

COOLANT DISTRIBUTION UNITS



One Company, Many Solutions



Coolant Distribution Units

Boyd's Coolant Distribution Units (CDUs) help lower data center total cost of ownership. CDUs right-sized and custom configured for specific applications mean hyperscale compute systems get the exact, optimal cooling performance the system needs, when it needs it. Intelligent controllers with operation logic, automatic diagnostics and trouble shooting, protection and warning functions, as well as smart flow, pressure and temperature controls manage system performance to spike with peak demand while remaining economical and efficient during non-peak operation and prevent problems before they occur. Blind mate quick disconnects with 360 swivel fittings make servicing systems fast for minimized maintenance downtime.

In Rack Coolant Distribution Units

In Rack Coolant Distribution Units (CDUs) are designed to integrate into a server chassis and distribute coolant to a series of servers or heat sources. In-rack CDU configurations are available for 2U and 4U space and feature redundancy pump design, dynamic condensation-free control, automatic coolant replenishing, a bypass loop for stand-by operation and automatic leak detection.



In Row Coolant Distribution Units

Freestanding In-Row Coolant Distribution Units (CDUs) are designed to manage high heat loads in hyperscale compute and data center environments. Full liquid cooling systems that distribute coolant in and out of a series of server chassis capable of tying into existing facility cooling systems or designed to be fully self-contained.



TECHNICAL SPECIFICATIONS

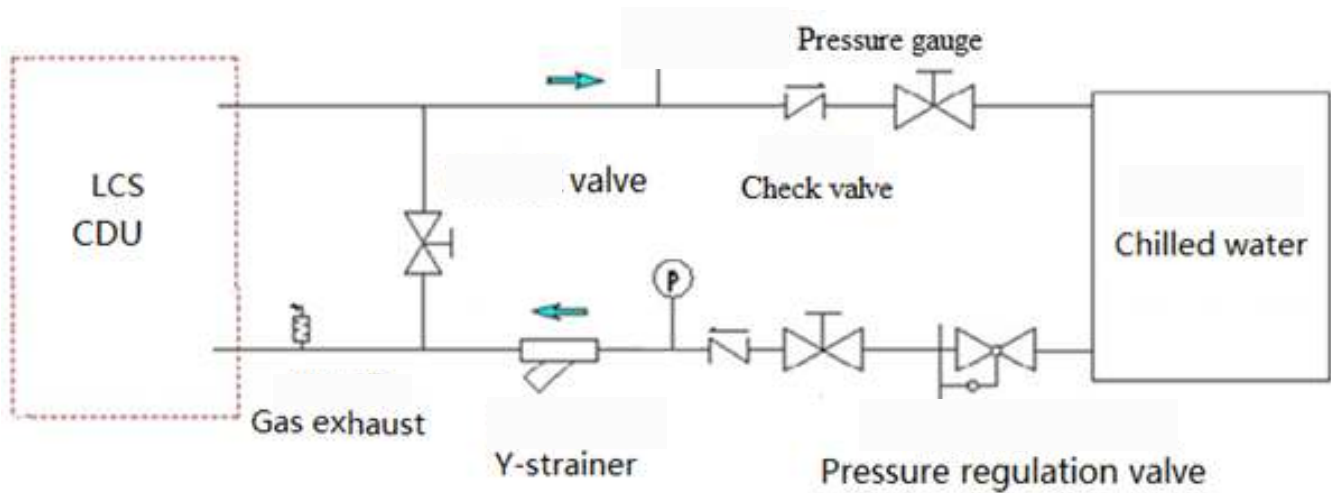
PROPERTIES	VALUES
Secondary Loop Coolant Supply Temperature Tolerance	±1.0 °C
Secondary Loop Coolant Supply Temperature	25-50 °C
Secondary Loop Coolant Residual Pressure	10 Bar
Primary Loop Port Size	1.5" Sanitary Fitting
Secondary Loop Port Size	1.5" Sanitary Fitting
Secondary Loop Test Pressure	5 Bar
Net Weight	≤40KG
(L×W×H) Outline Size	982×450×175mm
Electric Insulation	>10MΩ
Earth Resistance	<4Ω
Acoustic Noise	≤65dB
Cooling Capacity	60 kW
Power Consumption	1.0 kW
Power Supply	220VAC/50Hz
Primary Loop Coolant Supply Temperature Range	10-32 °C
Primary Loop Coolant Supply Flowrate	≥83LPM
Primary Loop Test Pressure	M10Bar
Approach Temperature Differential	8 °C
Secondary Loop Coolant Supply Flowrate	5-75 LPM

