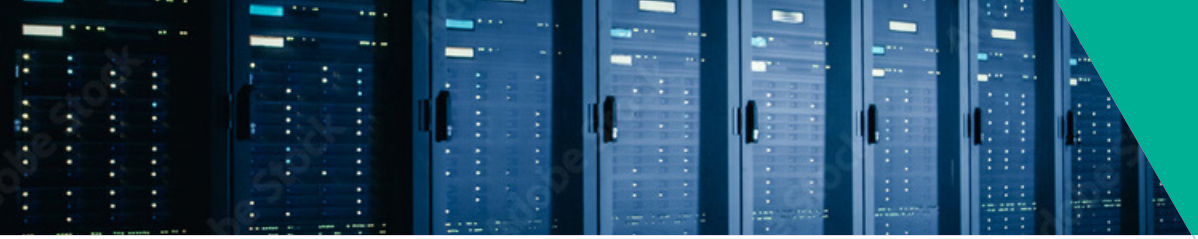

Direct-to-Chip Liquid Cooling

Accelerate deployment. Minimize errors.
Maximize existing space.

Engineered for demanding AI deployments

Panduit FlexFusion™ DTC Cooling cabinets and rack manifolds are engineered for high-density compute environments. The cabinets feature movable e-rails, split-hinged doors, and electrically bonded steel frames, while the manifolds offer leak-free quick connectors, automatic air exhaust valves, and uniform cooling distribution. Together, they reduce deployment time, minimize installation errors, and support scalable liquid cooling for AI workloads.

Top Features & Benefits

Fits Your Largest AI Servers

No retrofitting required

Designed for DTC Applications

Addressing the thermal and spatial challenges of next-gen compute

Supports Multiple Manifolds

And PDUs for high-density cooling

Spacious Layout

Simplifies buidout and reduces errors

Standard Cabinet Footprint

No caboose required

Quick-Swap Components

Enable fast replacements

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FlexFusion™ Direct-to-Chip (DTC) Integrated DTC Cooling Cabinet

PANDUIT®
SPECIFICATION SHEET

SPECIFICATIONS

Direct to Chip (DTC) Cooling Cabinets shall consist of movable e-rails capable of supporting up to four DTC manifolds or PDUs. A welded and assembled steel frame construction available in 750 and 800mm widths, 1200mm depth 45 and 48 RU height. Fully adjustable front and rear cage nut equipment rails. The DTC Cooling cabinet includes a front single-hinged door and rear split-hinged doors with 80% open perforation, horizontally split side panels, PDU mounting bracket, and casters. The entire cabinet shall be electrically bonded without the use of bonding wires. Cabinet shall have a 2540kg (5600 lbs) static load rating and 1814kg (4000 lbs) rolling load rating.

TECHNICAL SPECIFICATIONS

Available cabinet sizes:	**Height RU**	**Width (mm)**	**Depth (mm)**
	52	750	1200
	48	750	
Material:	Steel with durable black or white polyester epoxy powder coat finish		
Compliance:	EIA-310-E, TIA/EIA-942, UL2416		
Packaging:	Cabinets ships assembled, one per pallet		

KEY FEATURES AND BENEFITS

Designed for DTC Applications:	Takes advantage of underutilized space within the cabinet. This space can be used to mount the manifolds or the PDUs, providing maximum flexibility when deploying DTC-cooled servers. This flexibility reduces the time to deploy DTC cooling solutions and reduces installation errors. The DTC cooling cabinet removes the need to add a caboose to the rear of the cabinet to gain extra space. This frees up 200mm in the depth of the cabinet/caboose, simplifies the deployment, and reduces cost.
Flexible PDU Mounting:	New PDU attachment brackets allow mounting the PDUs on the rear cabinet posts for even more space.
Rapid Deployment:	Easy to adjust equipment rails, tool-less vertical cable manager bracket, and tool-less top cap rear entry allow for a faster cabinet installation time than other cabinets.
Durable Coating:	Cabinets are powder-coated in a durable, low-maintenance polyester epoxy paint available in black (RAL9005).

APPLICATIONS

Panduit's DTC cooling cabinets are specifically designed to alleviate overcrowding in cabinets that support AI and HPC workloads within on-premises and colocation data centers and deployments at the edge.

