MITSUBISHI ELECTRIC HYDRONICS & IT COOLING SYSTEMS S.p.A.

PROCESS COOLING PRODUCT OVERVIEW



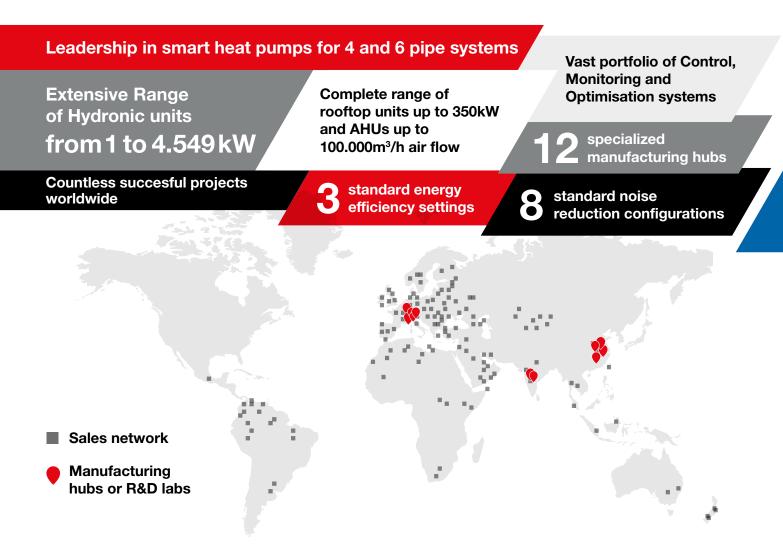
- HEAT PUMPS
- **MULTIFUNCTION UNITS**
- **ROOFTOP UNITS**
- **AIR HANDLING UNITS**
- **CONTROL, SUPERVISION AND OPTIMISATION SYSTEMS**
- HEAT REJECTION PRODUCTS

NEW GREEN REFRIGERANT SERIES





Climaveneta's mission in process cooling is to provide high performing, resilient, and reliable cooling solutions in all production, conservation, storage, and logistics applications where cooling systems are critical for productivity and sustainability.





From the correct conservation of perishable goods and the effectiveness of specific manufacturing phases, to the potential economic and environmental benefits resulting from free cooling and heat recovery, process cooling represents one of the strongest and most consolidated segments where Climaveneta units are employed. Vast experience, profound know-how, and the capability to combine the highest standards of manufacturing and operational quality with flexible, customized solutions are the key distinctive factors that make Climaveneta solutions the preferred choice in the most challenging and innovative process cooling projects worldwide.

Climaveneta range of dedicated process cooling solutions are designed to deliver even in the most challenging projects:





Perfect Comfort and Well-being



Environmental Respect



Specific Solution for each project



Lowest cost of ownership



Simplified on-site operations



Enhanced value of the real estate development



Advanced technologies for high efficiency and high quality air conditioning systems.

Climaveneta's leadership in air conditioning and heating is backed by over 45 years experience in the smart integration of premium technologies for the most challenging projects worldwide

Magnetic levitation



An extended range of chillers with magnetic levitation centrifugal compressors from 200kW to 4MW, both air source and water source, available also in free cooling and evaporative free cooling versions, to deliver highest efficiency in every application.

Smart Thermal Energy Management



234ze 513A

An innovative heat recovery system that allows the smart use of rejection heat from the industrial process for comfort heating and other neighbouring applications.

Inverter Driven Compressor



The possibility to modulate cooling capacity results in increased efficiency as well as in the possibility to effectively implement smart management solutions such as active redundancy. New G04, G05 and G06

Following on vast experience in using green refrigerants, Climaveneta has already employed extensively green refrigerants such as HFO124ze, R513A and R514B in many ranges, in order to continue to be at the forefront with green best practices.

V-AIR



High efficiency EC technology fans are extensively adopted for their advantages with 15% energy reduction compared to traditional EC fans.

VPF



The VPF (Variable Primary Flow) dynamically optimizes the unit's thermoregulation for variable flow operation, thus ensuring both the highest pump energy savings and chiller stable operation.

High Water Temperature

Climaveneta vast experience in high leaving water temperature applications is proven by a complete range of technical solutions in these areas, to cope with any heating requirement, from 6 pipe applications to high temperature heating.

HIGH WATER

TEMPERATURE



The performance of Climaveneta units is enhanced also by their control logics, based on a proprietary logics and knowhow, deployed in a vast range of solutions.

