



# Conquest air-cooled chillers and heat pumps

Scroll compressor  
Model CGAX/CXAX  
42-160 kW



## CONQUEST

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TRANE  
TECHNOLOGIES

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# Introduction

Trane is a leader in the air-cooled chillers marketplace, thanks to excellence in design and manufacturing. This tradition of excellence is present in the Conquest air-cooled scroll compressor chillers range, a new generation of chillers and heat pumps, providing capacities from 42-160 kW.

## Trane Quality

Trane is the designer and manufacturer of the core components applying modern market standards of quality in the finishing, a rigorous testing and manufacturing plan, a powerful service portfolio supporting the life cycle of the equipment.



## Useful Efficiency

The cooling only chillers, model CGAX, are rated Class B (EER at full load at Eurovent conditions) and optimized for operation at seasonal part load efficiency (ESEER) to maximize energy savings during real life building demand, across all seasons.

The heat pump version, model CXAX, has been optimized in the same way. Full Load COP is class B as per Eurovent standard as well, while the part load efficiency ratio SCOP is compliant with Ecodesign directive.

## Acoustic Package

Two acoustical package options are available:

- Standard Noise (SN), with an average sound power of Lw 86 dB(A)
- Low Noise (LN), for sensitive environments with a sound reduction of an additional -6 dB(A)

The acoustical package does not bring any degradation on the performances: cooling capacity, operating map, or efficiency.

## Smart Chillers

- The operating map of the chiller, allows in cooling mode, operation between -18°C up to 46°C ambient air temperature.
- In heating mode, CXAX units can deliver 40°C hot water, down to -15°C ambient air temperature.
- For industrial applications, with evaporator leaving water temperature down to -12°C is Ecodesign compliant (SEPR medium temperature > 2,8).
- The low profile of the Conquest units allows easy integration in buildings, thanks to the 1,5 m of height on most of the units.
- A plug & play integration is supported by the option of Hydraulic Module (with or without buffer tank).
- Chillers are provided with a Smart Controller and a new generation interface, the Deluxe Touch Display.
- Full integrability capability thanks to available communication protocols: Modbus, BACnet, LonTalk and Trane BMS.

# Features and Benefits

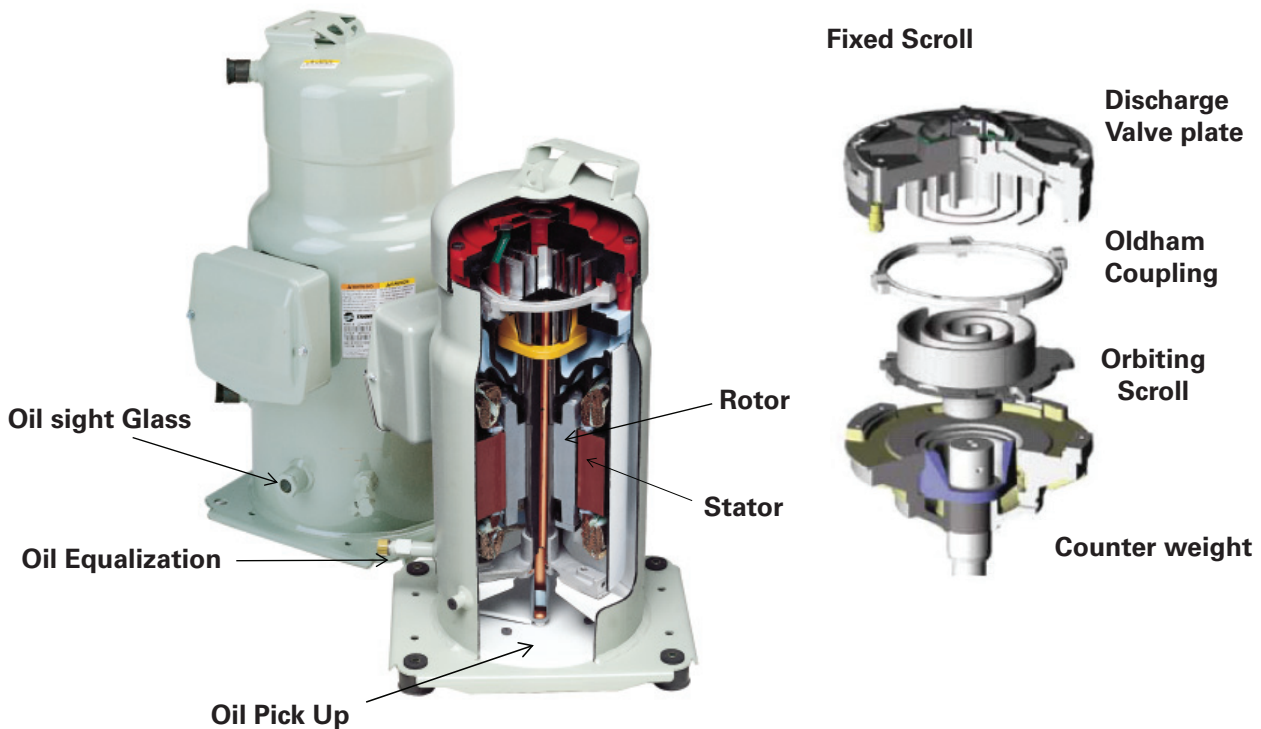
## Reliability

A robust design of the compressor and refrigerant circuit has been validated by an extensive program of operational tests, in extreme conditions, to ensure maximum reliability. Quality is verified during each and every step.

## Compressors

Direct drive, low speed, new generation of scroll compressor, with few moving parts, providing high efficiency, reliable operation and simplified maintenance. Suction gas cooled motor winding, maintaining uniform low temperature for extended motor life.

**Figure 1 – Scroll compressor**



## Chiller controller

The Conquest chiller is equipped with the new generation of chiller control systems, providing improved control capabilities, and integrated safety protocols to protect both compressors and motors from electrical faults like thermal overload and phase reversal.

The LCD display with 6 navigation buttons shows clear messages in 15 available languages. It features a customer communication package consisting in: external chilled water setpoint, external demand limit, analog capacity output, programmable relays.

**Figure 2 – Standard LCD user interface**



## Features and Benefits

A deluxe display is available as an option. It features an intuitive and user friendly color 7 inch touchscreen, able to display: Data trending, clear alarms logging, and TIS enable for remote monitoring.

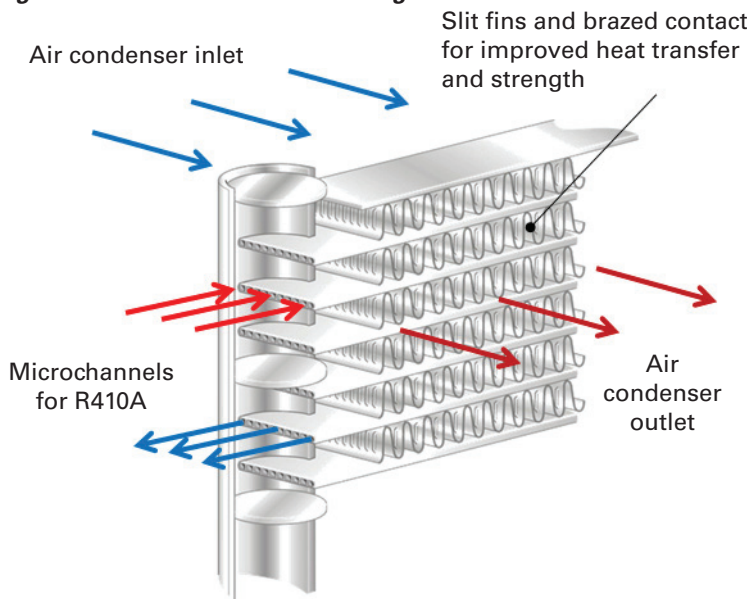
**Figure 3 – Optional deluxe user interface**



### Microchannel condensing coils on cooling-only units

Conquest chillers are equipped with microchannel condensing coils allowing excellent heat transfer and a dramatic improvement of corrosion resistance versus conventional tubes in fins coils. Microchannel coils are 100% aluminum, therefore avoiding galvanic corrosion which can occur on conventional condensers made with copper tubes and aluminum fins. Microchannel coils are also well adapted for dirty environment thanks to their small thickness and fins profile.

**Figure 4 – Microchannel condensing coils**



### Heat pump units coils

The condenser coil is made of aluminum fins mechanically bonded to seamless copper tubing and includes integral subcooling circuit. The coils are factory leak tested at 5 Mpa. If the unit is to be installed in a corrosive environment, aluminum fins can be pre-coated with epoxy (optional), with minimum thickness of 8µm, in order to withstand 1000 hours of salt spray test according to ISO 9227.

### Electronic Expansion Valve

Electronic expansion valve enables tight chilled water temperature control and low superheat, resulting in more efficient full-load and part-load operation.

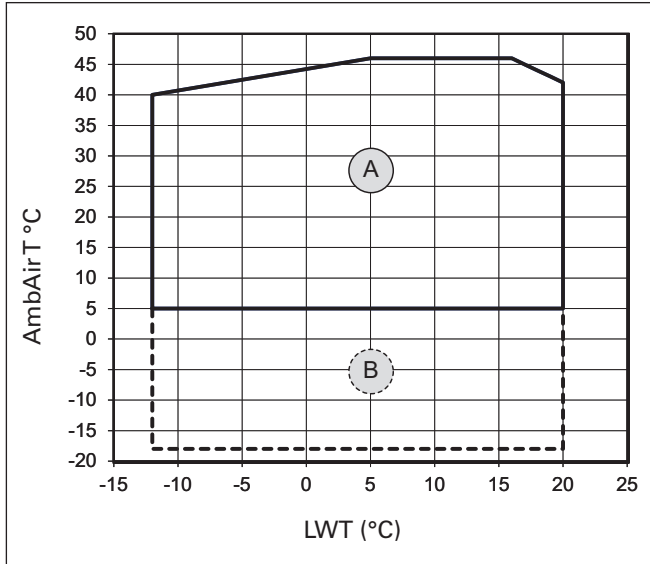
## Features and Benefits

### Application versatility

Extended operating map, allowing chiller operation in multiple applications:

- Industrial/low temperature process cooling with precise temperature control capability.
- Optimal and reliable operation at high ambient temperatures.

**Figure 5 – Operating map- Cooling-only Model CGAX**



LWT = Leaving water temperature

Amb AirT = Ambient air temperature

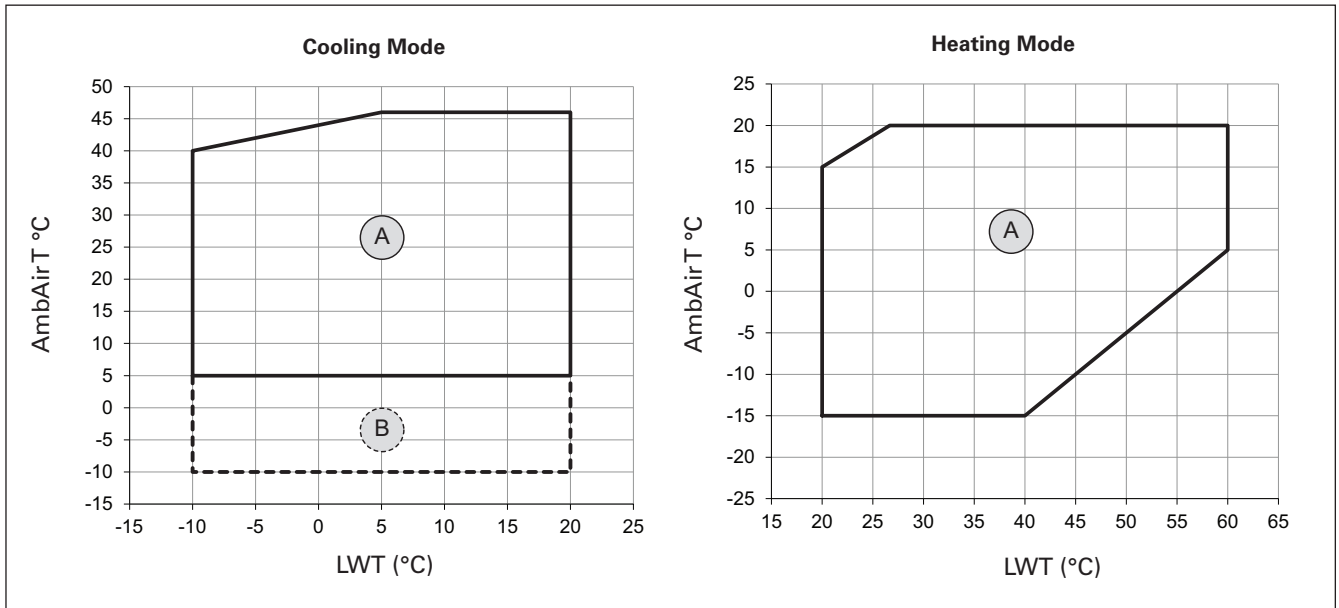
A = Standard operating map

B = Low ambient operating map (Variable air flow control)

Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser

## Features and Benefits

**Figure 6 – Heat Pump Model CXAX operating map**



LWT = Leaving water temperature

Amb Air T = Ambient air temperature

A = Standard operating map

B = Low ambient operating map (Variable air flow control)

Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser

### Improved Serviceability

- All main components like compressors, valves and refrigerant components are easy to access to simplify servicing. When the unit is supplied with an hydraulic module, the service valves and strainer can be accessed with ease for service.
- Water connections are extended up to the edge of the unit, for easy connection with system water piping.
- Optional pump package is designed for easy maintenance and service on site.
- Pressure transducers and temperature sensors are supplied for easy identification of potential troubleshooting and eventually, replacement, without the need of refrigerant handling.
- Dead front panel and IP20 protection allow for safe servicing.

# Application Considerations

Certain applications constraints should be considered when sizing, selecting and installing Conquest air-cooled Scroll chillers. Unit and system reliability often depend on proper and complete compliance with those considerations.

## Unit Size

Unit oversizing is often not recommended since erratic unit operation and excessive compressor cycling are often a direct result of an oversized chiller. If oversizing is desired, consider the alternative of multiple units, splitting the total capacity.

## Water Treatment

The use of untreated or improperly treated water in chillers may result in scaling, erosion, corrosion, and algae or slime buildup. This will adversely affect heat transfer between the water and system components. Proper water treatment must be determined locally and depends on the type of system and local water characteristics.

Neither salty nor brackish water is recommend for use in Trane air-cooled Conquest chiller. Usage of either will lead to a shortened life. Trane encourages the employment of a qualified water treatment specialist, familiar with local water conditions, to assist in the establishment of a proper water treatment program.

Foreign matter in the chilled water system can also increase pressure drop and, consequently, reduce water flow. For this reason it is important to thoroughly flush all water piping to the unit before making the final piping connections to the unit.

## Effect of the altitude on the cooling capacity

At elevations substantially above sea level, the decreased air density will decrease condenser capacity and, therefore, unit capacity and efficiency.

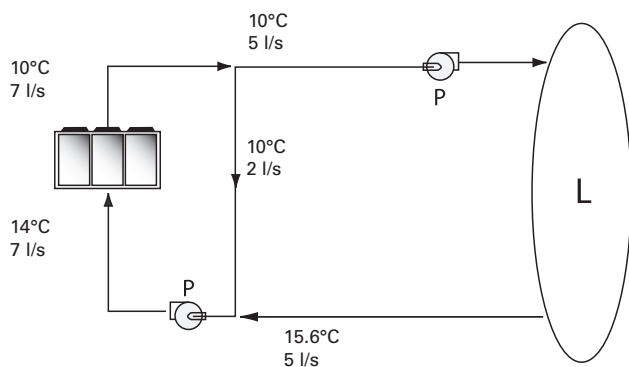
## Water flow limits

The minimum water flow rates are given in the General Data section of this catalog. Evaporator flow rates below the tabulated values will result in laminar flow causing freeze-up problems, scaling, stratification and poor control. The maximum evaporator water flow rate is also given. Flow rates exceeding those listed may result in very high pressure drop across the evaporator.

## Flow Rates Out of Range

Many process cooling jobs require flow rates that cannot be met with the minimum and maximum published values within the Conquest chiller evaporator. A simple piping change can alleviate this problem. For example: a plastic injection molding process requires 5.0 l/s of 10°C water and returns that water at 15.6°C. The selected chiller can operate at these temperatures, but has a minimum flow rate of 6.6 l/s. The system layout in Figure 7 can satisfy the process.

**Figure 7 – Flow rate out of range systems solution**



L = Load  
P = Pump



## Application Considerations

### Flow Proving

Trane provides a factory-installed water flow switch monitored by chiller controller CH535 which protects the chiller from operating in loss of flow conditions.

### Leaving Water Temperature Limits

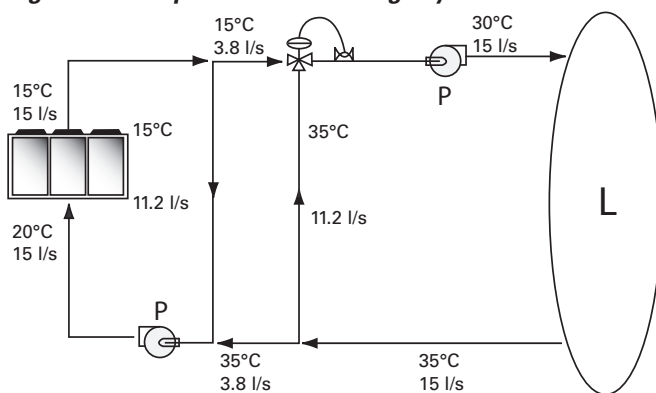
Trane air-cooled Conquest chillers have two distinct leaving water categories:

- standard, with a leaving solution range of 5.5 to 18°C
- low temperature process cooling, with leaving solution range of -12 to 18°C

Since the leaving solution temperature below 5.5°C results in suction temperature at or below the freezing point of water, a glycol solution is required for all low temperature.

Consult your local Trane sales engineer for applications or selections involving low temperature. The maximum water temperature that can be circulated through the CGAX evaporator when the unit is not operating is 51.7°C. For the model CXAX the water temperature limit is 60°C. Evaporator damage may result above this temperature.

**Figure 8 – Temperature out of range system solution**



L = Load

P = Pump

### Supply Water Temperature Drop

Full load chilled water temperature drops from 3.3 °C to 10°C may be used as long as minimum and maximum water temperature and minimum and maximum flow rates are not violated.

Temperature drops outside this range at full load conditions are beyond the optimum range for control and may adversely affect the microcomputer's ability to maintain an acceptable supply water temperature range. Furthermore, full load temperature drops of less than 3.3°C may result in inadequate refrigerant superheat which is critical to long term efficient and reliable operation.

Sufficient superheat is always a primary concern in any refrigerant system and is especially important in a packaged chiller where the evaporator is closely coupled to the compressor.

### Parameters which influence the water temperature stability:

- Ambient temperature and water temperature (modify cooling capacity)
- Number of capacity steps
- Minimum time between starts of a compressor
- Control dead band
- Water loop volume
- Load fluctuations
- Fluid type or percentage of glycol

### Typical Water Piping

All building water piping must be flushed prior to making final connections to the chiller. To reduce heat loss and prevent condensation, insulation should be applied. Expansion tanks are also usually required so that chilled water volume changes can be accommodated.



## Application Considerations

### Avoidance of Short Water Loops

Adequate chilled water system water volume is an important system design parameter because it provides for stable chilled water temperature control and helps limit unacceptable short cycling of chiller compressors.

The Conquest Air Cooled chiller's temperature control sensor is located in the supply (outlet) water connection or pipe. This location allows the building to act as a buffer to slow the rate of change of the system water temperature. If there is not a sufficient volume of water in the system to provide an adequate buffer, temperature control can suffer, resulting in erratic system operation and excessive compressor cycling.

Typically, a two-minute water loop circulation time is sufficient to prevent short water loop issues. Therefore, as a guideline, ensure the volume of water in the chilled water loop equals or exceeds two times the evaporator flow rate. For systems with a rapidly changing load profile the amount of volume should be increased.

If the installed system volume does not meet the above recommendations, the following items should be given careful consideration to increase the volume of water in the system and, therefore, reduce the rate of change of the return water temperature.

- A volume buffer tank located in the return water piping.
- Larger system supply and return header piping (which also reduces system pressure drop and pump energy use).

An optional factory-installed buffer tank is designed to meet the minimum two minute loop time without additional job site piping. The buffer tank can also be used on jobs that already meet or exceed the minimum loop time to further reduce the potential for compressor cycling, increasing the compressor life span, and reducing system temperature fluctuations.

### Minimum water volume for a process application

If a chiller is attached to an on/off load such as a process load, it may be difficult for the controller to respond quickly enough to the very rapid change in return solution temperature if the system has only the minimum water volume recommended. Such systems may cause chiller low temperature safety trips or in the extreme case evaporator freezing. In this case, it may be necessary to add or increase the size of the mixing tank in the return line or consider the optional factory-installed buffer tank with the chiller. Some guidance on calculating the minimum volume necessary for proper Scroll Compressors Chillers operation are given here, through a simplified formula, which does not take in account variations on chiller efficiency, compressor sequencing, evaporator inlet/outlet temperature.

Minimum recommendable volume on the hydraulic loop

$V = Cc * T / (Sh * Db)$  where:

$Cc * T = V * Db * Sh$

**V** = Volume of the loop (l)

**Cc** = Cooling Capacity of the chiller biggest Stage (kW)

**T** = Compressor Time (min running time (s))

**Db** = Dead Band (K)

**Sh** = Brine Specific heat (kJ.K-1.kg-1)

### Multiple Unit Operation

Whenever two or more units are used on one chilled water loop, Trane recommends that their operation be coordinated with a higher level system controller for best system efficiency and reliability. The Trane Tracer system has advanced chilled plant control capabilities designed to provide such operation.

# Unit Placement

## Setting The Unit

A base or foundation is not required if the selected unit location is level and strong enough to support the unit's operating weight (see "Weights" section of this catalog).

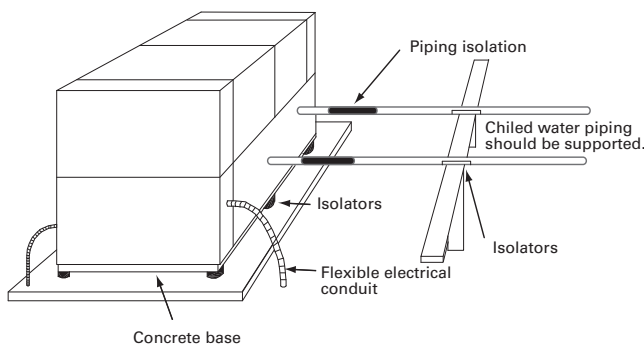
For a detailed discussion of base and foundation construction, refer to the sound engineering bulletin or the unit IOM. Manuals are available through the local Trane office.

HVAC equipment must be located to minimize sound and vibration transmission to the occupied spaces of the building structure it serves. If the equipment must be located in close proximity to a building, it should be placed next to an unoccupied space such as a storage room, mechanical room, etc. It is not recommended to locate the equipment near occupied, sound sensitive areas of the building or near windows. Locating the equipment away from structures will also prevent sound reflection, which can increase sound levels at property lines or other sensitive points.

## Isolation and Sound Emission

Structurally transmitted sound can be reduced by elastomeric vibration eliminators. Elastomeric isolators are generally effective in reducing vibratory noise generated by compressors, and therefore, are recommended for sound sensitive installations. An acoustical engineer should always be consulted in critical situations.

**Figure 9 – Installation example**



For maximum isolation effect, water lines and electrical conduit should also be isolated. Wall sleeves and rubber isolated piping hangers can be used to reduce the sound transmitted through water piping. To reduce the sound transmitted through electrical conduit, use flexible electrical conduit.

Local codes on sound emissions should always be considered. Since the environment in which a sound source is located affects sound pressure, unit placement must be carefully evaluated. Sound power levels for chillers are available on request.

## Servicing

Adequate clearance for evaporator and compressor servicing should be provided. Recommended minimum space envelopes for servicing are located in the dimensional data section and can serve as a guideline for providing adequate clearance. The minimum space envelopes also allow for control panel door swing and routine maintenance requirements. Local code requirements may take precedence.



## Unit Placement

### Unit Location

#### General

Unobstructed flow of condenser air is essential to maintain chiller capacity and operating efficiency. When determining unit placement, careful consideration must be given to assure a sufficient flow of air across the condenser heat transfer surface. Two detrimental conditions are possible and must be avoided: warm air recirculation and coil starvation. Air recirculation occurs when discharge air from the condenser fans is recycled back to the condenser coil inlet. Coil starvation occurs when free airflow to the condenser is restricted.

Condenser coils and fan discharge must be kept free of snow or other obstructions to permit adequate airflow for satisfactory unit operation. Debris, trash, supplies, etc., should not be allowed to accumulate in the vicinity of the air-cooled chiller. Supply air movement may draw debris into the condenser coil, blocking spaces between coil fins and causing coil starvation.

Both warm air recirculation and coil starvation cause reductions in unit efficiency and capacity because of the higher head pressures associated with them. The air-cooled Conquest chiller offers an advantage over competitive equipment in these situations. Operation is minimally affected in many restricted air flow situations due to its advanced chiller controller.