FlexFusion™ Direct-to-Chip (DTC) Cooling Integrated DTC Cooling Cabinet

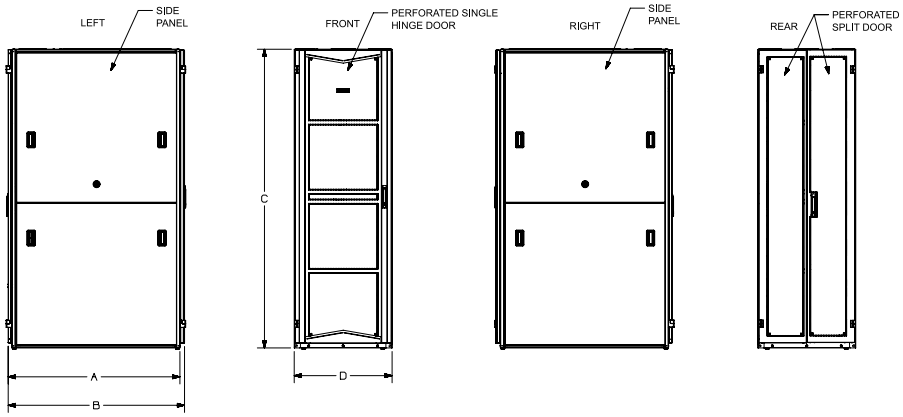
DTC COOLING CABINET OPTION

Features	Options to Choose From
Top Cap Seal	Brush Seal
Doors	Single Hinged Front/Split-Hinged Rear or None
Door Lock	Mechanical keyed; Electronic keypad
PDU Mounting Bracket	Left Side, Right Side, Both Sides or None
Casters	Yes
PDU Included	Choice of several G5 PDU

ORDERING INFORMATION

Width	RU	Side Panels	Color	Standard or Electronic	Part Number
750	48	No	Black	Standard	XGD754829B4S-DTC
			White	Standard	XGD754829W4S-DTC
		Yes	Black	Standard	XGD754822B4S-DTC
			White	Standard	XGD754822W4S-DTC
750	48	No	Black	Electronic	XGD754829B4E-DTC
			White	Electronic	XGD754829W4E-DTC
		Yes	Black	Electronic	XGD754822B4E-DTC
			White	Electronic	XGD754822W4E-DTC
750	52	No	Black	Standard	XGD755229B4S-DTC
			White	Standard	XGD755229W4S-DTC
		Yes	Black	Standard	XGD755222B4S-DTC
			White	Standard	XGD755222W4S-DTC
750	52	No	Black	Electronic	XGD755229B4E-DTC
			White	Electronic	XGD755229W4E-DTC
		Yes	Black	Electronic	XGD755222B4E-DTC
			White	Electronic	XGD755222W4E-DTC

Example: 750mm wide cabinet that is 48RU high, with no side panels, black, with standard handle = XGD754829B4S



All cabinets include:

- Adjustable front and rear equipemt rails
- Rail position markers
- Heavy-duty leveling legs
- Ganging brackets
- Standard floor mounting brackets
- 25 each M6 cage nuts and screws

Dimension A	Dimension B	Dimension C*	Dimension D
1200mm (48.0")	1254mm (49.4")	48 RU - 2266mm (89.2")	750mm (29.5")

