



Precision Air Condition



Hairf Network Power
Website: www.hairf.com

Agent:

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Precision Air Condition

About Hairf

Hairf, the worldly leading provider of critical power supply and cooling systems, who specialized in manufacturing precision air conditioner, UPS uninterruptible power supply, VRLA battery, STS static transfer switch, intelligent power distribution system and SPD surge protection device.

Hairf, with more than 30 years' R&D and manufacturing experience in server room equipment field, depends on world class labs and inspection and production equipment, not only can provides specialized products for meeting the exact requirement of user's job site, but also provides a perfect total solution for server room, rely on our complete production line of critical equipment used in server room.

Our professional system engineer and international sales and service team are all trough the world in Mexico, Russia, Pakistan, China, Philippines, Singapore, Kazakhstan, to ensure we can provides 24 hours service to more than fifty countries around the world. Till now we have set up offices in 22 cities such as Beijing, Shanghai, Guangzhou, Shenzhen, Chengdu, Xi'an, Wuhan, Zhengzhou, Fuzhou, Harbin, Hohhot to provide speedy technical support, installation, commissioning, maintenance and other after sales service.



01/02

The highest principle followed by Hairf in precision air-conditioner design is: the system's safety and reliable operations. To meet the users' highest system efficiency requirements and strict environment protection requirements, Hairf provides wide product lines to accommodate users' varied demands. Hairf air-conditioning products are also characterized with compatibility and flexibility. Hairf precision air-conditioners provide compatible options of various specifications for the users to decide the system package most suitable to themselves without the trouble of site renovations.

Protection of ecology and environment is Hairf's persistent commitment. The company gives full consideration to environmental impact in designing each product and strives to achieve an optimal balance between high performance and ecological environmental protection. All the products made by Hairf precision air conditioning are applicable to environment friendly R410A refrigerant.

Hairf precision air conditioning units are designed with comprehensiveness flexibility and time/cost saving in filed installation, system maintenance and management. With simple installation, simple connection of water supply pipelines and convenient power supply lines in installation site, the entire air conditioning system can be directly started debugged and easily installed.

Hi-tech equipment needs appropriate environment in order to play the highest system benefit. The speedy development of mobile communication and Internet network has resulted in highly complex and compact design in the electronic system of mobile communication base stations, telecom exchange centers and Internet data centers which require outstanding thermal performance and precisely controlled ambient conditions. Relying on highly reliable product quality, Hairf guarantees an accurate, reliable, safe and long lasting control over the environmental parameters of high-tech equipment and therefore is able to provide a highly reliable operating environment for complex and advanced electronic systems.

Hairf precision air conditioning units are widely used in such special places as telecom, bank, museum, laboratory, wafer fab and hospital operating room where ambient temperature, humidity and cleanliness are highly demanding. Installed base includes, among many others, Telecom Italia Group, Deutsche Telekom AG and Swiss Bank Corp.

High quality control component

It strictly complies with CE and IEC standards and is empowered with advanced electric control technology and able to work under a power source of 380V±20%. In addition, it is installed with a power supply protection module, enabling it to make a selection of protective value in a range of 380V±50%. When voltage goes beyond the selected range, it will automatically protect the unit. While the voltage becomes normal, it will automatically restart the unit.

Evaporator

An efficient evaporator made from quality material with advanced professional technology and featuring large heat exchange area and the realization of higher sensible heat factor of precision air conditioning unit.

Expansion Valve

Expansion valve adopts advanced thermal expansion valves with strong reliability and stability and can precisely control the supply of refrigerant. In order to achieve the reduction of energy consumption for refrigeration equipment, we employ advanced electronic expansion valves in high-performance precision air conditioning units to realize less energy consumption.

Humidifier

An internationally advanced electrode steam humidification system under which the amount of humidification and water inflow and outflow are all controlled by computer, the auto cleaning program for the humidifier cylinder ensure normal humidification efficiency of the cylinder.

Cabinet

With unique frame design and black steel framework demonstrating consummate production technology, professional design and elegant appearance, the cabinet guarantees the safety of the unit under any transport condition and operating environment.

Filter

Air filter under EU4 standard which is metallic bracket, filtering the dust and particulate effectively by air circulation, then purifying the air environment of telecom room.

Scroll Compressor

The core power of the unit is from Copeland hermetic scroll compressor that guarantees the high efficiency, low noise and long life of the unit.

Indoor blower fan

A blow fan adopts direct drive centrifugal fan with backward curved blades, the range of static pressure can be adjusted from 0 to 400pa, realizing the continuous operation of 365 days* 24 hours, 10 years' average life. The high-performance unit employ energy-saving EC fan controlled by 0-10V signal, DC driven and stepless speed regulation, which is more excellent than traditional fan in energy-saving filed.

Heater

An electric heater with perfect overheat protection function and ionization resistance, able to meet environmental requirements of the small heat-load machine rooms for base stations in cold arctic-alpine area.

Condenser

With an enclosure of anti-corrosion alloy that ensures service life and appearance of the condenser, an external rotor axial flow fan that is elaborately designed and able to satisfy the environmental protection requirements on noise, and a fan speed regulator that controls the rotating speed under different temperature and ensures sound operating effect and energy saving.

Microprocessor control

The control system of the unit adopts advanced 32 bits microprocessor that provides more accurate and convenient system monitoring, programming and alarm record. Under normal range of working temperature and humidity, the accuracy of temperature control is at ±0.2 and that of humidity control ±2%. The control panel of high configuration unit can choose the big touch screen with 1/4 VGA resolution.

Various kinds of Internet centralized monitoring modes

Through Internet monitoring network, a real-time long-distance monitoring on air conditioning unit can be realized. This system supports various kinds of networks, such as: homenet, telenet, building automation system and power and environment centralized monitoring network.

