G 070-1342

Precision Air Conditioners

Cooling capacity 50 ÷ 222 kW

- **Separate ventilating section for installation under raised floor**
- **Reduced energy consumption of fans**
- **High ratio between supplied cooling capacity and footprint**
- **Optimised distribution of air in the raised floor**

Last generation control panel

DESCRIPTION

Precision air conditioners of the series **G** their construction and operating features are suitable to meet the design criteria of last generation Data Centers.

CONFIGURATIONS

GXU: downwards flow air conditioners with direct expansion with air or water condensation.
GWU: downwards flow air conditioners with chilled water.
For the configuration **W** there is also the version **XH (Extra Height)**. By increasing the height, performance can be enhanced thanks to the larger coil.

FEATURES

Precision air conditioners of the series **G** they are designed for air-conditioning of utility rooms for high power density applications.
In these applications, the structures are characterised by technical floors as high as 1000 mm, creating ample space below to house the flow fans.
The fans are supplied inside a sub-base supplied separately, without increasing the size of the unit, thus optimising the available space with considerable advantages:

— The enlarged coils with ample heat exchange surface enhance performance with less energy consumption.
— Greater filtering surface reducing pressure drops so that less maintenance is needed as they get less dirty.
— Horizontal flow of fans in sub-base with lower pressure drops.

STRUCTURE

The structure consists of a steel frame painted with dark grey epoxy powders (RAL7024) guaranteeing a durable finish. Acoustic insulation self-extinguishing panels covered with anti-friction film.
The ventilating sub-base is supplied separately and must be electrically connected at the worksite or on-site.

FANS

Centrifugal fans with backward curved blades (plug fans) with EC motor directly coupled to the electronic control to minimize power consumption and noise emissions.

FILTERS

Corrugated baffle filters, not regenerable, self-extinguishing, G4 efficiency class (according to EN 779).
Differential pressure switch (STANDARD) for dirty filter alarm.
The control of filter dirt conditions via Modbus is available as an option.

ELECTRONIC CONTROLLER

The evolved electronic adjustment maximises energy saving and optimizes all operating modes of the units, both direct expansion and chilled water.

— The controller allows to supervise all main components of the unit, with more than 50 different variables that guarantee real time monitoring of all operating cycles.
— The units have a standard RS485 Modbus board, BACnet, LonWorks and SNMP are available as options, for a simple and quick interface with BMS (Building Management System) supervising systems.
— View of all operating parameters in 8 languages.

CHILLED WATER COILS

Only for W configurations
Large surface coils, positioned in such a way as to optimise airflow and heat transfer, made of copper tubes with aluminium louvers mechanically merged, fitted with 2-way modulating valve (3-way is also available in the selection process).

COMPRESSORS

Only for X configurations
High efficiency scroll compressor with low power consumption.
These units in the direct expansion configurations work with R410A refrigerant, which does not damage the ozone layer.

The dual circuit configuration controls the power output thanks to electronic adjustment that automatically manages the compressors activation depending on the load request.

Electronic expansion valve standard on all sizes.

ACCESSORIES

Direct expansion

— DC brushless compressors with inverter control
— Electric power supply line for remote condenser
— Electric power supply line with speed adjustment for remote condenser
— Condenser adjustment with 0-10V signal for remote condenser with EC fans
— Water condenser
— Condensate adjustment pressure valve
— "LAC" (Low Ambient Control) valve has the function of bypassing the condenser, injecting warm gas in the liquid piping, to maintain the refrigerant pressure stable. Use is recommended in very cold climates, in case of inverter compressors and in case of oversized condensers with respect to the real necessities of the units.

Chilled water

— Three-way modulating valves
— Inlet and outlet water temperature probes
— "Power Valve" kit: automatic adjustment and balancing valve of the water circuit, which allows to guarantee a constant water flow rate and monitor the efficiency of the unit in real time.