***Cabinet height excludes caster. Add 24mm (0.95") to heigh for cabinet with casters.**

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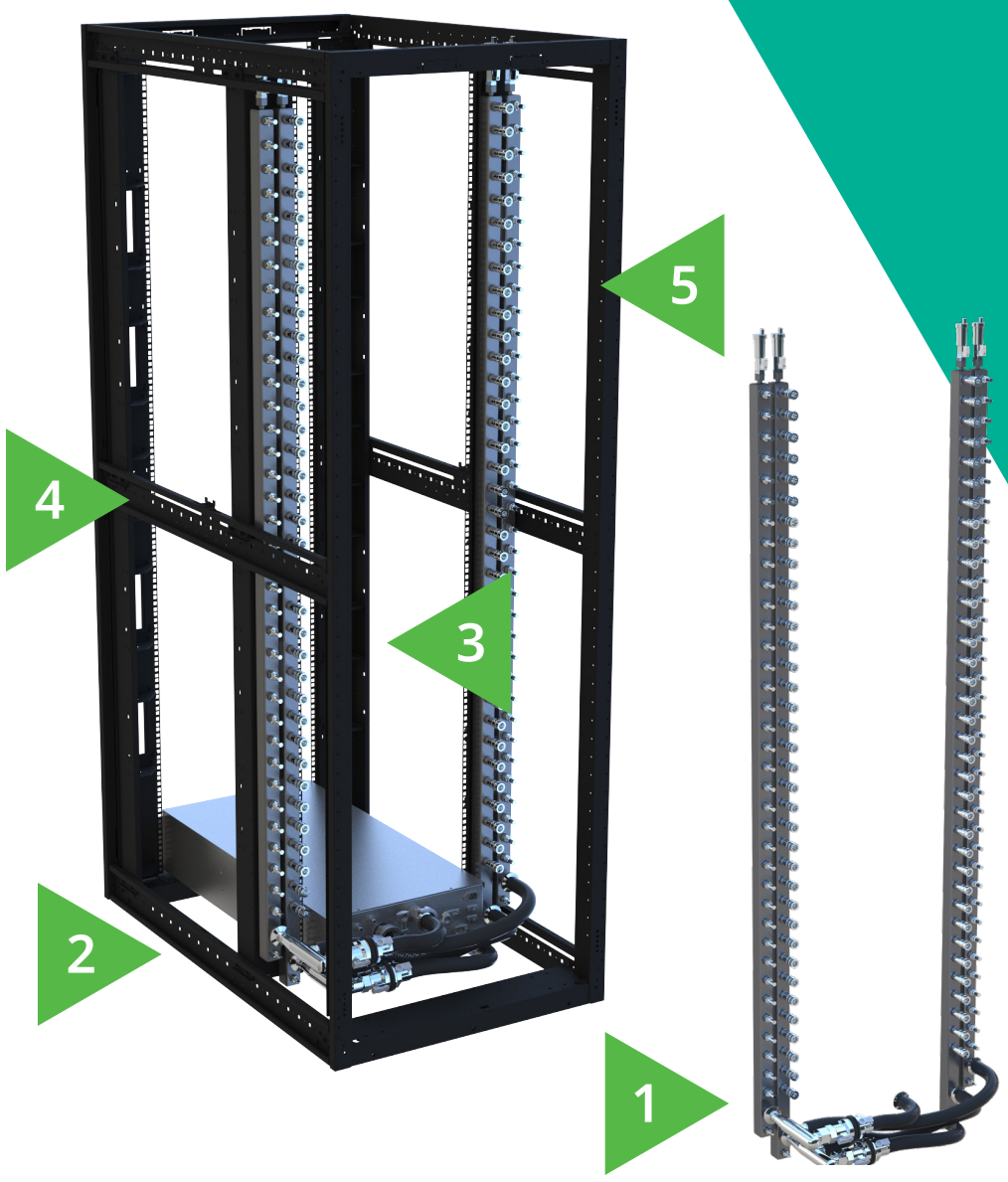
PANDUIT™

Cool Smarter. Perform Better.

Direct-to-Chip Cooling engineered for AI and HPC environments.



1 READY FOR YOUR LARGEST AI SERVERS

The Panduit Rack Manifold is an essential element of the Direct-to-Chip Cooling cabinet ecosystem. Designed for a quick and easy installation.

2 STANDARD FOOTPRINT, NO ADD ONS

Unique cabinet and rack manifold design maximizes the amount of usable space in the rear of the cabinet. Supports multiple manifolds and PDUs for high-density cooling.

3 ACCELERATE DEPLOYMENT, REDUCE RISK

Extra space makes it easier to outfit AI and HPC cabinets with liquid cooling manifolds, multiple PDUs, power cords, and fiber optic cabling management.

4 QUICK SWAP COMPONENTS

Designed to alleviate overcrowding in cabinets that support AI and HPC workloads within on-premises and colocation data centers and deployments at the edge.

5 FLEX FUSION CABINET

Consist of movable e-rails capable of supporting up to four DTC manifolds or PDUs.

For more information on the DTC Cooling, visit **panduit.com/dtc**

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FlexFusion™ Direct-to-Chip (DTC) Cabinet Rack Manifold

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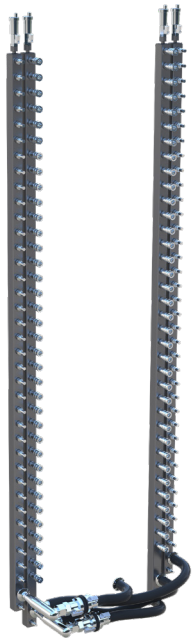
SPECIFICATION SHEET

SPECIFICATIONS

The Panduit Rack Manifold is an essential element of the FlexFusion Direct-to-Chip Cooling cabinet ecosystem. The rack manifold efficiently supplies water for liquid-cooled servers and return the heated water to a cooling distribution unit (CDU).

The unique design of the Direct-to-Chip Cooling Cabinet and rack manifold maximizes the amount of usable space in the rear of the cabinet. This extra space makes it easier to outfit AI and HPC cabinets with liquid cooling manifolds, multiple PDUs, power cords, and fiber optic cabling management, thereby shortening the deployment time and reducing errors.

The manifold consists of a supply pipe and a return pipe, used for uniformly supplying and returning liquid to the server. The body is made of SUS304 material, and the inlets and outlets are equipped with leak-free quick connectors, enabling rapid connection and disconnection. An automatic exhaust valve is installed above each manifold, allowing for effective exhaust of air in the system. A liquid discharge interface is installed at the bottom, and QD is used to realize quick plugging.



