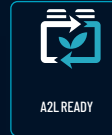
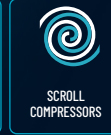


TSE

CHILLERS WITH REMOTE CONDENSER WITH SCROLL COMPRESSORS

43.1–433.2 kW



TSE is the HiRef range of liquid chillers with remote condenser and Scroll compressors. These motoevaporating units are available with different refrigerating set-ups (Efficiency Packs), numerous power ratings and two different noise emission set-ups, making them **particularly versatile for a number of system engineering applications**. Sizing, the choice of individual components and control of auxiliary units (circulation pumps, remote condenser fans) all aim to **reduce energy consumption and increase energy savings throughout the system**.

The configurations available for the refrigeration circuit are:

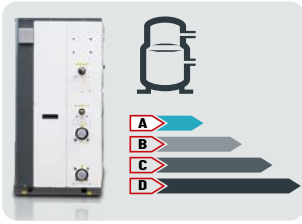
EFFICIENCY PACK 1: Dual compressor on dual circuit for high system redundancy. For units from 48 to 177 kW.

EFFICIENCY PACK 2: Dual compressor (tandem) on single circuit for greater efficiency at partial loads. For units from 48 to 177 kW.

EFFICIENCY PACK 4: Four compressors (dual tandem) on dual circuit, for a redundant system that is also efficient with low loads. For units from 146 to 481 kW.

Sizes above 481 kW are always of the dual refrigerating circuit type with five or six Scroll compressors.

- Refrigerant R410A: Available on request with R454B
- Electronically controlled expansion valve supplied as standard
- Optional Vic-Taulic hydraulic couplings
- Remote condenser fan management for air flow modulation
- External pump control according to constant T or constant ΔT logic
- Partial heat recovery (desuperheater)(optional)
- Oil recovery kit for refrigeration lines up to 50 m long



Maximum efficiency at partial loads

The TSE range features a multi-Scroll solution also on single circuits, electronically controlled expansion valves and the option of managing the circulation pumps and remote condenser fans via onboard software: all these features help **achieve high standards of energy efficiency, particularly at partial loads.**



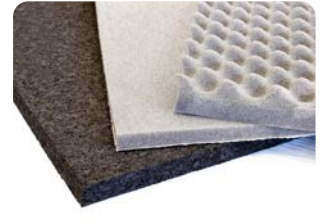
Reduced footprint

The carefully arranged component layout, together with compact plate heat exchangers and the Scroll compressors, gives the machine a **compact configuration and makes it adaptable to any installation area.** Sizes with **EFFICIENCY PACK 1 and 2** also have a width compatible with that of most commercially available doors, **making transport and installation easier.**



Efficiency and reliability in line with system requirements

The main strength of the TSE range is given by **its numerous configurations available for the refrigeration circuit,** which, depending on the size of the machine and system construction requirements (redundancy and/or efficiency at reduced load), can be available in the form of different **EFFICIENCY PACKS.** The management of the oil return through integrated software logic also helps **to increase the reliability of the compressors** - and consequently - of the unit.



Attention to detail and to low noise requirements

Scroll compressors, which are the main noise source in the unit, are fitted on rubber feet; these dampen vibration and therefore **attenuate the noise transmitted to the various system parts.** On request, the compressor enclosure can be lined with special sound absorbing material and the compressors can be enclosed in special insulating sheaths **to reduce airborne noise emission.**



TSE	041 CS	042 CS	051 CS	052 CS	061 CS	062 CS	071 CS	072 CS	081 CS	082 CS	091 CS	092 CS	
User water values 12/7°C, condensing temperature 50°C													
Cooling capacity	kW	43.1	43.1	50.5	50.3	57.9	57.9	65.2	65.1	75.3	75.4	84.5	84.3
Total absorbed power	kW	13.2	13.2	15.5	15.5	17.5	17.5	19.5	19.5	22.4	22.4	25.2	25.2
EER		3.26	3.25	3.25	3.24	3.32	3.32	3.34	3.33	3.37	3.37	3.35	3.34
Sound power	dB(A)	76	76	78	78	78	78	79	79	79	79	81	81
Sound power [Low noise]	dB(A)	72	72	74	74	74	74	75	75	75	75	77	77
Weight	kg	372	362	432	422	442	432	452	442	472	462	512	492
Dimensions [LxHxD]	mm	1174x1594x772											

TSE	111 CS	112 CS	131 CS	132 CS	141 CS	142 CS	144 CS	161 CS	162 CS	164 CS	181 CS	182 CS	
User water values 12/7°C, condensing temperature 50°C													
Cooling capacity	kW	100.2	100.1	114.4	114.1	127.3	127.3	131.2	139.7	139.4	149.8	175.1	175.1
Total absorbed power	kW	29.8	29.8	34.6	34.6	37.8	37.8	39	41.2	41.2	44.8	53.1	53.1
EER		3.36	3.36	3.31	3.3	3.37	3.37	3.37	3.39	3.39	3.34	3.3	3.3
Sound power	dB(A)	84	84	85	85	85	85	82	85	85	82	90	90
Sound power [Low noise]	dB(A)	80	80	81	81	81	81	78	81	81	78	86	86
Weight	kg	563	553	573	563	633	618	723	673	653	743	713	693
Dimensions [LxHxD]	mm	1644x1594x772						2374x1854x877	1644x1594x772		2374x1854x877	1644x1594x772	

TSE	184 CS	204 CS	214 CS	244 CS	284 CS	314 CS	344 CS	374 CS	424 CS	484 CS	
User water values 12/7°C, condensing temperature 50°C											
Cooling capacity	kW	169.8	185.3	199.2	228	249.6	272	303.1	338.8	433.2	
Total absorbed power	kW	50.4	55	59.7	68.8	75.5	82.2	94	105.7	132.1	
EER		3.37	3.37	3.33	3.31	3.31	3.31	3.23	3.21	3.28	
Sound power	dB(A)	84	85	86	88	88	88	91	93	95	
Sound power [Low noise]	dB(A)	80	81	82	84	84	84	87	89	91	
Weight	kg	853	873	923	983	1093	1253	1293	1333	1520	
Dimensions [LxHxD]	mm	2374x1854x877									

Also available with 60 Hz power supply