Leading Heat Recovery Technology



Climaveneta is a recognized leader in heat recovery applications and in its product employs in the most effective way all the most performing solutions such as thermodynamic, plate and rotary heat recovery as well as refrigerant booster. Configurable Efficiency Set



The willingness to cope even with the most demanding energy efficiency projects is reflected by the availability of 3 energy efficiency standard configurations in most hydronic units.



CHILLERS AND FREE-COOLING CHILLERS

i-BX-Y

i-NX-Y

NX-Y

scroll compressors NECS-Y

scroll compressors FX2-G01-Y

screw compressors **TECS2-Y**

i-FX-G01-Y

scroll compressors NX2-G02-Y

scroll compressors

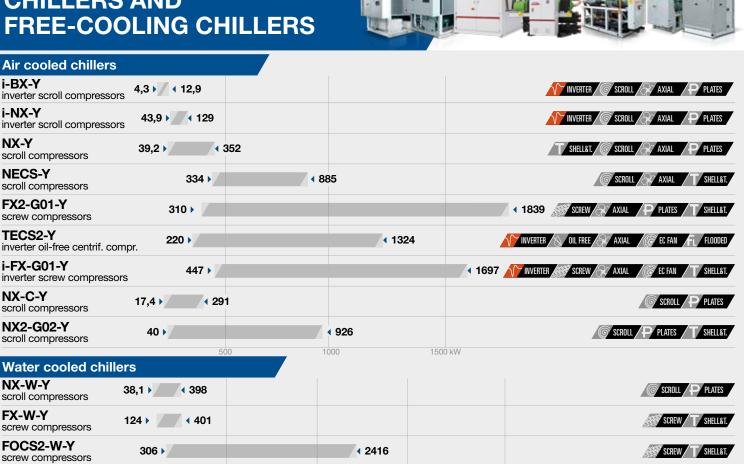
scroll compressors

screw compressors FOCS2-W-Y

NX-C-Y

NX-W-Y

FX-W-Y



screw compressors							
FOCS3-W-Y screw compressors	188 🕨		↓ 169	3			SCREW FL FLOODED
i-FX-W (1+i)-Y inverter screw compressors		532 ►	∢ 178	4			INVERTER SCREW FL FLOODED
TX-W-Y inverter oil-free centrif. comp	r. 246					4549	INVERTER OIL FREE FL FLOODED
		10	20	00 30	000 400) kW	

Water cooled chill	ers					
HE-Y scroll compressors	4,7 • 32,4					
NECS-ME-Y scroll compressors	39,5 •	432				
FOCS-ME-Y screw compressors	219 >					/
	50	0	1000	1500	2000 kW	

 \approx

Air cooled chillers with free-cooling technology	
--	--

NECS-FC-Y scroll compressors 41,5	477			AXIAL SCROLL PLATES
FX-FC-Y screw compressors	332 >		1450	SCREW AXIAL T SHELL&T.
TECS-FC-Y inverter oil-free centrif. compr.	302 >		↓ 1693	NVERTER SOULFREE C FAN FL FLOODED
NX2-FC-G02-Y scroll compressors	292 >	∢ 761		SCROLL AXIAL P PLATES T SHELL&T.

- Highest energy efficiency
- Perfect indoor climate control
- Lowest noise emissions

