



Air-Cooled Scroll Chillers

CGAF 300-700 kW

Proven reliability and flexibility to minimize total cost of ownership

SINTECIS™
ADVANTAGE



The Total Package

Quality, performance and reliability

The Trane advantage

Trane is recognized as a world leader with over 100 years of experience in creating and sustaining safe, comfortable and energy efficient environments while improving the performance of buildings and processes around the world.

Trane solutions optimize indoor environments with a broad portfolio of energy efficient heating, ventilating and air conditioning systems, building services, parts support and advanced controls.

To ensure your equipment continues to work at its optimum, throughout the life of the building, Trane provides a full range of service solutions, combined with in-house expertise and an extensive support network.

The Trane offering is...

Smart



Reliable



Energy Efficient



Quiet



General specifications

Operating outdoor air temperature range (min./max.) (1)	(°C)	-20 / +52°C
Leaving water temperature range (min./max.) (2)	(°C)	-12 / 18°C
Power supply	(V/Ph/Hz)	400/3/50



CGAF Standard Efficiency (SE)

Preliminary performances (1)		080	090	100	110	130	140	150	165	180	190
Net Cooling capacity (3)	(kW)	/	318	351	391	431	468	513	553	621	661
EER		/	3.04	2.94	2.83	2.74	2.89	2.78	2.71	2.94	2.88
Eurovent Efficiency Class - cooling		/	B	B	C	C	B	C	C	B	C
SEER	(kW)	/	4.08	4.04	4.10	4.10	4.10	4.10	4.18	4.25	4.24
Space cooling efficiency η_{sc}	(%)	/	161	158	161	161	161	161	164	167	167
Sound power level (SN)	(dBA)	/	92	94	95	95	94	95	96	97	97
Sound power level (LN)	(dBA)	/	89	90	91	92	91	92	92	93	94
Sound power level (XLN)	(dBA)	/	87	88	89	89	89	89	90	91	91

CGAF High Efficiency (HE)

Preliminary performances (1)		080	090	100	110	130	140	150	165	180	190
Cooling capacity (3)	(kW)	293	334	371	416	459	498	548	587	641	682
EER		3.25	3.28	3.22	3.16	3.09	3.21	3.11	3.03	3.12	3.07
Eurovent Efficiency Class - cooling		A	A	A	A	B	A	A	B	A	B
SEER	(kW)	4.23	4.19	4.23	4.28	4.36	4.18	4.21	4.33	4.29	4.30
Space cooling efficiency η_{sc}	(%)	166	165	166	168	172	164	165	170	169	169
Sound power level (SN)	(dBA)	89	92	94	95	95	94	95	96	97	97
Sound power level (LN)	(dBA)	87	90	91	92	92	91	92	93	94	94
Sound power level (XLN)	(dBA)	86	88	89	89	90	89	90	90	91	91

CGAF Extra High Efficiency (XE)

Preliminary performances (1)		080	090	100	110	130	140	150	165	180	190
Cooling capacity - Standard & Low noise (3)	(kW)	297	333	374	423	471	505	560	604	653	699
Cooling capacity - Extra low noise (3)	(kW)	295	333	374	419	464	502	553	593	647	689
EER		3,39	3,38	3,34	3,30	3,26	3,35	3,26	3,21	3,27	3,23
Eurovent Efficiency Class - cooling		A	A	A	A	A	A	A	A	A	A
SEER	(kW)	4,23	4,19	4,23	4,28	4,36	4,18	4,21	4,33	4,29	4,30
Space cooling efficiency η_{sc}	(%)	186	189	184	183	184	194	188	188	191	189
Sound power level (standard noise)	(dBA)	90	92	94	95	96	94	96	96	97	98
Sound power level (low noise)	(dBA)	88	90	91	92	93	91	93	94	94	95
Sound power level (extra low noise)	(dBA)	85	87	88	89	89	88	89	90	90	91

Dimensions and weights (operating)

		080	090	100	110	130	140	150	165	180	190
Length - SE version	(mm)	/	3395	3395	3395	3395	4520	4520	4520	5645	5645
Length - HE and XE versions	(mm)	3395	4520	4520	4520	4520	5645	5645	5645	6770	6770
Width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Height (6)	(mm)	2526	2526	2526	2526	2526	2526	2526	2526	2526	2526
Weight - SE version	(kg)	/	2145	2260	2330	2400	2915	3100	3175	3550	3630
Weight - HE version	(kg)	2085	2480	2615	2700	2770	3315	3500	3540	3910	3975
Weight - XE version	(kg)	2145	2560	2695	2780	2850	3415	3600	3640	4030	4095

(1) With low ambient and / or high ambient temperature option

(2) With process cooling option

(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14511-2013.

(4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614 maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016

(5) Average at 10 meters in a free field. This is a non-contractual data, calculated from the above certified sound power level according to the formula $L_p=L_w-10\log S$.

