



Air-cooled Chillers with High Speed Centrifugal Compressors

SINTECIS™
EXCELLENT

Model GVAF-X 575 - 1600 kW
Model GVAF-XP 720 - 1250 kW
Model GVAF-XPG 450 - 1250 kW



Trane Sintesis™ eXcellent

Air-cooled Chillers with High Speed Centrifugal Compressors

Sintesis eXcellent is a new model within Trane's Sintesis range able to reach market-leading Energy Efficiency Ratio (EER) and European Seasonal Energy Efficiency Ratio (ESEER) with lower sound levels.

This model GVAF is available with a choice of refrigerants: R134a or R1234ze which has a GWP value of less than one to exceed current F-Gas legislation requirements and help customers reduce their carbon dioxide (CO₂) emissions and achieve extreme part load and full load efficiencies.

Sintesis eXcellent chillers are suited for critical environments like

- Data centers
- Hospitals
- Large office buildings
- Industrial process applications



Data centers



Hospitals



Office buildings



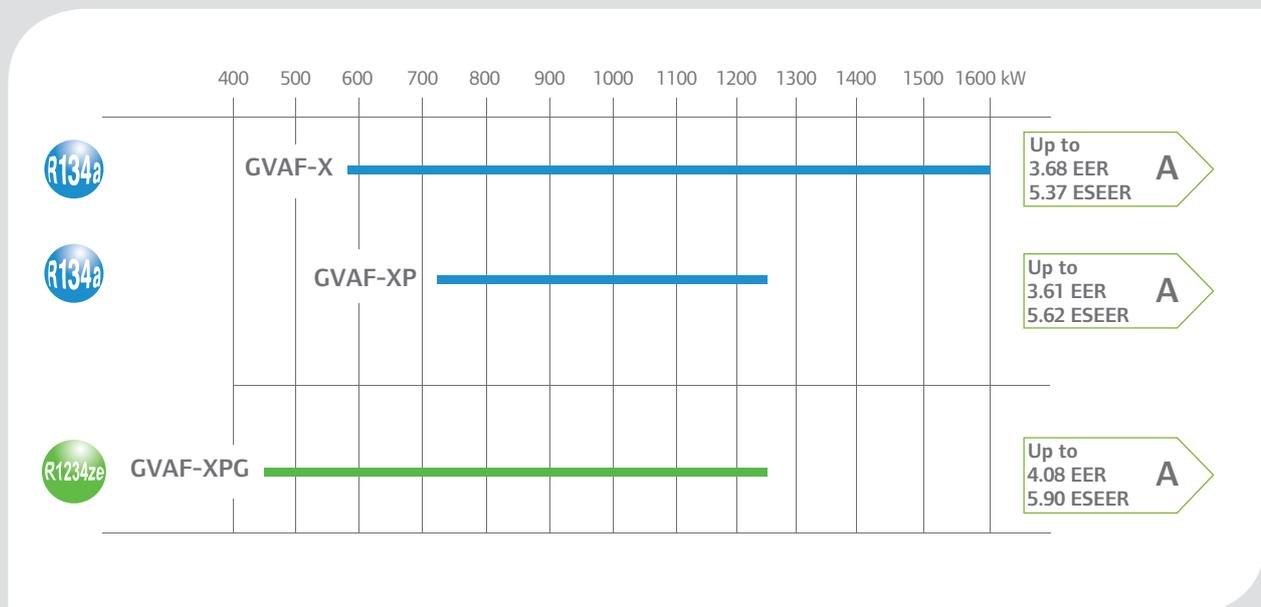
Industrial process applications



Range description

A model for every need

Trane's Sintesis eXcellent provides a wide capacity range up to 1.6MW with industry-leading part load and full load efficiencies.



Energy Efficient

Choose from three different efficiency tiers to respond to every building or process requirement.

Green

Two different refrigerant alternatives:
R134a and R1234ze with GWP<1

Reliable

No compromise: You can count on Trane's legendary reliability.