X-EFC-Y crew compressors	329 >		 14 	141		SCREW AXIAL / T SHEL
ECS-EFC-Y verter oil-free centrif. compr.	300 >				1682	ERTER OIL FREE C FAN FL FLOO
	500		1000	1500) kW	
ir and water cooled chi	llers with HFO	1234ze	GO4 SERIE	S ^{1234ze}		
X2-G04-Y ir cooled, screw compressors	252 •		< 1	463		SCREW AXIAL T SHEL
FX-G04-Y ir cooled, inverter screw compr.	377 •		∢ 1	463		VERTER SCREW C EC FAN / T SHEL
ECS2-W-HFO-Y air cooled, verter oil-free centrif. compr.	339)		1017			OIL FREE CFAN FLOO
X-W-G04-Y water 93 ooled, screw compressors	,1) (373					SCREW C EC FAN T SHELL
FX2-W-G04-Y ater cooled, screw compr.	398 >		1241			OIL FREE FL FLOO
X2-W-G04-Y verter oil-free centrif. compr. 246	•				∢ 4549	
	500		1000	1500) kW	
ir and water cooled chi	llers with R513	BA GOS	5 SERIES 📍	513A		
X2-G05-Y r cooled, screw compressors	310 •		1839			SCREW AXIAL T SHEL
FX-G05-Y ir cooled, inverter screw compr.	477 ►	↓ 10	697			REW 🔗 AXIAL 🧔 EC FAN / 🏹 SHEL
ECS2-G05-Y air cooled, 21 verter oilfree centrif. compr.	₿ ▶	1323				FREE AXIAL C EC FAN FL FLOOD
X-W-G05-Y water boled, screw compressors	401					SCREW/T/SHEL
OCS2-W-G05 water booled, screw compressors		2024 🕨	4 2416			SCREW/T/SHEL
OCS3-W-G05-Y water 18 booled, screw compressors	8 •	∢ 16	693			SCREW/FL/FLOOD
FX-W (1+i)-G05-Y water ooled, inverter screw compr.	532 >		1784			INVERTER SCREW FL/ FLOO
X-W-G05-Y water cooled, il-free centrif. compr.	248 •				▲ 4466	
ECS-FC-G05-Y air cooled, il-free centrif. compr., free-cooling	299 •	• 1	671			ERTER 🚫 OIL FREE 🧭 EC FAN FL FLOO
	1000	200		00	4000 kW	
ir Cooed chillers and fr	ee-cooling chi	llers with R4	454B GO	6 SERIE	S [•] R454B	
IX-G06-Y air cooled, 49 V croll compressors	∢ 314	1			© SCI	OLL AXIAL PLATES T SHEL
IX2-G06-Y air cooled, 40 Croll compressors				4 872		SCROLL SC AXIAL P PLAT
IX2-FC-G06-Y	292)		₹ 771			IN AXIAL /P PLATES /T SHEL

CONFIGURABILE A EFFICIENCY

©1234ze ©R513A

HEAT PUMPS



Air to water reversib	le heat pumps					
i-BX-N-Y inverter scroll compressors	4,2 > < 35,1					FERTER SCROLL AXIAL PLATES
AWR HT-Y scroll compressors	34 •	181				SCROLL SC AXIAL PLATES
NX-N-Y scroll compressors	35,8 •		∢ 516		T s	HELL&T. CSCROLL SC AXIAL PLATES
i-NX-N-Y inverter scroll compressors	43,9 • 128					VERTER SCROLL & AXIAL PLATES
NECS-N-Y scroll compressors	48 •		∢ 516			SCROLL & AXIAL T SHELL&T.
FOCS-N-Y screw compressors		441 🕨			1162	SCREW & AXIAL T SHELL&T.
NX-CN-Y scroll compressors	18 •	< 265				SCROLL C FAN PLATES
i-FX-N-G01-Y inverter screw compressors		444 🕨			1154	SCREW C EC FAN T SHELL&T.
	200	400	600	800 1	000 kW	
Air to water heat pu	mps (heating onl	y)				
AW-HT-Y scroll compressors	38 >	150	4 205			SCROLL CAXIAL PLATES
Water to water rever	sible heat nump					
NX-WN-Y scroll compressors	37,5 >				4 396	SCROLL PLATES
	50 100	150	200 250	300 350	0 400 kW	
Water to water heat	pumps (heating	only)				
WW-HT-Y scroll compressors	27,5 •	109				SCROLL P PLATES
EW-HT-Y scroll compressors	70,2			4 279		SCROLL PLATES
	50	100 15	0 200	250 300	350 kW	
Water to water heat	pumps reversibl	e on t <u>he hy</u>	draulic side			
NX-W-Y /H scroll compressors	38,1) 3	98				SCROLL PLATES
FOCS-W-Y /H screw compressors	87 • • 298					SCREW T SHELL&T.
FOCS2-W-Y /H screw compressors	306 ►				< 2416	SCREW/T SHELL&T.
i-FX-W(1+i)-Y/H screw compressors	532 🕨			↓ 1784		INVERTER SCREW FL FLOODED
FX-W-Y /H screw compressors	124 🖌 🦂 4	01				SCREW T SHELL&T.

