

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

**i-ACCURATE
PRECISE**

Precision air conditioners
with inverter technology
for stable room conditions



i-ACCURATE PRECISE

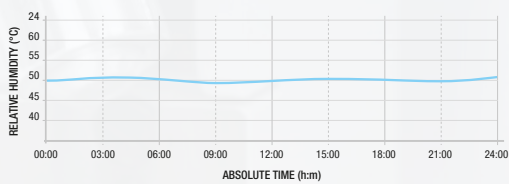
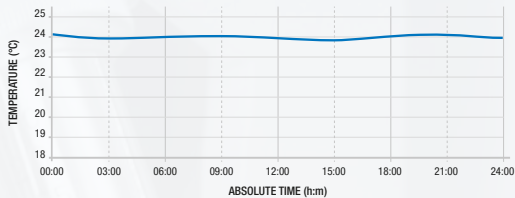
Extreme precision in temperature and humidity control

In laboratories, archives, museums, the tobacco, textile and pharmaceutical industries the temperature and humidity parameters strongly affect the size, tests and storing of sensitive goods.

i-ACCURATE PRECISE is the most dependable and efficient solution developed for these kinds of applications even in low or no load conditions.



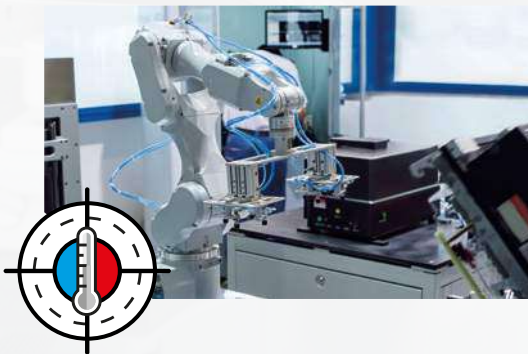
Temperature and humidity always under control



Minimal variations in the environmental conditions can influence the final result of test activities or compromise the correct preservation of perishable goods.

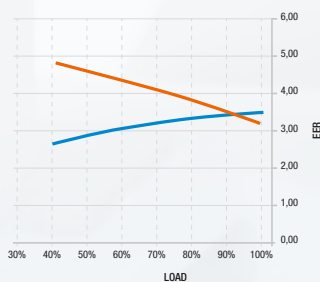
Thanks to the combination of the hot gas re-heating, the modulation of the refrigeration capacity through the inverter compressor and to a precise regulation of steam production, i-ACCURATE PRECISE ensures an accurate calibration of temperature and humidity (± 0.3 °C and ± 2 % R.H.).

Precision in all load conditions



The i-ACCURATE PRECISE unit was designed as a completely autonomous unit. In fact, thanks to the EVOLUTION+ software which is dedicated to the unit, it allows for the reduction of the refrigeration capacity from 100% to 0%. The unit is able to maintain control of the temperature and humidity with maximum precision even on low or no heat load.

Maximum energy efficiency



EER FULL INVERTER unit

EER ON/OFF unit

Responding to the strict requests of mission-critical applications does not necessarily mean forgetting the energy-saving strategies.

i-ACCURATE PRECISE combines the advanced DC inverter compressor technology with that of the EC fans contributing to increased efficiency especially at partial loads if compared to traditional systems with ON/OFF compressors.



Unit fitted with modulating hot gas re-heating coil that combines the use of the INVERTER compressor with the possibility to humidify or de-humidify the environment. It allows for extremely precise and stable control of the temperature and humidity conditions, resulting in particular efficiency especially at low heat loads.

VERSIONI

- i-AX PRECISE air cooled
- i-AW PRECISE water cooled

Ideal Applications

- Metrological environments
- Laboratories
- Technological sites
- Archives
- Textile industry
- Tobacco industry
- Paper industry

Avant-garde technological choices, for the most critical of applications

DC INVERTER COMPRESSOR



The DC INVERTER technology, applied to compressors, allows for the modulation of the refrigeration power based on the real necessities, continually varying the speed of the compressor rotation, notably heightening the efficiency at partial loads.

The DC inverter compressor ensures:

- No in-rush starting current
- Energy savings up to 50% compared to the traditional on/off technology
- Utmost reliability thanks to the continuous operation, without on/off cycles

NEW GENERATION EC FANS



The high performing EC fans ensure a perfect airflow modulation at partial loads, thus significantly increasing the overall efficiency of the unit.

