



# Infinite chiller configurations to help you achieve your goals



Quantech® QCW4 water-cooled variable speed screw chillers



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**Continuing a history of engineering  
innovations that meet your requirements.**

Building requirements are constantly evolving. To keep you ahead of the curve, Johnson Controls has developed numerous technological innovations for our Quantech chillers. When some refrigerants were identified as ozone depleters, we adapted our chillers to use compounds that are friendly to the environment. When electricity prices began to escalate, we developed enhanced tubes and variable speed drives that slashed energy use. And when the industry was looking for ways to recover energy, we developed a full line of heat-recovery chillers.

To help you meet today's challenges, Johnson Controls designed the Quantech QWC4 chiller. This cutting-edge design uses a number of engineering advances to address four primary requirements of building owners and designers — efficiency, application flexibility, sustainability, and confidence.



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# Reduce compressor speed. Increase energy savings.

Finding the right balance between a chiller's capital cost and its cost of ownership can be a challenge. But Johnson Controls makes it easy.

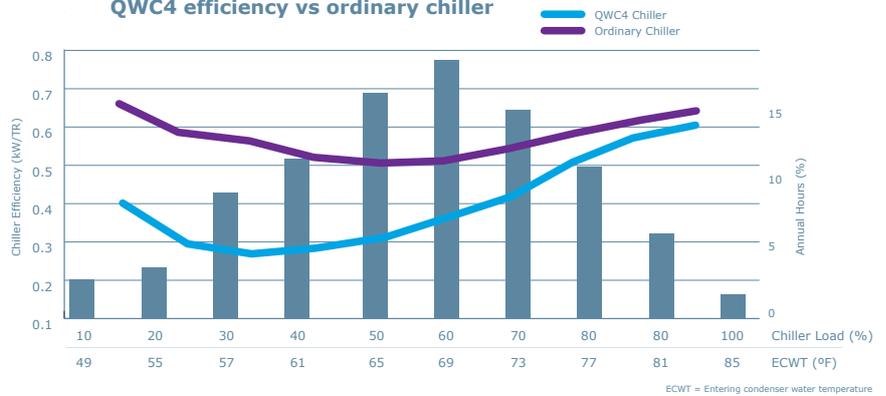
By making variable-speed technology standard on every Quantech QWC4 chiller, Johnson Controls delivers high energy performance and low ownership cost. The base model QWC4 chiller is more efficient than most competitive chillers.

There is a simple reason for this phenomenon. In most places in the world, the variable speed QWC4 chiller saves energy during 99 percent of operating hours spent at off-design conditions, which include reduced load and/or reduced entering condenser water temperature.

In addition, you can specify that your QWC4 chiller be built with optimized performance, which can deliver an Integrated Part Load Value (IPLV) that is as much as 30 percent better than ordinary chillers.

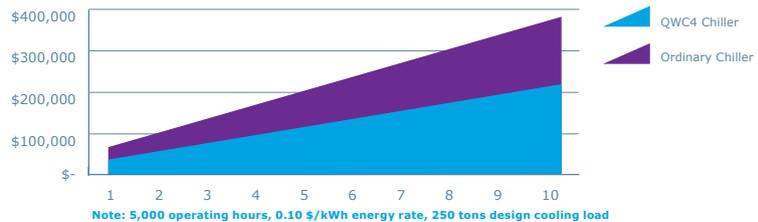
The bottom line: the QWC4 chiller makes it easy to balance capital cost and ownership cost.

**QWC4 efficiency vs ordinary chiller**



The QWC4 chiller delivers superior energy performance at all operating hours.

**QWC4 energy cost vs ordinary chiller**



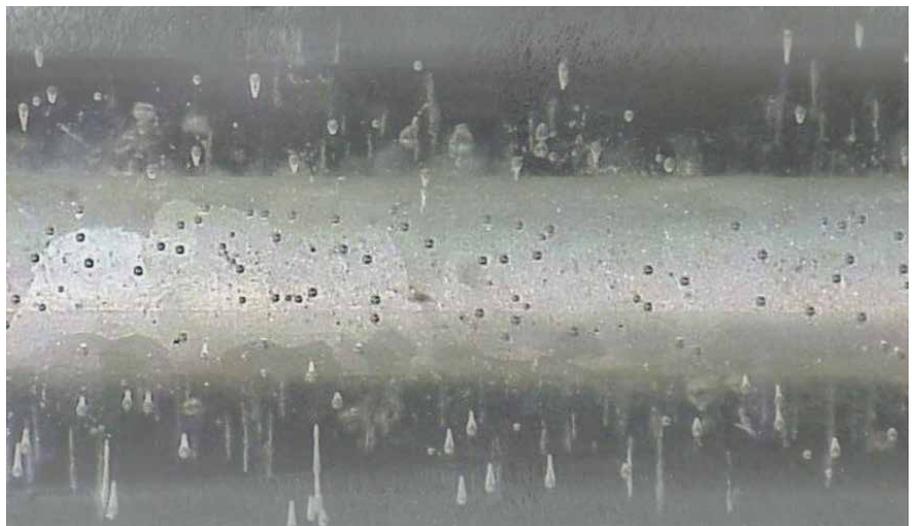
An investment in an optimized QWC4 chiller reduces energy costs by 30 percent.

