

LATITUDE™

Air-Cooled Chillers



R134a

Performance Matters

 **YORK®**
A JOHNSON CONTROLS COMPANY

The end of the air-cooled chiller compromise



LATITUDE™

Get the benefits of an air-cooled design, plus energy efficiency and quiet operation

When choosing between chillers, most system designers and building owners are well aware that air-cooled technology offers several valuable benefits, such as:

- Lower capital building costs by eliminating the need for space in a mechanical room.
- Lower capital equipment costs by using one air-cooled chiller with multiple circuits.
- Lower installation costs with a packaged unit that requires fewer connections and one lift for placement.
- Lower maintenance costs with fewer components than other systems.

But to enjoy the benefits of air-cooled chillers, designers and owners have had to compromise. That's because traditional air-cooled chillers have several critical shortcomings contributing to a high total cost of ownership, namely, high energy and high noise.

The air-cooled chiller of choice

Now there's an air-cooled chiller with all the traditional benefits and no compromise—the YORK® Latitude™ air-cooled screw chiller. The Latitude chiller delivers on energy and noise performance and drives down the total cost of ownership.

Introducing Latitude™ chillers: Driving down the total cost of ownership

Freedom to experience both lower first costs and operating costs

Latitude chillers deliver all of the capital and installation advantages of traditional air-cooled screw chillers. And with their packaged, multi-circuit design and simple control, minimal on-site staff is required for maintenance and operation.

What makes Latitude chillers unique is that they deliver real-world energy savings, which can reduce operating costs 15–25% when compared with other air-cooled screw chillers. Additionally, their sound levels at off-design conditions are so low that expensive sound-attenuation kits are often not required. Latitude chillers are the high-performance, air-cooled screw chillers that deliver revolutionary advances in energy efficiency and sound levels, because, in all of today's buildings, performance matters.

Latitude™ chillers offer the lowest total-cost-of-ownership of any air-cooled chiller to fit comfortably within construction and operation budgets.

So, factor in the low operating costs and improved sound performance with the low installed costs and low maintenance costs, and you will see that Latitude chillers deliver the lowest total cost of ownership of any air-cooled chiller. You no longer have to sacrifice operating costs to achieve low first costs. Latitude chillers give you the freedom to have both.



Real-world energy performance

Exceptional efficiency at design conditions

Today, cutting energy costs through energy efficiency is vital to economical building management. Because, according to the Department of Energy, 45% of the electricity used in a building is used by the HVAC equipment, choosing the right equipment can have a significant impact on your operational budget.

Latitude chillers are designed to provide best-in-class, design efficiencies as high as 10.3 EER, which exceeds the building-energy standard of the American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE), known as ASHRAE 90.1.

You can count on getting this outstanding level of performance, because YORK rates and tests Latitude chillers in accordance with the Air-conditioning and Refrigeration Institute's (ARI) Standard 550/590-98.

Latitude chillers save energy at off-design conditions when operating hours are most numerous.

Plus, pocket 15–25% savings at off-design conditions

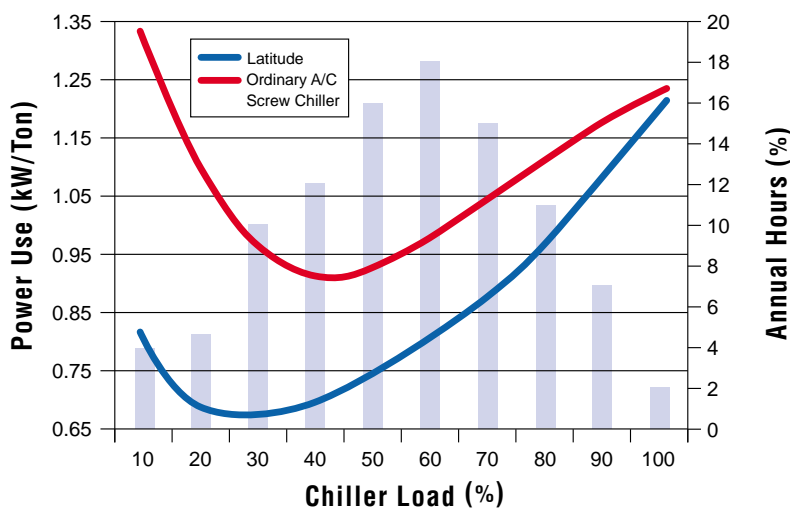
Design efficiencies of 10.3 EER are exceptional, but that is only 1% of the operating hours; for the other 99% of the time, off-design efficiencies are more important. In these conditions, Latitude chillers offer the highest off-design efficiency of any air-cooled chiller. The measure of a chiller's off-design efficiency is its Integrated Part Load Value (IPLV). Latitude chillers offer an outstanding IPLV, as high as 15.2 EER, which adds up to an average annual energy savings of 15–25% compared to ordinary air-cooled chillers.

This means you can save up to 10% of the first cost of the chiller every year in energy use alone.

Advanced technology advances savings

The variable speed drive (VSD) technology that revolutionized the performance of water-cooled chillers yesterday dramatically cuts your air-cooled-chiller energy costs today. By electronically matching chiller capacity to the building load, Latitude chillers deliver real-world energy performance.