Available in two versions, BASIC and HP at high prevalence (optional), the new generation fans deliver great advantages in terms of:

- Reduction of the noise levels by 4-5 dB(A) compared to traditional solutions
- Reduction of the absorbed power by 25% compared to traditional solutions



i-AX PRECISE

Model	12		18	
Frame	F2			
No. of circuits/ No. of compressors	1/1			
Refrigerant	R410A		R410A	
Nominal air flow	mc/h	3500	4900	
Power supply	V/Ph/Hz	230/1/50	400/3N/50	
PERFORMANCE				
Maximum speed				
Total cooling capacity	(1) kW	11,1	16,6	
Sensible cooling capacity	(1) kW	10,6	16,6	
SHR	(1)	0,95	1,00	
Compressors absorbed power	kW	2,54	4,09	
EC BASIC radial fans absorbed power	kW	0,35	0,84	
EC HP radial fans absorbed power	kW	0,27	0,47	
Modulating cooling capacity	0 ÷ 100%			
MODULATING HOT GAS				
Heating capacity	(2) kW	10,2	12,5	
FAN SECTION				
No. EC radial fans		2	2	
No. EC HP radial fans		2	2	
Sound pressure level	(5) dB(A)	49	53	
HUMIDIFIER				
Capacity	kg/h	3	3	
ELECTRICAL HEATERS				
Steps		3	3	
Heating capacity	kW	5,4	8,1	
DIMENSIONS				
Length	mm	1000	1000	
Depth	mm	500	500	
Height	mm	1980	1980	

i-AW PRECISE

Model	12		18	
Frame	F2			
No. of circuits/ No. of compressors	1/1			
Refrigerant	R410A		R410A	
Nominal air flow	mc/h	3500	4900	
Power supply	V/Ph/Hz	230/1/50	400/3N/50	
PERFORMANCE				
Maximum speed				
Total cooling capacity	(1) kW	11,7	17,4	
Sensible cooling capacity	(1) kW	10,9	17,0	
SHR	(1)	0,93	0,98	
Compressors absorbed power	kW	2,12	3,68	
EC BASIC radial fans absorbed power	kW	0,35	0,84	
EC HP radial fans absorbed power	kW	0,27	0,47	
Modulating cooling capacity	0 ÷ 100%			
MODULATING HOT GAS				
Heating capacity	(2) kW	10,2	12,5	
FAN SECTION				
No. EC radial fans		2	2	
No. EC HP radial fans		2	2	
Sound pressure level	(5) dB(A)	49	53	
HUMIDIFIER				
Capacity	kg/h	3	3	
ELECTRICAL HEATERS				
Steps		3	3	
Heating capacity	kW	5,4	8,1	
DIMENSIONS				
Length	mm	1000	1000	
Depth	mm	500	500	
Height	mm	1980	1980	

NOTE

- 1) Input air condition 24°C/50%, Condensation temperature 45°C - ESP 20Pa
- 2) Input air condition 24°C/50%, Condensation temperature 45°C
- 3) Measured at 1.5m height and 2m in front of the unit in free field

The units highlighted in this publication contain HFC R410A [GWP₁₀₀ 2088] fluorinated greenhouse gases.

ELECTRONIC THERMOSTATIC VALVE



Thanks to its wide modulation the electronic valve allows one to follow the entire operating field variation of the inverter compressor.

This allows for:

- Rapidly reaching system stability
- Precise adaptation to load fluctuations

ADVANCED CONTROL

EVOLUTION+
CONTROLLER



EVOLUTION + is the electronic heart installed in all the i-ACCURATE PRECISE units designed internally to guarantee reliability, efficiency and perfect control of all the parameters. Totally configurable and flexible according to the specific requests of the user, the controller presents evolved characteristics, including:

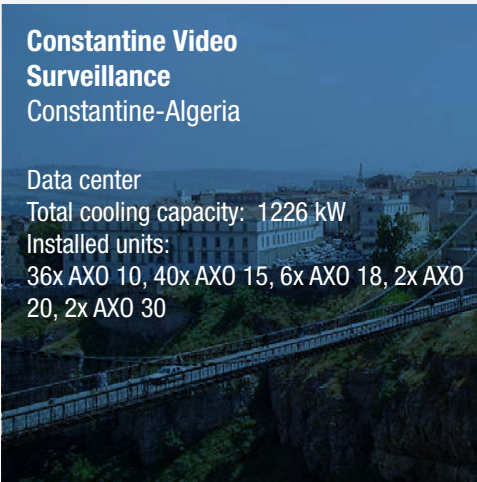
- Automatic reactivation after black out
- Processing of up to 200 events
- Serial cards for BMS interfacing
- Clock function
- BLACK BOX for preventive analyses
- Display with GRAPHIC ICONS

“By far the best proof is experience”

Sir Francis Bacon
Filosofo britannico (1561-1626)

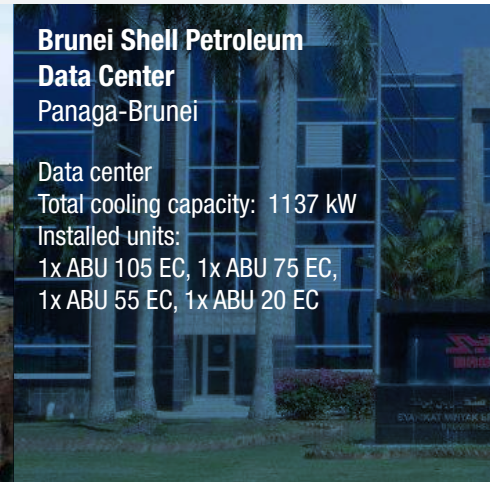
Constantine Video Surveillance Constantine-Algeria