This is an averaged value considering the unit as a parallelepiped box with five exposed face areas

(6) Height without EC Axitop fans. With EC Axitop option, add 146 mm to unit height

Trane Technology

Provides the innovative solution your building needs

2 Optimized fan diffusers

- Remodelled to optimize airflow
- Fans consume up to 27% less power
- Noise level reduced at part load

1 Electronically Commutated (EC) fans

- Improved capacity modulation
- Reduced power consumption
- Reduced energy costs

3 Micro-channel condenser coils

- Leading edge coil design for increased corrosion resistance
- Longer life expectancy
- Environmentally-friendly with less refrigerant charge
- Reduced carbon footprint
- 10% overall unit weight reduction

4 Trane smart control and interface combined

- Leading TD7 touch screen with 7" color display
- Clear display of critical information
- Monitor settings, data trending, reports and alarms
- Simple, intuitive navigation
- Effective operation, monitoring and management
- Durable construction for both indoor and outdoor use





Tracer™ UC800 controller

- New generation of Trane control platform for chillers
- Advanced algorithms for the most challenging conditions
- Perfect balance of performance and economy

Connectivity

- Full interoperability via SmartCom interface LonTalk®, BACnet® and Modbus
- Full remote control capability via our Trane BMS



5 Industry leading scroll compressor

- Optimized for part-load efficiency
- Reliable operation
- Reduced energy consumption: no overcompression thanks to intermediate discharge valves (IDVs)

Optional hydraulic module

- Housing within the chiller frame to keep overall footprint to a minimum
- Single or dual pump
- Optional water buffer tank

All units are compliant with all applicable EU Ecodesign Regulations under the ErP framework Directive 2009/125/EC of the European Parliament.



Quiet Operation

Choose your level of sound attenuation to suit the sensitivity of your application, without compromising operating efficiency.

Standard Noise: SN

Sound power level from 90 - 98 dB(A).

Low Noise: LN

Sound power level from 87 - 94 dB(A)

Unit is equipped with compressor jackets.

Extra Low Noise: XLN

Sound power level from 85 - 91 dB(A).

Unit is equipped with piping insulation and compressor sound box.

Greater acoustic comfort for noise-sensitive applications

EC fan motors

EC fans can be equipped with a special diffuser to deliver higher performance with optimized airflow. Efficiency is boosted by converting dynamic airflow into static pressure and reducing exit losses, allowing in most cases reduced fan speeds without affecting airflow. Lower speeds lead to lower energy consumption, especially at part load conditions.

Optimized diffuser

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Night Noise Setback

Night Noise Setback provides an additional low-noise operation profile. The sound level of the chiller is reduced by decreasing the speed of AC/EC fans which are controlled with an external on/off contact. This option is designed for night operation and ensures exceptional acoustic comfort without compromising efficiency when loads are increased.



Exceptional energy efficiency

Outstanding efficiency means less energy consumed and lower energy costs.

Choose from 3 versions:

Standard Efficiency: SE

EER up to 3.04

SEER up to 4.25

High Efficiency: HE

EER up to 3.28

SEER up to 4.36

Extra Efficiency: XE

EER up to 3.39

SEER up to 4.36



Energy saving solutions

Reduce your energy costs by taking advantage of low ambient conditions via our Free-cooling option or alternatively by converting the energy produced during the cooling cycle via our Heat Recovery solutions.

Free-cooling

Our free-cooling system can drastically reduce the operating costs of your Sintesis chiller, especially in winter cooling conditions. The principle is simple: when the outdoor temperature reaches below a certain point, the free cooling system will partially or totally offset the mechanical system by using the outdoor air to cool the water in the system. Additionally, by making less use of compressors over the year, the unit lifetime can be extended.

Heat Recovery

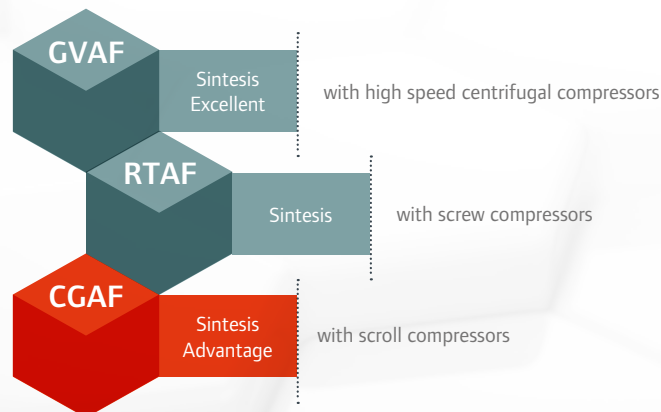
Our Heat Recovery system re-uses the waste heat generated during the cooling cycle, instead of exhausting it to the atmosphere. Choose between total or partial heat recovery. Both options combine energy saving from heat recovery with cost saving from installation and maintenance.

Units equipped with the Heat Recovery can produce chilled and hot water simultaneously for use in applications such as:

- Heating or preheating of the boiler system
- Air conditioning
- Ventilation air pre-heating
- Industrial processes.

SINTECIS™

Family of air-cooled chillers



The Sintesis™ Advantage model CGAF belongs to the Trane Sintesis™ air-cooled chiller portfolio representing industry leading performance and flexibility — for a perfect fit not only to your building and application requirements, but also to your sustainability and budget targets.

The Trane Sintesis Advantage range:

- 14 units offering capacities from 170 kW to 700 kW
- 3 efficiency levels: SE, HE, XE
- 3 low-noise packages: SN, LN, XLN
- Perfectly suited for comfort and process application with extended operating map:
 - Standard ambient option from -10°C to +46°C
 - High ambient option from -10°C to +52°C
 - Low ambient option from -20°C to +46°C
 - Wide ambient option from -20°C to +52°C.

Factory-mounted options:

- Hydraulic module with single or dual pump and buffer tank
- Partial heat recovery
- Total heat recovery
- Free-cooling
- For a complete and detailed list of all options and accessories, please refer to the product catalog or contact your local Trane office.



Trane® is a brand of Ingersoll Rand®. Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Ingersoll Rand®, Trane®, Thermo King® and Club Car® — 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 global business committed to a world of sustainable progress and enduring results.



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