



CGAM air-cooled scroll chiller

Highly efficient, yet extremely quiet



The right balance of energy efficiency and quiet operation

High efficiency or low noise? Most air-cooled chillers require you to choose between the two. The new 20 to 130 ton model CGAM air-cooled scroll chiller from Trane gives you the best of both worlds.

A quieter fan often produces less air flow, making it less efficient. The Trane design team compiled the best approaches from around the globe to optimize the Trane CGAM chiller—so that it meets global green initiatives and ASHRAE energy-efficiency standards.

The Trane CGAM chiller is one of the quietest air-cooled chillers, even among screw compressor equipment. Low sound levels are standard, with a 5 to 8 decibel reduction compared to previous

Trane air-cooled chiller models. And with factory-installed attenuation, Trane reduces sound levels even further—up to an additional 3 decibels.

Reliability you can count on

You need performance you can count on. As a result, we extensively test on our compressors and units to confirm their robust design.

Trane delivers

- Extreme testing—including cold ambient starts, hot water starts and high ambient operation
- Compressor-accelerated lifecycle testing, including high-pressure ratio, high load test, flooded starts/stops, start/stop testing and phase reversal
- Performance modeling and verification, both during design and for the life of the chiller
- FEA analysis to confirm the unit structure can withstand shipping, rigging and operational activity
- Electrical testing with destructive testing for short circuit withstand rating

To minimize leaks, Trane improved the coil structure by strengthening the coil frame and changing the construction method. We use a single copper tube for two passes through the coil to reduce braze joints on one side, eliminating up to sixty joints. This new construction method ensures all coils are square, so the coil components are better aligned.

The Trane on-site test facility ensures the reliability and performance of your system.



Factory-installed reliability

Several factory-installed features further reduce your energy consumption, add redundancy for mission-critical operations and reduce jobsite installation time—when every day counts.

A factory-installed pump package, designed specifically for this unit, comes pre-wired and factory-tested. The dual pump set-up provides built-in redundancy and the standard inverter delivers added energy savings.

With the factory-installed buffer tank, you can use the chiller in applications with less than a three-minute water loop and still maintain precise temperature control.

The flow switch and water strainer are also factory-installed as standard, reducing job site installation requirements and ensuring reliable operation.

Reduce your energy usage at every point

Using some of the best analytic approaches and tools in the industry, Trane engineers look for ways to reduce energy usage at every point within your system. For example, using partial heat recovery, the heat rejected from the condenser while cooling the building can be redirected through a factory-installed heat exchanger on the chiller to provide heat for VAV reheat coils. This can dehumidify a commercial building more efficiently, or pre-heat laundry or pool water in a hotel.

Another energy-saving strategy is a thermal storage system that uses ice made at night, when energy costs are lowest, to cool the building during the day. Thermal storage can be used in many settings, including schools, government buildings and industrial processes.



One way Trane reduces energy costs is with a thermal storage system design that uses ice made at night, when energy demand and cost are lowest, to cool the building during the day.

CGAM air-cooled scroll chiller 20-130 Ton



Compressor—facilitates full- and part-load efficiencies that exceed ASHRAE 90.1 standards by 6 to 8%.

Fans—quiet design is standard, 5 to 8 decibels lower than current models, with attenuation options for applications requiring ultra-quiet operation.

Integration—pump package and buffer tank are pre-wired and tested in the factory.

Heat recovery—can provide 140°F (60°C) water to dehumidify buildings or pre-heat laundry or pool water.

Reliability—water strainer and flow switch are factory-installed in an optimal location. Increased coil structure strength and reduced brazed joints control leaks.

Controls—CH530 improved fan staging logic for low ambient starting capability; Adaptive Controls™ are standard to maintain operation in adverse conditions.

Durability—powder-coated components and optional coated coils minimize corrosion.

Serviceability—major components are positioned for easy access. The unit structure is designed to rig pump up for easy seal changes.



Controls for reliability, efficiency and system monitoring

Trane unit controls and building automation solutions are designed to meet your critical requirements. Adaptive Control™ algorithms embedded in the factory-mounted CH530 controller on the CGAM chiller use Trane proprietary strategies to respond to normal, extreme or adverse conditions. The sophisticated algorithms intelligently maximize uptime while protecting equipment from damage.

