



A+
CLEANROOM

2 Save today,
0 Survive tomorrow,
2 Live smart.

1 www.wonygroup.com

*Data is subject to changes without notification due to product improvement



WONY, founded in 2011, is a leading global provider of innovative HVAC products solutions to the commercial and industrial markets. Our commitment is to provide our customers with the best products and services at affordable price to create better living environment.

WONY Building Clean Room Quality is becoming more and more important because of industrial pollutions to our living environment. A better air quality in the building improves the sleep quality, cognition efficiency, work productivity and reduces the entire illness rate.

Considerate design, well-selected material, fine construction, dynamic air management and intelligent control, that's A+ clean room solution from WONY to the Pharm, medical, food, and various industrial demands.

Building Clean Room Quality





Hand Made Sandwich Panel



Machine Made Sandwich Panel

+ Features

- The surface is made of high grade polyester, PVDF polyester and fluororesin paint. The face metal sheet can use galvanized sheet, 304# ss sheet, aluminum-magnesium sheet and aluminum alloy sheet to obtain good anti-corrosion, acid-proof, anti-crack, thermostability and ageing resistance.
- The core materials is A-class flame resistant to prevent melting and decomposing upon fire. High intensity, impact resistance, good shock resistance and easy construction and installation.

+ Specifications

Panel thickness	Double skin, 50mm, 75mm, 100mm		
Core material	Classification	Picture	Performance
	Rock wool		Fireproof $\geq 900^{\circ}\text{C}$, lasts 60 minutes and sound proof conforms to ISO 717/82 & UNI 18270/7.
	Glass magnesium		Fireproof $\geq 1000^{\circ}\text{C}$, lasts 60 minutes and good water-proof performance.
	Polyurethane		Lower cost, high-capacity of standing, high-stiffness and intensity, flexible for using. Heat and sound insulation, low water absorption.

+ Applications

Pharmaceutical industry, food & beverage, medicine and health, electronics, biology research, etc.



Swing Door



Half-Glass Swing Door



Full Glass Swing Door

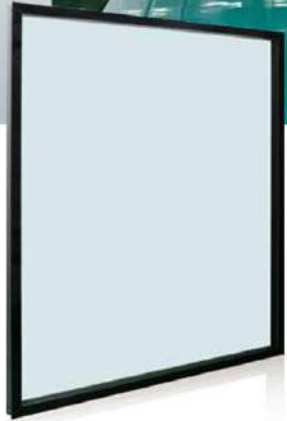
This series of doors are designed to meet GMP design and safety requirements. No dust, easy to clean. With high-quality sealing gasket, for good air tightness, strong impact, durable paint and anti-fouling.

+ Specifications

Name	Specifications	
Swing Door	1. Single door size: 800mm/950mm 2. Unique double door size: 1200mm/1350mm 3. Double door size: 1500mm/1800mm	Meet GMP Standard
Half-Glass Swing Door	4. Height of door: 2100mm 5. Opening angle: $0^{\circ}\sim 170^{\circ}$	
Full Glass Swing Door	1. Sandwich panel: Single door size: 745mm/895mm; Double door size: 1452mm/1752mm 2. Handmade panel: Single door size: 800mm/950mm; Double door size: 1505mm/1805mm 3. Height of door: 2100mm 4. Opening angle: $0^{\circ}\sim 170^{\circ}$	

+ Spec Option

Name	Swing Door	Half-Glass Swing Door	Full Glass Swing Door
Thickness	50 mm 100 mm		
Panel type	Color GI/SUS Panel		Double Tempered glass (Silk Screen)
Lock type	Handle lock, Globular lock, Split lock, Push type panic bar, Touch the bead lock, SUS handle		
Controlling type	Exposed door closers, Hidden door closers, Interlocking, Electric swing door machine		



Double Tempered Glass Window

Desiccant adsorbs water vapor in hollow glass sandwich to prevent mist in the glass caused by temperature difference between indoor and outdoor to keep the glass clean and bright to ensure the window's transparency. It's ideal for cleanroom, hospital, pharmaceutical factory, laboratory, electronics factory etc.

+ Structure

A- Aluminum frame	Aluminum Alloy Frame in clean grade.
B- PVC cover	The desiccant absorbing water vapor in hollow glass sandwich is under the PVC cover
C- Tempered glass	In case of damage, it will break into honeycomb-shaped, obtuse angled small particles to prevent easy harm to human body. The strength of glass is 3 to 5 times more than common glass.