KEY FEATURES AND BENEFITS

Native FlexFusion™ Compatibility:	Engineered specifically for plug-and-play integration with Panduit's Direct-to-Chip Cooling Cabinet ecosystem
Flexible Mounting Options:	E-rail or cabinet side mounting accommodates diverse rack configurations and space constraints to maximizes rear cabinet space for PDUs, cabling, and additional infrastructure components
Minimized Installation Errors:	Intuitive design and quick connectors reduce complexity during deployment
Low Maintenance Overhead:	Quick-disconnect components enable rapid servicing without system downtime
Uniform Cooling Distribtuion:	Low flow rate design ensures consistent thermal performance across all connected server
Leak-free Operation:	Quick connectors eliminate coolant loss and reduce contamination risk
Automatic Air Removal:	Integrated exhaust valves maintain optimal system performance and prevent air pocket
Industrial-grade Materials:	US304 stainless steel construction ensures long-term durability in demanding data center environments
Quick Disconnect Maintenance:	QD drainage interface simplifies routine maintenance and emergency procedures
Reliable Connection Integrity:	Leak-free quick connectors provide secure, repeatable connections for mission-critical cooling systems

FlexFusion™ Direct-to-Chip (DTC) Cabinet Rack Manifold

TECHNICAL SPECIFICATIONS

Input flow rate:	Max: 150 psi
Input water temperature:	Min: – 20C to Max: 70C (lower limit controlled based on condensation)
Water specification:	Water/PG25

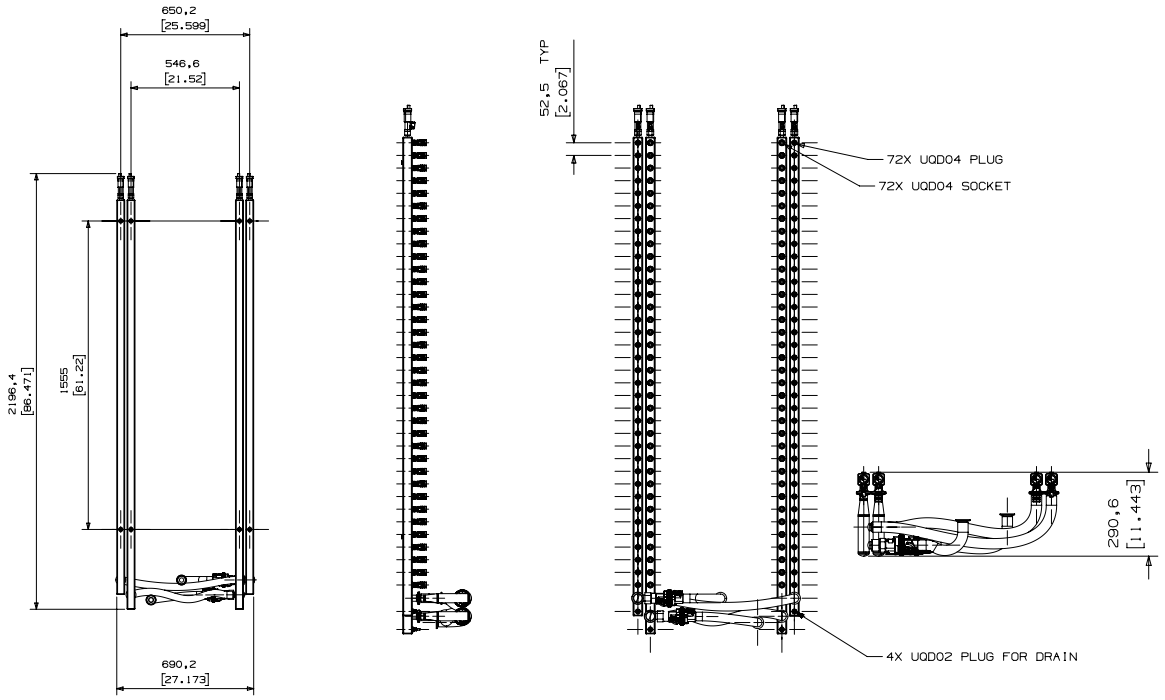
GENERAL SPECIFICATIONS

Server supply and return connection:	36 X UQD04 per manifold
Supply/Return connection:	1" FD83, sanitary flange
Dimensions:	H: 2000.6mm X W: 38. mm X L: 100.7mm
Weight:	44kg dry

ORDERING INFORMATION

DTC-MAN	No. of Ports	Supply/ Return	Height (RU)	Width (mm)	Depth (mm)	Feed	Type of QD	Size of QD (in.)
DTC-MAN	36	Supply	48	40	40	Bottom	Staubli	25
		Return				Top		
		2 Pairs						

Example: DTC 2 sets of manifolds (each set is one supply, one return) with 36-ports, 48RU H, 40mm X 40mm, bottom fed, using 0.25" Staubli QDs, with 1" ID hoses = DTC-MAN36P484040BS25



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