Chiller Efficiency and Operating Hours vs Load



The feature you never hear...quiet

Be a nice, quiet neighbor

Today, municipalities are writing and enforcing various sound-level codes. Typically, in areas zoned residential and commercial, the required sound levels vary by time of day. During evening, night, and early-morning hours, sound levels must be reduced for residential neighbors who are at home.

Ordinary air-cooled screw chillers exhibit relatively little reduction in sound level when operating at off-design conditions, which occur whenever the outdoor temperature is below its design maximum. As a result, the more stringent nighttime sound-level requirement often determines the amount of sound attenuation that must be added to a chiller installation. The Latitude chiller's superior acoustic performance at off-design conditions allows the designer to reduce attenuation requirements while meeting both day and night regulated sound levels.

Low noise at critical off-design conditions

Just as slowing the compressor down in off-design operation saves energy during 99% of operating hours, it also reduces sound. In the acoustically critical morning and evening hours, Latitude chillers are as much as 6 dBA lower than competitive chillers. Because decibel measurement is logarithmic, 6 dBA translates into an apparent sound level that is 50% quieter.

SilentNight™ controls

For night operation, when noise-level codes are more stringent, Latitude chillers use the

exclusive SilentNight™ control. This control employs a proprietary load-limit algorithm to ensure quiet operation. Lower evening ambient temperatures allow the load-limited chiller to quietly deliver significant cooling. The controls are fully programmable to run your operating schedule automatically.

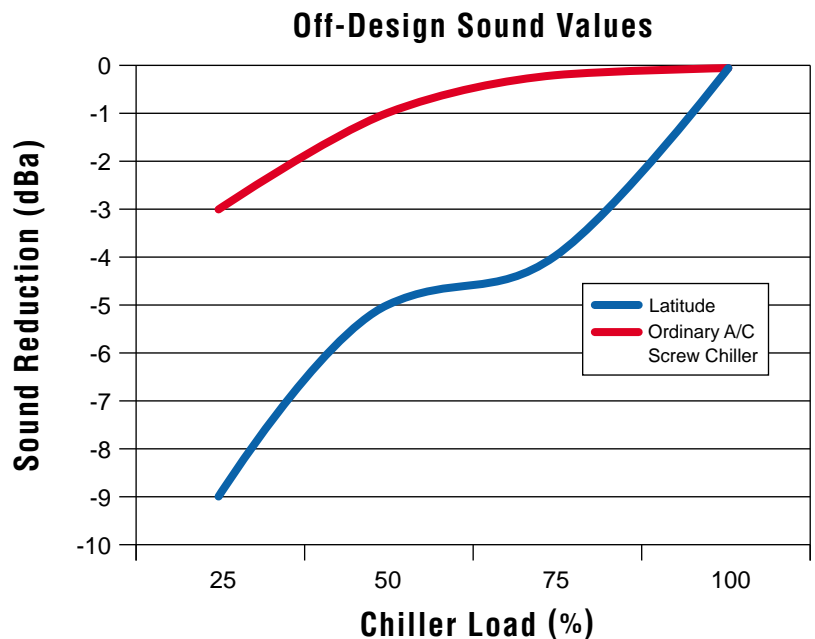
SILENT NIGHT™

Making the most of traditional sound-attenuation technology

Latitude chillers are designed and tested in accord with ARI Standard 370 to provide the lowest noise emissions without the need for added layers of sound-attenuation materials.

Latitude chillers also come standard with acoustic baffling or sound dampening on vital components. These built-in features eliminate the need for buying additional sound attenuation—and the need to include sound-barrier walls in the design budget.

Latitude chillers eliminate noise instead of attenuating it.



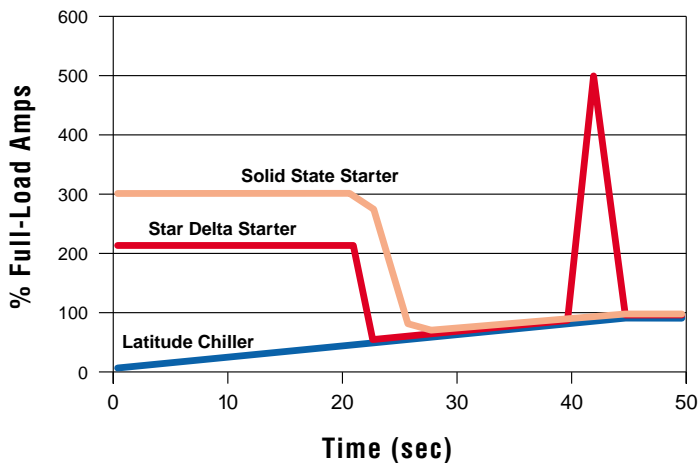
Soft starts and a stable power factor mean lower electrical costs

