



WATER/WATER

Liquid chillers

DATA CENTERINDUSTRIALSERVICES

XTW

WATER-CONDENSED CHILLERS
WITH OIL-FREE CENTRIFUGAL COMPRESSORS

122 – 916 kW



XTW SINGLE CIRCUIT



XTW DUAL CIRCUIT



MULTI-PROTOCOL
COMMUNICATION
INTERFACE



OIL-FREE
CENTRIFUGAL
FANS



SPRAY FLOODED
SHELL&TUBE



FAST RESTART



CORROSION
RESISTANT
MATERIAL



CLASS A



SUPER
LOW NOISE



LOW GWP
REFRIGERANT

XTW offers the most innovative, efficient water condensed chiller solution. A meticulous choice of components and equipment layout has led to a solution with numerous advantages as regards both energy performance and noise emissions. The special component layout lets users maximise the advantages provided by the oil-free centrifugal compressor (maximum heat exchange efficiency, ultra-high efficiency at partial loads, reduced inrush current) and the compact flooded exchangers (minimal approach temperature between water and refrigerant, lower load compared to traditional flooded units). The larger sizes have a double refrigerant circuit configuration and high system efficiency and redundancy.

New refrigerant R1234ze

XTW range water condensed chillers use the new HFO refrigerant with low GWP (GWPR1234ze=6) as part of a wider Green Technology approach. (Also available with R134a refrigerant.)

Top-class thermodynamic performance!

An effective combination of "oil-free" centrifugal compressor and flooded exchangers allows maximisation of thermal exchange efficiency; this is largely due to the absence of oil in the circuit and the reduced approach temperature between water and refrigerant (1K) as a result of no overheating in the evaporator. Cycle efficiency is enhanced by the centrifugal compressor, which features ultra-high efficiency at partial loads, and by the economiser, which ensures intermediate regenerative exchange in the circuit.

- Refrigerant R1234ze
- Also available with R134a refrigerant
- Refrigerant leak sensor
- Quick restart technology
- Water connections with Vic-Taulic quick couplings
- Modularity and supervision managed by the software
- Low noise set-up with compressor insulation
- Ductable electrical panel (separate electrical panel ventilation)

HiRef

CHILLERS AND HEAT PUMPS CATALOGUE

Reduced footprint

Careful assessment of component layout and sizing allows the system footprint to be reduced, freeing up more space within the facility and during handling operations.

"Silent" layout

The piping layout is designed and sized to ensure low noise emissions under all working conditions and mitigate Coriolis force acceleration. The use of high performance sound absorbing material in the Low Noise configuration results in a further reduction of the compressor noise emissions.

Compact size spray exchangers

The adoption of compact flooded heat exchangers (**XTW** 220, 300, 310, 370, 440, 450, 520) allows for a 30% reduction in the refrigerant load compared to traditional flooded exchangers. This characteristic, together with the low GWP of R1234ze refrigerant and high energy efficiency, ensures that the **XTW** range has ultra-low TEWI (Total Equivalent Warming Impact) levels.

XTW SINGLE CIRCUIT

Provision for modular configuration

Connecting the individual units in parallel makes it possible to obtain a modular configuration able to ensure high cooling capacity and high redundancy, with the system fully controlled by the on-board electronics. **XTW** units can be coupled to Polymorph® PLM hydronic modules by HiRef.

XTW DUAL CIRCUIT

Two-level evaporation

The evaporator with spray technology and single pass on the water side guarantees up to 5% more efficiency than traditional shell and tube versions, thanks to the permanently countercurrent heat exchange on two separate evaporation levels - and with a smaller refrigerant charge than a standard flooded shell and tube model.

24/7 Operation

The configuration with dual refrigerant circuit and dual centrifugal compressor with permanent magnets guarantees high operational reliability, making the **XTW** range particularly suitable for installation in Data Centers or wherever high-value, continuous cycle industrial processes are carried out.

