

# LSG60 chamber freeze dryer

The LYOSCIENCE range of freeze dryers provides an extended choice of process and control options for **reliable and reproducible freeze drying** of a wide range of sample types. Manufactured and fully supported in the UK, the latest LSG60, pictured below, **uses the most up-to-date technology in vacuum, refrigeration and control**, giving unrivalled reliability and reproducibility in the freeze drying process. A full system mimic on the **touch screen display** provides a user friendly interface giving a clear indication of system status.

## FEATURES

- **Fully automated** with **touch screen control**
- **Large shelf area** (up to 1.69m<sup>2</sup>)
- **Controllable** shelf temperatures **-60°C / +60°C**
- **High capacity** condenser (30kg)
- **Stoppering** facility
- **Data logging** /analysis accessible on screen in real time, and downloadable by both USB and ethernet (for remote view)
- Up to **200 reproducible process profiles**
- Integral **energy saving** feature
- Designed, manufactured and **fully supported** in the UK



Exhibiting all the features of the smaller LS dryers in the range, but on a larger scale, an **additional safety feature** automatically diverts the condenser refrigeration power to 'crash' cool the product if the shelf cooling system fails. This facility protects the product, potentially **averting significant losses**.

The MechaTech Systems  
LSG60 freeze dryer

The LSG60 comes complete with **nine product temperature shelves**, which can be controlled between -60°C and + 60°C, with an accuracy of better than  $\pm 0.5$  °C. Based around a large drying chamber mounted alongside a refrigerated chamber, the integral refrigerated shelves can be moved up and down via an hydraulically operated ram for stoppering purposes.

Freezing, primary and secondary drying, end point determination, backfill and stoppering sequences are all **controlled by a central processor unit**, allowing complex pressure/temperature profiles to be controlled accurately and reproducibly **without operator intervention**. In excess of 200 profiles can be stored and retrieved as required.

# LSG60 technical specification



Featuring 9 temperature controlled product shelves with automated movement for stoppering purposes.



FREEZE DRYER MODEL	LSG60
Condenser temperature	-85°C
Shelf temperature	-60°C to +60°C
Condenser capacity	30 Litres
Condenser rate	1 litre/hour
Defrost	Hot water / hot gas
Defrost time (water inlet temperature @ 40°C)	Approx. 20 minutes
Refrigeration	Cascade
No. of shelves (excluding radiant shelf)	9
Shelf area (per shelf)	0.175 m <sup>2</sup>
Shelf dimensions (w x d)	375 x 500 mm
Shelf area (total)	1.69m <sup>2</sup>
Shelf/chamber material	316L stainless steel
Shelf heat transfer	Silicon Fluid
Working height (max shelf gap)	98mm
<b>Shelf cool down times (with no load, from 25°C):</b>	
(to -35°C)	20 minutes
(to -40°C)	22 minutes
(to -55°C)	31 minutes
(to -60°C)	35 minutes
Temperature control	<± 0.5°C
Shelf temperature uniformity	±1°C
Stoppering	Hydraulic/Automatic
Vacuum pump: Type	Edwards E2M28
Nominal Pumping Speed	28 m <sup>3</sup> /hr
Pump down time (to 0.5mbar)	Approx. 10 minutes
Inter-chamber valve	Electrical QSB
Electrical: UK supply	415V, 50Hz, 3ph, 15kW
Dimensions (w x h x d) not including oil reservoir	1505 x 1940 x 1000mm
Gross weight	1025 Kg
Data logging	Yes
End point determination	Pressure rise
Gas backfill	Yes / Automatic
Pressure control	Optional
Product probes	9
Output noise	<75 dB at 1m

## About MechaTech Systems

We are a team of dedicated, high vacuum and refrigeration experts specialising in the design and manufacture of freeze dryers, which takes place on our premises near Bristol, UK. All elements of production, from initial design to installation, commissioning and user training are accessible, ensuring that the end product is precisely fit for purpose, and fully supported.

Please contact us for further details, or visit our website to view our full range of products and services.



[enquiries@mechatechsystems.co.uk](mailto:enquiries@mechatechsystems.co.uk)

01454 414723

[www.mechatechsystems.co.uk](http://www.mechatechsystems.co.uk)

MechaTech Systems Ltd, Unit 9, Brunel Way, Thornbury, Bristol. BS35 3UR

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