Heating

— Low thermal inertia electric batteries with differentiated stages regulation

Humidification

— Room humidity probe
— Flow humidity probe
— Submerged electrodes humidifier (also available with low conductivity cylinder)

Water presence detection

— Available as punctual probe or fabric belt (length 5 m) Allows to have an alarm in case water presence,even partial, is detected.

Mechanicals and structural

— Condensate discharge pump
— Condensation and humidifier drain pump
— Motorised damper on suction
— M5 (EU5) efficiency air filter on air supply
— Ventilated plenum with panelling for front or rear flow
— Ventilated plenum with panelling for downflow (installation above raised floor)
— Panels with "sandwich" counter-panels (available on request on some models only)
— Panels with increased soundproof upholstery (available on request on some models only)

Electrical

— The unit has a standard power supply 400V ~ 3N 50Hz. The following voltages are available as an alternative: 400V ~ 3N 60Hz, 460V ~ 3 60Hz, 380V ~ 3N 60Hz
— Electric power supply line without neutral
— "Basic" version automatic transfer switch (ATS)
— Advanced" version automatic transfer switch (ATS)

Regulation

— Constant flow rate ventilation adjustment
— Constant pressure ventilation adjustment
— Local area network configuration and cable
— User terminal for remote installation

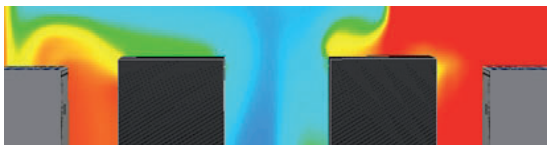
■ *For further details refer to the technical documentation or to the selection program.*

SMARTNET

The innovative **SMARTNET** system revolutionises the local area network concept.
This system, using the modulation capabilities of its components, allows dividing the workload across all units in the local area network.
Compared to the Duty Stand-by (n+1 o n+n) redundancy system, where the backup units were stopped waiting for a problem to arise, **the SMARTNET system allows to maintain the units connected on the network always active** with various advantages:
— greater efficiency of the units with partial loads;
— optimal air distribution, eliminating the risk of environment hot-spots;
— internal system redundancy,

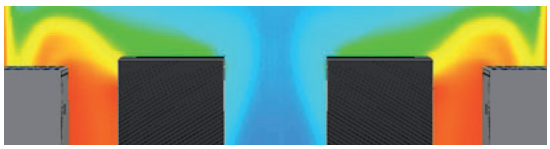
DUTY / STAND-BY

On 100% **On 100%** **Stand by**



SMARTNET

On 66% **On 66%** **On 66%**



TECHNICAL DATA

GXU: downwards airflow - direct expansion with air or water condensation

		GXU 932	GXU 1342
Cooling performances (1)			
Total cooling capacity	kW	91,2	130,5
Sensible cooling capacity	kW	77,5	121,2
EER (2)	W/W	3,70	3,81
Fans			
Type	type	Plug-fan EC inverter	
Air flow rate	m^3/h	18000	31500
Refrigerant circuit			
Number	no.	2	2
Sound data			
Sound pressure (3)	dB(A)	56	61
Electric data			
Power supply		400V ~ 3N 50Hz	

(1) Condensation temperature 45 °C; incoming air 24 °C / 45 % u.r.; external static pressure: 30Pa. Stated performances do not take into account the heat generated by the fans which must be added to the heat load of the system.
(2) EER: Energy Efficiency Ratio; total cooling capacity / input power to the compressors + the power of fans (excluding air condensers).
(3) Sound pressure: stated data 2m away, in free field according to UNI EN ISO 3744:2010

GWU: downwards airflow - with chilled water

		GWU 070	GWU 150	GWU 230	GWU 300
Cooling performances (1)					
Total cooling capacity	kW	58,6	96,4	143,6	208,8
Sensible cooling capacity	kW	49,0	79,4	118,0	184,3
EER (2)	W/W	31,83	46,92	62,41	33,68
Fans					
Type	type	Plug-fan EC inverter			
Air flow rate	m^3/h	11000	17600	25800	45200
Refrigerant circuit					
Number	no.	2	2	2	2
Sound data					
Sound pressure (3)	dB(A)	58	55	56	62
Electric data					
Power supply		400V ~ 3N 50Hz			

