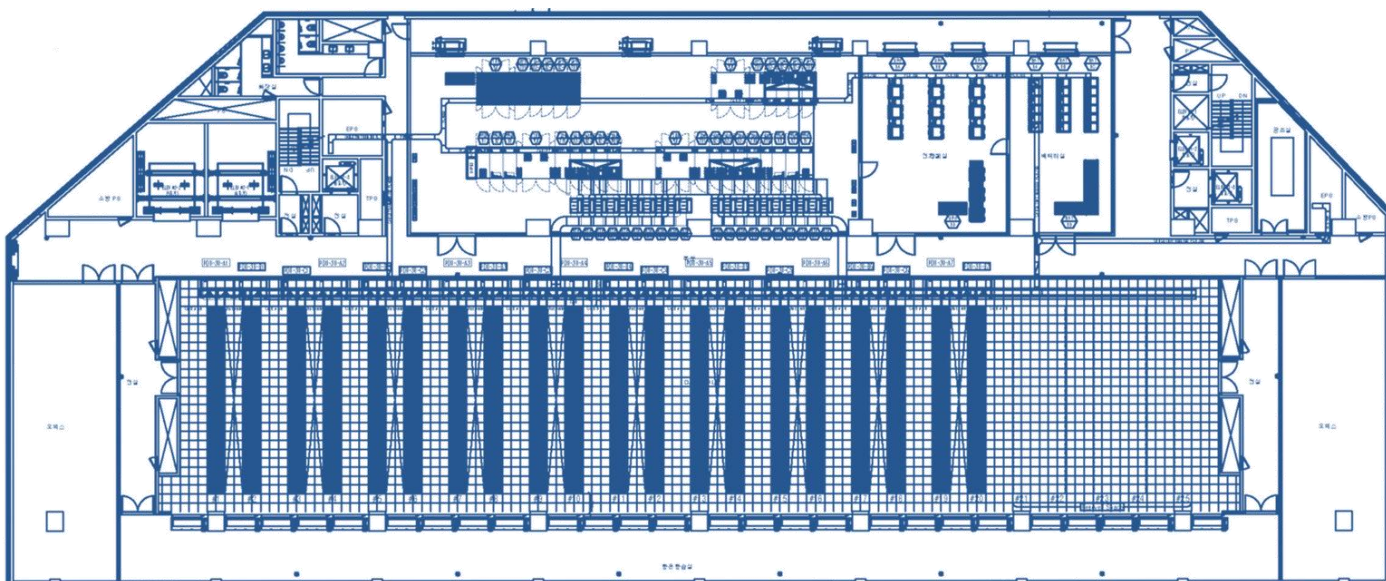


AI Data Center Reference Design



Consult Build Operate Prove

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Preface

This Appendix systematically introduces Avala's data center facility solutions for AI intelligent computing scenarios. It presents two key reference design paradigms designed to meet the requirements of various scenarios.

Depending on the environment in which the data center is required, solutions range from fully Prefabricated Modular Data Centers to construction times, Air Cooling vs. Liquid Cooling, high power efficiency (PUE) in densely populated areas, small box-type (Edge & Micro Data Centers) with sizes ranging from one to several containers (approximately 1 to 10 racks), and hyperscale (Mega & Hyperscale Data Centers) with sizes combining hundreds to thousands of modules (over thousands of racks). By enabling rapid deployment through on-site installation in the form of Lego blocks tailored to specific uses and situations, the data center construction cycle can be shortened from 18 months to 6 months.

Steel structure solutions, which involve prefabricating all or part of the structure at partner factories following on-site surveys and prior simulations, transporting it to the construction site, and assembling it, reduce on-site construction workload, improve construction efficiency, and shorten the construction cycle.

The various deployment methods described above are subdivided into three major sub-scenarios—50kW/rack, 70kW/rack, and 132kW/rack—to meet the construction requirements of intelligent computing centers across diverse scenarios.

This Appendix summarizes Avala's step-by-step exploration of intelligent computing center deployment and serves as a roadmap for next-generation data centers. We look forward to working with customers and partners worldwide to extract even more powerful computing performance across all power levels and jointly build a solid foundation for an intelligent world.

Avala's standard reference design represents minimum specifications and may be increased depending on the actual design and planned site conditions.

Avala Data Center Solutions

Overview

IT rack power: 50kW/rack, 70kW/rack, 140kW/rack, 180kW/rack, 250kW/rack

Capacity coverage: 1.7 MW-7.2 MW



Computational Fluid Dynamics
& Circuit Simulation

Cost & Structural Analysis

Efficiency & Project Planning

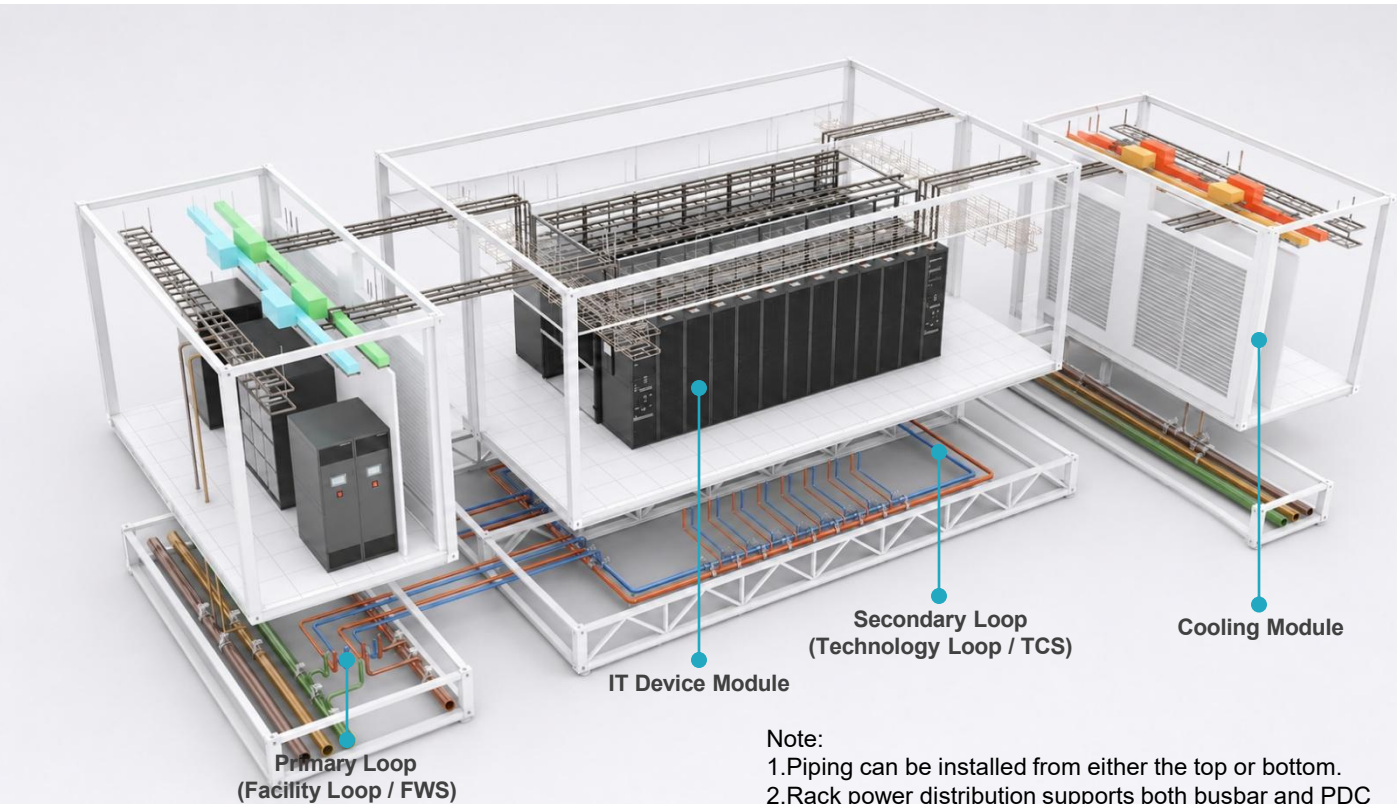
Description

Integrated Infrastructure Design	Features a comprehensive infrastructure design, encompassing advanced power/cooling, optimized campus master plan, administration facilities, and essential auxiliary support.
Hybrid Modular Design	Supports rapid construction through the standardization and modularization of data halls, office & customer spaces, power supply modules, and cooling modules.
High Reliability	Distributed placement of power and cooling systems, single-fault isolation
High Feasibility	Driven by optimized CapEx, with deployment taking approximately 6 months post-foundation.

Power densities up to 250kW per rack are supported within our standardized AI infrastructure framework, while requirements of 400kW(Rubin Ultra, Kyber(NVL576) Class) and above mandate reinforced structural engineering.

Prefabricated Hybrid Modular Solution

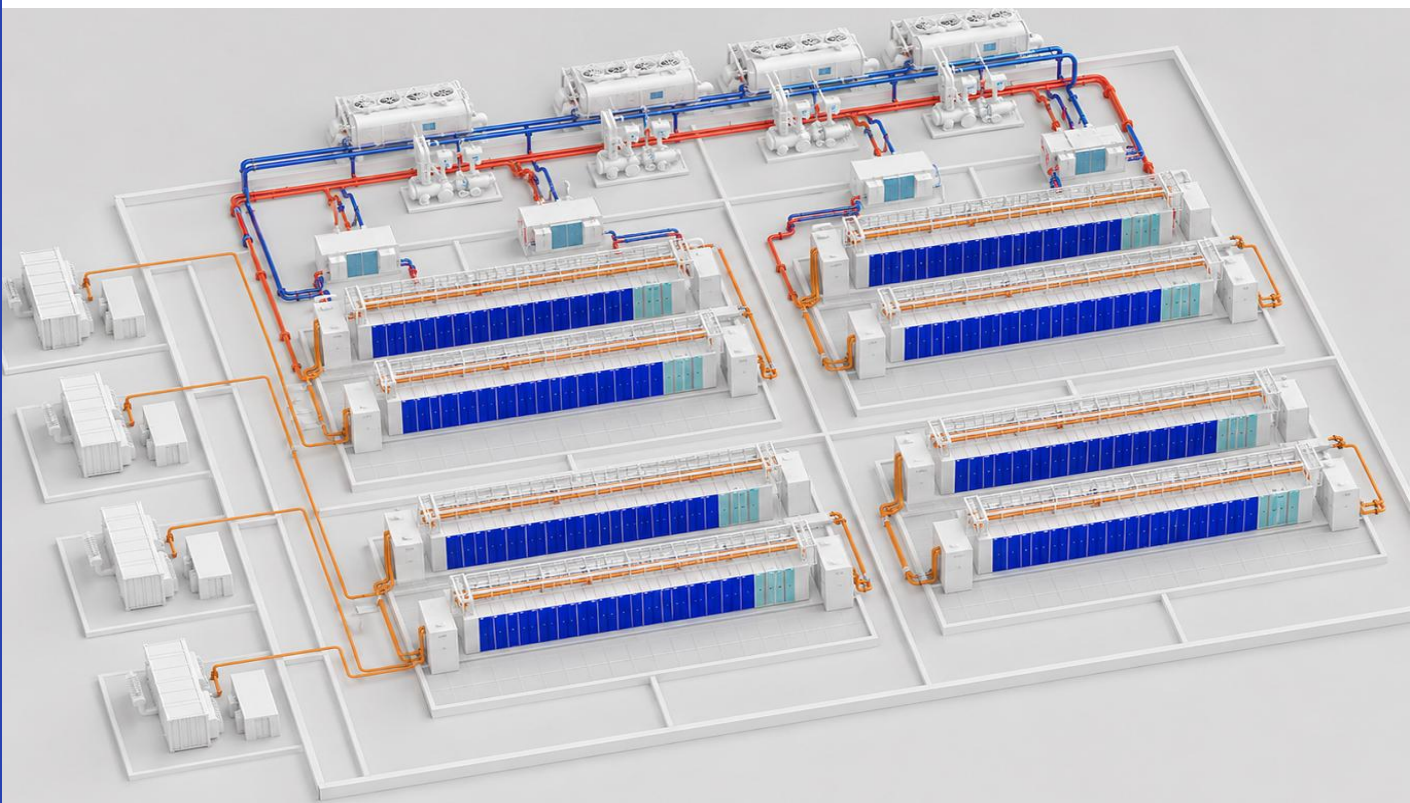
Overview



Hybrid Modular Design

IT Device Module	IT Rack, Network/Storage Rack, Storage Rack, PDC(Power Distribution Cabinet), Power Distribution Ladder, Cable Tray, and Integrated Cabling
Cooling Module	In-Row Cooler, Cold Aisle, CDU (Cooling Distribution Unit) and Liquid Cooling, Cooling Manifold, Cold Plate, RDHx (Rear Door Heat Exchanger), and power distribution ladder
Primary Loop (Facility Loop / FWS)	Liquid Cooling Primary Pipes, Fan Wall Chilled Water Pipes, Valves & Actuators and Instrumentation, and Water Leakage Detection System
Secondary Loop (Technology Loop / TCS)	Cooling Distribution Unit (CDU), Rack Manifolds & Quick Disconnects (QDCs), Direct-to-Chip Cold Plates / RDHx, and Sensors & Internal Leak Detection

AI DC Rack Architecture



AI DATA CENTER INTEGRATED ARCHITECTURE MASTER SPECIFICATION

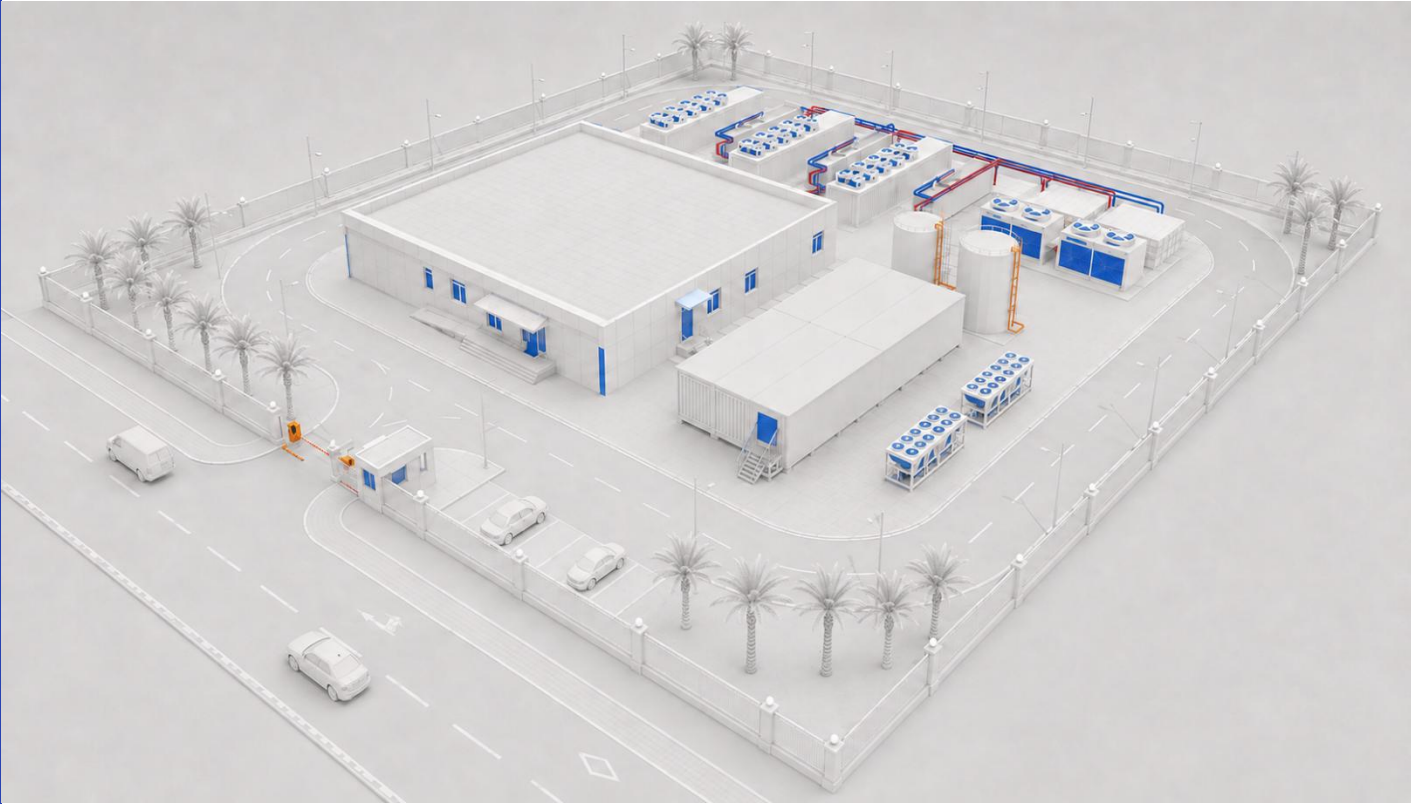
H1 2026 Reference Architecture Guide for High-Density AI Pod Deployments

