PANGEA

Air-Cooled CHILLERS



275-1467 kW

Screw

50 Hz
60 Hz

ACS

Made in Spain

R134a R513A R450A R1234ze

PANGEA

Adaptation and Versatility

- NEW available in 5 different VERSIONS to suit the project requirements
- Equipped with a direct action screw compressor and low speed and with the latest generation shell and tube heat exchangers
- Wide operating range of units available up to an outdoor temperature of 55°C
- Condensing pressure control as standard for all year operation
- Adaptability to the facility offering a wide range of models
- Maximum accessibility and easy maintenance via removable panels

Low noise level

- Low speed condensation axial fans and oversized outdoor coils
- EC axial fans with AxiTop diffusers as option, resulting in improved efficiency and a low noise level
- NEW available in version with "X" AxiBlade system for a very low noise level, reducing up to 8 dB(A)

Easy control

- Electronic regulation and SIEMENS supervision for simple use and high performance
- Wide variety of communication protocols (Modbus, BACnet and LonWorks)

Energy efficiency

- High energy efficiency in partial and full load, reducing operating costs
- Compliance with ErP 2018 and ErP 2021
- NEW inverter screw compressor available as an option for maximum energy efficiency
- Electronic fans and electronic expansion valve for minimal energy consumption
- Hot gas partial heat reclaim system with plate heat exchanger for sanitary hot water

Environment

- Optimised design for reduced refrigerant charge R-134a and low GWP refrigerants
- NEW availability of unit with low GWP refrigerants R-513A (ODP 0, GWP 513) and R-450A (ODP 0, GWP 547)
- NEW ONEIDA ECO availability of unit with low GWP refrigerant R-1234ze (ODP 0, GWP <1)

Applications

Industry | Retail & Shopping centres | Culture | Hotels

PANGEA

KWT Model			2075	3100	3125	4150	4160	6180	6210	6240
COOLING ONLY VERSION (R)										
Cooling capacity	Cooling power (1)	kW	274.6	378.6	488.9	527.8	549.1	605.8	757.2	867.3
		TR	78.5	108.0	139.5	150.5	156.5	172.5	215.5	247.0
		kBTU/h	942	1296	1674	1806	1878	2070	2586	2964
	Absorbed power (2)	kW	105.2	139.5	186.1	220.2	225.8	204.0	309.7	341.0
	EER (3)	kW/kW	2.6	2.7	2.6	2.4	2.4	3.0	2.4	2.5
		BTU/W*h	9.0	9.3	9.0	8.2	8.3	10.1	8.4	8.7
	SERP (7°C) (4) (6)	kwh/kwh	5.56	5.54	5.56	5.54	5.55	5.67	5.56	5.57
	SERP (-8°C) (4) (6)	kwh/kwh	3.29	3.46	3.30	3.29	3.29	3.62	3.30	3.31
TECHNICAL FEATURES										
Power supply			400V / III / 50HZ without neutral							
Cooling circuit	Refrigerant fluid / GWP	kg CO_2	R134a / 1345							
	Type of compressor		semi-hermetic screw compressor							
	No. circuits / compressors		1/1	1/1	1/1	1/1	2/2	2/2	2/2	2/2
	No. power stages		4	4	4	4	8	4	8	8
Hydraulic circuit	Inner water flow rate	m^3/h	47.3	65.2	84.2	90.9	94.6	104.3	130.4	149.4
	Type of heat exchanger		shell and tube heat exchanger							
	Ø hydraulic connections		DN150 VIC	DN150 VIC	DN150 VIC	DN150 VIC	DN150 VIC	DN150 VIC	DN150 VIC	DN200 VIC
Outdoor fan	Outdoor airflow	m^3/h	80000	120000	120000	160000	160000	240000	240000	240000
	No. fans		4	6	6	8	8	10	12	12
	Ø and type of fan	mm	800 Axial AC + VDF							
Equipment sound pressure (Lp10) (6)		dB(A)	68.0	68.4	68.5	68.9	69.1	68.6	69.9	70.0
Weights	Empty weight (S version)	kg	2650	3660	3680	4670	4700	6455	6765	6785
	In-service weight (S version)	kg	2746	3768	3824	4814	4892	6743	6981	7037