Laminar Flow Pass Box



Air Shower Pass Box



Air Shower



Dispensing Booth



Automatic Sliding Door of Air Shower



Rapid Rolling Door



Fan Filter Unit

The FFU holds a primary-efficiency filter net and a high-efficiency filter net. Air is absorbed by the fan at the top, filtered by the two filter nets, and diffused through the diffusion side at a constant speed.

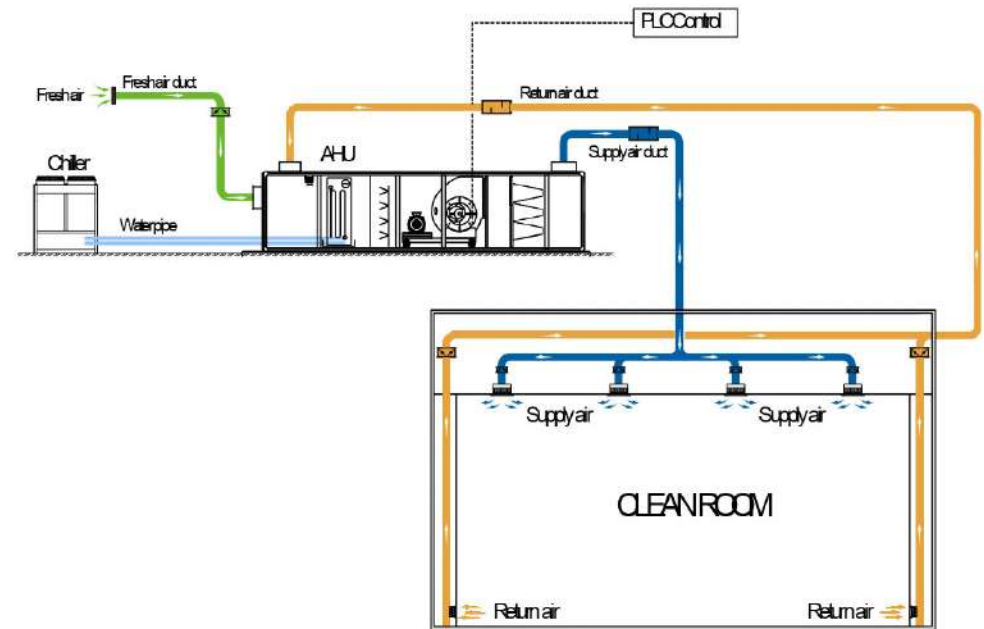
High Efficiency Filter and HEPA Diffuser



+ HVAC for Cleanroom

Cleanroom HVAC designs involve knowledge of regulations, a general term for indoor environmental comfort, which creates cleanliness level guidelines, airflow, room pressurization, indoor air quality (air change per hour, CFM, temperature control, humidity control etc).

When it comes to cleanrooms, HVAC means a lot more than comfort. In addition to comfort, cleanroom HVACs differentiate themselves from conventional systems with their increased air supply, airflow patterns, use of high efficiency filters and room pressurization. Air exchanging rate with cleanroom is many times more than conventional spaces.



Modular Air-cooled Scroll Chiller

- Special equalizing plate design of shell and tube: the distribution of refrigerant is more even for improving the heat-exchanging efficiency of the complete unit
- Use U-type heat exchange tube to improve the heat-exchange efficiency of the complete unit
- Running condition real-time display
- Low start-up current thanks to power delay control design
- Any module can be set as the main module
- Main module patent: Any unit can be set as main module as main module via wired controller
- Up to 16(60/71KW) or 8 unit(120/145KW) can be integrated



- freely to get a max capacity of 1160KW thanks to modular design
- Auto anti-freezing function under heating mode when the unit is switched off.

