

TSL

CLASS A CHILLERS AND HEAT PUMPS AIR CONDENSED WITH SCROLL COMPRESSORS

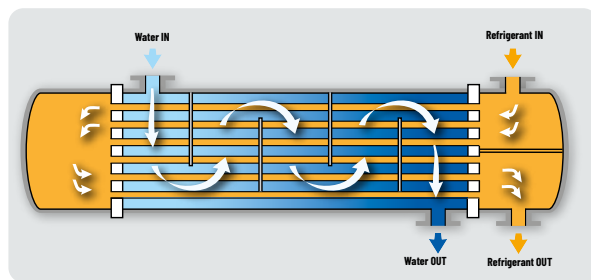
276.9–1003.8 kW



 MULTI-PROTOCOL COMMUNICATION INTERFACE	 FAST RESTART	 CORROSION RESISTANT MATERIAL	 CLASS A
 LOW GWP REFRIGERANT	 SCROLL COMPRESSORS	 SHELL AND TUBE HEAT EXCHANGER	



The new TSL range chillers and heat pumps are air/water units in energy class A for both cooling and heating, available for use with R410A refrigerant or, in the "A2L" version, with low environmental impact R454B refrigerant. The TSL range is designed to manage the **conditioning of industrial plants and thermal loads in technological applications, where 24/7 reliability in all working conditions, one of the assets of these units, is a critically important requirement.** The TSL range uses latest generation Scroll compressors, shell and tube water heat exchangers optimised for use with high pressure refrigerants (R410A/R454B) and axial fans suitable for outdoor installation.



Reliability: shell and tube

The use of shell and tube heat exchangers with exchange water flow on the shell side implies **a lower risk of blocking the flow** due to exchanger clogging compared to units with plate heat exchangers. This is thanks to the **larger throughsections**, the exchanged power being the same. Additionally, the dual-pass heat exchanger **ensures high heat exchange efficiency** both in "chiller" and in "heat pump" modes, **with lower consumption figures for the user.**

- 3 different soundproofing setups available: Standard, Low Noise and Super Low Noise
- Electric control panel with IP55 protection rating
- High power density units in both chiller and heat pump modes
- Radial EC motor fans (optional)
- Electronic expansion valve
- Easy accessibility thanks to the optimisation of the internal space
- Programmable microprocessor control with proprietary software
- Compliance with ERP regulations



Easy maintenance

To carry out maintenance of the condensing coil manifolds and refrigeration circuit components, which are located behind the electrical panel, the TSL range is supplied as standard with the Hi-Rail sliding guide. This allows **the control panel to be easily removed**, resulting in **extra space for unscheduled maintenance**, without impacting the footprint required for normal operation of the unit.

Maximised energy efficiency

The units of the TSL range belong to the energy **efficiency class A**, both in the chilling only version and in the heat pump version. This is thanks to a careful selection of internal components, which also includes the adoption **of innovative high efficiency Scroll compressors with direct start, permanent magnet motor technology**. The high modulation range guaranteed by the multi-Scroll technology allows cooling/heating requirements to be met at any time, **minimising energy waste and increasing seasonal efficiency**.



TSL		294FS	324FS	374FS	404FS	454FS	496FS	556FS	596FS	636FS	676FS	748FS	808FS	868FS	900FS	
User water temperature 12/7°C 20% ethylene glycol, outside air 35°C, 40% R.H.																
Cooling capacity	kW	276.9	319.4	354.2	383.2	422.9	478.9	545.6	585.7	608.1	648.6	725.3	791.8	848.6	910.9	
Total absorbed power	kW	89.7	105.8	118.3	129.2	150.4	155.8	179.4	195.8	205.4	221.1	235.4	258.1	270.8	289.7	
EER		3.09	3.02	2.99	2.97	2.81	3.07	3.04	2.99	2.96	2.93	3.08	3.07	3.13	3.04	
Sound power	dB(A)	89	90	90	90	92	91	92	91	93	93	93	93	94	94	
Sound power [Low noise]	dB(A)	86	87	87	87	89	87	89	88	90	90	90	90	91	91	
Dimensions [LxHxD]	mm	3865x2652x2256			4865x2652x2256			5860x2652x2256			6860x2652x2256		7865x2652x2256		8865x2652x2256	