IT Rack Power	Target GPU & Architecture	Network Rack Specs & Ratio (IT:NW)	Storage Rack Specs & Ratio (IT:ST)	Storage Architecture & Capacity Trend
50 kW	• RTX Pro 6000 • H200 (HGX 8-GPU)	• Capacity: 15–20 kW • Quantum-2 (400G IB) / Spectrum-4 • Ratio: 4:1 – 8:1	• Capacity: 12–15 kW per ST Rack (1 ST Rack per 8–16 IT Racks) • Ratio: 8:1 – 16:1	• Direct NVMe All-Flash (TLC) • Protocol: NVMe-oF (RoCEv2 / IB) • Capacity: 1–2 PB / ST Rack • High-throughput training data ingestion
70 kW	• B200 (HGX 8-GPU DLC) • GB200 NVL36	• Capacity: 20 kW • Ratio: 4:1 – 8:1 • Quantum-X800 (800G IB) / LPO Optics	• Capacity: 15–18 kW per ST Rack • Ratio: 12:1 – 20:1 (1 ST Rack per 12–20 IT Racks)	• Dense NVMe Flash (TLC / High-Density QLC) • Capacity: 2–4 PB / ST Rack • Speed: 100+ GB/s read throughput per shelf • Parallel File Systems (WEKA, VAST Data)
140 kW	• NVIDIA GB200 NVL72	• Capacity: 20 kW • Ratio: 8:1 – 16:1 • Scale-Out 800G High-Density	• Capacity: 15–20 kW per ST Rack • Ratio: 16:1 – 32:1 (1 ST Rack per 16–32 IT Racks)	• Disaggregated Shared Everything (DASE) • Capacity: 4–8 PB / ST Rack • Ultra-fast Checkpoint Storage (Multi-TB/s) • Direct GPU-to-Storage (GPUDirect Storage)
250 kW	• B300 (Blackwell Ultra) • Next-Gen Clusters	• Capacity: 25–30 kW • Ratio: 16:1 – 32:1 • 1.6T Quantum-X1000 / CPO Optics	• Capacity: 20–25 kW per ST Rack • Ratio: 32:1 – 64:1 (1 ST Rack per 32–64 IT Racks)	• Next-Gen CPO / High-Density QLC Array • Capacity: 8–16+ PB / ST Rack • Multi-Tier Automated Lifecycle (NVMe ↔ Object) • Continuous Zero-Stall Checkpointing

Overview

IT Load – 1,600 kW

2 modules • 960 kW/module • 50 kW/Rack



Standard indicators

(+/- depending on customer requirements)

Construction Site Area	7,800m²
AI DC Building Area	1,000m²
Total IT power	1,600kW
AI Liquid Cooling Rack	50 kW/rack, 16 racks/module, 32 rack in total
Network/Storage Rack	20 kW/rack, 8 racks/module, 16 rack in total
Minimum Design Grade	Tier III(Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min

PUE(Power Usage Effectiveness) 1.13

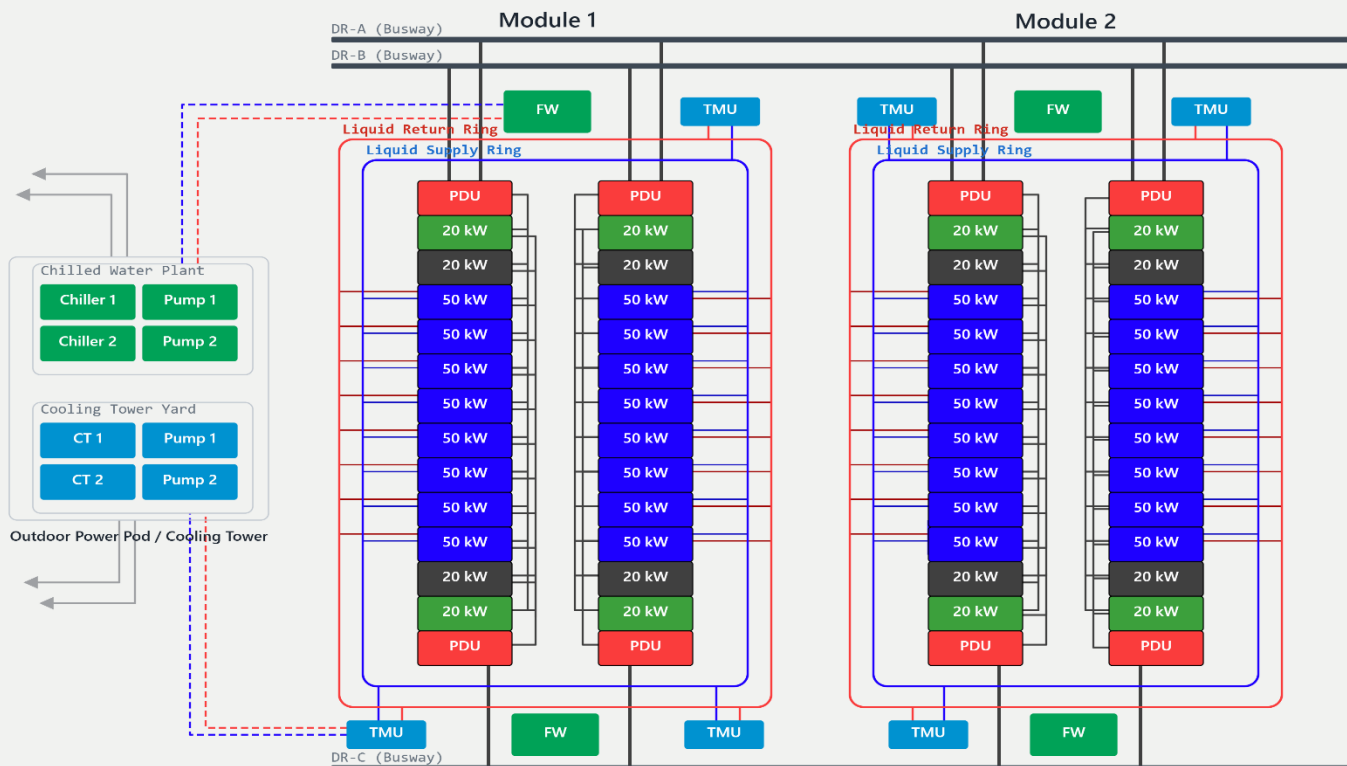
Block diagram

IT(AI) Rack: 1,600 kW (32 racks)

Network/Storage Rack: 320 kW (16 racks)

Total: 1,920 kW

2 Modules · 960 kW / Module · 50 kW / Cluster



TMU: Thermal Management Unit · FW: Chilled Water Fan Wall · PDU: Power Distribution Unit

Red: Liquid Supply · Blue: Liquid Return · DR-A/B/C: Redundant Busway Feeds

Power system

Architecture* Tier III/Tier III+

Power Module 1.6MW×3

Transformer 2000 kVA×3

Diesel Generator 2000 kW DCC×3

PDU(Power Distribution Unit) (630 A × 2) × 4 units/module

Cooling system

Air-to-Liquid Ratio 3:7 (1:9-3:7)

Fan Wall Unit 210 kW/set, 4 + 1

TMU(Thermal Management Unit) 360 kW, (2 + 1) × 2

Cooling Tower ≈150 m³/h, 1 + 1

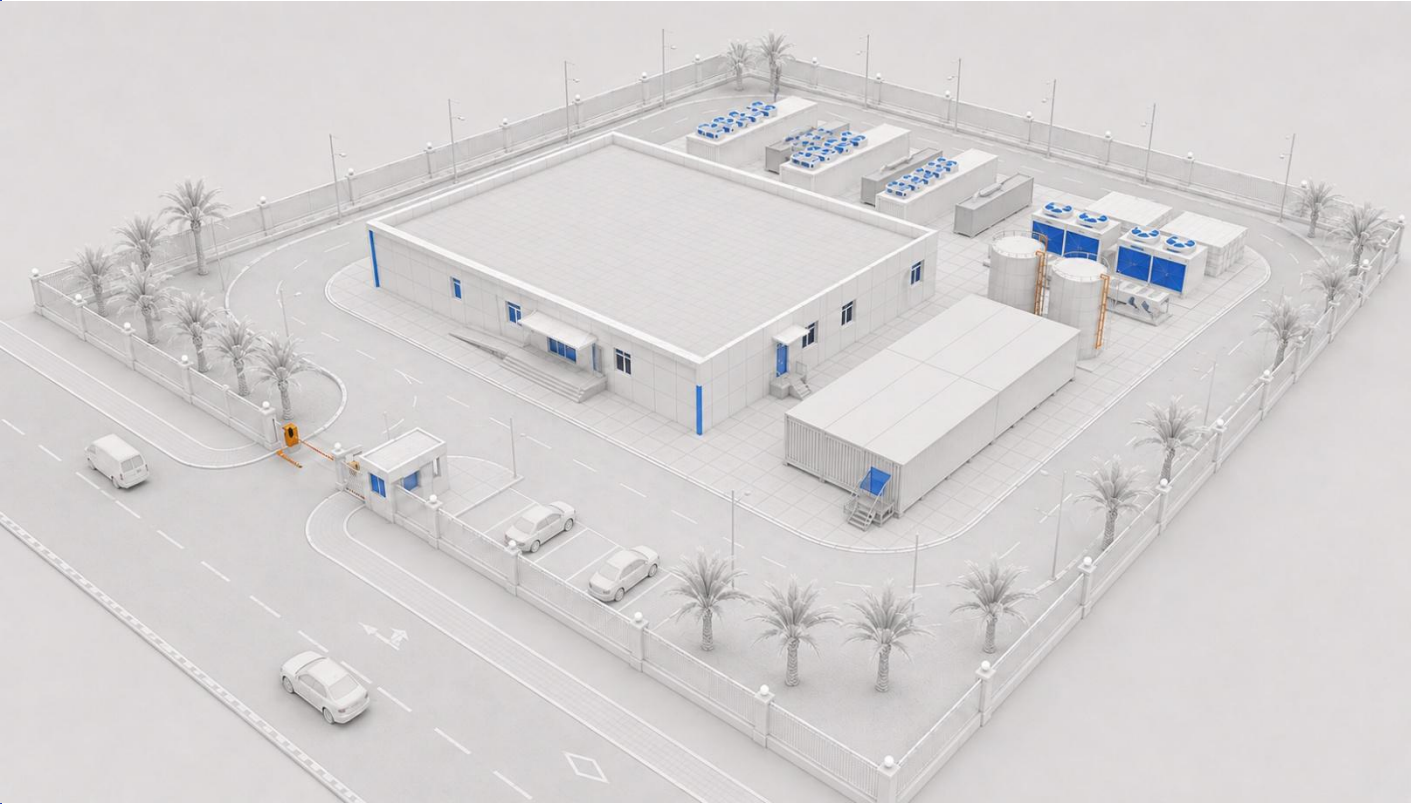
Air-Cooled Chiller 750 kW, 1 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 2,880kW

3 modules • 960 kW/module • 50 kW/Rack



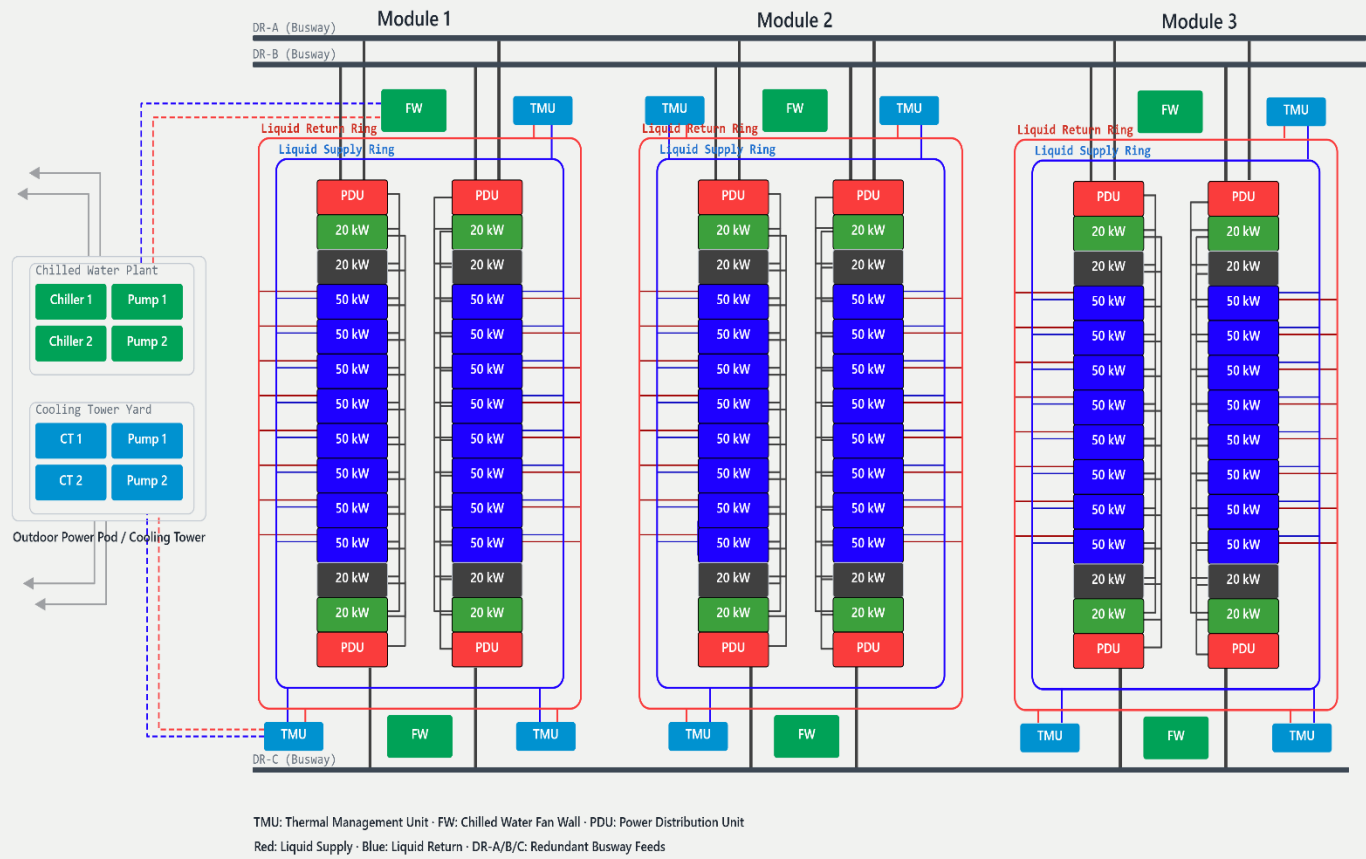
Standard indicators
(+/- depending on customer requirements)

