



**TRANE®**

# Air-Cooled Scroll Chillers CGAF 170-700 kW

Proven reliability and flexibility to minimize  
total cost of ownership

**SINTECIS™**  
**ADVANTAGE**



**IR** Ingersoll Rand®

# Trane Sintesis Chillers

Optimizing productivity

The Trane Sintesis Advantage chiller range enables you to choose the perfect solution to meet the needs of your building, your climate and your budget - all packaged in a compact design.



# SINTECIS™

## ADVANTAGE



### Exceptional efficiency: top-class performance at lower cost

Trane has developed the Sintesis Advantage chiller and heat pump range to minimize your Total Cost of Ownership (TCO). Three different levels of efficiency ensure a system tailored to your specific application, whether you are looking for high efficiency at full load, part load... or both.



### Quiet operation: enjoy the silence

Acoustic comfort is very often a key factor when selecting HVAC equipment as operating noise can create significant disruption in a sensitive building environment.

By providing a choice of three levels of noise attenuation, Trane Sintesis Advantage guarantees the perfect sound level to suit your particular application.

For even greater acoustic comfort, take advantage of optional features such as night noise setback whisper operation during certain periods of the day.



### Proven Trane Sintesis reliability

With equipment as critical as an HVAC system, quality is non-negotiable. At Trane we design and manufacture the core components and put our systems through extremely demanding performance and reliability tests.



### Smart, versatile and compact

The Trane Sintesis Advantage is the most versatile air-cooled scroll chiller on the HVAC market.

It has the capability to provide all-year cooling in ambients from -20°C up to 52°C. It is ideally suited to industrial and process applications and is Ecodesign compliant. Trane units have a compact design for quick and easy integration into jobsites and footprint has been reduced by 22% versus the previous generation.

Operation could not be easier thanks to the Trane Tracer UC800 smart controller and a user-friendly touchscreen interface. Connectivity with Modbus, BACnet®, LonTalk® and building automation systems is simple thanks to the Smart Com interface.



# Trane Proprietary Technology\*

Provides the innovative solution your building needs

## Optimized fan diffusers

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

## Electronically Commutated (EC) fans

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

## \* 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

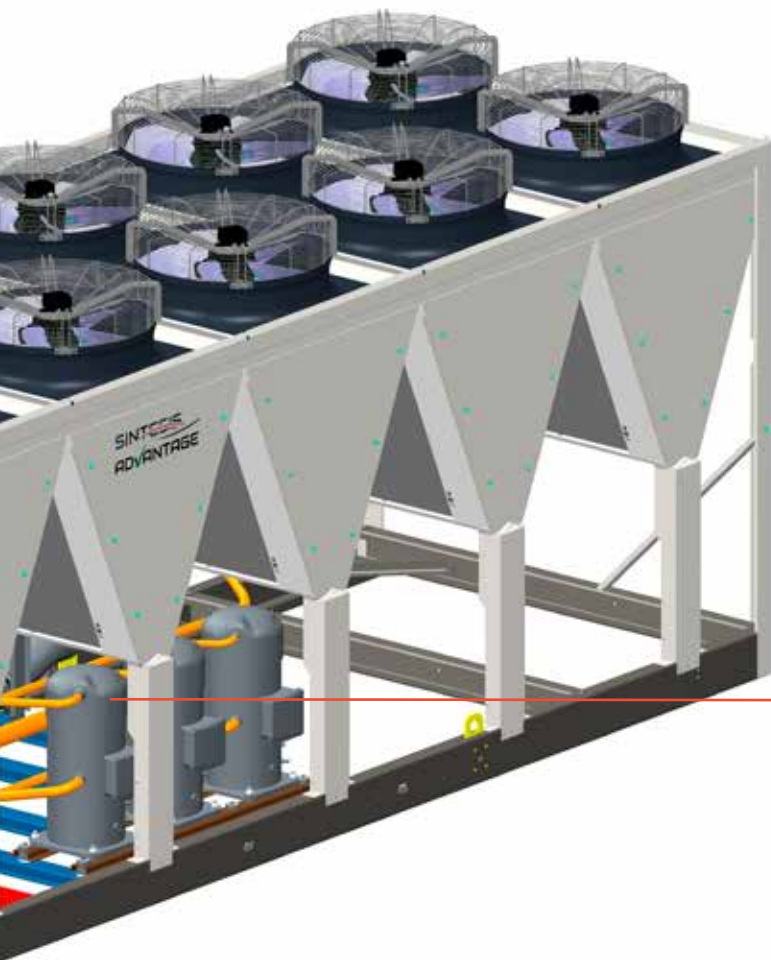
## \* Trane smart control and interface combined

- 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

### 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.\*



# 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





## 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

ESEER up to 4.18

### High Efficiency: HE

EER up to 3.34

ESEER up to 4.46

### Extra Efficiency: XE

EER up to 3.36

ESEER up to 4.73



## 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.

### Total Heat Recovery (THR)

When THR mode is ON, the chiller can produce heating up to 130% of its cooling capacity.

### Partial Heat Recovery (PHR)

When PHR mode is ON, the chiller can produce heating up to 25% of its cooling capacity.

## Quiet Operation



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

### Standard Noise: SN

Average sound power level from 86 to 97 dB(A).

### Low Noise: LN

Average sound power level from 83 to 95 dB(A).

