

Spray Dryer: YSE-DL410

Larger capacity spray dryer that can produce powder particles from 40 to 200µm which are considered to be extremely difficult to produce in laboratories.

It is useful for preliminary tests for pilot plant or expensive samples, micro capture spray drying research, substitute for general laboratory drying method etc.

The pilot spray dryer YSE-DL410 does not require the liquid sample or solution to undergo any pre or post-processes such as filtration, separation, or pulverization. The use of organic solvents is fully supported with the attachment of our YSE-GAS410 organic solvent recovery unit. Small, expensive and/or heat sensitive samples can be dried quickly and efficiently with this easy to operate system.



YSE-DL410

Water Evaporation:	
	<i>Max. 3000 ml/h</i>
Operating Temperature Range:	
	<i>40°C to 300°C</i>
Liquid Sample Flux:	
	<i>up to 80 ml/min</i>
Spray Nozzle:	
	<i>Dual Fluid Nozzle</i>



Control Panel

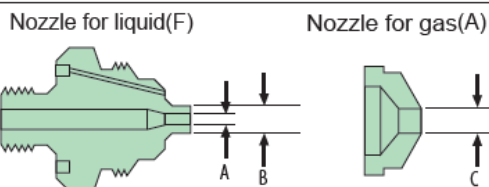
Advantages:

- Processes samples as small as 0.5g of solid matter
- Safe for heat-sensitive samples, such as food or medical products
- No risk of contamination
- Detachable drying chamber, cyclone and product vessel
- Fast and easy clean up
- Universal power supply and multilingual touch screen controller
- Digital display of inlet / outlet temperature and drying air volume increases readability

Easy operation & maintenance

- The hot air inlet and drying chamber cover automatically move up and down, and since the cyclone and product vessel can easily be removed, cleaning and maintenance after your experiment is easy.
- Control functions are conveniently arranged on the control panel for various conditions. The temperature recorder, air flow meter, pressure gauge and other measurements allow easy control of experiment conditions.

Spraying Nozzle



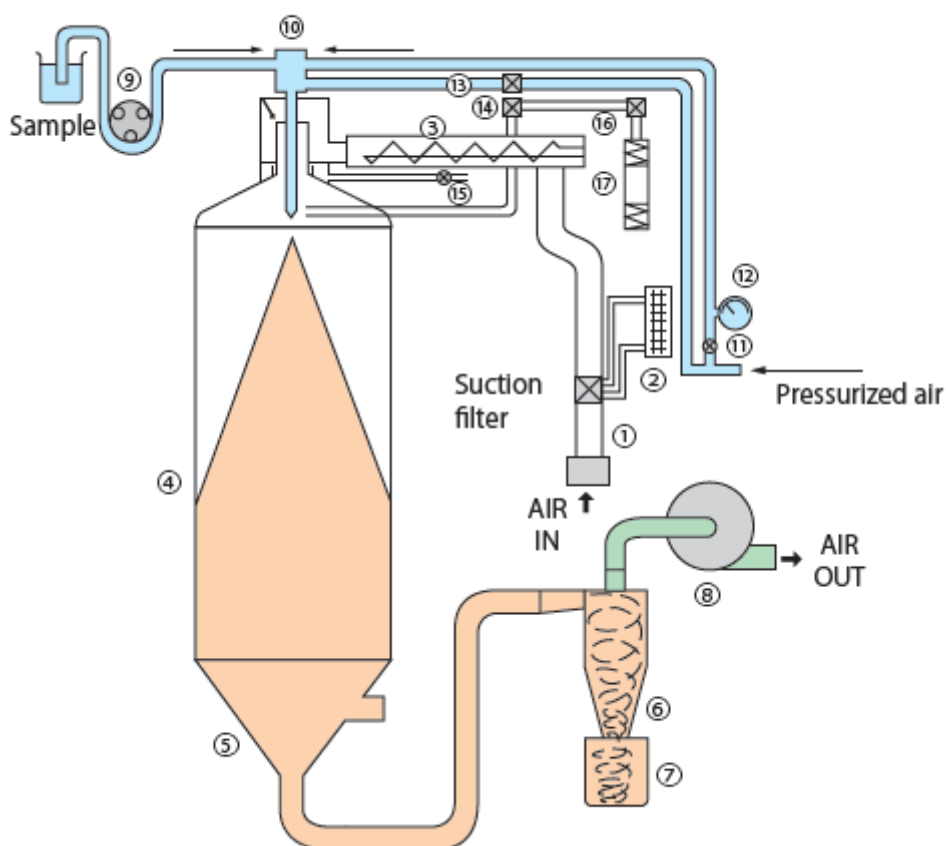
0 50 100µm

Powder generated by YSE-DL410

Spraying Nozzle size (µm)