# Many applications. One chiller.

Like all screw chillers, the QWC4 chiller is capable of handling higher pressure lift than a centrifugal chiller. As a result, a thermal storage application that requires glycol to be chilled to 14°F, or a heat recovery or heat pump application that requires water to be heated to 150°F, are within the capabilities of the QWC4 chiller.

However, unlike ordinary screw chillers, the QWC4 chiller has the flexibility to handle these high-lift applications with the highest efficiencies available. The difference is its variable speed drive, which constantly tunes the compressor speed to the exact lift and load requirements.

The remarkable flexibility offered by the variable speed technology also allows the QWC4 chiller to utilize a wide range of heat-rejection methods: in addition to an open cooling tower, you can also use a closed-circuit cooling tower, a dry cooler, or an adiabatic cooler, all with the peace of mind that the QWC4 chiller is giving you the highest efficiency possible.



The QWC4 chiller can efficiently handle the low evaporator pressure required for ice thermal storage. (Photo courtesy of Baltimore Air Coil)



The QWC4 can be used in heat pump applications producing hot water for high-volume users such as hospitals and hotels.

# Reach greener goals. Start with a smaller footprint.

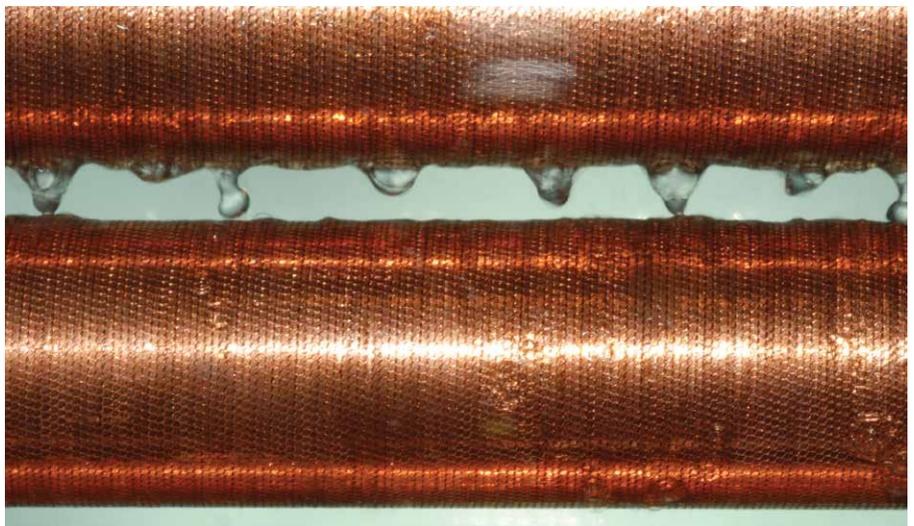
Why should you pay an economic penalty for being environmentally friendly? Unlike competitive chillers, the QWC4 chiller does not make you choose between saving money and saving the environment.

The QWC4 chiller reduces environmental impacts in two ways: directly, by managing refrigerant charges and the potential refrigerant leak points; and indirectly, by minimizing power plant CO2 emissions, which are responsible for 98 percent of the Global Warming Potential (GWP) associated with chillers.

To reduce the direct effect, the QWC4 chiller uses HFC-134a refrigerant, which has no ozone-depletion potential and no phase-out date. We also reduced the number of fittings, joints, and other potential leak points by 35 percent compared to conventional compressor designs. Plus, our proprietary falling-film evaporator design allows refrigerant charge to be reduced by as much as 30 percent compared to conventional designs.

The indirect effect is addressed through the superior energy performance of the QWC4 chiller, which cuts the energy that the power plant needs to produce and reduces emissions by as much as 30 percent.

Finally, the QWC4 chiller makes it easy for you to earn points in the LEED® green building certification program.



