

## Spray Dryers | Multi-functional

## GB211C-A

Evaporated water capacity 1500mL/h

Temp. adjustment range 0~240℃

Liquid sending pump flow rate range 0~26mL/min

Nozzle options For liquids-air

New intelligent spray dryer with multiple functions and easy operation.



## Features

- Instantaneous heating of granular samples ensures that products with poor thermal stability are not oxidized and uniform fine powder can be obtained.
- The micro-powder after spraying has low moisture content, will not be oxidized, and no pollution.
- Products are directly dried into fine powder from solution or suspension samples without the need for filtration, separation, grinding, and other pre-processing and post-processing operations associated with traditional drying methods, avoiding contamination.
- By connecting the organic solvent recovery device (GAS510C), samples containing organic solvents can be professionally and safely handled.
- After installing the optional granulation component GF200, it can be used as a fluidized bed dryer and granulator.
- Equipped with an electric lift, it is convenient for installing and removing attachments.
- Equipped with power socket (1A) for the stirrer, convenient for stirring the suspension while sampling.
- Use a unique peristaltic sampling pump, nozzle cooling mechanism, pulse nozzle cleaning mechanism, anti-blockage needle, etc., to achieve diversity and stability in spray conditions.
- Brand new 7-inch ultra-large touch screen control panel, available in Chinese/Japanese/English, easy and convenient to operate.
- Both two-fluid nozzles and three-fluid nozzles can be used.
- Experimental data recording and storage can be realized (optional function).
- Remote control is possible (optional function).
- Temperature zoning control is adopted, heating up faster and more stable.
- High-power heaters greatly enhance the time to reach temperature and the temperature setting range is wider, meeting more sample experiments.
- Widely used in the development of food, pharmaceuticals, new materials, and sample coating.

## Specifications

Model	GB211C-A	
Applicable test material	Water-soluble & organic solvent when connected to an organic solvent recovery device (GAS510C)	
Performance	Moisture evaporation capacity	Max. 1500mL/h
	Temp. regulator setting range	0~240℃ (inlet temperature), 0~100℃ (outlet temperature)
	Temp. adjusting accuracy	±1℃
	Drying air volume adjustment range	0.12~0.7m <sup>3</sup> /min
	Spray air flow adjustment range	0~30L/min
	Spray pressure usage range	0.3~0.6Mpa
Composition	Nozzle cleaning function	Manual pulse air cleaning from the nozzle front end
	External output	Inlet temperature, outlet temperature output (4~20mA)
	Temp. regulator	Multi-PID control
	Touch screen	Temperature adjustment, blower, heater, liquid feed pump, pulse air switch, automatic needle cleaning, alarm display, operation curve
	Control switch	Inlet temperature, outlet temperature control switch
	Temp. sensor	PT100 thermistor
	Heater	3.2kW
	Liquid feed pump	Duct type liquid feed pump
	Spray air pump	Spray air compressor(sold separately) or built-in air compressor of organic solvent recovery device GAS510C (sold separately)
	Service socket	For stirrer: 200-230V~1A
	Suction blower	Brushless blower
	Filters	Suction filter, exhaust filter
	Solvent recovery	Use a solvent recovery device GAS510C (sold separately)
Spray nozzle cooling structure	Joints×2, OD Φ10.5mm (connected to a chiller)	
Spray air connection	Joint outer diameter, Φ7mm	
Exhaust connection caliber	Φ50mm	
Safety functions	Inlet, outlet temperature overheating, liquid feed pump reverse function, overcurrent leakage protection switch, nozzle connection abnormality (when connected to GAS510C)	
Specifications	External dimensions	W760×D420×H1350mm
	Weight	Approx. 110kg
	Power supply	200-230V~50/60Hz 17-21A
Accessories	Liquid feed hose ×2, exhaust hose (with 1 hose clamp) ×1, exhaust conversion joint, outlet temperature sensor, fuse, antistatic connection cable, 5m intake hose (with 2 hose ties), nozzle conversion sleeve, stand assembly, protective cover (COV30), GF301C glass components, quick closure, air tube A, air tube B, product warranty, instruction manual	