Model	Nozzle No.	Size (µm)	Particle size
3 (Standard)	(F)2850	A 711 B 1270	up to 50µm
	(A)64.5	C 1638	
4	(F)60100	A 1530 B 2550	40~100µm
	(A)120	C 3060	
5	(F)100150	A 2550 B 3825	40~200µm
	(A)130	C 4530	

Diagram



- | | |
|-------------------------------|---------------------------------------|
| (1) Orifice tube | (10) Atomizing nozzle |
| (2) Drying air flow meter | (11) Atomizing pressure control valve |
| (3) Heater | (12) Atomizing pressure gauge |
| (4) Drying chamber | (13) Needle knock Solenoid valve |
| (5) Drying chamber lower half | (14) Nozzle blower Solenoid valve |
| (6) Cyclone | (15) Cool air control valve |
| (7) Product vessel | (16) Head elevation control valve |
| (8) Aspirator | (17) Air cylinder for head elevation |
| (9) Sample feed pump | |

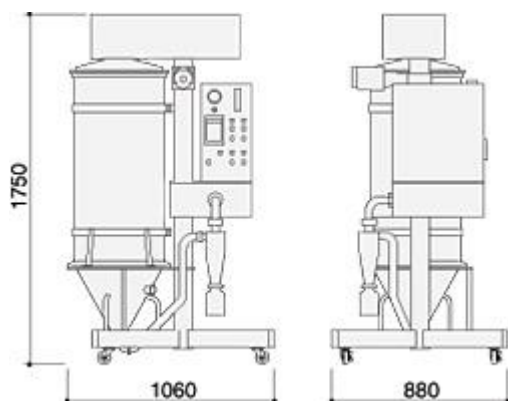
Technical Specifications:

Performance	Water Evaporation Rate	Max. approx. 3,000 ml/h
	Temperature Control Range	40°C - 300°C at inlet
	Temperature Control Accuracy	± 1°C at inlet
	Dry Air Flow Rate	Max. 1.2 m ³ /min
	Air Spray Pressure Control Range	0 - 600 k Pa (0-6 kg/cm ²)
	Flow Rate for Sample Liquid Feed Pump	Max. 80 ml/min
Structure	Temperature Controller	PID digital temperature controller
	Temperature Sensor	K thermocouple
	Stainless Tube Heater	2kW + 2kW at 240V
	Sample Liquid Feeding Pump	Quantitative peristaltic pump Flow rate variable up to 70 ml/min
	Solvent Recovering Capability	Organic solvent recovery unit YSE-GAS410 must be used
	Spray Line Cleaning	Needle inside the nozzle to clean the mesh automatically
	Safety Devices	Self-diagnostic functions (e.g. temperature aberration); Sample feed reversal

Laboratory Spray Dryer (YSE-DL-410) – YAMATO SCIENTIFIC EUROPE

Standard	Spraying system	Two-way nozzle (Diameter of orifice: 0.7mm) Nozzle No.3 standard supply
	Spray/hot air contact system	Downward spray parallel flow system
	Air Spray Pressure Gauge	Bourdon tube: 600k Pa (6 kg/cm ²)
	External Dimensions (W x D x H)	1750 x 1060 x 880 mm (69 x 42 x 35 in)
	Weight	180 kg (397 lbs)
	Power Supply	AC 200V - 240V, single-phase 24 A
Included Accessories	Sample liquid tube	Silicone tube - 2 pcs
	Safety Cover	Yes
	Air hose	1 pc
	Exhaust Duct	1 pc
Optional Accessories	Organic Solvent Recovery Unit	YSE-GAS410
	Inlet/outlet Temperature Recorder	212792 - factory installed
	Fine Powder Recovery Cyclone	N/A
	Viton/Tiron Feeding Tube	Please inquire
	Nozzle	3 is standard 4 & 5 are options
Operational Requirements	Compressed Air	28 l/min air volume and 8kgf/cm ² compressed air is required
	Type of Gas	N ₂ gas (99.99% purity, medical grade) is required when using YSE-GAS410

Dimensions (Unit: mm)



Service Note:

We provide our customers with our expertise in the fields of application and service:

- ✚ User and application training
- ✚ Installation and start-up of devices in the customer's laboratory is carried out by our certified Engineer
- ✚ IQ / OQ procedures
- ✚ Full warranty and post-warranty service of our products
- ✚ Preventive Maintenance Contracts and Re-Validation
- ✚ Excellent Support and fast delivery of consumables and spare parts (available in stock)

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