Microprocessor which has the ability to understand the operating environment of the chiller and adapt to it by first optimizing its performance and then staying on line through abnormal conditions. For example, high ambient temperatures combined with a restricted air flow situation will generally not cause the air-cooled model CGAX chiller to shut down. Other chillers would typically shut down on a high pressure nuisance cut-out in these conditions.

Cross winds, those perpendicular to the condenser, tend to aid efficient operation in warmer ambient conditions. However, they tend to be detrimental to operation in lower ambients due to the accompanying loss of adequate head pressure. Special consideration should be given to low ambient units. As a result, it is advisable to protect air-cooled chillers from continuous direct winds exceeding 4.5 m/s in low ambient conditions.

#### Provide Sufficient Unit-to-Unit Clearance

Units should be separated from each other by sufficient distance to prevent warm air recirculation or coil starvation. Doubling the recommended single unit air-cooled chiller clearances will generally prove to be adequate.

#### Walled Enclosure Installations

When the unit is placed in an enclosure or small depression, the top of the surrounding walls should be no higher than the top of the fans. The chiller should be completely open above the fan deck. There should be no roof or structure covering the top of the chiller. Ducting individual fans is not recommended.

# Model Number Description

## Digit 1-4 — Chiller Model

CGAX: Cooling-only unit

CXAX: Heat pump unit

## Digit 5-7 — Unit Nominal Size

015: 15 ton

017: 17 ton

020: 20 ton

023: 23 ton

026: 26 ton

030: 30 ton

036: 36 ton

039: 39 ton

045: 45 ton

035: 35 ton

040: 40 ton

046: 46 ton

052: 52 ton

060: 60 ton

## Digit 8 — Unit Voltage

E: 400V/3ph/50Hz

## Digit 9 — Manufacturing Plant

1 = Europe

## Digit 10-11 — Design Sequence

A: Factory assigned

0: Factory assigned

## Digit 12 — Efficiency Level

1: Standard Efficiency Class (B)

2: High Efficiency

## Digit 13 — Agency Listing

E: CE Certification

## Digit 14 — Pressure Vessel Code

4: Pressure Equipment Directive (PED)

## Digit 15 — Condenser Temperature Range

A: Standard operating map (5°C/46°C)

C: Low Ambient Cooling (CGAX -18°C/46°C;  
CXAX -10°C/46°C)

## Digit 16, 17 — Open for future options

## Digit 18 — Freeze Protection (Factory-Installed Only)

X: Without freeze protection

2: With freeze protection by heaters

3: With freeze protection by pump activation

## Digit 19, 20 — Open for future options

## Digit 21 — Evaporator Application

A: Comfort application (5°C/20°C)

B: Process application (CGAX: -12°C/5°C;  
CXAX: -10°C/5°C)

## Digit 22 — Water Connection (Evaporator)

1: Grooved pipe

2: Grooved pipe, couplings and pipestub

## Digit 23 — Condenser Fin Material

B: Standard aluminum fins on Heat Pumps

E: Epoxy aluminum fins on Heat Pumps

H: Microchannel (MCHE) on Cooling-only Units

J: E-coating on MCHE on Cooling-only units

## Digit 24 — Condenser Heat Recovery

X: Without Heat Recovery

2: Partial Heat Recovery

## Digit 25 — Open for future options

## Digit 26 — Starter Type

A: Across-the-line starter

B: Solid State Soft Starter

## Digit 27, 28, 29 — Open for future options

## Digit 30 — Human Interface

A: Standard display

B: Deluxe touch display

X: Without display

## Digit 31 — Communication Options

X: Without remote communication

1: ModBus Interface

2: LonTalk Interface

3: SmartWeb Interface

4: BACnet Interface

## Digit 32 — Customer Input/Output Options

X: None

A: With



## Model Number Description

### Digit 33 — Smart Sequencer

X: None

### Digit 34 — Open for future options

### Digit 35 — Hydraulic Module/Pump package type

X: Without contactors

2: Only contactors single pump

4: Only contactors twin pump

5: Single pump package low pressure

6: Single pump package high pressure

7: Dual pump package low pressure

8: Dual pump package high pressure

### Digit 36 — Pump flow control

X: Constant flow

B: Manual flow control

C: Variable primary flow (constant Delta T)

D: Variable primary flow (constant Delta P)

### Digit 37 — Buffer Tank

X: No Tank

1: With Tank

### Digit 38 — Open digit for future options

### Digit 39 — Installation Accessories

1: None

4: Neoprene pads

### Digit 40 — Open digit for future options

### Digit 41 — Acoustical options

2: High External Static Pressure

3: Standard

4: Low Noise

### Digit 42 — Condenser Protection

A: Condenser guard grills

X: Without

### Digit 43 — Open digit for future options

### Digit 44 — Literature Language

B: Spanish

C: English

D: German

E: French

H: Dutch

J: Italian

M: Swedish

N: Turkish

P: Polish

T: Czech

U: Greek

V: Portuguese

Y: Romanian

3: Hungarian

### Digit 45 — Under/Over Voltage Protection

X: None

1: With

### Digit 46 — Open for future options

### Digit 47 — Customer witness performance test

X: None

### Digit 48 — Open for future options

### Digit 49 — Supplementary Heat Control

1: With

X: Without

### Digit 50 — Special design

X: Standard

S: Special design

# General Data

**Table 1 – CGAX Standard efficiency and Standard Noise**

		CGAX 015 SE-SN	CGAX 017 SE-SN	CGAX 020 SE-SN	CGAX 023 SE-SN	CGAX 026 SE-SN	CGAX 030 SE-SN	CGAX 036 SE-SN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	43	49	59	65	74	82	99
Total Power input in cooling	(kW)	15	17	19	22	26	29	33
Total Power input in cooling - HESP Option (100Pa)	(kW)	15	18	21	24	27	31	34
EER		2.98	2.88	3.08	2.95	2.87	2.84	2.96
EER - HESP (915 RPM - 100Pa)		2.82	2.74	2.89	2.81	2.78	2.76	2.81
ESEER		3.89	3.93	3.81	3.82	3.84	3.80	3.93
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>
Sound power level	(dBA)	83	83	85	85	85	86	84
Sound power level - HESP Option (100Pa)	(dBA)	85	85	89	89	89	89	89
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	34	38	45	50	56	64	74
Unit rated amps - HESP Option (100Pa)	(A)	35	39	47	52	57	66	75
Unit start up amps	(A)	116	160	167	183	188	189	198
Unit start up amps - HESP Option (100Pa)	(A)	117	161	169	185	190	191	199
Short Circuit Unit Capacity (9)	(kA)	12	12	12	12	12	12	15
<b>Compressor</b>								
Compressor Number per Circuit	#	2	2	2	2	2	2	3
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		7.5+7.5	7.5+10	10+10	10+13	13+13	15+15	12+12+12
Motor RPM	(rpm)				2900			
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P80x66	P80x92	P80x92	P80x92	P120Tx76	P120Tx76	P120Tx104
Evaporator Water Content volume	(l)	3.8	5.3	5.3	5.3	9.2	9.2	12.5
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	25	25	25	25	25	25	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	1450	1450	1450	1450	1450	1450	2000
Optional water Buffer tank volume	(l)	324	324	324	324	324	324	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type		Full aluminum Micro channel heat exchanger						
Quantity of coil	#	1	1	1	1	1	1	2
Face area per circuit	(m <sup>2</sup> )	2.23	2.23	2.96	2.96	2.96	2.96	4.46
<b>Condenser Fan</b>								
Quantity	#	1	1	2	2	2	2	2
Diameter	(mm)				800			
Fan / motor Type		Propeller fan : Fixed speed AC motor / Variable speed - EC motor						
Airflow per Fan	(m <sup>3</sup> /h)	13788	13828	12362	12362	12370	12375	13827
Airflow per Fan - HESP Option (100Pa)	(m <sup>3</sup> /h)	13753	13718	12248	12231	12211	12193	13727
Motor RPM	(rpm)	686	686	686	686	686	686	686
Motor RPM - HESP Option (100Pa)	(rpm)	915	915	915	915	915	915	915
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-027-14-4.5L	B3-027-14-4.5L	B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.14	0.14	0.14	0.14	0.35	0.35	0.35
<b>Dimensions</b>								
Unit Length	(mm)	2346	2346	2346	2346	2346	2346	2327
Unit Width	(mm)	1285	1285	1285	1285	1285	1285	2250
Unit Height	(mm)	1524	1524	1524	1524	1524	1524	1524
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	519	531	574	579	608	621	853
Operating Weight (5)	(kg)	497	509	552	557	587	599	819
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	46	46	46	49	49	49	45
Single pump - High head pressure	(kg)	51	51	51	51	51	51	49
Twin pump - Standard head pressure	(kg)	70	70	70	75	75	75	71
Twin pump - High head pressure	(kg)	82	82	82	82	82	82	86
<b>Partial heat recovery option</b>								
Water Buffer tank option	(kg)	319	319	319	319	319	319	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	1	1	1	1	1
Minimum cooling load % (6)	%	50	43	50	43	50	50	33
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	7.5	9.0	9.0	9.0	10.5	10.5	14.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	7.5	9.0	9.0	9.0	10.5	10.5	14.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
POE Oil type		OIL058E / OIL057E						

- (1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013
  - (2) At Evaporator water temperature : 6.6°C (44°F) / 12.2°C (54°F) - condenser air temperature 46°C (114.8°F)
  - (4) under 400V/3/50Hz
  - (5) Rated Condition without Pump Package
  - (6) Percent minimum load can be lowered on demand to local sales office.
  - (7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.
  - (8) Maximum ambient operation is for unit at 12°C / 7°C
  - (9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.
- Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

# General Data

**Table 1 – CGAX Standard efficiency and Standard Noise (continued)**

		CGAX 039 SE-SN	CGAX 045 SE-SN	CGAX 035 SE-SN	CGAX 040 SE-SN	CGAX 046 SE-SN	CGAX 052 SE-SN	CGAX 060 SE-SN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	111	127	97	116	129	147	164
Total Power input in cooling	(kW)	38	41	35	39	47	51	58
Total Power input in cooling - HESP Option (100Pa)	(kW)	39	45	36	43	50	57	61
EER		2.92	3.08	2.79	2.94	2.78	2.86	2.83
EER - HESP (915 RPM - 100Pa)		2.82	2.81	2.72	2.73	2.61	2.55	2.68
ESEER		4.13	3.98	3.83	3.64	3.59	3.75	3.81
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>
Sound power level	(dBA)	85	87	86	88	88	88	89
Sound power level - HESP Option (100Pa)	(dBA)	90	92	90	92	92	92	92
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	81	96	77	90	101	111	128
Unit rated amps - HESP Option (100Pa)	(A)	83	98	78	93	104	114	131
Unit start up amps	(A)	214	221	198	212	233	243	253
Unit start up amps - HESP Option (100Pa)	(A)	215	224	200	215	236	247	256
Short Circuit Unit Capacity (9)	(kA)	15	15	15	15	15	15	15
<b>Compressor</b>								
Compressor Number per Circuit	#	3	3	2	2	2	2	2
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		13+13+13	15+15+15	7.5+10 / 7.5+10	10+10 / 10+10	10+13 / 10+13	13+13 / 13+13	15+15 / 15+15
Motor RPM	(rpm)	2900						
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P120Tx104	P120Tx104	DP300x82	DP300x82	DP300x82	DP300x114	DP300x114
Evaporator Water Content volume	(l)	12.5	12.5	8.5	8.5	8.5	11.8	11.8
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	35	35	35	35	35	35	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	2000	2000	2000	2000	2000	2000	2000
Optional water Buffer tank volume	(l)	444	444	444	444	444	444	444
Max. Water-side Operating Pressure without pump package	(kPa)	1000						
Max. Water-side Operating Pressure with pump package	(kPa)	400						
<b>Condenser</b>								
Type		Full aluminum Micro channel heat exchanger						
Quantity of coil	#	2	2	2	2	2	2	2
Face area per circuit	(m <sup>2</sup> )	5.93	5.93	2.23	2.96	2.96	2.96	2.96
<b>Condenser Fan</b>								
Quantity	#	2	3	2	4	4	4	4
Diameter	(mm)	800						
Fan / motor Type		Propeller fan : Fixed speed AC motor / Variable speed - EC motor						
Airflow per Fan	(m <sup>3</sup> /h)	14690	13676	14687	12358	12363	12592	12374
Airflow per Fan - HESP Option (100Pa)	(m <sup>3</sup> /h)	14660	13595	14686	12249	12233	12447	12205
Motor RPM	(rpm)	686	686	686	686	686	686	686
Motor RPM - HESP Option (100Pa)	(rpm)	915	915	915	915	915	915	915
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-027-20-4.5L	B3-027-20-4.5L	2xB3-014-144.5M	2xB3-014-144.5M	2xB3-014-144.5M	2xB3-027-14.4L	2xB3-027-14.4L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.5	0.5	2x0.14	2x0.14	2x0.14	2x0.35	2x0.35
<b>Dimensions</b>								
Unit Length	(mm)	2327	2327	2327	2327	2327	2327	2327
Unit Width	(mm)	2250	2250	2250	2250	2250	2250	2250
Unit Height	(mm)	1524	1524	1524	1524	1524	1524	1524
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	858	912	917	1004	1014	1034	1060
Operating Weight (5)	(kg)	824	879	887	973	983	1004	1029
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	47	47	45	47	47	47	47
Single pump - High head pressure	(kg)	49	49	49	49	49	49	49
Twin pump - Standard head pressure	(kg)	75	75	75	75	75	75	75
Twin pump - High head pressure	(kg)	86	86	84	84	84	84	84
<b>Partial heat recovery option</b>	(kg)	4.6	4.6	2x1.48	2x1.48	2x1.48	2x3.82	2x3.82
Water Buffer tank option	(kg)	425	425	425	425	425	425	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	2	2	2	2	2
Minimum cooling load % (6)	%	33	33	22	25	22	25	25
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	14.5	15.0	8.0 / 8.0	8.0 / 8.0	8.0 / 8.0	9.0 / 9.0	9.5 / 9.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	14.5	15.0	8.0 / 8.0	8.0 / 8.0	8.0 / 8.0	9.0 / 9.0	9.5 / 9.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
POE Oil type		OIL058E / OIL057E						

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013  
(2) At Evaporator water temperature : 6.6°C (44°F) / 12.2°C (54°F) - condenser air temperature 46°C(114.8°F)  
(4) under 400V/3/50Hz  
(5) Rated Condition without Pump Package  
(6) Percent minimum load can be lowered on demand to local sales office.  
(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.  
(8) Maximum ambient operation is for unit at 12°C / 7°C  
(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.  
Electrical & system data are subject to change without notice. Please refer to unit nameplate data.



## General Data

**Table 2 – CGAX Standard efficiency and Low Noise**

		CGAX 015 SE-LN	CGAX 017 SE-LN	CGAX 020 SE-LN	CGAX 023 SE-LN	CGAX 026 SE-LN	CGAX 030 SE-LN	CGAX 036 SE-LN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	43	49	59	65	74	82	99
Total Power input in cooling	(kW)	15	17	19	22	26	29	33
Total Power input in cooling - HESP Option (100Pa)	(kW)	15	18	21	24	27	31	34
EER		2.98	2.88	3.08	2.95	2.87	2.84	2.96
EER - HESP Option (100Pa)		2.82	2.74	2.89	2.81	2.78	2.76	2.81
ESEER		3.89	3.93	3.81	3.82	3.84	3.80	3.93
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>
Sound power level	(dBA)	77	77	79	79	79	80	79
Sound power level - HESP Option (100Pa)	(dBA)	85	85	89	89	89	89	89
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	34	38	45	50	56	64	74
Unit rated amps - HESP Option (100Pa)	(A)	35	39	47	52	57	66	75
Unit start up amps	(A)	116	160	167	183	188	189	198
Unit start up amps - HESP Option (100Pa)	(A)	117	161	169	185	190	191	199
Short Circuit Unit Capacity (9)	(kA)	12	12	12	12	12	12	15
<b>Compressor</b>								
Compressor Number per Circuit	#	2	2	2	2	2	2	3
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		7.5+7.5	7.5+10	10+10	10+13	13+13	15+15	12+12+12
Motor RPM	(rpm)				2900			
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P80x66	P80x92	P80x92	P80x92	P120Tx76	P120Tx76	P120Tx104
Evaporator Water Content volume	(l)	3.8	5.3	5.3	5.3	9.2	9.2	12.5
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	25	25	25	25	25	25	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	1450	1450	1450	1450	1450	1450	2000
Optional water Buffer tank volume	(l)	324	324	324	324	324	324	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type		Full aluminum Micro channel heat exchanger						
Quantity of coil	#	1	1	1	1	1	1	2
Face area per circuit	(m <sup>2</sup> )	2.23	2.23	2.96	2.96	2.96	2.96	4.46
<b>Condenser Fan</b>								
Quantity	#	1	1	2	2	2	2	2
Diameter	(mm)				800			
Fan / motor Type		Propeller fan : Fixed speed AC motor / Variable speed - EC motor						
Airflow per Fan	(m <sup>3</sup> /h)	13788	13828	12362	12362	12370	12375	13827
Airflow per Fan - HESP Option (100Pa)	(m <sup>3</sup> /h)	13753	13718	12248	12231	12211	12193	13727
Motor RPM	(rpm)	686	686	686	686	686	686	686
Motor RPM - HESP Option (100Pa)	(rpm)	915	915	915	915	915	915	915
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-027-14-4.5L	B3-027-14-4.5L	B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.14	0.14	0.14	0.14	0.35	0.35	0.35
<b>Dimensions</b>								
Unit Length	(mm)	2346	2346	2346	2346	2346	2346	2327
Unit Width	(mm)	1285	1285	1285	1285	1285	1285	2250
Unit Height	(mm)	1747	1747	1747	1747	1747	1747	1747
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	519	531	574	579	608	621	853
Operating Weight (5)	(kg)	497	509	552	557	587	599	819
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	46	46	46	49	49	49	45
Single pump - High head pressure	(kg)	51	51	51	51	51	51	49
Twin pump - Standard head pressure	(kg)	70	70	70	75	75	75	71
Twin pump - High head pressure	(kg)	82	82	82	82	82	82	86
<b>Partial heat recovery option</b>	(kg)	1.48	1.48	1.48	1.48	3.82	3.82	3.82
Water Buffer tank option	(kg)	319	319	319	319	319	319	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	1	1	1	1	1
Minimum cooling load % (6)	%	50	43	50	43	50	50	33
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	7.5	9.0	9.0	9.0	10.5	10.5	14.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	7.5	9.0	9.0	9.0	10.5	10.5	14.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
POE Oil type		OIL058E / OIL057E						

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(4) under 400V/3/50Hz

(5) Rated Condition without Pump Package

(6) Percent minimum load can be lowered on demand to local sales office.

(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

## General Data

**Table 2 – CGAX Standard efficiency and Low Noise (continued)**

		CGAX 039 SE-LN	CGAX 045 SE-LN	CGAX 035 SE-LN	CGAX 040 SE-LN	CGAX 046 SE-LN	CGAX 052 SE-LN	CGAX 060 SE-LN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	111	127	97	116	129	147	164
Total Power input in cooling	(kW)	38	41	35	39	47	51	58
Total Power input in cooling - HESP Option (100Pa)	(kW)	39	45	36	43	50	57	61
EER		2.92	3.08	2.79	2.94	2.78	2.86	2.83
EER - HESP Option (100Pa)		2.82	2.81	2.72	2.73	2.61	2.55	2.68
ESEER		4.13	3.98	3.83	3.64	3.59	3.75	3.81
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>
Sound power level	(dBA)	80	82	81	82	82	82	83
Sound power level - HESP Option (100Pa)	(dBA)	90	92	90	92	92	92	92
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	81	96	77	90	101	111	128
Unit rated amps - HESP Option (100Pa)	(A)	83	98	78	93	104	114	131
Unit start up amps	(A)	214	221	198	212	233	243	253
Unit start up amps - HESP Option (100Pa)	(A)	215	224	200	215	236	247	256
Short Circuit Unit Capacity (9)	(kA)	15	15	15	15	15	15	15
<b>Compressor</b>								
Compressor Number per Circuit	#	3	3	2	2	2	2	2
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		13+13+13	15+15+15	7.5+10 / 7.5+10	10+10 / 10+10	10+13 / 10+13	13+13 / 13+13	15+15 / 15+15
Motor RPM	(rpm)	2900						
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P120Tx104	P120Tx104	DP300x82	DP300x82	DP300x82	DP300x114	DP300x114
Evaporator Water Content volume	(l)	12.5	12.5	8.5	8.5	8.5	11.8	11.8
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	35	35	35	35	35	35	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	2000	2000	2000	2000	2000	2000	2000
Optional water Buffer tank volume	(l)	444	444	444	444	444	444	444
Max. Water-side Operating Pressure without pump package	(kPa)	1000						
Max. Water-side Operating Pressure with pump package	(kPa)	400						
<b>Condenser</b>								
Type		Full aluminum Micro channel heat exchanger						
Quantity of coil	#	2	2	2	2	2	2	2
Face area per circuit	(m <sup>2</sup> )	5.93	5.93	2.23	2.96	2.96	2.96	2.96
<b>Condenser Fan</b>								
Quantity	#	2	3	2	4	4	4	4
Diameter	(mm)	800						
Fan / motor Type		Propeller fan : Fixed speed AC motor / Variable speed - EC motor						
Airflow per Fan	(m <sup>3</sup> /h)	14690	13676	14687	12358	12363	12592	12374
Airflow per Fan - HESP Option (100Pa)	(m <sup>3</sup> /h)	14660	13595	14686	12249	12233	12447	12205
Motor RPM	(rpm)	686	686	686	686	686	686	686
Motor RPM - HESP Option (100Pa)	(rpm)	915	915	915	915	915	915	915
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-027-20-4.5L	B3-027-20-4.5L	263-014-144.5M	263-014-144.5M	263-014-144.5M	263-027-14-4L	263-027-14-4L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.5	0.5	2x0.14	2x0.14	2x0.14	2x0.35	2x0.35
<b>Dimensions</b>								
Unit Length	(mm)	2327	2327	2327	2327	2327	2327	2327
Unit Width	(mm)	2250	2250	2250	2250	2250	2250	2250
Unit Height	(mm)	1747	1747	1747	1747	1747	1747	1747
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	858	912	917	1004	1014	1034	1060
Operating Weight (5)	(kg)	824	879	887	973	983	1004	1029
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	47	47	45	47	47	47	47
Single pump - High head pressure	(kg)	49	49	49	49	49	49	49
Twin pump - Standard head pressure	(kg)	75	75	75	75	75	75	75
Twin pump - High head pressure	(kg)	86	86	84	84	84	84	84
<b>Partial heat recovery option</b>	(kg)	4.6	4.6	2x1.48	2x1.48	2x1.48	2x3.82	2x3.82
Water Buffer tank option	(kg)	425	425	425	425	425	425	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	2	2	2	2	2
Minimum cooling load % (6)	%	33	33	22	25	22	25	25
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	14.5	15.0	8.0 / 8.0	8.0 / 8.0	8.0 / 8.0	9.0 / 9.0	9.5 / 9.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	14.5	15.0	8.0 / 8.0	8.0 / 8.0	8.0 / 8.0	9.0 / 9.0	9.5 / 9.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
POE Oil type		OIL058E / OIL057E						

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(4) under 400V/3/50Hz

(5) Rated Condition without Pump Package

(6) Percent minimum load can be lowered on demand to local sales office.