OPERATIONAL/ ENVIRONMENTAL SPECIFICATIONS

PROPERTIES	VALUES
Storage Ambient Temperature	(-25)-55 °C
Storage Ambient Humidity	5-90%RH
Operating Ambient Temperature	5-4 °C
Operating Ambient Humidity	30-85%RH
Altitude	≤2000m
Applied Surroundings	Indoor
Coolant	Pure water

INSTALLATION REQUIREMENTS

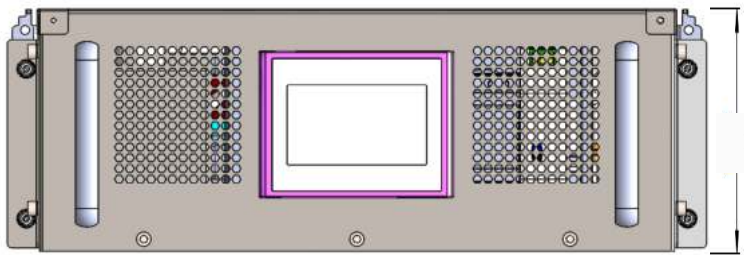
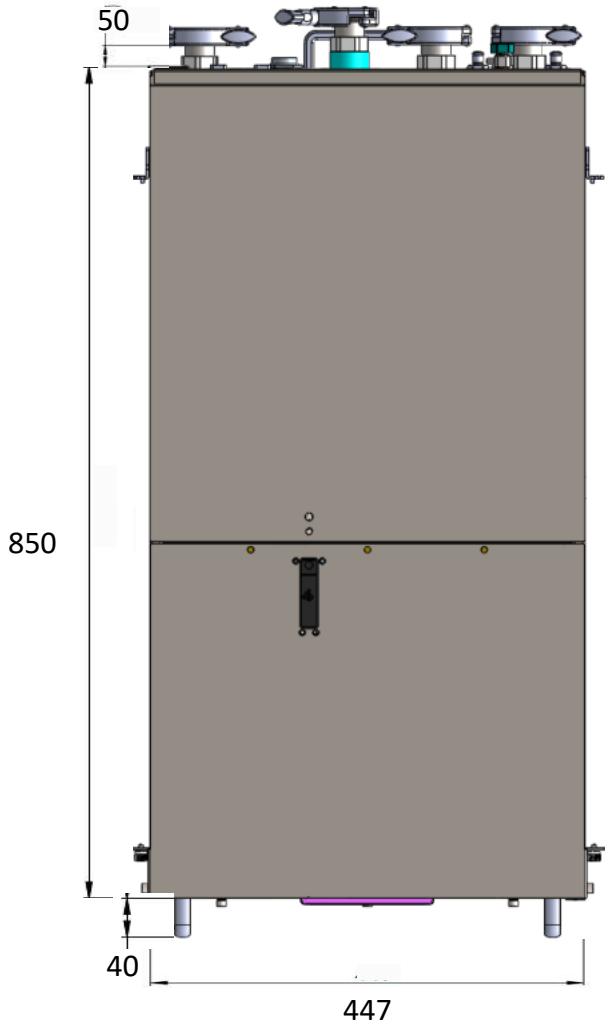
External Facility Coolant Loop Requirements