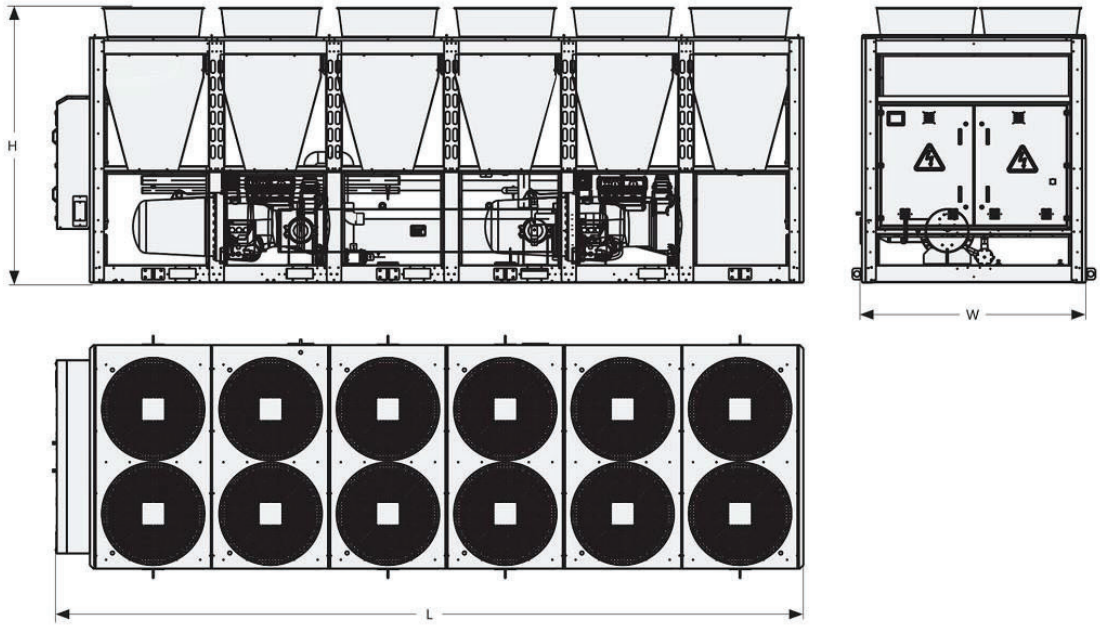
KWT Model			6260	8250	8300	9320	9350	9375	9400
COOLING ONLY VERSION (R)									
Cooling capacity	Cooling power (1)	kW	978.1	963.5	1055.9	1135.4	1244.8	1355.9	1466.5
		TR	278.5	274.0	300.5	323.0	354.0	386.0	417.0
		kBTU/h	3342	3288	3606	3876	4248	4632	5004
	Absorbed power (2)	kW	372.7	319.2	440.0	464.2	496.0	526.9	558.4
	EER (3)	kW/kW	2.6	3.0	2.4	2.4	2.5	2.6	2.6
		BTU/W*h	9.0	10.3	8.2	8.4	8.6	8.8	9.0
	SERP (7°C) (4) (6)	kwh/kwh	5.51	5.71	5.51	5.61	5.61	5.63	5.65
	SERP (-8°C) (4) (6)	kwh/kwh	3.36	3.67	3.27	3.34	3.39	3.42	3.47
TECHNICAL FEATURES									
Power supply			400V / III / 50HZ without neutral						
Cooling circuit	Refrigerant fluid / GWP	kg CO_2	R134a / 1345						
	Type of compressor		semi-hermetic screw compressor						
	No. circuits / compressors		2/2	2/2	2/2	3/3	3/3	3/3	3/3
	No. power stages		8	8	8	12	12	12	12
Hydraulic circuit	Inner water flow rate	m^3/h	168.5	166.0	181.9	195.6	214.4	233.5	252.6
	Type of heat exchanger		shell and tube heat exchanger						
	Ø hydraulic connections		DN200 VIC	DN250 VIC	DN250 VIC	DN250 VIC	DN250 VIC	DN250 VIC	DN250 VIC
Outdoor fan	Outdoor airflow	m^3/h	240000	320000	320000	360000	360000	360000	360000
	No. fans		12	12	16	16	18	18	18
	Ø and type of fan	mm	800 Axial AC + VDF						
Equipment sound pressure (Lp10) (6)		dB(A)	70.2	70.0	71.2	71.6	71.8	72.0	72.2
Weights	Empty weight (S version)	kg	6800	8750	8845	9925	9940	9965	9985
	In-service weight (S version)	kg	7088	9086	9133	10141	10156	10217	10273

