Unopex B 15 Mini Spray Dryer

Technical Data Sheet

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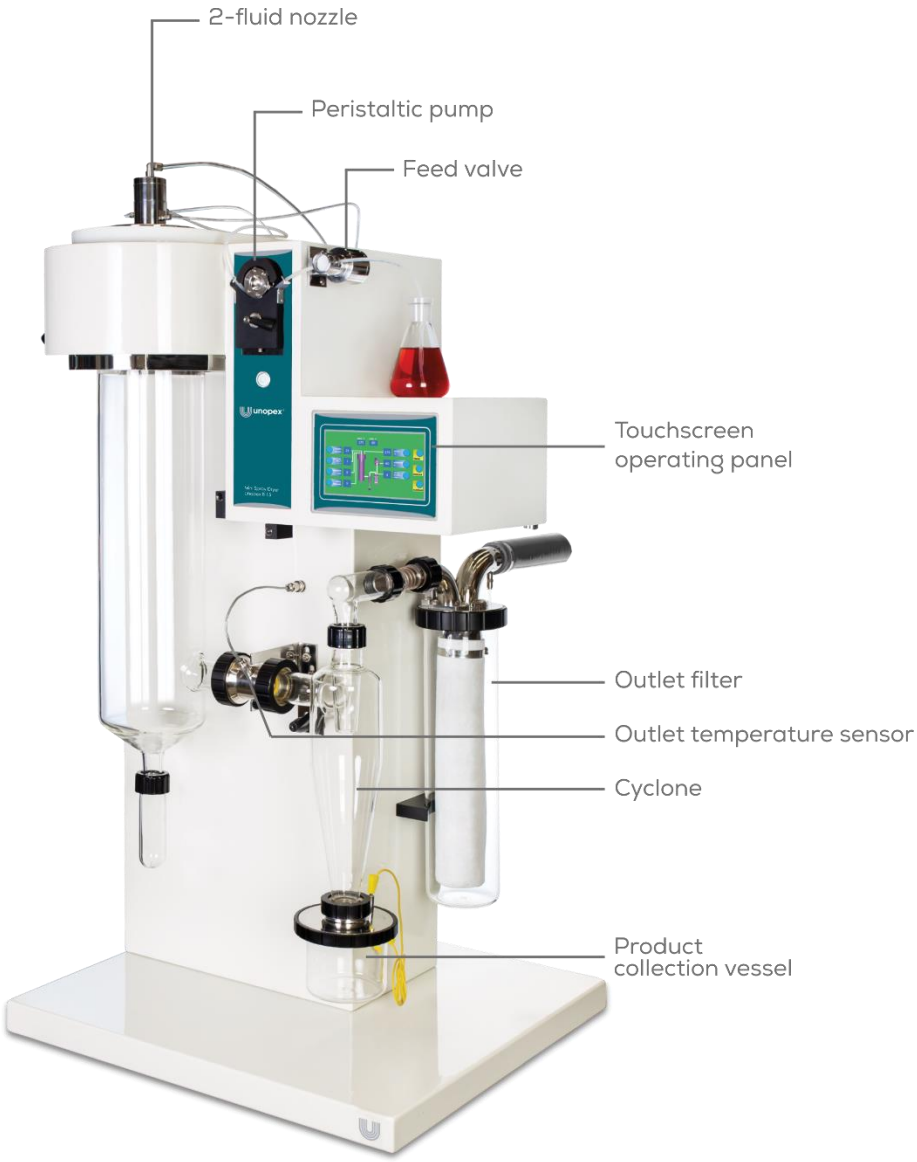
Unopex B 15 Mini Spray Dryer is a laboratory equipment for quick and gentle drying of products from water or organic solvent based feeds.

Unopex offers 2 different set-ups of Laboratory Spray Dryers:

- **Mini Spray Dryer B 15 Essential**
  Open mode spray drying of aqueous feeds.
- **Mini Spray Dryer B 15 Excellent**
  Open mode spray drying of aqueous feeds or
  closed cycle spray drying of feeds containing organic solvents
  under nitrogen atmosphere in combination with
  complementary units B 45 Dehumidifier and B 60 Inert Cycle.



Standard Instrument

Code	Instrument
877150	B 15 Mini Spray Dryer Essential
877155	B 15 Mini Spray Dryer Excellent

Instrument is delivered ready to use.

