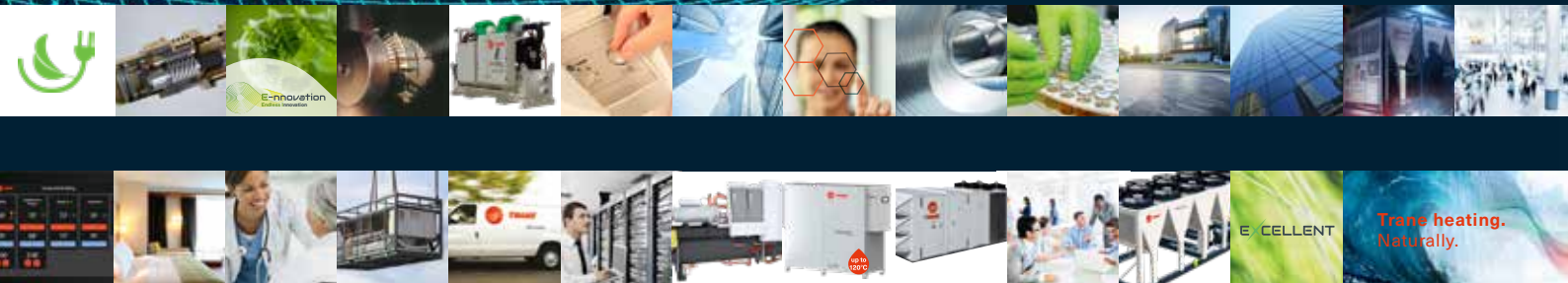




# Equipment and Services 2023

## Integrated HVAC-R Solutions for Commercial and Industrial Markets



TRANE  
TECHNOLOGIES

# Who we are

Trane is a leading provider of cooling, heating, ventilating, air conditioning and refrigeration (HVAC-R) systems, controls and services for commercial and industrial applications.

Founded in 1913 by James Trane and his son Reuben, Trane has a long history of industry-defining innovations in intelligent, energy efficient and sustainable solutions for diverse building comfort and process needs.

Trane's integrated HVAC-R systems and services enhance business performance, improve quality of life for building occupants and enable owners and operators to meet their business and operational objectives.

## Total lifecycle management

HVAC-R systems are at the core of your building infrastructure and have a lifespan of over 30 years.

Backed by over 100 years of experience, Trane understands that the operating costs of your HVAC-R infrastructure alone can account for almost 4 times the cost of your capital investment.

The costs of energy, maintenance, repairs and associated labor can amount up to 80% of building lifecycle costs. Trane offers expertise that enables you to manage and optimize your HVAC-R system lifecycle and reduce your total cost of ownership.

- At the planning and concept stages, we bring you the technical expertise and applications' know-how for different building types and help ensure that initial specifications get off to the right start.
- At the design stage, Trane engineers work with you to define and select the best equipment and control solutions that meet your specific needs.
- Trane offers start-up, turnkey installation and commissioning for projects.
- To enable smooth operations, we offer a wide portfolio of services ranging from temporary cooling solutions to energy monitoring and retrofits that give you peace of mind and sustain your investment for life.

## Integrated HVAC-R systems

Trane manufactures, manages and services HVAC-R equipment, systems and controls for buildings and industrial processes all over the world. Through our global research and development facilities, we dedicate extensive resources in innovation for HVAC-R systems. Whether it concerns a system upgrade, renovation or new construction, our projects focus on:

- Reliability
- Energy efficiency
- Environmental responsibility
- Technological expertise
- State-of-the-art design
- Operational efficiency
- Fulfilling specific business needs, no matter how simple or complex



# Solutions to meet your business needs

Trane has over a century of global experience providing customized HVAC-R systems and service applications for diverse vertical markets. We offer the broadest equipment portfolio in the industry, cover applications from deep freezing to extreme heating, and we partner with you to develop and deliver the best solutions that help meet your business goals.



**Healthcare:** Trane addresses healthcare facility needs with the most advanced HVAC equipment and controls that meet the precise environmental requirements for individual spaces. We foster thermal comfort and high Indoor Air Quality (IAQ) to improve patient outcomes, maintain a hygienic healing environment and achieve operational efficiency 24/7/365.



**Pharmaceuticals:** Trane helps you comply with Good Manufacturing Practices (GMP) with HVAC systems that are designed to maintain temperature, pressures, humidity, filtration and airflow in manufacturing, storage areas and in clean rooms. Trane systems are proven to deliver energy savings and carbon footprint reduction for pharmaceutical manufacturers.



**Data centers:** A data center requires systems' know-how to ensure adequate, energy efficient on-demand cooling, increase reliability, control costs and maximize uptime. From high efficiency cooling equipment, use of solutions like ice storage and free cooling, to system controls and total HVAC infrastructure management, Trane delivers reliable systems expertise that helps you improve Power Usage Effectiveness (PUE) and generate up to 60% energy savings.



**Commercial buildings:** For commercial real estate, offices or multi-purpose buildings, Trane customizes HVAC systems with integrated scalable controls to help you manage your assets for optimum energy efficiency, occupant comfort and staff productivity.



**Hospitality:** From empowering guest room comfort, sustaining facilities with complete care to enabling energy management and temporary cooling for outdoor recreation or events, Trane helps you deliver seamless hospitality at your hotel, restaurant, conference center or entertainment facility. Our flexible HVAC solutions ensure optimum environmental comfort for your guest experience while minimizing operating costs.



**Food and beverage:** Either for simple warehousing or complex food processing, Trane develops integrated low temperature systems that can meet air distribution, temperature, humidity and filtration requirements. We partner with you to build and sustain high quality, productive manufacturing, storage and processing environments that comply with food safety regulations.



**Other industries:** From chemicals and plastics manufacturing to electronics, energy rentals, utilities and district cooling/heating. Trane has extensive expertise in delivering high efficiency HVAC equipment, controls and services. Trane solutions are customized for even the most demanding environments and provide reliable performance all year round.

# Continuing the transition to low-GWP refrigerants



## Innovative products with low-GWP refrigerants

Our extensive portfolio of products continues to lead the marketplace, supporting our customers' ambitious sustainability goals. Whether you need a 100 kW scroll compressor heat pump, 1000 kW screw compressor chiller, or 14 MW centrifugal chiller, Trane provides high efficiency solutions and the **lowest GWP refrigerants in the industry.**

### Wide refrigerant portfolio

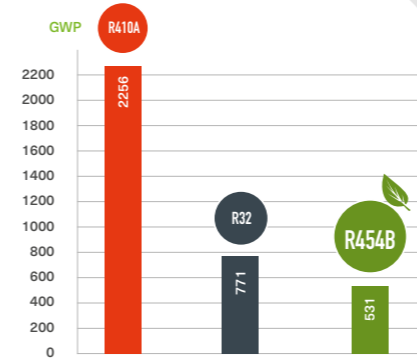
Trane has extensive experience in designing products utilizing low and ultra-low GWP refrigerants. Our entire portfolio of scroll, screw and high-speed centrifugal units is available with lowest -GWP refrigerants such as R1234ze, R1233zd, R513A, and R454B.

### Quality, reliability and safety

All Trane's refrigerant circuits are optimized for any refrigerant and our rigorous manufacturing, factory testing and servicing processes guarantee minimal risk of leakage. Trane's highly experienced Service Technicians are trained to handle all new refrigerants; your investment – and the environment – are safe and well protected.

## R1234ze Refrigerant

Following Trane's introduction of the first centrifugal chiller with near-zero GWP refrigerant, Trane continues to innovate, providing clients with a full screw compressor and high speed centrifugal compressor portfolio with near-zero GWP. We now serve virtually every industry with our broad offerings. Trane chillers and heat pumps with R1234ze meet the specific challenges of applications such as comfort cooling, process cooling and heating. Incorporating new near-zero GWP refrigerants makes our products ideal for applications that were previously rendered out-of-reach with HFCs.



\* according to the IPCC Assessment Report 6 (AR6)

## R454B Refrigerant

Trane offers the low global warming potential (GWP) R-454B refrigerant across its entire portfolio of scroll compressor chillers, heat pumps, multi-pipe units and rooftops. This more climate-friendly replacement for the R-410A has a GWP level of 467, the lowest on the market for scroll compressor technology. With improved energy efficiency, the R-454B offers a 76% reduction in direct GWP impact compared with the R-410A and 34% reduction against R-32 (AR 5), helping our clients future-proof their investment and mitigate rising refrigerant tax rates.



