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XVA

HiRef

Innovators above
the standards

SERVICES

DATA CENTER

INDUSTRY



Water condensed chillers and heat pumps

XVA

with inverter driven screw compressors

Range: 444.6–1587.7 kW



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.

Main advantages

Power and flexibility

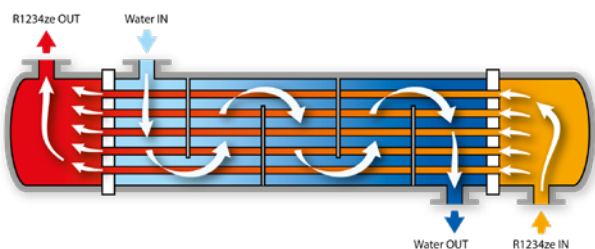
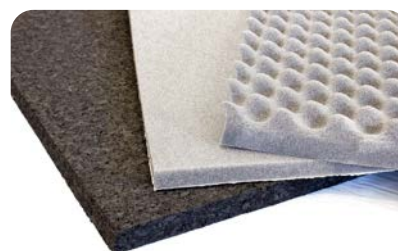
Screw compressor allows high cooling capacities to be achieved with load modulation via the special slide valve. On request, a version with inverter either on one or on both compressors is available, for finer adjustment of cooling capacity and obvious advantages in terms of energy efficiency.



Suitable for coupling to Polymorph HiRef modules

Low Noise set-up

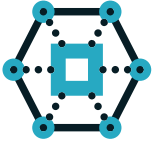
The screw compressors, the only source of noise on the machine, can be placed in a dedicated enclosure lined with sound-absorbing material that reduces the overall noise emission.



New concept of heat exchange

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

Technological components



Multi-protocol communication interface

HiRef units can be integrated with the customer's external supervision Building Management System (BMS), using the most popular communication protocols, including Modbus RTU, Modbus/IP, BacNet, LonWorks, SNMP.



Screw compressors

Screw compressors are suitable for handling large volumes of refrigerant and are therefore suitable for use with low density and pressure refrigerants, while still producing a remarkable cooling effect. The internal double screw construction allows work in all conditions with less vibration and greater stability compared to single screw compressors. On request, it is possible to install compressors equipped with inverters - ensuring constant power modulation and high energy efficiency even at partial loads.



Shell and tube heat exchanger

Some chiller and heat pump product ranges are equipped with a shell and tube exchanger. These heat exchangers are ideally suitable for units to be installed in high-tech industrial sites, thanks to their high reliability and operating stability. Their large volumes also make them less sensitive to thermal stress and capable of ensuring unit operation stability. Finally, the dual-pass exchanger configuration allows both cooling and heat pump operation to be optimised. According to the range chosen, it is possible to have either dry expansion tube exchangers or flooded shell and tube exchangers with spray technology.



Fast restart

The fast restart function (on request) allows the unit to restart quickly after a mains power outage. This optional feature is available with dual power to minimise restart times.



Corrosion resistant material

The HiRef outdoor units are protected by a metal structure resistant to corrosion and weathering. They are also made of galvanised steel sheet, with epoxy-polyester powder coating, oven-polymerised at 180°C, to offer a C3 degree of protection. On request, it is possible to order specific paint finishing treatments or a metalwork structure built entirely in stainless steel, to obtain a higher degree of protection from high impact adverse weather events.



Class A

Internal high-tech components suitably chosen and sized allow the units to operate with outstanding levels of efficiency.



Low GWP refrigerant

The Global Warming Potential (GWP) index is a numerical indicator that identifies the environmental impact of a substance. It measures the extent to which a gas contributes to the greenhouse effect, in relation to carbon dioxide (CO₂) whose baseline value is equal to 1. This parameter is used to determine the amount in kilograms of CO₂ corresponding to the environmental impact of the release of a refrigerant gas into the atmosphere. The use of low GWP refrigerants, such as R513A, R454B, R1234ze, CO₂, allows the environmental impact of air conditioning systems to be significantly reduced.



Available versions



COOLING ONLY



HEATING ONLY

Types of system



WATER/WATER



Additional benefits

- Refrigerant R1234ze
- Also available with R515B refrigerant on request
- Available in version with Eurovent A (XVA) energy efficiency class
- Available in versions: chilling only (with well water or evaporative tower), chilling only (with Dry-Cooler), heating only heat pump and 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
- Thermal insulation hoods on the compressors for the high temperature heat pump versions (optional)

Technical table

XVA		521D	621D	691D	811D	901D	1071D	1201D	1321D	1531D	1641D	491D	541D	601D	681D	801D
USER WATER VALUES 12/7°C, 30/35°C SOURCE WATER SIDE																
COOLING CAPACITY	kW	523.6	625.2	700.6	819.1	1010.3	1065.9	1212.4	1320	1491.6	1587.7	488.5	563.7	648.5	729.4	871
TOTAL POWER INPUT	kW	102.8	120.1	137.5	160.7	208.7	208.4	237	253.5	285.1	297.5	90.4	101.5	119.3	135.1	158.2
EER	-	5.09	5.21	5.09	5.1	4.84	5.12	5.12	5.21	5.23	5.34	5.41	5.56	5.44	5.4	5.51
SEPR	-	8	8.2	8.05	8.08	8.1	8.11	8.08	8.83	9.44	9.66	8.15	8.01	8	8	8
SEER	-	6.92	6.95	6.9	6.84	6.89	6.9	6.8	7.61	7.98	8.24	7.63	7.52	7.52	7.56	7.54
ESEER	-	6.27	6.37	6.27	6.33	6.42	6.31	6.29	6.72	7	7.17	6.99	6.9	6.89	6.92	6.9
SOUND POWER LEVEL	dB	92	95	96	97	98	99	100	101	102	103	95	97	98	99	
REFRIGERANT	-	R134A										R1234ZE				
DIMENSIONS [LxHxD]	mm	4250x2050x1500					5200x2250x1900					4250x2050x1500				

XVA		921D	1141D	1281D	451D	551D	641D	701D	821D	911D	1061D	1221D	1291D	1431D	1501D	
USER WATER VALUES 12/7°C, 30/35°C SOURCE WATER SIDE																
COOLING CAPACITY	kW	953.7	1113.8	1289.1	444.6	542.3	618.2	709	811.6	903.4	1096.5	1215	1260	1419.9	1493.9	
TOTAL POWER INPUT	kW	177.9	190.5	220.2	80.8	97.8	115.8	133.2	154.4	170.3	205.6	230.1	248.2	279.4	291.5	
EER	-	5.36	5.85	5.85	5.5	5.55	5.34	5.32	5.26	5.3	5.33	5.28	5.08	5.08	5.12	
SEPR	-	8.16	8.03	8.01	8.15	8	8	8.06	8.04	8.04	8.12	8.05	8.13	8.55	8.55	
SEER	-	7.52	7.88	7.94	7.63	7	6.79	6.93	6.94	6.94	7.03	6.99	7.23	7.52	7.55	
ESEER	-	6.93	7.1	7.13	6.99	6.43	6.38	6.4	6.55	6.56	6.46	6.52	6.5	6.61	6.65	
SOUND POWER LEVEL	dB	100	102	103	95	92	95	96	97	98	99	100	101	102	103	
REFRIGERANT	-	R1234ZE					R513A									
DIMENSIONS [LxHxD]	mm	4250x2050x1500					5200x2250x1900									

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