

Laboratory Freeze Dryers Routine Applications



Reliable and
versatile



Process reliability and versatility

For your application

Experience, expertise and versatility for your freeze drying

Benefit from our experience as a leading manufacturer of freeze drying systems for more than 65 years. We offer you a closely graduated series of systems for product-specific freeze drying with a wide range of optimisation options.

The highly diverse, modularly structured range of accessories allows the laboratory freeze drying systems to be used for a wide variety of tasks.

Assured results in daily routine use

Routing operations in particular make high demands on system technology. Along with suitable application versatility, a high level of process reliability and intuitive functionality are expected. The various base units of the Alpha and Beta series, combined with the specially developed LDplus system controller, ensure compliance with the requirements for successful and reliable freeze drying day after day.

Innovative technology for outstanding results

- Compact, high-performance laboratory systems with a small footprint
- Drying chamber above the ice condenser chamber for high sublimation performance and short process times
- Ice condenser chamber with internal condenser coils, all made from high-grade stainless steel
- Modular structure for an extremely wide range of applications
- Extensible with a large range of accessories to suit your task
- Integrated hot gas function for quick defrosting
- Digital indication of ice condenser temperature and vacuum, indirect product temperature determination based on the curve of vapour pressure over ice, vacuum control for process time optimization
- Data interface optionally available, e.g. for LyoLogplus documentation software

Selection criteria

Graduated condenser temperatures and drying capacities

The laboratory freeze dryers in the LDplus series are available in various sizes and with a wide range of accessories to match individual applications.

The laboratory freeze dryer systems are also available with two different ice condenser temperatures:

Temperature	Typical application area
–55 °C (one-stage refrigeration system)	Aqueous products
–85 °C (two-stage refrigeration system)	Products containing solvents or with low eutectic points

The various models have different maximum ice capacities:

System type	Maximum ice capacity
Alpha 1-2 LDplus	2.5 kg
Alpha 1-4 LDplus Alpha 2-4 LDplus	4 kg
Beta 1-8 LDplus Beta 2-8 LDplus	8 kg

Product designation format

Alpha 1-4 LDplus



Tell us your task requirements – we will be pleased to advise you at no obligation.