INSTALLATION REQUIREMENTS

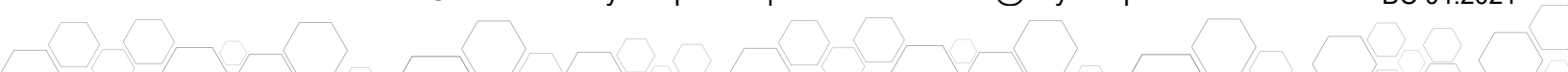
System Overall Dimension



Rear View



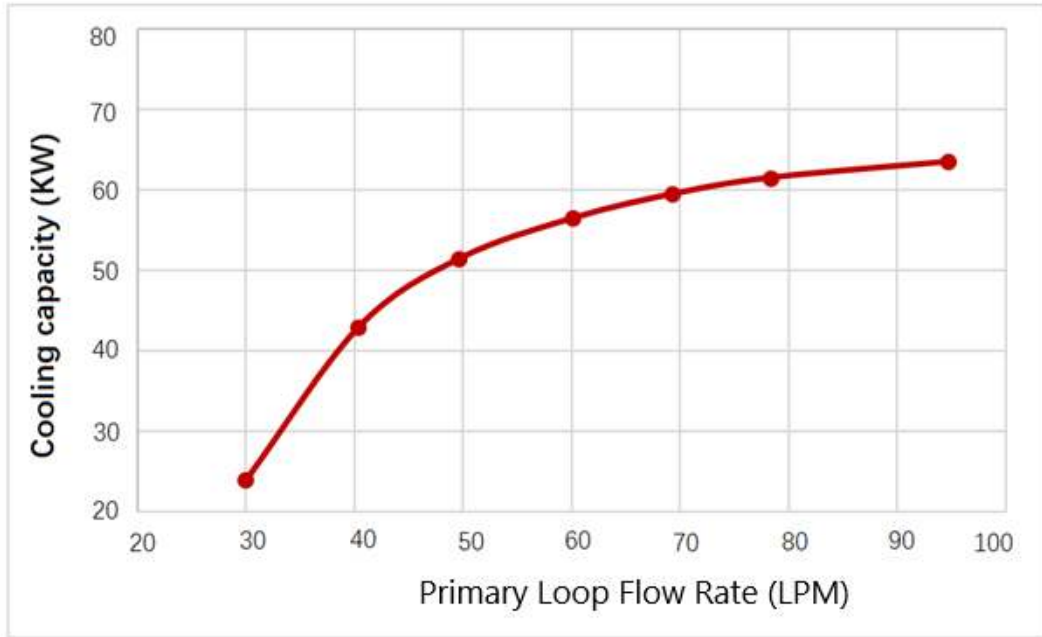
Front View





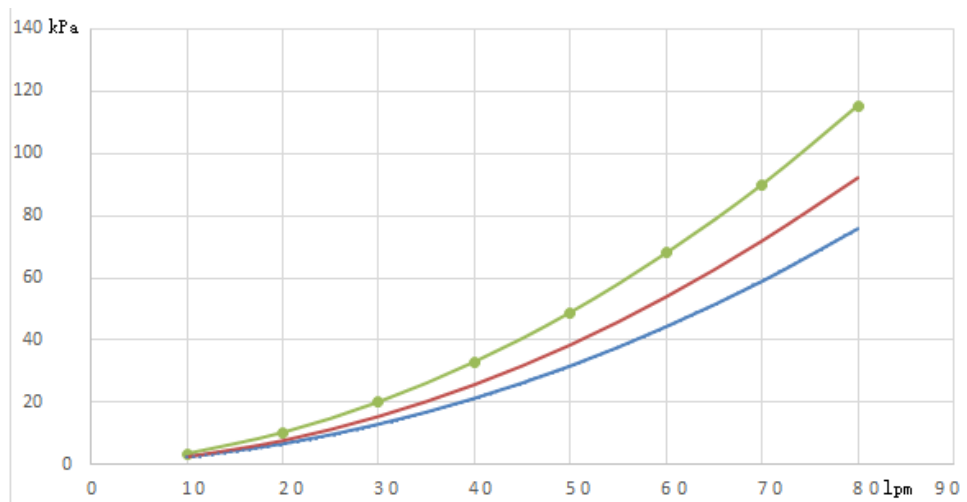
PERFORMANCE

Thermal Performance Curve



Note: Secondary loop flow rate is 75LPM.