Mechanical refrigeration mode

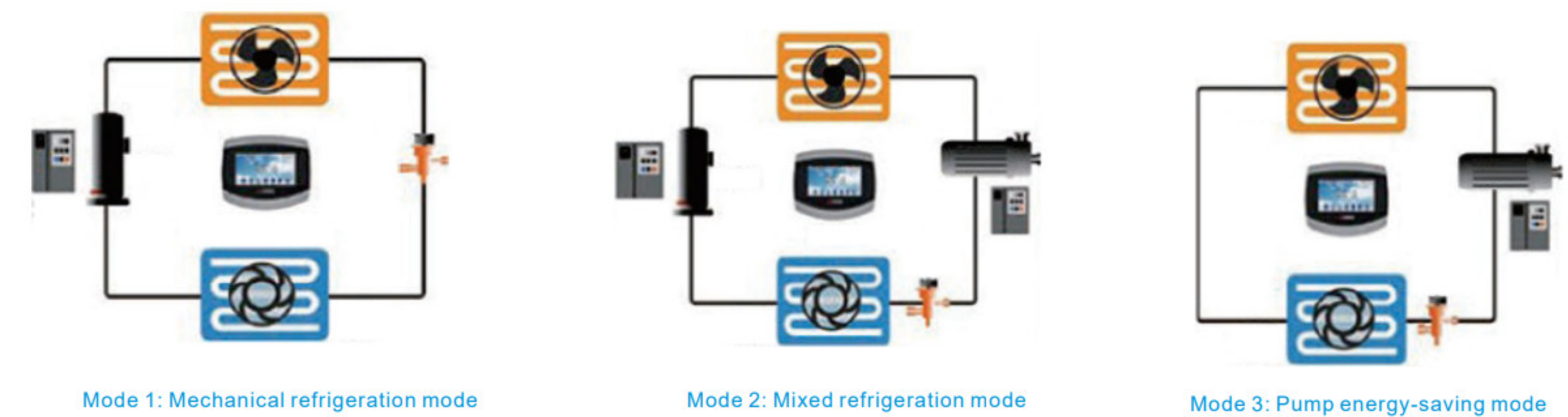
When the outdoor ambient temperature is high, the unit uses EC compressor for refrigeration operation.

Hybrid refrigeration mode

In excessive season, the unit adopts pump+compressor refrigeration, assisting the variable-frequency compressor operation by variable frequency pump, saving the power consumption of compressor, effectively reducing the condensing temperature of the compressor, improving the refrigeration capacity, and increasing the energy-efficiency ratio of the system.

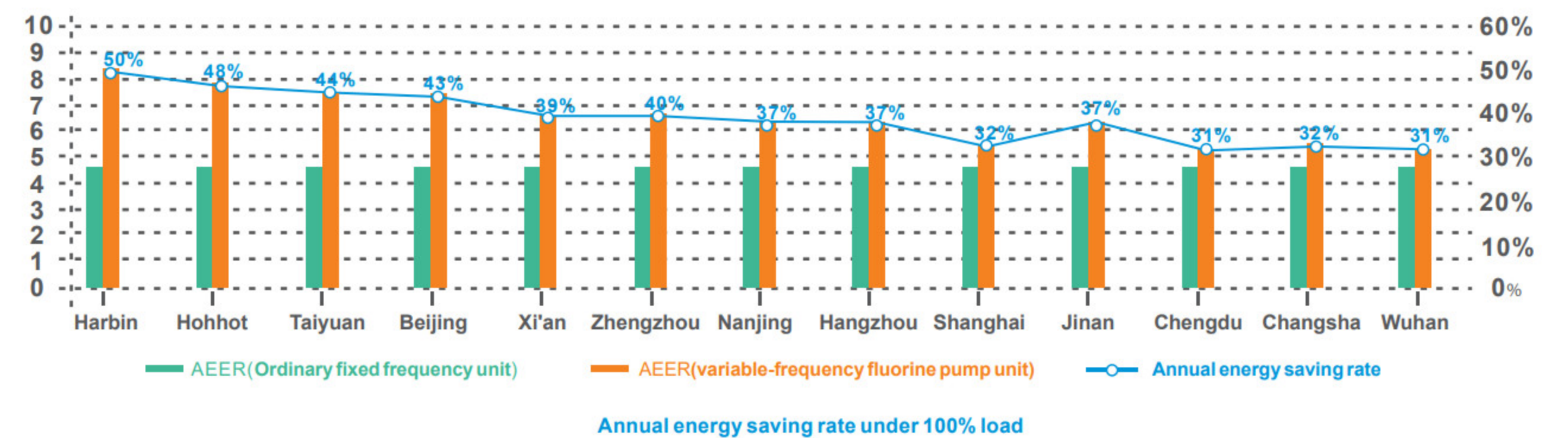
Pump energy-saving mode

When the outdoor ambient temperature is low, the unit adopts a fluorine pump for refrigeration, which makes full use of the outdoor natural cold source, and greatly reduces the energy consumption of the unit; the unit adopts a frequency conversion pump, which can be adjusted according to demand.



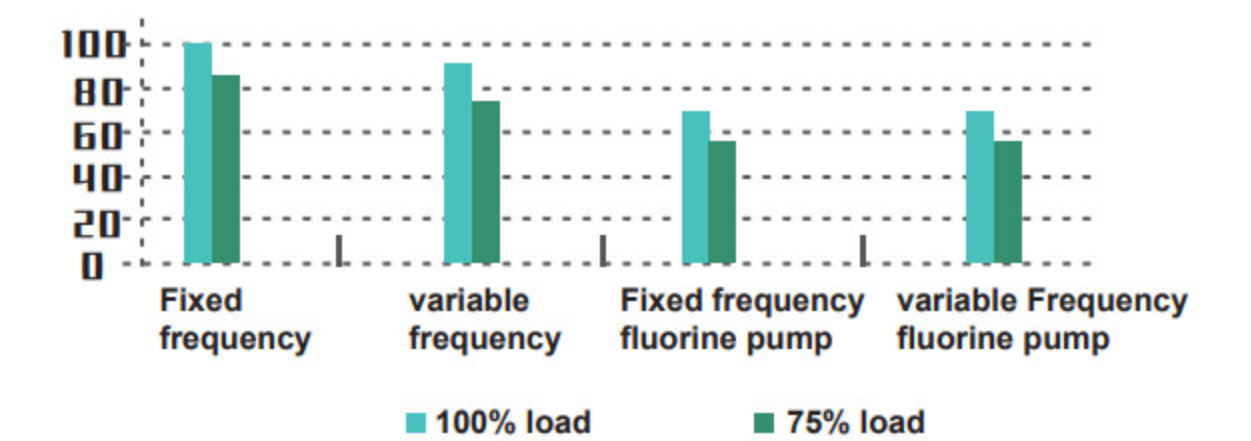
Energy-saving analysis

With dual-power integration technology and AI intelligent control, the energy-saving system of the frequency conversion pump operates efficiently and reliably; it can save more than 50% of energy under 100% load in Northeast China, more than 43% of energy can be saved in North China, more than 32% can be saved in East China, and more than 31% can be saved in Southwest China and Central China.