The chiller manages time-of-day scheduling for small buildings or schools without a building automation system. If an integrated pump package is included, the chiller even controls pumps as needed. For larger enterprise-wide projects, a Tracer ES™ building automation system monitors and manages all chillers within the enterprise.

Manage multiple chillers from any location

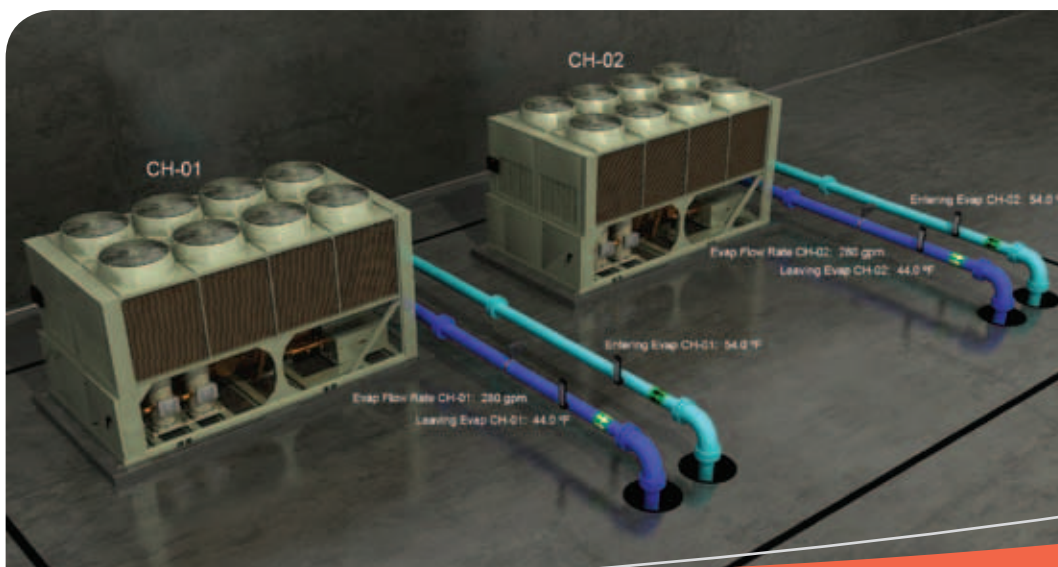
Adding the Tracer™ SC controller to a system provides a flexible, cost-effective solution for managing your HVAC system that can extend to lighting and energy consumption. Its simplified,

Web-based management tools help improve efficiencies, increase tenant comfort and reduce energy costs.

Accessible from any PC with an Internet connection, Tracer SC eliminates the need for a dedicated computer and monitor, so you can manage system performance whenever, wherever it is convenient. Tracer SC controller's simplified, Web-based management tool reduces scheduling, reporting and applications programming chores to simple "point and click" tasks. Users do not have to invest in special software or training—so it is easy to control the building without additional costs.

Tracer SC is scalable for most buildings—small, medium or large—and can grow with your building and adapt to your changing needs. With expandable communications from 30- to 60- to 120-unit controllers, it is a flexible and cost-effective choice.

Tracer SC now supports BACnet™ top to bottom, as well as existing LonWorks™ controllers.



Tracer SC can manage chiller sequencing and load sensing for optimum control on site or over the Web.

Expert services for the life of your building

Trane Building Services helps you improve energy efficiency, reduce operating costs and enhance the performance of your equipment—making your building work better for life.

CGAM chiller is available with the Trane Elite Start™ suite of services to make sure your system operates as designed from day one. Factory start-up services will help your system perform to specifications upon installation.