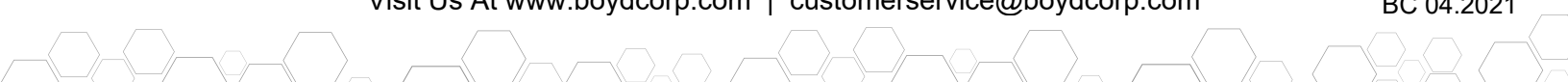
Secondary Loop Hydraulic P-Q Curve

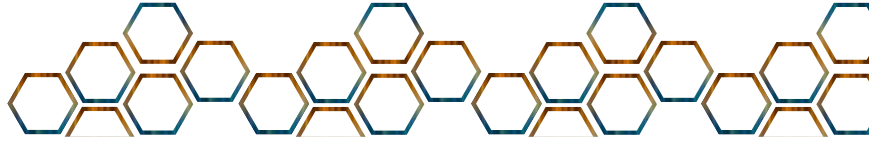


- Without flow transmitter & QD
- Without flow transmitter & with QD
- With flow transmitter & QD

NOTICE:

The information included in this data sheet is believed to be accurate and reliable. BOYD Corporation assumes no responsibility for end use applications and no performance warranty is expressed or implied.





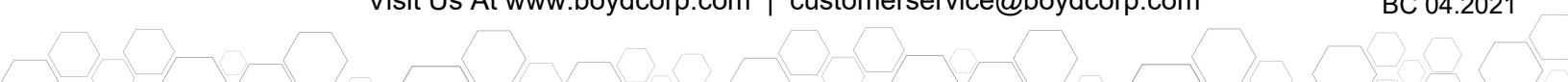
TECHNICAL SPECIFICATIONS

Performance Data

PROPERTIES	VALUES
Pumps Setup	Redundant pump design (only one pump operating at any given time)
Number of Pumps	2
Integrated Variable Speed Drives (V FD's)	Yes, one for each pump
Number of Power Feeds (Qty)	2
Nominal Flow Rate	360L/M (95 USgpm)
Nominal (Primary - Secondary) Flowrate (GPM)	360L/M (95 USgpm)
Cooling Capacity	305kW w/4 deg °C approach temperature
Minimum Approach Temperature (Plain water)	4 deg °C
Primary Temperature	36- 113°F (2- 45°C) ASHREA W4
Secondary Temperature	68-106°F (20-41°C) ± 2°C stability
Cooling Fluids Available	Plain water, 25% PGW mix, or 25% EGW mix
Nominal Available Pump Head Pressure (Psi)	See Graph
Pressure Available from CDU Unit	See Graph

Mechanical Data

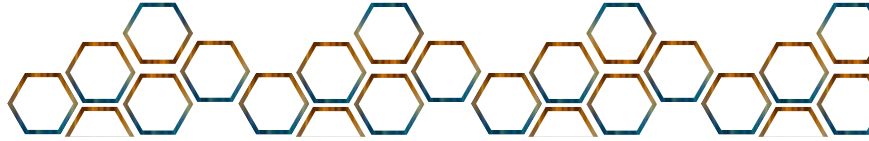
PROPERTIES	VALUES
Unit Dimensions (Width x height x depth)	610mm W x 1948mm H x 1219mm D 24.03" W x 76.68" H x 48.00" D
Weight	1190 lbs (540kg)
Pipe Connections	2" oval flanges that accept 2" nominal (2.125" actual OD) copper tubing. Top port configuration prototype. Top and bottom port configurations for production.



