



XSTREAM EXCELLENT



**Water-cooled Chillers with High
Speed Centrifugal Compressors**



Model GVWF (R134a)
395 - 2660 kW
Model GVWF G (R1234ze)
310 - 1820 kW

TRANE
TECHNOLOGIES

Trane XStream™ eXcellent

Water-cooled Chillers with High Speed Centrifugal Compressors

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

This model GVWF 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.

XStream eXcellent chillers are suited for critical environments like



Office buildings



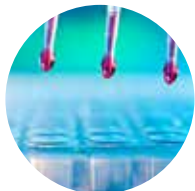
Healthcare



Data Centers



Automotive industry



Pharmaceutical industry



Plastic industry



Hospitality industry



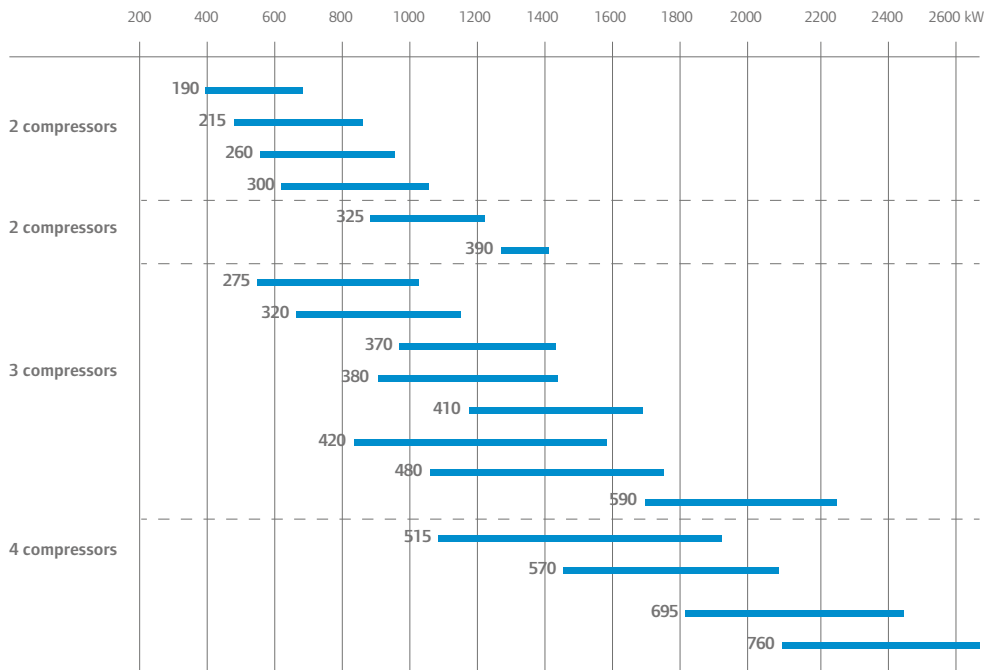
District Cooling

Range description

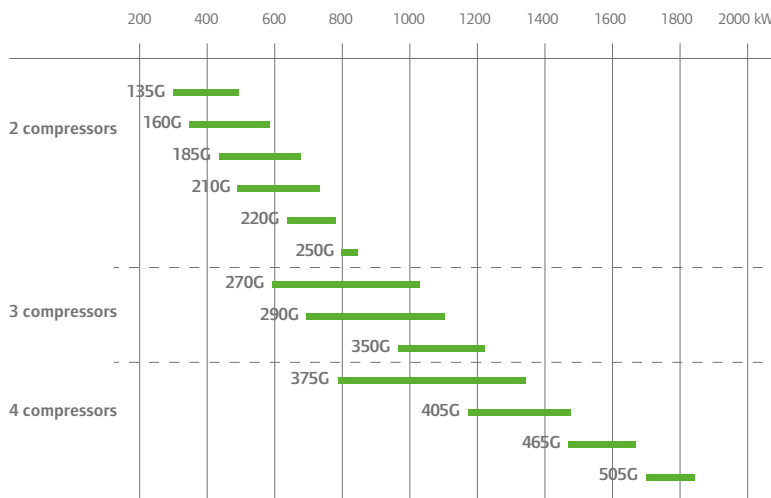
A model for every need

Trane's XStream eXcellent provides a wide capacity range up to 2.6 MW with industry-leading part load and full load efficiencies.

R134a



R1234ze



XStream eXcellent chillers

Excellence is standard

Standard on all models

- Multiple compressors (2, 3 or 4)
- Double refrigerant circuit
- Economizer circuit
- EMC filter to avoid harmonic transfer to compressor(s)



Smart

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



Energy Efficient

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



Green

Two different refrigerant alternatives:
R134a and the new HFO R1234ze with GWP<1.