Trane recommends these Elite Start services:

- **In-Warranty Support**—oil analysis, diagnostic reporting and monitoring keep equipment operation at peak performance during the first year of operation

- **Extended Warranty**—covers parts and labor associated with any equipment failure
- **Service Agreements**—scheduled inspections for preventive and proactive maintenance ensure long-term reliability, efficiency and performance

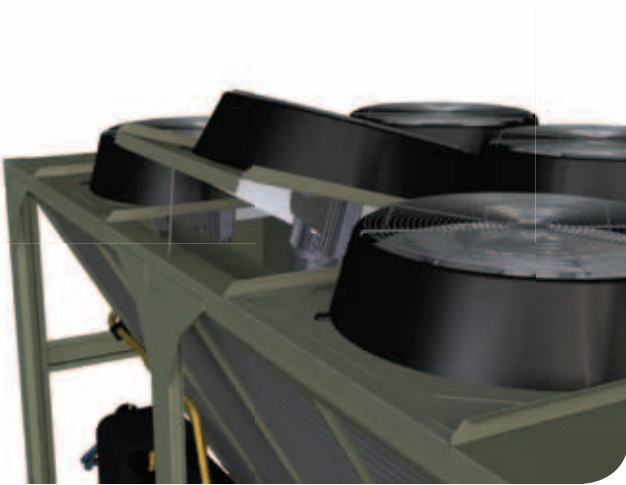
Easier to service if needed

We take advantage of the vast knowledge of service professionals by including them in our early design efforts. As a result, the Trane CGAM chiller has many valuable service improvements:

- All major serviceable components are very close to the edge of the unit, making it safer and easier to service. The unit has easy-to-reach service valves, water strainer and water piping connections.



Not only do Trane CGAM air-cooled chillers deliver the lowest noise levels and highest efficiencies in their class, but they also can be applied with Trane fan coil units or air handlers to improve indoor air quality — helping achieve LEED® performance.



- Hinged condenser fans with a prop rod makes coil cleaning safer and fan servicing easier.
- The factory-installed pump package is designed to service in place, including pump seal changes. Simply lift the pump within the chiller structure to replace the seal.
- The high-pressure transducer and temperature sensor mountings enable troubleshooting and replacement without refrigerant handling
- Separate access to the low-voltage control panel makes the chiller easier to service

To help ensure that building performance is meeting your business needs, our service professionals tap into a global network of proven best practices, Trane proprietary technology and industry-leading expertise.

We continually train our technicians and provide on-demand access to all the latest resources

to make maintenance decisions that will fine-tune your entire system, in order to achieve the highest level of performance.

No service provider is more qualified to deliver the cost savings and performance assurance you demand from Trane equipment. Trane sales and service professionals will customize creative solutions that meet your specific maintenance, budget and operational requirements. To minimize any downtime, the Trane nationwide network of HVAC Parts and Supply stores ensures you can get the part you need when you need it.

Contact your local Trane Account Manager to learn more about how you can increase your efficiency without sacrificing quiet operation, enjoy low lifecycle costs and gain the peace of mind a Trane chiller provides.

Your local Trane Account Manager can help you find the CGAM chiller to meet your building's specific cooling needs.



Get help making the right decision

There are hundreds of possible system designs and chiller configurations, and thousands of possible efficiency levels. How do you determine the right HVAC system for your building?

Whether you are calculating energy efficiency to determine eligibility for LEED credits, earn tax deductions, or select the HVAC system with the lowest operating costs, Trane can help. The Trane System Analyzer™ software estimates building loads and performs preliminary energy and economic analyses of virtually any building, system and equipment combination.

For LEED certification, TRACE™ 700 (Trane Air Conditioning Economics) software helps analyze the energy and economic effects of virtually any system by letting you manipulate a wide range of variables to create a detailed energy usage profile for the specific building. Unlike overly simplified spreadsheet-based energy analysis, TRACE 700 software accurately compares the impact of building alternatives, such as architectural features, HVAC systems and other economic options, to provide true lifecycle, cost-based decisions.



Ingersoll Rand (NYSE:IR) is a world leader in creating and sustaining safe, comfortable and efficient environments in commercial, residential and industrial markets. Our people and our family of brands—including Club Car®, Hussmann®, Ingersoll Rand®, Schlage®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings, transport and protect food and perishables, secure homes and commercial properties, and increase industrial productivity and efficiency. We are a \$14 billion global business committed to sustainable business practices within our company and for our customers.