



FLEX



Modular Air-cooled Chillers



High Seasonal Efficiency (HSE) version
Cooling capacity 48 - 232 kW

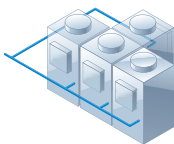
TRANE
TECHNOLOGIES

For modular applications requiring highest seasonal efficiency.

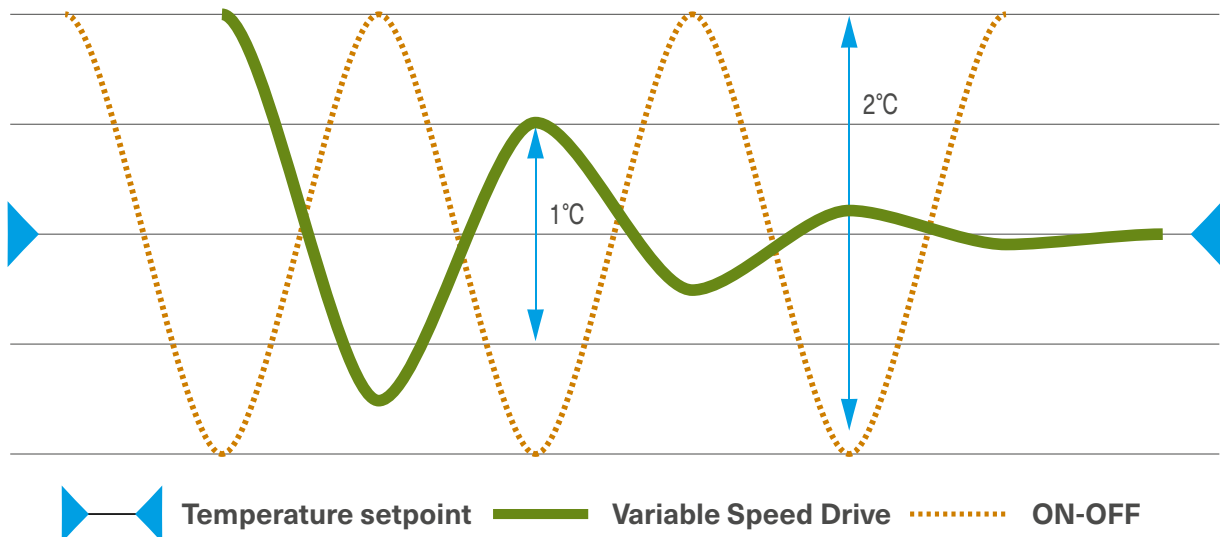
The key components of Flex HSE chillers feature continuous speed modulation by means of an inverter, allowing stepless capacity control. Overall performance is optimized because it is based on real cooling load, with maximum efficiency at partial loads.

It is particularly suited to applications that require precise control of the chilled water temperature.

Inrush current is reduced to avoid the need for soft starter devices or additional components for power factor correction.



Precise temperature control



Trane: designed to be the best tested to prove it

Proof of performance

This symbol means that Trane FLEX units have undergone extensive testing in Trane's state-of-the-art HVAC test facility in France to guarantee that testing of your FLEX unit conforms to EN 14511-2013 and EN 14825-2016 standards.

Experience performance validation of your unit – before shipment

Schedule an optional witness test in our testing facility in France before the unit ships to the jobsite. Trane's test facility is capable of evaluating the performance of your FLEX unit - based on customer-defined parameters. Contact your local sales office for more information.

Trane European Large HVAC Test Facility

A 5000m³ climate chamber with advanced ambient air temperature and humidity control. Regardless of outdoor air conditions, a wide range of operating conditions can be simulated within this range:

- Air temperature temperature: -25°C/+55°C
- Leaving water temperature: -12°C/+65°C (Below 4°C with glycol)
- Humidity: 10 – 90% max @ 7°C dry bulb.