Sintesis eXcellent chillers

Excellence is standard

Standard on all models

- EC fan motors to reach higher part load efficiencies with lower sound levels
- Double refrigerant circuit
- Economizer circuit
- EMC filter to avoid harmonic transfer to compressor



Smart

Easy operation thanks to smart controls and a user-friendly touchscreen interface



Quiet

GVAF is offered with three different acoustic packages:

- Low noise
- Extra low noise
- Night noise set back



Free Cooling

Take advantage of low ambient conditions to help cool water in your HVAC system. Sintesis eXcellent is designed to enable significant savings from free-cooling.

Choose from four free-cooling alternatives.

- Total Direct Free-cooling
- Partial Direct Free-cooling
- Total Glycol-Free Free-cooling
- Partial Glycol-Free Free-cooling



The Future of F-Gases

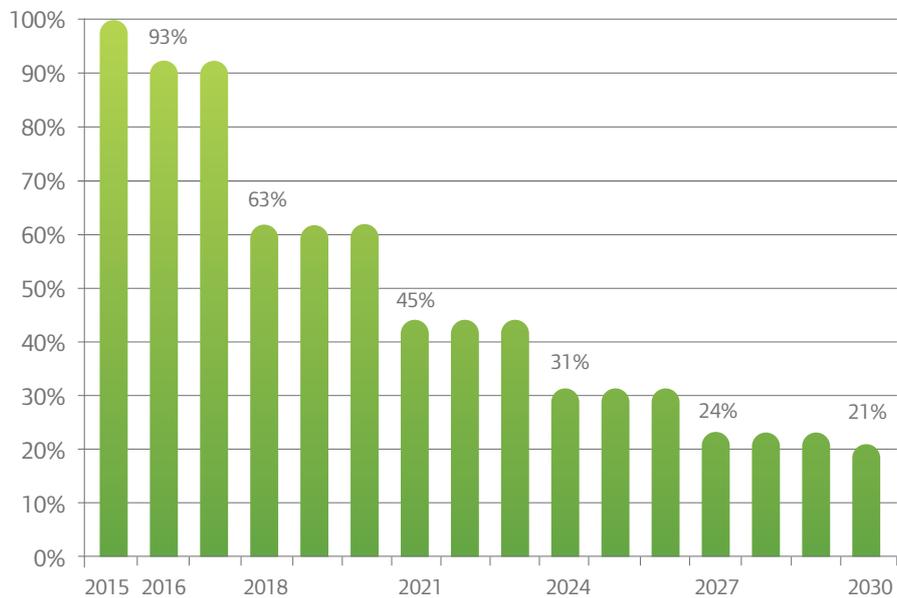
The fluorinated refrigerants phase-down, as defined in the new EU F-Gas Regulation, is a step-by-step approach where the quantities of HFCs expressed in CO₂ equivalent that are placed on the market are gradually reduced. As a result of the phase-down, HFC consumption will be reduced by 79% by 2030.

This is an unprecedented reduction and means that industry and users need to make, over time, the transition to refrigerants with a lower global warming potential.

Trane, recognized as a leading innovator in the HVAC industry, introduces this new, next generation, lower GWP refrigerant in Sintesis and other products to be front running in the marketplace and to support your strong sustainability objectives.

Ingersoll Rand and Trane - providers of sustainable solutions.

HFC consumption



Baseline value (100%) is the annual average of total quantity of CO₂ equivalents placed on the EU market from 2009 to 2012.

An environmentally sustainable solution

EcoWise™

Sintesis™ chillers with low GWP refrigerants 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.



New R1234ze

Ozone depletion potential = 0

Low global warming potential (GWP<1)

Refrigerant	Global Warming Potential (GWP)
R407C	1774
R134a	1300
R410A	1924
R513A	572
R1233zd	1
R1234ze	<1

What is GWP?

GWP is the global warming impact relative to the impact of the same quantity of carbon dioxide over a 100 year period.

What is ODP?

Ozone depletion potential of a chemical is the amount of degradation to the ozone layer it can cause.

