

LSG60 LYODRY GRANDE CHAMBER FREEZE DRYER



TECHNICAL VACUUM EXCELLENCE SINCE 2008

**FULLY AUTOMATED, CONTROLLABLE SHELF TEMPERATURES
-60°C TO +60°C, DATA LOGGING/ANALYSIS, STOPPERING OPTION**

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LyoDry Freeze Dryers provide an extended choice of process and control options for reliable, reproducible freeze drying of a wide range of sample types.

LSG60 LyoDry Grande Freeze Dryer is ideally suited to laboratory and pharmaceutical applications. It uses the latest technology in vacuum, refrigeration and control, providing unrivalled product protection and operator interfacing. A full system mimic on the touch screen display provides a user friendly interface, giving a clear indication of system status.

UK designed, manufactured and maintained. Quality assured.

Large shelf area 1.69m ² , 9 shelves, temperature controlled $\pm 60^{\circ}$	30 kg ice condenser capacity, -85°C condenser temperature
Fully automated, touch screen control	Data logging, real time and historical analysis, remote view (option)
Up to 200 reproducible process profiles (recipes)	Password protected user accounts
Stoppering (option)	Automatic end point determination
Pressure control	Hot gas defrost
CFC refrigeration	12 month warranty, extended warranties available (option)
Installation, commissioning, operator training	UK designed, manufactured and maintained



LSG60 LyoDry Grande has nine temperature controlled shelves, between $\pm 60^{\circ}\text{C}$ with an accuracy of better than $\pm 0.5^{\circ}\text{C}$.

Based around a large drying chamber mounted alongside a refrigerated chamber, the integral refrigerated shelves can be moved up and down via a hydraulically operated ram for stoppering.

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.

An additional product safety feature automatically diverts the condenser refrigeration power to 'crash' cool the product if the shelf cooling system fails. This facility averts significant potential losses by providing protection for the product.

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Registered in England and Wales No. 06469333

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MECHATECH
SYSTEMS

TECHNICAL VACUUM EXCELLENCE SINCE 2008

TECHNICAL SPECIFICATION

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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)	~ 20 minutes
Refrigeration	CFC Free - Cascade - water cooled
Number of shelves (excluding radiant shelf)	9
Shelf area (per shelf)	0.187m ²
Shelf dimensions (W x D)	375 x 500 mm
Total shelf area	1.69m ²
Shelf/chamber material	316L stainless steel
Shelf heat transfer	Silicon fluid
Working height (max shelf gap)	98mm
(min shelf gap)	35mm
Shelf cool down times (fluid temperature measurement, with no product, from 4°C with both refrigeration units):	
to -45°C	30 minutes
Temperature control	< ± 0.5°C
Shelf temperature uniformity	± 1°C
Shelf temperature uniformity between shelves	1°C
Stoppering	Hydraulic / automatic
Evacuation time (to 0.5 mbar)	~ 10 minutes
Inter-chamber valve	Electrical QSB
Electrical, UK supply	415V, 50Hz, 3ph, 15kW
Dimensions, not including oil reservoir (w x h x d)	1505 x 1940 x 1000mm
Gross weight	1400 kg
Data logging	Yes
End point determination	Pressure rise
Product probes	9
Output noise	<75 dB at 1m
Cooling water usage	1.2m ³ /h max 10°C (cooling capacity 8kW)
Approximate peak room heat generated	3kW (10,000 BTU/h)
Defrost water temperature	40°C minimum
Compressed air	6 bar (87 psig)
Nitrogen backfill / pressure control	1 bar supply regulated to 3 psig



User friendly interface with
200 retrievable process profiles



9 x 316L SS product shelves with
optional stoppering

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Decommissioning
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