

DESICCANT DEHUMIDIFICATION SYSTEM

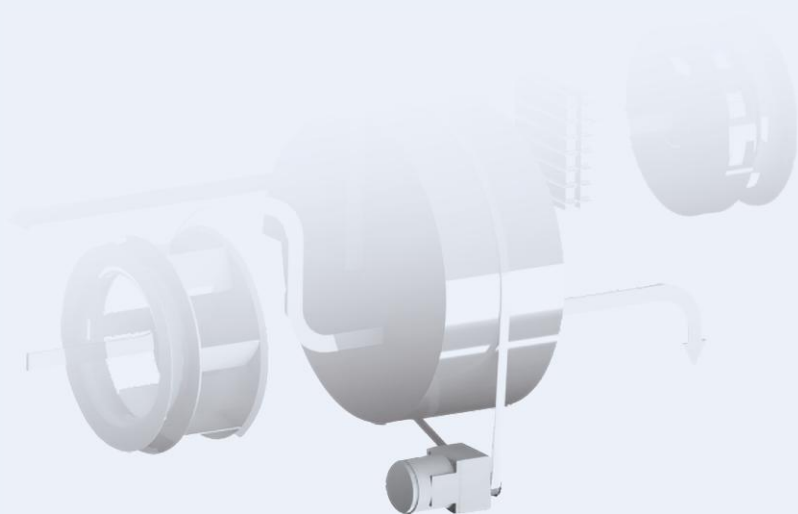
Honeycomb rotor:
the rotor is made by ceramic fiber and active silica gel



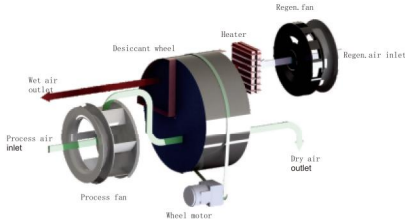
WORKING PRINCIPLE

LUKO desiccant dehumidifiers work based on adsorption theory. The moisture in the process air is adsorbed in the dehumidification sector of the desiccant rotor. As the desiccant adsorbs moisture, it is slowly rotated into the reactivation sector.

During reactivation, hot air passes through the desiccant rotor and removes moisture from the rotor. After reactivation, the rotor rotates back into the process air stream to begin adsorption again. Adsorption and reactivation take place continuously and simultaneously. Positive sealing between the two airstreams prevents mixing of the two streams.

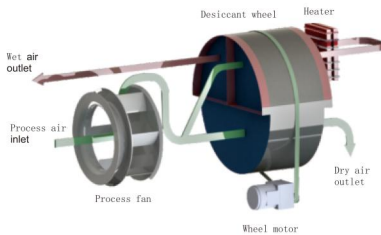


APPLICATION METHOD (VARIOUS TYPES)



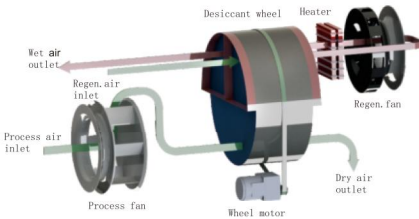
D - SERIES DESICCANT DEHUMIDIFIER

This series is normally with low regeneration temperature. It is suitable for environment with surplus of heat. And it is usually applied in applications that require to achieve low dew point.



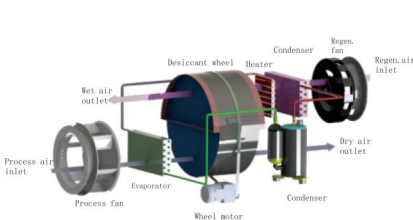
S - SERIES DESICCANT DEHUMIDIFIER

This series operates using integrated heat recycling. Regeneration Air and Process Air both share the same fan. This makes installation more simpler for rooms that require to be pressurized with dried fresh air.