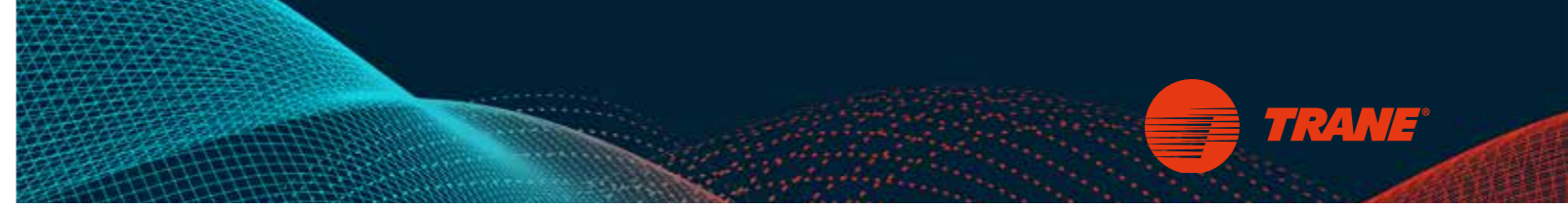
### What is GWP?

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

## What is the EU F-Gas Regulation?

The fluorinated refrigerants phase-down, as defined in the EU F-Gas Regulation, requires that the production of virgin fluorinated gases (HFCs) in the EU are gradually reduced and HFC consumption is cut 79% by 2030. This makes it even more vital that the industry and operators make a timely transition to high efficiency refrigerants with a low to ultra low Global Warming Potential (GWP) – such as R1234ze, R1233zd, R513A, and R454B.





# Partnering with you for process freezing and high temperature heating

**SAFE  
PROCESS  
COOLING**

R454B R1234ze 0 to -12°C

## A flexible range of chillers designed for mild freezing process applications

Specially designed for food processing, food storage requiring negative temperature leaving brine between 0°C and -12°C

A safe, sustainable and cost-efficient alternative to R717 (ammonia) and R290 (propane) refrigeration systems.

Trane process chillers operating with near-zero GWP R1234ze

- Sintesis Advantage CGAF with R454B  
2, 4 or 6 scroll compressors  
120-260 kW
- Sintesis Prime RTAF G with R1234ze  
2, 3 or 4 screw compressors  
410-755 kW

R717 down to -30°C

R449A down to -24°C

## Trane's solutions for deep freezing applications

RTDF is designed to suit applications which need leaving brine below -12°C.

- R717 refrigerant with zero GWP
- Lowest refrigerant charge in the industry
- i-Cube Low Temperature process chillers are designed to deliver brine water down to -24°C
- Highly reliable and robust process chiller with innovative coil-in-tank evaporator
- R449A refrigerant (R290 coming soon)

EXERGY

EXERGY

up to 120°C

## Industrial Heat Pumps for high temperature heating needs

Exergy heat pumps optimize the use of energy. Their goal is to repurpose traditionally unused and wasted energy to produce hot water for commercial or industrial process applications. Energy can be therefore sourced from from data centers, grey water, refrigeration plants or geothermy and efficiently transferred to where it is needed.

- Up to 120°C leaving water temperature
- 30-2000 kW heating capacity
- R1234ze, R1233zd(E), R450A, R513A, R134a, R410A
- Models RE/P/S with 3 different compressor technologies; Scroll, Piston or Screw
- Versatile control system for energy-efficient and easy operation with clear graphical user interface
- Multiple HVAC and industrial communication protocols available for integration in supervisory control system



## Cold storage rental - temperature controlled storage and warehousing solutions

- For short term storage or long term warehousing in food and beverage, pharmaceutical, high tech components applications, and more...
- Containers deliver between up to 40°C or down to -70°C with extreme accuracy and minimal fluctuation



# What's New from Trane



## Enhancements to CGAF/CXAF heat pumps and chillers range

- More compact version available up to 350 kW (models CXAF SSE and SHE)
- Extended operating maps - provides up to 65°C leaving hot water temperature and operates in ambient air temperatures down to -18°C
- New improved performances / higher heating capacity
- Total heat recovery (chillers only) or partial heat recovery option
- Compact footprint: less than 5 m<sup>2</sup> including tank and pumps
- Low weight: ideal for retrofit of existing HVAC systems
- SE and HE versions with AC or EC fans



## Air-cooled GVAF XSE & XSS chiller range

- Cooling capacity range 380 - 1500 kW
- HFO optimized oil-free high speed centrifugal compressors with integrated Adaptive Frequency Drive
- The best certified seasonal energy efficiency SEER of the industry according to Eurovent
- Extended operating map - full load ambient up to 46°C, part load 50°C and leaving water temperature 26°C
- XSS version for the most compact footprint per kW ratio to fit to the tightest rooftops
- Entire range available as data center special version with leaving water temperature up to 26°C, free-cooling option, optimized rapid restart, automatic transfer switch, UPS ready controller with user-friendly HMI and flexible programming interface



## CMAF simultaneous cooling and heating capacities from 150 kW to 1400 kW

- Innovative Trane Adaptive Refrigerant System™
- Largest operating maps in the industry
- Market-leading TER ratios
- Proven Sintesis platform of chillers, heat pumps and multi-pipe units
- Sustainable R454B refrigerant



## Trane SuperHeater

Our hassle-free factory heat pump cascade solution to deliver heating and hot water in the most challenging conditions.

- 0% fossil fuel and local CO<sub>2</sub> emissions.
- 100% electrical and renewable heating.
- 100% Trane equipment and controls.
- 80°C hot water at -18°C ambient temperature.
- 300-500kW heating capacity.

Must-see videos



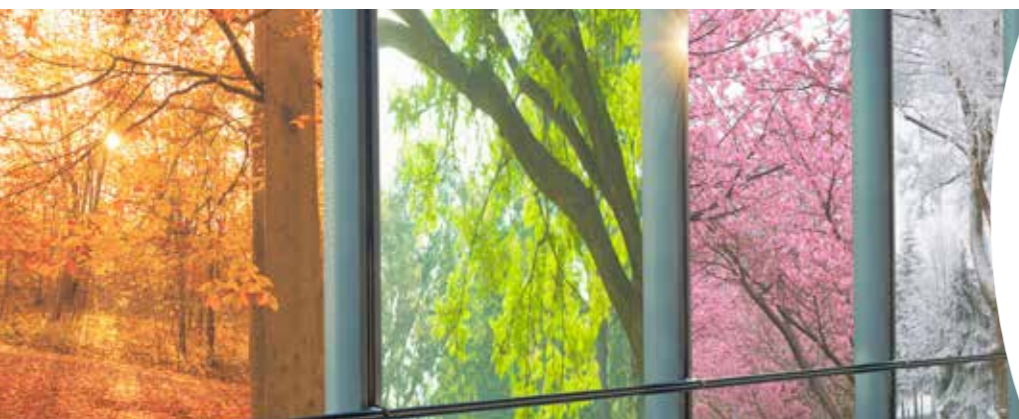
Trane Heating, Naturally



Trane Adaptive Refrigerant System



What is TER?



# What's New from Trane



## New CXC heat pumps and CGC chillers

- Inverter-driven scroll compressor
- Low-GWP R454B refrigerant (R290 coming soon)
- Heating capacity 20 - 50 kW



## Water-to-water booster heat pump

- Ideal in combination with an air-to-water unit (Trane CXAF/RTXC) or a Multi-pipe unit (Trane CMAF/CMAF) to increase the leaving hot water temperature
- 77-550 kW (R134a)
- 36-144 kW (R513A)
- Perfect for sanitary water to fully or partially replace boilers
- Applications: Hotel and commercial buildings, large apartment buildings, hospitals, office buildings
- Reduced footprint, easy installation and quiet operation
- Scroll compressor with R134a or R513A
- Brazed plate heat exchangers



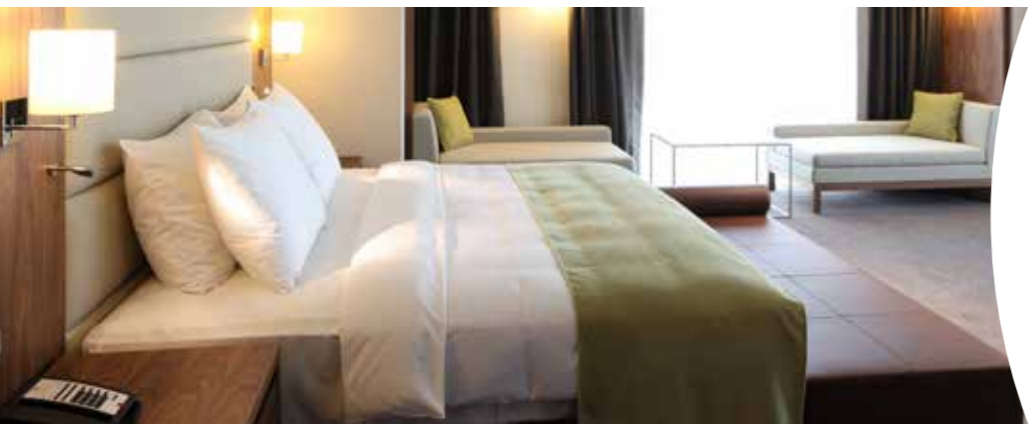
## Water-to-water heat pumps and chillers portfolio extension and new controller

- Portfolio extension up to 700 kW cooling or 835 kW heating
- Chillers, heat pumps and condenserless units
- Standard and high efficiency models
- Single and dual circuits
- Many different hydraulic modules available
- Sound attenuating options: low noise and super low noise
- Compact design: possible to install one side against wall, width of 900 mm, fits in all standard elevators - simplified access to work site
- Symbio 800: sophisticated Trane controller for optimal unit performances. Easier to integrate with other Trane units
- Easy to maintain: very good accessibility to all main components.