(1) Nominal cooling power for a water inlet/outlet temp. of 12/7°C and outdoor air temp. of 35ºC. Capacities calculated with a fouling factor in the heat exchanger of 0.43·10E-4 ($m^2 \cdot K / W$)
(2) Nominal power input by compressors and outdoor fans
(3) EER calculated based on regulation EN: 14511-2018
(4) Seasonal Efficiency calculated based on standard EN 14825:2018
(5) Seasonal Energy Performance Ratio (SEPR) values given for chillers for high-temperature processes (12/7ºC) in line with Ecodesign Regulation EU 2016/2281. Seasonal Energy Performance Ratio (SEPR) values for chillers for medium-temperature processes (-2/-8ºC) in line with Ecodesign Regulation EU 2015/1095
(6) Sound pressure level in dB(A) measured in a free field at 10 m from the source and with directivity 1

PANGEA

Dimensions

Standard version:



Dimensions of KWT standard (mm)						
	Series 2	Series 3	Series 4	Series 6	Series 8	Series 9
L	2710	3810	4910	7110	9310	10410
W	2100	2100	2100	2100	2100	2100
H	2600	2600	2600	2600	2600	2600
H with optional AxiBlade fan	2650	2650	2650	2650	2650	2650
H with optional AxiTop	2780	2780	2780	2780	2780	2780

Dimensions of KWT + Full Recovery optional (mm)						
	Series 2	Series 3	Series 4	Series 6	Series 8	Series 9
L	3810	4910	6010	8210	10410	11510
W	2100	2100	2100	2100	2100	2100
H	2600	2600	2600	2600	2600	2600
H with optional AxiBlade fan	2650	2650	2650	2650	2650	2650
H with optional AxiTop	2780	2780	2780	2780	2780	2780

For transportation in containers, the outer nozzles are shipped unassembled for subsequent on-site installation.
The AxiTop is a removable element and it can be installed on-site.
The optional hydraulic unit with a pump is supplied in a separate module (please see the technical documentation).

Electronic control:

Keyter series production PANGEA Inverter units include the AQUAMATIX specifically developed for the management of air-to-water and water-to-water units with the Climatix HMI user terminal.

AQUAMATIX



Climatix HMI terminal



PANGEA *Inverter*

Air-to-water screw CHILLERS



311-1196 kW

Screw · Inverter · EC · 50 Hz 60 Hz · DHW

Made in Spain

ErP 2021 · R134a · R513A · R450A

PANGEA *Inverter*

Adaptation and Versatility

- Different versions to suit the project requirements
- Equipped with a direct drive, low-speed screw compressor and state-of-the-art shell and tube heat exchangers
- Wide operating range of units available, up to an outdoor temperature
- Condensing pressure control as standard for all year operation
- Adaptability to the facility offering a wide range of models
- Maximum accessibility and easy maintenance thanks to removable panels

Energy efficiency

- High energy efficiency in partial and full load, reducing operating costs
- Complies with ErP 2021
- PANGEA INVERTER range with inverter screw compressors for maximum energy efficiency
- Electronic fans and electronic expansion valve for minimal energy consumption
- Hot gas partial heat recovery system with plate heat exchanger for DHW