500

1000

1500

2000 kW

- Operating limits up to -20°C
- Hot water production up to 78°C
- Highest energy efficiency



Water cooled chillers with HFO 1234ze i-FX2-W-G04-Y water cooled, screw compr. 398 > 1241 TX2-W-G04-Y inverter oil-free centrif. compr. 246 > 1241 50 100 150 200 250 300 350 kW

Air and water source heat pumps	with R513A	G05 SERIE	ES ^{PR513A}	
FOCS-N-G05-Y441air source, screw compressors441		↓ 1162		SCREW SC AXIAL T SHELL&T.
FOCS2-W-G05-Y /H water source, screw compressors 306			∢ 2416	SCREW T SHELL&T.
i-FX-W (1+i)-G05-Y /H 53 water source, inverter driven screw compr.	32 •		• 1784	INVERTER SCREW FL FLOODED
FX-W-G05-Y/H water source, screw compressors 124	401			SCREW T SHELL&T.
	500 1000	1500	2000 kW	
Air cooled chillers with R454B	GO6 SERIES	P R454B		
NX-N-G06-Y 40 >		4 322		SCROLL AXIAL PLATES
	100 200	400 60	00 800 kW	

CONTROL, SUPERVISION AND OPTIMISATION SYSTEMS



Group devices

 ClimaPRO+ Plant Room Optimisation System
 Plant Room Optimiser for real time, smart management of energy indecesfor the single units and the entireplant room.

 MANAGER 3000+ Specialized group control.

SEQUENCER

The ultimate solutions for supervision, remote monitoring, service, and preventive maintenance.



Human Machine Interfaces

• **KIPlink** Control interface for smart phones and tablets.



MULTIFUNCTION UNITS

• Highest efficiency in combined hot and cold water production

Rationalized system design and reduced footprint

Air cooled chillers						
NX-Q-Y scroll compressors	43,9 •	∢ 169				SCROLL AXIAL PLATES
NECS-Q-Y scroll compressors	142 •	∢ 757				T SHELL&T. C SCROLL AXIAL P PLATES
ERACS2-Q-Y screw compressors	199 🕨			€ 826		SCREW & AXIAL & EC FAN T SHELL&T.
i-FX-Q ₂ -Y inverter screw compressors	3	443 🕨			1125	INVERTER SCREW C FAN T SHELL&T.
	20	00 400	600	800 1000	kW	

8

VPF

Smart

HIGH WATER TEMPERATURE CONFIGURABLE A EFFICIENCY SET

Water source heat pumps

NECS-WQ-Y scroll compressors	48,4 •	< 520	Scroll Plates
ERACS2-WQ-Y scroll compressors	189 🕨	4 363	SCREW SCREW SHELL&T.
		200 400	

i-FX-Q2-G05-Y air source, inverter, screw compressors				
al source, inventer, screw compressors	443 🕨		1125 NIVERTER SCREW CF EC FAN	SHELL&T.
ERACS2-WQ-G05-Y 189 Vater source, screw compressors	4 363		SCREW / T	SHELL&T.
20	400	600 800 1000 kW		



ROOFTOP UNITS



HEAT

AIR

- Widest range and complete configurability
- Perfect thermoigrometric control
- Maximum flexibility in the air flow management

Air to air rooftop	unit, cooling only			
WSM-T-Y air cooled	51 ▶		∢ 422	SCROLL S PLUG FAN A REEBOOST. PLATE
WRX-T-Y air cooled	50,8 >	₹ 240	© SCROLL	😚 PLUG FAN AL REEBOOST / PLATE / ROTARY AL THERMOD.
WSM2-T-Y air cooled	81,1 >	182		Scroll Strong fan Alex Refronst
	100	200 300	400 kW	

Reversible air c	ooled rooftop unit	7			
WSM-Y air cooled	24,4 >			317	SCROLL SPILUG FAIL A PLATE
WRX-Y air cooled	50,8 >		4 240		SCROLL / SPLUG FAN
WSM2-Y air cooled	81,1 >	18	82		SCROLL SPLUG FAN ALA REFBOOST PLATE FOTARY
	100	200	30	00 40	00 kW

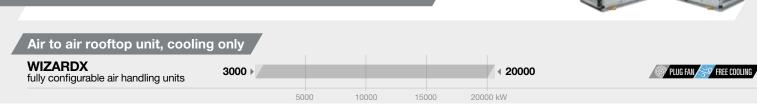
HEAT REJECTION PRODUCTS



Reversible air cooled rooftop unit



AIR HANDLING UNITS





MITSUBISHI ELECTRIC HYDRONICS & IT COOLING SYSTEMS S.p.A.

Head Office: Via Caduti di Cefalonia 1 - 36061 Bassano del Grappa (VI) - Italy Tel (+39) 0424 509 500 - Fax (+39) 0424 509 509 www.climaveneta.com www.melcohit.com