## RTXC efficient high-capacity air-to-water reversible heat pumps

- Cooling and heating capacity fixed-speed XE version: 370-800 kW
- New variable speed HSE version extends the cooling and heating capacity up to 1 MW
- Trane-designed and manufactured screw compressor technology, AC or EC fans and R513a or R134a refrigerant
- The best full load cooling efficiency EER of the industry in reversible air-to-water heat-pump segment according to Eurovent
- Strong operating map - in heating mode max water temperature up to 55 °C in -10 °C ambient
- Available as a duplex version which doubles the heating and cooling capacities
- Partial heat-recovery option to further boost the system efficiency



# What's New from Trane



## Enhancements to the rooftops portfolio

### New design of small capacity Airfinity S rooftops

- Cooling/heating capacity from 18 to 60 kW
- Variable speed compressor with R454B refrigerant

### Rooftop solutions for warehouses

- Extended airflow rate 18000-45000 m<sup>3</sup>/h
- Up to 100% fresh air
- Up to 800 Pa available external static pressure
- High efficiency rotary wheel
- Multi-rooftop control and management with Tracer Concierge

### Microchannel coil on IC units

Compared to units with traditional copper/aluminium coils, IC with microchannel coils offer:

- +4% on cooling capacity
- +6% on SEER and EER
- -29% on refrigerant charge



## GVWF XSE G Extended operating map and capacities

- Capacity range from 350 to 2160 kW
- Enhanced efficiencies up to a market-leading SEER of 10.4
- R1234ze (GWP <1) optimized
- R515B compatible
- Extended operating map up to 63°C condensing leaving temperature
- 1 to 4 compressors
- Data center requirements:
  - High Capacity
  - Up to 30°C leaving evaporator water temperature
  - Fast restart control
  - Uninterruptible Power Supply (UPS)



## Alternative A1 refrigerants on water-cooled screw chillers

- Alternative low-GWP refrigerants on screw units
- A1 classification
- R515B (GWP 299) on RTSF, RTWD and RTWF chillers and heat pumps from 180 to 1430 kW
- R513A (GWP 630) on RTHF chillers from 1150 to 3500 kW.



## Trane® Tracer Symbio™ 800 controller

- Latest Generation Unit Controller replacing UC800
- One of the industry-best controls algorithms with patented strategies to respond to rapidly changing conditions to avoid disruption
- The touchscreen display TD7 facilitates navigation and access to data and alarms
- Multiple communication protocols supported for easier integration into BMS
- WIFI module enabling wireless communication
- Embedded schedule allows the controller to operate in stand-alone scheduled operation (without BMS)
- SD card for local back-up and peace of mind in case of equipment failures
- Expandable I/O which make the controller field-programmable. This feature can reduce project costs and enables customized sequence of operations
- Remote connectivity: used in conjunction with Trane Connect, you can get equipment data at anytime, anywhere independently from the BMS system and potentially save money by preventing equipment failures if Trane Connected Services enabled.



# What's New from Trane



## Trane Free Heating - reduce your boiler gas consumption

Trane free heating solution : a global system approach. Free Heating is an important part of the efficiency portfolio developed by Trane to optimize your operation on a overall system approach. This generates immediate savings by balancing cooling and heating demands and consequently reduces energy needs.

- Reduce the gas consumption on your existing water boiler
- Improve your system global efficiency
- Reduce the carbon foot print of your building
- Available as capital investment or operating expense.



## Trane Free Cooling - saving energy the natural way

Cool outside air or water can be used as a free resource to help chill water which can be used for industrial processes or air conditioning. Trane Free Cooling is made simple and effective by using air-cooled dry coolers which remove unwanted heat without the need for integration with the chiller control.

For at least six months a year, the average outside ambient temperature is low enough to make Free Cooling possible.

Free Cooling uses external temperatures which are below the process temperature to:

- Reduce energy consumption and costs by up to 80%
- Reduce the carbon foot print of the building
- Extend chiller lifetime by reducing the load on mechanical parts.

## Trane EaaS

A **short-term or long-term rental program** where you only pay for HVAC when you need it. Whether it's a repair, an upgrade or a replacement, Trane can offer a revolutionary approach to meet your needs. Forget investing and owning your HVAC system – we can give you «Equipment-as-a-Service» (EaaS).

- No upfront cost, positive cash flow
- The latest technology
- Easy switching to more powerful equipment
- Minimized running costs and a fixed monthly rate
- Full maintenance and warranty cover
- Total reliability, total availability
- Zero risk and maximum flexibility.

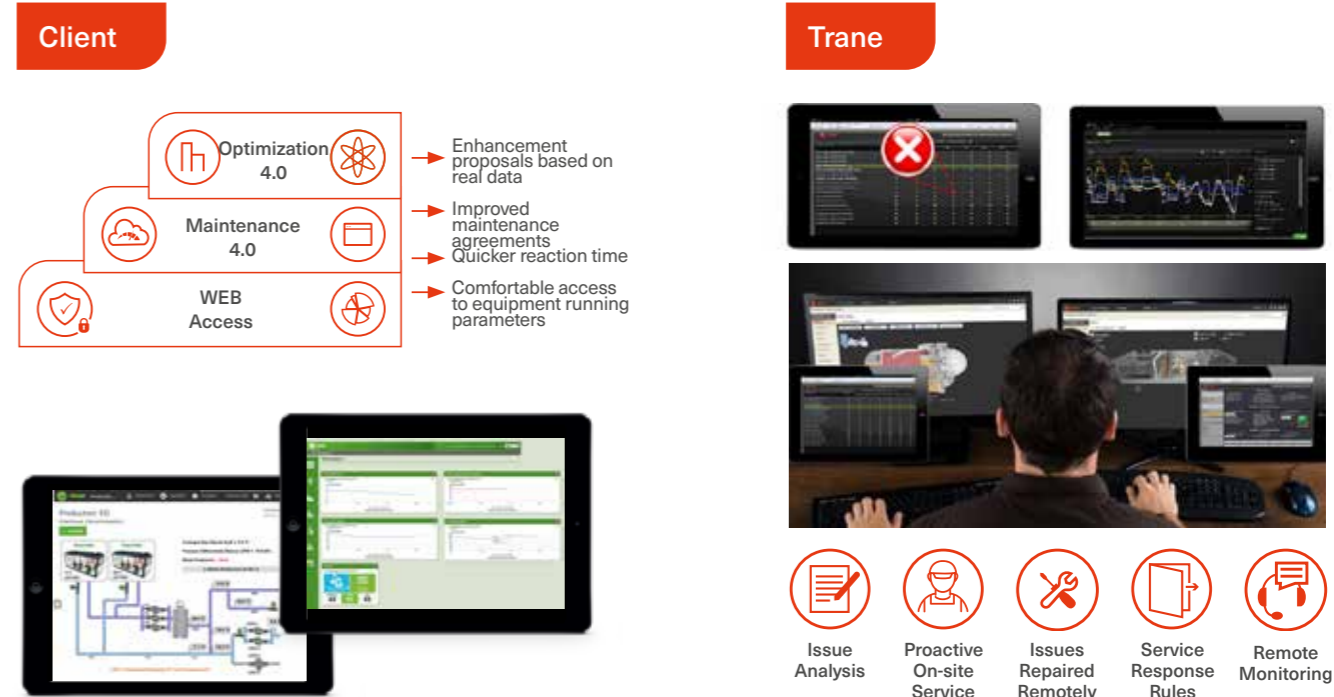
### Pay for what you need, when you need it

- EaaS Standby: At Trane depot or on your premises, ready to be connected.
- EaaS Partial use for seasonality
- Pay in full when you are using, otherwise pay a reduced rate.