R - SERIES DESICCANT DEHUMIDIFIER

This series operates using integrated heat recycling. During the rotor regeneration, heat is absorbed and then transferred to the "purge zone", where incoming regeneration air is pre-heated. This would help to reduce energy consumption and lower the dry air's temperature.

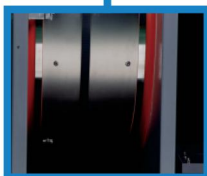


E - SERIES DESICCANT DEHUMIDIFIER

This series combines a heat pump with the desiccant rotor in a unique way, where it provides very low energy consumption and low dry air temperature. It is probably the most energy-efficient dehumidifier with approximately 1/4 of the total energy consumption of normal desiccant units. This system has both condensation and wet air outlet.

ENERGY-RELATED PRODUCTS (ErP) DIRECTIVE

- Allowable air leakage rate according to European standards
- Complies with GS standard, ROHS and CE standard
- Ensures better performance and more efficiency
- Standard configuration with G4 (EU4) filter,F7(EU7) available
- High-performance rotor ensures effective dehumidification in a wide operating temperature range
- Hinged side panel design ensure easy access to the internals for the maintenance.
- Electrical design complies with international standard EN60204, optional touch LCD panel or RS485 communication
- Uses a unique dynamic balance design, can be stable in swing operation, mainly used in wind power dehumidification
- Uses EC motor fan with adjustable air rate
- Equipped with an international standard circular air duct,conforms to the ISO7807 standard
- PTC and SCR heating technology can save 20%~30% of power consumption.
- Made of cold-plate paint or SUS304 stainless steel,ensures the durability and stability of the equipment.
- Uses Profute rotor,which has a long service life and ensures 10 years continuous operation without failure
- Uses ABB, OMRON (OMRON), Schneider (Schneider) and other top international brand electrical components.



CORE SPARE PARTS



Reliable Electrical Components to ensure the stability and reliability of the system.



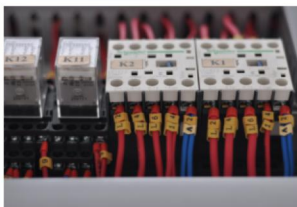
CPU module with combine of SCR technologies, to provide a smooth operation of the dehumidifier while saving of energy by intelligently regulating the heating elements.



Process air equipped with EC Backward Curved Centrifugal Fan with Variable Fan Speed to cater for the various environment and application that require different air volume and air pressure.



Rotor rotation protection switch, to ensure the rotor is rotating at 12rpm per hour to provide a stable and constant dehumidification operation.



All electrical wiring is well labeled to provide a clear instruction for maintenance, troubleshooting, parts and components replacement.

DESICCANT DEHUMIDIFICATION SYSTEM





DESICCANT DEHUMIDIFICATION SYSTEM INSTALLATION



INDOOR INSTALLATION

The regenerative air inlet and regenerative air outlet pipes must be placed outside of the space. Dry air must be distributed evenly in the dehumidified room, and the processing air inlet does not need to be connected.

FACTORY INSTALLATION

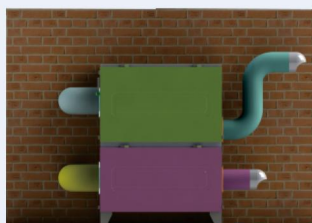
The process air outlet and the processed air inlet are connected to the dehumidified area. If the ventilation of the factory is not good, the regeneration air inlet and the regeneration air outlet can be connected to the surrounding environment by pipes.

OUTDOOR INSTALLATION

The regenerative air inlet and regenerative air outlet do not need to be connected.



INDOOR/FACTORY INSTALLATION DIAGRAM



OUTDOOR INSTALLATION DIAGRAM



INSTALLATION PRECAUTIONS

1. The unit is easy to connect to the pipeline. There must be enough space in front of the unit to open the service door and take out the rotor for the future maintenance. The open service space should be as wide as the unit.

2. It should use a forklift or other to move the unit. The unit cannot be placed in an explosive place, nor can it handle air containing explosive substances.