Construction Site Area	7,800m²
AI DC Building Area	1,200m²
Total IT power	2,880kW
AI Liquid Cooling Rack	50 kW/rack, 16 racks/module, 48 rack in total
Network/Storage Rack	20 kW/rack, 8 racks/module, 24 rack in total
Minimum Design Grade	Tier III(Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

Block diagram

IT(AI) Rack: 2,400 kW (48 racks) Network/Storage Rack: 480 kW (24 racks) Total: 2,880 kW

3 Modules · 960 kW / Module · 50 kW / Cluster



Power system

Architecture*	Tier III/Tier III+
Power module	2.4MW×3
Transformer	2500 kVA×3
Diesel generator	2200 kW DCC×3
PDU(Power Distribution Unit)	(630 A × 2) × 4 units/module

Cooling system

Air-to-liquid ratio	3:7 (1:9-3:7)
Fan wall	210 kW/set, 6 + 2
TMU(Thermal Management Unit)	360 kW, (2 + 1) × 3
Cooling tower	≈230 m³/h, 1 + 1
Air-Cooled Chiller	1075 kW, 1 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 3,840kW

4 modules • 960 kW/module • 50 kW/Rack



Standard indicators
(+/- depending on customer requirements)

Construction Site Area	8,400m²
AI DC Building Area	1,200m²
Total IT power	3,840kW
AI Liquid Cooling Rack	50 kW/rack, 16 racks/module, 64 rack in total
Network/Storage Rack	20 kW/rack, 8 racks/module, 32 rack in total
Minimum Design Grade	Tier III(Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

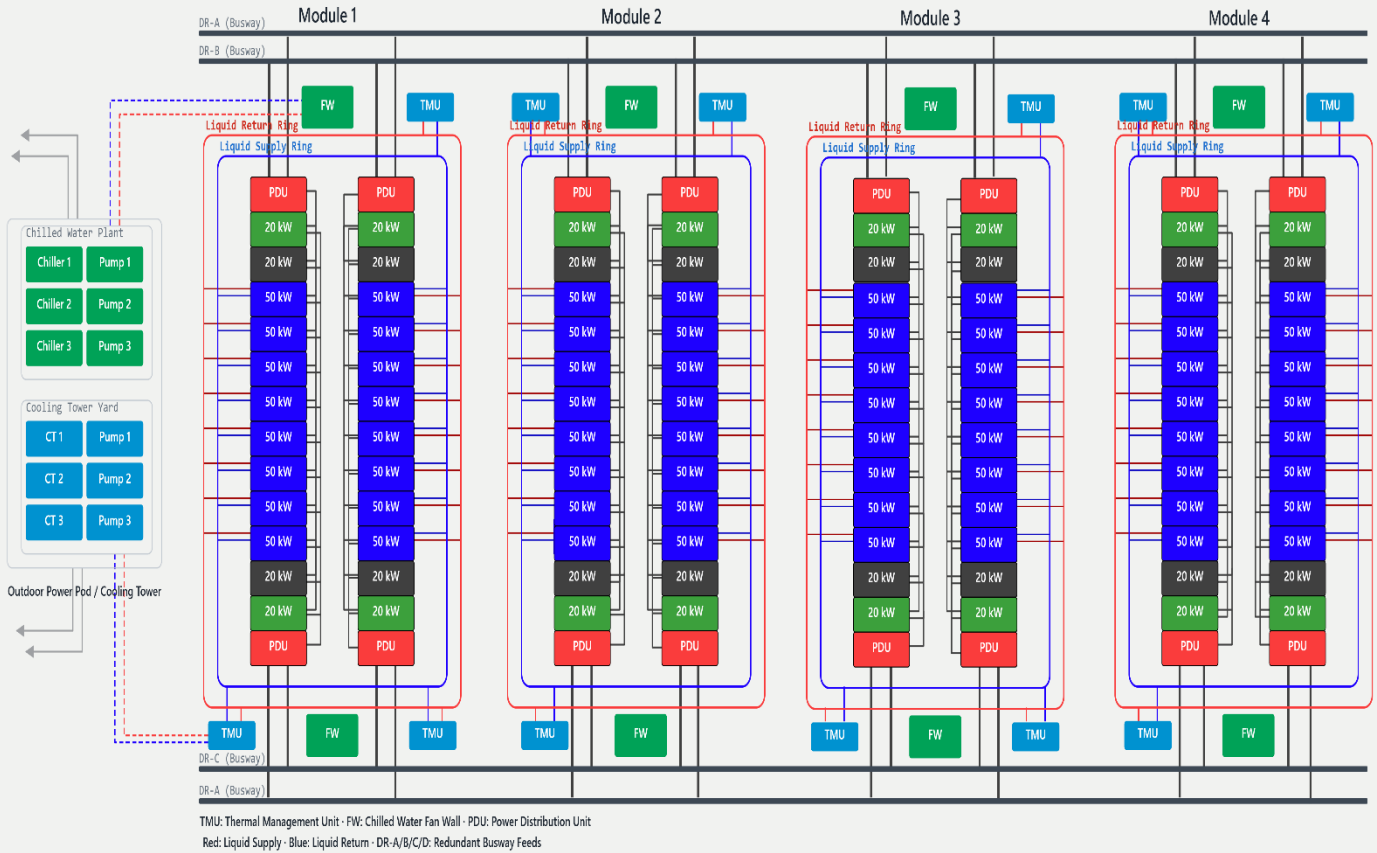
Block diagram

IT(AI) Rack: 3,200 kW (64 racks)

Network/Storage Rack: 640 kW (32 racks)

Total: 3,840 kW

4 Modules · 960 kW / Module · 50 kW / Cluster



Power system

Architecture* Tier III/Tier III+

Power module 2.4 MW×4

Transformer 2500 kVA×4

Diesel generator 2200 kW DCC×4

PDU(Power Distribution Unit) (630 A × 2) × 4 units/module

Cooling system

Air-to-liquid ratio 3:7 (1:9-3:7)

Fan wall 210 kW/set, 8 + 2

TMU(Thermal Management Unit) 360 kW, (2 + 1) × 4

Cooling tower ≈ 150 m³/h, 2 + 1

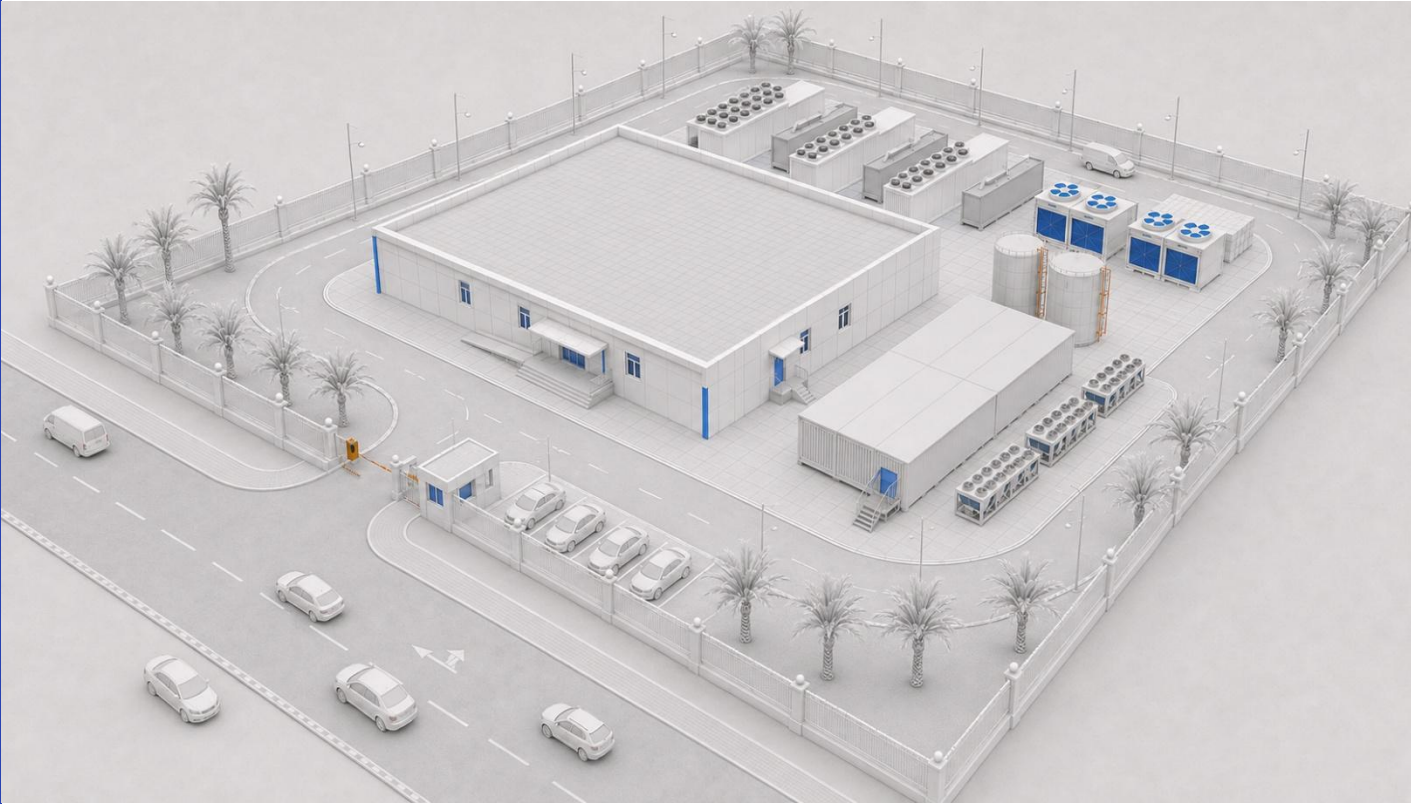
Air-Cooled Chiller 750 kW, 2 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 4,800kW

5 modules • 960 kW/module • 50 kW/Rack



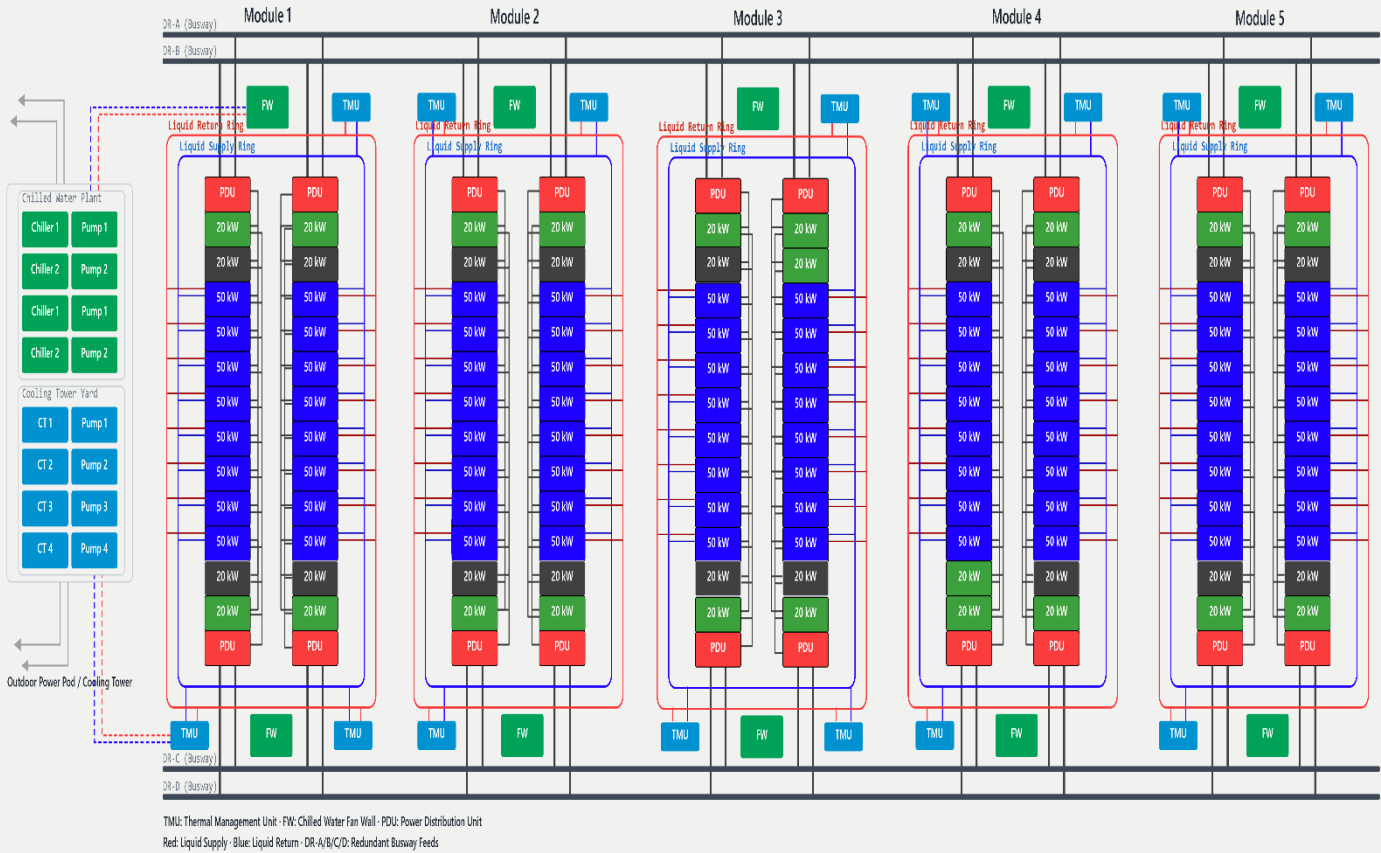
Standard indicators
(+/- depending on customer requirements)

Construction Site Area	8,400m²
AI DC Building Area	1,400m²
Total IT power	4,800kW
AI Liquid Cooling Rack	50 kW/rack, 16 racks/module, 80 rack in total
Network/Storage Rack	20 kW/rack, 8 racks/module, 40 rack in total
Minimum Design Grade	Tier III (Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

Block diagram

IT(AI) Rack: 4,000 kW (80 racks) Network/Storage Rack: 800 kW (40 racks) Total: 4,800 kW

5 Modules · 960 kW / Module · 50 kW / Cluster



Power system

Architecture* Tier III/Tier III+

Power module 2.4MW×4

Transformer 2500 kVA×4

Diesel generator 2400 kW DCC×8

PDU(Power Distribution Unit) (630 A × 2) × 4 units/module

Cooling system

Air-to-liquid ratio 3:7 (1:9-3:7)

Fan wall 210 kW/set, 10 + 2

TMU(Thermal Management Unit) 360 kW, (2 + 1) × 5

Cooling tower ≈ 130 m³/h, 3 + 1

Air-Cooled Chiller 625 kW, 3 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 4,800kW

