Trane® Sintesis™ Air-cooled Chillers

with next-generation, low-GWP refrigerant option

115 – 500 tons

Ingersoll Rand®

Trane Sintesis air-cooled chillers

Every building and every project is different, but they all need one thing — a cooling solution that meets their requirements. This is where Trane® Sintesis™ air-cooled chillers come in.

Trane designed Sintesis chillers to deliver high energy efficiency, robust cooling performance and sustainable solutions, with options that allow you to select the chiller that will best serve your building and meet your objectives.

Sintesis chillers are the first air-cooled chillers to offer the choice of either R-134a or R-513A, a next-generation, low global warming potential (GWP) refrigerant. This option allows the customer — not the chiller manufacturer — to choose when to make the transition to a lower GWP alternative.

And, three tiers of acoustic packages allow you to choose the level of sound treatment that meets your project's requirements.

Add to this advanced controls and rapid restart capabilities, and you've got a chiller you can count on.

High-performance technologies for lower life cycle costs

Sintesis chillers feature multiple technological solutions to deliver the cooling performance you need, with the lower life cycle costs your budget requires.

- **Trane Adaptive Frequency™ drive (AFD) –** Optimizes the chiller for both full- and part-load performance and delivers efficiencies up to 25 percent better than ASHRAE 90.1-2013 minimums. The AFD reduces compressor cycling, which can increase compressor life while helping reduce chiller sound output.

- **Electronically commutated (EC) motors –** Permanent magnet motors with integrated variable-speed drives on the condenser fans help reduce energy consumption for lower operating costs. And as the fan motors reduce speed, sound output is reduced as well.

- **Evaporator design –** Compact, high-performance, integrated, low-charge (CHIL) evaporator technology optimizes refrigerant flow for improved efficiency and better cooling performance, reducing the chiller refrigerant charge by up to 10 percent.

- **Condenser design –** The microchannel condenser reduces the refrigerant charge by another 30 percent and features a modular, transverse design that allows for easy access and cleaning, helping lower maintenance costs.

Powerful controls and a simple interface

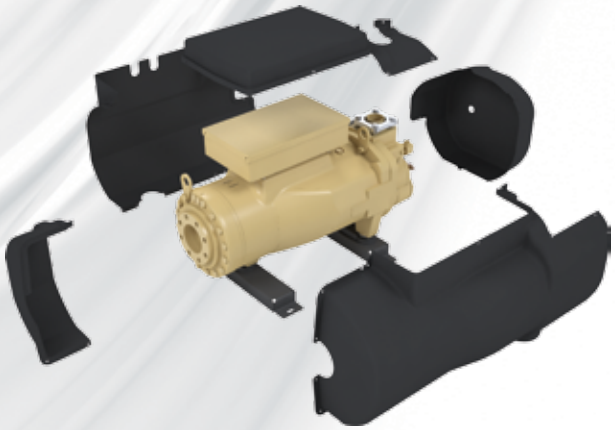
Tracer AdaptiView™ chiller controls provide a level of control that translates into enhanced building performance that can increase energy efficiency. Patented Adaptive Control™ algorithms keep your chiller running even during the most challenging conditions, when other chillers would shut down. And, the color touch screen provides instant visibility to key operating parameters with intuitive navigation to access data.

- **Reliable operation under widely varying conditions –** Proven control strategies, such as integrated temperature and flow logic, keep your chiller working efficiently in extreme conditions and even under a building automation system failure, so you can count on reliable operation when you need it the most.
- **Open-protocol design –** Tracer AdaptiView supports the BACnet®, LonTalk® and Modbus RTU open protocols without the need for gateways, reducing the complexity and cost of integration with other building control systems.
- **Easy-to-read 7-inch touch-screen display –** The AdaptiView touch-screen display gives users an easy, at-a-glance understanding of the system's status, showing not only current chiller performance, but also graphical trending information about performance over time.
- **Multilingual capabilities –** The AdaptiView touch screen can display 27 different languages, allowing chiller operators to choose the language they prefer to best understand how the chiller is performing.