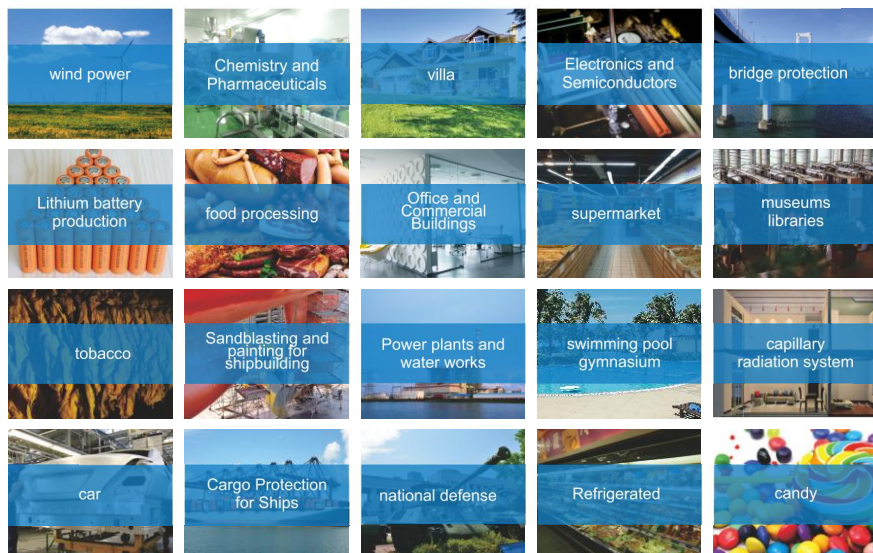
3. The regeneration air outlet should be far away the regeneration air inlet, and the process air inlet should be far away from the dry air outlet. Longer the pipes, less the dehumidification capacity. Please refer to the unit specifications for the dimensions of the unit duct size. The dry air outlet of the unit can be equipped with a regulating valve, which can be used to control the operation of the dehumidifier. If you want the dry air to contain lower humidity, the regulating valve must be installed at the dry air outlet. If the maximum dehumidification capacity is not required, the regulating valve should be installed at the humid air outlet. As the humid air outlet contains high humidity, condensation may occur in the pipe. Therefore, it is recommended that the duct of the humid air outlet be insulated and installed at an angle so that the condensed water will not flow back to the dehumidifier. There must be a hole with a diameter of 10 in the lower part of the duct to discharge the condensed water.

➤ DUCT CONNECTION:

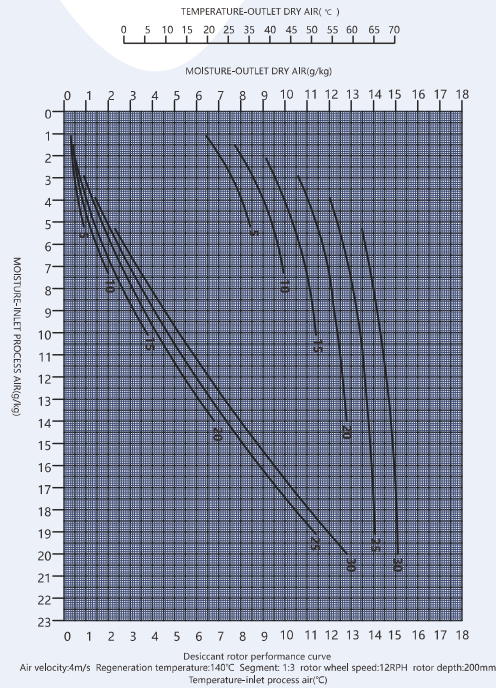
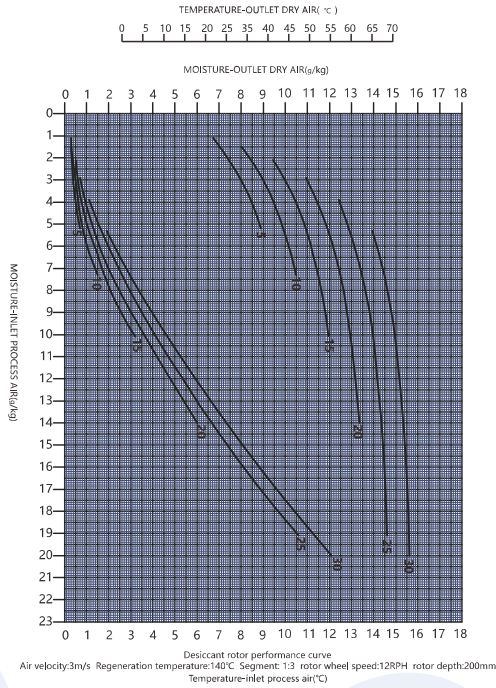
The size of the process air and regeneration air ducts should meet the recommended value of ISO7807. For the installation of pipe joints of ducts and elbow flanges, the bolt length shall not exceed 20mm.