(1) Incoming air 24 °C / 45 % r.h.; water 7 °C / 12 °C; external static pressure: 30 Pa. Stated performances do not take into account the heat generated by the fans which must be added to the heat load of the system.
(2) EER: Energy Efficiency Ratio; total cooling capacity / input power to the compressors + the power of fans (excluding air condensers).
(3) Sound pressure: stated data 2m away, in free field according to UNI EN ISO 3744:2010

		GWU 150 XH	GWU 230 XH
Cooling performances (1)			
Total cooling capacity	kW	113,2	222,9
Sensible cooling capacity	kW	93,1	178,2
EER (2)	W/W	55,78	79,32
Fans			
Type	type	Plug-fan EC inverter	
Air flow rate	m^3/h	20400	36000
Refrigerant circuit			
Number	no.	2	2
Sound data			
Sound pressure (3)	dB(A)	57	63
Electric data			
Power supply		400V ~ 3N 50Hz	

(1) Incoming air 24 °C / 45 % r.h.; water 7 °C / 12 °C; external static pressure: 30 Pa. Stated performances do not take into account the heat generated by the fans which must be added to the heat load of the system.
(2) EER: Energy Efficiency Ratio; total cooling capacity / input power to the compressors + the power of fans (excluding air condensers).
(3) Sound pressure: stated data 2m away, in free field according to UNI EN ISO 3744:2010

DOWNWARDS FLOW CONFIGURATIONS

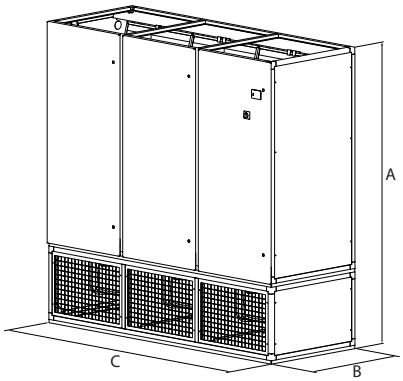
Standard execution for perimeter installation inside Data Centres: the height of the raised flooring must be minimum 550 mm.

Execution for perimeter installation inside Data Centre. In this case, the sub-base side closure panels must be installed above the flooring. It is in any case essential to make sure that the height of the ceiling allows good air intake.

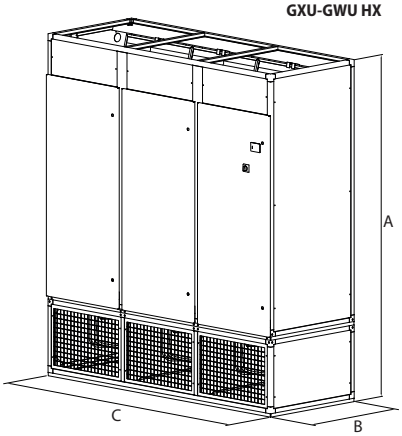
Execution for installation outside Data Centre, without raised flooring and rear delivery. In this case, the sub-base side closure panels and rear delivery grilles. Installation of the plenum with the rear return system is optional, if there is no channelling system.

DIMENSIONS

GXU-GWU



GXU-GWU HX



		GXU 932	GXU 1342
Dimensions and weights			
A	mm	1990	1990
B	mm	921	921
C	mm	2390	3290
Empty weight	kg	870	1000

		GWU 070	GWU 150	GWU 150 XH	GWU 230	GWU 230 XH	GWU 300
Dimensions and weights							
A	mm	1990	1990	2350	1990	2350	1990
B	mm	921	921	1050	921	1050	921
C	mm	1320	1840	1840	2740	2740	4020
Empty weight	kg	610	750	640	930	950	1250

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