(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

## General Data

**Table 3 – CGAX High Efficiency and Standard Noise**

		CGAX 015 HE-SN	CGAX 017 HE-SN	CGAX 020 HE-SN	CGAX 023 HE-SN	CGAX 026 HE-SN	CGAX 030 HE-SN	CGAX 036 HE-SN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	43	49	59	65	74	82	99
Total Power input in cooling	(kW)	15	17	19	22	26	29	33
EER		2.98	2.88	3.08	2.95	2.87	2.84	2.96
ESEER		3.97	3.98	3.96	4.03	3.93	3.86	4.04
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>
Sound power level	(dBA)	83	83	85	85	85	86	84
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	35	39	47	52	57	66	75
Unit rated amps - HESP Option (100Pa)	(A)	35	39	47	52	57	66	75
Unit start up amps	(A)	117	161	169	185	190	191	199
Unit start up amps - HESP Option (100Pa)	(A)	117	161	169	185	190	191	199
Short Circuit Unit Capacity (9)	(kA)	12	12	12	12	12	12	15
<b>Compressor</b>								
Compressor Number per Circuit	#	2	2	2	2	2	2	3
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		7.5+7.5	7.5+10	10+10	10+13	13+13	15+15	12+12+12
Motor RPM	(rpm)				2900			
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P80x66	P80x92	P80x92	P80x92	P120Tx76	P120Tx76	P120Tx104
Evaporator Water Content volume	(l)	3.8	5.3	5.3	5.3	9.2	9.2	12.5
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	25	25	25	25	25	25	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	1450	1450	1450	1450	1450	1450	2000
Optional water Buffer tank volume	(l)	324	324	324	324	324	324	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type		Full aluminum Micro channel heat exchanger						
Quantity of coil	#	1	1	1	1	1	1	2
Face area per circuit	(m <sup>2</sup> )	2.23	2.23	2.96	2.96	2.96	2.96	4.46
<b>Condenser Fan</b>								
Quantity	#	1	1	2	2	2	2	2
Diameter	(mm)	800						
Fan / motor Type		Propeller fan : Variable speed - EC motor / HESP MAX SPEED						
Airflow per Fan	(m <sup>3</sup> /h)	13788	13828	12362	12362	12370	12375	13827
Motor RPM	(rpm)	150 - 686 RPM						
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-027-14-4.5L	B3-027-14-4.5L	B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.14	0.14	0.14	0.14	0.35	0.35	0.35
<b>Dimensions</b>								
Unit Length	(mm)	2346	2346	2346	2346	2346	2346	2327
Unit Width	(mm)	1285	1285	1285	1285	1285	1285	2250
Unit Height	(mm)	1524	1524	1524	1524	1524	1524	1524
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	519	531	574	579	608	621	853
Operating Weight (5)	(kg)	497	509	552	557	587	599	819
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	46	46	46	49	49	49	45
Single pump - High head pressure	(kg)	51	51	51	51	51	51	49
Twin pump - Standard head pressure	(kg)	70	70	70	75	75	75	71
Twin pump - High head pressure	(kg)	82	82	82	82	82	82	86
Partial heat recovery option	(kg)	1.48	1.48	1.48	1.48	3.82	3.82	3.82
Water Buffer tank option	(kg)	319	319	319	319	319	319	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	1	1	1	1	1
Minimum cooling load % (6)	%	50	43	50	43	50	50	33
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	7.5	9.0	9.0	9.0	10.5	10.5	14.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	7.5	9.0	9.0	9.0	10.5	10.5	14.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
POE Oil type		OIL058E / OIL057E						

- (1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013  
(2) At Evaporator water temperature : 6.6°C (44°F) / 12.2°C (54°F) - condenser air temperature 46°C (114.8°F)  
(4) under 400V/3/50Hz  
(5) Rated Condition without Pump Package  
(6) Percent minimum load can be lowered on demand to local sales office.  
(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.  
(8) Maximum ambient operation is for unit at 12°C / 7°C  
(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.  
Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

## General Data

**Table 3 – CGAX High Efficiency and Standard Noise (continued)**

		CGAX 039 HE-SN	CGAX 045 HE-SN	CGAX 035 HE-SN	CGAX 040 HE-SN	CGAX 046 HE-SN	CGAX 052 HE-SN	CGAX 060 HE-SN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	111	127	97	116	129	147	164
Total Power input in cooling	(kW)	38	41	35	39	47	51	58
EER		2.92	3.08	2.79	2.94	2.78	2.86	2.83
ESEER		4.22	4.14	3.87	3.82	3.76	3.84	3.88
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>
Sound power level	(dBA)	85	87	86	88	88	88	89
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	83	98	78	93	104	114	131
Unit rated amps - HESP Option (100Pa)	(A)	83	98	78	93	104	114	131
Unit start up amps	(A)	215	224	200	215	236	247	256
Unit start up amps - HESP Option (100Pa)	(A)	215	224	200	215	236	247	256
Short Circuit Unit Capacity (9)	(kA)	15	15	15	15	15	15	15
<b>Compressor</b>								
Compressor Number per Circuit	#	3	3	2	2	2	2	2
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		13+13+13	15+15+15	7.5+10 / 7.5+10	10+10 / 10+10	10+13 / 10+13	13+13 / 13+13	15+15 / 15+15
Motor RPM	(rpm)	2900						
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P120Tx104	P120Tx104	DP300x82	DP300x82	DP300x82	DP300x114	DP300x114
Evaporator Water Content volume	(l)	12.5	12.5	8.5	8.5	8.5	11.8	11.8
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	35	35	35	35	35	35	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	2000	2000	2000	2000	2000	2000	2000
Optional Water Buffer tank volume	(l)	444	444	444	444	444	444	444
Max. Water-side Operating Pressure without pump package	(kPa)	1000						
Max. Water-side Operating Pressure with pump package	(kPa)	400						
<b>Condenser</b>								
Type		Full aluminum Micro channel heat exchanger						
Quantity of coil	#	2	2	2	2	2	2	2
Face area per circuit	(m <sup>2</sup> )	5.93	5.93	2.23	2.96	2.96	2.96	2.96
<b>Condenser Fan</b>								
Quantity	#	2	3	2	4	4	4	4
Diameter	(mm)	800						
Fan / motor Type		Propeller fan : Variable speed - EC motor / HESP MAX SPEED						
Airflow per Fan	(m <sup>3</sup> /h)	14690	13676	14687	12358	12363	12592	12374
Motor RPM	(rpm)	150 - 686 RPM						
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-027-20-4.5L	B3-027-20-4.5L	2xB3-014-14.45M	2xB3-014-14.45M	2xB3-014-14.45M	2xB3-027-14.45L	2xB3-027-14.45L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.5	0.5	2x0.14	2x0.14	2x0.14	2x0.35	2x0.35
<b>Dimensions</b>								
Unit Length	(mm)	2327	2327	2327	2327	2327	2327	2327
Unit Width	(mm)	2250	2250	2250	2250	2250	2250	2250
Unit Height	(mm)	1524	1524	1524	1524	1524	1524	1524
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	858	912	917	1004	1014	1034	1060
Operating Weight (5)	(kg)	824	879	887	973	983	1004	1029
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	47	47	45	47	47	47	47
Single pump - High head pressure	(kg)	49	49	49	49	49	49	49
Twin pump - Standard head pressure	(kg)	75	75	75	75	75	75	75
Twin pump - High head pressure	(kg)	86	86	84	84	84	84	84
Partial heat recovery option	(kg)	4.6	4.6	2x1.48	2x1.48	2x1.48	2x3.82	2x3.82
Water Buffer tank option	(kg)	425	425	425	425	425	425	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	2	2	2	2	2
Minimum cooling load % (6)	%	33	33	22	25	22	25	25
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	14.5	15.0	8.0 / 8.0	8.0 / 8.0	8.0 / 8.0	9.0 / 9.0	9.5 / 9.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	14.5	15.0	8.0 / 8.0	8.0 / 8.0	8.0 / 8.0	9.0 / 9.0	9.5 / 9.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
POE Oil type OIL058E / OIL057E								

- (1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013  
(2) At Evaporator water temperature : 6.6°C (44°F) / 12.2°C (54°F) - condenser air temperature 46°C (114.8°F)  
(4) under 400V/3/50Hz  
(5) Rated Condition without Pump Package  
(6) Percent minimum load can be lowered on demand to local sales office.  
(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.  
(8) Maximum ambient operation is for unit at 12°C / 7°C  
(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.  
Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

## General Data

**Table 4 – CGAX High Efficiency and Low Noise**

		CGAX 015 HE-LN	CGAX 017 HE-LN	CGAX 020 HE-LN	CGAX 023 HE-LN	CGAX 026 HE-LN	CGAX 030 HE-LN	CGAX 036 HE-LN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	43	49	59	65	74	82	99
Total Power input in cooling	(kW)	15	17	19	22	26	29	33
EER		2.98	2.88	3.08	2.95	2.87	2.84	2.96
ESEER		3.97	3.98	3.96	4.03	3.93	3.86	4.04
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>
Sound power level	(dBA)	77	77	79	79	79	80	79
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	35	39	47	52	57	66	75
Unit rated amps - HESP Option (100Pa)	(A)	35	39	47	52	57	66	75
Unit start up amps	(A)	117	161	169	185	190	191	199
Unit start up amps - HESP Option (100Pa)	(A)	117	161	169	185	190	191	199
Short Circuit Unit Capacity (9)	(kA)	12	12	12	12	12	12	15
<b>Compressor</b>								
Compressor Number per Circuit	#	2	2	2	2	2	2	3
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		7.5+7.5	7.5+10	10+10	10+13	13+13	15+15	12+12+12
Motor RPM	(rpm)	2900						
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P80x66	P80x92	P80x92	P80x92	P120Tx76	P120Tx76	P120Tx104
Evaporator Water Content volume	(l)	3.8	5.3	5.3	5.3	9.2	9.2	12.5
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	25	25	25	25	25	25	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	1450	1450	1450	1450	1450	1450	2000
Optional water Buffer tank volume	(l)	324	324	324	324	324	324	444
Max. Water-side Operating Pressure without pump package	(kPa)	1000						
Max. Water-side Operating Pressure with pump package	(kPa)	400						
<b>Condenser</b>								
Type		Full aluminum Micro channel heat exchanger						
Quantity of coil	#	1	1	1	1	1	1	2
Face area per circuit	(m <sup>2</sup> )	2.23	2.23	2.96	2.96	2.96	2.96	4.46
<b>Condenser Fan</b>								
Quantity	#	1	1	2	2	2	2	2
Diameter	(mm)	800						
Fan / motor Type		Propeller fan : Variable speed - EC motor						
Airflow per Fan	(m <sup>3</sup> /h)	13788	13828	12362	12362	12370	12375	13827
Motor RPM	(rpm)	150 - 686 RPM						
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-027-14-4.5L	B3-027-14-4.5L	B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.14	0.14	0.14	0.14	0.35	0.35	0.35
<b>Dimensions</b>								
Unit Length	(mm)	2346	2346	2346	2346	2346	2346	2327
Unit Width	(mm)	1285	1285	1285	1285	1285	1285	2250
Unit Height	(mm)	1747	1747	1747	1747	1747	1747	1747
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	519	531	574	579	608	621	853
Operating Weight (5)	(kg)	497	509	552	557	587	599	819
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	46	46	46	49	49	49	45
Single pump - High head pressure	(kg)	51	51	51	51	51	51	49
Twin pump - Standard head pressure	(kg)	70	70	70	75	75	75	71
Twin pump - High head pressure	(kg)	82	82	82	82	82	82	86
Partial heat recovery option	(kg)	1.48	1.48	1.48	1.48	3.82	3.82	3.82
Water Buffer tank option	(kg)	319	319	319	319	319	319	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	1	1	1	1	1
Minimum cooling load % (6)	%	50	43	50	43	50	50	33
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	7.5	9.0	9.0	9.0	10.5	10.5	14.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	7.5	9.0	9.0	9.0	10.5	10.5	14.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
POE Oil type		OIL058E / OIL057E						

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(4) under 400V/3/50Hz

(5) Rated Condition without Pump Package

(6) Percent minimum load can be lowered on demand to local sales office.

(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

# General Data

**Table 4 – CGAX High Efficiency and Low Noise (continued)**

		CGAX 039 HE-LN	CGAX 045 HE-LN	CGAX 035 HE-LN	CGAX 040 HE-LN	CGAX 046 HE-LN	CGAX 052 HE-LN	CGAX 060 HE-LN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	111	127	97	116	129	147	164
Total Power input in cooling	(kW)	38	41	35	39	47	51	58
EER		2.92	3.08	2.79	2.94	2.78	2.86	2.83
ESEER		4.22	4.14	3.87	3.82	3.76	3.84	3.88
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>
Sound power level	(dBA)	80	82	81	82	82	82	83
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	83	98	78	93	104	114	131
Unit rated amps - HESP Option (100Pa)	(A)	83	98	78	93	104	114	131
Unit start up amps	(A)	215	224	200	215	236	247	256
Unit start up amps - HESP Option (100Pa)	(A)	215	224	200	215	236	247	256
Short Circuit Unit Capacity (9)	(kA)	15	15	15	15	15	15	15
<b>Compressor</b>								
Compressor Number per Circuit	#	3	3	2	2	2	2	2
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		13+13+13	15+15+15	7.5+10/7.5+10	10+10/10+10	10+13/10+13	13+13/13+13	15+15/15+15
Motor RPM	(rpm)				2900			
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P120Tx104	P120Tx104	DP300x82	DP300x82	DP300x82	DP300x114	DP300x114
Evaporator Water Content volume	(l)	12.5	12.5	8.5	8.5	8.5	11.8	11.8
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	35	35	35	35	35	35	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	2000	2000	2000	2000	2000	2000	2000
Optional water Buffer tank volume	(l)	444	444	444	444	444	444	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type		Full aluminum Micro channel heat exchanger						
Quantity of coil	#	2	2	2	2	2	2	2
Face area per circuit	(m <sup>2</sup> )	5.93	5.93	2.23	2.96	2.96	2.96	2.96
<b>Condenser Fan</b>								
Quantity	#	2	3	2	4	4	4	4
Diameter	(mm)				800			
Fan / motor Type		Propeller fan : Variable speed - EC motor						
Airflow per Fan	(m <sup>3</sup> /h)	14690	13676	14687	12358	12363	12592	12374
Motor RPM	(rpm)				150 - 686			
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-027-20-4.5L	B3-027-20-4.5L	2xB3-014-14-4.5M	2xB3-014-14-4.5M	2xB3-014-14-4.5M	2xB3-027-14-4.5L	2xB3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.5	0.5	2x0.14	2x0.14	2x0.14	2x0.35	2x0.35
<b>Dimensions</b>								
Unit Length	(mm)	2327	2327	2327	2327	2327	2327	2327
Unit Width	(mm)	2250	2250	2250	2250	2250	2250	2250
Unit Height	(mm)	1747	1747	1747	1747	1747	1747	1747
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	858	912	917	1004	1014	1034	1060
Operating Weight (5)	(kg)	824	879	887	973	983	1004	1029
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	47	47	45	47	47	47	47
Single pump - High head pressure	(kg)	49	49	49	49	49	49	49
Twin pump - Standard head pressure	(kg)	75	75	75	75	75	75	75
Twin pump - High head pressure	(kg)	86	86	84	84	84	84	84
Partial heat recovery option	(kg)	4.6	4.6	2x1.48	2x1.48	2x1.48	2x3.82	2x3.82
Water Buffer tank option	(kg)	425	425	425	425	425	425	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	2	2	2	2	2
Minimum cooling load % (6)	%	33	33	22	25	22	25	25
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	14.5	15.0	8.0 / 8.0	8.0 / 8.0	8.0 / 8.0	9.0 / 9.0	9.5 / 9.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	14.5	15.0	8.0 / 8.0	8.0 / 8.0	8.0 / 8.0	9.0 / 9.0	9.5 / 9.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
POE Oil type		OIL058E / OIL057E						

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(4) under 400V/3/50Hz

(5) Rated Condition without Pump Package

(6) Percent minimum load can be lowered on demand to local sales office.

(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

## General Data

**Table 5 – CXAX Standard efficiency and Standard Noise**

		CXAX 015 SE-SN	CXAX 017 SE-SN	CXAX 020 SE-SN	CXAX 023 SE-SN	CXAX 026 SE-SN	CXAX 030 SE-SN	CXAX 036 SE-SN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	42	48	56	65	72	79	94
Total Power input in cooling	(kW)	14	17	19	22	25	28	32
Total Power input in cooling - HESP Option (100Pa)	(kW)	15	17	20	24	27	30	34
EER		2.90	2.83	2.91	2.97	2.84	2.84	2.90
EER - HESP Option (100Pa)		2.80	2.76	2.73	2.71	2.63	2.62	2.78
ESEER		3.71	3.75	3.63	3.80	3.84	3.82	3.96
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>
Sound power level	(dBA)	84	84	85	85	85	86	86
Sound power level - HESP Option (100Pa)	(dBA)	86	86	89	92	94	89	95
<b>Heating application data (2)</b>								
Net Heating Capacity	(A)	43	51	57	63	69	78	96
Total Power input in heating	(A)	14	16	19	21	23	25	30
Total Power input in heating - HESP Option (100Pa)	(A)	15	17	21	23	26	27	32
COP	(A)	3.09	3.15	2.98	3.08	3.01	3.09	3.19
COP - HESP Option (100Pa)		2.87	2.97	2.71	2.75	2.67	2.89	3.01
Eurovent Efficiency class Heating		<b>B</b>	<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>
ηs		126	125	115	124	125	124	128
SCOP	(kA)	3.21	3.21	2.95	3.17	3.19	3.18	3.29
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	34	38	45	50	56	64	74
Unit rated amps - HESP Option (100Pa)	(A)	35	39	47	52	57	66	75
Unit start up amps	(A)	116	160	167	183	188	189	198
Unit start up amps - HESP Option (100Pa)	(A)	117	161	169	185	190	191	199
Short Circuit Unit Capacity (9)	(kA)	12	12	12	12	12	12	15
<b>Compressor</b>								
Compressor Number per Circuit	#	2	2	2	2	2	2	3
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		7.5+7.5	7.5+10	10+10	10+13	13+13	15+15	12+12+12
Motor RPM	(rpm)				2900			
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P80x78	P80x78	P80x78	P120Tx86	P120Tx86	P120Tx86	P120Tx110
Evaporator Water Content volume	(l)	4.5	4.5	4.5	10.4	10.4	10.4	13.3
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	25	25	25	25	25	25	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	1450	1450	1450	1450	1450	1450	2000
Optional water Buffer tank volume	(l)	324	324	324	324	324	324	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type		Aluminum fins & copper tubes heat exchanger						
Quantity of coil	#	1	1	1	1	1	1	2
Face area per circuit	(m <sup>2</sup> )	2.96	2.96	2.96	2.96	2.96	3.46	5.93
<b>Condenser Fan</b>								
Quantity	#	1	1	2	2	2	2	2
Diameter	(mm)				800			
Fan / motor Type		Propeller fan : Fixed speed AC motor / Variable speed - EC motor / HESP MAX SPEED						
Airflow per Fan	(m <sup>3</sup> /h)	14949	14960	14966	12721	12726	13352	14959
Airflow per Fan - HESP Option (100Pa)	(m <sup>3</sup> /h)	15048	15018	14972	12622	12608	13258	15019
Motor RPM	(rpm)	686	686	686	686	686	686	686
Motor RPM - HESP Option (100Pa)	(rpm)	915	915	915	915	915	915	915
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-027-14-4.5L	B3-027-14-4.5L	B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.14	0.14	0.14	0.14	0.35	0.35	0.35
<b>Dimensions</b>								
Unit Length	(mm)	2346	2346	2346	2346	2346	2346	2327
Unit Width	(mm)	1285	1285	1285	1285	1285	1285	2250
Unit Height	(mm)	1524	1524	1524	1524	1524	1724	1524
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	558	564	616	644	649	684	911
Operating Weight (5)	(kg)	539	545	596	624	630	665	881
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	46	46	46	49	49	49	45
Single pump - High head pressure	(kg)	51	51	51	51	51	51	49
Twin pump - Standard head pressure	(kg)	70	70	70	75	75	75	71
Twin pump - High head pressure	(kg)	82	82	82	82	82	82	86
<b>Partial heat recovery option</b>	(kg)	1.48	1.48	1.48	1.48	3.82	3.82	3.82
Water Buffer tank option	(kg)	319	319	319	319	319	319	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	1	1	1	1	1
Minimum cooling load % (6)	%	50	43	50	43	50	50	33
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	12.5	13.0	15.0	15.0	15.0	15.5	26.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	12.5	13.0	15.0	15.0	15.0	15.5	26.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
POE Oil type		OIL058E / OIL057E						

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(2) At Evaporator water temperature : 40°C / 45°C - Condenser air: DB/WB 7°C / 6°C according to EN14511:2013

(4) under 400V/3/50Hz

(5) Rated Condition without Pump Package

(6) Minimum ambient in heating operation is for unit at 40°C / 45°C

(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

# General Data

**Table 5 – CXAX Standard efficiency and Standard Noise (continued)**

		CXAX 039 SE-SN	CXAX 045 SE-SN	CXAX 035 SE-SN	CXAX 040 SE-SN	CXAX 046 SE-SN	CXAX 052 SE-SN	CXAX 060 SE-SN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	108	118	94	114	127	146	162
Total Power input in cooling	(kW)	36	41	34	37	43	49	55
Total Power input in cooling - HESP Option (100Pa)	(kW)	38	45	35	40	46	53	61
EER		3.00	2.88	2.81	3.06	2.96	2.95	2.93
EER - HESP Option (100Pa)		2.83	2.65	2.71	2.81	2.75	2.73	2.66
ESEER		3.95	3.84	3.91	3.88	3.81	3.91	3.88
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>
Sound power level	(dBA)	87	88	87	89	88	88	89
Sound power level - HESP Option (100Pa)	(dBA)	95	91	90	92	95	97	92
<b>Heating application data (2)</b>								
Net Heating Capacity	(A)	110	120	101	114	127	139	162
Total Power input in heating	(A)	35	39	32	37	42	46	52
Total Power input in heating - HESP Option (100Pa)	(A)	38	43	34	41	47	51	57
COP	(A)	3.14	3.12	3.16	3.08	3.02	3.00	3.11
COP - HESP Option (100Pa)		2.90	2.79	2.97	2.79	2.71	2.72	2.84
Eurovent Efficiency class Heating		<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>
ηs		125	126	126	120	120	126	128
SCOP	(kA)	3.20	3.21	3.23	3.06	3.08	3.22	3.26
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	83	96	77	90	101	111	128
Unit rated amps - HESP Option (100Pa)	(A)	86	98	78	93	104	114	131
Unit start up amps	(A)	216	221	198	212	233	243	253
Unit start up amps - HESP Option (100Pa)	(A)	218	224	200	215	236	247	256
Short Circuit Unit Capacity (9)	(kA)	15	15	15	15	15	15	15
<b>Compressor</b>								
Compressor Number per Circuit	#	3	3	2	2	2	2	2
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		13+13+13	15+15+15	7.5+10 / 7.5+10	10+10 / 10+10	10+13/10+13	13+13/13+13	15+15 / 15+15
Motor RPM	(rpm)				2900			
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P120Tx110	P120Tx110	DP300x82	DP300x82	DP300x82	DP300x114	DP300x114
Evaporator Water Content volume	(l)	13.3	13.3	8.5	8.5	8.5	11.8	11.8
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	35	35	35	35	35	35	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	2000	2000	2000	2000	2000	2000	2000
Optional water Buffer tank volume	(l)	444	444	444	444	444	444	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type		Aluminum fins & copper tubes heat exchanger						
Quantity of coil	#	2	2	2	2	2	2	2
Face area per circuit	(m <sup>2</sup> )	5.93	5.93	2.96	2.96	2.96	2.96	3.46
<b>Condenser Fan</b>								
Quantity	#	3	3	2	4	4	4	4
Diameter	(mm)				800			
Fan / motor Type		Propeller fan : Fixed speed AC motor / Variable speed - EC motor / HESP MAX SPEED						
Airflow per Fan	(m <sup>3</sup> /h)	13823	13828	14960	14964	12725	12725	13351
Airflow per Fan - HESP Option (100Pa)	(m <sup>3</sup> /h)	13806	13786	15015	14980	12626	12611	13261
Motor RPM	(rpm)	686	686	686	686	686	686	686
Motor RPM - HESP Option (100Pa)	(rpm)	915	915	915	915	915	915	915
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-027-20-4.5L	B3-027-20-4.5L	2x B3-014-14-4.5M	2x B3-014-14-4.5M	2x B3-014-14-4.5M	2x B3-027-14-4.5L	2x B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.5	0.5	2x0.14	2x0.14	2x0.14	2x0.35	2x0.35
<b>Dimensions</b>								
Unit Length	(mm)	2327	2327	2327	2327	2327	2327	2327
Unit Width	(mm)	2250	2250	2250	2250	2250	2250	2250
Unit Height	(mm)	1524	1524	1524	1524	1524	1524	1724
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	954	972	1000	1098	1098	1120	1190
Operating Weight (5)	(kg)	925	942	974	1072	1072	1093	1163
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	47	47	45	47	47	47	47
Single pump - High head pressure	(kg)	49	49	49	49	49	49	49
Twin pump - Standard head pressure	(kg)	75	75	75	75	75	75	75
Twin pump - High head pressure	(kg)	86	86	84	84	84	84	84
<b>Partial heat recovery option</b>	(kg)	4.6	4.6	2x1.48	2x1.48	2x1.48	2x3.82	2x3.82
Water Buffer tank option	(kg)	425	425	425	425	425	425	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	2	2	2	2	2
Minimum cooling load % (6)	%	33	33	22	25	22	25	25
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	26.0	26.0	13.0 / 13.0	13.5 / 13.5	13.0 / 13.0	13.5 / 13.5	14.5 / 14.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	26.0	26.0	13.0 / 13.0	13.5 / 13.5	13.0 / 13.0	13.5 / 13.5	14.5 / 14.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
POE Oil type		OIL058E / OIL057E						

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(2) At Evaporator water temperature : 40°C / 45°C - Condenser air. DB/WB 7°C/6°C according to EN14511:2013

(4) under 400V/3/50Hz

(5) Rated Condition without Pump Package

(6) Minimum ambient in heating operation is for unit at 40°C / 45°C

(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.