Unit is equipped with compressor jackets.

### Extra Low Noise: XLN

Average sound power level from 82 to 93 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

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.

### 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.





# General specifications

SE



## CGAF SE (Standard Efficiency)

Preliminary performances (1)		50	55	65	70	80	90	100	110
Net cooling capacity	(kW)	173	197	223	253	272	318	351	391
EER		2.94	2.72	2.99	2.91	2.81	3.04	2.94	2.83
ESEER		3.96	3.93	4.18	4.15	4.12	4.13	3.99	4.01
Eurovent efficiency class cooling		B	C	B	B	C	B	B	C
Sound power level SN	(dB(A))	86	87	88	89	89	92	94	95
Sound power level LN	(dB(A))	83	84	86	86	86	89	90	91
Sound power level XLN	(dB(A))	82	82	84	85	85	87	88	89
<b>Dimensions</b>									
Unit length	(mm)	2750	2750	2750	2750	2750	3372	3372	3372
Unit width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200
Unit height	(mm)	2525	2525	2525	2525	2525	2525	2525	2525

Preliminary performances (1)		130	140	150	165	180	190
Net cooling capacity	(kW)	431	467	519	559	621	661
EER		2.74	2.93	2.83	2.76	2.94	2.88
ESEER		3.95	3.98	4.08	4.08	4.10	4.11
Eurovent efficiency class cooling		C	B	C	C	B	C
Sound power level SN	(dB(A))	95	94	95	96	97	97
Sound power level LN	(dB(A))	92	91	92	92	93	94
Sound power level XLN	(dB(A))	89	89	89	90	91	91
<b>Dimensions</b>							
Unit length	(mm)	3372	4497	4497	4497	5622	5622
Unit width	(mm)	2200	2200	2200	2200	2200	2200
Unit height	(mm)	2525	2525	2525	2525	2525	2525

(1) At evaporator water temperature: 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013, without pump package.

# General specifications

HE/XE



## CGAF HE (High Efficiency)

Preliminary performances (1)		50	55	65	70	80	90	100	110
Net cooling capacity	(kW)	182	208	240	270	293	334	371	416
EER		3.33	3.16	3.34	3.29	3.25	3.27	3.21	3.16
ESEER		4.46	4.33	4.19	4.25	4.21	4.32	4.21	4.19
Eurovent class		A	A	A	A	A	A	A	A
Sound power level SN	(dB(A))	87	88	89	89	89	92	94	95
Sound power level LN	(dB(A))	85	86	87	87	87	90	91	92
Sound power level XLN	(dB(A))	84	84	86	86	86	88	89	89
<b>Dimensions</b>									
Unit length	(mm)	2750	2750	2750	2750	2750	3372	3372	3372
Unit width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200
Unit height	(mm)	2525	2525	2525	2525	2525	2525	2525	2525

Preliminary performances (1)		130	140	150	165	180	190
Net cooling capacity	(kW)	459	495	548	587	641	682
EER		3.09	3.20	3.11	3.03	3.12	3.07
ESEER		4.14	4.16	4.22	4.15	4.16	4.16
Eurovent class		B	A	A	B	A	B
Sound power level SN	(dB(A))	95	94	95	96	97	97
Sound power level LN	(dB(A))	92	91	92	93	94	94
Sound power level XLN	(dB(A))	90	89	90	90	91	91
<b>Dimensions</b>							
Unit length	(mm)	3372	4497	4497	4497	5622	5622
Unit width	(mm)	2200	2200	2200	2200	2200	2200
Unit height	(mm)	2525	2525	2525	2525	2525	2525

(1) At evaporator water temperature: 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013, without pump package



### CGAF XE (Extra Efficiency)

Preliminary performances (1)		50	55	65	70	80	90	100	110
Net cooling capacity	(kW)	182	210	239	270	294	334	371	418
EER		3.34	3.18	3.36	3.31	3.27	3.29	3.23	3.18
ESEER		4.69	4.57	4.71	4.57	4.49	4.73	4.44	4.41
Eurovent class		A	A	A	A	A	A	A	A
Sound power level SN	(dB(A))	87	89	89	90	90	92	94	95
Sound power level LN	(dB(A))	85	87	87	88	88	90	91	92
Sound power level XLN	(dB(A))	84	86	86	86	87	88	89	90
<b>Dimensions</b>									
Unit length	(mm)	2750	2750	2750	2750	2750	3372	3372	3372
Unit width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200
Unit height	(mm)	2525	2525	2525	2525	2525	2525	2525	2525

Preliminary performances (1)		130	140	150	165	180	190
Net cooling capacity	(kW)	465	497	552	596	646	690
EER		3.12	3.21	3.13	3.07	3.14	3.10
ESEER		4.31	4.31	4.43	4.32	4.43	4.43
Eurovent class		A	A	A	B	A	B
Sound power level SN	(dB(A))	96	94	96	97	97	98
Sound power level LN	(dB(A))	93	92	93	94	94	95
Sound power level XLN	(dB(A))	92	90	92	93	93	93
<b>Dimensions</b>							
Unit length	(mm)	3372	4497	4497	4497	5622	5622
Unit width	(mm)	2200	2200	2200	2200	2200	2200
Unit height	(mm)	2525	2525	2525	2525	2525	2525

(1) At evaporator water temperature: 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013, without pump package

# Range Description

A model for every application

## 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.



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