Trane Flex Series

Unit description

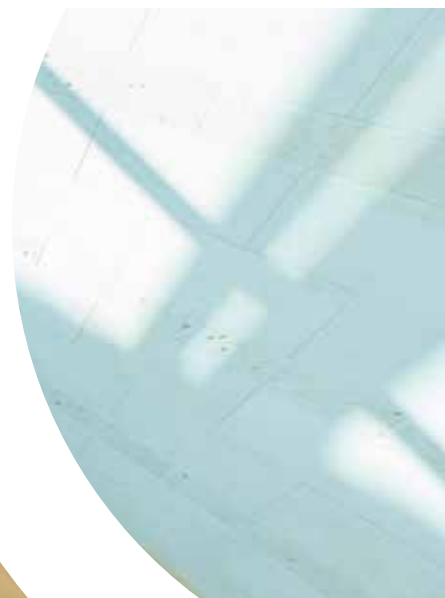
- High performance modular chillers, available in 9 sizes
- Up to 6 units can be combined into one system in order to reach the required power
- Inverter driven scroll compressors
- Excellent acoustic comfort levels with statically and dynamically balanced axial fans
 - Super low noise (optional), equipped with condensing control with variable fan speed modulation, muffler on the compressor delivery lines and compressor soundproof box
- Hydraulic kit (optional) including 1 or 2 pumps, expansion vessel and a choice of 3 available head pressures: 150/250/450 kPa
- Water side plate heat exchanger with differential pressure switch and antifreeze protection electric heater
- Air-cooled microchannel condenser coils, full Aluminum (100% recyclable)
- Condensing pressure control with variable fans speed modulation
- Microprocessor-based controller
- Electronic expansion valve
- Casing and panels in galvanised and painted steel
- Communication card RS485

Factory-mounted options

- Inverter water pumps , available 150/250/450 kPa
- Power factor correction to $\cos \phi$ 0.91
- Control panel electric heater with thermostat
- Phase failure protection
- Serial card with BACnet™ Protocol MS/TP or TCP/IP
- Gateway Modbus LonTalk™
- Soft-start (only ON OFF compressors)
- Automatic circuit breakers
- Low outdoor air temperature kit for operation down to -10°C
- EC fans, high static pressure (100 Pa)
- Protection grilles
- Special treatments condenser coils

Accessories

- Multi-manager controller to control up to 6 FLEX chillers in modular configuration
- Compressor sound absorbing jackets
- Remote control display
- Flow switch
- Automatic water filling
- Threaded strainer
- Water gauges
- Rubber and spring anti vibration mounts





Flexible investment

The scalable system can be extended on site, in terms of number of chillers (maximum 6) and total available cooling capacity.

Non-stop continuous operation

The multiple units activation and the specially designed control system allows the system to always be reliable and operational.

In case of failure, maintenance or repair of one system unit, the rest continue to work to ensure the reliability of the system.

In comparison with a packaged unit, the addition of just one module can guarantee the total power back up in case of failure.



Quiet operation

Super low noise, including: condensing control with variable fan speed modulation, oversized coils, muffler on the compressors delivery lines and soundproof box for the compressors and Axitop diffusers.