## General Data

**Table 6 – CXAX Standard efficiency and Low Noise**

		CXAX 015 SE-LN	CXAX 017 SE-LN	CXAX 020 SE-LN	CXAX 023 SE-LN	CXAX 026 SE-LN	CXAX 030 SE-LN	CXAX 036 SE-LN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	43	49	58	67	74	82	96
Total Power input in cooling	(kW)	14	17	20	22	25	29	32
Total Power input in cooling - HESP Option (100Pa)	(kW)	15	17	20	24	27	30	34
EER		3.01	2.93	2.93	3.03	2.90	2.89	2.99
EER - HESP Option (100Pa)		2.88	2.81	2.82	2.80	2.70	2.72	2.85
ESEER		3.71	3.75	3.63	3.80	3.84	3.82	3.96
Eurovent Efficiency class Cooling		<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>B</b>
Sound power level	(dBA)	78	78	81	80	80	81	80
Sound power level - HESP Option (100Pa)	(dBA)	86	86	89	92	94	89	95
<b>Heating application data (2)</b>								
Net Heating Capacity	(kW)	43	51	57	63	69	78	96
Total Power input in heating	(kW)	14	16	19	21	23	25	30
Total Power input in heating - HESP Option (100Pa)	(kW)	15	17	21	23	26	27	32
COP		3.09	3.15	2.98	3.08	3.01	3.09	3.19
COP - HESP Option (100Pa)		2.87	2.97	2.71	2.75	2.67	2.89	3.01
Eurovent Efficiency class Heating		<b>B</b>	<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>
ηs		126	125	115	124	125	124	128
SCOP		3.21	3.21	2.95	3.17	3.19	3.18	3.29
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	34	38	45	50	56	64	74
Unit rated amps - HESP Option (100Pa)	(A)	35	39	47	52	57	66	75
Unit start up amps	(A)	116	160	167	183	188	189	198
Unit start up amps - HESP Option (100Pa)	(A)	117	161	169	185	190	191	199
Short Circuit Unit Capacity (9)	(kA)	12	12	12	12	12	12	15
<b>Compressor</b>								
Compressor Number per Circuit	#	2	2	2	2	2	2	3
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		7.5+7.5	7.5+10	10+10	10+13	13+13	15+15	12+12+12
Motor RPM	(rpm)				2900			
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type				Stainless steel	Copper Brazed plate	Heat exchanger		
Evaporator model		P80x78	P80x78	P80x78	P120Tx86	P120Tx86	P120Tx86	P120Tx110
Evaporator Water Content volume	(l)	4.5	4.5	4.5	10.4	10.4	10.4	13.3
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	25	25	25	25	25	25	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	1450	1450	1450	1450	1450	1450	2000
Optional water Buffer tank volume	(l)	324	324	324	324	324	324	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type				Aluminum fins & copper tubes	Heat exchanger			
Quantity of coil	#	1	1	1	1	1	1	2
Face area per circuit	(m <sup>2</sup> )	2.96	2.96	2.96	2.96	2.96	3.46	5.93
<b>Condenser Fan</b>								
Quantity	#	1	1	2	2	2	2	2
Diameter	(mm)			800				
Fan / motor Type				Propeller fan : Fixed speed AC motor / Variable speed - EC motor				
Airflow per Fan	(m <sup>3</sup> /h)	14949	14960	14966	12721	12726	13352	14959
Airflow per Fan - HESP Option (100Pa)	(m <sup>3</sup> /h)	15048	15018	14972	12622	12608	13258	15019
Power per Motor	(kW)				0.89 / 1.95			
Rated Amps per Motor	(A)				2.22 / 3			
Motor RPM	(rpm)	686	686	686	686	686	686	686
Motor RPM - HESP Option (100Pa)	(rpm)	915	915	915	915	915	915	915
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type				Stainless steel	Copper Brazed plate	Heat exchanger		
Heat-Exchanger Model		B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-027-14-4.5L	B3-027-14-4.5L	B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G1 1/4 (31.75 mm)	G1 1/4 (31.75 mm)	G1 1/4 (31.75 mm)	G1 1/4 (31.75 mm)	G1 1/4 (31.75 mm)	G1 1/4 (31.75 mm)	G1 1/4 (31.75 mm)
Water content volume	(l)	0.14	0.14	0.14	0.14	0.35	0.35	0.35
<b>Dimensions</b>								
Unit Length	(mm)	2346	2346	2346	2346	2346	2346	2327
Unit Width	(mm)	1285	1285	1285	1285	1285	1285	2250
Unit Height	(mm)	1747	1747	1747	1747	1747	1947	1747
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	558	564	616	644	649	684	911
Operating Weight (5)	(kg)	539	545	596	624	630	665	881
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	46	46	46	49	49	49	45
Single pump - High head pressure	(kg)	51	51	51	51	51	51	49
Twin pump - Standard head pressure	(kg)	70	70	70	75	75	75	71
Twin pump - High head pressure	(kg)	82	82	82	82	82	82	86
Partial heat recovery option	(kg)	1.48	1.48	1.48	1.48	3.82	3.82	3.82
Water Buffer tank option	(kg)	319	319	319	319	319	319	425
<b>Operating limits</b>								
<b>Minimum Starting/Operating Ambient (7)</b>								
Standard ambient unit in cooling mode	(°C)	5						
Low Ambient (Option) in cooling mode	(°C)	-18						
In Heating mode	(°C)	-15						
Maximum ambient operation Standard ambient (8)	(°C)	46						
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	1	1	1	1	1
Minimum cooling load % (6)	%	50	43	50	43	50	50	33
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	12.5	13.0	15.0	15.0	15.0	15.5	26.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	12.5	13.0	15.0	15.0	15.0	15.5	26.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
POE Oil type					OIL058E / OIL057E			

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(2) At Evaporator water temperature : 40°C / 45°C - Condenser air. DB/WB 7°C/6°C according to EN14511:2013

(4) under 400V/3/50Hz

(5) Rated Condition without Pump Package

(6) Minimum ambient in heating operation is for unit at 40°C / 45°C

(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

# General Data

**Table 6 – CXAX Standard efficiency and Low Noise (continued)**

		CXAX 039 SE-LN	CXAX 045 SE-LN	CXAX 035 SE-LN	CXAX 040 SE-LN	CXAX 046 SE-LN	CXAX 052 SE-LN	CXAX 060 SE-LN	
<b>Eurovent Performances (1)</b>									
Net Cooling Capacity	(kW)	109	121	98	111	131	145	161	
Total Power input in cooling	(kW)	36	42	33	39	43	50	57	
Total Power input in cooling - HESP Option (100Pa)	(kW)	38	45	35	40	46	53	61	
EER		3.06	2.87	2.96	2.86	3.03	2.91	2.85	
EER - HESP Option (100Pa)		2.86	2.71	2.83	2.75	2.82	2.71	2.65	
ESEER		3.95	3.84	3.91	3.88	3.81	3.91	3.88	
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	
Sound power level	(dBA)	81	82	81	84	83	83	84	
Sound power level - HESP Option (100Pa)	(dBA)	95	91	90	92	95	97	92	
<b>Heating application data (2)</b>									
Net Heating Capacity	(kW)	110	120	101	114	127	139	162	
Total Power input in heating	(kW)	35	39	32	37	42	46	52	
Total Power input in heating - HESP Option (100Pa)	(kW)	38	43	34	41	47	51	57	
COP		3.14	3.12	3.16	3.08	3.02	3.00	3.11	
COP - HESP Option (100Pa)		2.90	2.79	2.97	2.79	2.71	2.72	2.84	
Eurovent Efficiency class Heating		<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	
ηs		125	126	126	120	120	126	128	
SCOP		3.20	3.21	3.23	3.06	3.08	3.22	3.26	
<b>Unit amps (4) (5)</b>									
Unit rated amps	(A)	83	96	77	90	101	111	128	
Unit rated amps - HESP Option (100Pa)	(A)	86	98	78	93	104	114	131	
Unit start up amps	(A)	216	221	198	212	233	243	253	
Unit start up amps - HESP Option (100Pa)	(A)	218	224	200	215	236	247	256	
Short Circuit Unit Capacity (9)	(kA)	15	15	15	15	15	15	15	
<b>Compressor</b>									
Compressor Number per Circuit	#	3	3	2	2	2	2	2	
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	
Model Circuit1 / Circuit 2		13+13+13	15+15+15	7.5+10 / 7.5+10	10+10 / 10+10	10+13 / 10+13	13+13 / 13+13	15+15 / 15+15	
Motor RPM	(rpm)	2900							
<b>Evaporator</b>									
Quantity	#	1	1	1	1	1	1	1	
Type		Stainless steel Copper Brazed plate Heat exchanger							
Evaporator model		P120Tx110	P120Tx110	DP300x82	DP300x82	DP300x82	DP300x114	DP300x114	
Evaporator Water Content volume	(l)	13.3	13.3	8.5	8.5	8.5	11.8	11.8	
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	
<b>Hydraulic Module Components</b>									
Expansion Tank Volume	(l)	35	35	35	35	35	35	35	
Max User water loop Volume for factory mounted expansion tank (1)	(l)	2000	2000	2000	2000	2000	2000	2000	
Optional water Buffer tank volume	(l)	444	444	444	444	444	444	444	
Max. Water-side Operating Pressure without pump package	(kPa)	1000							
Max. Water-side Operating Pressure with pump package	(kPa)	400							
<b>Condenser</b>									
Type		Aluminum fins & copper tubes heat exchanger							
Quantity of coil	#	2	2	2	2	2	2	2	
Face area per circuit	(m <sup>2</sup> )	5.93	5.93	2.96	2.96	2.96	2.96	3.46	
<b>Condenser Fan</b>									
Quantity	#	3	3	2	4	4	4	4	
Diameter	(mm)	800							
Fan / motor Type		Propeller fan : Fixed speed AC motor / Variable speed - EC motor							
Airflow per Fan	(m <sup>3</sup> /h)	13823	13828	14960	14964	12725	12725	13351	
Airflow per Fan - HESP Option (100Pa)	(m <sup>3</sup> /h)	13806	13786	15015	14980	12626	12611	13261	
Power per Motor	(kW)	0.89 / 1.95							
Rated Amps per Motor	(A)	2.22 / 3							
Motor RPM	(rpm)	686	686	686	686	686	686	686	
Motor RPM - HESP Option (100Pa)	(rpm)	915	915	915	915	915	915	915	
<b>Partial Heat recovery (PHR) option</b>									
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger							
Heat-Exchanger Model		B3-027-20-4.5L	B3-027-20-4.5L	2x B3-014-14-4.5M	2x B3-014-14-4.5M	2x B3-014-14-4.5M	2x B3-027-14-4.5L	2x B3-027-14-4.5L	
Water connection size (Thread connection)	(in) - (mm)	G1"1/4 (31.75 mm)	G1"1/4 (31.75 mm)	G1"1/4 (31.75 mm)	G1"1/4 (31.75 mm)	G1"1/4 (31.75 mm)	G1"1/4 (31.75 mm)	G1"1/4 (31.75 mm)	
Water content volume	(l)	0.5	0.5	2x 0.14	2x 0.14	2x 0.14	2x 0.35	2x 0.35	
<b>Dimensions</b>									
Unit Length	(mm)	2327	2327	2327	2327	2327	2327	2327	
Unit Width	(mm)	2250	2250	2250	2250	2250	2250	2250	
Unit Height	(mm)	1747	1747	1747	1747	1747	1747	1947	
<b>Option Additional height</b>									
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330	
<b>Weights</b>									
Shipping Weight (5)	(kg)	954	972	1000	1098	1098	1120	1190	
Operating Weight (5)	(kg)	925	942	974	1072	1072	1093	1163	
<b>Option Additional shipping weight</b>									
Single pump - Standard head pressure	(kg)	47	47	45	47	47	47	47	
Single pump - High head pressure	(kg)	49	49	49	49	49	49	49	
Twin pump - Standard head pressure	(kg)	75	75	75	75	75	75	75	
Twin pump - High head pressure	(kg)	86	86	84	84	84	84	84	
Partial heat recovery option	(kg)	4.6	4.6	2x1.48	2x1.48	2x1.48	2x3.82	2x3.82	
Water Buffer tank option	(kg)	425	425	425	425	425	425	425	
<b>Operating limits</b>									
<b>Minimum Starting/Operating Ambient (7)</b>									
Standard ambient unit in cooling mode	(°C)								-10
Low Ambient (Option) in cooling mode	(°C)								-20
In Heating mode	(°C)								-20
Maximum ambient operation Standard ambient (8)	(°C)								46
<b>System data</b>									
Nb of refrigerant circuit	#	1	1	2	2	2	2	2	
Minimum cooling load % (6)	%	33	33	22	25	22	25	25	
<b>Standard unit</b>									
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	26.0	26.0	13.0 / 13.0	13.5 / 13.5	13.0 / 13.0	13.5 / 13.5	14.5 / 14.5	
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2	
<b>Unit with partial heat recovery option</b>									
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	26.0	26.0	13.0 / 13.0	13.5 / 13.5	13.0 / 13.0	13.5 / 13.5	14.5 / 14.5	
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2	
POE Oil type									OIL058E / OIL057E

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(2) At Evaporator water temperature : 40°C / 45°C - Condenser air. DB/WB 7°C/6°C according to EN14511:2013

(4) under 400V/3/50Hz

(5) Rated Condition without Pump Package

(6) Minimum ambient in heating operation is for unit at 40°C / 45°C

(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

## General Data

**Table 7 – CXAX High Efficiency and Standard Noise**

		CXAX 015 HE-SN	CXAX 017 HE-SN	CXAX 020 HE-SN	CXAX 023 HE-SN	CXAX 026 HE-SN	CXAX 030 HE-SN	CXAX 036 HE-SN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	42	48	56	65	72	79	94
Total Power input in cooling	(kW)	14	17	19	22	25	28	32
EER		2.90	2.83	2.91	2.97	2.84	2.84	2.90
ESEER		3.77	3.80	3.84	4.03	3.96	3.98	4.09
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>
Sound power level	(dBA)	84	84	85	85	85	86	86
<b>Heating application data (2)</b>								
Net Heating Capacity	(kW)	43	51	57	63	69	78	96
Total Power input in heating	(kW)	14	16	19	21	23	25	30
COP		3.09	3.15	2.98	3.08	3.01	3.09	3.19
Eurovent Efficiency class Heating		<b>B</b>	<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>
$\eta_s$	(%)	127	129	118	127	128	128	134
SCOP		3.26	3.29	3.03	3.25	3.27	3.28	3.42
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	35	39	47	52	57	66	75
Unit rated amps - HESP Option (100Pa)	(A)	35	39	47	52	57	66	75
Unit start up amps	(A)	117	161	169	185	190	191	199
Unit start up amps - HESP Option (100Pa)	(A)	117	161	169	185	190	191	199
Short Circuit Unit Capacity (9)	(kA)	12	12	12	12	12	12	15
<b>Compressor</b>								
Compressor Number per Circuit	#	2	2	2	2	2	2	3
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		7.5+7.5	7.5+10	10+10	10+13	13+13	15+15	12+12+12
Motor RPM	(rpm)				2900			
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type						Stainless steel Copper Brazed plate Heat exchanger		
Evaporator model		P80x78	P80x78	P80x78	P120Tx86	P120Tx86	P120Tx86	P120Tx110
Evaporator Water Content volume	(l)	4.5	4.5	4.5	10.4	10.4	10.4	13.3
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	25	25	25	25	25	25	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	1450	1450	1450	1450	1450	1450	2000
Optionnal water Buffer tank volume	(l)	324	324	324	324	324	324	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type						Aluminum fins & copper tubes heat exchanger		
Quantity of coil	#	1	1	1	1	1	1	2
Face area per circuit	(m <sup>2</sup> )	2.96	2.96	2.96	2.96	2.96	3.46	5.93
<b>Condenser Fan</b>								
Quantity	#	1	1	2	2	2	2	2
Diameter	(mm)				800			
Fan / motor Type					Propeller fan : Variable speed - EC motor / HESP MAX SPEED			
Airflow per Fan	(m <sup>3</sup> /h)	14949	14960	14966	12721	12726	13352	14959
Power per Motor	(kW)				1.95 / 1.95			
Rated Amps per Motor	(A)				3 / 3			
Motor RPM	(rpm)				150 - 686 RPM			
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type						Stainless steel Copper Brazed plate Heat exchanger		
Heat-Exchanger Model		B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-027-14-4.5L	B3-027-14-4.5L	B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.14	0.14	0.14	0.14	0.35	0.35	0.35
<b>Dimensions</b>								
Unit Length	(mm)	2346	2346	2346	2346	2346	2346	2327
Unit Width	(mm)	1285	1285	1285	1285	1285	1285	2250
Unit Height	(mm)	1524	1524	1524	1524	1524	1724	1524
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	558	564	616	644	649	684	911
Operating Weight (5)	(kg)	539	545	596	624	630	665	881
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	46	46	46	49	49	49	45
Single pump - High head pressure	(kg)	51	51	51	51	51	51	49
Twin pump - Standard head pressure	(kg)	70	70	70	75	75	75	71
Twin pump - High head pressure	(kg)	82	82	82	82	82	82	86
Partial heat recovery option	(kg)	1.48	1.48	1.48	1.48	3.82	3.82	3.82
Water Buffer tank option	(kg)	319	319	319	319	319	319	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	1	1	1	1	1
Minimum cooling load % (6)	%	50	43	50	43	50	50	33
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	12.5	13.0	15.0	15.0	15.0	15.5	26.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	12.5	13.0	15.0	15.0	15.0	15.5	26.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
POE Oil type						OIL058E / OIL057E		

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013  
(2) At Evaporator water temperature : 40°C / 45°C - Condenser air, DB/WB 7°C/6°C according to EN14511:2013

(4) under 400V/3/50Hz  
(5) Rated Condition without Pump Package

(6) Minimum ambient in heating operation is for unit at 40°C / 45°C

(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

# General Data

**Table 7 – CXAX High Efficiency and Standard Noise (continued)**

		CXAX 039 HE-SN	CXAX 045 HE-SN	CXAX 035 HE-SN	CXAX 040 HE-SN	CXAX 046 HE-SN	CXAX 052 HE-SN	CXAX 060 HE-SN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	108	118	94	114	127	146	162
Total Power input in cooling	(kW)	36	41	34	37	43	49	55
EER		3.00	2.88	2.81	3.06	2.96	2.95	2.93
ESEER		4.20	4.02	3.98	4.10	4.00	4.03	3.95
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>
Sound power level	(dBA)	87	88	87	89	88	88	89
<b>Heating application data (2)</b>								
Net Heating Capacity	(kW)	110	120	101	114	127	139	162
Total Power input in heating	(kW)	35	39	32	37	42	46	52
COP		3.14	3.12	3.16	3.08	3.02	3.00	3.11
Eurovent Efficiency class Heating		B	B	B	B	B	B	B
ηs	(%)	133	132	131	124	124	128	129
SCOP		3.39	3.37	3.35	3.16	3.16	3.28	3.30
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	86	98	78	93	104	114	131
Unit rated amps - HESP Option (100Pa)	(A)	86	98	78	93	104	114	131
Unit start up amps	(A)	218	224	200	215	236	247	256
Unit start up amps - HESP Option (100Pa)	(A)	218	224	200	215	236	247	256
Short Circuit Unit Capacity (9)	(kA)	15	15	15	15	15	15	15
<b>Compressor</b>								
Compressor Number per Circuit	#	3	3	2	2	2	2	2
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		13+13+13	15+15+15	7.5+10 / 7.5+10	10+10 / 10+10	10+13 / 10+13	13+13 / 13+13	15+15 / 15+15
Motor RPM	(rpm)				2900			
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P120Tx110	P120Tx110	DP300x82	DP300x82	DP300x82	DP300x114	DP300x114
Evaporator Water Content volume	(l)	13.3	13.3	8.5	8.5	8.5	11.8	11.8
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	35	35	35	35	35	35	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	2000	2000	2000	2000	2000	2000	2000
Optionnal water Buffer tank volume	(l)	444	444	444	444	444	444	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type		Aluminum fins & copper tubes heat exchanger						
Quantity of coil	#	2	2	2	2	2	2	2
Face area per circuit	(m²)	5.93	5.93	2.96	2.96	2.96	2.96	3.46
<b>Condenser Fan</b>								
Quantity	#	3	3	2	4	4	4	4
Diameter	(mm)				800			
Fan / motor Type		Propeller fan : Variable speed - EC motor / HESP MAX SPEED						
Airflow per Fan	(m³/h)	13823	13828	14960	14964	12725	12725	13351
Power per Motor	(kW)				1.95 / 1.95			
Rated Amps per Motor	(A)				3 / 3			
Motor RPM	(rpm)				150 - 686 RPM			
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-027-20-4.5L	B3-027-20-4.5L	2x B3-014-14-4.5M	2x B3-014-14-4.5M	2x B3-014-14-4.5M	2x B3-027-14-4.5L	2x B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1 1/4 (31.75 mm)	G 1 1/4 (31.75 mm)	G 1 1/4 (31.75 mm)	G 1 1/4 (31.75 mm)	G 1 1/4 (31.75 mm)	G 1 1/4 (31.75 mm)	G 1 1/4 (31.75 mm)
Water content volume	(l)	0.5	0.5	2x0.14	2x0.14	2x0.14	2x0.35	2x0.35
<b>Dimensions</b>								
Unit Length	(mm)	2327	2327	2327	2327	2327	2327	2327
Unit Width	(mm)	2250	2250	2250	2250	2250	2250	2250
Unit Height	(mm)	1524	1524	1524	1524	1524	1524	1724
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	954	972	1000	1098	1098	1120	1190
Operating Weight (5)	(kg)	925	942	974	1072	1072	1093	1163
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	47	47	45	47	47	47	47
Single pump - High head pressure	(kg)	49	49	49	49	49	49	49
Twin pump - Standard head pressure	(kg)	75	75	75	75	75	75	75
Twin pump - High head pressure	(kg)	86	86	84	84	84	84	84
Partial heat recovery option	(kg)	4.6	4.6	2x1.48	2x1.48	2x1.48	2x3.82	2x3.82
Water Buffer tank option	(kg)	425	425	425	425	425	425	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	2	2	2	2	2
Minimum cooling load % (6)	%	33	33	22	25	22	25	25
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	26.0	26.0	13.0 / 13.0	13.5 / 13.5	13.0 / 13.0	13.5 / 13.5	14.5 / 14.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	26.0	26.0	13.0 / 13.0	13.5 / 13.5	13.0 / 13.0	13.5 / 13.5	14.5 / 14.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
POE Oil type		OIL058E / OIL057E						

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013  
(2) At Evaporator water temperature : 40°C / 45°C - Condenser air, DB/WB 7°C / 6°C according to EN14511:2013  
(4) under 400V/3/50Hz  
(5) Rated Condition without Pump Package  
(6) Minimum ambient in heating operation is for unit at 40°C / 45°C  
(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.  
(8) Maximum ambient operation is for unit at 12°C / 7°C  
(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.  
Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

**Table 8 – CXAX High Efficiency and Low Noise**

		CXAX 015 HE-LN	CXAX 017 HE-LN	CXAX 020 HE-LN	CXAX 023 HE-LN	CXAX 026 HE-LN	CXAX 030 HE-LN	CXAX 036 HE-LN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	42	48	56	65	72	79	94
Total Power input in cooling	(kW)	14	17	19	22	25	28	32
EER		2.90	2.83	2.91	2.97	2.84	2.84	2.90
ESEER		3.77	3.80	3.84	4.03	3.96	3.98	4.09
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>
Sound power level	(dBA)	78	78	81	80	80	81	80
<b>Heating application data (2)</b>								
Net Heating Capacity	(kW)	43	51	57	63	69	78	96
Total Power input in heating	(kW)	14	16	19	21	23	25	30
COP		3.09	3.15	2.98	3.08	3.01	3.09	3.19
Eurovent Efficiency class Heating		B	B	C	B	B	B	B
ηs	(%)	127	129	118	127	128	128	134
SCOP		3.26	3.29	3.03	3.25	3.27	3.28	3.42
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	35	39	47	52	57	66	75
Unit rated amps - HESP	(A)	35	39	47	52	57	66	75
Unit start up amps	(A)	117	161	169	185	190	191	199
Unit start up amps - HESP	(A)	117	161	169	185	190	191	199
Short Circuit Unit Capacity (9)	(kA)	12	12	12	12	12	12	15
<b>Compressor</b>								
Compressor Number per Circuit	#	2	2	2	2	2	2	3
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		7.5+7.5	7.5+10	10+10	10+13	13+13	15+15	12+12+12
Rated Amps Circuit1 / Circuit 2 (4)	(A)	15.5+15.5	15.5+20.2	20.2+20.2	20.2+25.3	25.3+25.3	29.5+29.5	22.9+22.9+22.9
Locked Rotor Amps Circuit1 / Circuit 2 (4)	(A)	98+98	98+142	142+142	142+158	158+158	155+155	147+147+147
Motor RPM	(rpm)				2900			
Oil sump heater Circuit1 / Circuit 2	(W)	0.17 / 0	0.17 / 0	0.17 / 0	0.17 / 0	0.17 / 0	0.17 / 0	0.25 / 0
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P80x78	P80x78	P80x78	P120Tx86	P120Tx86	P120Tx86	P120Tx110
Evaporator Water Content volume	(l)	4.5	4.5	4.5	10.4	10.4	10.4	13.3
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	25	25	25	25	25	25	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	1450	1450	1450	1450	1450	1450	2000
Optional water Buffer tank volume	(l)	324	324	324	324	324	324	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type		Aluminum fins & copper tubes heat exchanger						
Quantity of coil	#	1	1	1	1	1	1	2
Face area per circuit	(m <sup>2</sup> )	2.96	2.96	2.96	2.96	2.96	3.46	5.93
<b>Condenser Fan</b>								
Quantity	#	1	1	2	2	2	2	2
Diameter	(mm)				800			
Fan / motor Type		Propeller fan : Variable speed - EC motor						
Airflow per Fan	(m <sup>3</sup> /h)	14949	14960	14966	12721	12726	13352	14959
Motor RPM	(rpm)				150	686		
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-014-14-4.5M	B3-027-14-4.5L	B3-027-14-4.5L	B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.14	0.14	0.14	0.14	0.35	0.35	0.35
<b>Dimensions</b>								
Unit Length	(mm)	2346	2346	2346	2346	2346	2346	2327
Unit Width	(mm)	1285	1285	1285	1285	1285	1285	2250
Unit Height	(mm)	1747	1747	1747	1747	1747	1947	1747
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	558	564	616	644	649	684	911
Operating Weight (5)	(kg)	539	545	596	624	630	665	881
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	46	46	46	49	49	49	45
Single pump - High head pressure	(kg)	51	51	51	51	51	51	49
Twin pump - Standard head pressure	(kg)	70	70	70	75	75	75	71
Twin pump - High head pressure	(kg)	82	82	82	82	82	82	86
Partial heat recovery option	(kg)	1.48	1.48	1.48	1.48	3.82	3.82	3.82
Water Buffer tank option	(kg)	319	319	319	319	319	319	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	1	1	1	1	1
Minimum cooling load % (6)	%	50	43	50	43	50	50	33
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	12.5	13.0	15.0	15.0	15.0	15.5	26.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	12.5	13.0	15.0	15.0	15.0	15.5	26.0
Oil charge Circuit1 / Circuit 2	(l)	6.0	6.3	6.6	6.6	6.6	7.2	10.5
POE Oil type		OIL058E / OIL057E						