Reliable

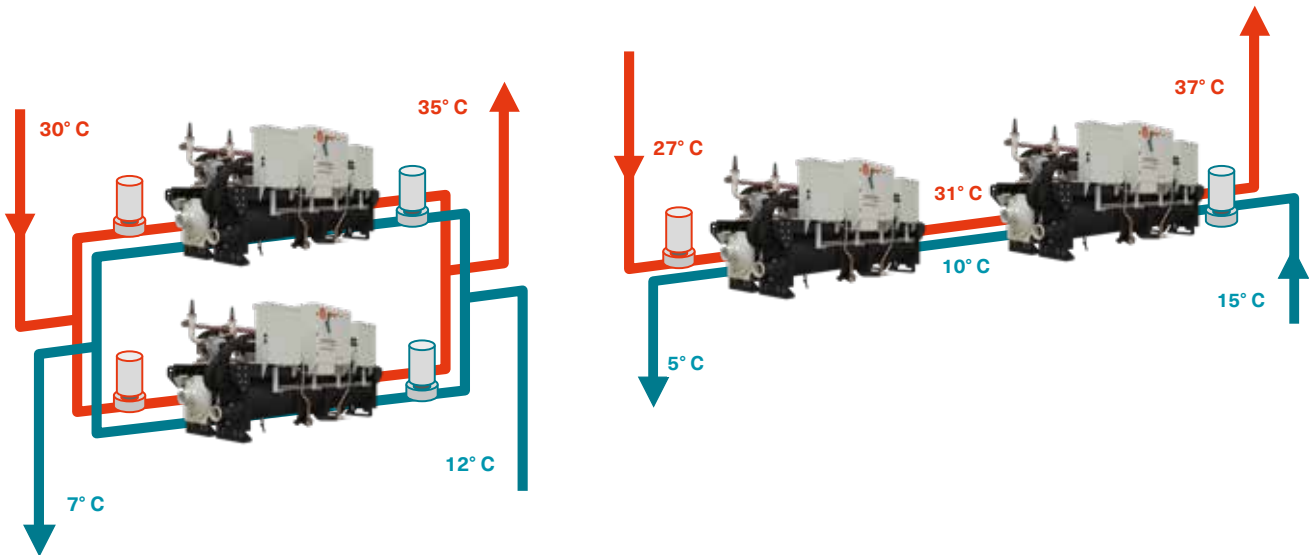
No compromise: You can count on Trane's legendary reliability.



Multiple chiller plants



Overall efficiency can be further improved by using an alternative chiller lay-out to the conventional parallel-piped configuration. For example, chillers can be piped in series, on the evaporator side, on the condenser side or both.



This layout provides the opportunity for

- Lower chilled water design temperature with larger ΔT
- Reduced design flow
- Installation and operational cost savings by fewer installed pumps and valves, reduced pipe diameters and chiller downsizing
- Maximized system efficiency
- Continuous temperatures allow better stability of controls

By combining series configuration with Variable Primary Flow (VPF) it is possible to further increase system efficiency.

Variable Primary Flow (VPF) capabilities



VPF systems provide building owners with multiple cost savings derived directly from pump operation. The XStream series is designed to make VPF easy to use.

- The evaporator on the XStream series can run safely with up to 50% water flow reduction.
- The microprocessor and capacity control algorithms are designed to handle a maximum of 10% change in water flow rate per minute in order to maintain $\pm 0.3^{\circ}\text{C}$ temperature control leaving the evaporator.
- For applications in which system energy savings are the priority and tight temperature control is classified as $\pm 1.1^{\circ}\text{C}$, up to 30% change in flow per minute is possible.
- With the help of a TRANE software analysis tool, you can determine whether the anticipated energy savings justify the use of VPF in a particular application.

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.