Features

Innovative solutions to your needs

Electronically Commutated (EC) fan motors

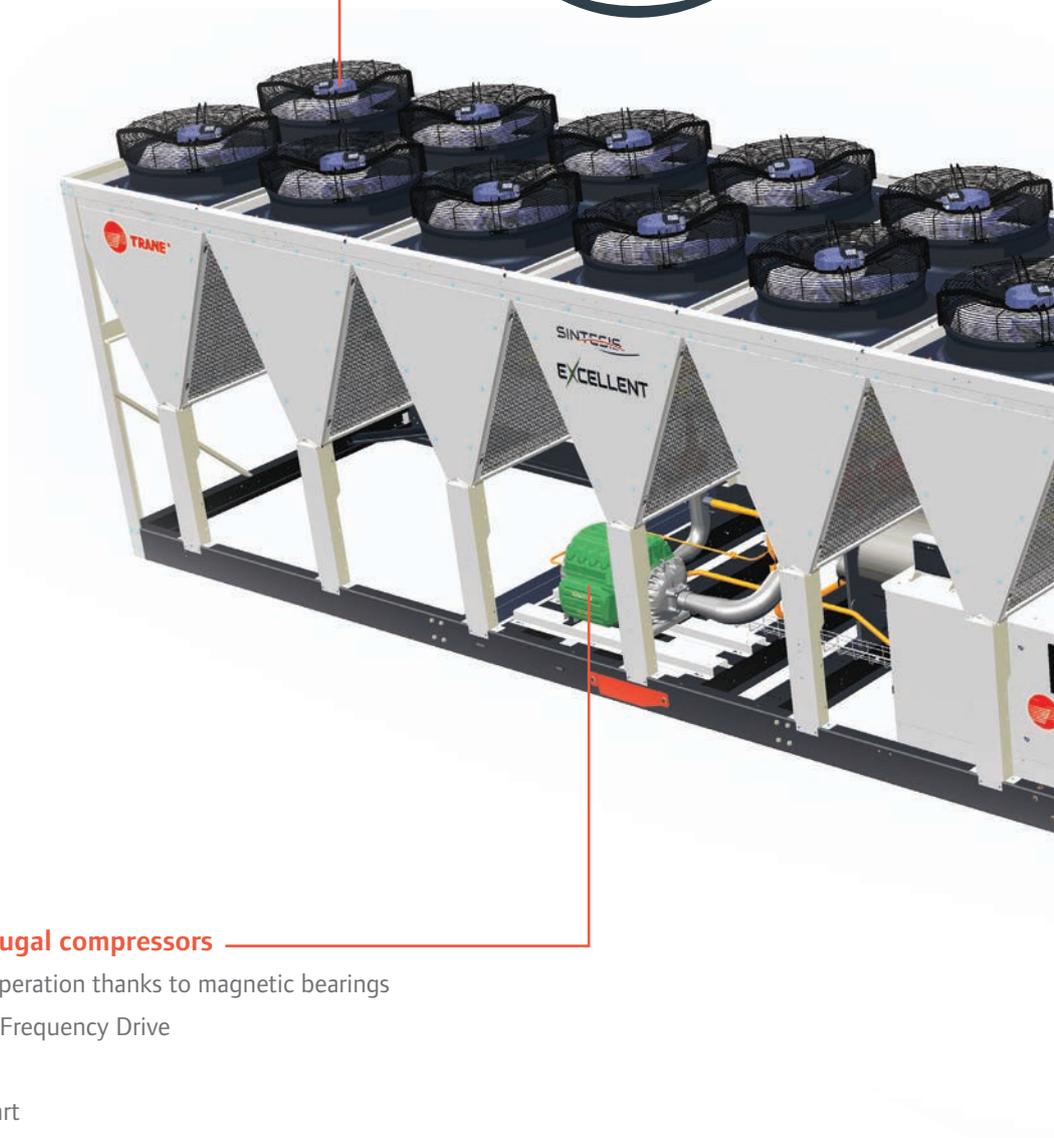
- Improved capacity modulation
- Reduced power consumption
- Reduced energy costs

* Micro-channel condenser coils

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

High speed centrifugal compressors

- Oil free and silent operation thanks to magnetic bearings
- Integrated Variable Frequency Drive
- Soft starter module
- Only one moving part