- Minimize the length of the air duct in order to reduce the static pressure loss of the air system. In order to ensure performance, all rigid (galvanized) pipe connections must be airtight.
- The duct should be insulated to avoid condensation on the outer wall of the duct when the temperature of the airflow in the duct drops below the dew point temperature of the outside air, which will lead to duct corrosion; and energy loss can be avoided.
- The pipeline directly installed on the unit should be fully supported in order to reduce the load and pressure caused by the gravity and operation of the pipeline.
- In order to reduce noise and vibration along the pipeline, the regeneration air outlet can be installed with a soft connection with good quality and strong air tightness. Regulating dampers must be installed on the process air and regeneration air outlet ducts. The total resistance of the pipes on the treatment side and the regeneration side cannot exceed the pressure head provided by the fan installed in the unit.
- If the system is introduced into the dehumidification unit from the outside, the air inlet should be sufficiently high from the ground to prevent the inhalation of dust and debris. The entrance must be far away from possible pollution sources, such as energy waste gas, steam and harmful gases. In order to prevent humid air from humidifying the process air (inlet), the outdoor process air inlet must be at least 2 meters away from the humid air outlet. The pipeline design should prevent the intrusion of rain and snow. The outlet regeneration air is hot and humid. It can be easily formed on the inner wall of the pipeline. The pipeline should be installed at a downward slope from the unit. In addition, the condensate drain should be set at the lowest point of the pipeline to prevent internal water accumulation. The humid air pipeline must be insulated to prevent condensation on the inner wall of the pipeline when the dew point temperature of the air in the pipeline is higher than the temperature of the outside air, which may cause corrosion and water accumulation in the pipeline.