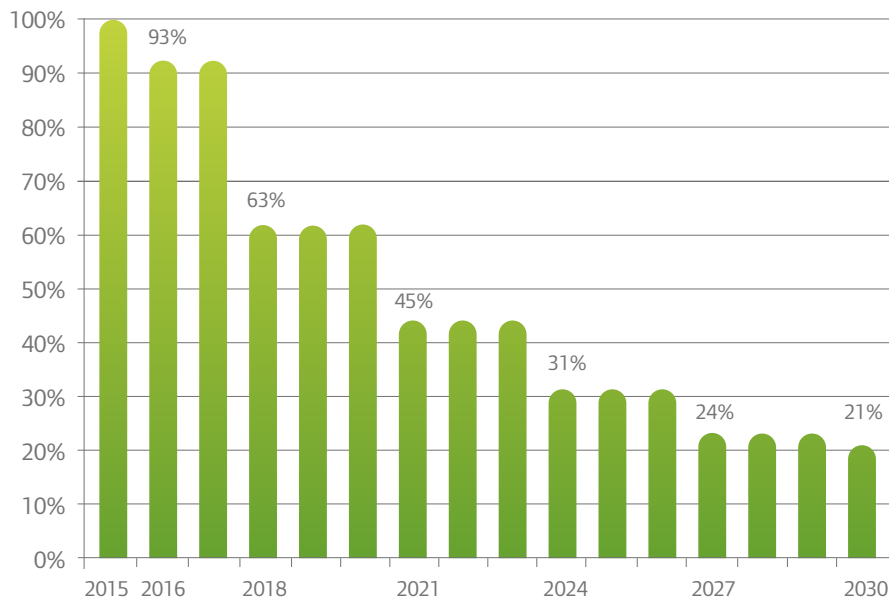
This is an unprecedented reduction and means that industry and users need to make, over time, the

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.

Trane - provider 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™

XStream Excellent chillers with low GWP refrigerants are part of the 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)
R410A	1924
R407C	1774
R134a	1300
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

Two different refrigerant alternatives

- R134a
- R1234ze with GWP<1

① High speed centrifugal compressor

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



② Trane combined smart control and interface*

- 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



③ Trane patented Compact - High performance - Integrated design - Low charge (CHIL) flooded evaporator*

- Double pass or counter flow single pass, depending on unit size
- Reduced refrigerant volume
- Increased efficiency
- Reduced carbon footprint



④ Dual refrigerant circuit Multi Compressor

- Provide redundancy
- Reduce the impact of any failure

* Trane Proprietary Technology

General specifications

General Data for cooling performances

	GVWF	GVWF G
Condenser leaving water temperature (min/max) (°C) Low Lift units		+20 / +55
High Lift units		+20 / +42
Evaporator leaving water temperature (min/max) (°C)		+5 / +20
Power supply (V/Ph/Hz)		400/3/50
Refrigerant	R134a	R1234ze

GVWF



Unit size	GVWF 190	GVWF 215	GVWF 260	GVWF 300	GVWF 325	GVWF 390	GVWF 275	GVWF 320	GVWF 370
Compressor Lift	High	High	High	Low	Low	Low	High	High	Low
Maximum Gross Capacity (1) (kW)	684	828	972	1056	1230	1425	1031	1167	1424
Performances at Optimum SEER (1)									
Gross Cooling Capacity (kW)	547	621	776	856	1088	1426	825	876	1281
Gross EER (1)	5.48	5.59	5.57	5.70	5.88	5.84	5.69	5.72	5.76
Net Cooling Capacity (1)(2) (kW)	546	620	776	855	1087	1425	824	875	1280
Net EER (1)(3)	5.24	5.39	5.38	5.44	5.65	5.70	5.54	5.57	5.64
Eurovent Energy class - Cooling	A	A	A	A	A	A	A	A	A
SEER (4)	8.30	8.40	8.28	8.58	9.30	9.50	9.23	9.05	9.48
Space Cooling Efficiency $\eta_{s,c}$ (3) (%)	329	333	328	340	369	377	366	359	376
Number of refrigerant circuits	2	2	2	2	2	2	2	2	2
Number of compressors	2	2	2	2	2	2	3	3	3
Sound power level (4) (dB(A))	87	88	89	92	96	99	88	90	95
Weights and dimensions									
Length (mm)	2976	2976	2976	3476	4730	4804	4730	4730	4804
Width (mm)	1125	1125	1125	1125	1700	1800	1700	1700	1800
Height (mm)	1920	1920	1920	1920	2032	2135	2032	2032	2135
Operating Weight (kg)	2310	2810	3020	3370	4094	4954	4110	4102	5177

