

FOOD FREEZE DRYER

FDR SERIES



Vekuma's FDR series freeze dryers are designed to perform food freeze dry, typical applications include fruits, vegetables, seafood, meat, soup, dairy, candy, nutrient and health care products freeze drying. The range food freeze drying machines from small commercial units to industrial large production plant, capacity from 50kgs to 2000kgs.

Technical Specifications (Conductive Heating)

	FD-5R	FD-10R	FD-20R	FD-30R
Shelf Area	4.8m ²	9.7m ²	19.4m ²	29m ²
No. of Shelves	9+1	9+1	12+1	12+1
Shelf Size	610*910mm	910*1210mm	1210*1360mm	1360*1810mm
Shelf Spacing	60mm	60mm	60mm	60mm
Shelf Temp.	-35C ~ +100C	-35C ~ +100C	-35C ~ +100C	-35C ~ +100C
Final Vacuum	<15Pa	<15Pa	<15Pa	<15Pa
Condenser 24Hrs	50Kgs	100Kgs	200Kgs	300Kgs
Condenser Total	75Kgs	150Kgs	330Kgs	550Kgs
Condenser Temp.	-45C	-45C	-45C	-45C
Voltage	380V/50Hz/3P	380V/50Hz/3P	380V/50Hz/3P	380V/50Hz/3P
Power	15Kwh	22Kwh	45Kwh	55Kwh
Size (mm)	1300*2800*2000	1500*4000*2100	1800*5500*2400	2000*6500*2400

Performance & Features

- All-in-one structure with clean room wall panel.
- S/S304 hemispheric chamber door.
- S/S304 drying chamber, interior polish Ra<1um.
- Anodized aluminum shelves, flatness <0.5mm/m.
- Shelves Temp. controllable -35C ~ +100C, accuracy <+/-2C.
- Shelves heating rate >1C/Min.
- S/S304 ice condenser, interior polish Ra<1um.
- S/S304 condenser coils, surface polish Ra<0.8um.
- Condenser lowest -45C, pull down to -40C <30Min.
- Condenser hot water defrost.
- System final vacuum <15Pascal.
- Chamber vacuumize to 100Pa <30Min.
- Chamber leak rate <5Pa L/Sec.
- All the machinery that involved with the operation of FDR freeze dryer is mounted in a steel frame. Thoroughly quality and performance test before it is shipped. Deliver includes:
 - Industrial grade, PLC and user friendly touch screen HMI based control system. FD-MEGA interface.
 - Rubber sponge insulated drying chamber and condenser.
 - Sandwich type shelves enable thermal fluid circulates inside for heating and chilling. Electric heating and PID control.
 - Shelves conductive heating. S/S304 or aluminum alloy shelves and trays.
 - Exposed coils type, internal ice condenser, hot water defrost.
 - Water cooled reciprocating compressor system.
 - 2-stage oil sealed rotary vane vacuum pump, roots pump for larger models.
 - PT-100 temperature sensors.
 - Pirani vacuum gauge.
 - Chamber pressure auto regulate as per set point.

Technical Specifications (Radiative Heating)

	FD-30R	FD-50R	FD-100R	FD-200R
Shelf Area	29.9m ²	50.8m ²	101m ²	206m ²
No. of Shelves	10+1	17+1	17+1	17+1
Shelf Modules	2	2	2	4
Shelf Size	570*2850mm	570*2850mm	570*5610mm	630*5300mm
Shelf Spacing	100mm	100mm	100mm	100mm
Shelf Temp.	RT ~ +100C	RT ~ +100C	RT ~ +100C	RT ~ +100C
Shelf Heating Method	Electric	Electric or Steam	Electric or Steam	Electric or Steam
Trays Size	550*680mm	550*680mm	550*680mm	610*710mm
Trays Transfer Trolley	2 Sets	2 Sets	4 Sets	7 Sets
Final Vacuum	<15Pa	<15Pa	<15Pa	<15Pa
Condenser 24Hrs	300Kgs	500Kgs	1000Kgs	2000Kgs
Condenser Total	500Kgs	1000Kgs	2000Kgs	4000Kgs
Condenser Temp.	-45C	-45C	-45C	-45C
Voltage	380V/50Hz/3P	380V/50Hz/3P	380V/50Hz/3P	380V/50Hz/3P
Power	85Kwh	125Kwh	220Kwh	400Kwh
Install Area	8*8m	12*12m	12*15m	12*25m

Key Features

- Modular design, shipment and installation.
- S/S304 cylindrical drying chamber with rubber sponge insulation.
- Radiative heating shelves, aluminum alloy shelves and trays.
- Shelf modules mirror install in drying chamber, a catwalk between is used for trolleys pass through and for maintenance.
- Pure water based heat-plates, evenly temperature distribution and harmless to raw products.
- Trolleys and overhead monorail for raw material quick loading/unloading.
- Provide 2 suits trays and trolleys, allows for pre-freezing while the other set is in the freeze dryer to improve productivity
- Industrial grade, PLC and touch screen HMI based control system. FD-MEGA interface.

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