	XTW 310CS	XTW 450CS	XTW 520CS	XTW 651CS	XTW 901CS	XTW 1071CS	XTW 220CS	XTW 300CS	XTW 370CS	XTW 440CS	XTW 461CS	XTW 641CS	XTW 761CS	XTW 921CS
Refrigerant	R134a						R1234ze							
Water Conditions: 12/7 °C user side, 30/35 °C source side														
Cooling capacity	kW	122-312	149-438	177-518	122-646	149-901	177-1071	89-221	108-305	130-367	240-436	89-461	109-644	129-764
EER [UNI 14511]		5.93	5.92	6.06	6.22	6.30	6.46	5.79	5.91	5.90	6.01	6.18	6.39	6.35
Water Conditions: 16/10 °C user side, 30/35 °C source side														
Cooling capacity	kW	109-338	149-469	163-557	109-697	149-956	163-1161	81-242	110-334	121-400	194-489	81-502	110-687	121-831
EER [UNI 14511]		6.71	6.73	6.87	7.11	7.26	7.43	6.81	7.04	6.98	6.82	7.23	7.54	7.41
ESEER1		7.99	7.93	8.05	8.48	8.27	8.52	7.99	7.87	8.27	7.97	8.52	8.79	8.77
SEER1		10.21	9.08	9.82	9.71	9.28	9.39	10.18	9.05	9.83	8.98	9.61	9.66	9.76
SEPR1		11.24	11.37	11.57	11.55	11.56	11.96	11.31	11.15	12.54	11.79	11.33	12.47	12.74
Sound power	dB(A)	86	89	89	89	92	92	86	89	89	89	89	92	92
Dimensions [L x D x H]	mm	2310 x 1080 x 2040	2700 x 1500 x 1900		4800 x 1500 x 1900		4800 x 1500 x 2000	2310 x 1080 x 2040		2700 x 1500 x 1900		4800 x 1500 x 1900		4800 x 1500 x 2000

Also available with 60 Hz power supply

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DATA CENTERINDUSTRIALSERVICES

XVA

WATER CONDENSED CHILLERS AND HEAT PUMPS
WITH INVERTER DRIVEN SCREW COMPRESSORS

523 – 1587 kW

MULTI-PROTOCOL
COMMUNICATION
INTERFACE

SCREW
COMPRESSORS

CORROSION
RESISTANT
MATERIAL

SHELL & TUBE
HEAT EXCHANGER

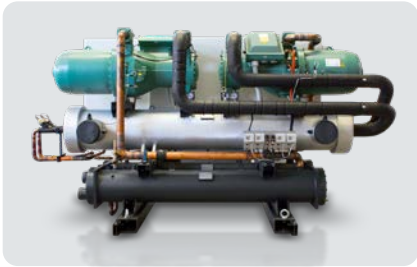
FAST RESTART

CLASS A

LOW GWP
REFRIGERANT

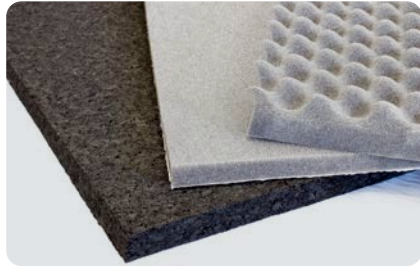
XVA is HiRef's range of water-cooled chillers with screw compressors and shell and tube heat exchangers. Use of the new R1234ze refrigerant, with ultra-low GWP (Global Warming Potential), and achievement of high energy efficiency levels, especially at partial loads, ensures the system has a low TEWI (Total Equivalent Warming Impact). The broad capacity range offered and the availability of different versions caters to a wide variety of needs. It's possible to choose operation in chiller-only mode with evaporative tower or Dry-Cooler and operation in heat pump mode for high or low temperatures.