6 modules • 960 kW/module • 50 kW/Rack



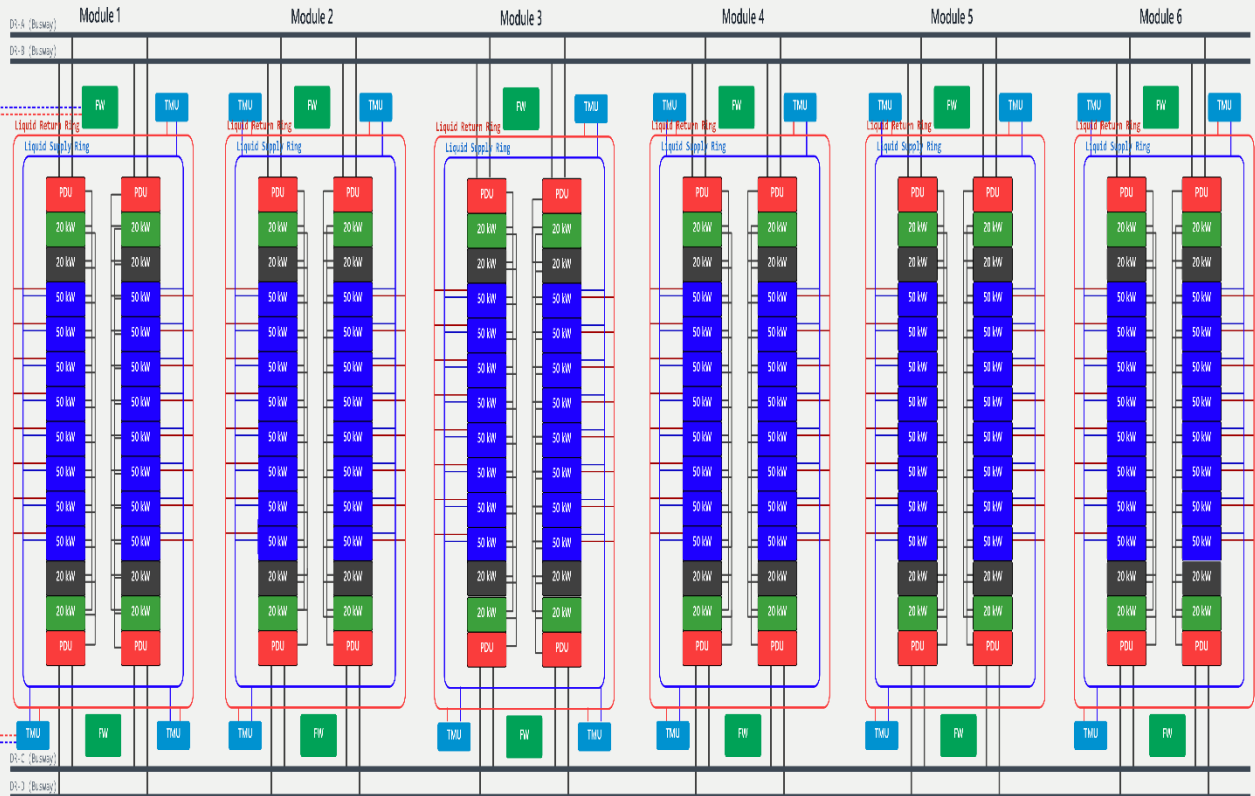
Standard indicators
(+/- depending on customer requirements)

Construction Site Area	9,600m²
AI DC Building Area	1,620m²
Total IT power	4,800kW
AI Liquid Cooling Rack	50 kW/rack, 16 racks/module, 96 rack in total
Network/Storage Rack	20 kW/rack, 8 racks/module, 48 rack in total
Minimum Design Grade	Tier III(Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

Block diagram

IT(AI) Rack: 4,800 kW (96 racks) Network/Storage Rack: 960 kW (48 racks) Total: 5,760 kW

6 Modules - 960 kW / Module - 50 kW / Cluster



TMU: Thermal Management Unit - FW: Chilled Water Fan Wall - PDU: Power Distribution Unit
Red: Liquid Supply - Blue: Liquid Return - DR-A/B/C/D: Redundant Busway Feeds

Power system

Architecture*	Tier III/Tier III+
Power module	2.4MW×6
Transformer	2500 kVA×6
Diesel generator	2200 kW DCC×6
PDU(Power Distribution Unit)	(630 A × 2) × 4 units/module

Cooling system

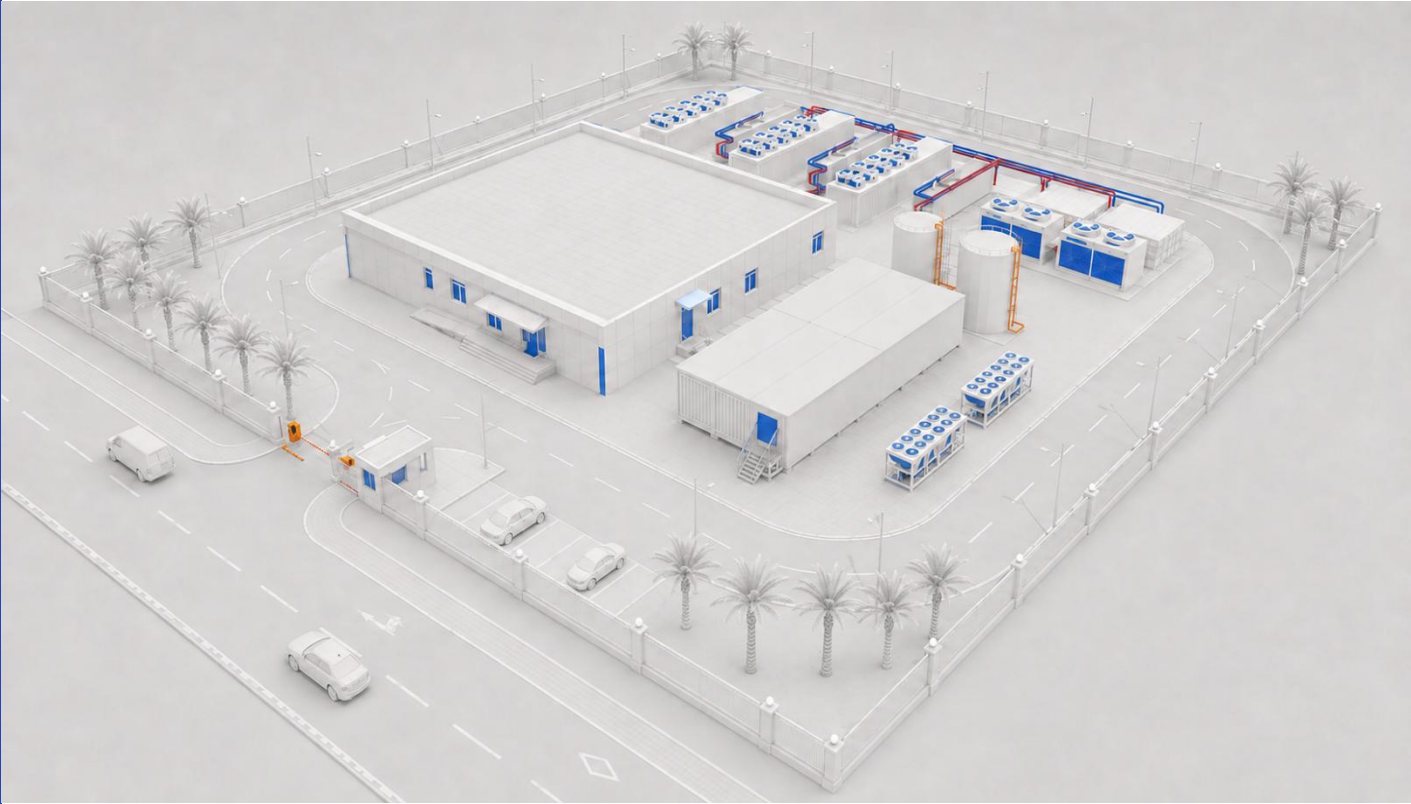
Air-to-liquid ratio	3:7 (1:9-3:7)
Fan wall	210 kW/set, 11 + 2
TMU(Thermal Management Unit)	360 kW, (2 + 1) × 6
Cooling tower	≈ 150 m³/h, 3 + 1
Air-Cooled Chiller	750 kW, 3 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 2,560 kW

2 modules • 1,280 kW/module • 70 kW/Rack



Standard indicators

(+/- depending on customer requirements)

Construction Site Area	7,800m²
AI DC Building Area	1,000m²
Total IT power	2,560kW
AI Liquid Cooling Rack	70 kW/rack, 16 racks/module, 32 rack in total
Network/Storage Rack	20 kW/rack, 8 racks/module, 16 rack in total
Minimum Design Grade	Tier III(Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min

PUE(Power Usage Effectiveness) 1.13

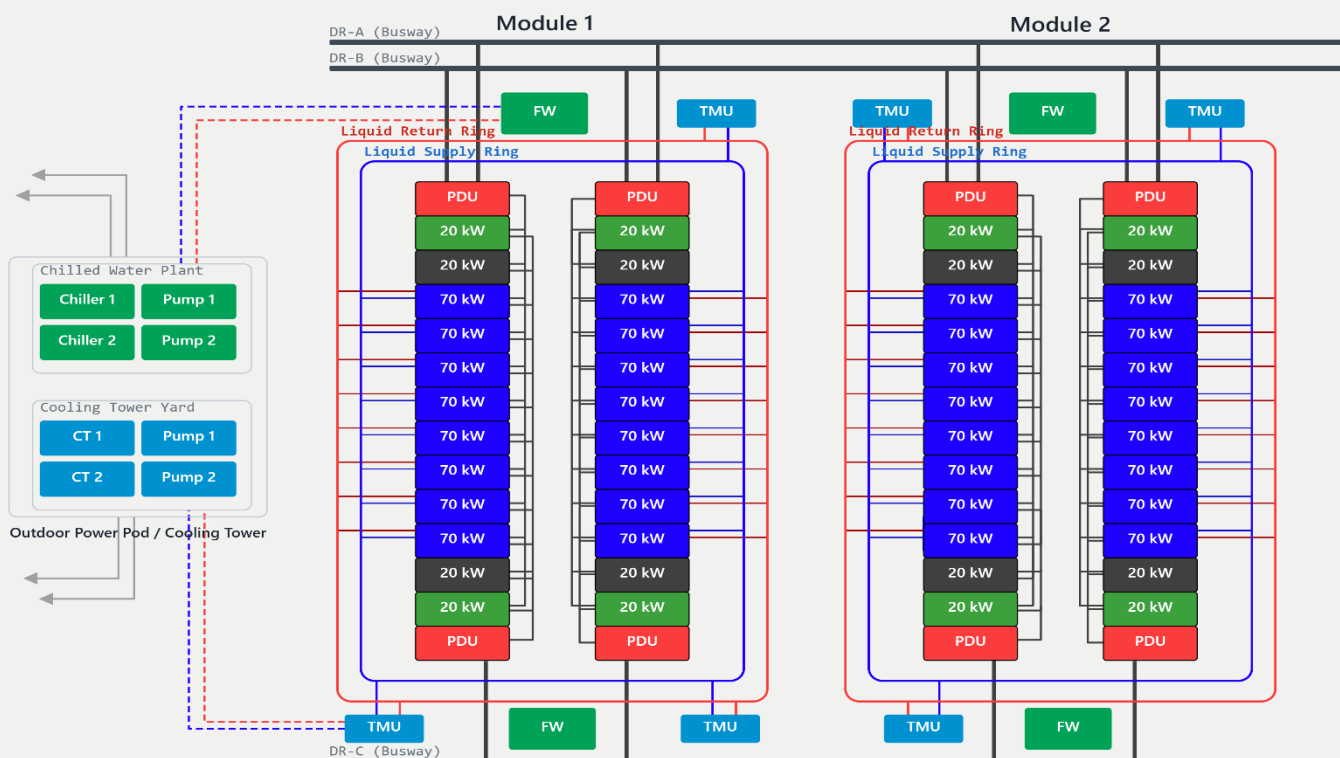
Block diagram

IT(AI) Rack: 2,240 kW (32 racks)

Network/Storage Rack: 320 kW (16 racks)

Total: 2,560 kW

2 Modules · 1,280kW / Module · 70 kW / Cluster



TMU: Thermal Management Unit · FW: Chilled Water Fan Wall · PDU: Power Distribution Unit

Red: Liquid Supply · Blue: Liquid Return · DR-A/B/C: Redundant Busway Feeds

Power system

Architecture* Tier III/Tier III+

Power Module 2.4MW×3

Transformer 2500 kVA×3

Diesel Generator 2200 kW DCC×3

PDU(Power Distribution Unit) (630 A × 2) × 4 units/module

Cooling system

Air-to-Liquid Ratio 2:8 (1:9-3:7)

Fan Wall Unit 210 kW/set, 4 + 1

TMU(Thermal Management Unit) 360 kW, (3 + 1) × 2

Cooling Tower ≈250 m³/h, 1 + 1

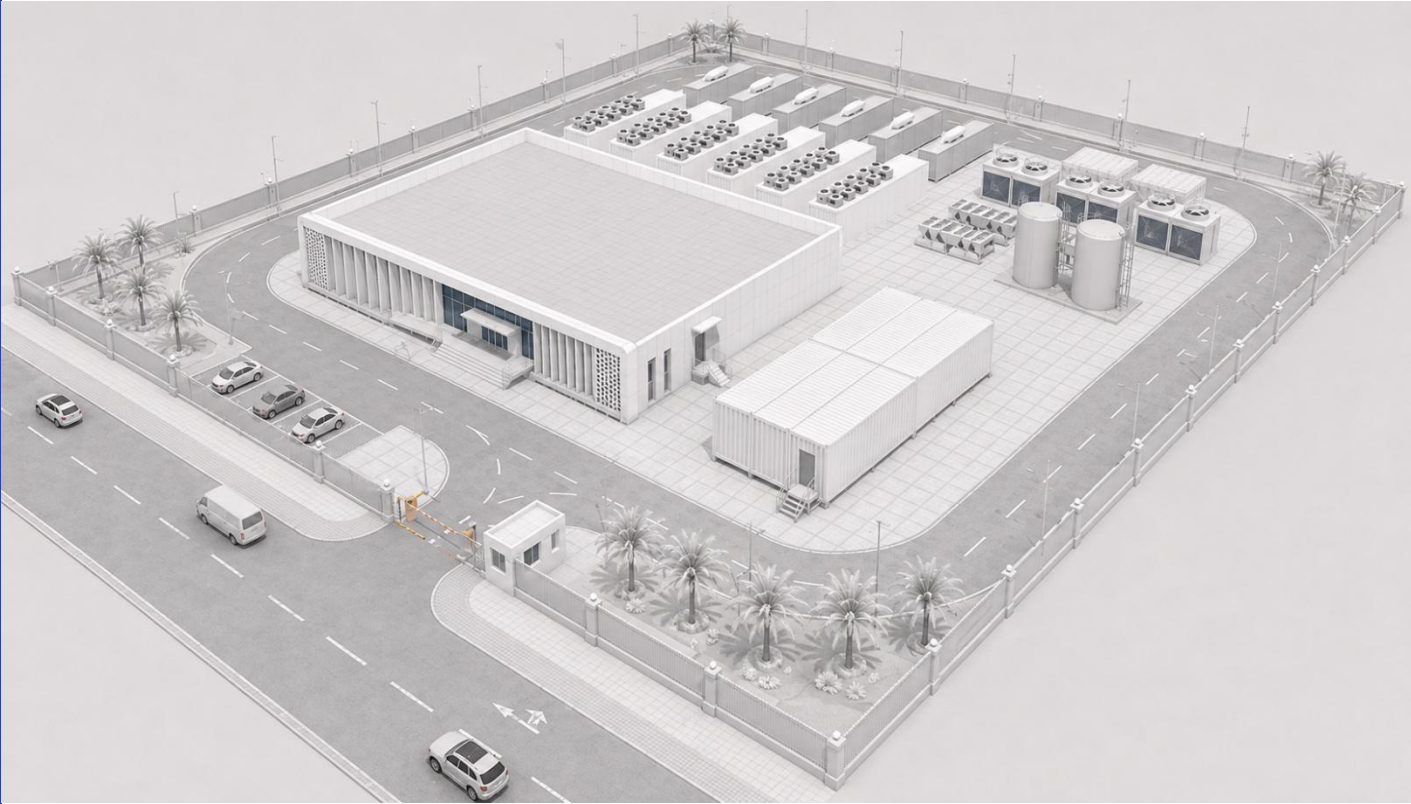
Air-Cooled Chiller 750 kW, 1 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 3,840kW