Codification

KWT | **Size** | **Power** | **VS3Y**

Series · **Size** · **Power**

S - Standard equipment
R - Full recovery as option

Series version
V - Screw Inverter compressors

S - Standard
Power supply
3 - 400V/III/50Hz without neutral
Refrigerant
Y - R134a / **T** - R513A /
E - R1234ze (PANGEA ECO)

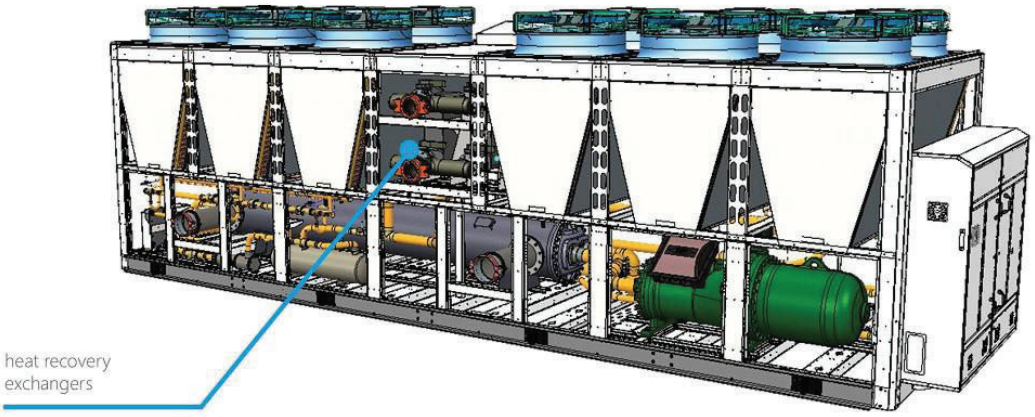
Dimensions of KWT Inverter version / Optional full energy recovery (mm)					
	Series 2	Series 3	Series 4	Series 6	Series 8
L	3810	4910	6010	8210	10410
W	2100	2100	2100	2100	2100
H1	2600	2600	2600	2600	2600
H2, Version with Axiblade	2650	2650	2650	2650	2650

For transportation in containers, the outer nozzles are shipped unassembled for subsequent on-site installation.
With the optional AxiTop, the total height of the unit increases by 180 mm.
The AxiTop is a removable element and it can be installed on-site.
The optional hydraulic unit with a pump is supplied in a separate module (please see the technical documentation).

PANGEA *Inverter*

FULL HEAT RECOVERY

A system that uses the residual heat from air condensation chillers to heat water, for both domestic use and industrial applications by featuring heat recovery exchangers in the refrigerant circuit.



Electronic control:

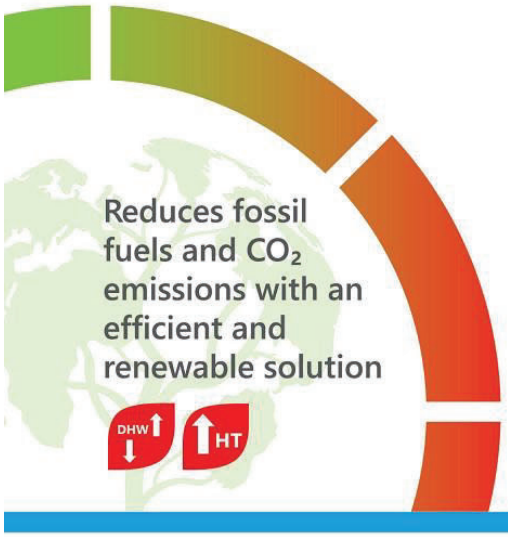
Keyter series production PANGEA Inverter units include the AQUAMATIX specifically developed for the management of air-to-water and water-to-water units with the Climatix HMI user terminal.