Alpha 1-2 LDplus

 2.5 kg  -55 °C



Alpha 1-4 LDplus Alpha 2-4 LDplus

 4 kg  -55 °C
-85 °C



Beta 1-8 LDplus Beta 2-8 LDplus

 8 kg  -55 °C
-85 °C





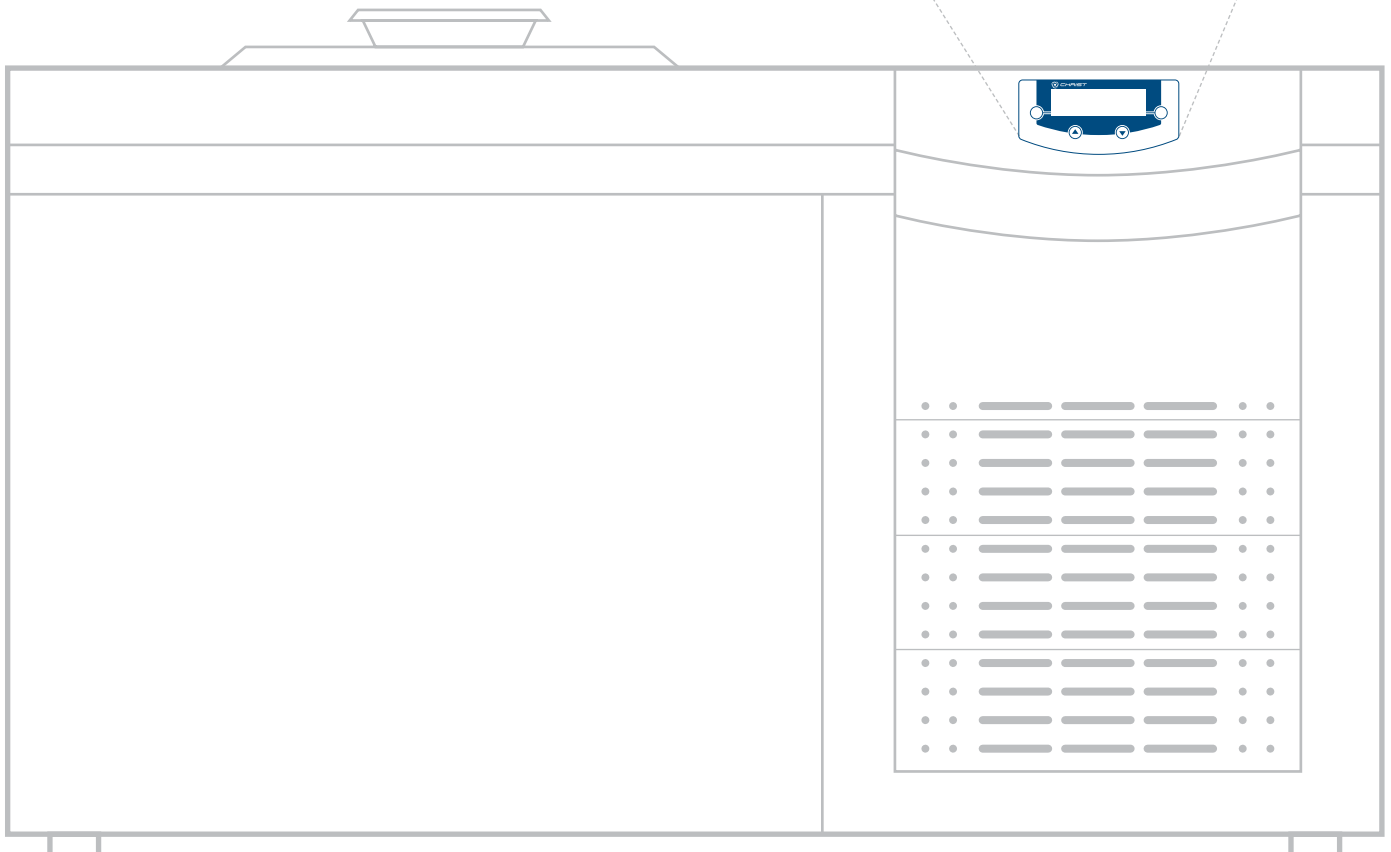
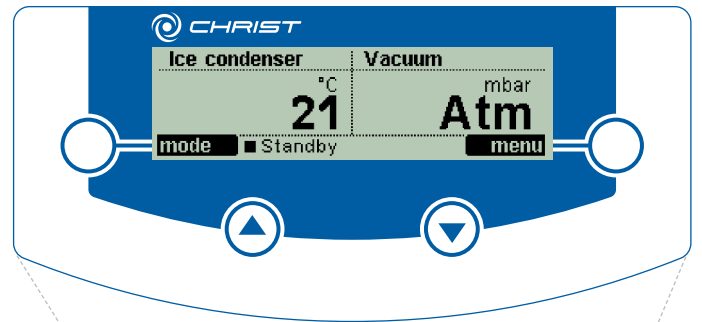
LDplus system controller

Convenient user interface

The LDplus system controller is a simply-to-use, intuitive user interface for controlling freeze drying processes. It combines functionality with practicality:

- Clearly arranged graphic display
- Indication of important process parameters
- Large selection of languages
- Vacuum control
- Detailed messages
- Option: LyoLogplus process documentation software

LDplus system controller



Example configurations

Alpha 1-2 LDplus



Drying manifold ^a		Shelves			
No.	Number of vessels	Number	Ø	A _{tot}	Spacing
1	8	-	-	-	-
2	-	3	200 mm	0.09 m ²	85 mm
3	8	3	200 mm	0.09 m ²	85 mm
4	-	2	200 mm	0.06 m ²	70 mm ^b