Quiet operation

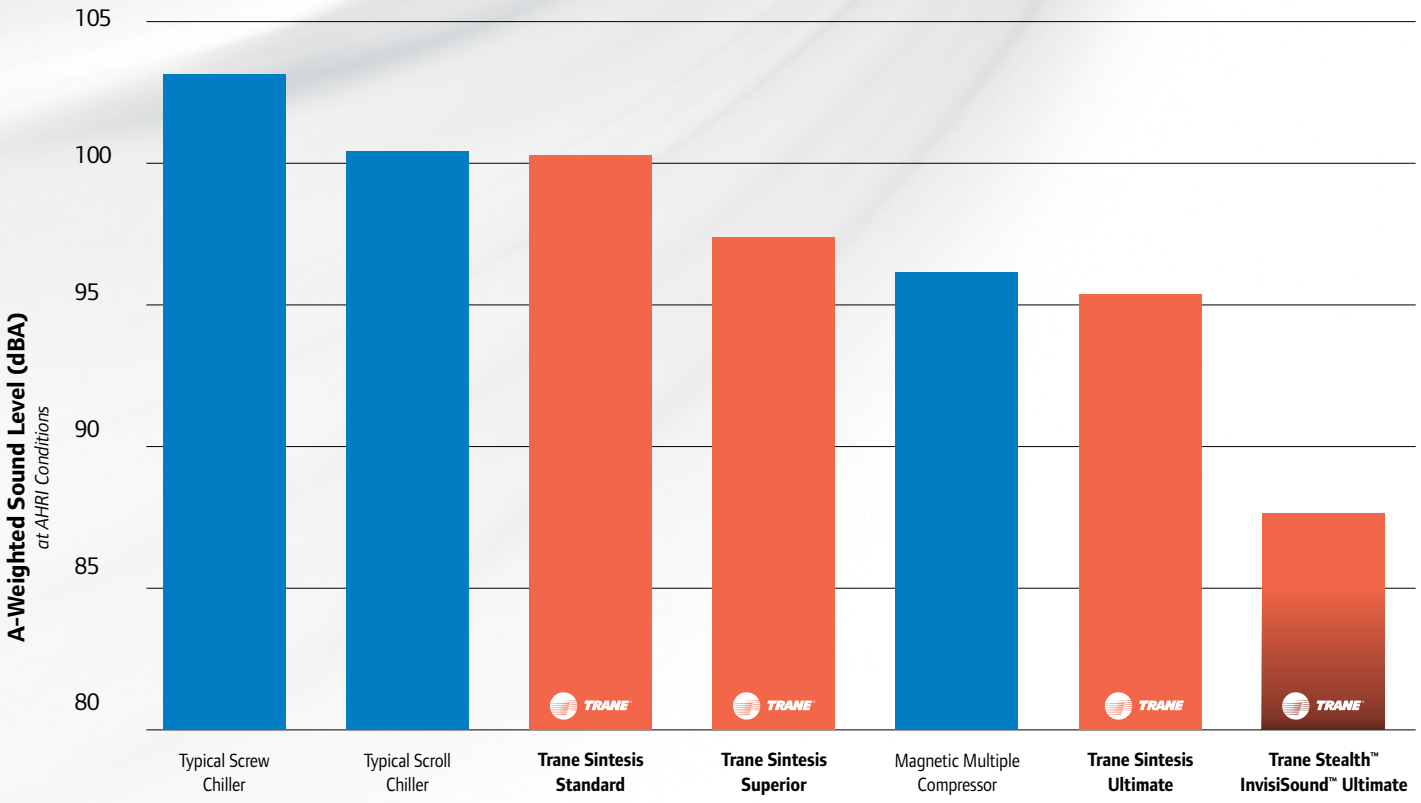
Because sound requirements can vary considerably from one project to the next, Sintesis™ chillers offer different acoustic packages to allow you to choose the level of sound treatment that meets both your application requirements and budget constraints.

- **Multiple sound packages –** The choice is yours with Standard, Superior or Ultimate packages for full-load sound power levels as low as 95 dBA at AHRI conditions.
- **User-selectable noise-reduction mode –** Use this mode to limit the maximum condenser fan speed for even lower sound levels and to comply with nighttime and weekend noise restrictions.
- **Factory-applied, factory-tested –** Trane® acoustic treatments are applied at the factory to ensure consistent performance in accordance with ANSI/AHRI Standard 370, and can often save money when compared to on-site applications.



Full-load sound power comparison

200-ton chiller



An environmentally sustainable solution

Sintesis™ chillers are part of the Ingersoll Rand EcoWise™ portfolio of products that are designed to lower their environmental impact with next-generation, low global warming potential (GWP) refrigerants and high-efficiency operation.

- **High-efficiency operation –** To deliver lower operating costs, Sintesis chillers are optimized for both full- and part-load performance, with efficiencies up to 25 percent better than required by ASHRAE 90.1-2013 for IPLV.
- **Lower refrigerant charge –** The CHIL evaporator and microchannel condenser reduce the amount of refrigerant required by up to 40 percent compared to earlier designs, making it even easier to earn a point under the LEED® Energy and Atmosphere (EA) Credit for Enhanced Refrigerant Management.
- **Low-GWP option –** Sintesis chillers are designed to operate with either R-134a or DuPont™ Opteon® XP10 (R-513A), a non-flammable, next-generation refrigerant that delivers the same capacity with a GWP 55 percent lower than that of R-134a.
- **Reduced risk of refrigerant leaks –** The microchannel design used in Sintesis chillers eliminates brazed U-bend connections and their potential for refrigerant leaks, helping maintain peak chiller efficiency.