Easy on the motor

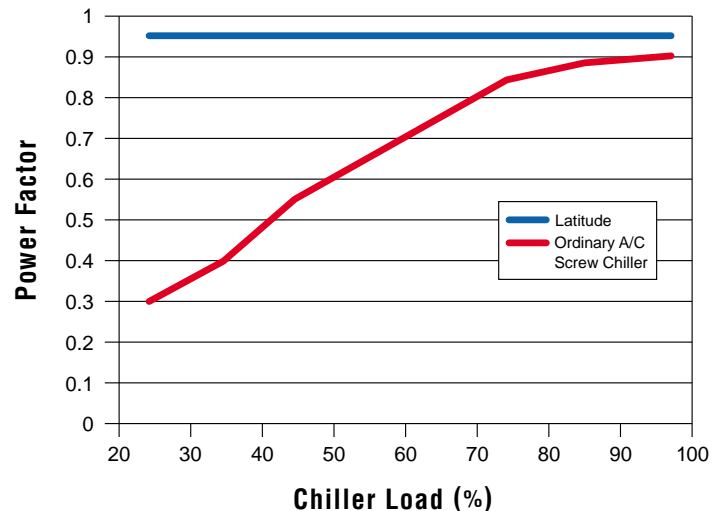
Unlike conventional motor starters, a VSD avoids the sudden current surges that shock motors and drives during start-up. Starting the compressor slowly and then bringing it up to speed gradually reduces equipment stresses and yields several benefits. The electronics and circuitry can be designed for Minimum Current Ampacity (MCA), which reduces the size and cost of chiller wiring and the backup generator. With less current, there is also less heat, which extends the life of motor components and allows motor restarts in as little as two minutes.

Power factor improves energy savings

Another electrical benefit of VSD is its positive impact on your building's power factor. The power factor is an index of how effectively your building uses electricity. A low power factor translates into higher utility bills because utilities often charge a premium if the usage profile doesn't meet their minimum requirements. A high power factor indicates efficient utilization of electrical power. Latitude chillers do not require power-factor correction capacitors to meet some utility requirements of 0.95. YORK Latitude chillers help reduce your building's power profile by providing a stable 0.95 power factor throughout its entire operating range.



Slow ramping of power reduces equipment stress and costs.



Unlike competitive chillers, Latitude chillers maintain a stable power factor.

The choice for reliability

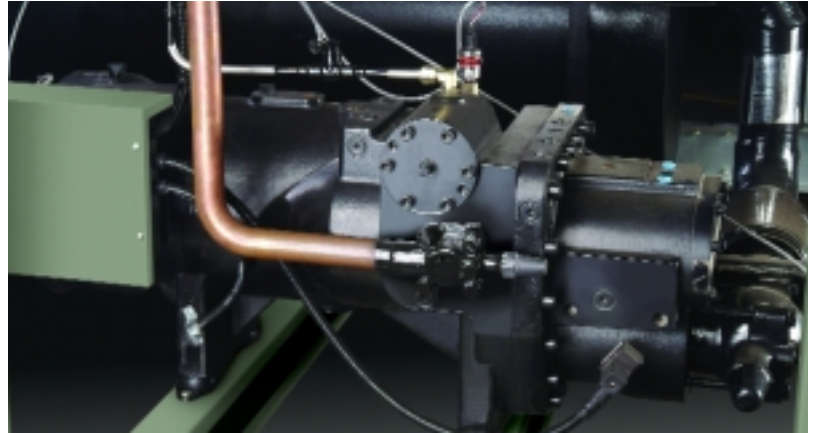
Reduced maintenance costs

It begins with the most critical component—the screw compressor. YORK employs industrial-grade screw compressors manufactured by Frick®, the YORK company recognized as the industrial-refrigeration, screw-compressor experts. The result? Outstanding reliability whether your chiller runs continuously or on demand. Scheduled maintenance is minimal, because the Latitude compressor uses 50% fewer moving parts than ordinary screw compressors.

The Latitude control center keeps track of compressor runtime and startups, automatically switching the lead and lag compressors to balance operating hours. All maintenance data is easily read from the LCD display panel, from a remote BAS station, or by downloading printable logs.

Nobody knows more about VSD for HVAC

For over 25 years, YORK has led the way in developing VSD technology specifically for chiller application. Instead of applying an “off-the-shelf” VSD, YORK created drives to meet the specific demands of HVAC. The VSD in a Latitude chiller is ruggedly designed to perform regardless of outdoor conditions. All Latitude electronics are housed in a NEMA 3R enclosure that ensures reliable operation day after day.



Built by the best, backed by best warranty

You can count on Latitude chillers to provide the same low-maintenance, highly reliable operation, and long service life that make YORK chillers the preferred choice in the most demanding applications in the world.

That's why we confidently back Latitude chillers with the industry's only 18-month air-cooled warranty that covers all parts.

Count on the lowest total cost of ownership without compromise

You've known all the traditional benefits of air-cooled-chiller technology, such as capital-cost savings, straightforward installation, and maintenance simplicity. Now you can also count on the added benefits of better energy efficiency and quieter operation. It all adds up to an air-cooled chiller offering that delivers the lowest total cost of ownership by far. YORK Latitude chillers are the “no compromise” chiller line.

To learn how it all adds up for you, call your nearby YORK sales engineer today.