Alpha 1-4 LDplus

Alpha 2-4 LDplus



Drying manifold ^a		Shelves			
No.	Number of vessels	Number	Ø	A _{tot}	Spacing
5	8	-	-	-	-
6	12	3	265 mm	0.15 m ²	79 mm
7	2 x 12	3	265 mm	0.15 m ²	79 mm
8	-	5	360 mm	0.5 m ²	70 mm
9	-	2	250 mm	0.1 m ²	45 mm ^b

Beta 1-8 LDplus

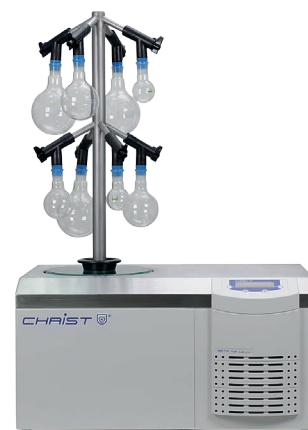
Beta 2-8 LDplus



Drying manifold ^a		Shelves			
No.	Number of vessels	Number	Ø	A _{tot}	Spacing
10	8	-	-	-	-
11	-	5	265 mm	0.25 m ²	79 mm
12	2 x 12	3	265 mm	0.15 m ²	79 mm
13	-	5	360 mm	0.5 m ²	70 mm
14	-	4	250 mm	0.2 m ²	50 mm ^b



5



10

a) For round-bottom flasks, wide-neck filter bottles or ampoule distributors

b) Distance for stoppering device



1



2



3



4



6



7



8



9



11



12



13



14

Technical data

Technical data	Alpha 1-2 LDplus	Alpha 1-4 LDplus	Alpha 2-4 LDplus	Beta 1-8 LDplus	Beta 2-8 LDplus
Ice condenser					
<ul style="list-style-type: none"> • Max. capacity • Max. performance • Temperature • Chamber volume 	2.5 kg 2 kg/24 h Approx. -55 °C Approx. 3.5 L	4 kg 4 kg/24 h Approx. -55 °C Approx. 6.5 L	4 kg 4 kg/24 h Approx. -85 °C Approx. 6.5 L	8 kg 6 kg/24 h Approx. -55 °C Approx. 11 L	8 kg 6 kg/24 h Approx. -85 °C Approx. 11 L
Product temperature with freezing inside the ice condenser chamber	Approx. -20 °C	Approx. -20 °C	Approx. -35 °C	Approx. -20 °C	Approx. -35 °C
Refrigeration system	0.43 kW	0.51 kW	2 x 0.51 kW	0.51 kW	2 x 0.51 kW
Dimensions of basic unit	W: 315 mm H: 345 mm D: 460 mm	W: 390 mm H: 415 mm D: 540 mm	W: 390 mm H: 415 mm D: 540 mm	W: 780 mm H: 415 mm D: 540 mm	W: 780 mm H: 415 mm D: 540 mm
Weight	Approx. 28 kg	Approx. 42 kg	Approx. 55 kg	Approx. 63 kg	Approx. 78 kg
Supply voltage (other voltages available on request)	230 V / 50 Hz 230 V / 60 Hz	230 V / 50 Hz 220 V / 60 Hz 208 V / 60 Hz	230 V / 50 Hz 220 V / 60 Hz 208 V / 60 Hz	230 V / 50 Hz 220 V / 60 Hz 208 V / 60 Hz	230 V / 50 Hz 220 V / 60 Hz 208 V / 60 Hz

The given data applies to the base unit within the ambient temperature range of +10 °C to +25 °C.
Subject to change without prior notice.



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accessories catalogue at
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Our Product Spectrum

With a unique and broad graduated range of equipment and accessories, we can supply freeze drying systems and vacuum concentrators for every application. Let us show you what we can do!



- 1 Freeze drying systems for industrial production with ice condenser capacity from 20 to 500 kg; custom system design including loading and unloading system.
- 2 Pilot freeze drying systems for process development or process optimisation with ice condenser capacity from 4 to 16 kg.
- 3 Freeze drying systems for routine applications or R&D with ice condenser capacity from 2 to 24 kg.
- 4 Rotational vacuum concentrators for applications extending from routine to evaporation concentration in the high-end range of pharmaceutical research.



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