

LQ2 Connections Frequently Asked Questions



What is the LQ2?

The LQ2 Series connectors are the latest addition to CPC's liquid cooling of electronics (LCoE) Series. For liquid cooling systems, the small, compact LQ2 connector is the product of choice. Use the LQ2 in applications such as high-powered PCs, data centers or medical equipment that require ultra-reliable, drip-free connections and disconnections.

What makes the LQ2 unique?

- Like the LQ4 and LQ6 Series, the LQ2 is specifically designed for the liquid cooling market. It uses a thumb latch for one-handed, quick connections and disconnections.



- The LQ2 thumb latch offers a clear connection/disconnection point making it easy to see how to connect and disconnect the connectors compared to less intuitive ball and sleeve style connectors

- The LQ2 thumb latch enables operation in tight spaces since there is no sleeve to pull back as in a ball-and-sleeve connector.
- The LQ2 thumb latch is color-coded for foolproof connections.
- The LQ2 thumb latch has the audible “CPC click” to indicate a connection.
- The LQ2 has the highest flow capacity on the market of any 1/8” connector. The higher flow capacity provides a reduced pressure drop, so your fluid handling systems do not work as hard.
 - The Cv (flow capacity) of the LQ2 is .37 while other competitive products are .30 or lower.
 - Pressure drop is reduced on average by 34%.
 - With the LQ2’s higher flow capacity a fully-loaded 42U server rack will see savings of 84 psi with a flow rate of 0.5 GPM This allows for additional energy savings, reduced wear on pumps, and potential to reduce pump size.
- The LQ2, like all LQ Series products, uses multilobed seals that ensure connector reliability.
 - Further protection against debris since the first lobe collects the debris with the additional seals adding another layer of protection.
 - Higher sealing efficiency which prolongs the life of the connector.

Key Advantages of the LQ2 Series

Specifically designed for liquid cooling, the LQ2 uses a thumb latch for one-handed, quick connections and disconnections.

The LQ2 has the highest flow capacity of any 1/8” connector on the market.

Like all LQ Series products, the LQ2 uses multilobed seals that ensure connector reliability.

- Lower friction force that reduces the connection forces of the LQ2



Redundant seals

- The LQ2 is redundantly sealed in the connected state for an extra layer of protection

Other important features for the LQ2 include:

- The LQ2 provides a frictionless valve for longer life and ease of use
- Size
 - The LQ2 fits in a standard one rack unit (1U). The height of electronic modules is standardized as multiples of 1.752 inches (44.50 mm) labeled one rack unit or U.
- Sleek, ergonomic look
 - Low profile with smooth lines
 - Easy for users to grip
 - Obvious connection/disconnection
- New hose barb design specifically for LCoE applications using reinforced tubing to deliver coolant



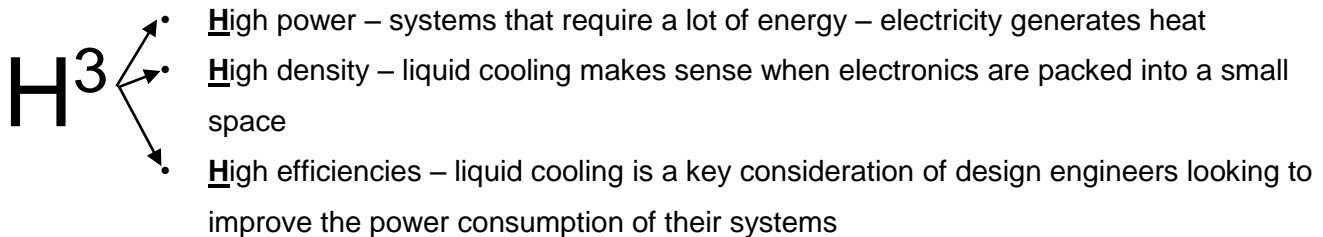
- Two barbs spaced to allow the reinforced tubing to relax between the barbs for a stronger grasp of the tubing.
- Larger barbs to securely grip reinforced tubing.

- Plastic valves offer significant advantages over metal valves
 - Protect the connector from corrosion
 - Increase cycle life over metal design
 - Higher flow due to optimized design
 - Reduce costs
- Swivel
 - Makes installation, connection and disconnection easier

- Allows specific orientation of the body latch, even in threaded connections to manifolds

Where can I use LQ2 connections?

Think H³. Find thermal/environmental, design and mechanical engineers at companies developing systems that have requirements for:



The LQ2 is perfect for those liquid cooling applications that require multiple connect/disconnect cycles where liquid loss and air introduction back into the system are not desired. There is a broad range of systems that meet the H³ requirements – from power supplies to LEDs to solar generators. Key markets that fit the H³ requirements and where liquid cooling exists include these types of equipment:

- Chip testing
- Laser
- Communication broadcast
- Solar/winder power generation
- Power supplies/Power Inverters
- LEDs
- Aerospace
- Defense
- Personal computers for hardcore gamers

Look for companies that:

- Compete on performance and use cutting edge technology to stay ahead
- Currently use or are planning to change to liquid cooling for their equipment

How does the LQ2 compare with competitors?

- Higher flow coefficients with a Cv of .37 vs. competitors Cv of .30 or lower that equates to reduced pressure drop on average of 34%, optimizing liquid cooling system performance
- Lower profile that's sleek and modern
 - Elegant, modern looking connector compared to old-style industrial ball and sleeve
- The disconnection is obvious
 - Ball and sleeve connectors are not intuitive and in some cases require a sleeve pull-back to connect
- Easier installation
- Color coding for foolproof connections (red for hot, blue for cold)
- Lower connection forces. The LQ2 provides connection forces less than half when compared to some competitive products.