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(2) At Evaporator water temperature : 40°C / 45°C - Condenser air. DB/WB 7°C/6°C according to EN14511:2013

(4) under 400V/3/50Hz

(5) Rated Condition without Pump Package

(6) Minimum ambient in heating operation is for unit at 40°C / 45°C

(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

# General Data

**Table 8 – CXAX High Efficiency and Low Noise (continued)**

		CXAX 015 HE-LN	CXAX 017 HE-LN	CXAX 020 HE-LN	CXAX 023 HE-LN	CXAX 026 HE-LN	CXAX 030 HE-LN	CXAX 036 HE-LN
<b>Eurovent Performances (1)</b>								
Net Cooling Capacity	(kW)	108	118	94	114	127	146	162
Total Power input in cooling	(kW)	36	41	34	37	43	49	55
EER		3.00	2.88	2.81	3.06	2.96	2.95	2.93
ESEER		4.20	4.02	3.98	4.10	4.00	4.03	3.95
Eurovent Efficiency class Cooling		<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>
Sound power level	(dBA)	81	82	81	84	83	83	84
<b>Heating application data (2)</b>								
Net Heating Capacity	(kW)	110	120	101	114	127	139	162
Total Power input in heating	(kW)	35	39	32	37	42	46	52
COP		3.14	3.12	3.16	3.08	3.02	3.00	3.11
Eurovent Efficiency class Heating		B	B	B	B	B	B	B
ηs	(%)	133	132	131	124	124	128	129
SCOP		3.39	3.37	3.35	3.16	3.16	3.28	3.30
<b>Unit amps (4) (5)</b>								
Unit rated amps	(A)	86	98	78	93	104	114	131
Unit rated amps - HESP	(A)	86	98	78	93	104	114	131
Unit start up amps	(A)	218	224	200	215	236	247	256
Unit start up amps - HESP	(A)	218	224	200	215	236	247	256
Short Circuit Unit Capacity (9)	(kA)	15	15	15	15	15	15	15
<b>Compressor</b>								
Compressor Number per Circuit	#	3	3	2	2	2	2	2
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model Circuit1 / Circuit 2		13+13+13	15+15+15	7.5+10 / 7.5+10	10+10 / 10+10	10+13 / 10+13	13+13 / 13+13	15+15 / 15+15
Rated Amps Circuit1 / Circuit 2 (4)	(A)	25.3+25.3+25.3	29.5+29.5+29.5	15.5 / 20.2 / 15.5+20.2	20.2 / 20.2 / 20.2+20.2	20.2 / 25.3 / 20.2+25.3	25.3 / 25.3 / 25.3+25.3	29.5 / 29.5 / 29.5+29.5
Locked Rotor Amps Circuit1 / Circuit 2 (4)	(A)	158+158+158	155+155+155	98 / 142 / 98+142	142 / 142 / 142+142	142 / 158 / 142+158	158 / 158 / 158+158	155 / 155 / 155+155
Motor RPM	(rpm)				2900			
Oil sump heater Circuit1 / Circuit 2	(W)	0.25 / 0	0.25 / 0	0.17 / 0.17	0.17 / 0.17	0.17 / 0.17	0.17 / 0.17	0.17 / 0.17
<b>Evaporator</b>								
Quantity	#	1	1	1	1	1	1	1
Type		Stainless steel Copper Brazed plate Heat exchanger						
Evaporator model		P120Tx110	P120Tx110	DP300x82	DP300x82	DP300x82	DP300x114	DP300x114
Evaporator Water Content volume	(l)	13.3	13.3	8.5	8.5	8.5	11.8	11.8
Nominal water connection size (Grooved coupling) - Without HYM	(in) - (mm)	2" - 60.3	2" - 60.3	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
Nominal water connection size (Grooved coupling) - With HYM	(in) - (mm)	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1	3" OD - 76.1
<b>Hydraulic Module Components</b>								
Expansion Tank Volume	(l)	35	35	35	35	35	35	35
Max User water loop Volume for factory mounted expansion tank (1)	(l)	2000	2000	2000	2000	2000	2000	2000
Optional water Buffer tank volume	(l)	444	444	444	444	444	444	444
Max. Water-side Operating Pressure without pump package	(kPa)				1000			
Max. Water-side Operating Pressure with pump package	(kPa)				400			
<b>Condenser</b>								
Type		Aluminum fins & copper tubes heat exchanger						
Quantity of coil	#	2	2	2	2	2	2	2
Face area per circuit	(m²)	5.93	5.93	2.96	2.96	2.96	2.96	3.46
<b>Condenser Fan</b>								
Quantity	#	3	3	2	4	4	4	4
Diameter	(mm)				800			
Fan / motor Type		Propeller fan : Variable speed - EC motor						
Airflow per Fan	(m³/h)	13823	13828	14960	14964	12725	12725	13351
Motor RPM	(rpm)				150 - 686 RPM			
<b>Partial Heat recovery (PHR) option</b>								
Heat-Exchanger Type		Stainless steel Copper Brazed plate Heat exchanger						
Heat-Exchanger Model		B3-027-20-4.5L	B3-027-20-4.5L	2x B3-014-14-4.5M	2x B3-014-14-4.5M	2x B3-014-14-4.5M	2x B3-027-14-4.5L	2x B3-027-14-4.5L
Water connection size (Thread connection)	(in) - (mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)	G 1"1/4 (31.75 mm)
Water content volume	(l)	0.5	0.5	2x0.14	2x0.14	2x0.14	2x0.35	2x0.35
<b>Dimensions</b>								
Unit Length	(mm)	2327	2327	2327	2327	2327	2327	2327
Unit Width	(mm)	2250	2250	2250	2250	2250	2250	2250
Unit Height	(mm)	1747	1747	1747	1747	1747	1747	1747
<b>Option Additional height</b>								
Water Buffer tank option	(mm)	+330	+330	+330	+330	+330	+330	+330
<b>Weights</b>								
Shipping Weight (5)	(kg)	954	972	1000	1098	1098	1120	1190
Operating Weight (5)	(kg)	925	942	974	1072	1072	1093	1163
<b>Option Additional shipping weight</b>								
Single pump - Standard head pressure	(kg)	47	47	45	47	47	47	47
Single pump - High head pressure	(kg)	49	49	49	49	49	49	49
Twin pump - Standard head pressure	(kg)	75	75	75	75	75	75	75
Twin pump - High head pressure	(kg)	86	86	84	84	84	84	84
Partial heat recovery option	(kg)	4.6	4.6	2x1.48	2x1.48	2x1.48	2x3.82	2x3.82
Water Buffer tank option	(kg)	425	425	425	425	425	425	425
<b>System data</b>								
Nb of refrigerant circuit	#	1	1	2	2	2	2	2
Minimum cooling load % (6)	%	33	33	22	25	22	25	25
<b>Standard unit</b>								
R410A refrigerant charge Circuit1 / Circuit 2	(kg)	26.0	26.0	13.0 / 13.0	13.5 / 13.5	13.0 / 13.0	13.5 / 13.5	14.5 / 14.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
<b>Unit with partial heat recovery option</b>								
R410a refrigerant charge Circuit1 / Circuit 2	(kg)	26.0	26.0	13.0 / 13.0	13.5 / 13.5	13.0 / 13.0	13.5 / 13.5	14.5 / 14.5
Oil charge Circuit1 / Circuit 2	(l)	10.5	11.5	6.3 / 6.3	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	7.2 / 7.2
POE Oil type		OIL058E / OIL057E						

(1) At Evaporator water temperature : 12°C / 7°C - Condenser air temperature 35°C according to EN14511:2013

(2) At Evaporator water temperature : 40°C / 45°C - Condenser air. DB/WB 7°C/6°C according to EN14511:2013

(4) under 400V/3/50Hz

(5) Rated Condition without Pump Package

(6) Minimum ambient in heating operation is for unit at 40°C / 45°C

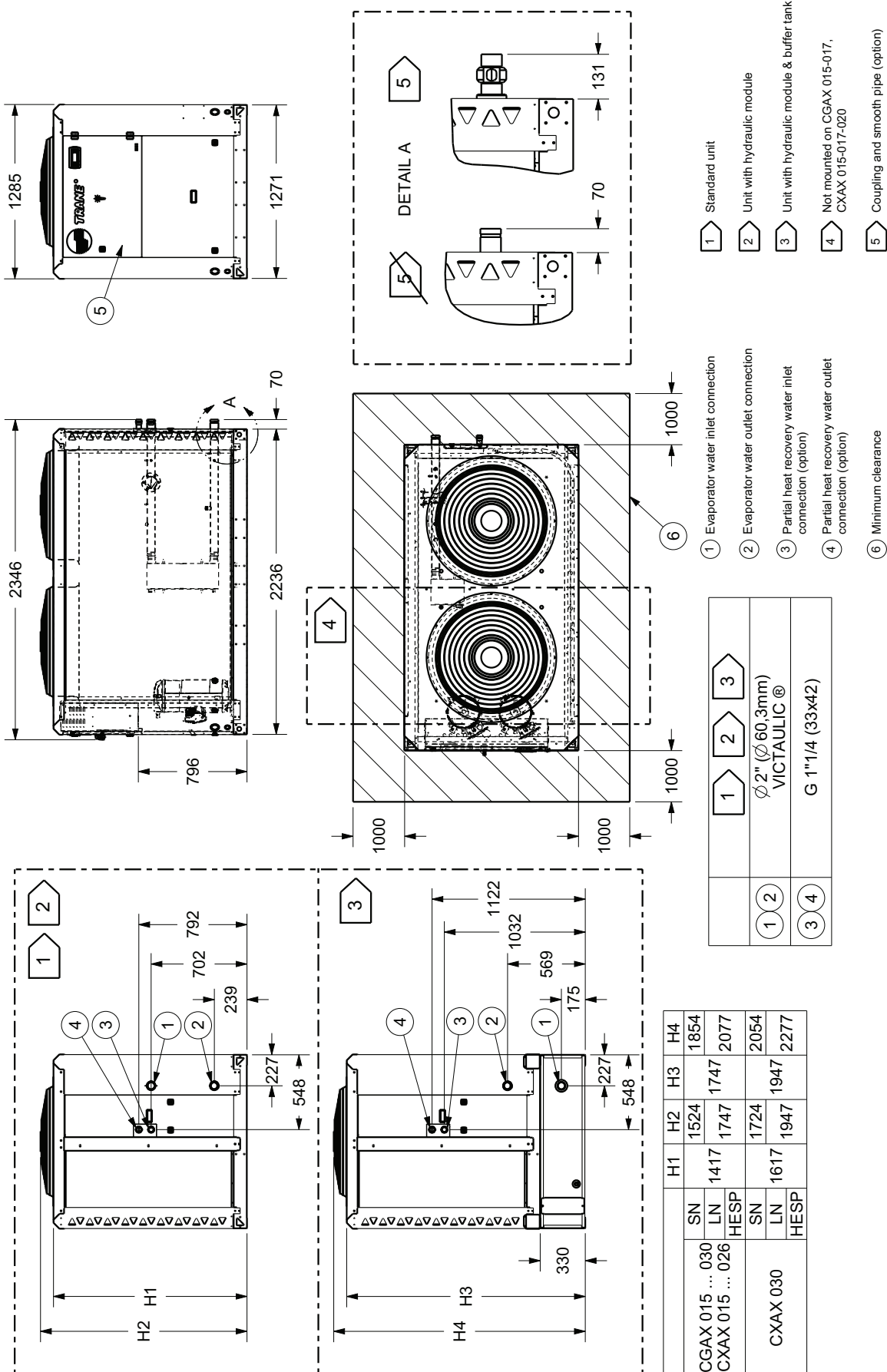
(7) Minimum start-up/operation ambient based on a 2.22 m/s (5mph) wind across the condenser.

(8) Maximum ambient operation is for unit at 12°C / 7°C

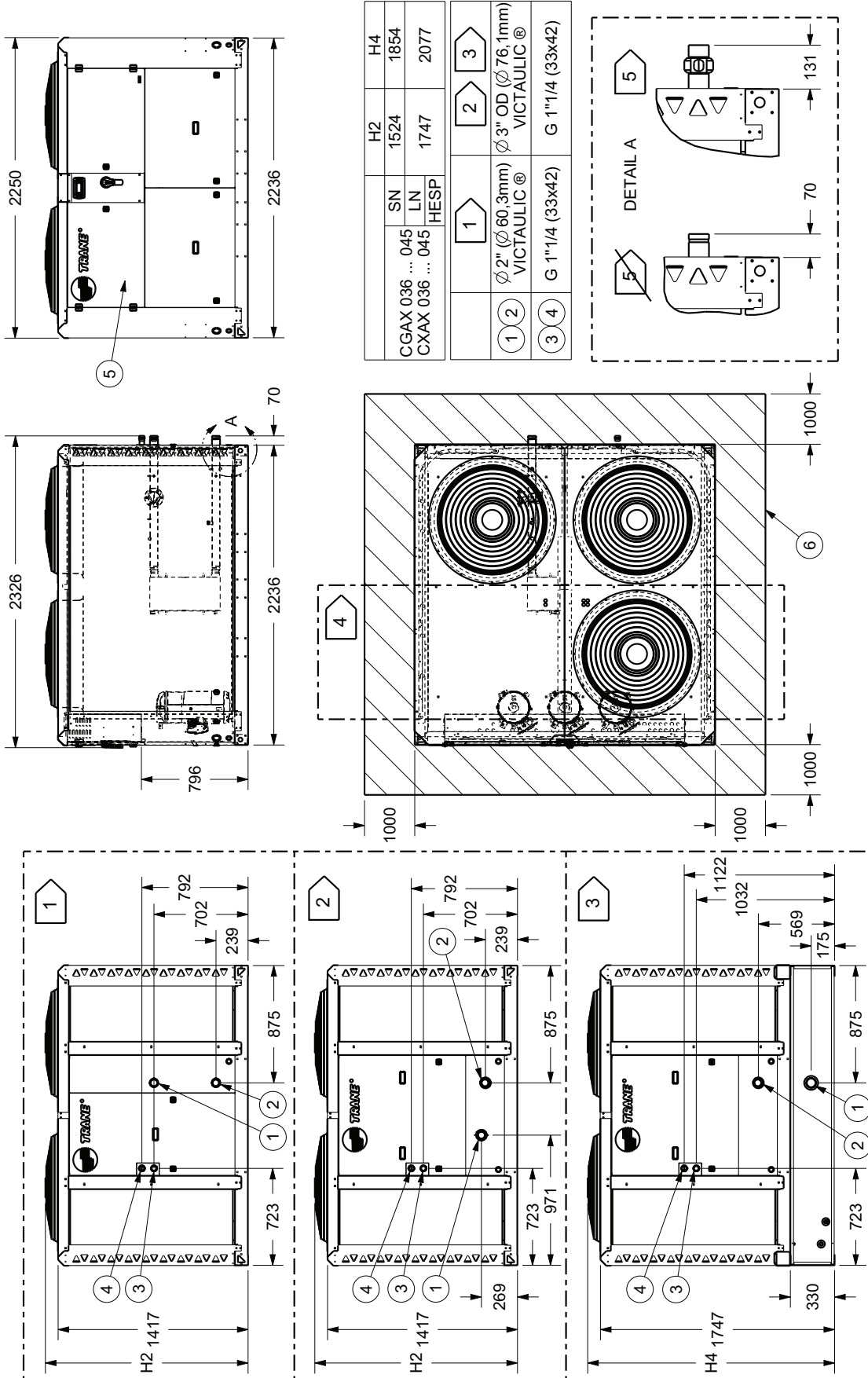
(9) If the power line of the unit is protected by fuses gG of the same size as the disconnect switch.

Electrical & system data are subject to change without notice. Please refer to unit nameplate data.

# Dimensional Data

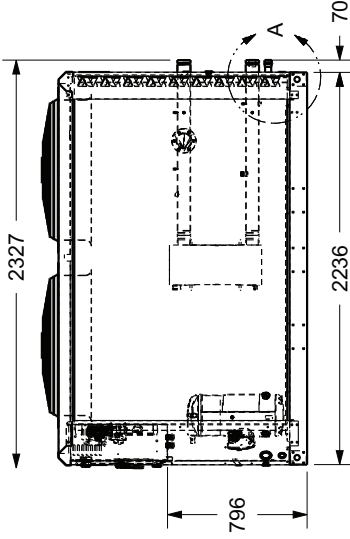
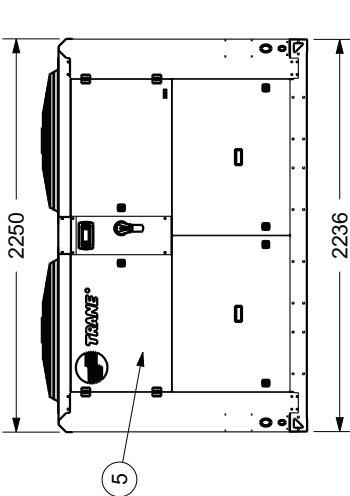


# Dimensional Data

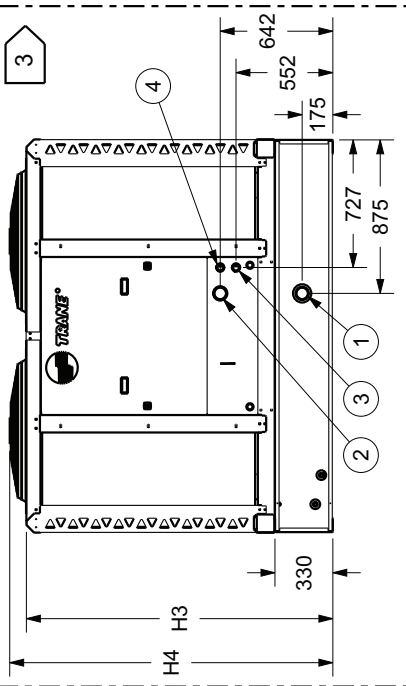
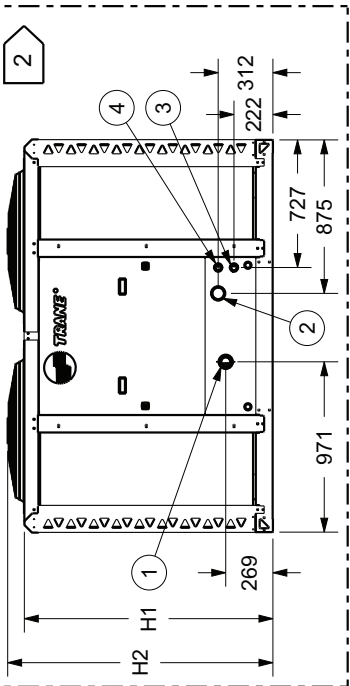
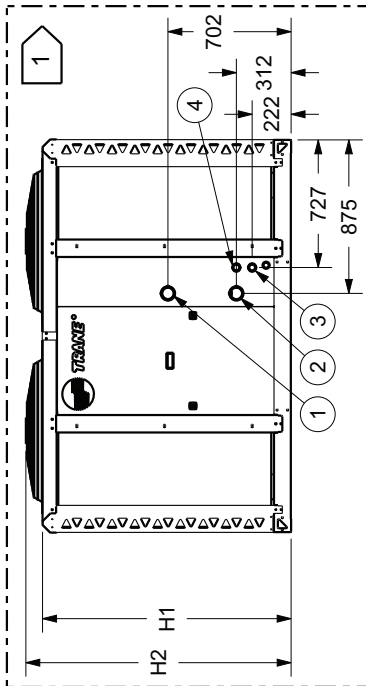
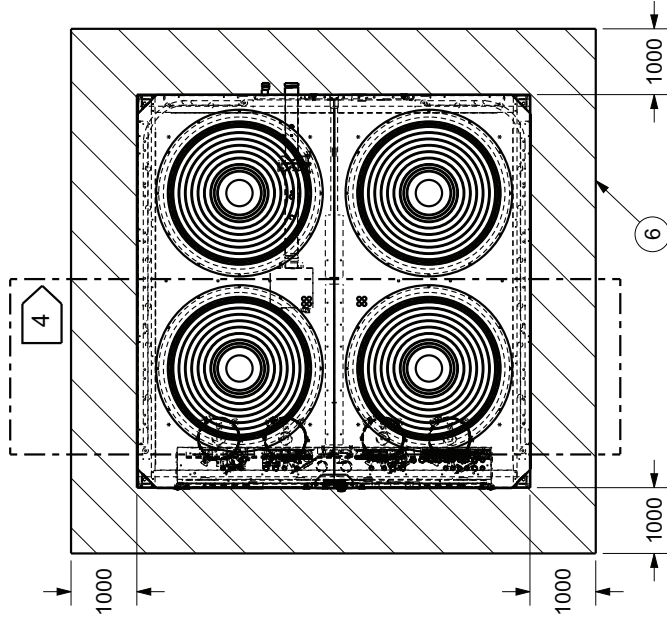
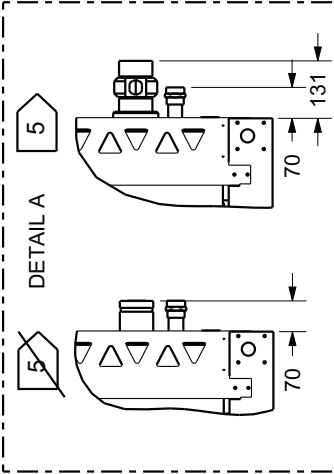




# Dimensional Data



	H1	H2	H3	H4
CGAX 035 ... 060	SN 1524	1747	1854	
CXAX 035 ... 052	LN 1417	1747	2077	
	HESP	1724	2054	
CXAX 060	SN 1617	1947	2277	
	HESP			





# Electrical Data

**Table 9 – CGAX - CXAX SE-SA-SN or LN Electrical Characteristics**

Unit Type	Base unit amps at 400V / 3Ph / 50Hz				
	Max Power input (kW)	Max Amps (A)	Start up amp		Power Factor
			Without soft starter (A)	With soft starter (A)	
CGAX - CXAX <b>015 SE-SA-SN or LN</b>	19.4	33.8	116.3	77.1	0.85
CGAX - CXAX <b>017 SE-SA-SN or LN</b>	22.1	38.5	160.3	103.5	0.85
CGAX - CXAX <b>020 SE-SA-SN or LN</b>	25.8	45.4	167.2	110.4	0.84
CGAX - CXAX <b>023 SE-SA-SN or LN</b>	29.5	50.5	183.2	120.0	0.86
CGAX - CXAX <b>026 SE-SA-SN or LN</b>	33.3	55.6	188.3	125.1	0.88
CGAX - CXAX <b>030 SE-SA-SN or LN</b>	37.0	64.0	189.5	127.5	0.85
CGAX - CXAX <b>036 SE-SA-SN or LN</b>	43.0	73.8	197.9	139.1	0.85
CGAX - CXAX <b>039 SE-SA-SN or LN</b>	49.0	81.0	213.7	150.5	0.89
CGAX - CXAX <b>045 SE-SA-SN or LN</b>	55.5	95.8	221.3	159.3	0.85
CGAX - CXAX <b>035 SE-SA-SN or LN</b>	44.2	76.5	198.3	141.5	0.85
CGAX - CXAX <b>040 SE-SA-SN or LN</b>	51.6	90.4	212.2	155.4	0.84
CGAX - CXAX <b>046 SE-SA-SN or LN</b>	59.0	100.6	233.3	170.1	0.86
CGAX - CXAX <b>052 SE-SA-SN or LN</b>	66.5	110.8	243.5	180.3	0.88
CGAX - CXAX <b>060 SE-SA-SN or LN</b>	74.0	127.6	253.1	191.1	0.85

