



NAUTILUS PRODUCT DATA SHEET

EcoCore FCD

NAUTILUS DATA TECHNOLOGIES

EcoCore FCD

Facility Cooling Distribution Unit

UP TO

4MW

Heat Rejection per Unit

APPROACH

2°C ATD

Industry-Leading Efficiency

PROVEN

550K+ hrs

Field-Validated Runtime

SCALABLE

2-6 Units

Linked System Operation

PERFORMANCE SPECIFICATIONS

Cooling Capacity

Single Pump Mode (N+1)	2,400 kW 3,600 L/min [951 GPM]
Dual Pump Mode (Active-Active)	3,200 kW 4,800 L/min [1,268 GPM]

Approach Temperature [ATD]	2°C [3.6°F]
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TCS Temperature ΔT	10°C [18°F]
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Hydraulic

TCS External ΔP (Dual Pump)	2.7 bar [39 PSI]
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Total Available Head	6 bar [87 PSI]
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Primary Pressure Drop (FWS)	0.6 bar [8.7 PSI] at 3,100 L/min [819 GPM]
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TCS Operating Pressure Range	Sub-atmospheric (LPS) to +6 bar [+87 PSI]
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Electrical

Power Supply	400–480 V, 50/60 Hz, 3-phase dual feeds
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Max Power Consumption	60 kW
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Service Amps	80 A
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KEY CAPABILITIES

Data Hall-Scale CDU

Engineered to cool entire data halls, not just individual rows. Delivers up to 4,000 kW per unit and links 2 to 6 modules for linear capacity scaling and system level redundancy without requiring facility infrastructure upgrades.

Modular Configuration

Factory configurable for high capacity parallel pump operation aligned with the latest GPU workloads or LPS mode with integrated degassing and leak mitigation. Designed to adapt to evolving density and pressure requirements.

Water Source Agnostic

Low approach temperature design and configurable heat exchanger materials enable compatibility with virtually any facility water source, including treated water, high TDS sources, and seawater. Supports a wide operating temperature range and maximizes flexibility across cooling plant strategies, including zero water consumption when paired with natural sources.

Flexible Deployment

Suitable for greenfield or retrofit environments. Deployable at the perimeter or within the data hall to match site constraints and distribution strategy.

Intelligent Controls

Native BMS and DCIM integration via Modbus, OPC UA, SNMP, and Redfish, with local and remote HMI for full visibility. Advanced control logic dynamically aligns TCS flow and pressure with real time GPU demand while optimizing facility side flow and system efficiency.