What is the material type for the LQ2?

The LQ2 is available in chrome-plated brass. Material types of the other components are:

Valves and thumb latch:	Polysulfone
Valve springs (wetted):	Stainless steel
External springs and pin:	Stainless steel
Seals:	EPDM

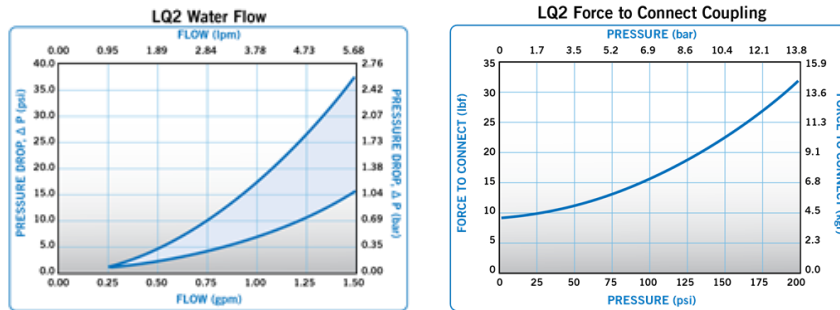
What terminations come standard on the LQ2?

The LQ2 comes standard with:

- 1/4" SAE Straight thread options for manifolds. These terminations are designed to be used with o-ring boss port SAE J1926.
- 1/4" (6.4 mm) hose barb
- 1/4" (6.4 mm) hose barb elbow

What are the flow characteristics?

The LQ2 coupling has 1/4" nominal flow.



At what flow rate is it safe to disconnect the LQ2?

The maximum flow at disconnect is:

- 1.00 gallons per minute at 0 to 100 psi
- 0.25 gallons per minute at 101 to 200 psi

Example: It is safe to disconnect the LQ2 when liquid is flowing at one gallon per minute from 0 to 100 psi and at 0.25 gallons per minute from 101 to 200 psi.

What are the pressure/temperature specifications?

Pressure per Line: Vacuum to 200 psi, 1.38 bar

Temperature: 0°F to 240°F (-17° C to 115° C).

Cold storage temperature: Connectors can be stored at -55° C without damage or failure.

This is not under pressure, but may be charged with coolant.

What are the specifications for the LQ2?

Coupling Bodies • CHROME-PLATED BRASS



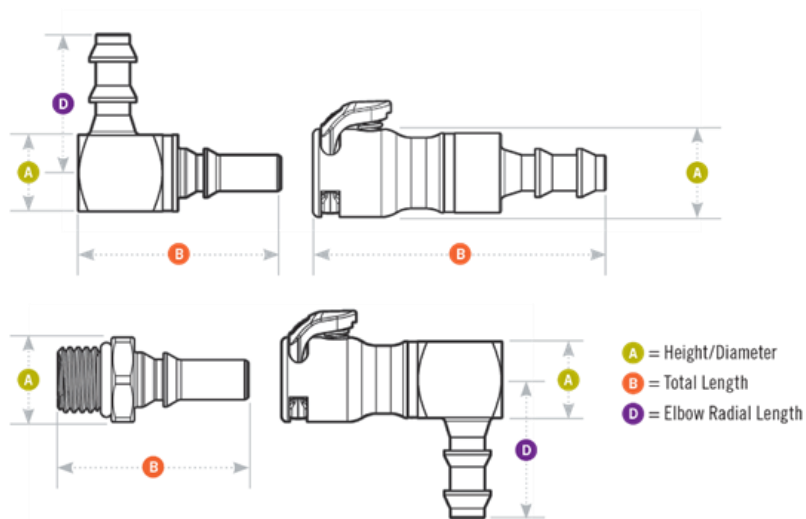
TERMINATION	TUBING/THREAD SIZE	METRIC EQ.	SKU TOFF	A	B	D
IN-LINE LOCKING HOSE BARB	1/4" ID	6.4mm ID	LQ2D1704LRED LQ2D1704LBLU	0.82	2.09	
IN-LINE STRAIGHT THREAD PORT SAE	1/4 SAE		LQ2D3004LRED LQ2D3004LBLU	0.82	1.72	
ELBOW LOCKING HOSE BARB	1/4" ID	6.4mm ID	LQ2D3304LRED LQ2D3304LBLU	1.54	1.64	1.03

Coupling Inserts • CHROME-PLATED BRASS



TERMINATION	TUBING/THREAD SIZE	METRIC EQ.	SKU TOFF	A	B	D
IN-LINE LOCKING HOSE BARB	1/4" ID	6.4mm ID	LQ2D2204LRED LQ2D2204LBLU	0.562	1.96	
IN-LINE STRAIGHT THREAD PORT SAE	1/4 SAE		LQ2D4604LRED LQ2D4604LBLU	0.625	1.28	
ELBOW LOCKING HOSE BARB	1/4" ID	6.4mm ID	LQ2D2304LRED LQ2D2304LBLU	1.313	1.51	1.03

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters.



When is it available?

The product is available mid-December 2016.

What color is the LQ2 available in?

The LQ2 is available with a warm red thumb latch and color band or a cool blue thumb latch and color band.

What is the bag quantity of LQ2?

There are 10 LQ2 connectors in a bag.

What is the lead time for LQ2?

The standard lead time for LQ2 is 10 working days, starting with availability in December 2016.

How can I receive product samples?

Product sample requests are available in the LQ2 page of [CPC's Channel Tools/New Products](#).

How can I get more information on the LQ2?

More information including specifications, customer drawings, part numbers and purchase information can be found at cpcworldwide.com/LQ2.