## Trane Connected Services: Continuous Maintenance Monitoring and Diagnosis

A new way of maintaining and improving Trane equipment

- Clients and Trane monitor equipment running conditions from anywhere, using a standard web browser.
- Connection occurs through fully secured infrastructure
- Gateway can collect information from ancillaries and depict an overall situation
- Trane can execute on maintenance inspections from remote and provide with reports on equipment's main running parameters
- Running parameters get harvested on a regular basis to provide insights on how running conditions evolve over time
- System based on Trane controller for which setup can be extended to accommodate live system optimization, such as Equipment Plant Optimizer.





# Trane Equipment

## Air-cooled chillers and condensing units

### Air-cooled chillers

TRANE CUBE R454B AFD



Scroll compressor  
CGC HSE  
20-50 kW

FLEX R410A R454B



Scroll compressor  
Modular Flex  
55-135 kW

CONQUEST R410A R454B



Scroll compressor  
CGAX  
40-165 kW

TRANE i-CUBE R410A R449A



Scroll compressor  
i-Cube  
1-260 kW

SINTECIS ADVANTAGE R410A R454B



Scroll compressor  
CGAF  
192-670 kW

SINTECIS PRIME R134a R513A R1234ze



Screw compressor  
RTAF  
300-1900 kW

SINTECIS EXCELLENT R134a R513A R1234ze



High speed centrifugal compressor  
GVAF  
450-1615 kW

### Condensing units

R410A

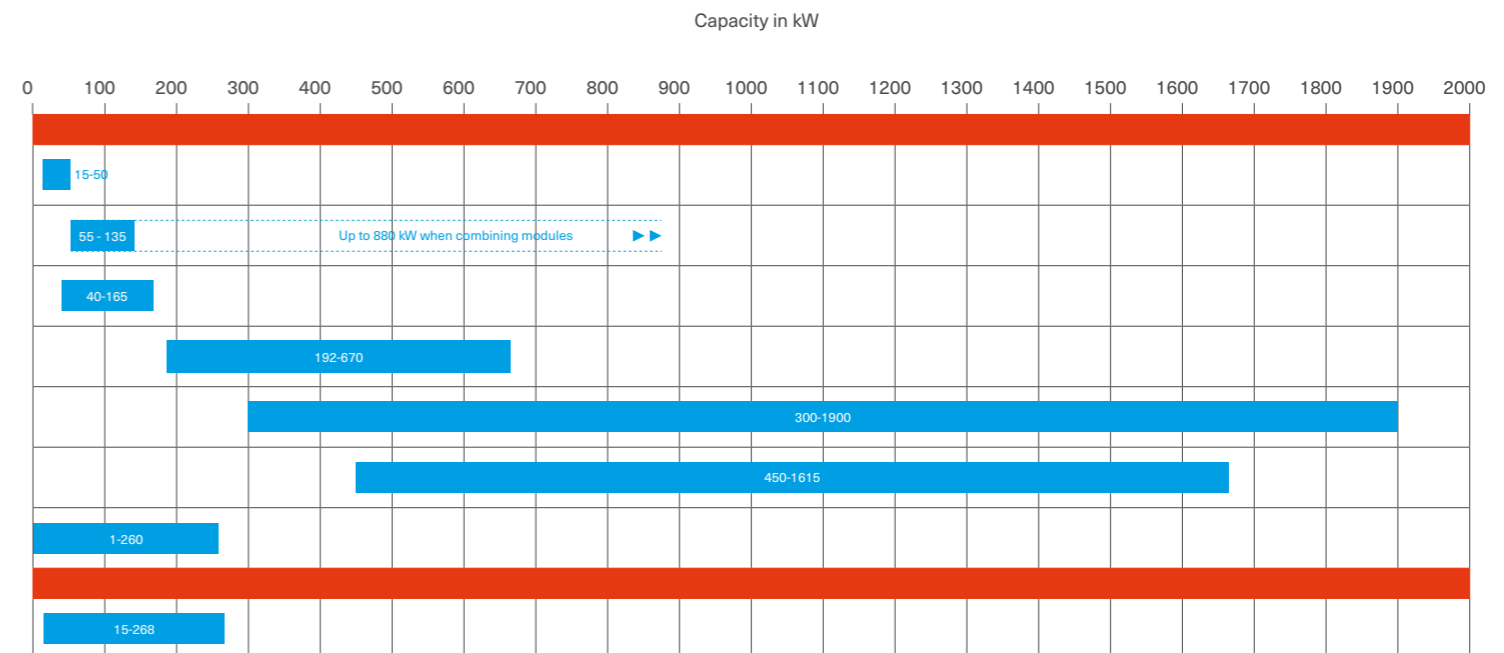


Scroll compressor  
RAUS  
15-268 kW



Model	Compressor	Water heat exchanger	Efficiency version						Sound version											
			Refrigerant circuits	Adaptive Frequency™ Drive	Free cooling	Heat recovery	Renewable Energy for Heating	Scroll	Screw	High speed centrifugal	Brazed plate	Shell and tube	Standard	High	Extra high	High Seasonal	Excellent	Standard	Low	Extra Low
<b>CHILLERS</b>																				
TRANE CUBE	CGC	1	1						•									•	•	
FLEX	Flex	1	•		•				•									•	•	•
CONQUEST	CGAX	1/2				P			•									•	•	
SINTECIS ADVANTAGE	CGAF	2		•	•				•									•	•	•
SINTECIS PRIME	RTAF	1/2	•	•	•	•			•									•	•	•
SINTECIS EXCELLENT	GVAF	1/2	•	•					•									•		•
TRANE i-CUBE	i-Cube	1							•									•		
<b>CONDENSING UNITS</b>																				
	RAUS	1/2							•									•		

P= Partial



# Trane Equipment

## Air-to-water heat pumps / Multi-pipe units

### Air-to-water heat pumps



Scroll compressor with inverter  
Cooling 5-38 kW  
Heating 6-50 kW



Scroll compressor  
CXC  
Cooling 20-50 kW  
Heating 20-60 kW



Liquid injection scroll compressor  
Modular Flex/Flex HP HT  
Cooling 55-144 kW  
Heating 54-154 kW



Scroll compressor  
CXAX  
Cooling 40-165 kW  
Heating 40-160 kW



Scroll compressor  
CXAF  
Cooling 192-700 kW  
Heating 181-700 kW



Screw compressor  
RTXC  
Cooling 380-940 kW  
Heating 385-1005 kW

### Multi-pipe units



Scroll compressor  
CMAC  
Cooling 50-140 kW  
Heating 50-150 kW



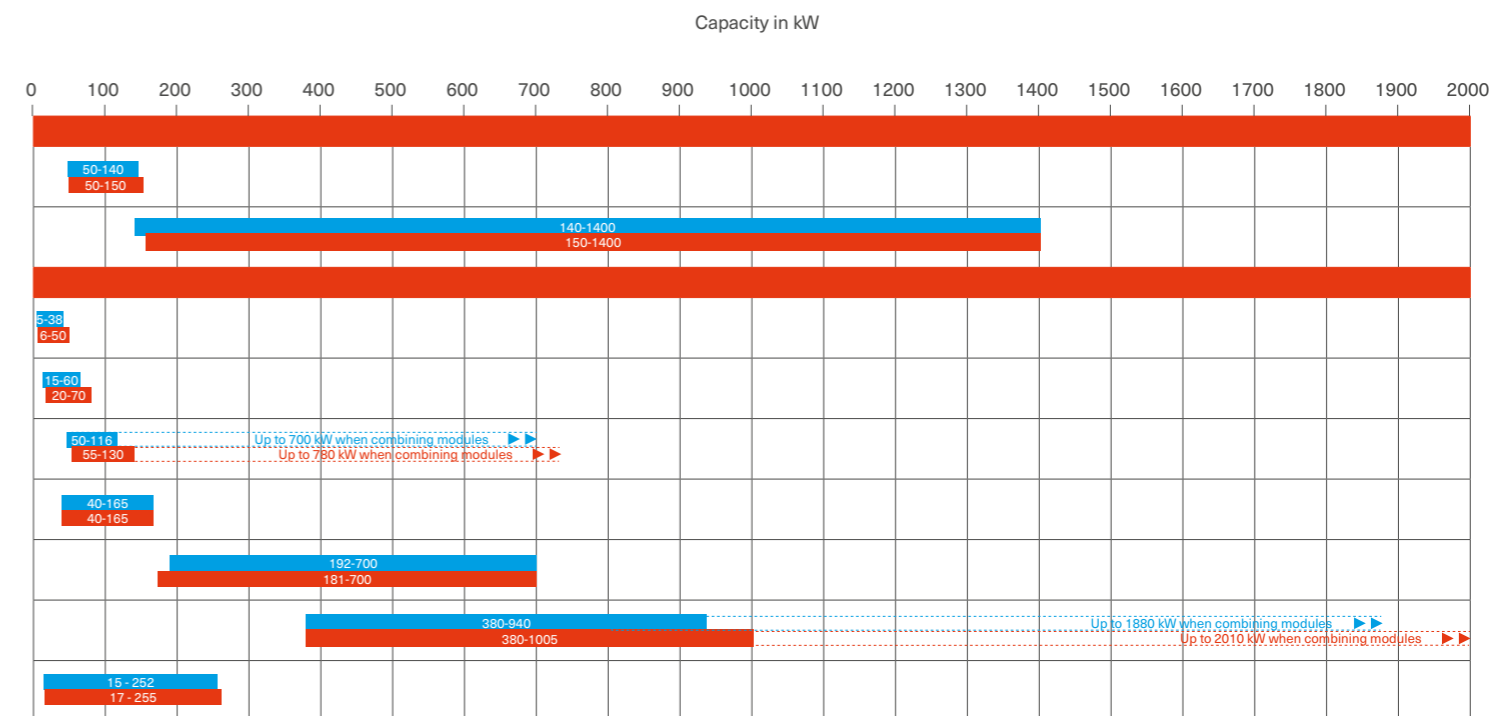
Scroll compressor  
CMAF  
Cooling 140-1400 kW  
Heating 150-1400 kW