➤ APPLICATIONS

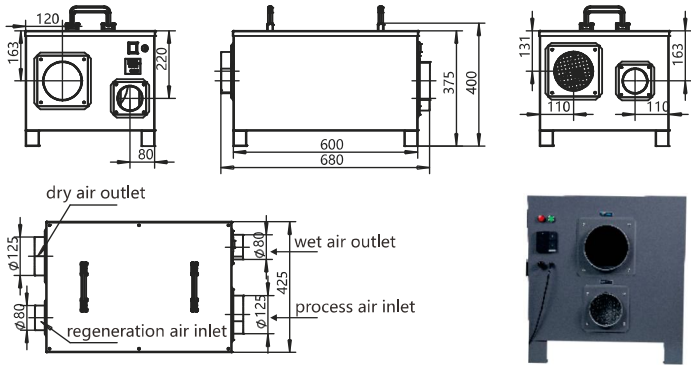


DESICCANT ROTOR PERFORMANCE CURVE



DESICCANT DEHUMIDIFIER

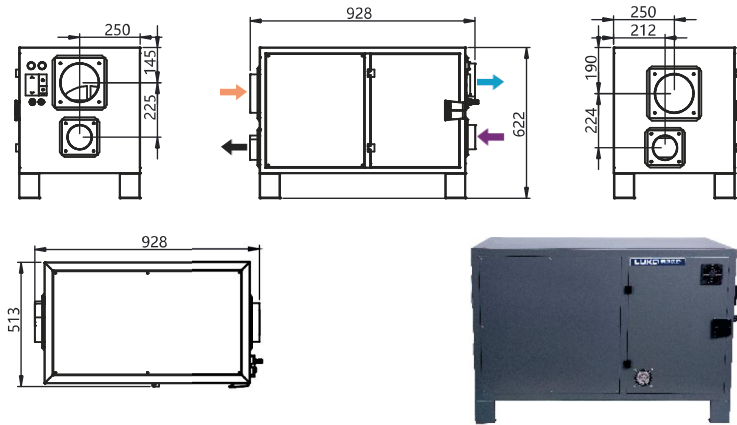
FD-D210K / FD-D300K



test condition: 20°C 60%

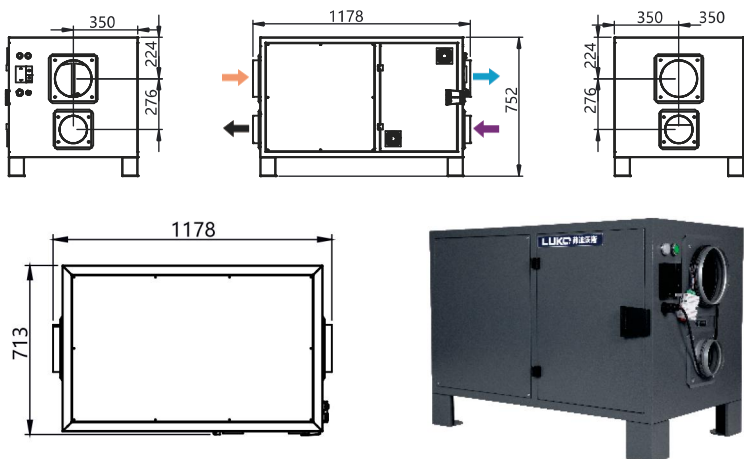
Parameters	FD-D210K	FD-D320K
capacity	0.6kg/h	1.2kg/h
process air flow/ESP	210m³/h 70PA	320m³/h 100PA
reactivation air flow/ESP	60m³/h 50PA	120m³/h 50PA
rated power	1.2KW/5.2A	1.9KW/8.3A
power supply frequency	220V/50Hz	220V/50Hz
process air in	Φ125mm	Φ125mm
dry air out	Φ125mm	Φ125mm
regeneration air in	Φ80mm	Φ80mm
wet air out	Φ80mm	Φ80mm
heating type	PTC	PTC
frame material	cold-rolled steel	cold-rolled steel
control	touch screen + RS485	touch screen + RS485
water proof class	IPX3	IPX3
process air filter	primary efficiencyG4	primary efficiencyG4
regeneration air filter	primary efficiencyG4	primary efficiencyG4
electric shock protection class	class I	class I
dimension	680*420*400mm	680*420*400mm