AQUAMATIX



Climatix HMI terminal





- *Recovers up to 100% of the thermal energy*
- *Free production of high-temperature hot water*
- *Reduces the electricity consumed by the heating system*
- *Heat electrification*
- *Available for PANGEA Inverter's whole range (except for X0 series)*

PANGEA *Inverter*

optional features

General characteristics		
Compresor	Semi-hermetic screw compressors with Inverter technology	✓
Expansions valves	Electronic expansion valve	✓
Ventilation		
Outdoor fans	Condensation pressure control	✓
	EC axial fans	✓
	Enhanced axial EC fans	•
	AxiBlade axial EC fans	•
	Straight outer nozzles	✓
	Curved outer nozzles (Silent ring)	•
	Difusor AxiTop	•
Hydraulic		
Pumps (in separate hydraulic module)	Single pump (standard, high and very high pressure available)	•
	Pump with variable speed drive	•
	Back-up pump - standard, high and very high pressure	•
Exchanger	Shell and tube heat exchanger	✓
Hydraulic elements	Low-temperature kit for operation with water outlet temp. < 0ºC	•
	Outdoor low temp. kit	•
	Victaulic adaptor - Flange	•
	Water filter	•
Energy		
Energy recovery	Partial/full condensation heat recovery	•
Anti-corrosion		
Coils	Coils with copper tubes and aluminium fins	✓
	Al / Al microchannel coils	•
	Coil with copper tubes/aluminium fins pre-lacquered with polyurethane	•
	ALUCOAST: coil with copper tubes/high-strength aluminium fins	•
	BLYGOLD: coil with copper tubes/aluminium fins with Blygold coating	•
	COPPERFIN: coil with copper tubes/copper fins	•
Installation		
Anti-vibration elements	Anti-vibration mounts	•
Electrical panel	Electric panel ventilation	✓
Power supply	400 V / III ph / 50 Hz without neutral	✓
	Other electrical voltages (consult)	•
Insulation	Compressors in fully closed sheet compartment	•
	Acoustic insulation of the compressor chamber	•
	Thermal insulation	✓
	Insulation of all piping cold lines	•
	Acoustic installation jacket	•
	Original manufacturer high-performance acoustic installation jacket	•
Protection grilles	Coil protection grille	•
	Protection grille for access to the equipment perimeter	•
Control		
	Programmable AQUAMATIX control	✓
	Climatix HMI user terminal for AQUAMATIX control	✓
	RS485 communication interface for ModBus communication	✓
	Bacnet/Lonworks communication	•
	Electricity meter	•

✓ Included as standard • Optional - Not applicable

PANGEA *Inverter*

R134a refrigerant

KWT Inverter Model - Standard version			2070	3095	3120	4130	4140	6150
COOLING ONLY VERSION (R)								
Cooling capacity	Cooling power (1)	kW	311,0	429,2	553,1	597,7	621,8	683,6
		TR	88,5	122,5	157,5	170,0	177,0	194,5
		kBTU/h	1062	1470	1890	2040	2124	2334
	Absorbed power (2)	kW	112,3	149,4	200,4	236,5	242,4	218,5
	EER (3)	kW/kW	2,8	2,9	2,8	2,5	2,6	3,1
		BTU/W*h	9,5	9,8	9,4	8,6	8,8	10,7
	SEER (4)	kWh/kWh	4,8	4,8	4,8	4,8	4,9	5,1
	ηs,c (5)	%	184%	184%	185%	185%	189%	195%
	SEPR (7°C) (6)	kWh/kWh	5,87	5,97	5,86	5,63	5,67	6,23
	SEPR (-8°C) (6)	kWh/kWh	3,74	3,92	3,74	3,60	3,54	4,08
	IPLV (7)	kW/TR	0,57	0,58	0,57	0,57	0,57	0,56
		kBtu/kWh	20,39	20,34	20,43	20,41	20,69	21,02
TECHNICAL FEATURES								
Power supply			400V / III / 50HZ without neutral					
Cooling circuit	Refrigerant fluid / GWP	kg CO_2	R134a / 1345					
	Type of compressor		semi-hermetic screw compressor + external VFD					
	No. circuits / compressors		1/1	1/1	1/1	1/1	2/2	2/2
	No. power stages		25%-100%					
Hydraulic circuit	Inner water flow rate	m³/h	53,6	73,9	95,3	103,0	107,1	117,8
	Type of heat exchanger		shell and tube heat exchanger					
	Ø hydraulic connections		DN150 VIC	DN150 VIC	DN150 VIC	DN150 VIC	DN150 VIC	DN150 VIC
Outdoor fan	Outdoor airflow	m³/h	86000	129000	129000	172000	172000	258000
	No. fans		4	6	6	8	8	12
	Ø and type of fan	mm	800 Axial EC HP					
Equipment sound pressure (Lp10) (9)		dB(A)	67,0	67,4	67,5	67,9	68,1	67,6
Weights	Empty weight (S version)	kg	3042	4052	4072	5062	5092	6847
	In-service weight (S version)	kg	3138	4160	4216	5206	5284	7135