3 modules • 1,280 kW/module • 70 kW/Rack



Standard indicators

(+/- depending on customer requirements)

Construction Site Area	8,400m²
AI DC Building Area	1,200m²
Total IT Power	3,840kW
AI Liquid Cooling Rack	70 kW/rack, 16 racks/module, 48 rack in total
Network/Storage Rack	20 kW/rack, 8 racks/module, 24 rack in total
Minimum Design Grade	Tier III (Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

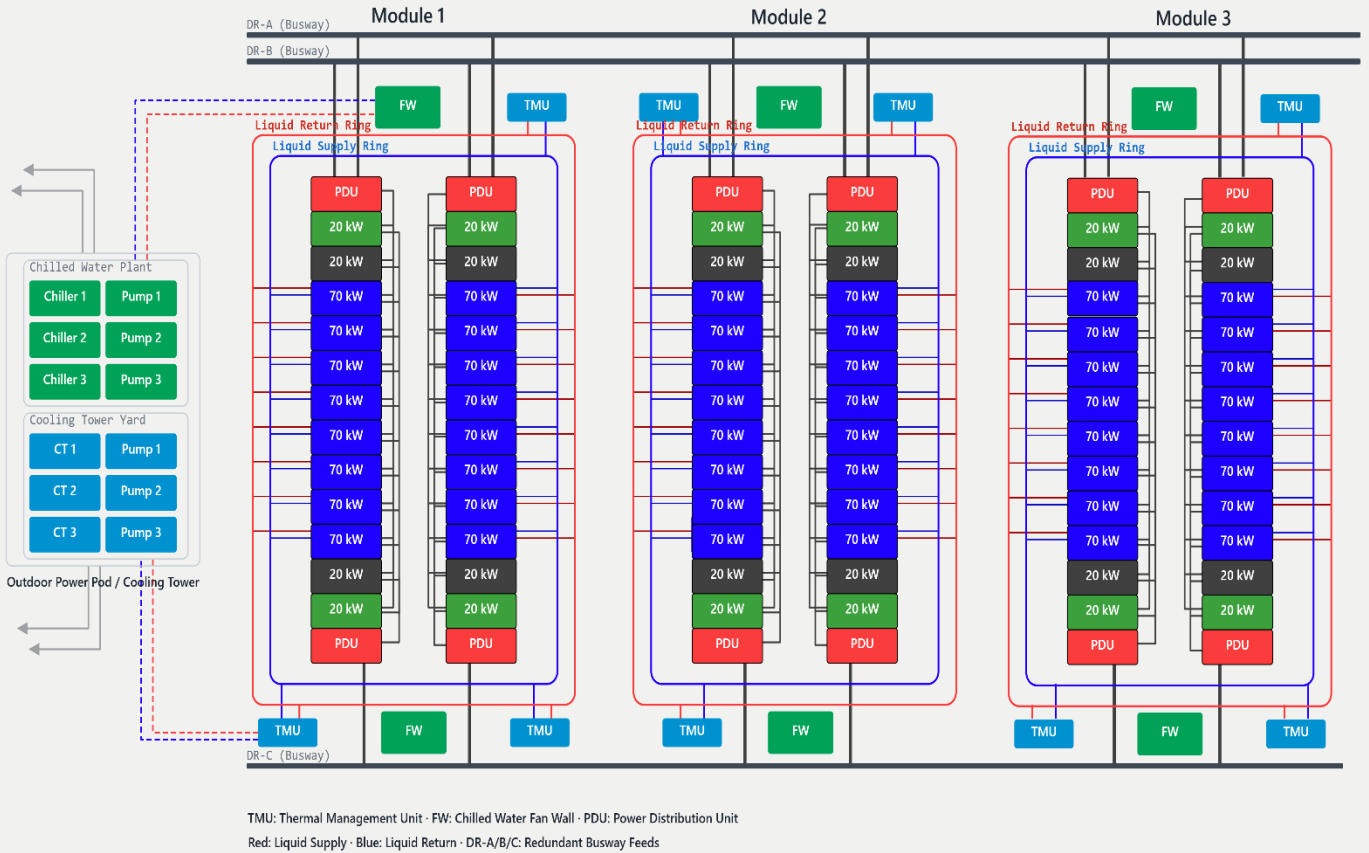
Block diagram

IT(AI) Rack: 3,360 kW (48 racks)

Network/Storage Rack: 480 kW (24 racks)

Total: 3,840 kW

3 Modules · 1,280 kW / Module · 70 kW / Cluster



Power system

Architecture* Tier III/Tier III+

Power module 2.4MW×4

Transformer 2500 kVA×4

Diesel generator 2200 kW DCC×4

PDU(Power Distribution Unit) (630 A × 2) × 4 units/module

Cooling system

Air-to-liquid ratio 2:8 (1:9-3:7)

Fan wall 210 kW/set, 6 + 2

TMU(Thermal Management Unit) 360 kW, (3 + 1) × 6

Cooling tower ≈ 180 m³/h, 2 + 1

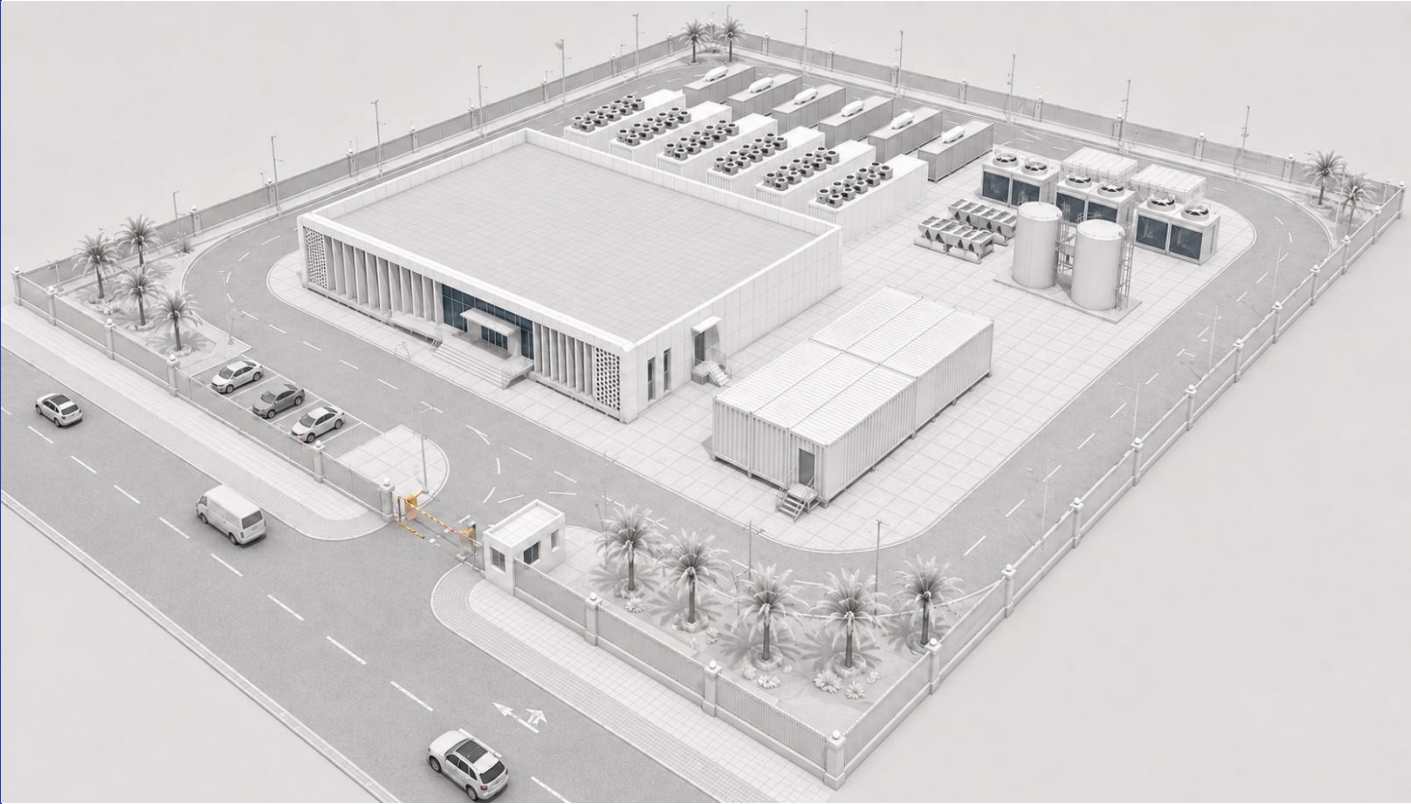
Air-Cooled Chiller ≈ 500 kW, 2 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 5,120kW

4 modules • 1,280 kW/module • 70 kW/Rack



Standard indicators

(+/- depending on customer requirements)

Construction Site Area	9,600m²
AI DC Building Area	1,200m²
Total IT Power	5,120 kW
AI Liquid Cooling Rack	70 kW/rack, 16 racks/module, 64 rack in total
Network/Storage Rack	20 kW/rack, 8 racks/module, 32 rack in total
Minimum Design Grade	Tier III (Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

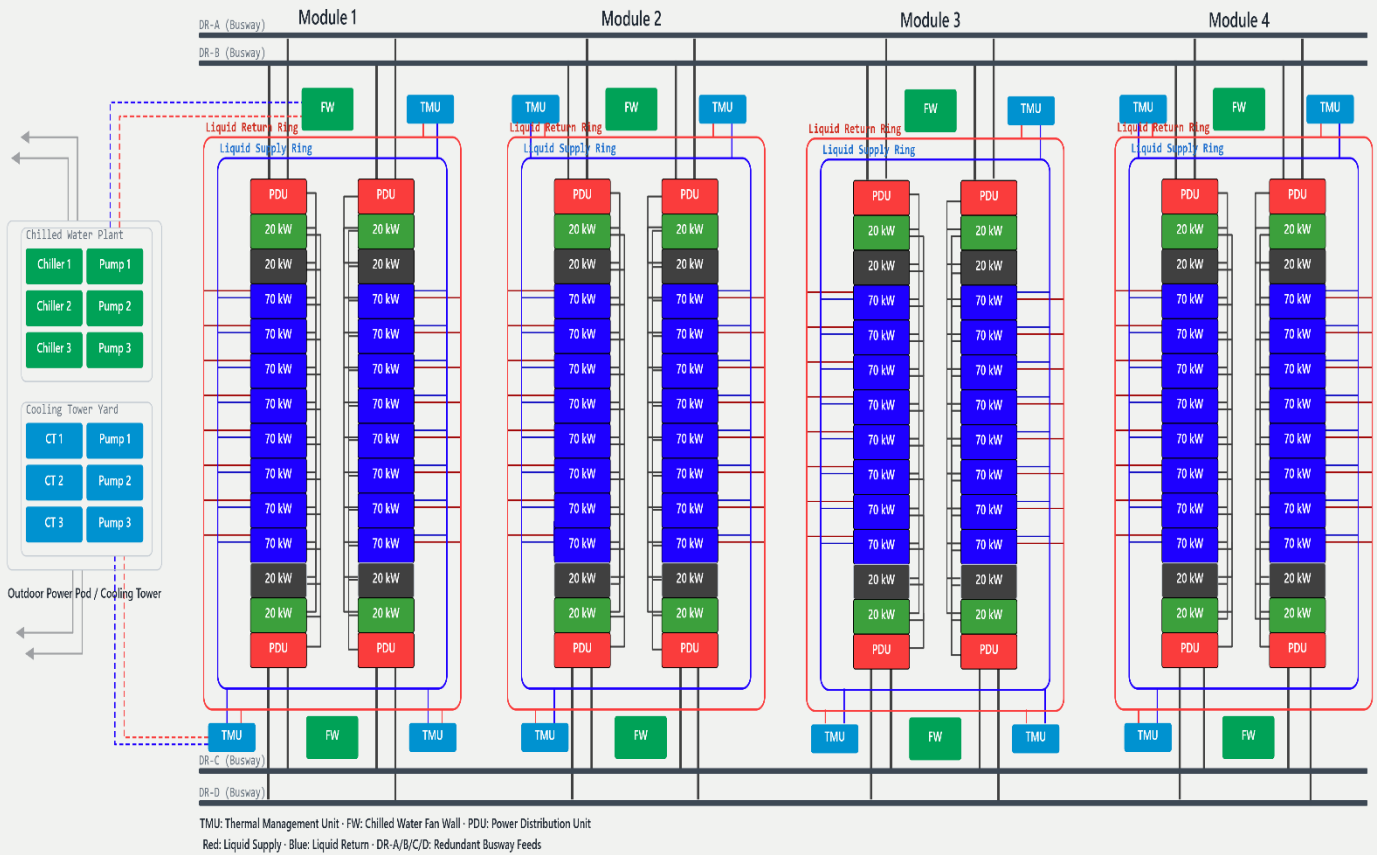
Block diagram

IT(AI) Rack: 4,480 kW (64 racks)

Network/Storage Rack: 640 kW (32 racks)

Total: 5,120 kW

4 Modules · 1,280 kW / Module · 70 kW / Cluster



Power system

Architecture*	Tier III/Tier III+
Power module	2.4MW×6
Transformer	2500 kVA×6
Diesel generator	2200 kW DCC×6
PDU(Power Distribution Unit)	(630 A × 2) × 4 Units / module

Cooling system

Air-to-liquid ratio	2:8 (1:9-3:7)
Fan wall	210 kW/set, 7 + 2
TMU(Thermal Management Unit)	450 kW, (3 + 1) × 4
Cooling tower	≈250 m³/h, 2 + 1
Air-Cooled Chiller	750 kW, 2 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 6,400kW

