

3000 Series Production Freeze Dryer



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

PRODUCTION FREEZE DRYER

With more than 20 years of experience in freeze dryer design and manufacturing, the equipment meets all industry standards. According to the customer's factory, we can flexibly customize the design and manufacture freeze dryers of different structures.



- CIP+SIP
Cleaning-in-place and sterilization-in-place
- Meets GMP requirements
- Isolation, integration, modularization, automation, and intelligence.

Pharmaceutical Freeze Dryer



- Received energy-saving patents.
- Continuous freeze-drying improves efficiency by 50%.
- Aerospace-grade panels, dual-sided radiant heating, strong temperature uniformity.

Food Freeze Dryer



- Ensures equipment and product safety.
Optional freeze-drying film available.
- Designed according to aerodynamics principles to prevent material drift.
- Specialized control system to prevent surface reduction upon vacuum release.

Special Material Engineering Drying Equipment

PHARMACEUTICAL AND BIOTECH



Vaccines Traditional Medicine Pharmaceuticals Biopharmaceuticals Biochemical Drugs Biologics, Probiotics Extracts Nutritional Supplements Diagnostic Reagents Blood Products

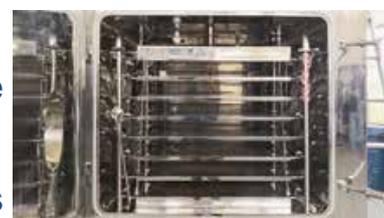


	Freeze-drying area	Vacuum degree	Cold tap temperature	ice capacity	Shelf temperature range	Shelf dimensions	Number of shelves	Capacity for vials	Dimensions	Power
	m ²	Pa	°C	kg/B	°C	mm	Layer	φ16(2m)Piece	mm	kW
LY-0.5 CIP SIP	0.5	≤1	-75	>10	-55~+80	410 * 410	3+1	2058	2650 * 1450 * 2300	10
L-3001/LY-3001	1.15	≤1	-75	>20	-55~+70	480 * 600	4+1	4788	1640 * 1100 * 1830	7.5
L-3002/GZLY-2	2.2	≤1	-75	>40	-55~+70	610 * 910	4+1	9216	2500 * 1560 * 2020	12
L-3003/GZLY-3	3.3	≤1	-75	>60	-55~+70	480 * 600	6+1	13824	2500 * 1560 * 2300	15
L-3005/GZLY-5	5.25	≤1	-75	>100	-55~+70	750 * 1000	7+1	22540	4000 * 1360 * 2800	24
L-3010/GZLY-10	10.5	≤1	-75	>200	-55~+70	990 * 1520	7+1	45360	5500 * 1670 * 2800	46
L-3020/GZLY-20	20.2	≤1	-75	>400	-55~+70	1210 * 1520	11+1	84942	6500 * 1980 * 2800	85
L-3030/GZLY-30	30.0	≤1	-75	>600	-55~+70	1520 * 1800	11+1	131967	7500 * 2280 * 2900	160
L-3040/GZLY-40	41.0	≤1	-75	>800	-55~+70	1520 * 1800	15+1	179955	7500 * 2280 * 3300	180
L-3050	51.0	≤1	-75	>1000	-55~+70	1520 * 2250	15+1	-	6200 * 6200 * 2900	200
L-3060	60.0	≤1	-75	>1000	-55~+70	1520 * 2250	18+1	-	9800 * 2500 * 3300	230

The freeze-drying system is a highly reliable industrial equipment that meets GMP requirements, consisting primarily of freeze-drying chamber, shelf components, condenser, refrigeration system, vacuum system, circulation system, hydraulic system, pneumatic system, control system, CIP system, and SIP system. These components work together to ensure the efficiency, stability, and controllability of the freeze-drying process.

Freeze-drying chamber

Constructed with stainless steel materials that comply with GMP requirements, undergo welding, machining, and surface polishing treatments. Features large rounded corners, smooth inner surfaces of the chamber and door, and no dead corners for easy cleaning





Shelf components

Manufactured using patented internal welding technology to ensure temperature uniformity and enhance heat exchange efficiency. High-precision CNC machining ensures flatness within $\pm 1\text{mm/m}$.

Condenser

Large ice capacity in the condenser coils with uniform ice formation. Equipped with precisely designed steam guide devices to maximize condenser surface utilization, System safety design prevents sublimated water vapor from entering the vacuum pump.



Refrigeration system

Utilizes German BITZER dual-stage compressor units, each refrigeration system operates independently in a closed loop, providing powerful refrigeration capacity and energy efficiency. Equipped with refrigeration components from internationally renowned brands and multiple refrigeration system protection measures.



Vacuum system

Equipped with high-performance vacuum pump units composed of German Leybold or British Edwards dual-stage rotary vane pumps and Roots pumps. Large displacement significantly enhances product sublimation and freeze-drying efficiency.



Circulation system

Uses original Danish GRUNDFOS shielded circulation pumps with stainless steel liners, ensuring long service life and low failure rate. Intelligent fuzzy PID heating control technology provides low shelf temperature difference and high temperature control accuracy.



Hydraulic system

Hydraulic cylinders and hydraulic stations use internationally renowned brands to ensure stable hydraulic performance, preventing slipping and vibration. Pressure force control with real-time monitoring and protection devices improves vial sealing success rate and prevents bottle breakage.