Great for thermal storage systems

Ice-enhanced chiller plants can substantially reduce cooling costs by making and storing ice during nighttime hours — when utility rates are usually at their lowest — and then using the ice to help cool buildings during peak-rate daytime hours. Trane® Sintesis air-cooled chillers are ideal for making ice and can be a key component in ice-enhanced chiller plants, helping to improve building owners' bottom lines — and helping to improve the environment as well. Here's how:

- The chiller produces ice at night, when outdoor air temperatures are lower, which increases the chiller's efficiency and capacity.
- The system reduces the building's environmental impact by shifting cooling to off-peak hours when power comes from a higher mix of renewable and cleaner sources, including wind energy and natural gas-powered electrical plants.

Trane ice-enhanced cooling systems not only use less expensive electricity, they also use less of it, in a more environmentally sustainable manner. In fact, ice storage systems are specifically identified by the U.S. Green Building Council as being eligible for LEED® design credits.

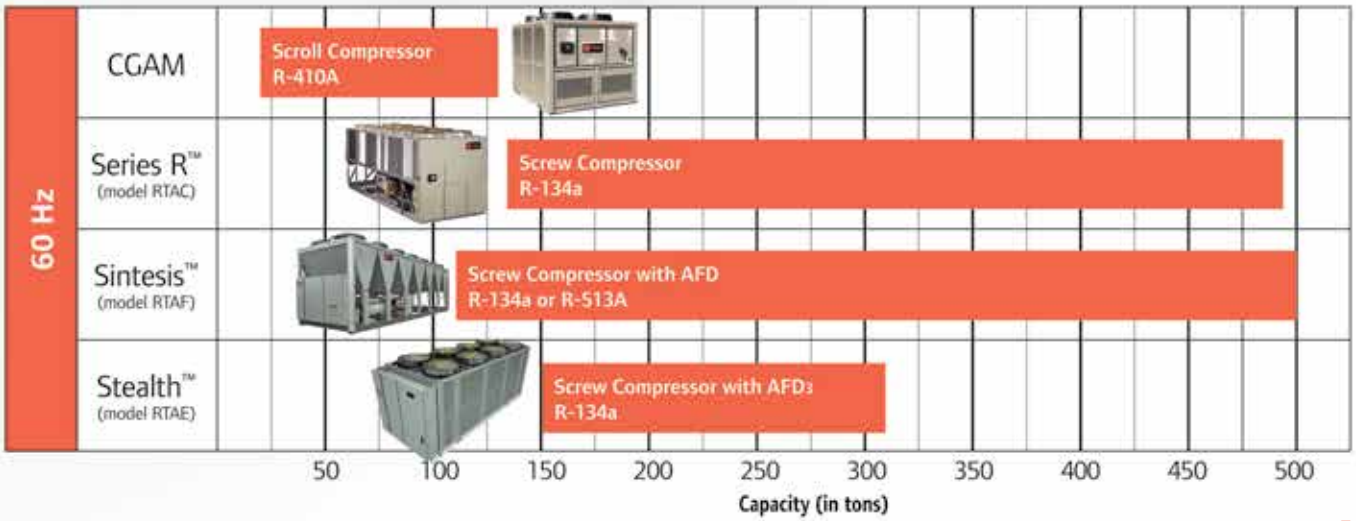
Performance you can count on

Legendary Trane reliability is built into every Sintesis chiller. That reliability is your assurance of lasting quality, performance and value — qualities that you can depend on to make your buildings better for life.

- **ISO 9001-certified –** This quality-management system requires extensive documentation on how quality-assurance activities are managed, performed and continuously monitored, including verification checkpoints from the time an order is entered until final shipment, ensuring maximum consistency in quality.
- **Extended warranties –** An extended warranty from Trane allows you another opportunity to manage your ongoing operating costs. With extended warranties available up to 10 years, you can enjoy peace of mind, knowing your investment is protected by the extensive Trane service network.
- **Reliable operation –** Sintesis chillers feature exceptionally rigid, corrosion-resistant coils and an industrial bearing system that's designed to withstand heavy use and extend compressor life.
- **Proven performance** – Factory performance tests at our world-class, AHRI-approved testing facility can confirm actual chiller performance, and the results can serve as a benchmark during the commissioning process.
- **Rapid restart capability –** Mission-critical applications can benefit from Sintesis chillers' rapid restart capability, which allows the chillers to quickly regain full operational capacity after the restoration of electrical power.
- **Trane Intelligent Services-enabled –** Real-time operation of your chiller can be monitored 24/7/365 to enable data-based decisions that result in improved energy efficiency, higher productivity and reduced costs — the hallmarks of high-performance buildings.

There's a Trane air-cooled chiller that's right for you

Sintesis chillers offer many choices to meet your needs — and they're just one choice in a broad portfolio of air-cooled chillers from Trane. With a wide range of cooling capacities and efficiency ratings, choose the Trane air-cooled chiller that's right for your application.



Scan the code or visit Trane.com/Sintesis to learn more.

Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a $12 billion global business committed to a world of sustainable progress and enduring results.

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RLC-SLB036-EN
June 30, 2015