

Fluid Bed Dryers



Fluid Bed Dryers (FBD) are primarily used in almost all chemical, pharmaceutical, food, dyestuff and other process industries to dry materials by fluidization with hot and / or dehumidified air, which creates a turbulence in the wet product (not totally liquid) while flowing through it.

Working Principle:

The atmospheric air is sucked in the dryer through 5/10 micron filter by efficient dynamically balanced fan driven by an electric motor.

The clean air then passes over the electric heaters / steam or radiator provided with controller. The hot air passes through the product and fluidization dries the product. Dryer is provided with dehumidifier (Chilled water system) at the inlet so as to dry the product at low temperature under fluidized condition.

The blower speed is controlled by AC frequency drive so as to control the fluidization avoiding choking of the filter bag. A raking system is provided to avoid lump formation in the container to achieve uniform fluidization and uniform drying.

A model with complete automation and PLC, automatic bag shaking and with MIMIC is also offered. The drying time depends on various factors such as physical properties of material, moisture content, type of moisture (free or inherent or water of crystallization), drying temperature etc. For example, the crystalline product can be dried faster than amorphous product containing same percentage of moisture at same temperature.

Salient features:

- Modular Design.
- Uniform Drying with less Drying time.
- Easy Dismantling of Dutch Sieve & Perforated Sheet at the Product container.
- Online Sampling Device.
- Fully Automatic Operation through PLC (Optional).
- Product Container with Stirrer (Optional).
- Flameproof Design (Optional).
- All contact parts are SS 316 / 316 L.
- In compliance with cGMP.

Models	LPTFBD	LPTFBD	LPTFBD	LPTFBD	LPTFBD	LPTFBD	LPTFBD	LPTFBD	LPTFBD
	15	30	60	120	200	300	400	500	600
Container									
Gross Volume Ltr.	46	71	142	280	475	650	870	1055	1350
Max. Batch Capacity	10 to 15	20 to 30	40 to 60	80 to 120	160 to 200	200 to 300	300 to 400	400 to 500	500 to 600
(0.5 bd) Kg									
Blower Motor HP **	5	7.5	10	20	25	30	40	50	50
Air Flow (CFM) ± 10 %	430	706	1060	1880	2590	3225	3825	4000	4705
Steam Pressure (Kg/cm ²)	3.5 kg./cm ²								
Steam Consumption (Kg/Hr)	30	50	80	140	216	250	288	344	384
Electric Heater (KW)	20	20	36	60	N.A.	N.A.	N.A.	N.A.	N.A.
Compressed Air Pressure (bar)	6								
Drying Temp (°C)	35-80								
	415 V ± 10%, 3 Phase, AC								

** The blower motor of higher capacity will be required in machine if supplied with HEPA, Scrubber & ducting length above 5 m