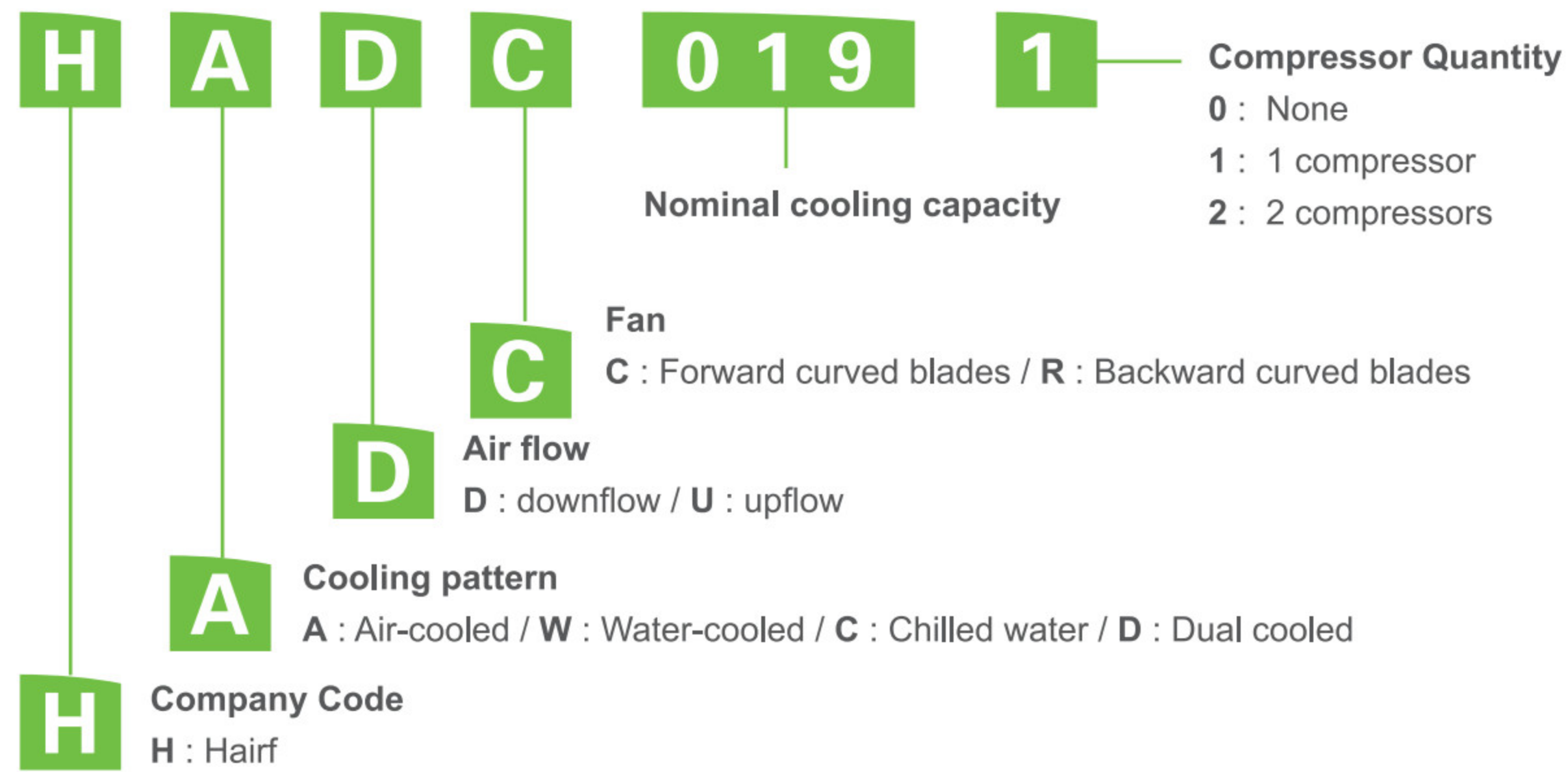
The energy-saving products of variable frequency pump adopt full variable frequency design of inverter compressor and frequency conversion fluorine pump, etc., which can adjust the cooling output in real time to quickly match the load change during partial load and is more energy-saving during partial load.

In Beijing, under 75% load, the annual power consumption of frequency conversion pumps energy-saving products is lower than that fixed-frequency pump energy-saving products, inverter and fixed-frequency power consumption, and the energy-saving effect is more obvious.

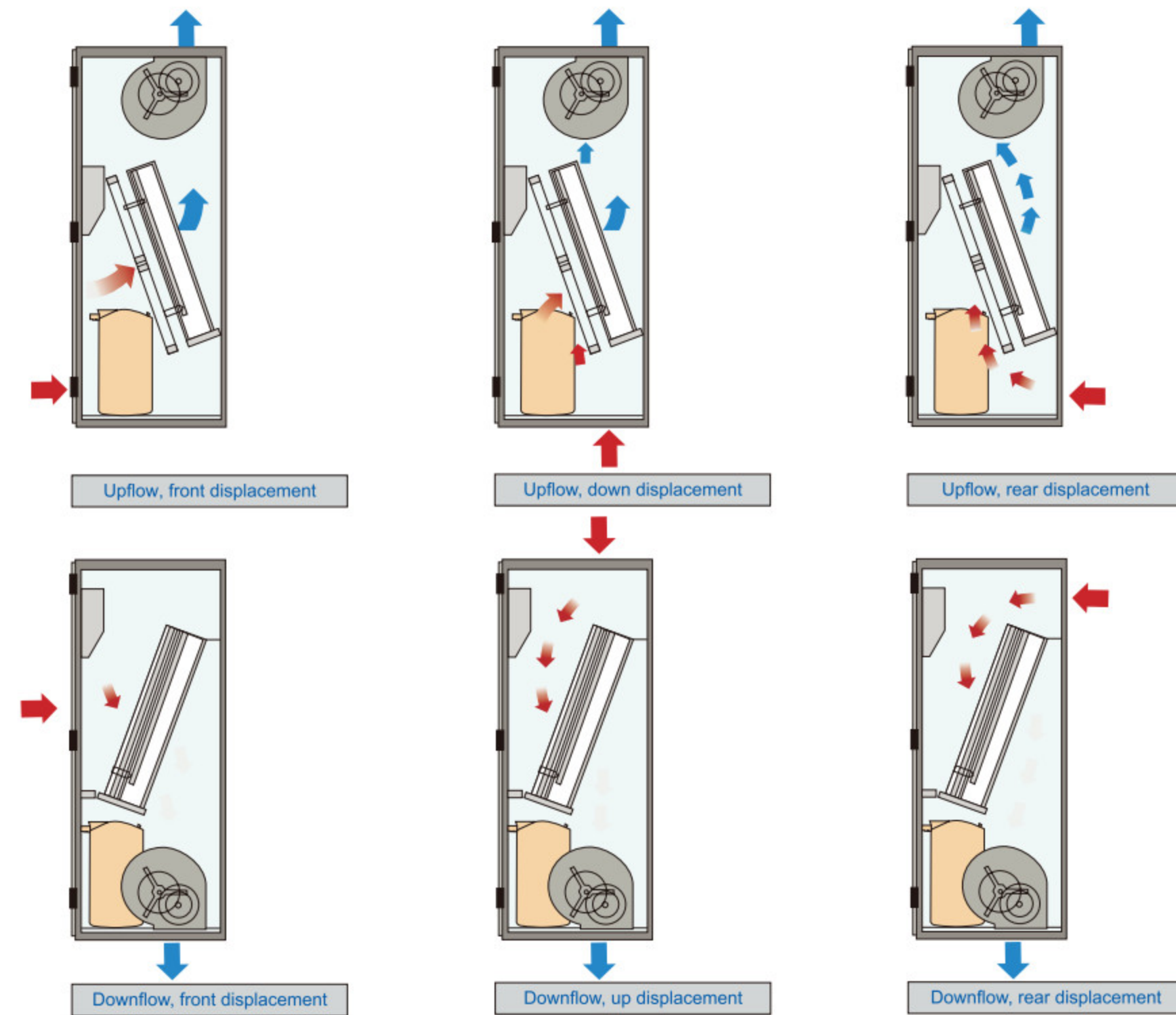


Comparison of 75% load power consumption in Beijing area

Product Model Name Convention



Flow / displacement



05/06

Technical Data for Air Cooled DX Units (I)