### Condensing units



Scroll compressor  
RAUX  
15-252 kW  
17-255 kW

		Refrigerant circuits			Compressor		Water heat exchanger		Efficiency version				Sound version		
		Heat recovery	Renewable Energy for Heating	Scroll	Screw	Brazed plate	Shell and tube	Standard	High	Extra high	High Seasonal	Standard	Low	Extra Low	
<b>MULTI-PIPE UNITS</b>															
BALANCE™	CMAC	1/2	•	•	•	•		•	•		•	•	•	•	
SINTECIS BALANCE™	CMAF	2	•	•	•	•		•	•		•	•	•	•	
<b>HEAT PUMPS</b>															
PIEQ		1		•	•	•		•				•	•	•	
TRANE CUBE	CXC	1		•	•	•					•	•	•		
FLEX	Flex II	1	P	•	•	•		•				•	•	•	
CONQUEST	CXAX	1/2	P	•	•	•		•	•			•	•	•	
SINTECIS ADVANTAGE	CXAF	1/2	P	•	•	•		•	•			•	•	•	
	RTXC	1/2	P	•	•		•			•	•	•	•	•	
	RAUX	1/2				•	•	•				•			



# Trane Equipment

## Water-cooled chillers and condenserless units

### Water-cooled chillers and condenserless units

CITY ADVANTAGE

R410A R454B



Scroll compressor  
Water-cooled and  
condenserless  
CGWF/CCUF  
50-700 kW

CITY

R1234ze R515B



Screw compressor  
RTSF G  
185-385 kW

RTWD

R134a R1234ze R515B



Screw compressor  
Water-cooled and  
condenserless  
RTWD-RTUD  
235-1005 kW

RTHD<sup>evo</sup>

R134a



Screw compressor  
RTHD Evo  
545-1450 kW

XSTREAM EXCELLENT

R134a R513A R1234ze



High speed centrifugal  
compressor  
GVWF  
350-2530 kW  
GVWF XSE G 350-2160 kW  
GVWF G 425-1380 kW  
GVWF 600-2560 kW

XSTREAM

R134a R513A R1234ze



Screw compressor  
RTWF  
345-1860 kW

XSTREAM

R134a R513A R1234ze



Screw compressor  
RTHF  
850-3670 kW

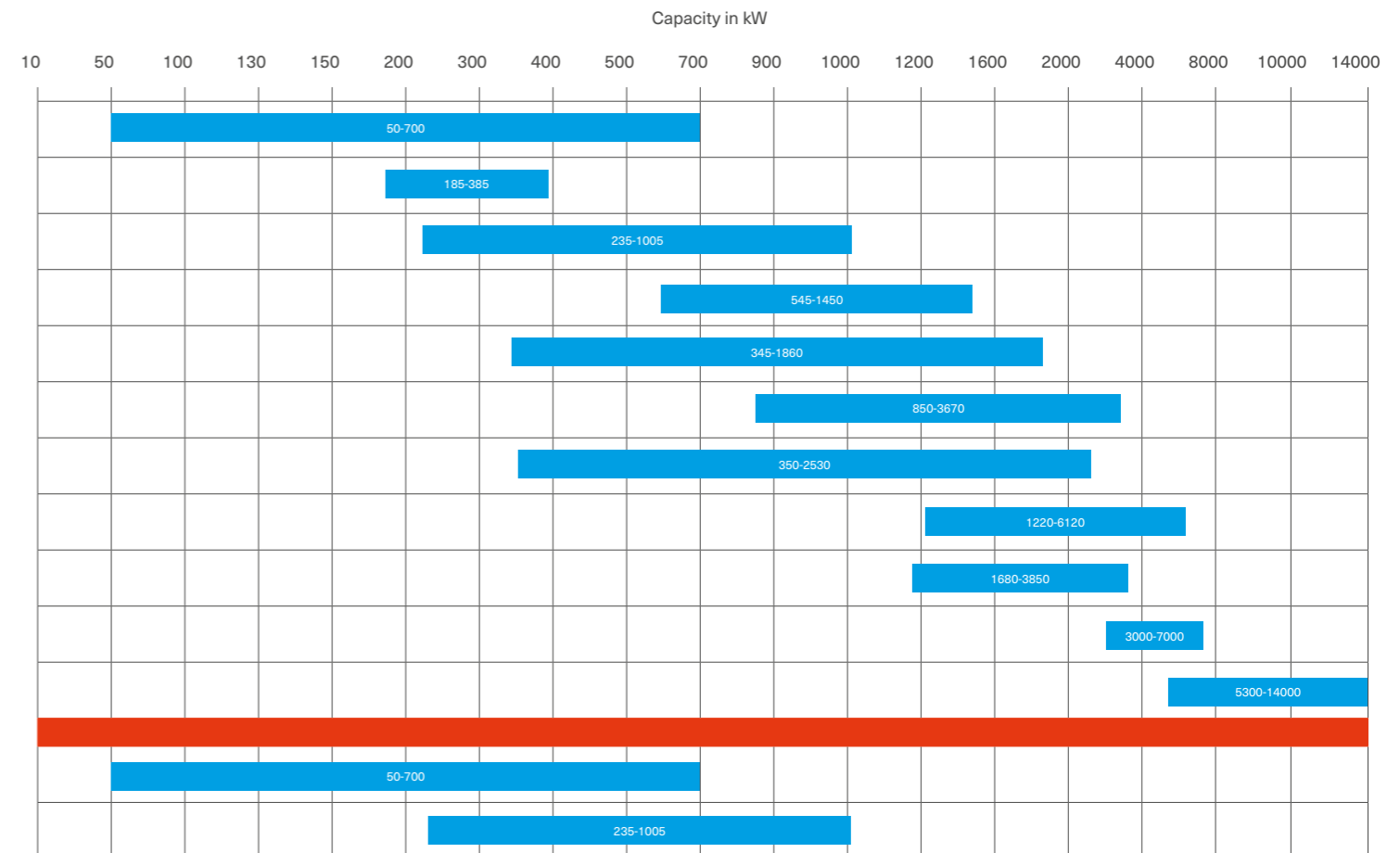
Series E™  
CenTraVac™  
CenTraVac™

R514A R1233zd



Centrifugal compressor  
CVHH 3000-7000 kW  
CDHH 5300-14000 kW  
CVHF 1220-6120 kW  
CVHG 1680-3850 kW