TSL		294FS	324FS	374FS	404FS	454FS	496FS	556FS	596FS	636FS	676FS	748FS	808FS	868FS	900FS	
Utility water temperature 12/7°C, ethylene glycol 20%																
Full Free-Cooling temperature	°C	-8.7	-10.4	-6.4	-7.3	-8.6	-6.2	-8.1	-9.2	-6.7	-7.7	-6.8	-8.1	-7.1	-8	
Sound power	dB(A)	89	90	90	90	92	91	92	91	93	93	93	93	94	94	
Sound power [Low noise]	dB(A)	86	87	87	87	89	87	89	88	90	90	90	90	91	91	
Dimensions [LxHxD]	mm	3865x2652x2256			4865x2652x2256			5860x2652x2256			6860x2652x2256		7865x2652x2256		8865x2652x2256	

TSL		294CS	324CS	374CS	404CS	454CS	496CS	556CS	596CS	636CS	676CS	748CS	808CS	868CS	900CS	
Cooling: User water values 12/7°C, 35°C outside air, 40% U.R.																
Cooling capacity	kW	281.5	326.1	364.2	396.6	436.1	485.9	549.9	598.9	617.1	658.3	734.3	794.1	861.2	923.2	
Total absorbed power	kW	88.7	104.2	117	127.6	148.6	153.7	176.9	193	202.7	218	232.5	254.7	267.6	295.7	
EER		3.18	3.13	3.11	3.11	2.93	3.16	3.11	3.1	3.04	3.02	3.16	3.12	3.22	3.12	
SEER		4.9	4.99	4.82	4.87	5.03	5.02	5.09	5.18	5.06	5.14	4.77	4.81	4.88	4.84	
SEPR		5.46	5.62	5.38	5.49	5.74	5.56	5.64	5.79	5.67	5.75	5.53	5.58	5.65	5.71	
Sound power	dB(A)	89	90	90	90	92	91	92	91	93	93	93	93	94	94	
Sound power [Low noise]	dB(A)	86	87	87	87	89	87	89	88	90	90	90	90	91	91	
Dimensions [LxHxD]	mm	3520x2652x2256			4520x2652x2256			5520x2652x2256			6520x2652x2256		7520x2652x2256		8520x2652x2256	

TSL		294HS	324HS	374HS	404HS	454HS	496HS	556HS	596HS	636HS	676HS	748HS	808HS	868HS	900HS	
Heating: User water values 40/45°C, 7°C outside air, 89% U.R.																
Thermal power	kW	291.9	337	390.9	412.9	448.8	504.5	566	603.9	656.7	683.9	776.9	841	883.1	1003.8	
Total absorbed power	kW	89.1	102.3	119.2	126	143.4	153.6	173.3	184.1	200.6	213.5	231.3	250.5	267.9	295.1	
SEER		-	-	-	-	-	-	-	5.19	5.1	5.2	4.63	4.69	4.73	4.63	
COP		3.27	3.29	3.28	3.28	3.13	3.28	3.27	3.28	3.27	3.2	3.36	3.36	3.3	3.4	
SCOP		4.01	4.17	4.1	4.1	4.24	3.82	3.99	-	-	-	-	-	-	-	
Sound power	dB(A)	89	90	90	90	92	91	92	91	93	93	93	93	94	95	
Sound power [Low noise]	dB(A)	86	87	87	87	89	87	88	87	89	89	90	89	90	91	
Dimensions [LxHxD]	mm	3520x2652x2256			4520x2652x2256			5520x2652x2256			6520x2652x2256		9085x2652x2256		11085x2652x2256	

20% Ethylene glycol | Also available with 60 Hz power supply | Data declared with use of R410A refrigerant