Model : HADC/HAUC		0061	0081	0101	0111	0131	0161	0191	0201
Cooling capacity(1)	kw	5.9	7.7	9.3	10.6	12.6	15.6	18.2	20.5
Air flow	m³/h	1720	2150	2850	3200	3530	4800	5200	5700
EER		3.60	3.65	3.55	3.65	3.60	3.65	3.65	3.66
SHR		0.95	0.93	0.95	0.95	0.93	0.96	0.93	0.93
Compressor									
Type		Scroll							
Capacity	kw	1.5	1.9	2.2	2.3	3.0	3.6	4.3	5.3
Quantity	nr	1	1	1	1	1	1	1	1
Finned coil evaporator									
Frontal surface	m²	0.29	0.29	0.47	0.47	0.47	0.65	0.65	0.65
Geometry	mm	25 x 21.65							
Type of fins		Hydrophilic							
Fin pitch	mm	1.8							
Fan section									
Type		Centrifugal fan							
Quantity	nr	1	1	2	2	2	2	2	2
Absorbed current	A	1.2	1.6	3.2	3.2	3.2	3.8	3.8	3.8
Absorbed power	W	165	282	500	563	563	668	668	850
AESP Max Speed(2)	Pa	180	180	180	250	250	250	250	250
Air filter									
Efficiency		EU4							
Overall surface	m²	2.2	2.2	3.6	3.6	3.6	5.0	5.0	5.0
Fire resistance class		1							
Electrical heaters									
Total heating capacity	kw	2	2	2.5	2.5	2.5	5	5	5
Quantity	nr	1	1	1	1	1	2	2	2
Material		PTC							
Humidifier									
Capacity	Kg/h	5-8	5-8	5-8	5-8	5-8	5-8	5-8	5-8
Absorbed power	kw	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Dimension&Weight									
Height	mm	1875	1875	1875	1875	1875	1875	1875	1875
Length	mm	600	600	900	900	900	1200	1200	1200
Depth	mm	449	449	449	449	449	449	449	449
Weight	kg	150	157	195	210	230	245	255	270
Sound level									
Sound pressure level(3)	dB(A)	46	48	48	49	51	52	53	52

- (1) Displacement temperature 24°C ,relative humidity 50%; ambient temperature 40°C
- (2) For higher External Static Pressure (ESP), please contact Hairf.
- (3) Noise is measured in free field 2m apart from the unit.

Technical Data for Air Cooled DX Units (II)

Model : HADR/HAUR		0201	0251	0261	0271	0301	0351	0401	0451
Cooling capacity(1)	kw	21.2	23.2	26.8	27.3	31.5	35.6	41.2	44
Air flow	m³/h	6530	7050	7280	8500	9000	10000	11000	13000
EER		3.72	3.60	3.60	3.75	3.71	3.71	3.71	3.68
SHR		0.98	0.98	0.92	0.98	0.99	0.98	0.97	0.95
Compressor									
Type		Scroll							
Capacity	kw	5.2	5.5	5.9	6.2	7.4	8.3	9.3	10.1
Quantity	nr	1	1	1	1	1	1	1	1
Finned coil evaporator									
Frontal surface	m²	0.8	0.8	0.8	1.4	1.4	1.4	1.7	1.7
Geometry	mm	25 × 21.65							
Type of fins		Hydrophilic							
Fin pitch	mm	1.8							
Fan section									
Type		Centrifugal fan							
Quantity	nr	1	1	1	1	1	1	2	2
Absorbed current	A	2.5	2.5	2.8	3.2	3.5	4.1	4.4	4.9
Absorbed power	W	1050	1100	1200	1300	1320	2000	2150	2400
AESP Max Speed(2)	Pa	360	360	360	380	380	355	355	355
Air filter									
Efficiency		EU4							
Overall surface	m²	5.8	5.8	5.8	6.5	6.5	6.5	7.8	7.8
Fire resistance class		1							
Electrical heaters									
Total heating capacity	kw	5	5	5	5	5	8	8	8
Quantity	nr	2	2	2	2	2	2	2	2
Material		PTC							
Humidifier									
Capacity	Kg/h	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13
Absorbed power	kw	6	6	6	6	6	6	6	6
Dimension&Weight									
Height	mm	1998	1998	1998	1998	1998	1998	1998	1998
Length	mm	1000	1000	1000	1000	1000	1000	1750	1750
Depth	mm	795	795	795	795	795	795	795	795
Weight	kg	375	385	393	450	490	590	595	610
Sound level									
Sound pressure level(3)	dB(A)	52	53	53	55	56.5	58	60	60

Technical Data for Air Cooled DX Units (III)

Model: HADR/HAUR		0272	0322	0362	0422	0452	0512	0522	0652
Cooling capacity(1)	kw	26.9	31.9	35.9	41.9	45.3	50.5	55.4	61.4
Air flow	m³/h	8000	9000	10000	11500	12950	15500	16000	17500
EER	w/w	3.60	3.65	3.66	3.61	3.63	3.72	3.72	3.65
SHR		0.95	0.96	0.95	0.95	0.97	0.95	0.95	0.96
Compressor									
Type		全封闭涡旋式							
Capacity	kw	6.0	7.0	8.2	9.2	10.0	11.0	11.2	13.6
Quantity	个	2	2	2	2	2	2	2	2
Finned coil evaporator									
Frontal surface	m²	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Geometry	mm	25x21.65							
Type of fins		亲水铝箔							
Fin pitch	mm	1.8							
Fan section									
Type		后弯叶片离心风机							
Quantity	个	2	2	2	2	2	2	2	2
Absorbed current	A	4.3	4.3	4.3	4.4	4.4	4.4	5	5.2
Absorbed power	W	1600	1600	1800	1800	2000	2000	3000	3300
AESP Max Speed(2)	Pa	380	380	380	355	355	355	380	380
Air filter									
Efficiency		G4							
Overall surface	m²	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
Fire resistance class		1							
Electrical heaters									
Total heating capacity	kw	5	5	5	10	10	10	10	10
Quantity	个	2	2	2	3	3	3	3	3
Material		PTC							
Humidifier									
Capacity	kg/h	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13
Absorbed power	kw	6	6	6	6	6	6	6	6
Dimension&Weight									
Height	mm	1998	1998	1998	1998	1998	1998	1998	1998
Length	mm	1750	1750	1750	1750	1750	1750	1750	1750
Depth	mm	795	795	795	795	795	795	795	795
Weight	kg	565	580	590	605	615	615	620	625
Sound level									
Sound pressure level(3)	dB(A)								

- (1) Displacement temperature 24°C ,relative humidity 50%; ambient temperature 40°C
 (2) For higher External Static Pressure (ESP), please contact Hairf.
 (3) Noise is measured in free field 2m apart from the unit.