**Table 10 – CGAX - CXAX SE-LA-SN or LN Electrical Characteristics**

Unit Type	Base unit amps at 400V / 3Ph / 50Hz				
	Max Power input (kW)	Max Amps (A)	Start up amp		Power Factor
			Without soft starter (A)	With soft starter (A)	
CGAX - CXAX <b>015 SE-LA-SN or LN</b>	20.4	34.5	117.0	77.8	0.87
CGAX - CXAX <b>017 SE-LA-SN or LN</b>	23.2	39.2	161.0	104.2	0.87
CGAX - CXAX <b>020 SE-LA-SN or LN</b>	26.8	46.2	168.0	111.2	0.85
CGAX - CXAX <b>023 SE-LA-SN or LN</b>	30.6	51.3	184.0	120.8	0.88
CGAX - CXAX <b>026 SE-LA-SN or LN</b>	34.3	56.4	189.1	125.9	0.89
CGAX - CXAX <b>030 SE-LA-SN or LN</b>	38.1	64.8	190.3	128.3	0.86
CGAX - CXAX <b>036 SE-LA-SN or LN</b>	44.1	74.6	198.7	139.9	0.86
CGAX - CXAX <b>039 SE-LA-SN or LN</b>	50.0	81.8	214.5	151.3	0.89
CGAX - CXAX <b>045 SE-LA-SN or LN</b>	56.6	96.6	222.1	160.1	0.85
CGAX - CXAX <b>035 SE-LA-SN or LN</b>	46.4	78.1	199.9	143.1	0.87
CGAX - CXAX <b>040 SE-LA-SN or LN</b>	53.7	91.9	213.7	156.9	0.85
CGAX - CXAX <b>046 SE-LA-SN or LN</b>	61.2	102.1	234.8	171.6	0.88
CGAX - CXAX <b>052 SE-LA-SN or LN</b>	68.6	112.3	245.0	181.8	0.89
CGAX - CXAX <b>060 SE-LA-SN or LN</b>	76.1	129.1	254.6	192.6	0.86

SE = Standard Efficiency  
 SA = Standard Ambient  
 LA = Low Ambient  
 SN = Standard Noise  
 LN = Low Noise

## Electrical Data

**Table 11 – CGAX - CXAX HESP Electrical Characteristics / CGAX - CXAX HE Electrical Characteristics**

Unit Type	Base unit amps at 400V / 3Ph / 50Hz				
	Max Power input (kW)	Max Amps (A)	Start up amp		Power Factor
			Without soft starter (A)	With soft starter (A)	
CGAX - CXAX <b>015 HE or HESP</b>	20.4	34.5	117.0	77.8	0.87
CGAX - CXAX <b>017 HE or HESP</b>	23.2	39.2	161.0	104.2	0.87
CGAX - CXAX <b>020 HE or HESP</b>	27.9	46.9	168.7	111.9	0.87
CGAX - CXAX <b>023 HE or HESP</b>	31.6	52.0	184.7	121.5	0.89
CGAX - CXAX <b>026 HE or HESP</b>	35.4	57.1	189.8	126.6	0.90
CGAX - CXAX <b>030 HE or HESP</b>	39.1	65.5	191.0	129.0	0.87
CGAX - CXAX <b>036 HE or HESP</b>	45.1	75.4	199.5	140.7	0.87
CGAX - CXAX <b>039 HE or HESP</b>	51.1	82.6	215.3	152.1	0.90
CGAX - CXAX <b>045 HE or HESP</b>	58.7	98.2	223.7	161.7	0.87
CGAX - CXAX <b>035 HE or HESP</b>	46.4	78.1	199.9	143.1	0.87
CGAX - CXAX <b>040 HE or HESP</b>	55.8	93.5	215.3	158.5	0.87
CGAX - CXAX <b>046 HE or HESP</b>	63.3	103.7	236.4	173.2	0.89
CGAX - CXAX <b>052 HE or HESP</b>	70.7	113.9	246.6	183.4	0.90
CGAX - CXAX <b>060 HE or HESP</b>	78.2	130.7	256.2	194.2	0.87

HE = High Efficiency

HESP = High External Static Pressure

**Table 12 – CGAX - CXAX Compressor electrical data**

Unit Type	Compressor					
	Circuit 1			Circuit 2		
	Max Power input (kW)	Max Amps (A)	Start up amp (A)	Max Power input (kW)	Max Amps (A)	Start up amp (A)
CGAX - CXAX <b>015</b>	9.2/9.2	15.5/15.5	98/98	0/0	0/0	0/0
CGAX - CXAX <b>017</b>	9.2/12	15.5/20.2	98/142	0/0	0/0	0/0
CGAX - CXAX <b>020</b>	12/12	20.2/20.2	142/142	0/0	0/0	0/0
CGAX - CXAX <b>023</b>	12/15.7	20.2/25.3	142/158	0/0	0/0	0/0
CGAX - CXAX <b>026</b>	15.7/15.7	25.3/25.3	158/158	0/0	0/0	0/0
CGAX - CXAX <b>030</b>	17.6/17.6	29.5/29.5	155/155	0/0	0/0	0/0
CGAX - CXAX <b>036</b>	13.7/13.7/13.7	22.9/22.9/22.9	147/147/147	0/0	0/0	0/0
CGAX - CXAX <b>039</b>	15.7/15.7/15.7	25.3/25.3/25.3	158/158/158	0/0	0/0	0/0
CGAX - CXAX <b>045</b>	17.6/17.6/17.6	29.5/29.5/29.5	155/155/155	0/0	0/0	0/0
CGAX - CXAX <b>035</b>	9.2/12	15.5/20.2	98/142	9.2/12	15.5/20.2	98/142
CGAX - CXAX <b>040</b>	12/12	20.2/20.2	142/142	12/12	20.2/20.2	142/142
CGAX - CXAX <b>046</b>	12/15.7	20.2/25.3	142/158	12/15.7	20.2/25.3	142/158
CGAX - CXAX <b>052</b>	15.7/15.7	25.3/25.3	158/158	15.7/15.7	25.3/25.3	158/158
CGAX - CXAX <b>060</b>	17.6/17.6	29.5/29.5	155/155	17.6/17.6	29.5/29.5	155/155



## Electrical Data

**Table 13 – CGAX-CXAX SE-SA Condenser fans Electrical Data**

Unit Type		Condenser fan			
		Circuit 1 (Fan 1 / 2 / 3)		Circuit 2 (Fan 1 / 2)	
		Max Power input (kW)	Max Amps (A)	Max Power input (kW)	Max Amps (A)
CGAX-CXAX	<b>015 SE-SA</b>	0.89 /0 /0	2.2 /0 /0	0 /0	0 /0
CGAX-CXAX	<b>017 SE-SA</b>	0.89 /0 /0	2.2 /0 /0	0 /0	0 /0
CXAX	<b>020 SE-SA</b>	0.89 /0 /0	2.2 /0 /0	0 /0	0 /0
CGAX	<b>020 SE-SA</b>	0.89 /0.89 /0	2.2 /2.2 /0	0 /0	0 /0
CGAX-CXAX	<b>023 SE-SA</b>	0.89 /0.89 /0	2.2 /2.2 /0	0 /0	0 /0
CGAX-CXAX	<b>026 SE-SA</b>	0.89 /0.89 /0	2.2 /2.2 /0	0 /0	0 /0
CGAX-CXAX	<b>030 SE-SA</b>	0.89 /0.89 /0	2.2 /2.2 /0	0 /0	0 /0
CGAX-CXAX	<b>036 SE-SA</b>	0.89 /0.89 /0	2.2 /2.2 /0	0 /0	0 /0
CGAX	<b>039 SE-SA</b>	0.89 /0.89 /0	2.2 /2.2 /0	0 /0	0 /0
CXAX	<b>039 SE-SA</b>	0.89 /0.89 /0.89	2.2 /2.2 /2.2	0 /0	0 /0
CGAX-CXAX	<b>045 SE-SA</b>	0.89 /0.89 /0.89	2.2 /2.2 /2.2	0 /0	0 /0
CGAX-CXAX	<b>035 SE-SA</b>	0.89 /0	2.2 /0	0.89 /0	2.2 /0
CXAX	<b>040 SE-SA</b>	0.89 /0	2.2 /0	0.89 /0	2.2 /0
CGAX	<b>040 SE-SA</b>	0.89 /0.89	2.2 /2.2	0.89 /0.89	2.2 /2.2
CGAX-CXAX	<b>046 SE-SA</b>	0.89 /0.89	2.2 /2.2	0.89 /0.89	2.2 /2.2
CGAX-CXAX	<b>052 SE-SA</b>	0.89 /0.89	2.2 /2.2	0.89 /0.89	2.2 /2.2
CGAX-CXAX	<b>060 SE-SA</b>	0.89 /0.89	2.2 /2.2	0.89 /0.89	2.2 /2.2

**Table 14 – CGAX-CXAX SE-LA Condenser fans Electrical Data**

Unit Type		Condenser fan			
		Circuit 1 (Fan 1 / 2 / 3)		Circuit 2 (Fan 1 / 2)	
		Max Power input (kW)	Max Amps (A)	Max Power input (kW)	Max Amps (A)
CGAX-CXAX	<b>015 SE- LA</b>	1.95/0/0	3/0/0	0/0	0/0
CGAX-CXAX	<b>017 SE- LA</b>	1.95/0/0	3/0/0	0/0	0/0
CXAX	<b>020 SE- LA</b>	1.95/0/0	3/0/0	0/0	0/0
CGAX	<b>020 SE- LA</b>	1.95/0.89/0	3/2.2/0	0/0	0/0
CGAX-CXAX	<b>023 SE- LA</b>	1.95/0.89/0	3/2.2/0	0/0	0/0
CGAX-CXAX	<b>026 SE- LA</b>	1.95/0.89/0	3/2.2/0	0/0	0/0
CGAX-CXAX	<b>030 SE- LA</b>	1.95/0.89/0	3/2.2/0	0/0	0/0
CGAX-CXAX	<b>036 SE- LA</b>	1.95/0.89/0	3/2.2/0	0/0	0/0
CGAX	<b>039 SE- LA</b>	1.95/0.89/0	3/2.2/0	0/0	0/0
CXAX	<b>039 SE- LA</b>	1.95/0.89/0.89	3/2.2/2.2	0/0	0/0
CGAX-CXAX	<b>045 SE- LA</b>	1.95/0.89/0.89	3/2.2/2.2	0/0	0/0
CGAX-CXAX	<b>035 SE- LA</b>	1.95/0	3/0	1.95/0	3/0
CXAX	<b>040 SE- LA</b>	1.95/0	3/0	1.95/0	3/0
CGAX	<b>040 SE- LA</b>	1.95/0.89	3/2.2	1.95/0.89	3/2.2
CGAX-CXAX	<b>046 SE- LA</b>	1.95/0.89	3/2.2	1.95/0.89	3/2.2
CGAX-CXAX	<b>052 SE- LA</b>	1.95/0.89	3/2.2	1.95/0.89	3/2.2
CGAX-CXAX	<b>060 SE- LA</b>	1.95/0.89	3/2.2	1.95/0.89	3/2.2

SE = Standard Efficiency

SA = Standard Ambient

LA = Low Ambient

## Electrical Data

**Table 15 – CGAX-CXAX HE or HESP Condenser fans Electrical Data**

Unit Type	Condenser fan			
	Circuit 1 (Fan 1 / 2 / 3)		Circuit 2 (Fan 1 / 2)	
	Max Power input (kW)	Max Amps (A)	Max Power input (kW)	Max Amps (A)
CGAX-CXAX <b>015 HE or HESP</b>	1.95/0/0	3/0/0	0/0	0/0
CGAX-CXAX <b>017 HE or HESP</b>	1.95/0/0	3/0/0	0/0	0/0
CXAX <b>020 HE or HESP</b>	1.95/0/0	3/0/0	0/0	0/0
CGAX <b>020 HE or HESP</b>	1.95/1.95/0	3/3/0	0/0	0/0
CGAX-CXAX <b>023 HE or HESP</b>	1.95/1.95/0	3/3/0	0/0	0/0
CGAX-CXAX <b>026 HE or HESP</b>	1.95/1.95/0	3/3/0	0/0	0/0
CGAX-CXAX <b>030 HE or HESP</b>	1.95/1.95/0	3/3/0	0/0	0/0
CGAX-CXAX <b>036 HE or HESP</b>	1.95/1.95/0	3/3/0	0/0	0/0
CGAX <b>039 HE or HESP</b>	1.95/1.95/0	3/3/0	0/0	0/0
CXAX <b>039 HE or HESP</b>	1.95/1.95/1.95	3/3/3	0/0	0/0
CGAX-CXAX <b>045 HE or HESP</b>	1.95/1.95/1.95	3/3/3	0/0	0/0
CGAX-CXAX <b>035 HE or HESP</b>	1.95/0	3/0	1.95/0	3/0
CXAX <b>040 HE or HESP</b>	1.95/0	3/0	1.95/0	3/0
CGAX <b>040 HE or HESP</b>	1.95/1.95	3/3	1.95/1.95	3/3
CGAX-CXAX <b>046 HE or HESP</b>	1.95/1.95	3/3	1.95/1.95	3/3
CGAX-CXAX <b>052 HE or HESP</b>	1.95/1.95	3/3	1.95/1.95	3/3
CGAX-CXAX <b>060 HE or HESP</b>	1.95/1.95	3/3	1.95/1.95	3/3

HE = High Efficiency

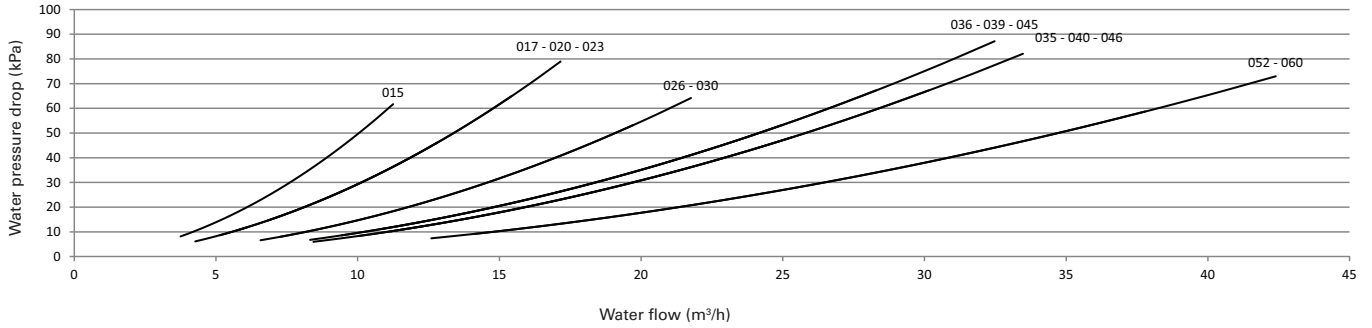
HESP = High External Static Pressure

**Table 16 – CGAX - CXAX Options electrical data**

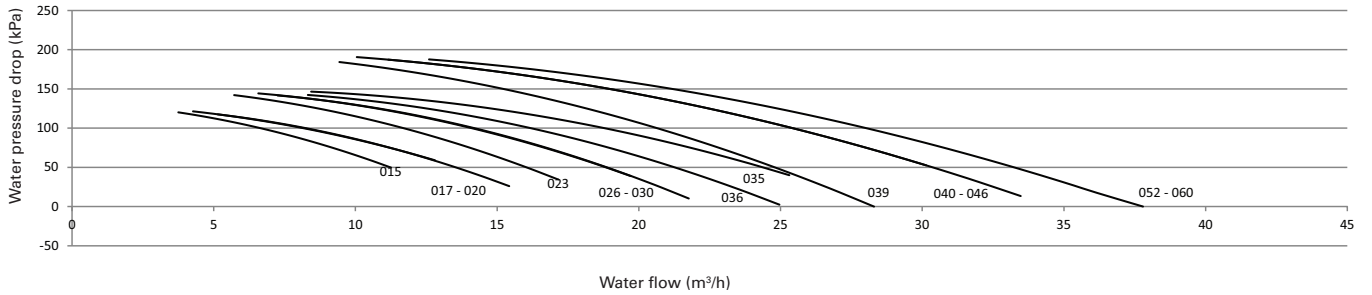
Unit Type	Disconnect switch option		Pump package				Heaters					
	Discon-nect switch Size (A)	Power Cable cross section Max (mm <sup>2</sup> )	Single & Twin pump Standard head pressure		Single & Twin pump High head pressure		Freeze protection Without pump package		Freeze protection With pump package		Oil sump heater Circuit 1 / 2	
			Max Power input (kW)	Max Amps (A)	Max Power input (kW)	Max Amps (A)	Max Power input (W)	Max Amps (A)	Max Power input (W)	Max Amps (A)	Max Power input (kW)	Max Amps (A)
CGAX - CXAX <b>015</b>	80	35	1.2	2.4	2.3	5.0	120	0.3	280	0.7	167	0.4
CGAX - CXAX <b>017</b>	80	35	1.2	2.4	2.3	5.0	120	0.3	280	0.7	167	0.4
CGAX - CXAX <b>020</b>	100	35	1.2	2.4	2.3	5.0	120	0.3	280	0.7	167	0.4
CGAX - CXAX <b>023</b>	100	35	1.5	3.5	2.3	5.0	120	0.3	280	0.7	167	0.4
CGAX - CXAX <b>026</b>	100	35	1.5	3.5	2.3	5.0	120	0.3	280	0.7	167	0.4
CGAX - CXAX <b>030</b>	100	35	1.5	3.5	2.3	5.0	120	0.3	280	0.7	167	0.4
CGAX - CXAX <b>036</b>	250	150	1.5	3.5	3.0	6.2	180	0.5	340	0.9	251	0.6
CGAX - CXAX <b>039</b>	250	150	2.3	5.0	3.0	6.2	180	0.5	340	0.9	251	0.6
CGAX - CXAX <b>045</b>	250	150	2.3	5.0	3.0	6.2	180	0.5	340	0.9	251	0.6
CGAX - CXAX <b>035</b>	250	150	1.5	3.5	3.0	6.2	120	0.3	280	0.7	334 / 334	0.8 / 0.8
CGAX <b>040</b>	250	150	2.3	5.0	3.0	6.2	120	0.3	280	0.7	334 / 334	0.8 / 0.8
CXAX <b>040</b>	250	150	2.3	5.0	3.0	6.2	180	0.3	340	0.7	334 / 334	0.8 / 0.8
CGAX - CXAX <b>046</b>	250	150	2.3	5.0	3.0	6.2	120	0.3	280	0.7	334 / 334	0.8 / 0.8
CGAX - CXAX <b>052</b>	250	150	2.3	5.0	3.0	6.2	180	0.5	340	0.9	334 / 334	0.8 / 0.8
CGAX - CXAX <b>060</b>	250	150	2.3	5.0	3.0	6.2	180	0.5	340	0.9	334 / 334	0.8 / 0.8

# Hydraulic Data

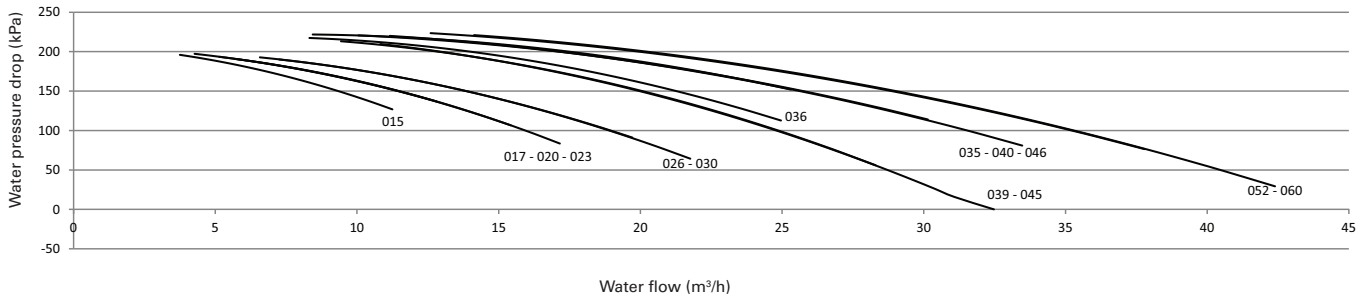
**CGAX Unit without pump package  
(Pressure drop)**



**CGAX Single/Dual pump - Standard head pressure  
(Avail. pressure)**

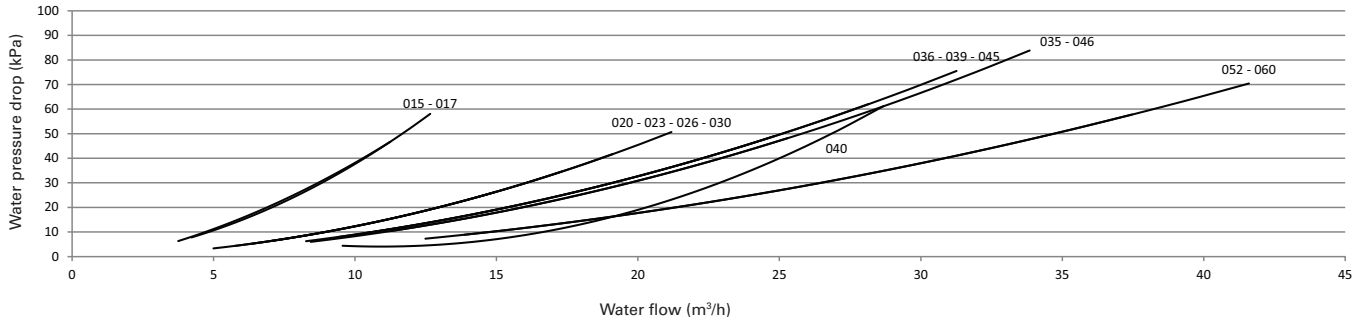


**CGAX Single/Dual pump - High head pressure  
(Avail. pressure)**

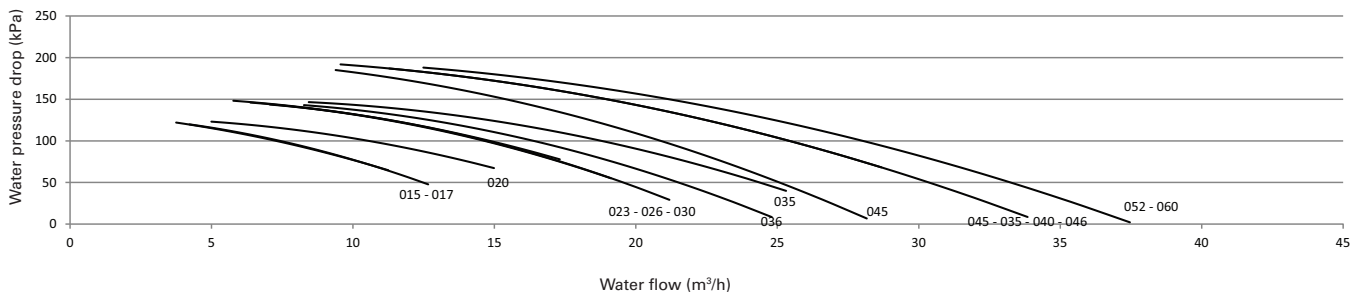


## Hydraulic Data

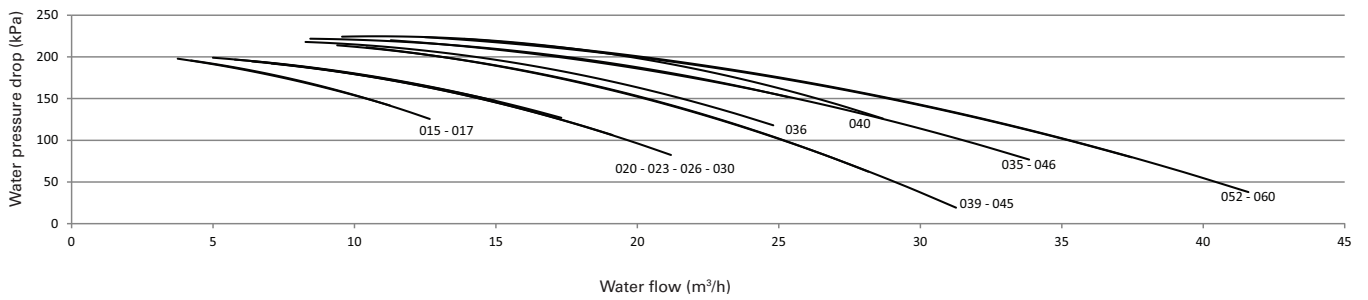
**CXAX Unit without pump package  
(Pressure drop)**



**CXAX Single/Twin pump - Standard head pressure  
(Avail. pressure)**



**CXAX Single/Twin pump - High head pressure  
(Avail. pressure)**



## Hydraulic Data

**Table 17 – Water flow limits**

Unit type		Minimum water Flow		Maximum water Flow	
		(m <sup>3</sup> /h)	(l/s)	(m <sup>3</sup> /h)	(l/s)
CGAX	<b>015</b>	3.8	1.0	11.3	3.1
CGAX	<b>017</b>	4.3	1.2	12.8	3.6
CGAX	<b>020</b>	5.1	1.4	15.4	4.3
CGAX	<b>023</b>	5.7	1.6	17.2	4.8
CGAX	<b>026</b>	6.6	1.8	19.7	5.5
CGAX	<b>030</b>	7.3	2.0	21.8	6.0
CGAX	<b>036</b>	8.3	2.3	25.0	6.9
CGAX	<b>039</b>	9.4	2.6	28.3	7.9
CGAX	<b>045</b>	10.8	3.0	32.5	9.0
CGAX	<b>035</b>	8.4	2.3	25.3	7.0
CGAX	<b>040</b>	10.0	2.8	30.1	8.4
CGAX	<b>046</b>	11.2	3.1	33.5	9.3
CGAX	<b>052</b>	12.6	3.5	37.8	10.5
CGAX	<b>060</b>	14.1	3.9	42.4	11.8
CXAX	<b>015</b>	3.8	1.0	11.3	3.1
CXAX	<b>017</b>	4.2	1.2	12.7	3.5
CXAX	<b>020</b>	5.0	1.4	15.0	4.2
CXAX	<b>023</b>	5.8	1.6	17.3	4.8
CXAX	<b>026</b>	6.4	1.8	19.1	5.3
CXAX	<b>030</b>	7.1	2.0	21.2	5.9
CXAX	<b>036</b>	8.3	2.3	24.8	6.9
CXAX	<b>039</b>	9.4	2.6	28.2	7.8
CXAX	<b>045</b>	10.4	2.9	31.3	8.7
CXAX	<b>035</b>	8.4	2.3	25.3	7.0
CXAX	<b>040</b>	9.6	2.7	28.7	8.0
CXAX	<b>046</b>	11.3	3.1	33.8	9.4
CXAX	<b>052</b>	12.5	3.5	37.5	10.4
CXAX	<b>060</b>	13.9	3.9	41.6	11.6