KWT Inverter Model - Standard version			6190	6215	6245	8240	8265
COOLING ONLY VERSION (R)							
Cooling capacity	Cooling power (1)	kW	858,4	982,1	1106,6	1087,9	1195,7
		TR	244,5	279,5	315,0	309,5	340,0
		kBTU/h	2934	3354	3780	3714	4080
	Absorbed power (2)	kW	331,1	366,1	401,3	341,9	472,7
	EER (3)	kW/kW	2,6	2,7	2,8	3,2	2,5
		BTU/W*h	8,9	9,2	9,4	10,9	8,6
	SEER (4)	kWh/kWh	5,0	5,0	5,0	5,1	4,9
	ηs,c (5)	%	190%	192%	193%	196%	189%
	SEPR (7°C) (6)	kWh/kWh	5,69	5,78	5,86	6,28	5,63
	SEPR (-8°C) (6)	kWh/kWh	3,67	3,75	3,80	4,13	3,63
	IPLV (7)	kW/TR	0,56	0,56	0,56	0,55	0,57
		kBtu/kWh	20,74	20,84	20,91	21,09	20,65
TECHNICAL FEATURES							
Power supply			400V / III / 50HZ without neutral				
Cooling circuit	Refrigerant fluid / GWP	kg CO_2	R134a / 1345				
	Type of compressor		semi-hermetic screw compressor + external VFD				
	No. circuits / compressors		2/2	2/2	2/2	2/2	2/2
	No. power stages		25%-100%				
Hydraulic circuit	Inner water flow rate	m³/h	147,9	169,2	190,6	187,4	205,9
	Type of heat exchanger		shell and tube heat exchanger				
	Ø hydraulic connections		DN200 VIC	DN200 VIC	DN200 VIC	DN200 VIC	DN250 VIC
Outdoor fan	Outdoor airflow	m³/h	258000	258000	258000	344000	344000
	No. fans		12	12	12	16	16
	Ø and type of fan	mm	800 Axial EC HP				
Equipment sound pressure (Lp10) (9)		dB(A)	68,9	69,0	69,2	69,0	70,2
Weights	Empty weight (S version)	kg	7157	7177	7192	9142	9237
	In-service weight (S version)	kg	7373	7429	7480	9478	9525

(1) Nominal cooling power for a water inlet/outlet temp. of 12/7°C and outdoor air temp. of 35°C. Capacities calculated with a fouling factor in the heat exchanger of 0.43·10E-4 ($m^2 \cdot K / W$)
(2) Nominal power input by compressors and outdoor fans
(3) EER calculated based on regulation EN: 14511-2018
(4) Seasonal Efficiency calculated based on standard EN 14825:2018
(5) Ηs, c values given in accordance with Ecodesign Regulation EU 2016/2281 for comfort applications
(6) Seasonal Energy Performance Ratio (SEPR) values given for chillers for high-temperature processes (12/7°C) in line with Ecodesign Regulation EU 2016/2281. Seasonal Energy Performance Ratio (SEPR) values for chillers for medium-temperature processes (-2/-8°C) in line with Ecodesign Regulation EU 2015/1095
(7) Seasonal Energy Efficiency Ratio in line with AHRI Standards 550/590
(9) Sound pressure level in dB(A) measured in a free field at 10 m from the source and with directivity 1