Scope of Supply

Code	Component	B 15 Essential	B 15 Excellent
40500	2-fluid nozzle (0.7 mm) complete with automatic nozzle de-blocking	√	√
52100	Touchscreen operating panel	√	√
42092	Glass assembly complete	√	√
44200	Inlet filter, complete with filter element	√	√
41100	Peristaltic pump	√	√
47110	Peristaltic pump tubing, silicone (1 m)	√	√
48030	Cleaning brush for nozzle	√	√
44100	Outlet filter, complete with filter bag		√
45200	Feed valve		√
54150	Safety curtains, complete set		√
55120	Closed cycle operation module		√
49110	Operation Manual, English	√	√
49210	Quick Operation Guide, English	√	√

Optional Complementary Units

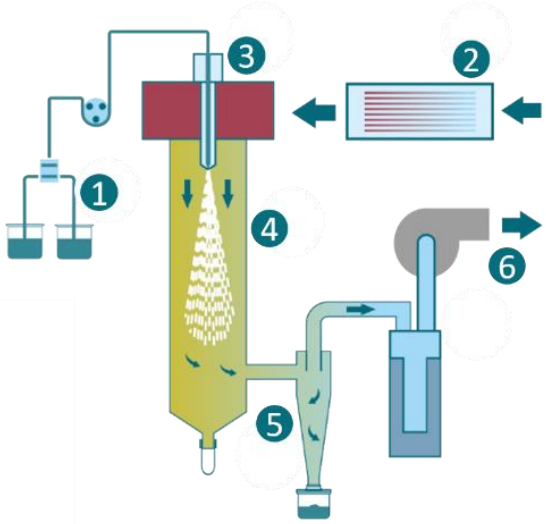
Code	Unit
877450	B 45 Dehumidifier
877600	B 60 Inert Cycle
877900	B 92 Spray Chilling-Solidification

Optional Accessories

Code	Accessories
42022	High performance cyclone
42095	Amber glass assembly complete (for light sensitive applications)
44500	HEPA filter inlet, complete
44550	HEPA filter outlet, complete
47130	Peristaltic pump tubing, pharmed (1 m)
108320	Trolley
108312	Oil Free Air Compressor
117410	Spray cylinder insulation
120201	IQ/OQ documentation

Working principle

Unopex B 15 Mini Spray Dryer operates in co-current flow configuration where the drying gas flows in the same direction with the sprayed sample product.



1. Solution or suspension is injected into the drying chamber through a nozzle.
2. Drying gas is injected into the drying chamber.
3. The nozzle atomizes the solution into small droplets.
4. As the droplets of solution fall through the chamber, moisture evaporates from the droplets and they become particles.
5. The drying gas carries the particles to the cyclone where the particles are separated from the gas. Powder is collected.
6. The drying gas is filtered and exhausted.

Technical Data

Model	Unopex B 15 Mini Spray Dryer
Evaporating capacity	1500 mL/h H_2O, higher for organic solvents
Max. inlet temperature	220 °C
Ambient conditions	for indoor use only altitude up to 2000 meters above sea level temperature: 5–40 °C relative humidity up to 31 °C max. 80% and decreasing linearly to 50% up to 40 °C
Feed pump	peristaltic, variable speed
Configuration	co-current
Spray gas	compressed air or nitrogen
Atomization	2-fluid nozzle with automatic nozzle de-blocking feature tip diameter 0.7 mm standard, optional sizes available
Blower	variable speed
Heating	3 kW, PID controlled
Operating panel	touchscreen
Computer connection	data transfer with usb flash drive
Certification	CE, RoHS

Material of Construction for Product Contact Parts

Feed tubing	silicone / tygon / pharmed
2-fluid nozzle	stainless steel (AISI 316L/AISI 316)
Hot air duct	stainless steel (AISI 304/AISI 316)
Glass parts	heat resistant borosilicate glass

Unopex B 45 Dehumidifier

can be used in open mode in combination with Unopex B 15 Mini Spray Dryer to condition drying air for spray drying under constant and reproducible humidity conditions or to cool inlet air in spray chilling operation.

Cooling capacity	max. 1200 W
Minimum outlet temperature	0 °C
Dimensions (LxWxH)	600x700x800 mm

Unopex B 60 Inert Cycle

enables safe operation of B 15 Mini Spray Dryer with 100% organic solvents under inert conditions,

use in closed cycle in combination with B 15 Mini Spray Dryer and B 45 Dehumidifier enables to work with water/organic solvent mixtures safely.

Cooling capacity	max. 1500 W
Minimum outlet temperature	-25 °C
Dimensions (LxWxH)	1000x600x1300 mm

Unopex B 92 Spray Chilling

is used in combination with B 15 Mini Spray Dryer to make powders directly from molten feed samples by solidification.

Batch capacity	0,5 liter
Heating capacity	800 W
Temperature control	digital
Melting temperature	max. 80 °C
Heating fluid	water

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