5 modules • 1,280 kW/module • 70 kW/Rack



Standard indicators

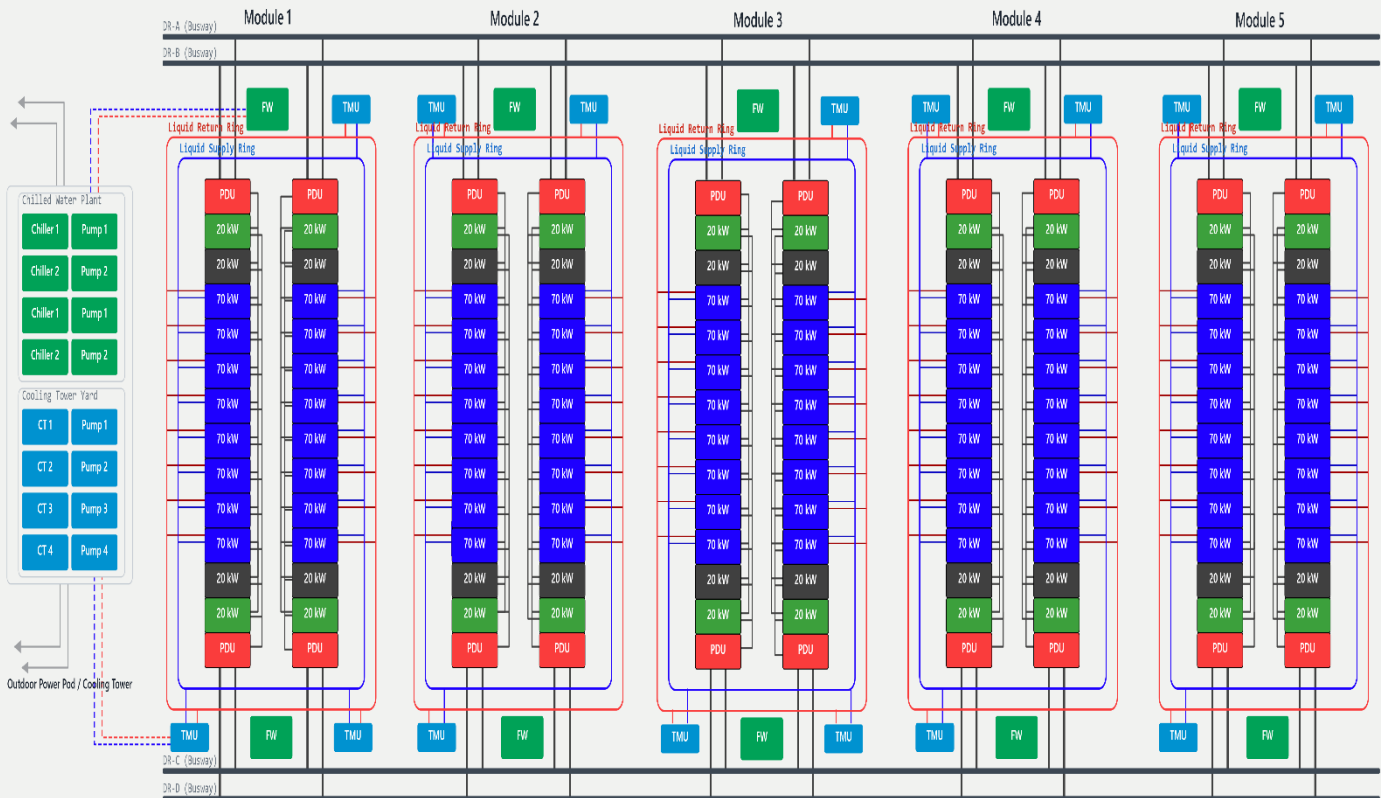
(+/- depending on customer requirements)

Construction Site Area	11,500m²
AI DC Building Area	1,500m²
Total IT Power	6,400 kW
AI Liquid Cooling Rack	70 kW/rack, 16 racks/module, 80 rack in total
Network/Storage Rack	20 kW/rack, 8 racks/module, 40 rack in total
Minimum Design Grade	Tier III (Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

Block diagram

IT(AI) Rack: 5,600 kW (80 racks) Network/Storage Rack: 800 kW (40 racks) Total: 6,400 kW

5 Modules · 1,280 kW / Module · 70 kW / Cluster



TMU: Thermal Management Unit - FW: Chilled Water Fan Wall - PDU: Power Distribution Unit

Red: Liquid Supply - Blue: Liquid Return - DR-A/B/C/D: Redundant Busway Feeds

Power system

Architecture* Tier III/Tier III+

Power module 1.8MW×8

Transformer 2000 kVA×8

Diesel generator 2000 kW DCC×8

PDU(Power Distribution Unit) (630 A × 2) × 4 units/module

Cooling system

Air-to-liquid ratio 2:8 (1:9-3:7)

Fan wall 210 kW/set, 9 + 2

TMU(Thermal Management Unit) 360 kW, (3 + 1) × 5

Cooling tower 200 m³/h, 3 + 1

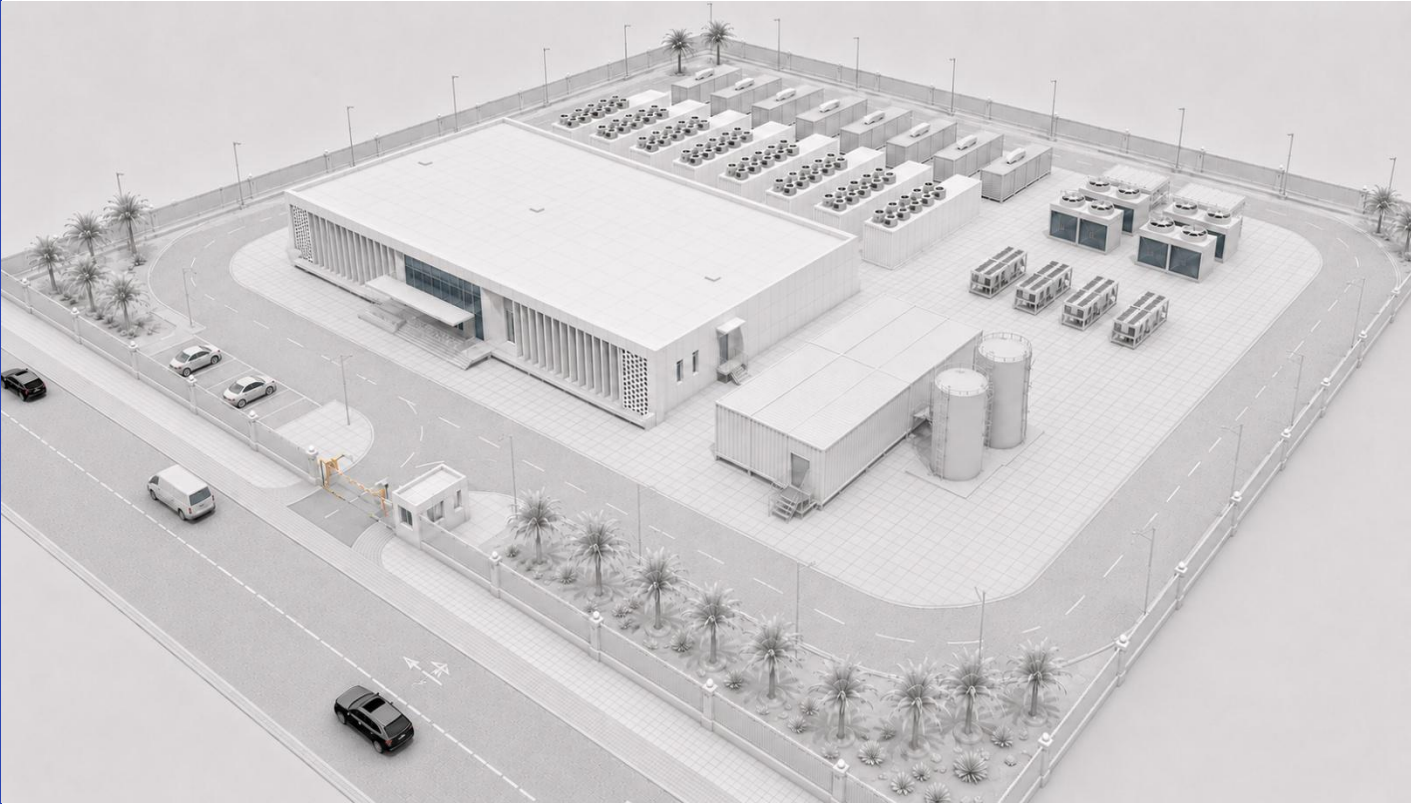
Air-Cooled Chiller 625 kW, 3 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 7,680kW

6 modules • 1,280 kW/module • 70 kW/Rack



Standard indicators

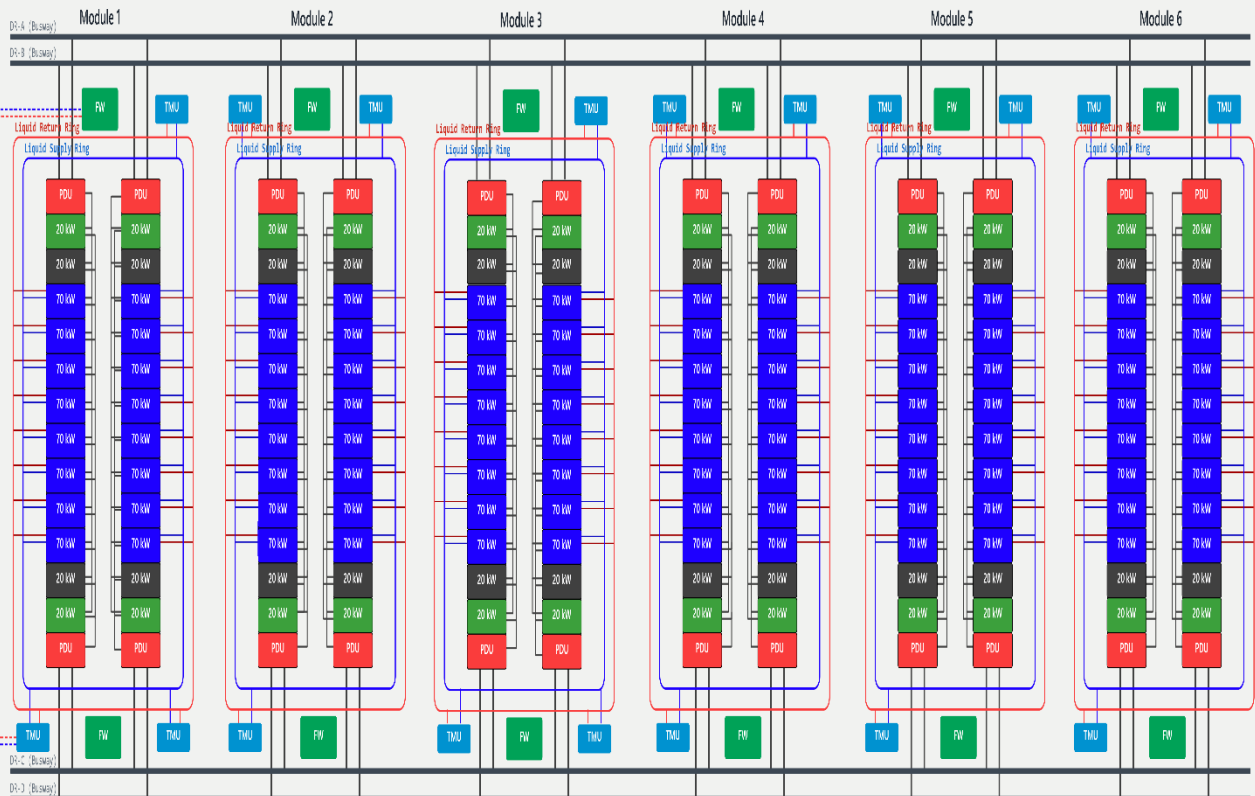
(+/- depending on customer requirements)

Construction Site Area	12,000m²
AI DC Building Area	1,740m²
Total IT Power	7,680kW
AI Liquid Cooling Rack	70 kW/rack, 16 racks/module, 96 rack in total
Network/Storage Rack	20 kW/rack, 8 racks/module, 48 rack in total
Minimum Design Grade	Tier III(Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

Block diagram

IT(AI) Rack: 6,720 kW (96 racks) Network/Storage Rack: 960 kW (48 racks) Total: 7,680 kW

6 Modules - 1,280 kW / Module - 70 kW / Cluster



TMU: Thermal Management Unit - FW: Chilled Water Fan Wall - PDU: Power Distribution Unit
Red: Liquid Supply - Blue: Liquid Return - DR-A/B/C/D: Redundant Busway Feeds

Power system

Architecture*	Tier III/Tier III+
Power module	2.4MW×8
Transformer	2500 kVA×8
Diesel generator	2200 kW DCC×8
PDU(Power Distribution Unit)	(630 A × 2) × 4 units/module

Cooling system

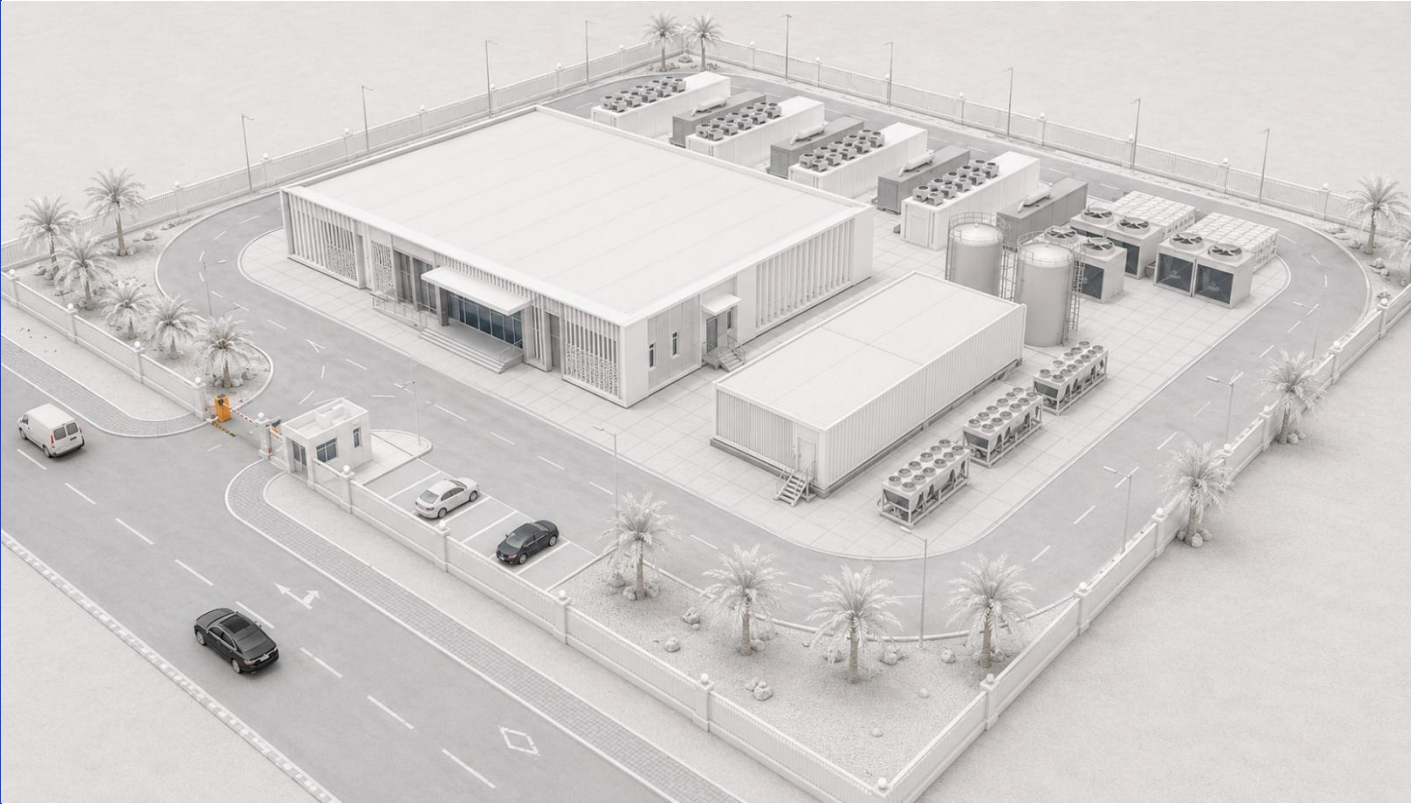
Air-to-liquid ratio	2:8 (1:9-3:7)
Fan wall	210 kW/set, 11 + 2
TMU(Thermal Management Unit)	360 kW, (3 + 1) × 6
Cooling tower	250 m³/h, 3 + 1
Air-Cooled Chiller	750 kW, 3 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 6,960kW