# Sound Data

**Table 18 – Overall Sound Power Level at full load and 35°C ambient temperature - SE-HE versions**

Unit Type		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global dBA
CGAX	015 SN	75 dB	80 dB	80 dB	78 dB	79 dB	75 dB	69 dB	55 dB	<b>83 dBA</b>
CGAX	017 SN	75 dB	80 dB	80 dB	78 dB	79 dB	75 dB	69 dB	55 dB	<b>83 dBA</b>
CGAX	020 SN	75 dB	88 dB	84 dB	81 dB	81 dB	76 dB	71 dB	60 dB	<b>85 dBA</b>
CGAX	023 SN	72 dB	88 dB	84 dB	81 dB	81 dB	76 dB	69 dB	61 dB	<b>85 dBA</b>
CGAX	026 SN	66 dB	88 dB	84 dB	81 dB	81 dB	76 dB	68 dB	62 dB	<b>85 dBA</b>
CGAX	030 SN	66 dB	88 dB	84 dB	83 dB	81 dB	78 dB	72 dB	60 dB	<b>86 dBA</b>
CGAX	036 SN	67 dB	83 dB	82 dB	80 dB	81 dB	77 dB	68 dB	61 dB	<b>84 dBA</b>
CGAX	039 SN	67 dB	84 dB	81 dB	80 dB	82 dB	77 dB	68 dB	62 dB	<b>85 dBA</b>
CGAX	045 SN	68 dB	88 dB	85 dB	84 dB	83 dB	80 dB	73 dB	62 dB	<b>87 dBA</b>
CGAX	035 SN	78 dB	84 dB	82 dB	80 dB	83 dB	78 dB	73 dB	60 dB	<b>86 dBA</b>
CGAX	040 SN	78 dB	91 dB	88 dB	84 dB	84 dB	79 dB	74 dB	63 dB	<b>88 dBA</b>
CGAX	046 SN	75 dB	91 dB	87 dB	84 dB	84 dB	79 dB	72 dB	64 dB	<b>88 dBA</b>
CGAX	052 SN	69 dB	91 dB	87 dB	84 dB	84 dB	79 dB	71 dB	65 dB	<b>88 dBA</b>
CGAX	060 SN	69 dB	91 dB	87 dB	86 dB	84 dB	81 dB	75 dB	63 dB	<b>89 dBA</b>
CGAX	015 LN	77 dB	81 dB	74 dB	71 dB	74 dB	70 dB	62 dB	51 dB	<b>77 dBA</b>
CGAX	017 LN	77 dB	81 dB	74 dB	71 dB	74 dB	70 dB	62 dB	51 dB	<b>77 dBA</b>
CGAX	020 LN	77 dB	80 dB	76 dB	75 dB	76 dB	71 dB	64 dB	56 dB	<b>79 dBA</b>
CGAX	023 LN	75 dB	80 dB	76 dB	75 dB	75 dB	71 dB	63 dB	57 dB	<b>79 dBA</b>
CGAX	026 LN	68 dB	80 dB	75 dB	75 dB	75 dB	71 dB	62 dB	58 dB	<b>79 dBA</b>
CGAX	030 LN	66 dB	80 dB	76 dB	77 dB	75 dB	73 dB	65 dB	56 dB	<b>80 dBA</b>
CGAX	036 LN	70 dB	84 dB	75 dB	74 dB	76 dB	72 dB	61 dB	57 dB	<b>79 dBA</b>
CGAX	039 LN	70 dB	83 dB	76 dB	75 dB	76 dB	72 dB	62 dB	58 dB	<b>80 dBA</b>
CGAX	045 LN	68 dB	83 dB	77 dB	78 dB	77 dB	75 dB	66 dB	58 dB	<b>82 dBA</b>
CGAX	035 LN	80 dB	83 dB	78 dB	75 dB	78 dB	73 dB	66 dB	56 dB	<b>81 dBA</b>
CGAX	040 LN	80 dB	83 dB	79 dB	78 dB	79 dB	74 dB	67 dB	59 dB	<b>82 dBA</b>
CGAX	046 LN	78 dB	83 dB	79 dB	78 dB	78 dB	74 dB	66 dB	60 dB	<b>82 dBA</b>
CGAX	052 LN	71 dB	83 dB	78 dB	78 dB	78 dB	74 dB	65 dB	61 dB	<b>82 dBA</b>
CGAX	060 LN	69 dB	83 dB	79 dB	80 dB	78 dB	76 dB	68 dB	59 dB	<b>83 dBA</b>
CXAX	015 SN	75 dB	82 dB	80 dB	79 dB	81 dB	76 dB	70 dB	57 dB	<b>84 dBA</b>
CXAX	017 SN	75 dB	82 dB	80 dB	79 dB	81 dB	76 dB	70 dB	57 dB	<b>84 dBA</b>
CXAX	020 SN	75 dB	82 dB	80 dB	79 dB	81 dB	76 dB	70 dB	57 dB	<b>84 dBA</b>
CXAX	023 SN	72 dB	88 dB	85 dB	82 dB	81 dB	77 dB	70 dB	61 dB	<b>85 dBA</b>
CXAX	026 SN	66 dB	88 dB	85 dB	82 dB	81 dB	77 dB	69 dB	62 dB	<b>85 dBA</b>
CXAX	030 SN	66 dB	88 dB	85 dB	83 dB	81 dB	78 dB	72 dB	60 dB	<b>86 dBA</b>
CXAX	036 SN	67 dB	85 dB	82 dB	82 dB	83 dB	78 dB	69 dB	63 dB	<b>86 dBA</b>
CXAX	039 SN	67 dB	89 dB	86 dB	84 dB	84 dB	78 dB	70 dB	64 dB	<b>87 dBA</b>
CXAX	045 SN	68 dB	89 dB	86 dB	85 dB	83 dB	80 dB	74 dB	62 dB	<b>88 dBA</b>
CXAX	035 SN	78 dB	85 dB	83 dB	82 dB	84 dB	79 dB	73 dB	60 dB	<b>87 dBA</b>
CXAX	040 SN	78 dB	85 dB	83 dB	82 dB	84 dB	79 dB	73 dB	60 dB	<b>87 dBA</b>
CXAX	046 SN	75 dB	91 dB	88 dB	85 dB	84 dB	80 dB	73 dB	64 dB	<b>88 dBA</b>
CXAX	052 SN	69 dB	91 dB	88 dB	85 dB	84 dB	80 dB	72 dB	65 dB	<b>88 dBA</b>
CXAX	060 SN	69 dB	91 dB	88 dB	86 dB	84 dB	81 dB	75 dB	63 dB	<b>89 dBA</b>



## Sound Data

Unit Type	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global dBA
CXAX 015 LN	77 dB	84 dB	75 dB	71 dB	74 dB	70 dB	62 dB	51 dB	<b>78 dBA</b>
CXAX 017 LN	77 dB	84 dB	75 dB	71 dB	74 dB	70 dB	62 dB	51 dB	<b>78 dBA</b>
CXAX 020 LN	77 dB	84 dB	75 dB	71 dB	74 dB	70 dB	62 dB	51 dB	<b>78 dBA</b>
CXAX 023 LN	75 dB	82 dB	77 dB	76 dB	76 dB	73 dB	66 dB	57 dB	<b>80 dBA</b>
CXAX 026 LN	68 dB	82 dB	77 dB	76 dB	76 dB	73 dB	65 dB	58 dB	<b>80 dBA</b>
CXAX 030 LN	66 dB	82 dB	77 dB	77 dB	76 dB	75 dB	67 dB	57 dB	<b>81 dBA</b>
CXAX 036 LN	70 dB	87 dB	76 dB	74 dB	76 dB	72 dB	61 dB	57 dB	<b>80 dBA</b>
CXAX 039 LN	70 dB	87 dB	78 dB	77 dB	77 dB	74 dB	66 dB	59 dB	<b>81 dBA</b>
CXAX 045 LN	68 dB	86 dB	78 dB	78 dB	77 dB	76 dB	68 dB	58 dB	<b>82 dBA</b>
CXAX 035 LN	80 dB	87 dB	78 dB	74 dB	77 dB	73 dB	65 dB	54 dB	<b>81 dBA</b>
CXAX 040 LN	80 dB	87 dB	78 dB	74 dB	77 dB	73 dB	65 dB	54 dB	<b>81 dBA</b>
CXAX 046 LN	78 dB	85 dB	80 dB	79 dB	79 dB	76 dB	69 dB	60 dB	<b>83 dBA</b>
CXAX 052 LN	71 dB	85 dB	80 dB	79 dB	79 dB	76 dB	68 dB	61 dB	<b>83 dBA</b>
CXAX 060 LN	69 dB	85 dB	80 dB	80 dB	79 dB	78 dB	70 dB	60 dB	<b>84 dBA</b>

**Table 19 – Overall Sound pressure level at 10m - SE-HE versions**

Unit Type	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global dBA
CGAX 015 SN	45 dB	50 dB	50 dB	47 dB	49 dB	45 dB	39 dB	25 dB	<b>53 dBA</b>
CGAX 017 SN	45 dB	50 dB	50 dB	47 dB	49 dB	45 dB	39 dB	25 dB	<b>53 dBA</b>
CGAX 020 SN	45 dB	58 dB	54 dB	51 dB	51 dB	46 dB	40 dB	30 dB	<b>55 dBA</b>
CGAX 023 SN	42 dB	58 dB	54 dB	51 dB	51 dB	46 dB	39 dB	31 dB	<b>55 dBA</b>
CGAX 026 SN	36 dB	58 dB	54 dB	51 dB	51 dB	46 dB	38 dB	32 dB	<b>55 dBA</b>
CGAX 030 SN	36 dB	58 dB	54 dB	52 dB	51 dB	48 dB	42 dB	30 dB	<b>55 dBA</b>
CGAX 036 SN	37 dB	53 dB	51 dB	49 dB	50 dB	46 dB	37 dB	30 dB	<b>54 dBA</b>
CGAX 039 SN	37 dB	53 dB	50 dB	49 dB	51 dB	46 dB	38 dB	31 dB	<b>54 dBA</b>
CGAX 045 SN	37 dB	58 dB	54 dB	53 dB	52 dB	49 dB	43 dB	31 dB	<b>56 dBA</b>
CGAX 035 SN	47 dB	53 dB	51 dB	50 dB	52 dB	48 dB	42 dB	29 dB	<b>55 dBA</b>
CGAX 040 SN	47 dB	60 dB	57 dB	54 dB	54 dB	49 dB	43 dB	33 dB	<b>57 dBA</b>
CGAX 046 SN	45 dB	60 dB	57 dB	54 dB	53 dB	48 dB	42 dB	33 dB	<b>57 dBA</b>
CGAX 052 SN	38 dB	60 dB	57 dB	54 dB	53 dB	48 dB	40 dB	34 dB	<b>57 dBA</b>
CGAX 060 SN	38 dB	60 dB	57 dB	55 dB	53 dB	50 dB	44 dB	33 dB	<b>58 dBA</b>
CGAX 015 LN	47 dB	51 dB	44 dB	41 dB	44 dB	40 dB	32 dB	21 dB	<b>47 dBA</b>
CGAX 017 LN	47 dB	51 dB	44 dB	41 dB	44 dB	40 dB	32 dB	21 dB	<b>47 dBA</b>
CGAX 020 LN	47 dB	50 dB	46 dB	45 dB	45 dB	41 dB	34 dB	26 dB	<b>49 dBA</b>
CGAX 023 LN	44 dB	50 dB	46 dB	45 dB	45 dB	41 dB	33 dB	27 dB	<b>49 dBA</b>
CGAX 026 LN	38 dB	50 dB	45 dB	45 dB	45 dB	41 dB	32 dB	28 dB	<b>49 dBA</b>
CGAX 030 LN	36 dB	50 dB	45 dB	46 dB	45 dB	43 dB	34 dB	26 dB	<b>50 dBA</b>
CGAX 036 LN	39 dB	53 dB	44 dB	43 dB	45 dB	41 dB	30 dB	26 dB	<b>48 dBA</b>
CGAX 039 LN	39 dB	52 dB	45 dB	44 dB	45 dB	41 dB	31 dB	27 dB	<b>49 dBA</b>
CGAX 045 LN	37 dB	52 dB	46 dB	47 dB	46 dB	44 dB	35 dB	27 dB	<b>51 dBA</b>
CGAX 035 LN	49 dB	52 dB	47 dB	44 dB	47 dB	42 dB	35 dB	25 dB	<b>50 dBA</b>
CGAX 040 LN	49 dB	52 dB	48 dB	47 dB	48 dB	43 dB	36 dB	28 dB	<b>51 dBA</b>
CGAX 046 LN	47 dB	52 dB	48 dB	47 dB	47 dB	43 dB	35 dB	29 dB	<b>51 dBA</b>
CGAX 052 LN	40 dB	52 dB	47 dB	47 dB	47 dB	43 dB	34 dB	30 dB	<b>51 dBA</b>
CGAX 060 LN	38 dB	52 dB	48 dB	49 dB	47 dB	45 dB	37 dB	28 dB	<b>52 dBA</b>

## Sound Data

### Sound pressure level at 10m - SE-HE versions

Unit Type		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global dBA
CXAX	015 SN	45 dB	52 dB	50 dB	49 dB	51 dB	46 dB	40 dB	27 dB	<b>54 dBA</b>
CXAX	017 SN	45 dB	52 dB	50 dB	49 dB	51 dB	46 dB	40 dB	27 dB	<b>54 dBA</b>
CXAX	020 SN	45 dB	52 dB	50 dB	49 dB	51 dB	46 dB	40 dB	27 dB	<b>54 dBA</b>
CXAX	023 SN	42 dB	58 dB	55 dB	52 dB	51 dB	47 dB	40 dB	31 dB	<b>55 dBA</b>
CXAX	026 SN	36 dB	58 dB	55 dB	52 dB	51 dB	46 dB	39 dB	32 dB	<b>55 dBA</b>
CXAX	030 SN	36 dB	57 dB	54 dB	53 dB	51 dB	48 dB	42 dB	30 dB	<b>56 dBA</b>
CXAX	036 SN	37 dB	54 dB	51 dB	51 dB	53 dB	47 dB	38 dB	32 dB	<b>55 dBA</b>
CXAX	039 SN	37 dB	58 dB	55 dB	53 dB	53 dB	48 dB	39 dB	33 dB	<b>56 dBA</b>
CXAX	045 SN	37 dB	58 dB	55 dB	54 dB	53 dB	49 dB	43 dB	31 dB	<b>57 dBA</b>
CXAX	035 SN	47 dB	54 dB	52 dB	51 dB	53 dB	48 dB	42 dB	30 dB	<b>56 dBA</b>
CXAX	040 SN	47 dB	54 dB	52 dB	51 dB	53 dB	48 dB	42 dB	30 dB	<b>56 dBA</b>
CXAX	046 SN	45 dB	60 dB	57 dB	54 dB	54 dB	49 dB	42 dB	33 dB	<b>58 dBA</b>
CXAX	052 SN	38 dB	60 dB	57 dB	54 dB	54 dB	49 dB	41 dB	34 dB	<b>57 dBA</b>
CXAX	060 SN	38 dB	60 dB	57 dB	55 dB	53 dB	50 dB	44 dB	32 dB	<b>58 dBA</b>
CXAX	015 LN	47 dB	54 dB	45 dB	41 dB	44 dB	40 dB	32 dB	20 dB	<b>47 dBA</b>
CXAX	017 LN	47 dB	54 dB	45 dB	41 dB	44 dB	40 dB	32 dB	20 dB	<b>47 dBA</b>
CXAX	020 LN	47 dB	54 dB	45 dB	41 dB	44 dB	40 dB	32 dB	20 dB	<b>47 dBA</b>
CXAX	023 LN	44 dB	52 dB	47 dB	46 dB	46 dB	43 dB	35 dB	27 dB	<b>50 dBA</b>
CXAX	026 LN	38 dB	52 dB	46 dB	46 dB	46 dB	43 dB	35 dB	28 dB	<b>50 dBA</b>
CXAX	030 LN	36 dB	52 dB	46 dB	47 dB	45 dB	44 dB	36 dB	26 dB	<b>50 dBA</b>
CXAX	036 LN	39 dB	56 dB	45 dB	43 dB	45 dB	41 dB	30 dB	26 dB	<b>49 dBA</b>
CXAX	039 LN	39 dB	55 dB	47 dB	46 dB	46 dB	43 dB	35 dB	28 dB	<b>50 dBA</b>
CXAX	045 LN	37 dB	55 dB	47 dB	47 dB	46 dB	45 dB	37 dB	27 dB	<b>51 dBA</b>
CXAX	035 LN	49 dB	56 dB	47 dB	43 dB	46 dB	42 dB	34 dB	23 dB	<b>50 dBA</b>
CXAX	040 LN	49 dB	56 dB	47 dB	43 dB	46 dB	42 dB	34 dB	23 dB	<b>50 dBA</b>
CXAX	046 LN	47 dB	54 dB	49 dB	48 dB	48 dB	45 dB	38 dB	29 dB	<b>52 dBA</b>
CXAX	052 LN	40 dB	54 dB	49 dB	48 dB	48 dB	45 dB	37 dB	30 dB	<b>52 dBA</b>
CXAX	060 LN	38 dB	54 dB	49 dB	49 dB	48 dB	46 dB	39 dB	28 dB	<b>53 dBA</b>



## Sound Data

**Table 20 – Overall Sound Power Level at full load and 35°C ambient temperature - HESP version**

Unit Type		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global dBA
CGAX	015 HESP	75 dB	84 dB	82 dB	80 dB	82 dB	77 dB	71 dB	62 dB	<b>85 dBA</b>
CGAX	017 HESP	75 dB	84 dB	82 dB	80 dB	82 dB	77 dB	71 dB	62 dB	<b>85 dBA</b>
CGAX	020 HESP	75 dB	89 dB	89 dB	85 dB	84 dB	80 dB	74 dB	68 dB	<b>89 dBA</b>
CGAX	023 HESP	72 dB	89 dB	89 dB	85 dB	84 dB	80 dB	73 dB	68 dB	<b>89 dBA</b>
CGAX	026 HESP	66 dB	89 dB	89 dB	85 dB	84 dB	79 dB	73 dB	69 dB	<b>89 dBA</b>
CGAX	030 HESP	66 dB	89 dB	89 dB	86 dB	84 dB	80 dB	74 dB	68 dB	<b>89 dBA</b>
CGAX	036 HESP	70 dB	87 dB	85 dB	83 dB	85 dB	80 dB	72 dB	66 dB	<b>89 dBA</b>
CGAX	039 HESP	70 dB	84 dB	85 dB	86 dB	86 dB	81 dB	74 dB	67 dB	<b>90 dBA</b>
CGAX	045 HESP	71 dB	89 dB	90 dB	88 dB	87 dB	84 dB	77 dB	69 dB	<b>92 dBA</b>
CGAX	035 HESP	78 dB	84 dB	85 dB	86 dB	86 dB	81 dB	75 dB	66 dB	<b>90 dBA</b>
CGAX	040 HESP	78 dB	92 dB	92 dB	88 dB	87 dB	83 dB	77 dB	71 dB	<b>92 dBA</b>
CGAX	046 HESP	75 dB	92 dB	92 dB	88 dB	87 dB	83 dB	76 dB	71 dB	<b>92 dBA</b>
CGAX	052 HESP	69 dB	92 dB	92 dB	88 dB	87 dB	82 dB	76 dB	72 dB	<b>92 dBA</b>
CGAX	060 HESP	69 dB	92 dB	92 dB	89 dB	87 dB	83 dB	77 dB	71 dB	<b>92 dBA</b>
CXAX	015 HESP	78 dB	88 dB	90 dB	80 dB	81 dB	75 dB	69 dB	64 dB	<b>86 dBA</b>
CXAX	017 HESP	78 dB	88 dB	90 dB	80 dB	81 dB	75 dB	69 dB	64 dB	<b>86 dBA</b>
CXAX	020 HESP	78 dB	90 dB	88 dB	84 dB	85 dB	79 dB	74 dB	69 dB	<b>89 dBA</b>
CXAX	023 HESP	76 dB	90 dB	88 dB	84 dB	85 dB	79 dB	74 dB	90 dB	<b>92 dBA</b>
CXAX	026 HESP	69 dB	90 dB	88 dB	84 dB	85 dB	79 dB	74 dB	93 dB	<b>94 dBA</b>
CXAX	030 HESP	67 dB	90 dB	88 dB	84 dB	85 dB	80 dB	74 dB	69 dB	<b>89 dBA</b>
CXAX	036 HESP	71 dB	91 dB	93 dB	83 dB	84 dB	78 dB	72 dB	95 dB	<b>95 dBA</b>
CXAX	039 HESP	71 dB	90 dB	92 dB	84 dB	84 dB	80 dB	73 dB	95 dB	<b>95 dBA</b>
CXAX	045 HESP	69 dB	91 dB	92 dB	86 dB	86 dB	82 dB	76 dB	71 dB	<b>91 dBA</b>
CXAX	035 HESP	81 dB	90 dB	92 dB	84 dB	84 dB	80 dB	74 dB	68 dB	<b>90 dBA</b>
CXAX	040 HESP	81 dB	93 dB	91 dB	87 dB	88 dB	82 dB	77 dB	72 dB	<b>92 dBA</b>
CXAX	046 HESP	79 dB	93 dB	91 dB	87 dB	88 dB	82 dB	77 dB	93 dB	<b>95 dBA</b>
CXAX	052 HESP	72 dB	93 dB	91 dB	87 dB	88 dB	82 dB	77 dB	96 dB	<b>97 dBA</b>
CXAX	060 HESP	70 dB	93 dB	91 dB	87 dB	88 dB	83 dB	77 dB	72 dB	<b>92 dBA</b>

