

coolvacuum
TECHNOLOGIES



FREEZE DRYERS SOLUTIONS

www.coolvacuum.es

Who we are

Coolvacuum Technologies is a company with an exclusive dedication to lyophilisation. Our objective is to carry out our work with the utmost rigor to offer the best performance at reasonable costs.

We offer **customized solutions for each client**, developing projects for new processes or improving existing ones, being adapted to the needs of our customers. The success of our activity lies in the satisfaction of our customers.

What we do

- New machinery manufacturing
- Corrective repair
- Upgrading and updating
- Preventive maintenance
- Spare parts and consumables
- Qualifications and validations
- Calibrations

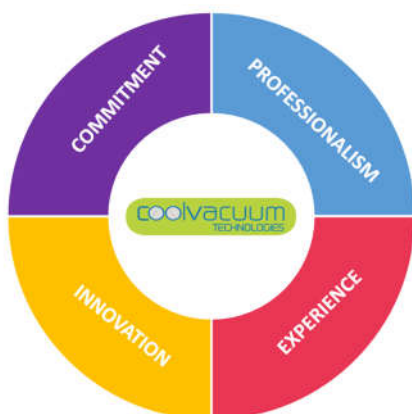
All brands

Specialization

Coolvacuum is specialized in solutions designed for the following sectors:

- Chemical industry
- Pharmaceutical industry
- Food industry
- Cosmetics
- Laboratories
- R&D

Our philosophy



Technical assistance around the world



Production freeze dryers (LyoPharm)

We develop **new** freeze drying equipment to be used in massive production. Factory Assistance Test (FAT) in Barcelona. Transportation and SAT at the customer premises.

TECHNICAL DATA

- Shelf temperature: -55°C to +80°C
- Cooling rate in shelf: 20°C to -40°C in <60 min
- Heating rate in shelf: 1°C/min
- Condenser final temperature: <-75°C
- Final vacuum: <0.01mbar
- Removal rate: 1000 mbar to 0.1 mbar < 30 min
- Leak rate: <0.03 mbar · L/s
- CIP/SIP system
- PLC 21 CFR control Part 11 and cGAMP



CHARACTERISTICS	Unit	2	3	5	7.5	10	13	15	20	25	30	40
Shelf usable area	m ²	2.16	3.24	5.40	7.56	9.72	12.96	14.40	19.73	24.59	29.6	41.86
Condenser ice capacity	Kg	40	60	100	150	200	250	300	400	500	600	800
Vial capacity (22mm: -10ml)	vials	4900	7300	11400	17100	22000	29400	32700	44800	55800	67200	95100
Vial capacity (16mm: 5ml)	vials	9200	13900	21500	32400	41700	55600	61800	84700	105600	127000	179000
Shelve length	mm	900	900	1200	1200	1200	1200	1200	1495	1495	1800	2000
Shelve width	mm	600	600	900	900	900	1200	1200	1200	1495	1495	1495
Number of shelves		4+1	6+1	5+1	7+1	9+1	9+1	10+1	11+1	11+1	11+1	14+1
Total dim. (length)	mm	3600	3900	4500	4700	5200	6500	6500	7300	7300	7600	8000
Total dim. (width)	mm	1750	2200	2300	2300	2200	2300	2300	3000	3000	3000	3200
Total dim. (height)	mm	2850	3100	3100	3400	3800	3900	3900	4200	4200	4200	4600
Approx. weight	ton	3	4.5	7	8.5	10	12.5	13	17.5	20	25	30

Used freeze dryers




Availability of used freeze dryers should be consulted with **Coolvacuum**.

Lab freeze dryers (LyoMicron/LyoEpic/LyoLab)

The **laboratory freeze dryers** are specifically designed to meet the demands of **lyophilisation under research and development** in the increasingly demanding R&D departments of industries, colleges and universities.

Our **laboratory freeze dryers** range from small desktop equipment to the most sophisticated pilot equipment.

The quality of our machines, together with a firm commitment to provide the best possible service, makes our equipment a first class choice if what is sought is a laboratory freeze dryer.

TECHNICAL CHARACTERISTICS	Units			
		LyoMicron	LyoEpic	LyoLab
Number of shelves	ud	6/8	5	4/6
Dimension of shelves	mm	∅200	430(W)x390(L)	345(W)/385(W) x 455(L)
Total usable area	m ²	0.19/0.25	0.84	0.6/1.0
Minimum spacing	mm	40	47	72/65
Temperature range on shelves	°C	optional	optional	-60 to +80
24h condenser capacity	kg	5	9	20/30
Final condenser capacity	°C	<-55	<-55 / <-80	-80
Electrical power	W	850	1500	6500/8000
Power supply	V-Hz	230-50	230-50	230/400-50
		(others under request)	(others under request)	(others under request)
Vacuum pump capacity	m ³ /h	7	12	30
Weight	kg	50	120	1000/1400
Dimensions	Width	mm	420	1255/1235
	Height	mm	360+430	1800/1960
	Length	mm	565	620

LYOMICRON



Vials closing system



LyoMicron front view



Cubic Chamber



Ice condenser



Accessories

LYOLAB

LYOEPIC



LyoLab front view



LyoEpic front view

Freeze dryers for food industry (LyoTech)

We have a wide range of freeze dryers for the **food industry** with the following advantages:

- Lower production cost
- Best price of equipment
- Easy to use
- High capacity and cycle speed
- Small size
- Fully updated



Freeze-dried products retain textures, nutritional value and full flavour; therefore, they are widely used in the following fields:

- *Avant-garde cuisine*
- Vegetables
- Dairy products, fresh cheese and yogurt
- Precooked meals, germinated
- Sea products
- Fruits
- Cosmetics
- Bone tissue and skin
- Marine plankton



MODEL	CONDENSER CAPACITY (Kg)	SHELF AREA (m ²)
LyoTech 5	50	5
LyoTech 10	90	10
LyoTech 20	200	20
LyoTech 30	400	30
LyoTech 50	600	50
LyoTech 100	1200	100

Technical Services

- Maintenance
- Reform and updating of freeze dryers
- Project management
- Equipment qualification
- Software optimisation
- Recipe optimisation
- Training



Probe calibration

Instrument calibration is performed in situ, with the latest technology in standards and equipment, as well as equipment detectors, with extensive experience in the field of calibration. The patterns are perfectly traceable.

- Temperature
- Pressure
- Vacuum probes
 - Capacitive
 - Pirani



Equipment qualification

- Risk analysis
- Installation qualification IQ
- Operations qualification OQ
- Qualification plan PQ
- Incident resolution management
- Requalifications
- Integration of change control procedures



Spare parts and Consumables

- Pumps
- Refrigeration accessories
- Clamp accessories
- ISO KF accessories
- Oil for vacuum pumps
- Thermal fluids
- Refrigerants



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