*** 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



*** Compact - High performance - Integrated design
- Low charge (CHIL) flooded evaporator**

- Reduced refrigerant volume
- Increased efficiency
- Reduced carbon footprint



Two refrigerant options

- R134a
- R1234ze

* Trane Proprietary Technology

General specifications

X/XP/XPG

GVAF X - LN Low Noise



Eurovent performances (1)		GVAF X 155 LN	GVAF X 175 LN	GVAF X 205 LN	GVAF X 245 LN	GVAF X 250 LN	GVAF X 280 LN	GVAF X 310 LN	GVAF X 350 LN	GVAF X 380 LN	GVAF X 410 LN	GVAF X 450 LN
Net cooling capacity	(kW)	577	640	758	849	883	1002	1121	1238	1375	1473	1580
EER		3.63	3.60	3.40	3.04	3.58	3.53	3.36	3.10	3.39	3.29	3.12
ESEER		4.92	4.89	4.97	4.88	5.30	5.22	5.11	4.88	5.35	5.27	5.16
Eurovent efficiency class cooling		A	A	A	B	A	A	A	A	A	A	A
Sound power level	(dBA)	92	93	93	94	95	95	95	96	96	96	97
Dimensions												
Unit length	(mm)	7895	7895	7895	7895	11260	11260	11260	11260	13510	13510	13510
Unit width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Unit height	(mm)	2526	2526	2526	2526	2526	2526	2526	2526	2526	2526	2526
Weights (2)												
Operating weight	(kg)	4274	4274	4274	4274	5840	5840	5840	5840	7235	7235	7235

GVAF XP - LN Low Noise



Eurovent performances (1)		GVAF XP 190 LN		GVAF XP 205 LN		GVAF XP 245 LN		GVAF XP 310 LN		GVAF XP 350 LN		
Net cooling capacity	(kW)	719		759		878		1117		1245		
EER		3.55		3.54		3.48		3.47		3.49		
ESEER		5.53		5.37		5.30		5.50		5.43		
Eurovent efficiency class cooling		A		A		A		A		A		
Sound power level	(dBA)	94		94		94		96		96		
Dimensions												
Unit length	(mm)	11260		11260		11260		13510		13510		
Unit width	(mm)	2200		2200		2200		2200		2200		
Unit height	(mm)	2526		2526		2526		2526		2526		
Weights (2)												
Operating weight	(kg)	5840		5840		5840		7235		7235		

GVAF XPG - LN Low Noise



Eurovent performances (1)		GVAF XPG 125 LN	GVAF XPG 145 LN	GVAF XPG 155 LN	GVAF XPG 175 LN	GVAF XPG 190 LN	GVAF XPG 205 LN	GVAF XPG 245 LN	GVAF XPG 250 LN	GVAF XPG 280 LN	GVAF XPG 310 LN	GVAF XPG 350 LN
Net cooling capacity	(kW)	453	536	578	642	693	756	878	961	999	1121	1243
EER		4.03	3.92	3.76	3.45	4.02	3.98	3.72	3.41	3.92	3.73	3.47
ESEER		5.34	5.28	5.46	5.42	5.81	5.79	5.65	5.43	5.80	5.59	5.33
Eurovent efficiency class cooling		A	A	A	A	A	A	A	A	A	A	A
Sound power level	(dBA)	90	90	92	93	92	93	94	95	94	95	96
Dimensions												
Unit length	(mm)	7895	7895	7895	7895	11260	11260	11260	11260	13510	13510	13510
Unit width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Unit height	(mm)	2526	2526	2526	2526	2526	2526	2526	2526	2526	2526	2526
Weights (2)												
Operating weight	(kg)	4274	4274	4274	4274	5840	5840	5840	5840	7235	7235	7235

(1) At evaporator water temperature: 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(2) Rated condition without pump package