		Refrigerant circuits	Compressor				Water heat exchanger		Efficiency version					
			Adaptive Frequency™ Drive	Heat recovery	Scroll	Screw	Centrifugal	High Speed Centrifugal	Brazed plate	Shell and tube	Standard	High	Extra high	High Seasonal
<b>CHILLERS</b>														
CITY ADVANTAGE	CGWF	1/2			•			•		•	•			
CITY	RTSF	1	•					•						•
RTWD	RTWD	2	•						•	•	•	•	•	
RTHD <sup>evo</sup>	RTHD evo	1	•						•	•	•	•	•	
XSTREAM	RTWF	2	•						•	•	•		•	
XSTREAM	RTHF	2	•						•			•	•	
XSTREAM EXCELLENT	GVWF	1/2	•				•							•
CenTraVac™	CVHF	1	•						•	•	•	•	•	
CenTraVac™	CVHG	1							•	•	•	•	•	
Series E™ CenTraVac™	CVHH	1	•	•					•	•	•	•	•	
Series E™ CenTraVac™	CDHH	2	•	•					•	•	•	•	•	
<b>CONDENSERLESS UNITS</b>														
CITY ADVANTAGE	CCUF	1/2			•			•		•				
	RTUD	2	•						•	•	•	•		



# Trane Equipment

## Water-to-water heat pumps

### Water-to-water heat pumps

**CITY ADVANTAGE** R410A R454B



up to 65°C

Scroll compressor  
CXWF  
Cooling 50-700 kW  
Heating 50-835 kW

**LIFT** R134a R513A



up to 80°C

Scroll compressor  
Heating 36-550 kW

**CITY BOOSTER** R1234ze R515B



up to 80°C

Screw compressor  
RTSF G  
Cooling 185-385 kW  
Heating 205-445 kW

**RTWD** R134a R1234ze R515B



up to 76°C

Screw compressor  
RTWD  
Cooling 235-1005 kW  
Heating 265-1140 kW

**XSTREAM** R134a R513A R1234ze R515B



up to 85°C

Screw compressor  
RTWF  
Cooling 345-1860 kW  
Heating 385-2020 kW

**EXERGY** R410A R134a R513A R1234ze R1233ze R450A



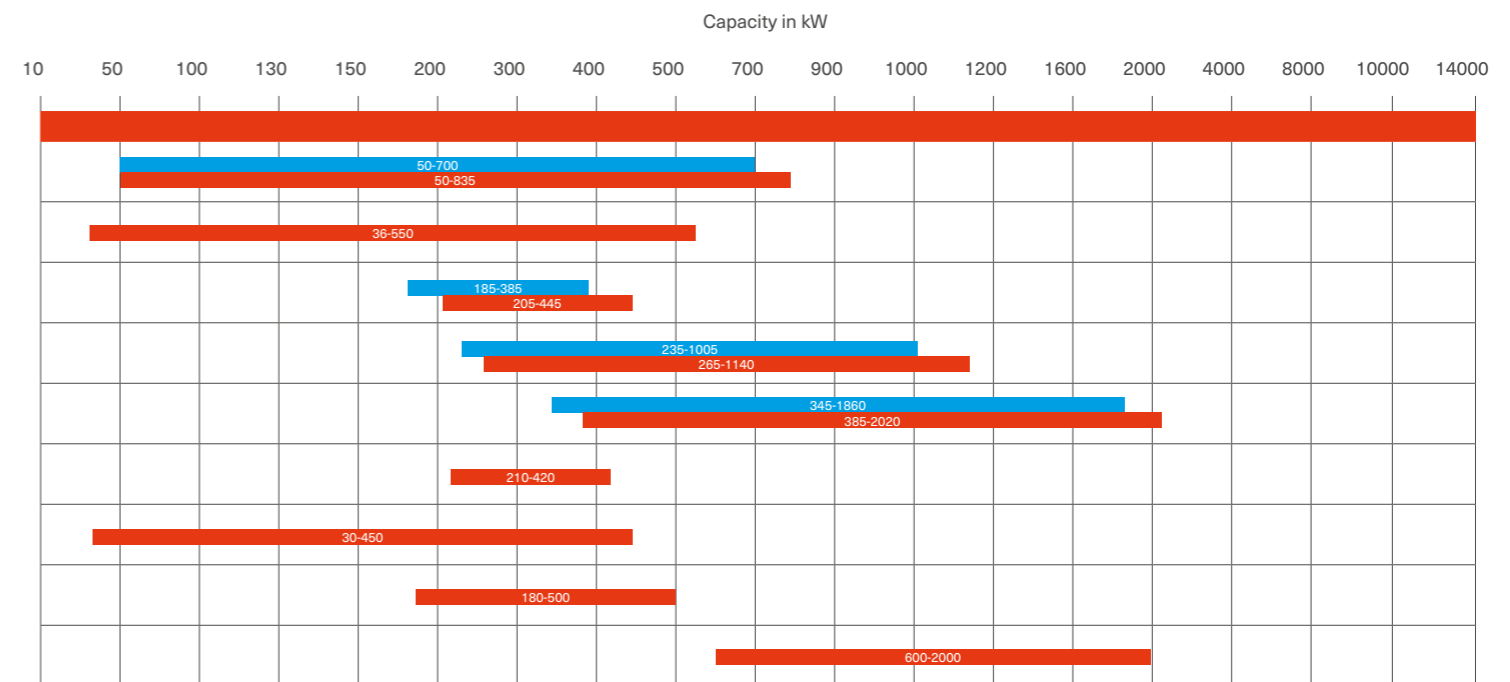
up to 120°C

Piston, scroll or screw  
compressor  
RE/P/S Series  
Heating 30-2000 kW



Trane heating. Naturally.

		Refrigerant circuits			Compressor			Water heat exchanger		Efficiency version			
		Adaptive Frequency™ Drive	Renewable Energy for Heating	Scroll	Screw	Piston	Brazed plate	Shell and tube	Standard	High	Extra high	High Seasonal	
<b>HEAT PUMPS</b>													
<b>CITY ADVANTAGE</b>	CXWF	1/2	•	•			•			•			
<b>LIFT</b>		1	•	•			•		•				
<b>CITY BOOSTER</b>	RTSF	1	•	•	•		•					•	
<b>RTWD</b>	RTWD	2	•	•	•		•	•	•	•	•	•	
<b>XSTREAM</b>	RTWF	2	•	•	•		•	•	•			•	
<b>EXERGY</b>	RE	1/2		•	•		•		•				
<b>EXERGY</b>	P	1/2		•		•	•		•				
<b>EXERGY</b>	S-180 - 580	1		•	•		•		•				
<b>EXERGY</b>	S-600 - 2000	2		•	•		•		•				



# Trane Equipment

## UniTrane™ water terminals

### Hi-wall units



AC or EC fan motor  
W-Line WFS/WFE  
5-30 kW

### 1-way cassettes



AC or EC fan motor  
CFAS/CFAE  
1-4 kW  
AC or EC fan motor

### 4-way cassettes



CWS/CWE  
1-11 kW

### Flexi cabinet-type units

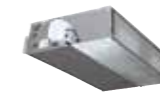


Cabinet or concealed  
AC or EC fan motor Harmony FCAS/  
FCAE/FVAS/FVAE/FKAS/FKAE  
1-6.5 kW