TECHNICAL SPECIFICATIONS

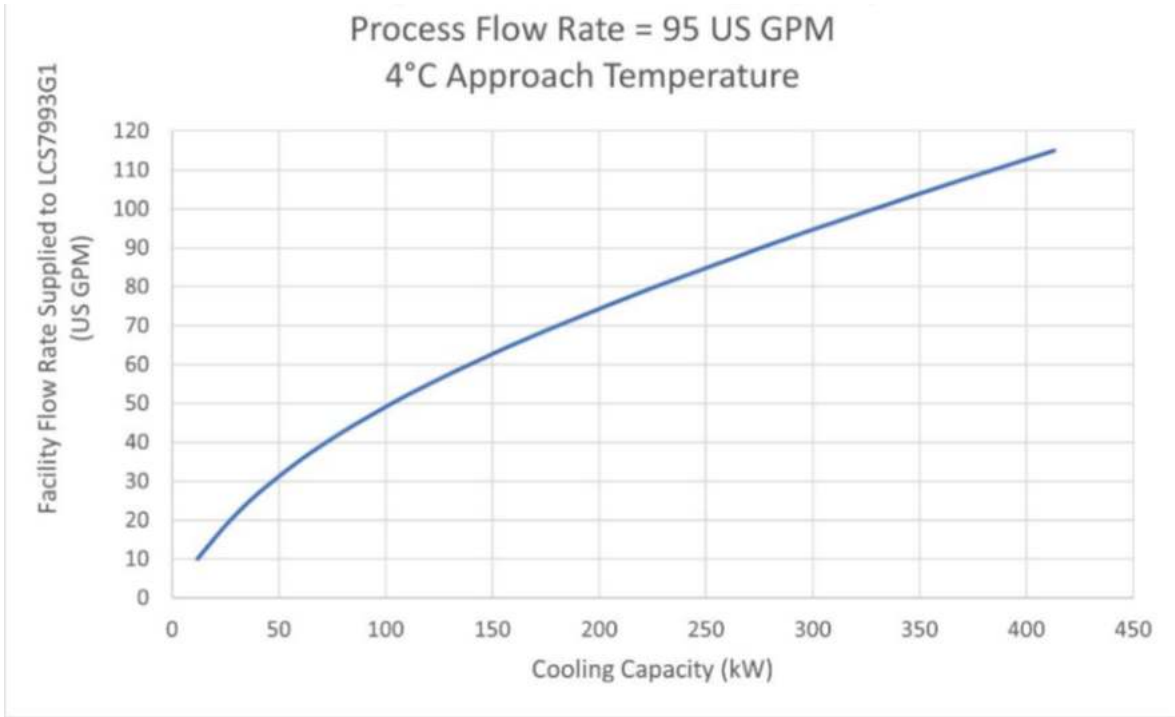
Electrical Data

PROPERTIES	VALUES
Power Supply	380V / 3PH/ 50H z; 480V/3PH/ 60Hz
Full Load Current	7.24A @ 400V, 6.71A @ 480V
Typical Nominal Power and Installed Load	4.6 kW (maximum) 5.4 kVA (maximum)
Nominal Pump Motor Power (HP- kW)	5.5 HP (4.10kW)
Electrical Connection	3 Phase + Ground (x2) Accomoclates Redundant Power Sources
Communication Platforms Available	EthernetTCP/IP RJ45 Isolated RS232/485 RJII (standard) CANbus/ Profibus (optional) Communication Protocols: MODBUS TCP, SNMP VI , CAN open, CANlayer 2, UniCAN, BACnet, KNX and m -Bus via gateway FB Protocol: for any 3rd party protocol
PLC Controls Available	Yes
Sound Data Rated at 10 ft (3m)(dBa)	< 75 dBA
Safety Approvals	CE & designed to the intent of 60950-1