07/08 >

- (1) Displacement temperature 24°C ,relative humidity 50%; ambient temperature 40°C
 (2) For higher External Static Pressure (ESP), please contact Hairf.
 (3) Noise is measured in free field 2m apart from the unit.

Technical Data for Air Cooled DX Units (III)

Model: HADR/HAUR		0692	0752	0852	0912	1022	1222	1302
Cooling capacity(1)	kw	68.7	76.2	85.5	90.8	102	122	132.1
Air flow	m ³ /h	18000	21000	23500	24200	26800	30500	31200
EER	w/w	3.61	3.61	3.61	3.65	3.62	3.65	3.64
SHR		0.95	0.96	0.95	0.96	0.95	0.94	0.94
Compressor								
Type		Scroll						
Capacity	kw	15.8	17.6	18.6	19.6	22.4	25.2	28.5
Quantity	↑	2	2	2	2	2	2	2
Finned coil evaporator								
Frontal surface	m ²	1.7	2.8	2.8	2.8	2.8	3.2	3.5
Geometry	mm	25x21.65						
Type of fins		Hydrophilic						
Fin pitch	mm	1.8						
Fan section								
Type		Centrifugal fan						
Quantity	↑	2	3	3	3	3	3	3
Absorbed current	A	5.2	6.5	16.5	16.5	16.5	17.5	19.8
Absorbed power	W	3900	3900	5400	6300	6300	7500	10800
AESP Max Speed(2)	Pa	380	360	400	400	400	400	400
Air filter								
Efficiency		G4						
Overall surface	m ²	7.8	13.5	13.5	13.5	13.5	13.5	15.5
Fire resistance class		1						
Electrical heaters								
Total heating capacity	kw	10	12	12	24	24	24	24
Quantity	↑	3	2	2	4	4	4	4
Material		PTC						
Humidifier								
Capacity	kg/h	8-13	8-13	8-13	8-13	8-13	8-13	8-13
Absorbed power	kw	6	6	6	6	6	6	6
Dimension&Weight								
Height	mm	1998	1998	1998	1998	1998	1998	1998
Length	mm	1750	2500	2500	2500	2500	2500	2500
Depth	mm	795	795	795	795	795	895	895
Weight	kg	625	979	985	992	1015	1180	1280
Sound level								
Sound pressure level(3)	dBA	65	65	65	65	66	66	72

Technical Data for Water Cooled DX Units(I)

Model : HWDC/HWUC		0061	0081	0101	0111	0131	0161	0191	0201
Cooling capacity(1)	kw	6.59	8.48	10.70	12.15	14.21	17.98	20.86	24.00
Cooling capacity(2)	kw	5.66	7.16	9.04	10.27	12.00	14.90	17.55	19.97
Air flow(2)	m ³ /h	1720	2150	2850	3200	3530	4800	5200	6000
EER		3.65	3.72	3.60	3.68	3.63	3.68	3.68	3.16
SHR		0.95	0.95	0.93	0.95	0.96	0.96	0.95	0.95
Compressor									
Type		Scroll							
Capacity	kw	1.5	1.9	2.4	2.7	3.35	4.2	5.0	4.5
Quantity	nr	1	1	1	1	1	1	1	1
Finned coil evaporator									
Frontal surface	m ²	0.29	0.29	0.47	0.47	0.47	0.65	0.65	0.65
Geometry	mm	25 × 21.65							
Type of fins		Hydrophilic							
Fin pitch	mm	1.8							
Fan section									
Type		Centrifugal fan							
Quantity	nr	1	1	2	2	2	2	2	2
Absorbed current	A	1.2	1.6	3.2	3.2	3.2	3.8	3.8	3.4
Absorbed power	W	165	282	500	563	563	668	668	1300
AESP Max Speed(3)	Pa	180	180	180	180	250	250	250	250
Air filter									
Efficiency		EU4							
Overall surface	m ²	2.2	2.2	3.6	3.6	3.6	5.0	5.0	5.0
Fire resistance class		1							
Electrical heaters									
Total heating capacity	kw	2	2	2.5	2.5	2.5	5	5	5
Quantity	nr	1	1	1	1	1	2	2	2
Material		PTC							
Humidifier									
Capacity	Kg/h	5-8	5-8	5-8	5-8	5-8	5-8	5-8	5-8
Absorbed power	kw	1.5	1.5	2.25	2.25	2.25	2.25	2.25	2.25
Water cooled condenser									
Type		Braze Plate Heat Exchange Condenser							
Water flow	L/S	0.40	0.51	0.64	0.73	0.85	1.10	1.25	1.44
Water pressure drop	Kpa	47.5	47.5	48	48	48	49	49	49
Quantity	nr	1	1	1	1	1	1	1	1
Dimension&Weight									
Height	mm	1875	1875	1875	1875	1875	1875	1875	1875
Length	mm	600	600	900	900	900	1200	1200	1200
Depth	mm	449	449	449	449	449	449	449	449
Weight	kg	162	169	207	232	265	273	285	300
Sound level									
Sound pressure level(4)	dB(A)	46	48	48	49	51	52	53	52

- (1) Displacement temperature 24°C ,relative humidity 50%; ambient temperature 40°C
- (2) For higher External Static Pressure (ESP), please contact Hairf.
- (3) Noise is measured in free field 2m apart from the unit.



09/10 >

- (1) Inlet water T30°C , outlet water T35°C
- (2) Inlet water T40°C , outlet water 45°C
- (3) For higher External Static Pressure (ESP), please contact Hairf.
- (4) Noise is measured in free field 2m apart from the unit.