### Ductable concealed units



Ductable fan coil unit  
AC or EC fan motor  
D-Line DFSL/DFEL  
1-16 kW



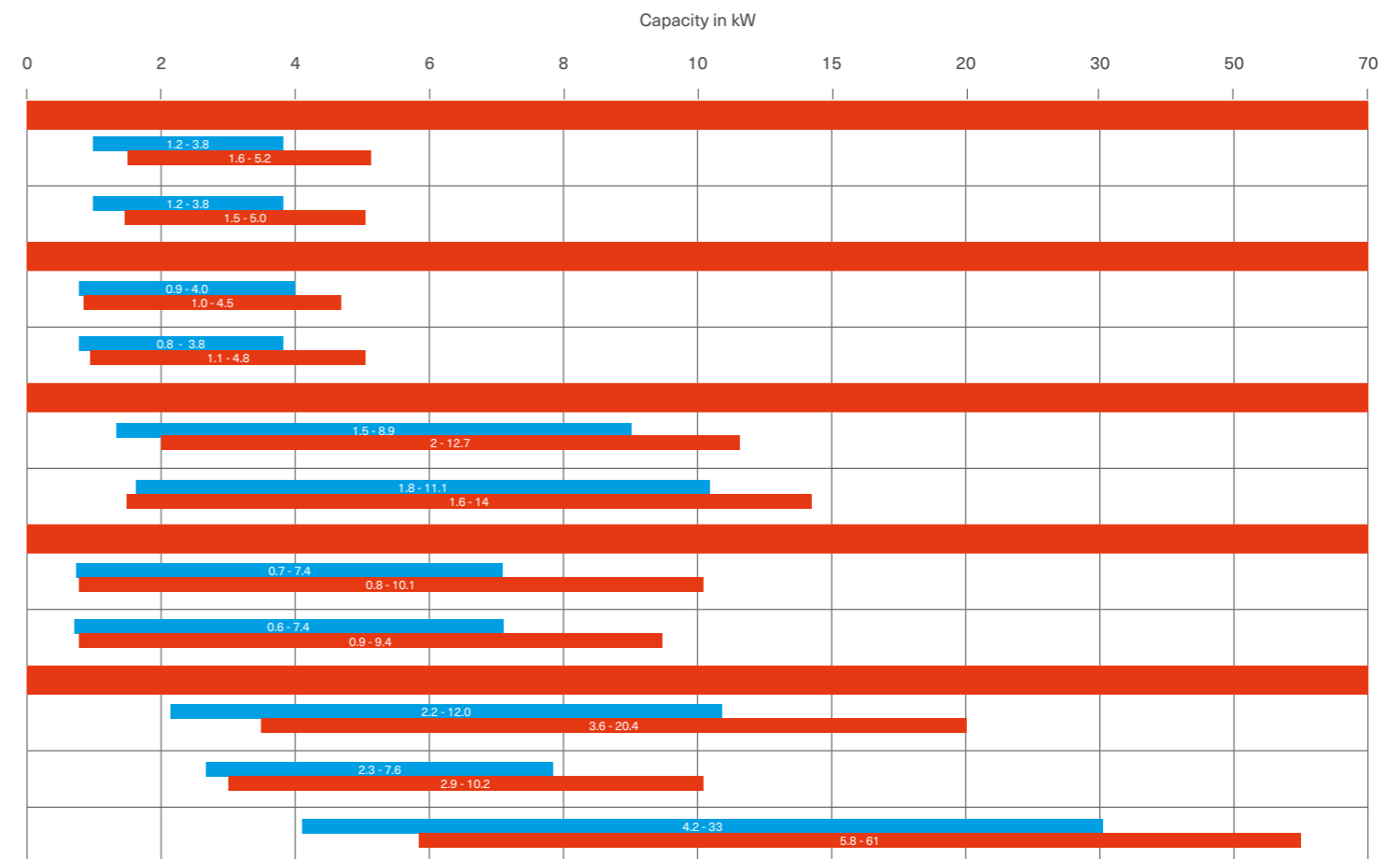
Ductable blower unit  
AC fan motor  
B-Line BFSL  
1-60 kW

### Heat recovery units



Heat recovery units with  
counterflow heat exchanger  
300-2600 m³/h

		Application					Mounting options					Fan motor type	
		Ducted	Non-ducted	2-pipe	4-pipe	Reversible	Ceiling-mounted	Floor-mounted	Built-in Horizontal	Built-in Vertical	Wall-mounted	AC	Low energy consumption EC
<b>HI-WALL UNITS</b>													
W-line	WFS		•	•		•					•	•	
W-Line	WFE		•	•		•					•		•
<b>1-WAY CASSETTES</b>													
	CFAS		•	•	•	•	•				•		
	CFAE		•	•	•	•	•						•
<b>4-WAY CASSETTES</b>													
	CWS		•	•	•	•	•				•		
	CWE		•	•	•	•	•						•
<b>FLEXI CABINET-TYPE UNITS</b>													
	FCAS/FKAS/FVAS		•	•	•	•		•	•	•	•		
	FCAE/FKAE/FVAE		•	•	•	•		•	•	•			•
<b>CONCEALED UNITS</b>													
D-Line	DFSL	•		•	•	•			•		•		
D-Line	DFEL	•		•	•	•			•				•
B-Line	BFSL	•		•	•	•			•		•		



# Trane Equipment Rooftops

Cooling only, heat pump, dual fuel and gas-fired

AIRENITY S R454B AFD



Airfinity S  
16-60 kW

AIRENITY ONE R410A R454B



Airfinity One  
38-133 kW

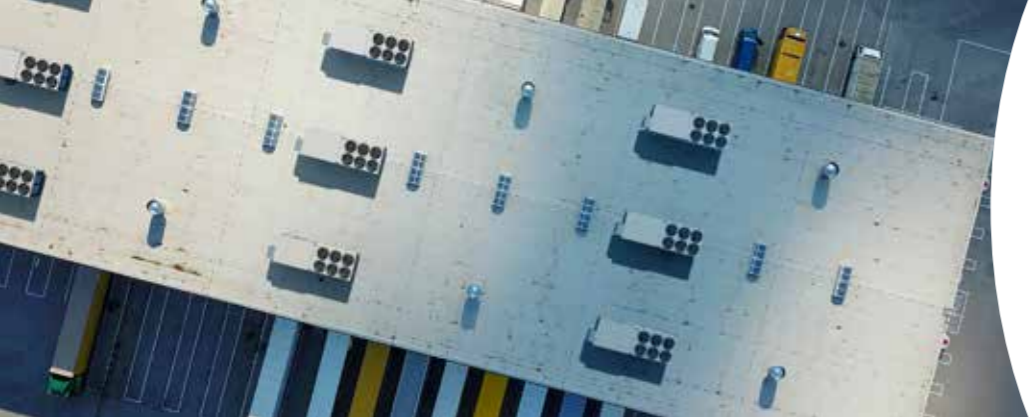
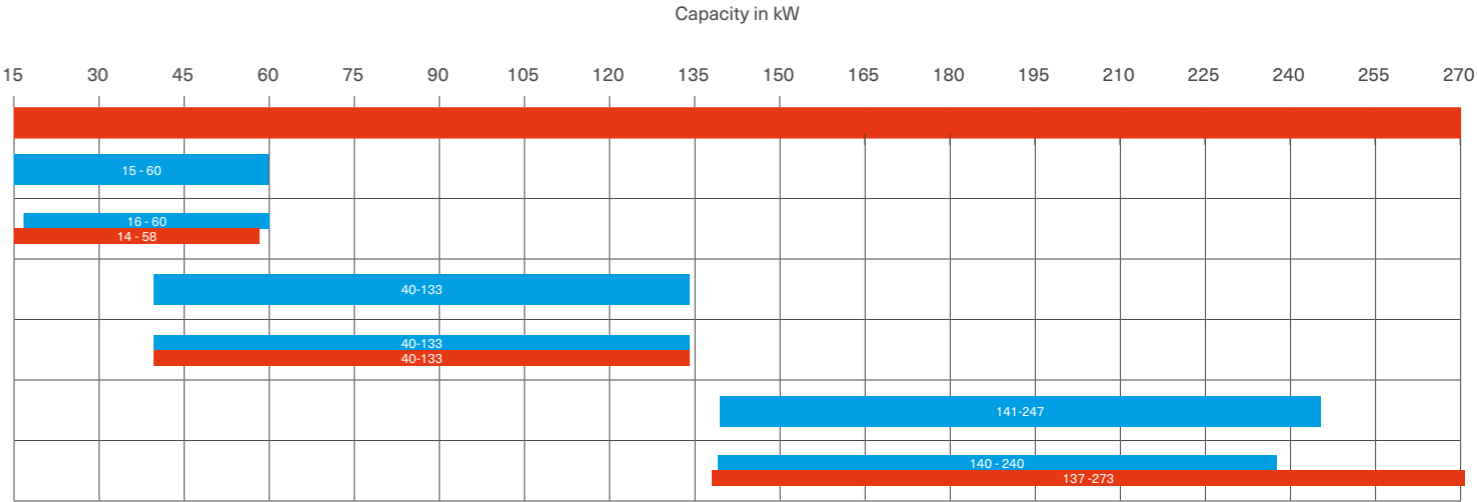
AIRENITY XL R410A R454B



Airfinity XL  
141-247 kW



Rooftop Model	Application	Refrigerant circuits	Application			Airflow			Auxiliary heat			Heat recovery		
			Free cooling	Heat pump	Cooling only	Downflow	Horizontal flow	Multi-directional	Modulating gas burner	Hot water coil	Electric heater	Enthalpy Rotary Wheel (ERW)	Energy recovery circuit (ERC)	Thermodynamic heat recovery
<b>ROOFTOPS</b>														
AIRENITY S	IC	1	•	•		•	•	•		•	•			•
AIRENITY S	IH	1	•	•		•	•	•	•	•	•			•
AIRENITY ONE	IC	1/2	•		•	•	•	•	•	•	•	•	•	
	IH	1 / 2	•	•		•	•	•	•	•	•	•	•	
AIRENITY XL	IC	2	•		•	•	•	•	•	•	•	•	•	
	IH	2	•	•		•	•	•	•	•	•	•	•	



# Trane Equipment

## Air handling units



CLCF  
for comfort  
applications  
1000-55000 m³/h



CLCF for hospital,  
laboratory and  
pharmaceutical  
applications  
1000-55000 m³/h