+ Specifications

Model		130M/NaD	160M/NaD
Rated cooling capacity	Kw	130	160
Rated heating capacity	KW	140	170
Cooling input power	KW	38.7	47.6
Heating input power	KW	40	50
Power	-	380V 3N~50HZ	380V 3N~50HZ
Water flow	m ³ /h	22.3	27.5
Water resistance	kPa	30	35
Input/output pipe diameter	DN	DN80	DN80
Operation way	-	Micro-PC automatic control	Micro-PC automatic control
Compressor	Type	-	Hermetic scroll compressor
	Qty	-	4 (Emerson/Danfoss)
Fan	Type	-	Axial low noise with big wheel
	Airflow	m ³ /h	54000
Refrigerant	Qty	Pcs	2
	Type	-	R410a
Dimensions	Length	mm	2276
	Wide	mm	1830
	Height	mm	2278
Weight	Net weight	kg	1350
	Operation weight	kg	1485
Operation noise	dB(A)	69	70
Optional auxiliary electric heating	KW	/	/

Inverter Centrifugal Chiller

The inverter centrifugal chiller adopts high-efficiency DC inverter centrifugal compressor with internationally leading coefficient of performance. It provides high-efficiency and stable operation, and can be connected to all sorts of fan coil unit to realize cooling for large civil and industrial building.



- It adopts high-efficiency motor driving two-stage impellers with simpler structure and more reliable operation. The size and weight of compressor is only 40% of the conventional compressor with the same cooling capacity.
- It adopts high-efficiency permanent magnet synchronous inverter motor, whose power is over 400KW and rotation speed is over 18000rp. Meanwhile, the helical refrigerant ejecting cooling technology is adopted to ensure high-efficiency operation of the motor.
- The design of impeller and diffuser is optimized for the load of 25~100%, achieving high-efficiency operation of compressor in various loads.

- It adopts patented sensor control technology to control the position of motor precisely and improve the reliability.
- It adopts the unique low solidity diffuser to achieve high-efficiency recycle of pressure.
- Two-stage compression technology is adopted to improve efficiency by 5~6% compared with one-stage cooling circulation system.
- User-friendly touch screen is adopted for convenient operation, precise control and stable output.

+ Specifications

Model	Cooling capacity		Input power (1)		COP (1)		IPLV (1)		Input power (2)		COP (2)		Electric power	Start Current	Refrigerant volume	Evaporator		Condenser		Unit Weight	
	KW	RT	KW	-	-	KW	-	KW	-	KW	A	Kg				m ³ /h	Pressure drop	Water flow	Pressure drop	Net	Operating
WNVE210HG4GG4D	879	250	141.1	6.23	8.55	150.8	5.83	166	77	350	151	69.9	189	64.9	5150	5700					
WNVE210HG3GG3D	966.9	275	157.2	6.15	8.82	165.8	5.83	182	85	350	166	70	208	65	5240	5800					
WNVE220HG2GG2D	1055	300	161.8	6.52	8.8	174.1	6.06	192	89	350	181	70	227	65	5500	6050					
WNVE220HG1GG1D	1231	350	191.4	6.43	9.21	202.1	6.09	222	103	350	212	75	268	70	5700	6600					
WNVE310L G1 HG1D	1406	400	215	6.54	9.38	226.8	6.20	250	116	320	242	68.6	302	64.4	6100	6400					
WNVE320MH4HH2D	1582	450	237.6	6.66	9.1	254.0	6.23	279	130	360	272	74.8	340	76.2	6800	7650					
WNVE320MH3HH1D	1758	500	269.4	6.55	9.38	283.1	6.21	311	145	385	302	74.9	378	79.6	6880	7750					
WNVE410MH2H2D	1934	550	285.9	6.74	9.27	306.5	6.31	337	157	425	333	81.7	416	77.2	7710	8650					
WNVE410MH1H1D	2110	600	317.2	6.65	9.52	334.9	6.30	368	171	450	363	81.2	454	76.4	7820	8750					
WNVE510PIE1E	2285	650	339.6	6.37	9.33	361.6	6.32	398	185	850	393	74.3	491	69.1	8860	9900					
WNVE510PI1D1D	2461	700	370.7	6.64	9.53	390.7	6.30	430	200	850	423	72.2	529	69.1	8963	10050					
WNVE520PIC1C	2637	750	387.2	6.81	9.27	415.9	6.34	458	213	850	454	77.7	567	70.7	9064	10400					
WNVE520PIB1B	2813	800	414.3	6.79	9.47	440.2	6.39	484	225	900	484	72.1	605	71.1	9384	10500					
WNVE520PIA1A	2989	850	446.1	6.70	9.62	469.9	6.36	517	240	900	514	74.1	643	73.1	9474	10600					
WNVE520QJCMJD	3164	900	477.3	6.63	9.86	-	-	252	244	1000	544	72.1	680	80.3	10495	11700					
WNVE610QJCMJD	3164	900	457.9	6.91	9.65	486.1	6.51	535	249	1000	544	72.1	680	80.3	10721	12150					
WNVE610QJBMJC	3340	950	489	6.83	9.80	525.5	6.48	578	269	1050	579	70.9	718	81.1	10851	12250					
WNVE620QJAMJB	3516	1000	508.1	6.92	9.51	542.6	6.48	597	278	1050	605	71	756	81.3	11010	12500					
WNVE620QJAMJA	3868	1100	566.3	6.83	9.79	596.9	6.48	657	305	1150	665	72	832	82.4	11666	13200					
WNVE710SKNQKNG	4219	1200	608	6.94	9.57	647.1	6.52	712	331	1500	726	67	907	51	15500	17350					
.....																					
WNVE720UN1S1N1-2-G	10550	3000	1538	6.86	10.32	1615	6.53	1777	820	2800	1815	51.7	2365	48.5	25990	30100					