Pneumatic system

Pneumatic pipelines are equipped with pressure relays and pressure gauges for precise pressure monitoring. Valves are designed with closed-loop control to provide signal feedback, supporting precise system control and Fault diagnosis.

Control system

Advanced PLC and SCADA systems enable operators to easily manage freeze-drying systems and comply with complex freeze-drying process cycles. Includes user access management, operation log recording and report printing to enhance product traceability. Equipped with UPS uninterruptible power supply to ensure reliable power supply within 30 minutes after emergency power failure.



CIP system

Equipped with internationally renowned brands of cleaning nozzles, pneumatic diaphragm valves, and sanitary-grade pneumatic ball valves. Uses point fog spray and action program cleaning to ensure thorough cleaning of shelf components. Uses spherical nozzles and wide-angle nozzles for cleaning inside the condenser to achieve CIP goals.

SIP system

Uses pulsating air inlet method to preheat freeze-drying chamber and condenser, uses multiple steam inlets and water ring pumps to exhaust residual air, achieving pure steam vaporization inside the system. Equipped with compressed air filters and online integrity testing to ensure safe sterilization. Offers the choice of ozone or hydrogen peroxide (VHP) sterilization solutions.



Automatic loading and unloading system

This system automatically handles material transfer and loading/unloading operations in an A-grade environment within a B-grade background, minimizing direct contact between operators and drugs, effectively reducing the sterile production operation risk for non-final sterilized products.



SPECIAL MATERIALS PROCESSING DRYER

1m³-60m³

Freeze Dryer's patented design for a new material processing dryer, combining years of industry application experience and a completely new design based on aerodynamics, meets aerodynamic requirements, and prevents material drift. Providing technical support for enterprises and institutions.



- Advanced design: Uses 3D design and aerodynamics to minimize airflow caused by air intake, maintaining good pressure balance
- Air filtration: Comes with standard air intake filtration system to prevent moisture absorption after freeze-drying.
- Professional technology: Utilizes endpoint determination technology designed specifically for new material products to optimize freeze-drying processes and reduce energy consumption.
- Multiple protection systems Ensures equipment, product, and production environment safety with multiple protection systems
- Efficient operation: Specifically designed freeze-drying processes and control

technology for new material products significantly reduce equipment energy consumption and operating costs.

- Research collaboration: As a participant in the field of new material preparation, has years of experience in collaboration with educational institutions, research centers, and manufacturers, developed patented products of new intelligent material drying equipment, supported by local development departments and Innovation funds.
- Centralized control: Uses a new generation of centralized control systems that are centralized and reliable, with high automation.

FOOD PRODUCTION FREEZE DRYER

5m²~200m²



High Efficiency



Low Energy Consumption



Long Lifespan

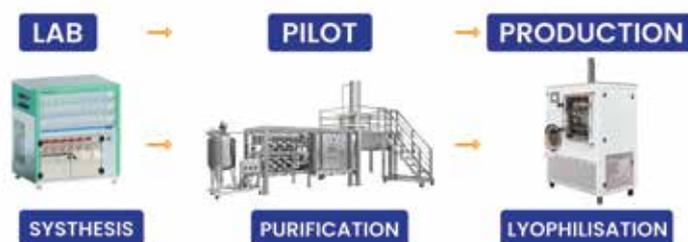


Excellent Product Quality



	Freeze-drying area	Vacuum degree	Cold tap temperature	Ice capacity	Shelf temperature range	Shelf dimensions	Number of shelves	Capacity for vials	Dimensions	Power	Pre-freezing method
	m ²	Pa	°C	kg/B	°C	mm	Layer	kg	mm	kW	kW
3005	5.1	≤10	≤-55	80	-40~+90	1650x620	5+1	50~75	2500×1800×2400	10	In-situ freeze-drying
3010	10.2	≤10	≤-55	160	-40~+90	1650x620	10+1	100~150	3200x1800x2400	7.5	In-situ freeze-drying
3020	21	≤10	≤-55	320	-45~+90	1750x920	13+1	200~300	4300×2500×2500	12	In-situ freeze-drying
3030	30.3	≤10	≤-55	480	-45~+90	1750x1240	14+1	300~450	6000×2300×2700	15	In-situ freeze-drying
3050	50	≤10	≤-55	800	RT~+90	2900x1200	15+1	500~750	1. 10000×2750×3000 2. 3000×1800×2400 3. 1900×2000×2400	24	Freezer, 2 carts
3100	100	≤10	≤-55	1600	RT~+95	5800x1200	15+1	1000~1500	Refer to the drawing	46	Freezer, 4 carts
3200	200	≤10	≤-55	3200	RT~+95	12000x1200	15+1	2000~3000	Refer to the drawing	85	Freezer, 8 carts

COMPLETE DOWN STREAM PROCESS (DSP) SOLUTIONS



HPLC Servicing, Validation, Trainings and Preventive Maintenance :

HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

AMC's/CMC :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

Validations :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

Instruments :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



About Analytical Technologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

Our Products & Technologies



LCMS



Automated Prep-Flash Chromatography system



Maldi TOF



Optima Gas Chromatograph



Flash Chromatograph



DAC Column



GCMS 3068



UHPLC



HPTLC



Ion Chromatograph



Production HPLC



HPLC



Column



DLS



Water purification system

Regulatory compliances



Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



Analytical
Foundation

1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at Info@analyticalfoundation.org

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

Reach us @



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