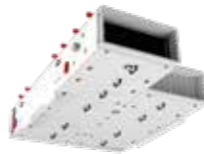
CCTA-CCTB for  
customized applications  
1000-160000 m³/h



AL-KO AT4  
customized applications  
T2/TB2 \*



AL-KO EASYAIR®  
Compact unit  
for comfort  
applications

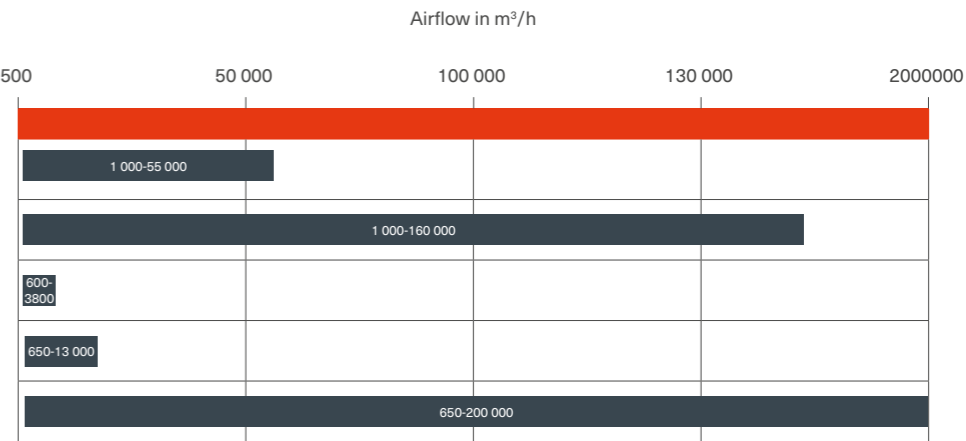


AL-KO EASYAIR® flat  
Compact unit  
for comfort  
applications



	Application						Certifications					Standard					
	Comfort	Hospital & Lab	Swimming pool	Food Industry (T1/TB1)	Industry (Data centers, power stations, ...)	Customized	CE marking	VDI 6022 German compliant construction	Compliant to CO4 BS for hospitals	ATEX certified construction	Eurovent	50 mm panels	25 mm panels	60 mm panels	Modular self supporting panel design	High flexibility (dimensions/components/materials/options)	High efficiency solutions
<b>AIR HANDLING UNITS</b>																	
CLCF	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
CCTA/CCTB			•	•	•	•	•	•	•	•	•	•	•		•	•	•
AL-KO EASYAIR® flat	•						•	•						•		•	•
AL-KO EASYAIR®	•						•	•						•		•	•
AL-KO AT4	•	•	•	•	•	•	•	•	•	•				•	•	•	•

Options							
Factory mounted controls	Factory tests	Polyurethane or mineral wool insulation	Integrated refrigeration	Flat pack	Gas burner	False ceiling units	Packaged units
•	•	•		•	•	•	•
•	•	•		•	•		•
•	•		•	•		•	•
•	•		•	•	•		•







# Trane Controls

## Building Management Systems and Heating and Cooling Plant Controls

Whether managing one or multiple facilities, Trane will support by selecting, designing and implementing the best controls for the building's requirements. Trane BMS controls have full flexibility integrating the latest IT technologies, such as IP networking and web services support.

### Trane Tracer® architecture

Enterprise	Tracer® Ensemble™	
Building	Tracer® Synchrony™	
Equipment	Tracer® Symbio™	
Occupant spaces	Wireless sensors	

### A complete range of smart solutions

The Trane Tracer® range of controls solution extends from sensors, unit controllers, system controllers and enterprise control solutions. They contain pre-engineered applications and graphics to optimize control, saving energy. Tracer® system controller can be accessed from any PC, tablet or connected devices and eliminates the need for a dedicated computer and monitor. Tracer® Ensemble is a web based solution for managing single or multiple buildings from one interface. Tracer® Synchrony is a cost-effective single building solution for managing your HVAC equipment from a web-enabled interface. Tracer® Ensemble, Tracer® Synchrony and Tracer® Symbio™ controllers support open and standard protocols as well as working with non-Trane BACnet system controllers.

### Chiller and Heat Pump Plant Controls

Trane has leveraged over 40 years of experience in controls to develop cooling and heating control systems, featuring chillers and heat pumps, and to provide energy-efficient and reliable cooling and heating solutions. These include pre-engineered solutions for multiple chiller and heat pump applications. Running multiple energy strategies for optimization by operating the components of the chilled and hot water systems at their best efficiency.



### Rooftop Controls

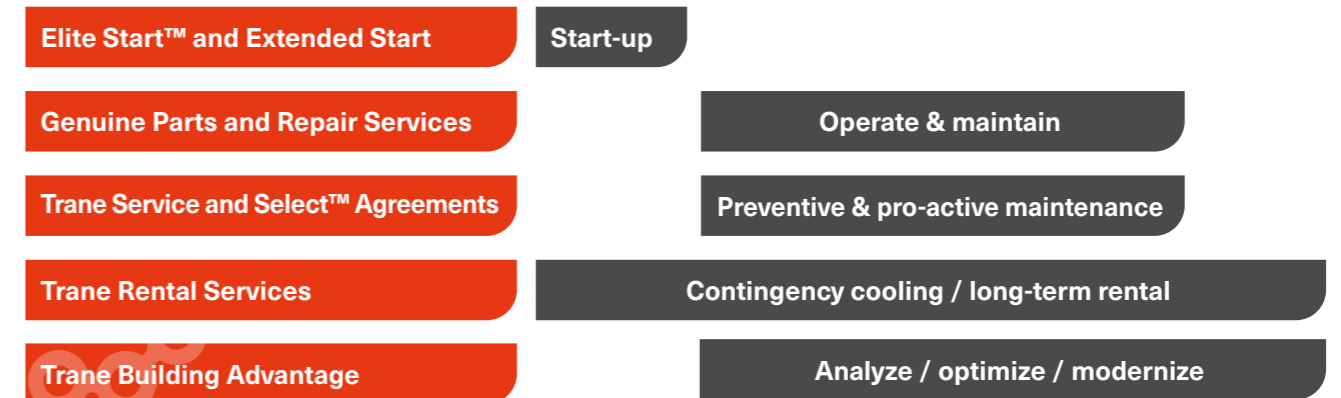
Tracer® Concierge is a packaged control solution for managing rooftops and simple on/off lighting system. most efficient point can realize savings of 25%.

### Mobile Apps

The Trane BAS Operator and Trane BAS Occupant apps help you to monitor your system and respond to your building occupant's needs by adjusting temperatures, schedules, and viewing critical alerts that require immediate service. The apps can be used on a tablet or smart phone operating iOS™ and Android™ devices.



# Trane Service



### Elite Start™

All Trane engineers and technicians are experts in refrigeration, air conditioning and controls. Trane will take the extra step beyond installation to perfectly adapt the system to its environment.

### Trane Service & Select™ Agreements

Each agreement is tailored to meet the budget and operating needs of your facility and can include both preventive maintenance to keep your equipment running and predictive maintenance to identify potential problems.

Trane Select™ Agreements add two layers of protection:

- Trane makes sure any potential problem is corrected before anyone in your building becomes aware of it.
- You know exactly what services and parts are covered eliminating surprises when it comes to expense.

### Repair & Parts

Our fast response factory-trained service technicians and diagnostic tools enable us to perform adjustments or repairs when you need them using a Full range of HVAC parts and supplies:

- Meeting the specifications of the original components
- Available in real time
- Quick and efficient ordering and delivery service
- Reduced equipment downtime





## Trane Building Advantage

40 to 60% of your total energy budget goes into running your chiller plant. Our mission with Trane Building Advantage is clear: to bring you the services, tools, equipment and expertise to transform your building. Our customers measure HVAC systems by their reliability, efficiency and environmental impact. The suite of enhancement solutions we call Trane Building Advantage has been developed to deliver results at two levels:

**Components:** By targeting individual components of the system we can ensure they meet design requirements and so optimize life cycle costs.

**Plant:** We leverage our expertise and use proprietary analysis software to produce a holistic system design to suit specific needs within clear cost parameters.

## Trane Rental Services

Whether it's extra cooling or heating needed during extreme weather conditions or a short-term replacement following an emergency, businesses sometimes require equipment to condition an indoor environment on a temporary basis.

Trane Rental Services can provide fast, safe and cost effective solutions using modern and reliable equipment.



A must-see NEW video promoting our smaller capacity product portfolio starting at 5 kW.  
<https://www.youtube.com/watch?v=7bABj2XvO5s&t=2s>



**RUN  
WITH  
US**



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](http://trane.eu) or [tranetechnologies.com](http://tranetechnologies.com).

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