- Remark(1) satisfy the condition: Chilled water inlet/outlet temperature:12°C/7°C; Cooling water inlet/outlet temperature: 30/°C;
- Remark(2) satisfy the condition: Chilled water inlet/outlet temperature: 12°C/7°C, cooling water inlet/outlet temperature: 32/°C;
- Standard unit water side pressure 1.0MPa, optional 1.6MPa;
- VFD start driving compressor current<rating current, power factor is 0.99;
- IPLV test on the condition of GB/T18430.1-2007.

Air Handling Unit

- Customized to meet space restrictions, different engineering configurations, and air tunnel options.
- Total control on temperature, humidity, cleanness and air pressure etc.
- EU standard

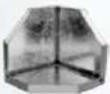
Professional selection program and modular design (1module=100mm) is providing customer with reasonable, economical, and practical solution.



Upgraded insulation strip to make thermal bridge factor meet TB2<En 1886-2007> and air leakage ratio 0.94% according to <GB/T1429-2008> standards.



High strength aluminum alloy framework with AHU casing mechanical strength D1 grade according to <En 1886-2007>.



Sandwich panels are made with high density injection polyurethane insulation, meeting the thermal transmittance T2<En 1886-2007> standards.



Hinged/removable type access door are both available. Panel of AHU can be removed from outside, easy to disassemble at project site when necessary.



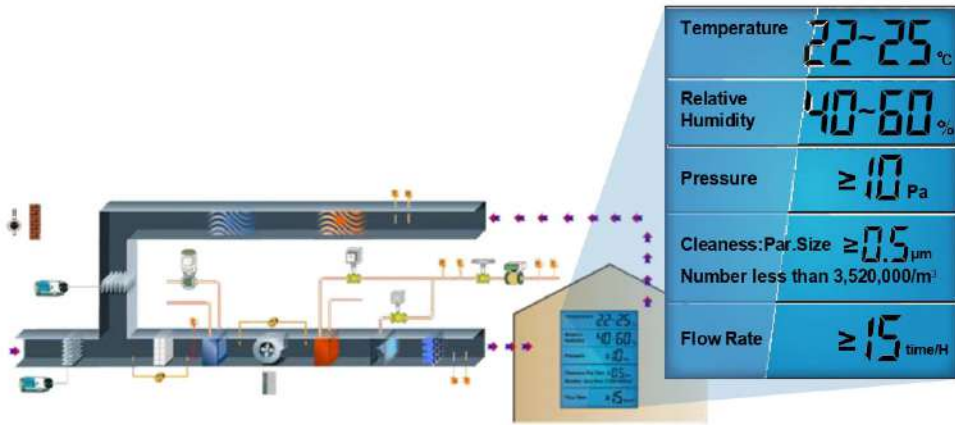
Variety of optional accessories, like water-proof service lamp, observation window, filter of all classes, air inlet and outlet damper(TOX connection technology), etc.



Equipped with various of high-efficiency air-to-air heat recovery devices, such as heat recovery wheel, "U" heat pipe, plate heat exchanger, glycol circulation heat exchanger, to get the lowest energy and power consumption cost.



High performance water/DX coil with excellent heat transfer. Coil is made of copper pipe and aluminum fin.



Intelligent Control System Three Strategies

01 Multi-condition energy saving control for the whole year 

02 Supply air control between the requirement of comfort air-conditioning temperature and a specific process 

03 The online energy saving control between air conditioning and chiller or building control system 





Building Clean Room Quality

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