- Refrigerant R1234ze
- Versions with R134a refrigerant and on request with R513A are also available
- Available in version with Eurovent A (XVA) energy efficiency class
- Available in versions:
 1. Chilling only (with well water or evaporative tower)
 2. Chilling only (with Dry-Cooler)
 3. Heating only heat pump
 4. Heating only heat pumps for high temperatures.
- Electronic expansion valve
- Monitoring and limitation of the maximum absorbed power
- Available with screw compressors driven by inverters (on both compressors or on one compressor only)
- Thermal insulation hoods on the compressors for the high temperature heat pump versions (optional)



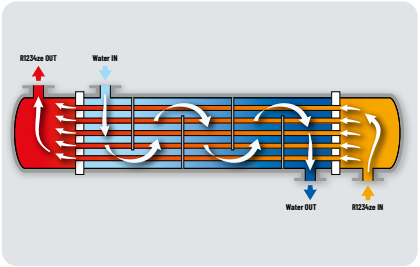
Power and flexibility

Screw compressor allows high cooling capacities to be achieved with load modulation via the special slide valve. On request, a version with inverter either on one or on both compressors is available, for finer adjustment of cooling capacity and obvious advantages in terms of energy efficiency.



Low noise set-up

The screw compressors, the only source of noise on the machine, can be placed in a dedicated enclosure lined with sound-absorbing material that reduces the overall noise emission.

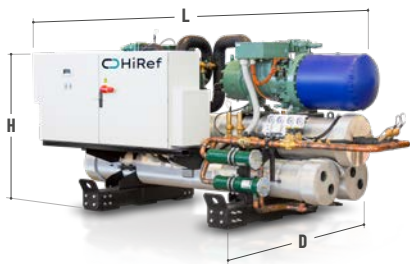


New concept of heat exchange

Single pass shell and tube evaporators provide excellent levels of thermodynamic efficiency thanks to full heat exchange counter-flow.



Suitable for coupling to Polymorph HiRef modules



XVA		521D	621D	691D	811D	901D	1071D	1201D	1321D	1531D	641D
R134a											
		Water Conditions: 12/7 °C user side, 30/35 °C source side									
Refrigerating power	kW	523.6	625.2	700.6	819.1	917.0	1065.9	1212.4	1320.0	1491.6	1587.7
Total absorbed power	kW	102.8	120.1	137.5	160.7	179.7	208.4	237.0	253.5	285.1	297.5
EER [UN14511]		5.09	5.21	5.09	5.10	5.10	5.12	5.12	5.21	5.23	5.34
SEPR		8.00	8.20	8.05	8.08	8.10	8.11	8.08	8.83	9.44	9.66
XVA		451D	541D	601D	681D	801D	921D	1141D	1281D		
R1234ze											
		Water Conditions: 12/7 °C user side, 30/35 °C source side									
Refrigerating power	kW	444.6	563.8	648.5	729.4	871.0	953.7	1113.8	1289.1		
Total absorbed power	kW	80.8	101.5	119.3	135.1	158.2	177.9	190.5	220.2		
EER [UN14511]		5.50	5.56	5.44	5.40	5.51	5.36	5.85	5.85		
SEPR		8.15	8.01	8.00	8.00	8.00	8.16	8.03	8.01		
XVA		551D	641D	701D	821D	911D	1061D	1221D	1291D	1431D	1501D
R513A											
		Water Conditions: 12/7 °C user side, 30/35 °C source side									
Refrigerating power	kW	534.1	615.0	708.5	801.9	890.4	1090.6	1215.2	1266.2	1428.1	1502.4
Total absorbed power	kW	99.6	116.9	133.2	157.3	173.5	205.5	230.1	248.2	279.4	291.5
EER [UN14511]		5.36	5.26	5.32	5.10	5.13	5.31	5.28	5.10	5.11	5.15
SEPR		8.02	8.00	8.01	8.04	8.04	8.03	8.01	8.14	8.55	8.55