Data center
Total cooling capacity: 1226 kW
Installed units:
36x AXO 10, 40x AXO 15, 6x AXO 18, 2x AXO 20, 2x AXO 30



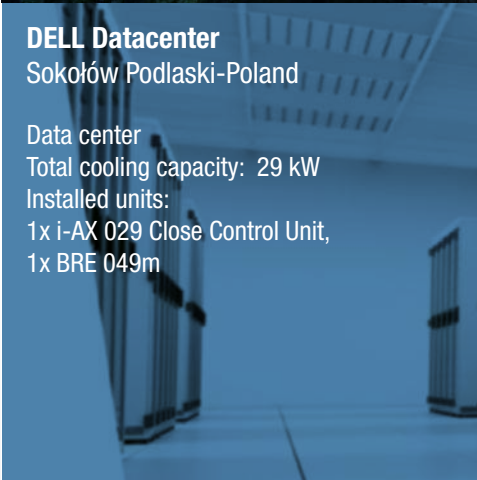
Brunei Shell Petroleum Data Center Panaga-Brunei

Data center
Total cooling capacity: 1137 kW
Installed units:
1x ABU 105 EC, 1x ABU 75 EC,
1x ABU 55 EC, 1x ABU 20 EC



DELL Datacenter Sokołów Podlaski-Poland

Data center
Total cooling capacity: 29 kW
Installed units:
1x i-AX 029 Close Control Unit,
1x BRE 049m



Leonardo Da Vinci International Airport Rome, Fiumicino-Italy

Airports
Total cooling capacity: 266 kW
Installed units:
9x WIZARD, 2x FOCS/LN/S 1302,
9x ACU 2.0 Basic 0701

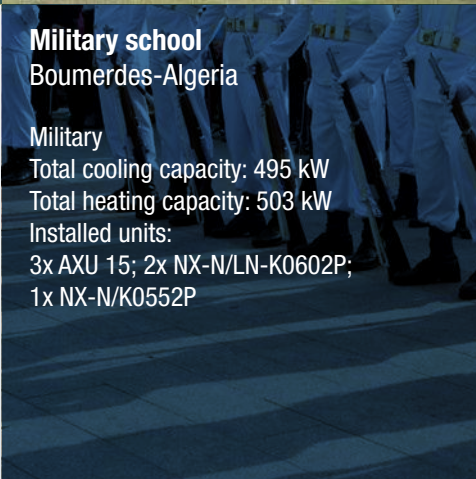
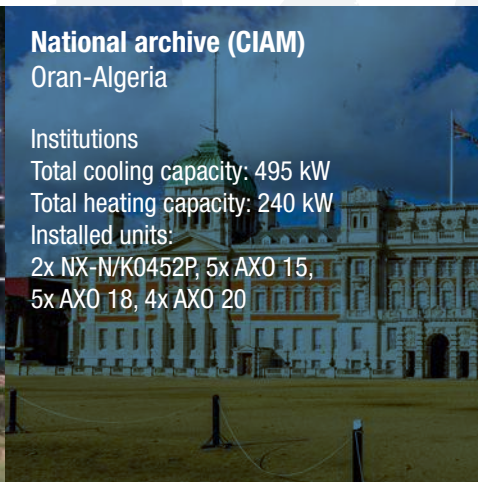


All over the world, in most data centers and in all projects where efficiency, quality and reliability are priorities, the precision Climaveneta air conditioners are the best guarantee.



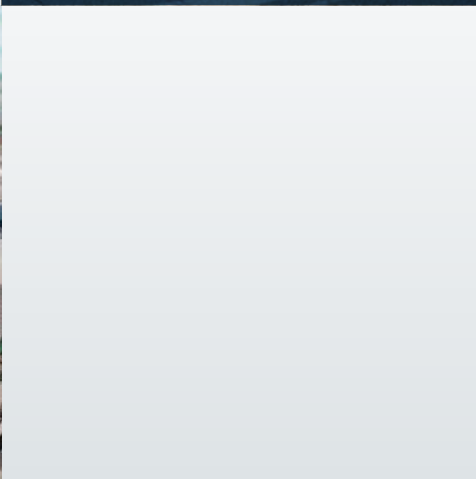
National archive (CIAM)
Oran-Algeria

Institutions
Total cooling capacity: 495 kW
Total heating capacity: 240 kW
Installed units:
2x NX-N/K0452P, 5x AXO 15,
5x AXO 18, 4x AXO 20



Military school
Boumerdes-Algeria

Military
Total cooling capacity: 495 kW
Total heating capacity: 503 kW
Installed units:
3x AXU 15; 2x NX-N/LN-K0602P;
1x NX-N/K0552P



Siam Pharmaceutical
Bangkok-Thailandia

Process cooling
Total cooling capacity: 56 kW
Installed units:
2x i-AX 29





for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.



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