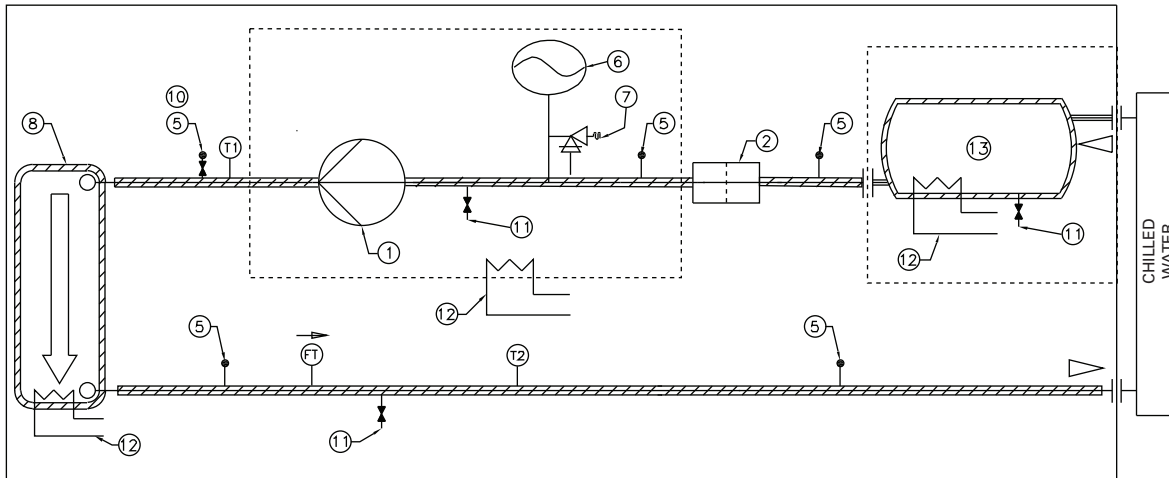
## Sound Data

**Table 21 – Overall Sound pressure level at 10m - HESP version**

Unit Type		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global dBA
CGAX	015 HESP	45 dB	54 dB	52 dB	50 dB	51 dB	46 dB	41 dB	31 dB	<b>55 dBA</b>
CGAX	017 HESP	45 dB	54 dB	52 dB	50 dB	51 dB	46 dB	41 dB	31 dB	<b>55 dBA</b>
CGAX	020 HESP	45 dB	58 dB	58 dB	55 dB	54 dB	49 dB	43 dB	38 dB	<b>58 dBA</b>
CGAX	023 HESP	42 dB	58 dB	58 dB	55 dB	54 dB	49 dB	43 dB	38 dB	<b>58 dBA</b>
CGAX	026 HESP	35 dB	58 dB	58 dB	55 dB	54 dB	49 dB	42 dB	38 dB	<b>58 dBA</b>
CGAX	030 HESP	35 dB	58 dB	58 dB	55 dB	53 dB	50 dB	44 dB	38 dB	<b>58 dBA</b>
CGAX	036 HESP	39 dB	56 dB	54 dB	52 dB	54 dB	49 dB	41 dB	35 dB	<b>57 dBA</b>
CGAX	039 HESP	39 dB	53 dB	54 dB	55 dB	55 dB	50 dB	43 dB	36 dB	<b>58 dBA</b>
CGAX	045 HESP	40 dB	58 dB	59 dB	57 dB	56 dB	53 dB	46 dB	38 dB	<b>60 dBA</b>
CGAX	035 HESP	47 dB	53 dB	54 dB	55 dB	55 dB	50 dB	44 dB	35 dB	<b>58 dBA</b>
CGAX	040 HESP	47 dB	61 dB	61 dB	57 dB	56 dB	52 dB	46 dB	40 dB	<b>61 dBA</b>
CGAX	046 HESP	44 dB	61 dB	61 dB	57 dB	56 dB	52 dB	45 dB	40 dB	<b>60 dBA</b>
CGAX	052 HESP	38 dB	61 dB	61 dB	57 dB	56 dB	51 dB	45 dB	41 dB	<b>60 dBA</b>
CGAX	060 HESP	38 dB	61 dB	60 dB	58 dB	56 dB	52 dB	46 dB	40 dB	<b>60 dBA</b>
CXAX	015 HESP	45 dB	54 dB	52 dB	50 dB	51 dB	46 dB	41 dB	31 dB	<b>55 dBA</b>
CXAX	017 HESP	45 dB	54 dB	52 dB	50 dB	51 dB	46 dB	41 dB	31 dB	<b>55 dBA</b>
CXAX	020 HESP	45 dB	58 dB	58 dB	55 dB	54 dB	49 dB	43 dB	38 dB	<b>58 dBA</b>
CXAX	023 HESP	42 dB	58 dB	58 dB	55 dB	54 dB	49 dB	43 dB	38 dB	<b>58 dBA</b>
CXAX	026 HESP	35 dB	58 dB	58 dB	55 dB	54 dB	49 dB	42 dB	38 dB	<b>58 dBA</b>
CXAX	030 HESP	35 dB	58 dB	58 dB	55 dB	53 dB	50 dB	44 dB	38 dB	<b>58 dBA</b>
CXAX	036 HESP	39 dB	56 dB	54 dB	52 dB	54 dB	49 dB	41 dB	35 dB	<b>57 dBA</b>
CXAX	039 HESP	36 dB	58 dB	58 dB	54 dB	54 dB	49 dB	42 dB	38 dB	<b>58 dBA</b>
CXAX	045 HESP	40 dB	61 dB	61 dB	58 dB	56 dB	53 dB	47 dB	40 dB	<b>61 dBA</b>
CXAX	035 HESP	47 dB	53 dB	54 dB	55 dB	55 dB	50 dB	44 dB	35 dB	<b>58 dBA</b>
CXAX	040 HESP	47 dB	61 dB	61 dB	57 dB	56 dB	52 dB	46 dB	40 dB	<b>61 dBA</b>
CXAX	046 HESP	44 dB	61 dB	61 dB	57 dB	56 dB	52 dB	45 dB	40 dB	<b>60 dBA</b>
CXAX	052 HESP	38 dB	61 dB	61 dB	57 dB	56 dB	51 dB	45 dB	41 dB	<b>60 dBA</b>
CXAX	060 HESP	38 dB	61 dB	60 dB	58 dB	56 dB	52 dB	46 dB	40 dB	<b>60 dBA</b>

# Typical Unit Schematics

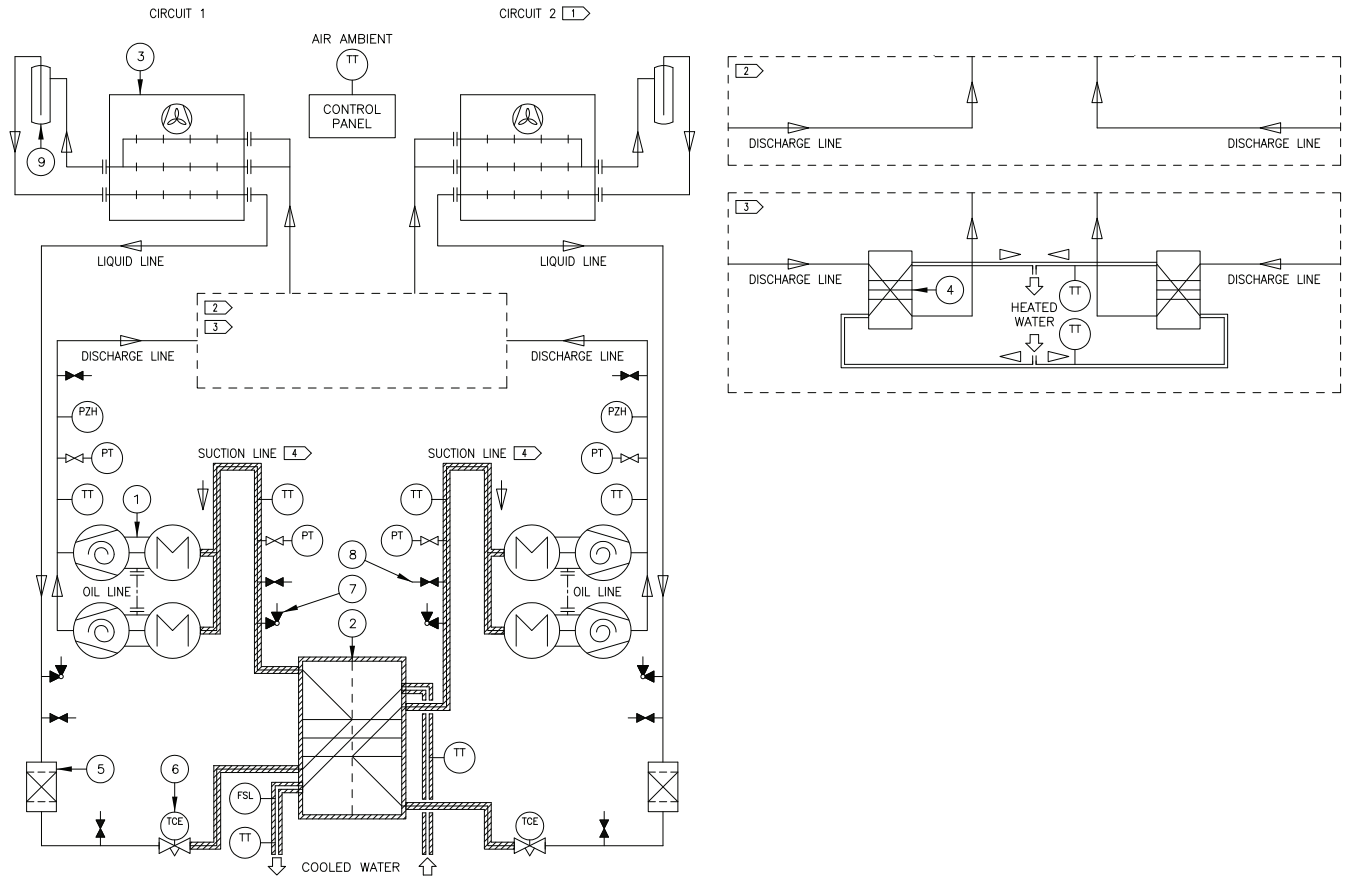
Figure 10 – Hydraulic Module water chart



- 1 - Single or Dual Pump
- 2 - Water Strainer
- 5 - Valve for pressure point
- 6 - Expansion tank
- 7 - Water pressure point
- 8 - Brazed Plate Heat Exchanger
- 10 - Manual air bleed
- 11 - Drain valve
- 12 - Optional Freeze protection
- 13 - Optional buffer tank
- FT - Water flow switch
- T1 - Water inlet temperature sensor
- T2 - Water outlet temperature sensor

# Typical Unit Schematics

**Figure 11 – Refrigerant Chart Cooling-only Units**



ITEM	DESIGNATION
1	SCROLL COMPRESSOR
2	EVAPORATOR (PLATE HEAT EXCHANGER)
3	CONDENSER (MICRO CHANNEL HEAT EXCHANGER)
4	HEAT RECOVERY EXCHANGER (PLATE HEAT EXCHANGER)
5	FILTER DRIER
6	ELECTRIC EXPANSION VALVE
7	SERVICE VALVE
8	SCHRAEDER VALVE
9	RECEIVER

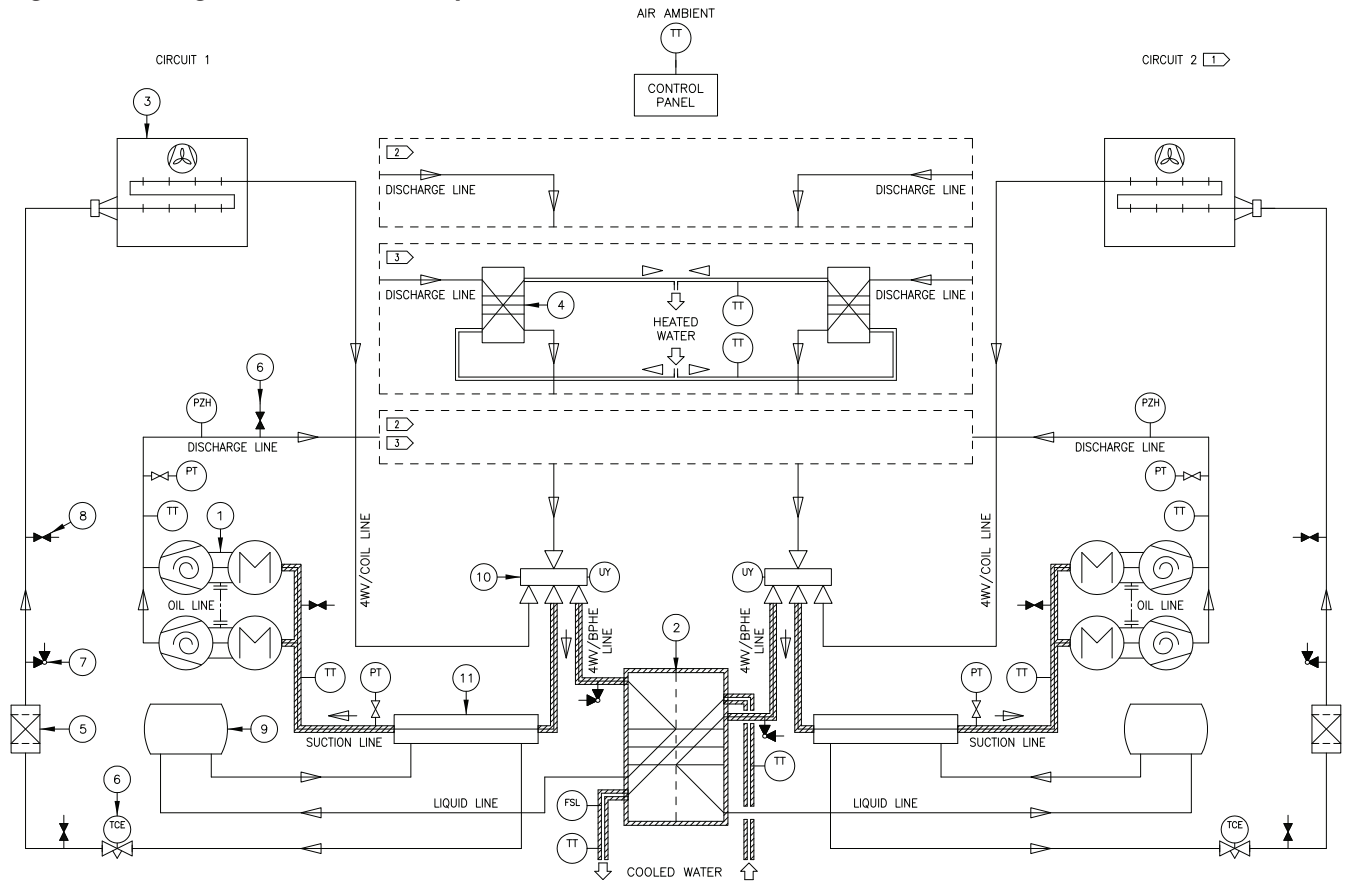
ITEM	DESIGNATION
PT	PRESSURE TRANSDUCER
PZH	HIGH PRESSURE SWITCH
TT	TEMPERATURE SENSOR
TCE	ELECTRIC EXPANSION VALVE
FSL	EVAPORATOR WATER FLOW SWITCH

—	REFRIGERANT LINE
- - -	OIL LINE
====	CHILLED / HEATED WATER LINE
	INSULATION

- 1 ONLY FOR CGAX 035-040-046-052-060.  
CGAX 015-017-020-023-026-030 GET ONLY ONE REFRIGERANT CIRCUIT
- 2 COOLING ONLY UNIT
- 3 PARTIAL HEAT RECOVERY OPTION
- 4 INSULATION ON SUCTION LINES ONLY WHEN EVAPORATOR WATER OUTLET IS BELOW 5°C

# Typical Unit Schematics

Figure 12 – Refrigerant Chart Heat Pump Units



ITEM	DESIGNATION
1	SCROLL COMPRESSOR
2	EVAPORATOR (PLATE HEAT EXCHANGER)
3	CONDENSER (FINS & TUBES HEAT EXCHANGER)
4	HEAT RECOVERY EXCHANGER (PLATE HEAT EXCHANGER)
5	BIFLOW FILTER DRIER
6	ELECTRIC EXPANSION VALVE
7	SERVICE VALVE
8	SCHRAEDER VALVE
9	RECEIVER
10	4 WAY REVERSING VALVE
11	SUCTION/LIQUID HEAT EXCHANGER (TUBE IN TUBE EXCHANGER)

ITEM	DESIGNATION
PT	PRESSURE TRANSDUCER
PZH	HIGH PRESSURE SWITCH
TT	TEMPERATURE SENSOR
TCE	ELECTRIC EXPANSION VALVE
FSL	EVAPORATOR WATER FLOW SWITCH
UY	SOLENOID

—	REFRIGERANT LINE
- - -	OIL LINE
====	CHILLED / HEATED WATER LINE
	INSULATION

- 1 ONLY FOR CXAX 035-040-046-052-060.  
CXAX 015-017-020-023-026-030 GET ONLY ONE REFRIGERANT CIRCUIT
- 2 HEAT PUMP ONLY UNIT
- 3 PARTIAL HEAT RECOVERY OPTION
- 4 INSULATION ON SUCTION LINES ONLY WHEN EVAPORATOR WATER OUTLET IS BELOW 5°C

REFRIGERANT FLOW DIRECTION IS SHOWN FOR HEATING MODE



# Mechanical Specifications

## General

Chiller is designed for outdoor application strictly in accordance with specifications and it will be shipped with a full operating charge of R410A refrigerant and lubrication oil scroll compressors and electronic expansion valve.

## Quality assurance

Chiller is designed and manufactured under a quality assurance system and environmental management system certified in accordance with standard ISO 9001:2008 and ISO14001.

All chillers follow a production quality plan to ensure proper construction and operation including electrical sequence running test.

Unit construction is in accordance with the following European directives:

- Machinery Directive (MD) 2006/42/CE
- Low Voltage Directive (LV) 2006/95/CE
- ElectroMagnetic Compatibility Directive (EMC) 2004/108/CE
- Electrical Machinery Safety Standard EN 60204-1

## Construction characteristics

Chiller casing and electrical panels are made of galvanized steel of 1.5 mm thickness mounted on a riveted structural steel entirely painted base. Unit panels frames and exposed steel surfaces are painted and have a corrosion resistance of 1500 hours to salt spray test according ISO 9227. Electrical panel is rated as minimum. IP54 fully factory mounted and wired with access door clearly visible from outside with power on/off indication.

## Compressors and Motors

Chiller are provided with hermetic Scroll compressors:

- Direct drive 2900 rpm
- Suction gas cooled hermetic motor
- Built-in centrifugal oil pump
- Built-in oil level sight glass and oil charging valve

Compressor motors have a voltage utilization range of  $\pm 10\%$  on nameplate voltage internal temperature and current-sensitive motor overload is included for maximum protection.

## Evaporator

The evaporator is a single brazed plate heat exchanger made of stainless steel 316 L and copper brazing designed to operate properly and efficiently with a refrigerant charge.

Maximum operating pressure on water side does not exceed 1MPa. The evaporator is fully insulated with appropriate thickness and close cell type insulation protected against freezing either with a control activated heater either with a pump activation sequence whenever the ambient temperature will be below 3°C. It has only one entering and only one leaving water connection.

Chiller is able to supply water temperature leaving the evaporator:

- For comfort application: between 5°C / 20°C
- For process application:
  - o Between -12°C and 5°C on cooling only units (CGAX)
  - o Between -10°C and 5°C on heat pump units (CXAX)



## Mechanical Specifications

### Condenser coil and fans

Ambient temperature operating map is as minimum:

- Cooling only: 5°C (-18°C with Low Ambient Option) up to 46°C
- Heating mode: -15°C up to 20°C

#### Cooling-only units coils

Condenser coil is Microchannel type made in aluminum brazed fin construction; coils will consist of three main components: flat microchannel tube fins in between the microchannel tubes and two refrigerant manifolds. Coils are cleanable using a high pressure water stream. Condenser coil includes an integral subcooling circuit. An option for E-coating or complete coil coating shall be available.

#### Heat pump units coils

Condenser coil is made of aluminum fins mechanically bonded to seamless copper tubing and includes integral subcooling circuit. Coils are factory leak tested at 3.2Mpa under water. If unit will be installed on corrosive environment aluminum fins are pre-coated with epoxy with minimum thickness of 8µm in order to withstand 1000 hours of salt spray test according ISO 9227.

Chillers are equipped with axial condenser fan and motors with permanently lubricated ball bearings and external overload protection shall be provided. Fans motors are class F, powered through an IP55 electrical box.

### Refrigerant Circuit

Each refrigerant circuit includes compressor(s) high and low pressure transducer permanent liquid filter drier electronic expansion valve pressure port on each refrigerant line full operating charge of R410A and POE oil as long as high pressure side pressostat.

### Oil Management

The chiller is equipped with an oil management system consisting of an oil pump integrated on the compressor to ensure proper oil circulation throughout the unit and a crankcase heater integrated in the compressor to avoid startup with low oil temperature. Unit is delivered with operating oil charge factory supplied and checked (Trane recommended oil OIL 0057E or OIL 0058E).

### Electrical panel

Unit is provided with a weatherproof control and IP54 power panel with a single point connection with disconnect switch. The disconnect switch is mechanically interlocked to disconnect line power from power panel accessible from the outside the chiller. All components and control cables are numbered in accordance with CEI 60750. The unit is equipped with a control power transformer with two secondary control circuits:

- 230 V single phase connection for evaporator freeze protection heaters and control board
- 24 V single phase connection for the human interface control.

Each compressor is provided with a direct on line starter factory mounted wired and tested. Soft Starter is available as an option.

## Mechanical Specifications

### Hydraulic module (option)

Hydraulic module is integrated within the chiller frame field pipe connection is Victaulic and is outside of the unit casing. Hydraulic kit has the following factory mounted components:

- Single or double pump (in this case manifolded in parallel one pump working as redundancy of the other) factory mounted wired and tested with check valve in the discharge. Options for standard and high pressure shall be available.
- Pump crankcase shall be in polyamid impeller in propylene dynamically balanced. Pump rated for 1MPa working pressure.
- Pre-charged expansion tank.
- Flow switch.
- Water strainer able to retain particles above 1mm of diameter.
- Water pressure relief valve.
- Electrical heater for freezing protection up to -10°C.
- Cold critical parts such the brazed plate evaporator will be insulated with a closed cell foam insulation against condensation of minimum 13 mm.
- Freeze protection shall be made by pump activation as standard.
- As an option unit shall include a water buffer tank insulated with closed cell foam of 13mm with antifreezing protection. Buffer tank will fit into the chiller to minimize the system footprint.

### Chiller Control System CH535

Chilled water temperature control is fulfilled through a microprocessor based controller monitoring water and refrigerant temperature as long as refrigerant pressure. Controller is able to generate adequate operational diagnostics.

The Microprocessor based controller is supplied factory mounted fully wired configured and tested in factory and it ensures compressor and fan sequence (load control) fault detection diagnostic and supervision.

#### **The following features are present on the chiller operational control**

- High and low refrigerant pressure protection
- Load limit control to limit compressor loading on high return water temperature
- Condenser fan sequencing with automatically cycling in response to ambient condensing pressure.
- Compressors anti-short cycle timer protection adjustable
- Automatic compressor lead-lag to even out run hours and compressors starts
- Phase reversal/single phasing protection
- Low ambient lockout control with adjustable set point
- Integrated RS485 serial port to allow BMS connectivity
- Options for communication protocols: ModBus, LonTalk and BACnet should be available

#### **User display interface are provided on the external wall of the chiller allowing complete graphic management through icons and touchscreen display:**

- Leaving chilled water setpoint adjustment
- Entering and leaving water temperatures display
- Condenser pressure per circuit
- Suction pressure per circuit
- Air ambient temperature
- Condensing temperature per circuit
- Suction temperature per circuit

#### **Safety control readouts on the user display:**

- Low chilled water temperature detection
- High refrigerant pressure
- Loss of chilled water flow
- Contact to external shut-down per circuit
- Motor current overload
- Phase reversal/unbalance/single phasing
- Failure of leaving water temperature sensor used to drive the set point
- Compressor status (on/off)



# Options

## Application options

### Low ambient option

The low ambient option permits unit controls to allow start and operation down to ambient temperatures of -18°C (-0.4°F) for CGAX units; -10°C (26.4°F) for CGAX heat pump in cooling mode if there is sufficient glycol in the evaporator to prevent freezing.

### Low noise sound level option

Low noise units are equipped with a jacket encapsulating each compressor for sound reduction.

## SmartFlow Control

### Constant speed pump – Variable frequency drive adjustment

The unit is equipped with a pump package driven by a speed inverter, without providing continuous modulation of the speed. The water flow is fixed during commissioning. The goal of this alternative is to provide the appropriate flow rate and hydraulic balance, without the need for a mechanical balancing valve, and by taking advantage of the energy consumption optimization of the pump.

Water flow is adjusted through parameter 204 of the speed inverter (TR200), when having the dual pump option, the active pump arbitration is based on pump equalization time and pump failure status.

### Variable speed pump – Constant differential pressure (DP)

The unit is equipped with a pump package driven by a speed inverter. The modulation of the pump speed is made in order to ensure that the Differential Pressure (DP) remains constant within the system. The minimum pump speed is factory set at 60% of the nominal speed. The minimum pump frequency can be adjusted through inverter. The constant DP option is intended to be used with 2-way water regulation valves in the customer hydraulic system.

At minimum system partial load, when most of the 2-way valves are closed, a minimum flow rate must be ensured through the chiller evaporator. DP is measured by a differential pressure sensor supplied by Trane, that the customer must install on the water loop, in a freeze protected area. A regulation valve should be installed on the by-pass line.

### Variable speed pump – Constant differential temperature (DT)

The unit will be equipped with a pump package driven by a speed inverter. The modulation of the pump speed is managed to ensure that chiller DT stays constant. Entering and leaving temperatures at the evaporator will be measured directly by the chiller controller, through the factory-supplied sensor. A DT setpoint will be present on the unit controller. The option for constant DT is intended to be used with 3-way valves on water systems, or 2-way valves on water system but constant flow at the by-pass. The minimum pump frequency can be adjusted on the inverter.

## Partial Heat Recovery

Heat recovery appears more and more as a sensible response to offset energy costs continually on the rise.

The Trane Conquest chillers with Partial Heat Recovery option combines the energy savings of heat recovery operation with the installation and maintenance cost savings of completely factory packaged air cooled liquid chillers. The CGAX or CXAX in cooling mode with Heat Recovery option operate as a standard unit as long as heat is not required or it can simultaneously produce chilled and hot water which can be used for applications like: Heating or preheating of boiler systems or domestic cater, Air conditioning/ventilation air pre-heat, and Industrial processes.

The Heat Recovery Exchanger is a brazed plate exchanger, connected to the compressor discharge line, and sized to recover up to 20% of the nominal cooling capacity.

The Heat Recovery Exchanger is not approved for Food and Beverage applications. The use of a primary loop is mandatory.

## **Communication options**

### **BACnet™ communication interface**

Allows the user to easily interface with BACnet via a single twisted pair wiring to a factory installed and tested communication board.

### **LonTalk™ communication interface**

Allows the user to easily interface with LonTalk via a single twisted pair wiring to a factory installed and tested communication board.

### **ModBus™ communication interface**

Allows the user to easily interface with ModBus via a single twisted pair wiring to a factory installed and tested communication board.

## **Other options**

### **Coated condensing coils**

For cooling only units (CGAX) a complete coating on microchannel condenser coils shall be available.

For Heat Pump units (CXAX) pre-coated aluminium epoxy fins shall be available.

### **Compressors soft starters**

Electronic solid state soft starter shall be available.

### **Deluxe display**

For a remote display type Deluxe is available.



# Notes



## Notes

Trane - by Trane Technologies (NYSE: TT), a global climate innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit [trane.com](http://trane.com) or [tranetechnologies.com](http://tranetechnologies.com).

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

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