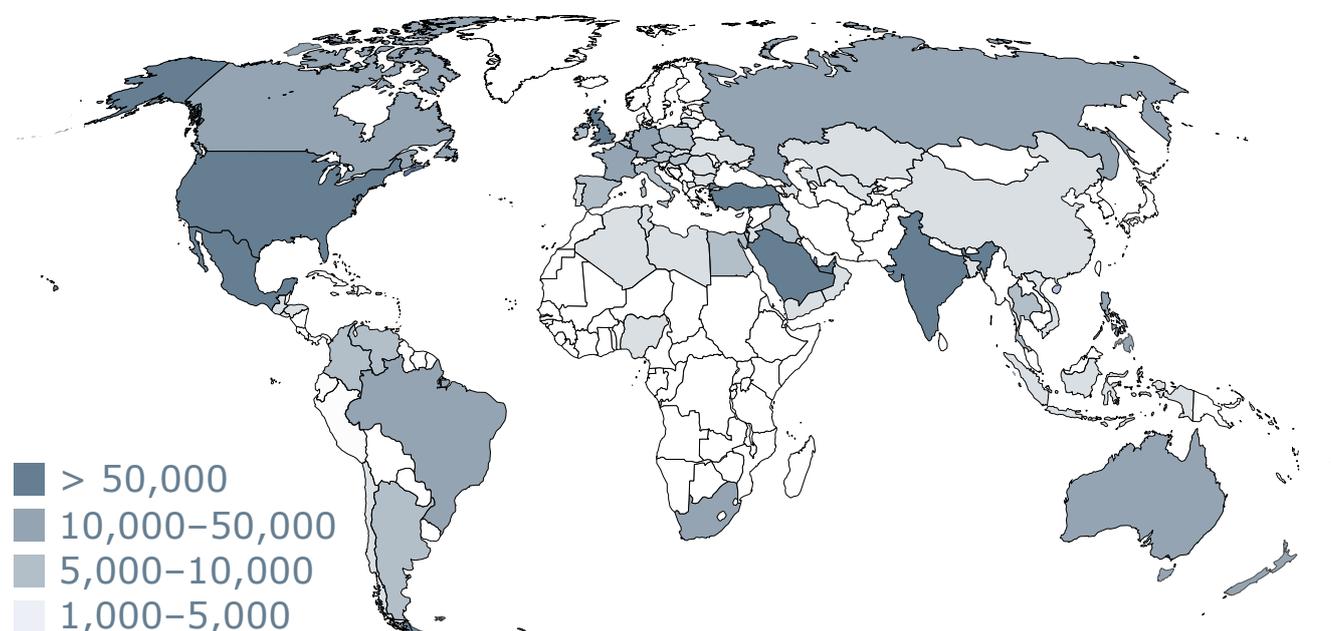
Reduce direct emissions with the QWC4's falling-film evaporator, which reduces refrigerant charges by up to 30 percent.

(Photo courtesy of the LTCM lab of the Ecole Polytechnique Fédérale de Lausanne, Switzerland)



The efficiency of the QWC4 chiller can reduce your environmental footprint. Less electricity has to be generated, which means greenhouse gas emissions created by the power plant are reduced by as much as 30 percent.

# Capable hands. World-class partner.



Quantech air-cooled, variable speed screw chillers in use, by cumulative capacity (tons).

You can be sure you are making the right choice when you select the QWC4 chiller. Our experience is unsurpassed. Johnson Controls invented variable speed drive technology for water-cooled chillers in 1979.

We also introduced the industry's first air-cooled, variable speed screw chiller in 2004. By 2010, our installed base exceeded 2,500,000 TR in more than 100 countries. With all units combined, we have more than 20,000 years of field experience. The QWC4 chiller uses the same

variable speed compressor, so you can trust the chiller will perform as expected in your application.

Nobody can tailor and tune a variable speed, watercooled, screw chiller to match the unique requirements of your application better than Johnson Controls.

To learn more about the Quantech QWC4 chiller, go to [www.quantech-hvac.com](http://www.quantech-hvac.com).



#### **About Johnson Controls**

At Johnson Controls, we transform the environments where people live, work, learn and play. From optimizing building performance to improving safety and enhancing comfort, we drive the outcomes that matter most. We deliver our promise in industries such as healthcare, education, data centers and manufacturing. With a global team of 100,000 experts in more than 150 countries and over 130 years of innovation, we are the power behind our customers' mission. Our leading portfolio of building technology and solutions includes some of the most trusted names in the industry, such as Tyco®, YORK®, Metasys®, Ruskin®, Titus®, Frick®, Penn®, Sabroe®, Simplex®, Ansul® and Grinnell®.

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