FD-D600K



test condition: 20°C 60%

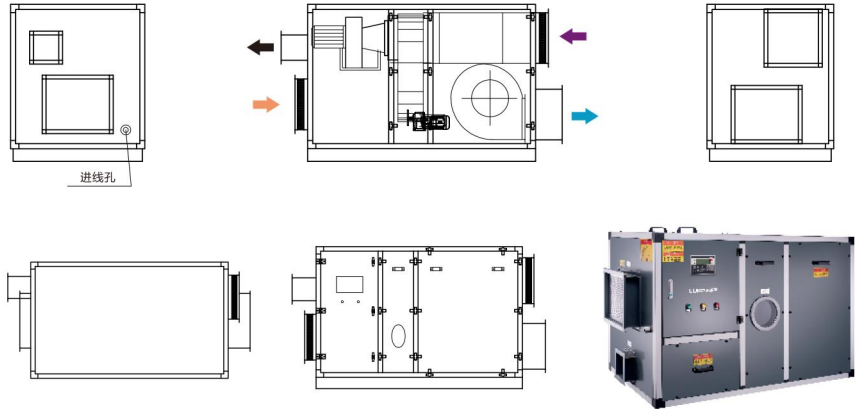
Parameters	FD-D600K
capacity	3.0kg/h
process air flow/ESP	600m ³ /h 150PA
reactivation air flow/ESP	210m ³ /h 80PA
rated power	5.5KW/24A
power supply frequency	220V/50Hz
process air in	Φ160mm
dry air out	Φ160mm
regeneration air in	Φ100mm
wet air out	Φ100mm
heating type	PTC
frame material	cold-rolled steel
control	touch screen + RS485
water proof class	IPX3
process air filter	primary efficiencyG4
regeneration air filter	primary efficiencyG4
electric shock protection class	class I
dimension	928*513*622mm



test condition: 20°C 60%

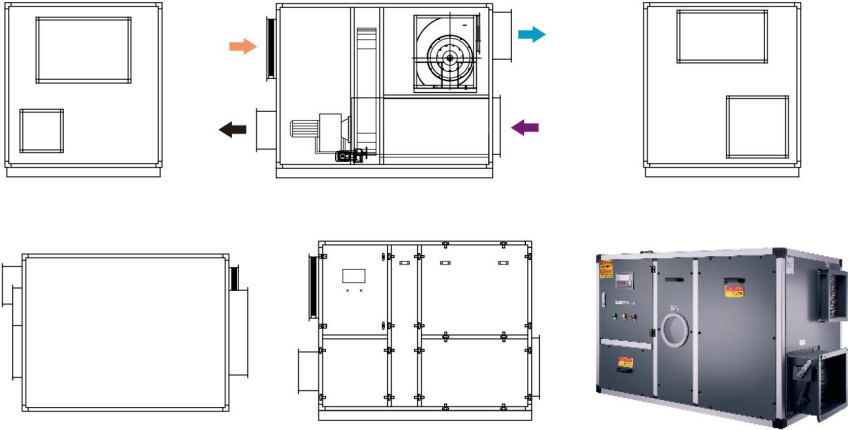
Parameters	FD-D820K	FD-D1050K	FD-D1280K	FD-D1550K
capacity	4.5kg/h	5.2kg/h	8.5kg/h	10kg/h
process air flow/ESP	820m ³ /h 200PA	1050m ³ /h 200PA	1280m ³ /h 200PA	1550m ³ /h 250PA
reactivation air flow/ESP	250m ³ /h 100PA	350m ³ /h 100PA	450m ³ /h 150PA	580m ³ /h 200PA
rated power	9KW/13.6A	11KW/16A	12KW/18A	13KW/20A
power supply frequency	380-415V/50-60Hz	380-415V/50-60Hz	380-415V/50-60Hz	380-415V/50-60Hz
process air in 	Φ200mm	Φ200mm	Φ200mm	Φ200mm
dry air out 	Φ200mm	Φ200mm	Φ200mm	Φ200mm
regeneration air in 	Φ150mm	Φ150mm	Φ150mm	Φ150mm
wet air out 	Φ150mm	Φ150mm	Φ150mm	Φ150mm
heating type	PTC+SCR	PTC+SCR	PTC+SCR	PTC+SCR
frame material	cold-rolled steel	cold-rolled steel	cold-rolled steel	cold-rolled steel
control	touch screen + RS485	touch screen + RS485	touch screen + RS485	touch screen + RS485
water proof class	IPX3	IPX3	IPX3	IPX3
process air filter	primary efficiencyG4	primary efficiencyG4	primary efficiencyG4	primary efficiencyG4
regeneration air filter	primary efficiencyG4	primary efficiencyG4	primary efficiencyG4	primary efficiencyG4
electric shock protection class	class I	class I	class I	class I
dimension	1178*713*752mm	1178*713*752mm	1178*713*752mm	1178*713*752mm