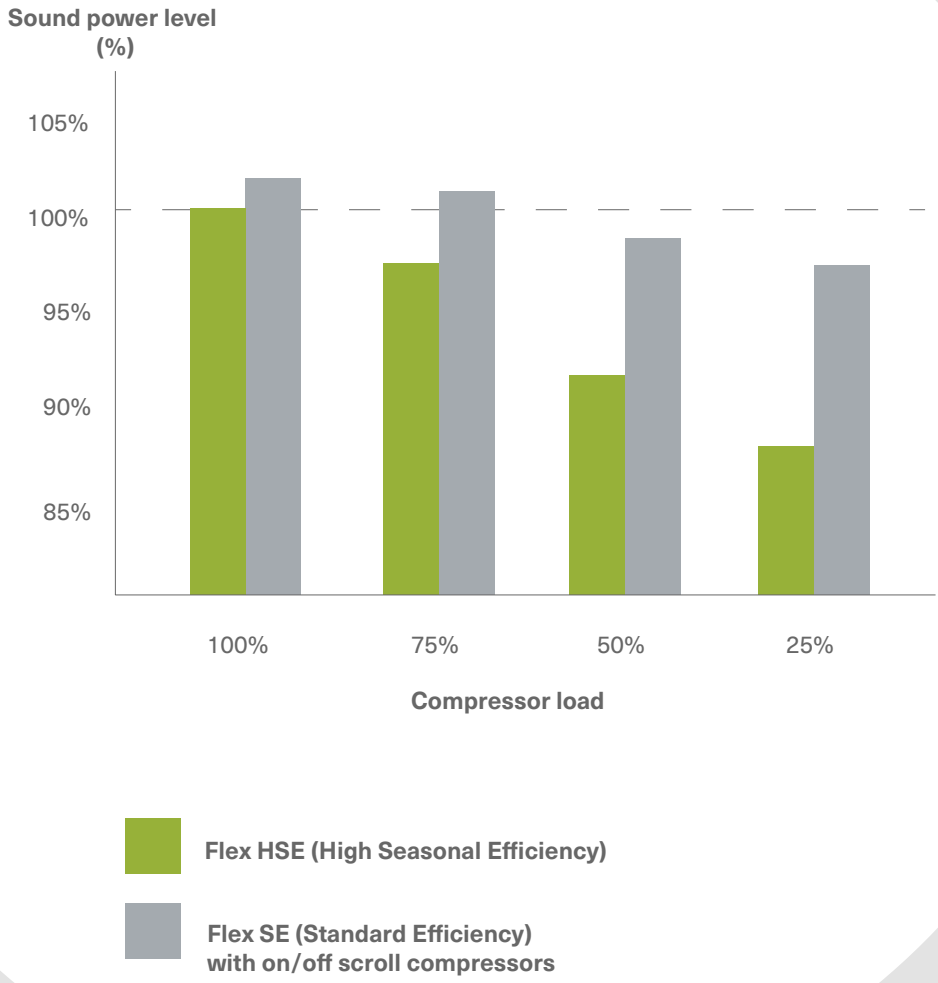
The innovative fan profile ensures the highest energy efficiency in combination with low sound emissions.

Easy to handle

Trane Flex HSE chillers can be easily lifted and moved, and fit into standard elevators, which make them a perfect choice for older buildings and confined spaces.



Trane Flex Series



General specifications



General data FLEX HSE Standard noise

Model		150 ZC	170 ZC	180 ZC	1115 ZC	2135 ZC	2150 ZC	2185 ZC	2215 ZC	2230 ZC
Cooling according to EN 14511:2013 (1)										
Total cooling capacity	(kW)	48.4	67.8	80.9	114	134	151	183	214	232
Compressors power input	(kW)	13	20	22.1	31	39.3	41.4	47.9	59.9	66.4
Total EER		3.02	2.95	3.04	3.08	2.97	2.99	3.05	2.98	2.96
ESEER		4.41	4.47	4.51	4.49	4.27	4.27	4.18	4.11	4.24
EER Class (Eurovent)		B	B	B	B	B	B	B	B	B
Water flow	(m ³ /h)	8.3	11.7	13.9	19.6	23.1	26	31.5	36.8	39.9
Water pressure drop	(kPa)	30.5	26.4	35.9	23.7	29	34.2	29.5	42.4	38.3
Seasonal efficiency in cooling according to EN 14825:2016 (2)										
SEER		4.21	4.34	4.29	4.35	4.11	4.13	4.15	4.12	4.1
η _{s,c}	(%)	165	171	169	171	161	162	163	162	161
Compressors										
Number of compressors		1	1	2	2	2	4	4	4	4
Number of refrigerant circuits		1	1	1	1	2	2	2	2	2
Type of compressor(s) per circuit		1 VSD scroll		1 VSD scroll + 1 fixed speed scroll		1 VSD scroll	1 VSD scroll + 1 fixed speed scroll			
Type of regulation		Stepless								
Minimum capacity step		37%	37%	21%	23%	19%	10%	9%	7%	10%
Refrigerant charge	(kg)	8	8.4	12.3	16.5	16.6	23.9	32.1	32.1	32.5
Fans										
Number of fans		2	2	3	4	4	6	8	8	8
Air flow	(m ³ /h)	35200	35200	52800	70400	70400	105600	140800	140800	140800
Power input for each fan	(kW)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Sound Level										
Sound power level (ISO 3744)	(dB(A))	87	92	88	93	95	91	92	94	96
Sound pressure level at 10 m	(dB(A))	55	60	56	61	63	59	60	62	64
Dimensions and weight										
Length	(mm)	2461	2461	3599	2257	2257	3421	4550	4550	4550
Depth	(mm)	1100	1100	1100	2146	2146	2138	2244	2244	2244
Height	(mm)	2179	2179	2179	2175	2175	2469	2458	2458	2458
Operating weight	(kg)	598	657	954	1226	1283	1897	2297	2421	2543