## Control panel



1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

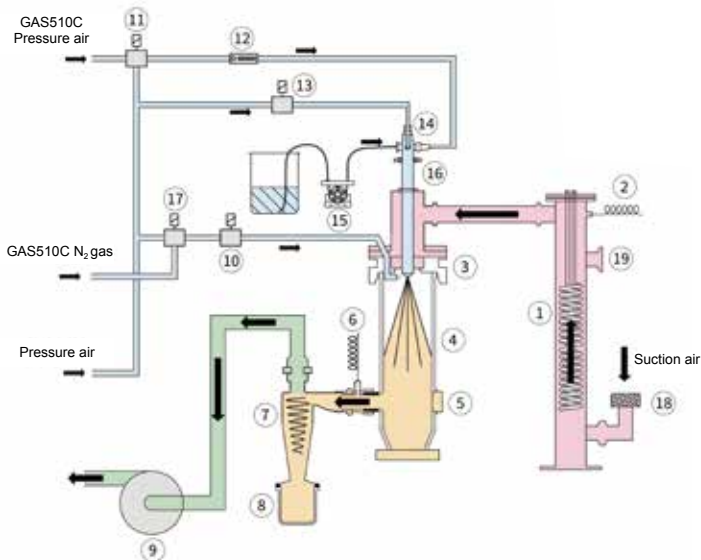
10 Rotary Evaporators

11 Stirrers &amp; Shakers

12 Options

CE Certification

### System diagram



No.	Part name	No.	Part name
①	Heater	10	Three-way solenoid valve for spray air switching
②	Inlet temperature sensor	11	Spray flowmeter
③	Distributor	12	Solenoid valve for automatic nozzle
④	Drying chamber	13	Spray nozzle
⑤	Cap	14	Liquid sending pump
⑥	Outlet temperature sensor	15	Cooling water connection port
⑦	Cyclone	16	Three-way solenoid valve for pulse jet gas source switching
⑧	Product collecting container	17	Suction filter
⑨	Blower	18	Suction blind plate

### Operability



The disassembly or cleaning of the drying chamber, cyclone, and product collection container adopts a quick-insert method, making it very convenient.

Organic Solvent Recovery Device GAS510C



### Application



- Food and Pharmaceuticals  
Milk powder, egg yolk, soy sauce, coffee, starch, protein, hormones, serum, antibiotics, enzyme flavorings, extracts, etc.
- Organic Chemistry  
Paraffin, fuels, detergents, surfactants, pesticides, preservatives, synthetic resins, pigments, etc.
- Inorganic Chemistry  
Ferrites, ceramics, toner, magnetic tape materials, photosensitive materials, various industrial chemicals, test sample waste liquids, etc.

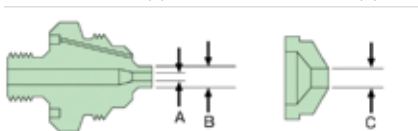
### Spray nozzle



The top part of the spray consists of a liquid nozzle and a gas nozzle.

Fluid nozzle (F)

Gas nozzle (A)



Code	Nozzle size		Nozzle specifications	Applicable models
A080999031	Fluid cap PF2850-SS	Aperture A=0.711mm Aperture B=1.270mm	3	ADL312SC/GB211C/DL411C/DL410 (Standard) ADL311(S)/GB210
A080999040	Air cap PA64-SS	Aperture C=1.626mm		
A080999031	Fluid cap PF2850-SS	Aperture A=0.711mm Aperture B=1.270mm	2	ADL311(S)/ADL312SC/GB210/ GB211C/DL410/DL411C
A080999029	Air cap PA-70-SS	Aperture C=1.778mm		
A080999034	Fluid cap PF40100-SS	Aperture A=1.016mm Aperture B=2.540mm	6	ADL312SC/GB211C/DL410/DL411C
A080999035	Air cap PA120-SS	Aperture C=3.048mm		
A080999049	Fluid cap PF60100-SS	Aperture A=1.524mm Aperture B=2.540mm	4	ADL312SC/GB211C/DL410/DL411C
A080999035	Air cap PA120-SS	Aperture C=3.048mm		

### Repeatability of spray drying tests

Test No.	Sample name	Sample concentration (%)	Drying conditions							Recover amount (g)	Recovery rate (%)
			Inlet temp. (°C)	Outlet temp. (°C)	Dry air amount (m³/min)	Spray air pressure (Mpa/kg/cm²)	Test sample amount (g)	Sample liquid feed amount (g/min)	Test time (min)		
1	Coffee solution	5.00	150	80	0.45	147(1.5)	198	6.6	30	8.1	81.8
2	Coffee solution	5.00	150	80	0.45	147(1.5)	198.7	6.6	30	8.1	81.5
3	Coffee solution	5.00	150	80	0.45	147(1.5)	200.6	6.7	30	8	79.8
4	Coffee solution	5.00	150	80	0.45	147(1.5)	198.1	6.6	30	8.2	82.8
5	Coffee solution	5.00	150	80	0.45	147(1.5)	199.3	6.6	30	8.4	84.3

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