FD-D2000K / FD-D3000K / FD-D4000K / FD-D5000K



test condition: 20°C 60%

Parameters	FD-D2000K	FD-D3000K	FD-D4000K	FD-D5000K
capacity	15kg/h	22kg/h	30kg/h	37kg/h
process air flow/ESP	2000m³/h 400PA	3000m³/h 600PA	4000m³/h 600PA	5000m³/h 600PA
reactivation air flow/ESP	700m³/h 400PA	1000m³/h 400PA	1500m³/h 400PA	1660m³/h 400PA
rated power	25KW/38A	34KW/52A	45.5KW/70A	58KW/89A
power supply frequency	380V/50Hz	380V/50Hz	380V/50Hz	380V/50Hz
process air in 	400*250mm	500*300mm	500*400mm	630*450mm
dry air out 	400*250mm	500*300mm	500*400mm	630*400mm
regeneration air in 	200*200mm	300*300mm	400*400mm	400*400mm
wet air out 	200*200mm	200*200mm	200*200mm	200*200mm
heating type	electric heater	electric heater	electric heater	electric heater
frame material	aluminum alloy+ polyurethane foam	aluminum alloy+ polyurethane foam	aluminum alloy+ polyurethane foam	aluminum alloy+ polyurethane foam
control	PLC+RS485	PLC+RS485	PLC+RS485	PLC+RS485
water proof class	IPX3	IPX3	IPX3	IPX3
process air filter	plate primary filterG4	plate primary filterG4	plate primary filterG4	plate primary filterG4
regeneration air filter	plate primary filterG3	plate primary filterG3	plate primary filterG3	plate primary filterG3
electric shock protection class	class I	class I	class I	class I
dimension	2000*850*1040mm	2200*1000*1240mm	2200*1040*1240mm	2300*1200*1340mm



test condition: 20°C 60%

Parameters	FD-D6000K	FD-D8000K	FD-D10000K	FD-D12000K
capacity	44kg/h	60kg/h	73kg/h	80kg/h
process air flow/ESP	6000m ³ /h 600PA	8000m ³ /h 600PA	10000m ³ /h 600PA	12000m ³ /h 600PA
reactivation air flow/ESP	2000m ³ /h 400PA	2600m ³ /h 400PA	3300m ³ /h 400PA	4000m ³ /h 400PA
rated power	66KW/100A	86KW/131A	105.5KW/161A	128KW/195A
power supply frequency	380V/50Hz	380V/50Hz	380V/50Hz	380V/50Hz
process air in 	630*450mm	600*600mm	800*600mm	950*630mm
dry air out 	630*400mm	600*450mm	800*500mm	900*500mm
regeneration air in 	500*500mm	500*500mm	600*600mm	600*600mm
wet air out 	300*300mm	300*300mm	400*400mm	400*400mm
heating type	electric heater	electric heater	electric heater	electric heater
frame material	aluminum alloy+ polyurethane foam	aluminum alloy+ polyurethane foam	aluminum alloy+ polyurethane foam	aluminum alloy+ polyurethane foam
control	PLC+RS485	PLC+RS485	PLC+RS485	PLC+RS485
water proof class	IPX3	IPX3	IPX3	IPX3
process air filter	plate primary filterG4	plate primary filterG4	plate primary filterG4	plate primary filterG4
regeneration air filter	plate primary filterG3	plate primary filterG3	plate primary filterG3	plate primary filterG3
electric shock protection class	class I	class I	class I	class I
dimension	2600*1220*1600mm	2600*1400*1600mm	2600*1520*1720mm	2700*1670*1850mm

Internationalization process

Serving domestically and exporting overseas

Fedywos products serve more than 30 countries and regions around the world

Provide fresh air dehumidification solutions for families around the world

In the future, we will continue to expand domestic and overseas markets

Become a global leader in fresh air dehumidification



Asia



Europe



America



Oceania