Unit size	GVWF 380	GVWF 410	GVWF 420	GVWF 480	GVWF 590	GVWF 515	GVWF 570	GVWF 695	GVWF 760
Compressor Lift	High	Low	Low	Low	Low	High	Low	Low	Low
Maximum Gross Capacity (1) (kW)	1439	1697	1582	1776	2069	1924	2123	2430	2662
Performances at Optimum SEER (1)									
Gross Cooling Capacity (kW)	1114	1272	1107	1348	1862	1539	2123	1944	1864
Gross EER (1)	5.81	6.02	5.81	5.76	5.95	5.79	5.24	5.96	5.72
Net Cooling Capacity (1)(2) (kW)	1113	1271	1106	1347	1861	1538	2122	1943	1863
Net EER (1)(3)	5.64	5.90	5.65	5.64	5.86	5.63	5.06	5.86	5.63
Eurovent Energy class - Cooling	A	A	A	A	A	A	A	A	A
SEER (4)	9.43	9.63	9.43	9.48	9.95	9.28	9.15	9.78	9.90
Space Cooling Efficiency $\eta_{s,c}$ (3) (%)	374	382	374	376	395	368	363	388	393
Number of refrigerant circuits	2	2	2	2	2	2	2	2	2
Number of compressors	3	3	3	3	3	4	4	4	4
Sound power level (4) (dB(A))	91	96	93	96	100	92	96	99	101
Weights and dimensions									
Length (mm)	4730	4804	4730	4804	5245	4804	4804	5444	5444
Width (mm)	1700	1800	1700	1800	2141	1800	1800	2141	2141
Height (mm)	2032	2135	2032	2135	2315	2135	2135	2315	2315
Operating Weight (kg)	4317	5177	4317	5177	8076	5401	5574	8263	8323

(1) Evaporator 12/7°C and 0.0 m²K/kW, and condenser at 30/35°C and 0.0 m²K/kW

(2) Net performances calculated as per EN 14511-2013.

(3) $\eta_{s,c}$ / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016

(4) At full load and in accordance with ISO9614

GVWF G



Unit size		GVWF 135 G	GVWF 160 G	GVWF 185 G	GVWF 210 G	GVWF 220 G	GVWF 250 G	GVWF 270 G
Compressor Lift		High	High	High	Low	Low	Low	High
Maximum Gross Capacity (1)	(kW)	422	530	613	659	787	850	764
Performances at Optimum SEER (1)								
Gross Cooling Capacity	(kW)	398	531	614	734	787	848	717
Gross EER (1)		5.57	5.17	5.43	5.21	5.29	5.48	6.05
Net Cooling Capacity (1)(2)	(kW)	397	530	613	733	786	847	716
Net EER (1)(3)		5.39	5.05	5.16	4.97	5.09	5.25	5.92
Eurovent Energy class - Cooling		A	A	A	A	A	A	A
SEER (4)		8.05	7.95	7.98	7.75	7.80	7.63	9.48
Space Cooling Efficiency $\eta_{s,c}$ (3)	(%)	319	315	316	307	309	302	376
Number of refrigerant circuits		2	2	2	2	2	2	2
Number of compressors		2	2	2	2	2	2	3
Sound power level (4)	(dB(A))	86	88	89	92	96	98	90
Weights and dimensions								
Length	(mm)	2976	2976	2976	2976	2976	3476	4730
Width	(mm)	1125	1125	1125	1125	1125	1125	1700
Height	(mm)	1920	1920	1920	1920	1920	1920	2032
Operating Weight	(kg)	2130	2280	2420	2740	3000	3380	4025

Unit size		GVWF 290 G	GVWF 350 G	GVWF 375 G	GVWF 405 G	GVWF 465 G	GVWF 505 G
Compressor Lift		Low	Low	High	Low	Low	Low
Maximum Gross Capacity (1)	(kW)	942	1120	1018	1356	1352	1672
Performances at Optimum SEER (1)							
Gross Cooling Capacity	(kW)	886	1121	1017	1478	1353	1669
Gross EER (1)		5.82	5.48	6.12	5.49	5.53	5.98
Net Cooling Capacity (1)(2)	(kW)	885	1120	1016	1477	1352	1668
Net EER (1)(3)		5.68	5.33	5.99	5.34	5.42	5.90
Eurovent Energy class - Cooling		A	A	A	A	A	A
SEER (4)		9.18	9.23	9.48	9.18	9.43	9.73
Space Cooling Efficiency $\eta_{s,c}$ (3)	(%)	364	366	376	364	374	386
Number of refrigerant circuits		2	2	2	2	2	2
Number of compressors		3	3	4	4	4	4
Sound power level (4)	(dB(A))	93	99	91	95	100	101
Weights and dimensions							
Length	(mm)	4730	4730	4804	4804	4804	5444
Width	(mm)	1700	1700	1800	1800	1800	2141
Height	(mm)	2032	2032	2135	2135	2135	2315
Operating Weight	(kg)	4085	4304	5002	5128	5556	8239

(1) Evaporator 12/7°C and 0.0 m²K/kW, and condenser at 30/35°C and 0.0 m²K/kW

(2) Net performances calculated as per EN 14511-2013.

(3) $\eta_{s,c}$ / SEER as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for Comfort Chillers with 2000 kW maximum capacity - COMMISSION REGULATION (EU) N° 2016/2281 of 20 December 2016

(4) At full load and in accordance with ISO9614

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



Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit trane.eu or tranetechnologies.com.

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