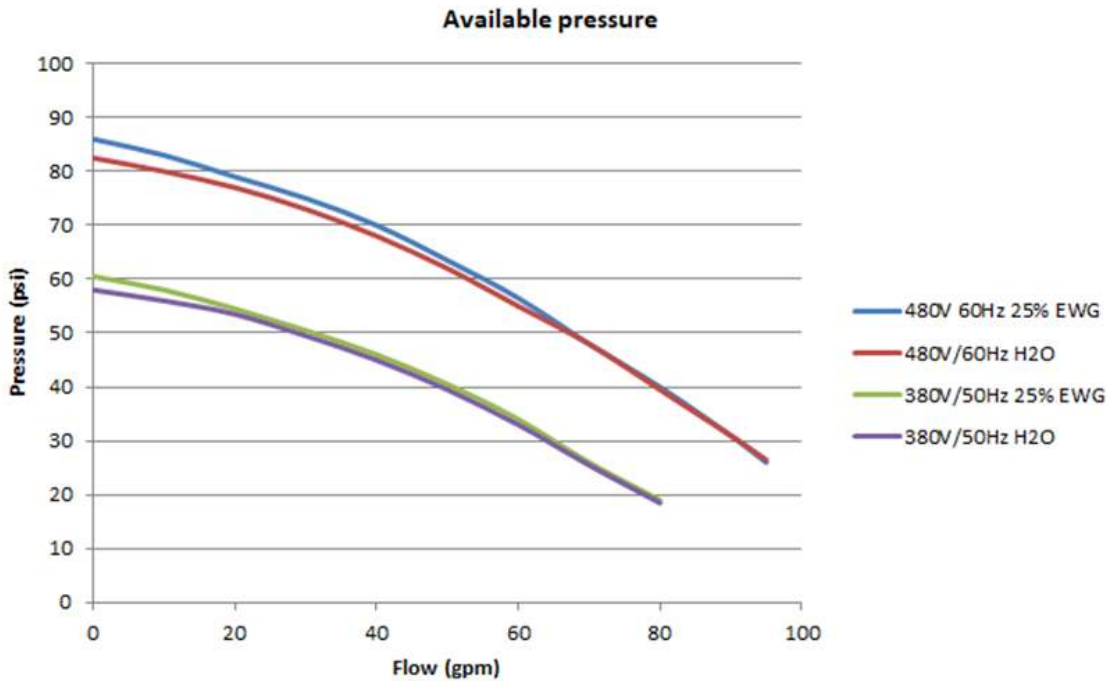


PERFORMANCE

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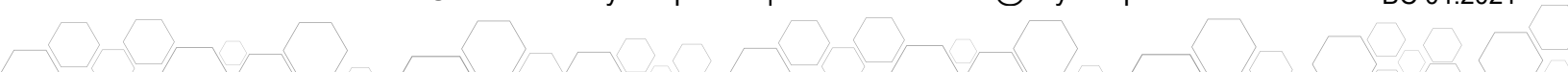


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Global Presence



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Boyd North America

Our highly-trained North American support teams are here to assist with your program management requirements, material selections, product design, commodity management, application engineering and raw material or finished goods testing. Our cross-functional team can be tailored to your unique needs and will closely monitor your initiatives and new programs, while ensuring tight management of new product introduction, volume production and delivery deadlines.

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Our engineers have decades of research and develop experience to provide European customers with the highest quality custom technologies. Boyd excels in rapid prototyping and regional design services deployed for global mass production. We offer sophisticated order management that caters to your custom EDI or supply portal needs with just-in-time stocking and delivery support. Boyd delivers high touch customer service in a global environment, optimized for your complex value chains.

Italy • Germany • United Kingdom

Boyd Asia

With operations spread across Asia, Boyd's global manufacturing footprint, engineering design centers and clean room capabilities from Class 100 to Class 100,000 provide consistent quality, speed and cost-effectiveness with centers of excellence and quality management systems to meet the unique needs of highly diversified industries, providing Asia-Pacific customers as well as global OEMs reliability throughout the product life cycle.

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