GVAF X - XLN Extra Low Noise



Eurovent performances (1)		GVAF X 155 XLN	GVAF X 175 XLN	GVAF X 205 XLN	GVAF X 245 XLN	GVAF X 250 XLN	GVAF X 280 XLN	GVAF X 310 XLN	GVAF X 350 XLN	GVAF X 380 XLN	GVAF X 410 XLN	GVAF X 450 XLN
Net cooling capacity	(kW)	577	640	758	849	883	1002	1121	1238	1375	1473	1580
EER		3.68	3.66	3.44	3.07	3.64	3.58	3.40	3.13	3.43	3.32	3.15
ESEER		5.00	4.97	5.06	4.96	5.39	5.31	5.18	4.96	5.44	5.35	5.24
Eurovent efficiency class cooling		A	A	A	B	A	A	A	A	A	A	A
Sound power level	(dBA)	90	91	91	92	93	93	93	94	94	94	95
Dimensions												
Unit length	(mm)	7895	7895	7895	7895	11260	11260	11260	11260	13510	13510	13510
Unit width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Unit height	(mm)	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672
Weights (2)												
Operating weight	(kg)	4414	4414	4414	4414	6040	6040	6040	6040	7475	7475	7475

GVAF XP - XLN Extra Low Noise



Eurovent performances (1)		GVAF XP 190 XLN	GVAF XP 205 XLN	GVAF XP 245 XLN	GVAF XP 310 XLN	GVAF XP 350 XLN
Net cooling capacity	(kW)	719	759	878	1117	1245
EER		3.61	3.60	3.53	3.52	3.54
ESEER		5.62	5.46	5.38	5.59	5.51
Eurovent efficiency class cooling		A	A	A	A	A
Sound power level	(dBA)	92	92	92	94	94
Dimensions						
Unit length	(mm)	11260	11260	11260	13510	13510
Unit width	(mm)	2200	2200	2200	2200	2200
Unit height	(mm)	2672	2672	2672	2672	2672
Weights (2)						
Operating weight	(kg)	6040	6040	6040	7475	7475

GVAF XPG - XLN Extra Low Noise



Eurovent performances (1)		GVAF XPG 125 XLN	GVAF XPG 145 XLN	GVAF XPG 155 XLN	GVAF XPG 175 XLN	GVAF XPG 190 XLN	GVAF XPG 205 XLN	GVAF XPG 245 XLN	GVAF XPG 250 XLN	GVAF XPG 280 XLN	GVAF XPG 310 XLN	GVAF XPG 350 XLN
Net cooling capacity	(kW)	453	536	578	642	693	756	878	961	999	1121	1243
EER		4.08	3.97	3.81	3.50	4.08	4.04	3.77	3.46	3.97	3.78	3.52
ESEER		5.41	5.36	5.54	5.50	5.90	5.88	5.74	5.51	5.88	5.66	5.39
Eurovent efficiency class cooling		A	A	A	A	A	A	A	A	A	A	A
Sound power level	(dBA)	88	89	90	91	90	91	92	93	92	93	94
Dimensions												
Unit length	(mm)	7895	7895	7895	7895	11260	11260	11260	11260	13510	13510	13510
Unit width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Unit height	(mm)	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672	2672
Weights (2)												
Operating weight	(kg)	4414	4414	4414	4414	6040	6040	6040	6040	7475	7475	7475

(1) At evaporator water temperature: 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(2) Rated condition without pump package

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 innovative solutions optimize indoor environments with the **broadest portfolio** of energy efficient heating, ventilating and air conditioning systems, building services, parts support and advanced controls in the industry.

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 the **most extensive service and support network** in the industry.

And with Trane's **extensive rental fleet** all your temporary cooling and heating needs are served: we provide continuous cooling or heating during equipment changeouts or supplemental supply for those times when your cooling loads exceed your current system's capacity. For more information: www.trane-chiller-rental.eu

Ingersoll Rand recognition



For the fifth consecutive year, Ingersoll Rand has been recognized as one of the World's Most Admired Companies according to FORTUNE Magazine. What's more, we ranked second in our Industrial Machinery category – up two places from the previous year.



Ingersoll Rand was recognized at the 2016 Climate Leadership Conference for its refrigerant phase-out efforts by the US EPA, its greenhouse gas emissions reduction goal of 35% by 2020 and its commitment to reduce the climate impact of the refrigerants used in its products by 50% by 2020.



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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