Technical Data for Water Cooled DX Units(II)

Model : HWDR/HWUR		0201	0251	0261	0271	0301	0351	0401	0451
Cooling capacity(1)	kw	24.00	25.30	28.50	30.50	35.40	40.60	46.50	50.50
Cooling capacity(2)	kw	19.97	21.06	25.37	25.37	29.45	35.55	39.16	45.10
Air flow	m³/h	6530	7050	7280	8500	9000	10000	11000	13800
EER		3.16	3.75	3.65	3.65	3.74	3.74	3.74	3.65
SHR		0.95	0.94	0.92	0.94	0.95	0.95	0.95	0.94
Compressor									
Type		Scroll							
Capacity	kw	5.50	5.60	6.60	7.10	8.10	8.75	10.30	10.8
Quantity	nr	1	1	1	1	1	1	1	1
Finned coil evaporator									
Frontal surface	m²	0.8	0.8	0.8	1.4	1.4	1.4	1.7	1.7
Geometry	mm	25 × 21.65							
Type of fins		Hydrophilic							
Fin pitch	mm	1.8							
Fan section									
Type		Centrifugal fan							
Quantity	nr	1	1	1	1	1	1	2	2
Absorbed current	A	2.5	2.5	2.8	3.2	3.5	4.1	4.4	5.0
Absorbed power	W	1050	1100	1200	1300	1320	2000	2150	2600
AESP Max Speed(3)	Pa	380	380	380	425	425	355	355	350
Air filter									
Efficiency		EU4							
Overall surface	m²	5.8	5.8	5.8	6.5	6.5	6.5	7.8	7.8
Fire resistance class		1							
Electrical heaters									
Total heating capacity	kw	5	5	5	5	5	8	8	8
Quantity	nr	2	2	2	2	2	2	2	2
Material		PTC							
Humidifier									
Capacity	Kg/h	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13
Absorbed power	kw	6	6	6	6	6	6	6	6
Water cooled condenser									
Type		Braze Plate Heat Exchange Condenser							
Water flow	L/S	1.44	1.70	1.83	1.83	2.12	2.40	2.78	3.2
Water pressure drop	Kpa	49	49	49	51	51	51	51	51
Quantity	nr	1	1	1	1	1	1	1	1
Dimension&Weight									
Height	mm	1998	1998	1998	1998	1998	1998	1998	1998
Length	mm	1000	1000	1000	1000	1000	1000	1750	1750
Depth	mm	795	795	795	795	795	795	795	795
Weight	kg	375	385	393	450	490	590	595	610
Sound level									
Sound pressure level(4)	dB(A)	52	53	53	55	56.5	60	60	60

- (1) Inlet water T30°C , outlet water T35°C
(2) Inlet water T40°C , outlet water 45°C
(3) For higher External Static Pressure (ESP), please contact Hairf.
(4) Noise is measured in free field 2m apart from the unit.

Technical Data for Water Cooled DX Units(III)

Model: HWDR/HWUR		0272	0302	0362	0422	0452	0512	0552	0602	0692	0762	0852	0912	1022	1182	1302
Cooling capacity(1)	kw	27.9	34.60	40.6	48.0	50.6	57.1	60.9	70.7	81.8	90.0	95.6	100.8	112.5	126.8	138.2
Cooling capacity(2)	kw	23.5	28.9	34.0	39.9	42.1	48.8	50.7	58.9	68.6	80.3	83.6	92.5	98.6	117.3	128.1
Air flow	m³/h	8000	9000	10000	11500	12950	13500	16000	17500	18000	21000	23500	24200	26800	28500	31200
EER	w/w	3.67	3.68	3.64	3.65	3.65	3.73	3.73	3.65	3.61	3.61	3.61	3.65	3.62	3.60	3.59
SHR		0.95	0.95	0.96	0.95	0.95	0.93	0.96	0.96	0.95	0.93	0.97	0.95	0.94	0.95	0.94
Compressor																
Type		Scroll														
Capacity	kw	6.0	7.8	9.2	11.2	12.0	13.2	13.5	16.4	19.4	20.4	21.8	22.8	25.0	28.0	31.0
Quantity	nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Finned coil evaporator																
Frontal surface	m²	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.8	2.8	2.8	2.8	3.1	3.1
Geometry	mm	25 × 21.6														
Type of fins		Hydrophilic														
Fin pitch	mm	1.8														
Fan section																
Type		Centrifugal fan														
Quantity	nr	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3
Absorbed current	A	4.3	4.3	4.3	4.4	4.4	4.4	5	5.2	5.2	6.5	16.5	16.5	16.5	18.7	21
Absorbed power	W	2500	2500	1800	1800	2000	2000	3000	3300	3900	3900	5400	6300	6300	7200	8500
AESP Max Speed(3)	Pa	425	425	425	355	355	355	405	378	378	378	400	400	400	350	350
Air filter																
Efficiency		EU4														
Overall surface	m²	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	13.5	13.5	13.5	13.5	14	14
Fire resistance class		1														
Electrical heaters																
Total heating capacity	kw	5	5	5	10	10	10	10	10	10	12	12	24	24	24	24
Quantity	nr	2	2	2	3	3	3	3	3	3	2	2	4	4	4	4
Material		PTC														
Humidifier																
Capacity	Kg/h	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13
Absorbed power	kw	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Water cooled condenser																
Type		Braze Plate Heat Exchange Condenser														
Water flow	L/S	1.67	2.10	2.43	2.87	3.03	3.41	3.64	4.23	4.89	5.56	5.68	6.02	6.72	7.2	7.9
Water pressure drop	Kpa	51	52	52	52	52	53	53	53	53	54	55	55	60	60	
Quantity	nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Dimension&Weight																
Height	mm	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Length	mm	1750	1750	1750	1750	1750	1750	1750	1750	1750	2500	2500	2500	2500	2500	
Depth	mm	795	795	795	795	795	795	795	795	795	795	795	795	795	795	
Weight	kg	565	580	590	605	615	615	620	625	625	979	950	992	1020	1080	
Sound level																
Sound pressure level(4)	dB(A)	56	58	59	62	62	63	64	65	65	65	65	65	66	68	69

- (1) Inlet water T30°C , outlet water T35°C
(2) Inlet water T40°C , outlet water 45°C
(3) For higher External Static Pressure (ESP), please contact Hairf.
(4) Noise is measured in free field 2m apart from the unit.