3 modules • 2,320 kW/module • 140 kW/Rack



Standard indicators

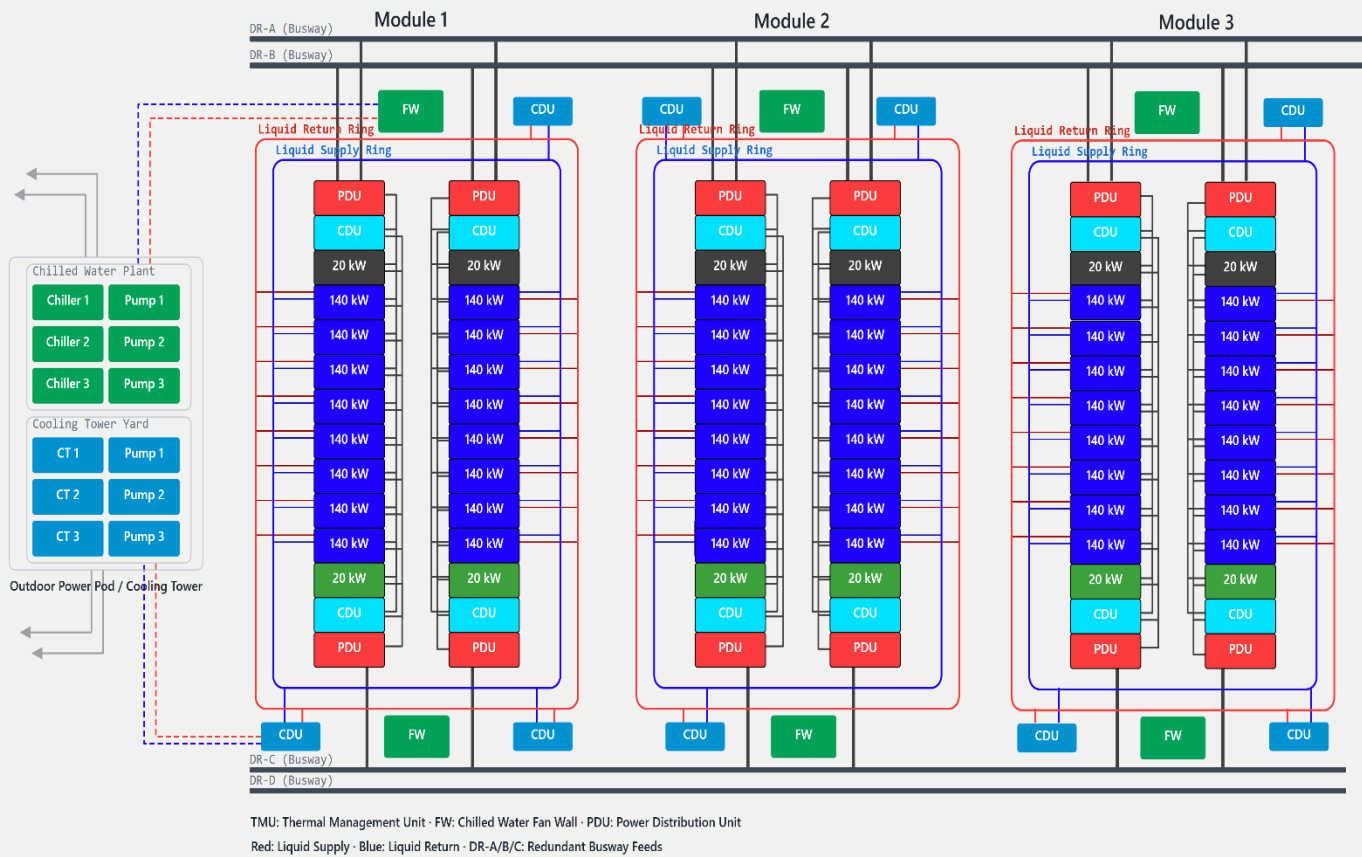
(+/- depending on customer requirements)

Construction Site Area	9,060m²
AI DC Building Area	1,250m²
Total IT Power	6,960 kW
AI Liquid Cooling Rack	140 kW/rack, 16 racks/module, 48 rack in total
Network/Storage Rack	20 kW/rack, 4 racks/module, 12 rack in total
Minimum Design Grade	Tier III(Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

Block diagram

IT(AI) Rack: 6,720 kW (48 racks) Network/Storage Rack: 240 kW (12 racks) Total: 6,960 kW

3 Modules · 2,320 kW / Module · 140 kW / Cluster



Power system

Architecture*	Tier III/Tier III+
Power module	2.4MW×4
Transformer	2500 kVA×4
Diesel generator	2200 kW DCC×4
PDU(Power Distribution Unit)	(630 A × 2) × 4 units/module

Cooling system

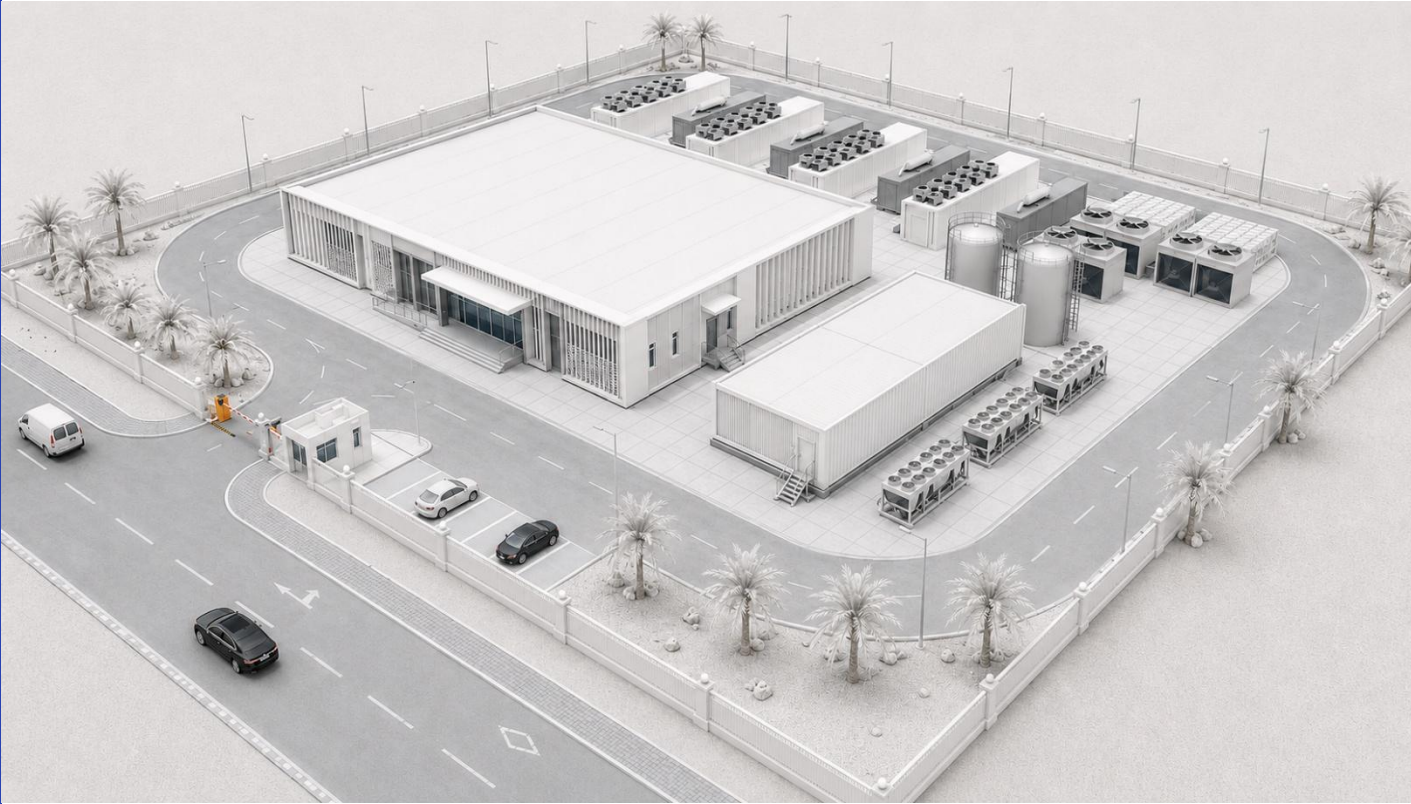
Air-to-liquid ratio	2:8 (1:9-3:7)
Fan wall	210 kW/set, 6 + 2
TMU(Thermal Management Unit)	360 kW, (3 + 1) × 3
Cooling tower	180 m³/h, 2 + 1
Air-Cooled Chiller	625 kW, 2 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 9,280kW

4 modules • 2,320 kW/module • 140 kW/Rack



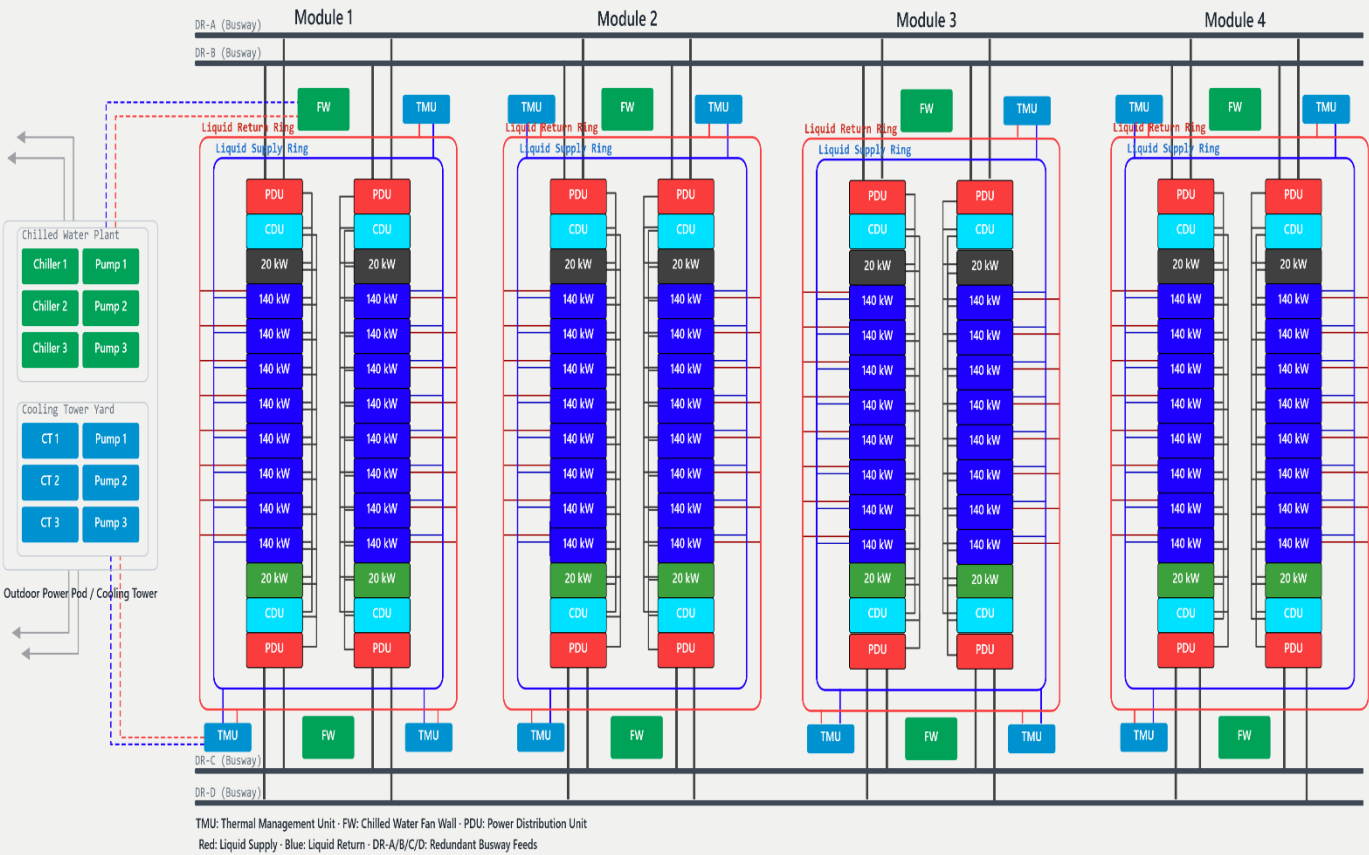
Standard indicators
(+/- depending on customer requirements)

Construction Site Area	9,600m²
AI DC Building Area	1,300m²
Total IT Power	9,280 kW
AI Liquid Cooling Rack	140 kW/rack, 16 racks/module, 64 rack in total
Network/Storage Rack	20 kW/rack, 4 racks/module, 16 rack in total
Minimum Design Grade	Tier III(Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

Block diagram

IT(AI) Rack: 8,960 kW (64 racks) Network/Storage Rack: 320 kW (16 racks) Total: 9,280 kW

4 Modules - 2,320 kW / Module - 140 kW / Cluster



Power system

Architecture*	Tier III/Tier III+
Power module	2.4 MW×6
Transformer	2500 kVA×6
Diesel generator	2200 kW DCC×6
PDU(Power Distribution Unit)	(630 A x 2) x 4 units/module

Cooling system

Air-to-liquid ratio	2:8 (1:9-3:7)
Fan wall	210 kW/set, 8 + 2
TMU(Thermal Management Unit)	360 kW, (3 + 1) × 4
Cooling tower	225 m³/h, 2 + 1
Air-Cooled Chiller	750 kW, 2 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 11,600kW