(1) Outdoor air temperature 35°C and chilled water temperature 12/7°C

(2) Ecodesign rating for comfort chiller. Outdoor air temperature 35°C and chilled water temperature in/out: 12°C/7°C.

η_{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.





General data FLEX HSE Super low noise

Model		150 ZC	170 ZC	180 ZC	1115 ZC	2135 ZC	2150 ZC	2185 ZC	2215 ZC	2230 ZC
Cooling according to EN 14511:2013 (1)										
Total cooling capacity	(kW)	47.7	65	79.3	110	130	144	181	210	222
Compressors power input	(kW)	13.9	21	23.5	32.8	41.3	45.3	51.4	63.9	70.9
Total EER		3.17	2.93	3.16	3.14	2.99	2.97	3.24	3.07	2.95
ESEER		4.58	4.63	4.71	4.79	4.17	4.19	4.25	4.29	4.15
EER Class (Eurovent)		A	B	A	A	B	B	A	B	B
Water flow	(m ³ /h)	8.2	11.2	13.6	18.9	22.3	24.9	31.1	36.1	38.2
Water pressure drop	(kPa)	29.6	24.3	34.5	22.1	27	31.4	28.9	40.8	35.1
Seasonal efficiency in cooling according to EN 14825:2016 (2)										
SEER		4.33	4.27	4.36	4.34	4.14	4.1	4.31	4.25	4.1
η _{s,c}	(%)	170	168	171	171	163	161	169	167	161
Compressors										
Number of compressors		1	1	2	2	2	4	4	4	4
Number of refrigerant circuits		1	1	1	1	2	2	2	2	2
Type of compressor(s) per circuit		1 VSD scroll		1 VSD scroll + 1 fixed speed scroll		1 VSD scroll	1 VSD scroll + 1 fixed speed scroll			
Type of regulation		Stepless								
Minimum capacity step		37%	37%	21%	23%	19%	10%	9%	7%	10%
Refrigerant charge	(kg)	8	8.4	12.3	16.5	16.6	23.9	32.1	32.1	32.5
Fans										
Number of fans		2	2	3	4	4	6	8	8	8
Air flow	(m ³ /h)	24640	24640	36960	49280	49280	73920	98560	98560	98560
Power input for each fan	(kW)	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Sound Level										
Sound power level (ISO 3744)	(dB(A))	82	87	83	88	90	86	86	89	91
Sound pressure level at 10 m	(dB(A))	50	55	51	56	58	53	54	57	59
Dimensions and weight										
Length	(mm)	2461	2461	3599	2257	2257	3421	4550	4550	4550
Depth	(mm)	1100	1100	1100	2146	2146	2138	2244	2244	2244
Height	(mm)	2179	2179	2179	2175	2175	2469	2458	2458	2458
Operating weight	(kg)	782	841	1192	1518	1651	2373	2881	3005	3127

(1) Outdoor air temperature 35°C and chilled water temperature 12/7°C

(2) Ecodesign rating for comfort chiller. Outdoor air temperature 35°C and chilled water temperature in/out: 12°C/7°C.

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