Technical Data for Chilled Water CW Units(I)

Model : HCDC/HCUC		0080	0110	0140	0160	0200	0230
Cooling capacity[Water7/12°C]	KW	7.6	10.6	13.9	15.6	19.3	22.2
Cooling capacity[Water10/15°C]	KW	5.3	6.2	9.8	11.3	14.0	15.7
Air flow	m³/h	1720	2150	3200	3530	4800	5200
Water flow	L/S	0.40	0.56	0.73	0.78	0.96	1.14
Water pressure drop	KPa	37	37	39	52	52	52
Finned coil evaporator							
Front surface	m²	0.29	0.29	0.47	0.47	0.65	0.65
SHR [water 7/12°C]		0.83	0.83	0.84	0.83	0.84	0.83
SHR [water 10/15°C]		0.98	0.96	0.98	0.97	0.98	0.96
Fan section							
Type		Centrifugal fan					
Quantity	Nr.	1	1	2	2	2	2
AESP	Pa	20-240					
Air filter							
Efficiency		EU4					
Overall surface	m²	2.2	2.2	3.6	3.6	5.0	5.0
Electrical heaters							
Total heating capacity	KW	2	2	2.5	2.5	5	5
Quantity	Nr.	1	1	1	1	2	2
Humidifier							
Capacity	kg/h	5-8	5-8	5-8	5-8	5-8	5-8
Absorbed power	KW	2.25	2.25	2.25	2.25	2.25	2.25
Dimension&Weight							
Height	mm	1875	1875	1875	1875	1875	1875
Lengt	mm	600	600	900	900	1200	1200
Depth	mm	449	449	449	449	449	449
Weight	kg	125	135	150	160	170	175
Sound level							
Sound pressure level (*)	dB(A)	48	50	51	51	52	52

Technical Data for Chilled Water CW Units(II)

Model : HCDR/HCUR		0300	0400	0500	0650	0850	0900	01000	01200	01300	01500
Cooling capacity[Water7/12°C]	KW	37.9	47.5	61.2	69.8	85.6	94.7	108.5	125.6	135.6	156.8
Cooling capacity[Water10/15°C]	KW	28.4	39.5	50.2	60.0	71.5	77.5	93.3	108.0	114	132.7
Air flow	m³/h	8120	13500	16500	16800	17500	19000	25800	28800	35500	42000
Water flow	L/S	1.89	2.50	3.10	3.48	4.30	4.78	5.3	6.1	7.05	7.5
Water pressure drop	KPa	46	52	53	55	56	56	62	63	62	64
Finned coil evaporator											
Front surface	m²	1.10	1.75	1.90	1.90	2.8	2.80	2.80	3.95	3.95	3.95
SHR [water 7/12°C]		0.83	0.84	0.83	0.82	0.86	0.84	0.82	0.84	0.83	0.82
SHR [water 10/15°C]		0.98	0.98	0.97	0.92	0.92	0.91	0.89	0.93	0.91	0.92
Fan section											
Type		Centrifugal fan									
Quantity	Nr.	1	1	2	2	2	2	3	3	3	3
AESP	Pa	20-350									
Air filter											
Efficiency		EU4									
Overall surface	m²	5.8	5.8	7.8	7.8	7.8	7.8	7.8	13.5	13.5	13.5
Electrical heaters											
Total heating capacity	KW	5	5	12	12	18	18	24	24	24	24
Quantity	Nr.	2	2	2	2	3	3	4	4	4	4
Humidifier											
Capacity	kg/h	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13	8-13
Absorbed power	KW	6									
Dimension&Weight											
Height	mm	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Lengt	mm	1000	1000	1750	1750	1750	1750	1750	2500	2500	2500
Depth	mm	795	795	795	795	795	795	795	795	875	795
Weight	kg	310	370	410	430	450	490	510	730	750	850
Sound level											
Sound pressure level (*)	dB(A)	58	58	60	61	63	63	63.5	68	68	68

(*)Noise is measured in free field 2m apart from the unit.

(*) Noise is measured in free field 2m apart from the unit.

Technical Data for Dual Cooled Units(Air-cooled+Chilled water)

Technical data for air-cooled:

Model : HDDR/HDUR		0251	0301	0401	0512	0602	0762	0912	1022
Cooling capacity(1)	kw	23.2	31.5	41.2	50.5	61.4	76.2	90.8	102
Air flow	m³/h	7280	9000	10000	12950	17000	21000	25000	26800
EER		3.70	3.71	3.71	3.72	3.63	3.41	3.45	3.52
SHR		0.98	0.99	0.97	0.93	0.96	0.93	0.97	0.96
Capacity	kw	6.1	7.0	9.6	11.0	13.6	17.6	19.6	22.4
Quantity	nr	1	1	1	2	2	2	2	2
Quantity	nr	1	2	2	2	2	3	3	3
Absorbed current	A	2.5	4.3	4.4	4.4	5	6.5	6.5	6.5
Absorbed power	W	1100	1600	1800	2000	3300	3900	6300	6300
AESP Max Speed(2)	Pa	360	380	355	355	380	360	360	360
Total heating capacity	kw	5	5	8	10	12	12	24	24
Electrical heaters	nr	2	2	2	3	2	2	4	4
Capacity	Kg/h	8	8	8	8	8	8	8	8
Absorbed power	kw	6	6	6	6	6	6	6	6
Height	mm	1998	1998	1998	1998	1998	1998	1998	1998
Length	mm	1000	1750	1750	1750	1750	2500	2500	2500
Depth	mm	795	795	795	795	795	795	875	875
Weight	kg	385	585	595	615	940	979	992	1015
Sound pressure level(3)	dB(A)	53	56.5	60	63	65	65	65	66

Technical data for Chilled water:

Cooling capacity [Water 7/12°C]	KW	22.2	37.9	42.6	51.5	61.2	78.4	94.7	118.6
Cooling capacity [Water 10/15°C]	KW	15.7	28.4	33.1	41.7	50.2	64.3	77.5	91.6
Water flow	L/S	1.14	1.96	2.10	2.53	3.14	3.85	4.78	5.9
Water pressure drop	KPa	46	46	52	53	56	58	62	62
SHR [water 7/12°C]		0.83	0.83	0.84	0.84	0.83	0.82	0.84	0.82
SHR [water 10/15°C]		0.96	0.98	0.98	0.98	0.97	0.92	0.91	0.83

Air-cooled condenser configuration(I)

Unit model:	0061	0081	0101	0111	0131	0161	0191	0201
Condenser model(KYV/KYH)	16	16	16	16	16	24	24	24