5 modules • 2,320 kW/module • 140 kW/Rack



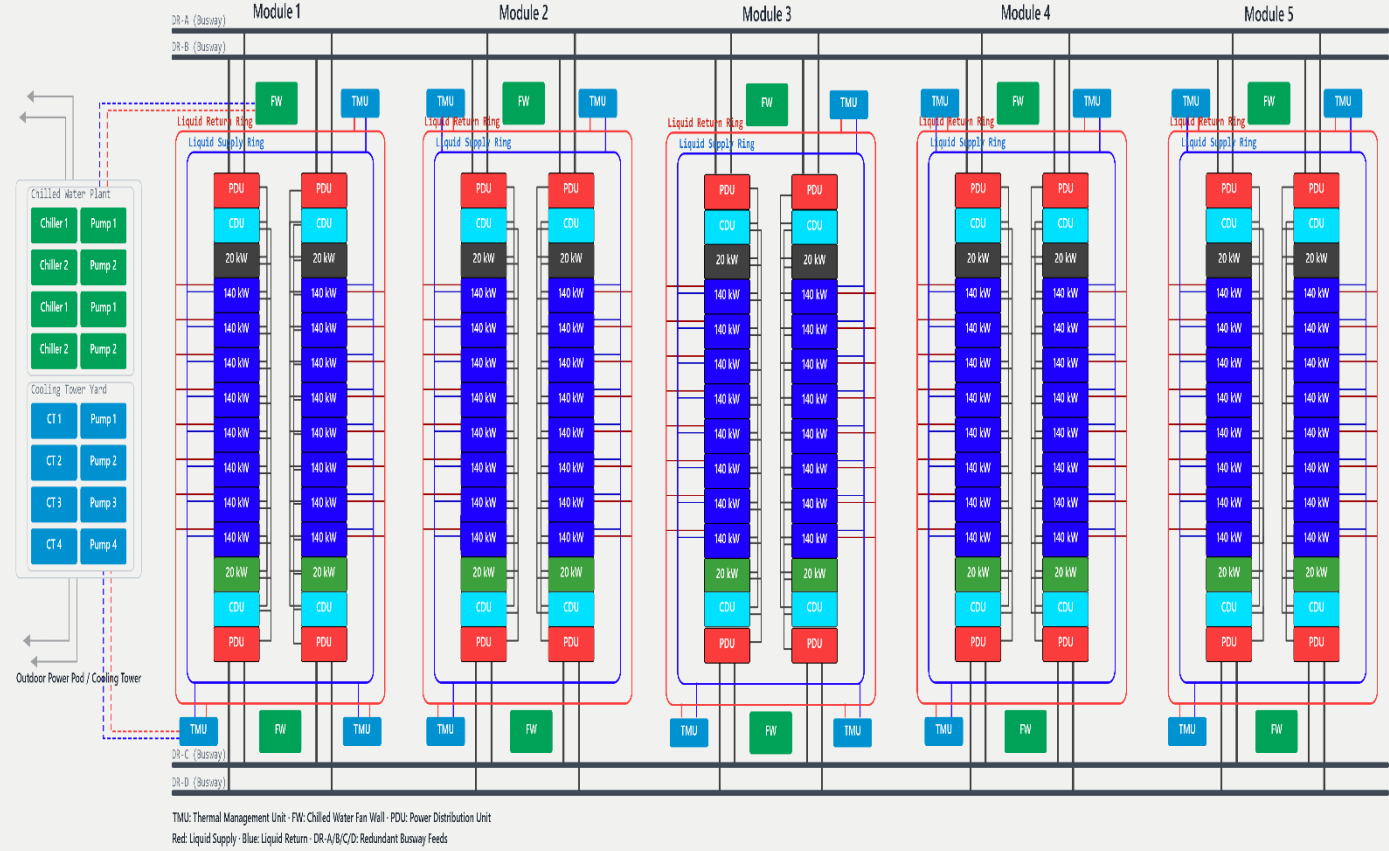
Standard indicators
(+/- depending on customer requirements)

Construction Site Area	12,250m²
AI DC Building Area	1,5200m²
Total IT Power	11,600 kW
AI Liquid Cooling Rack	140 kW/rack, 16 racks/module, 80 rack in total
Network/Storage Rack	20 kW/rack, 4 racks/module, 20 rack in total
Minimum Design Grade	Tier III(Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

Block diagram

IT(AI) Rack: 11,200 kW (80 racks) Network/Storage Rack: 400 kW (30 racks) Total: 11,600 kW

5 Modules - 2,320 kW / Module - 140 kW / Cluster



Power system

Architecture*	Tier III/Tier III+
Power module	2.4 MW×8
Transformer	2500 kVA×8
Diesel generator	2200 kW DCC×8
PDU(Power Distribution Unit)	(630 A x 2) x 4 units/module

Cooling system

Air-to-liquid ratio	2:8 (1:9-3:7)
Fan wall	210 kW/set, 10 + 2
TMU(Thermal Management Unit)	360 kW, (3 + 1) × 5
Cooling tower	225 m³/h, 2 + 1
Air-Cooled Chiller	750 kW, 2 + 1

* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 13,920kW

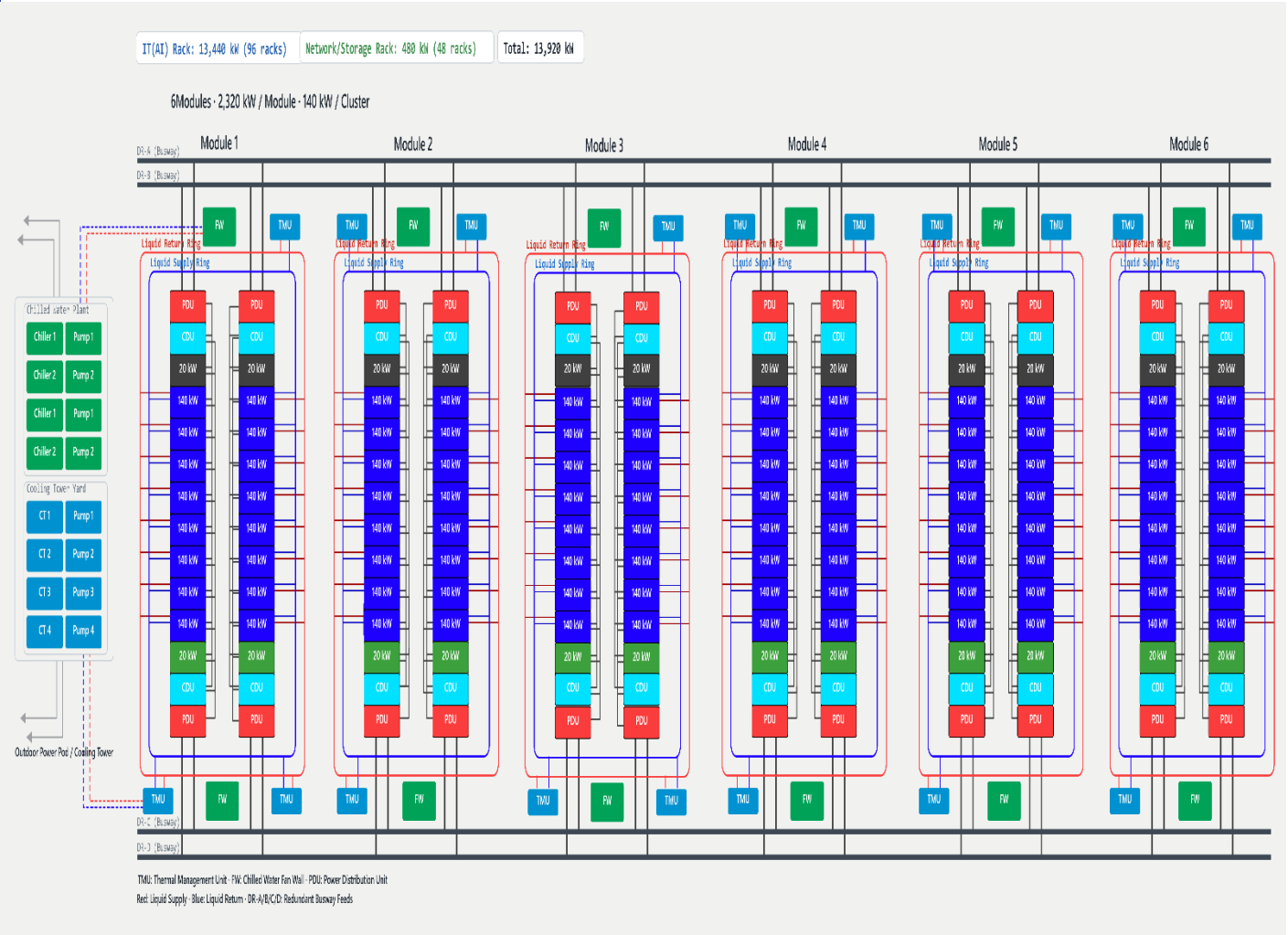
6 modules • 2,320 kW/module • 140 kW/Rack



Standard indicators
(+/- depending on customer requirements)

Construction Site Area	12,250m²
AI DC Building Area	1,750m²
Total IT Power	13,920 kW
AI Liquid Cooling Rack	140 kW/rack, 16 racks/module, 96 rack in total
Network/Storage Rack	20 kW/rack, 4 racks/module, 24 rack in total
Minimum Design Grade	Tier III(Basic: Tier III or higher is a customer option)
IT/Cooling Power Backup Time	10 min
PUE(Power Usage Effectiveness)	1.13

Block diagram



Power system

Architecture*	Tier III/Tier III+
Power module	2.4 MW×8
Transformer	2500 kVA×8
Diesel generator	2200 kW DCC×8
PDU(Power Distribution Unit)	(630 A x 2) x 4 units/module

Cooling system

Air-to-liquid ratio	2:8 (1:9-3:7)
Fan wall	210 kW/set, 12 + 2
TMU(Thermal Management Unit)	360 kW, (3 + 1) × 6
Cooling tower	225 m³/h, 3 + 1
Air-Cooled Chiller	750 kW, 3 + 1

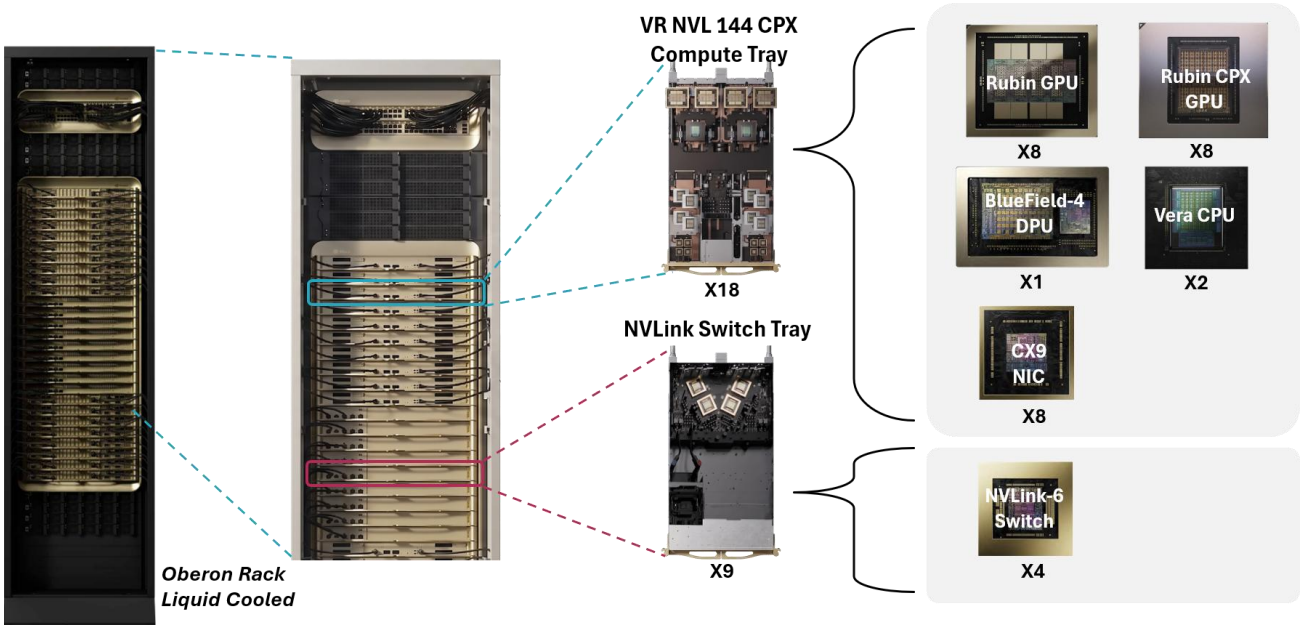
* The Power distribution **architecture** offers adaptable redundancy models—2N, DR, and BR—tailored to optimize both client CAPEX and uptime performance.

Overview

IT Load – 4.8MW

1 modules • 4.8MW/module • 250 kW/Rack

IDIA Vera Rubin chip configuration diagram

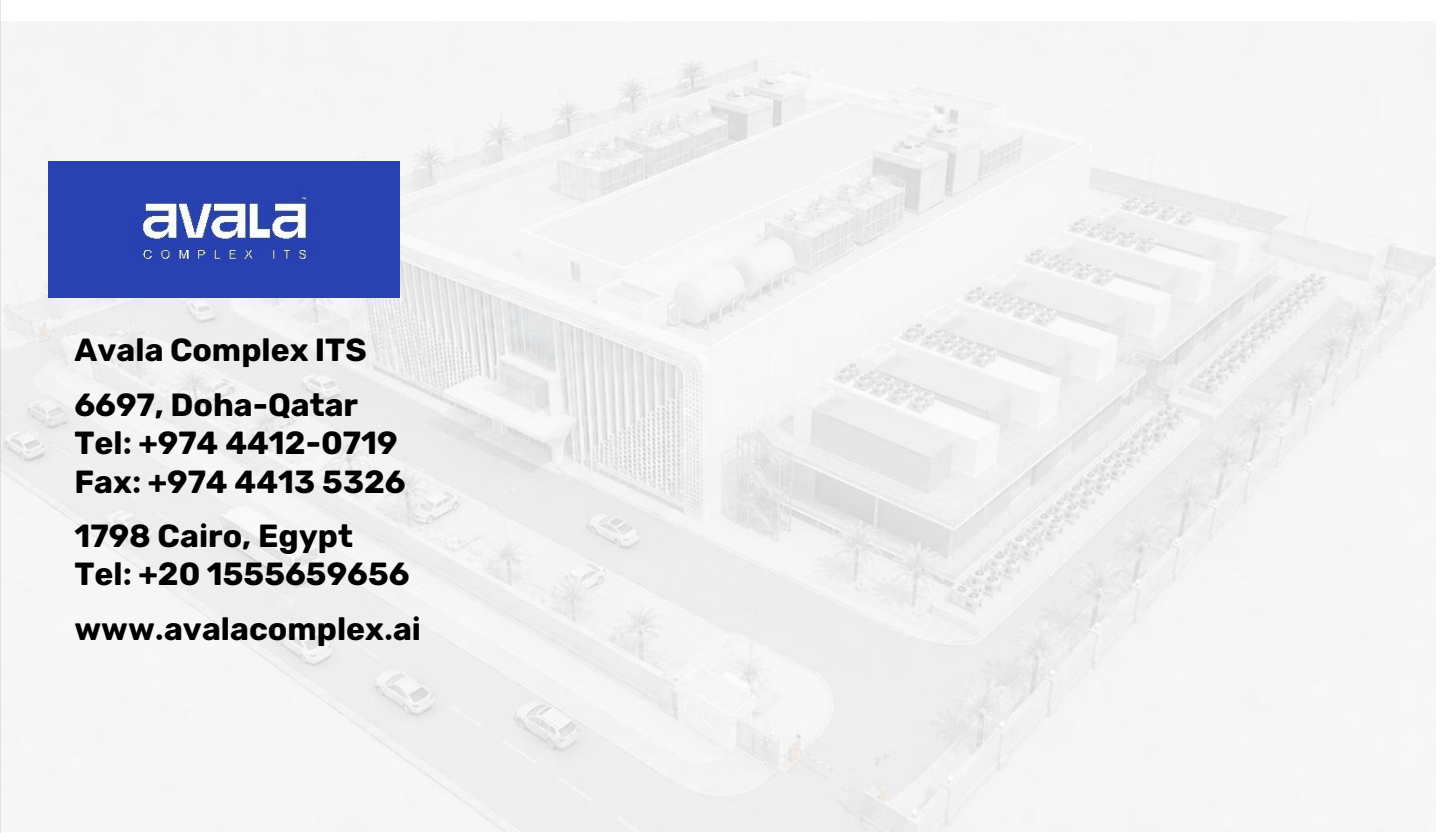


A 1/2 module composed of NVIDIA DGX Vera Rubin NVL72 has IT power of over 2.2MW.



If the NVIDIA DGX Vera Rubin NVL72 is configured as a 16-rack, 1-module setup, it provides more AI IT power than the existing 3 to 4 modules, and significantly reduces the building site area.

Platform	Racks	Per-rack	IT Load	Role
Vera Rubin NVL72 (Oberon)	16 racks	250kW	4,000kW	Mainstream training & inference
Network · Storage · Mgmt	12 racks	30kW	360kW	Quantum-X800 CPO · Spectrum-6 · NVMe-oF
28 racks +α		—	4,360kW	



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