EcoCore FCD | System Performance Curves

Fig. 1 — TCS Differential Pressure vs. Flow Rate

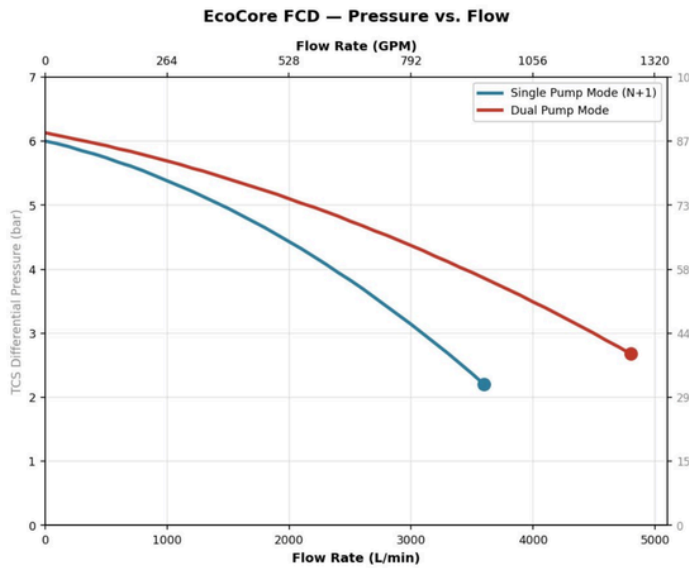
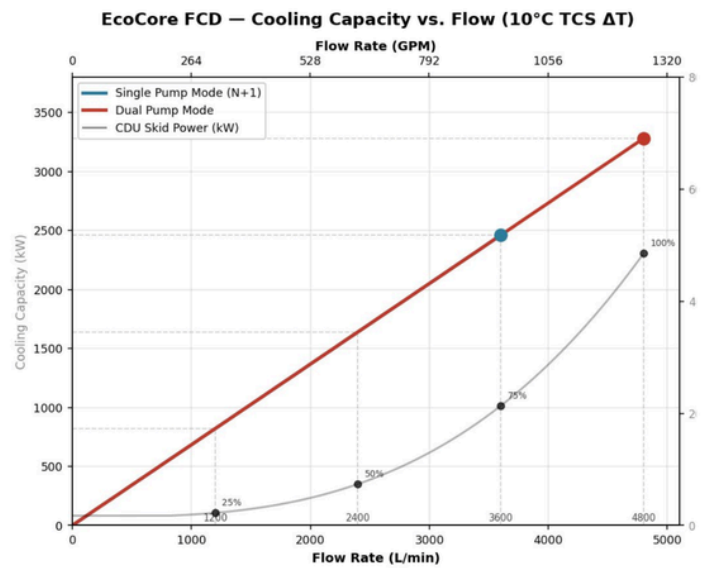
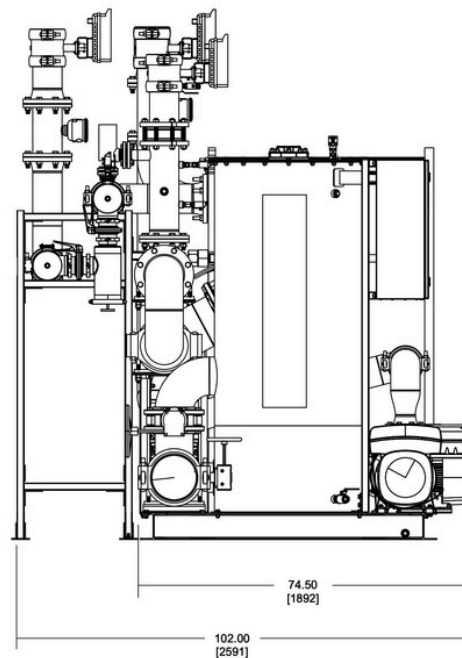
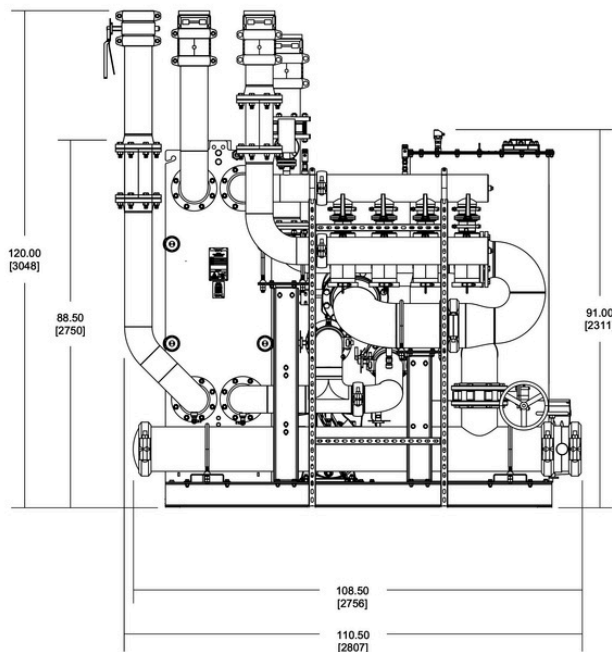


Fig. 2 — Cooling Capacity & CDU Skid Power vs. Flow (10°C TCS ΔT)



EcoCore FCD | General Dimensions



EcoCore FCD | Technical Specifications

GENERAL SPECIFICATIONS	
Connections & Coolant	
Primary Connection	150 mm [6 in.] Sanitary SS316
Secondary Connection	150 mm [6 in.] Sanitary SS316
FWS Coolant Type	Water, Sea Water, Water-Glycol Mix [1–25%]
TCS Coolant Type	Water, Water-Glycol Mix [1–25%]
TCS Filtration	25–50 µm Full-Stream; 1–25 µm Side-Stream
FWS Filtration	500 µm Full-Stream (optional)
System	
Leak Detection	Yes
Pump Redundancy	N+1 Standby or Active-Active Dual Pump
Linked System Operation	2 to 6 CDU modules
Communication	Modbus, OPC UA, SNMP, Redfish
HMI	Local and Remote
Physical	
Dimensions (W×D×H)	2,689 × 1,702 × 2,074 mm [106 × 67 × 82 in.]
Dry Weight	3,520–3,550 kg [7,760–7,827 lbs]
Wet Weight	5,141–3,170 kg [11,333–11,400 lbs]
Noise Level	< 80 dBA at 1 m [3 ft]

AVAILABLE OPTIONS
Titanium Heat Exchanger Plates
Water Quality Monitor
Harmonic Filter
Expansion Vessel and Fill Pump
Auto Transfer Switch

FLUID SYSTEMS & MONITORING	
Fill & Air Removal	
System Fill	Factory fill ports, automatic venting
Integrated Degasser	ADRS continuous air and dissolved gas removal
Expansion Vessel	Available as factory option
Sensors & Monitoring	
Temperature Sensors	TCS supply, return; FWS inlet/outlet
Pressure Sensors	TCS supply and return differential
Flow Meters	TCS loop
Leak Detection	Continuous monitoring, alarmed
Fluid Quality	Conductivity and pH monitoring (optional)

APPLICATIONS & COMPATIBILITY			
Cooling Methods	Primary Water	Deployment	Protocols
Direct-to-Chip Immersion Rear-Door HX Hot Aisle	Freshwater / RO / DI Salt Water Grey Water Glycol Mix 1–25%	Greenfield Retrofit / Upgrade Perimeter- Deploy Data Hall Interior	Modbus TCP OPC UA SNMP Redfish

For specifications, quoting, and regional integrator contacts:

nautilusdt.com | sales@nautilusdt.com