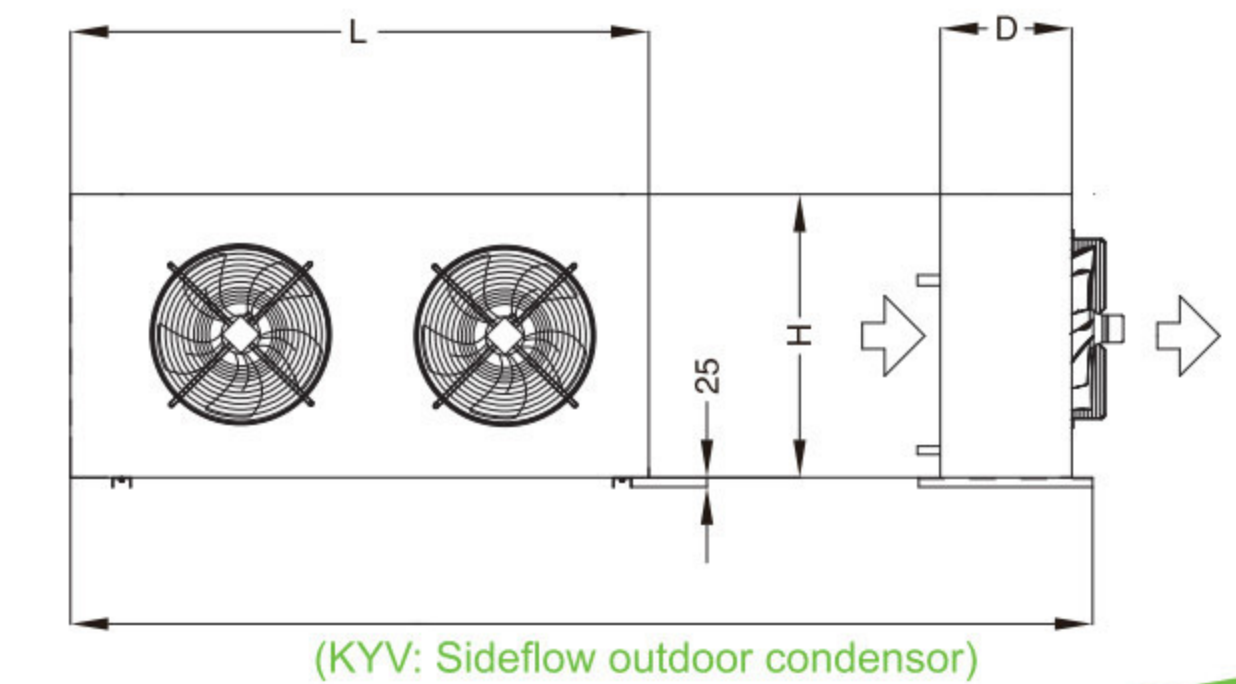
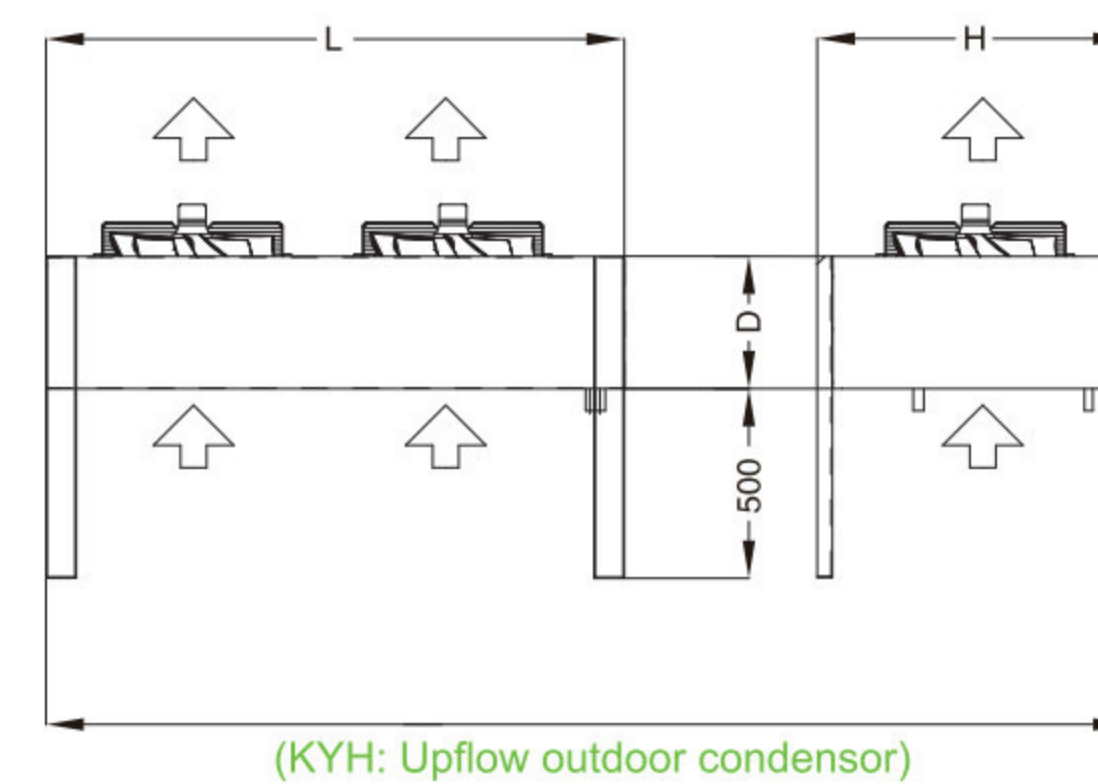
Unit model:	0201	0251	0261	0271	0301	0351	0401	0451
Condenser model(KYV/KYH)	80	80	80	100	100	120	150	165

Air-cooled condenser configuration(II)

Unit model:	0272	0322	0362	0422	0452	0512	0522	0652	0692	0752	0852	0912	1022	1222	1302
Condenser model (KYV/KYH)	2x24	2x24	2x24	2x80	2x80	2x80	2x100	2x100	2x120	2x150	2x150	2x165	2x180	2x200	2x265

Technical data for outdoor condenser

Condenser model (KYV/KYH)	16	24	80	100	120	150	165	180	200	265
Rated Power (Kw)	0.39	0.49	0.39x2	0.49x2	0.49x2	0.76x2	0.76x2	1.1x2	1.1x2	1.1x2
Power supply	220V/1PH/50Hz						380V/3PH/50Hz			
Air flow	5500	6500	11000	13000	13000	21600	21600	30800	30800	30800
Fan diameter (mm)	450	500	450	500	500	630	630	630	630	630
Fan quantity	1	1	2	2	2	2	2	2	2	2
Sound pressure level (dB)	50	56	62	62	66	68	70	70	70	72
Dimension	L(MM)	980	980	1530	1530	1790	1850	2035	2200	2450
	D(MM)	350	350	350	400	400	400	400	400	400
	H(MM)	605	757	750	996	955	996	996	996	974
Weight (KG)	35	52	90	100	125	136	148	169	195	315
Installation dimension (Installation hole φ 12)	775x420	775x420	1325x480	1345x480	1625x480	1685x480	1870x480	2035x480	2285x480	1200x1040



- (1) Displacement temperature 24°C ,relative humidity 50%; ambient temperature 40°C
- (2) For higher External Static Pressure (ESP), please contact Hairf.
- (3) Noise is measured in free field 2m apart from the unit.



Air/water-cooled precision unit
0061 ~ 0301

Chilled water precision unit
0080 ~ 0300



Air/water-cooled precision unit
0351 ~ 0451

Air/water-cooled precision unit
0272 ~ 0692

Chilled water precision unit
0400 ~ 01000



Air/water-cooled precision unit
0762 ~ 1302

Chilled water precision unit
01200 ~ 01500