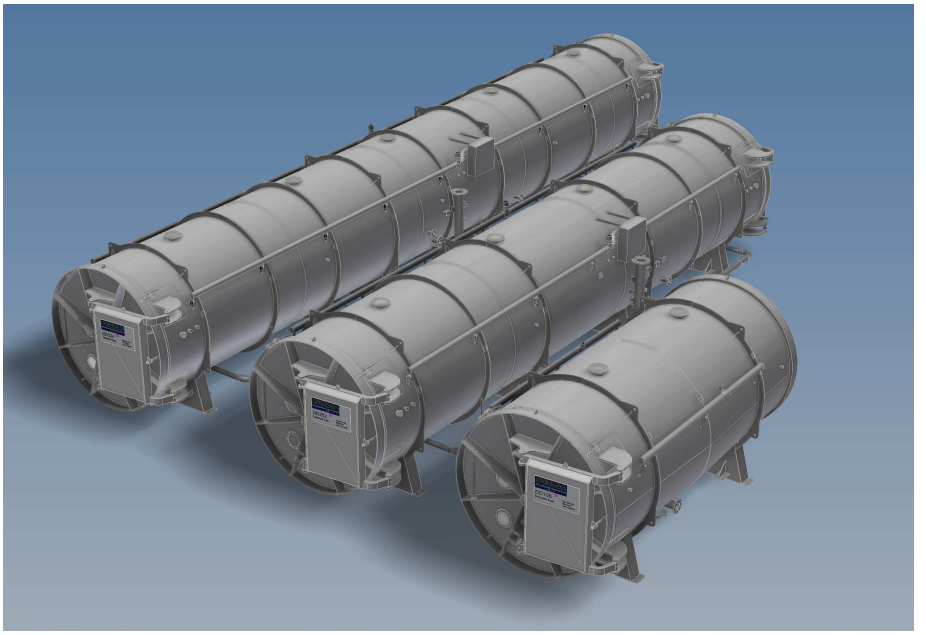
CUDDON

FREEZE DRY

MODEL SPECIFICATION SHEET:

Document Restoration Dryers
DD108 / DD252 / DD324



Certified ISO 9001 by

BVQI

MANUFACTURERS OF QUALITY FREEZE DRYING EQUIPMENT SINCE 1963

www.cuddonfreezedry.com

A LITTLE BACKGROUND

Experience and Expertise

Cuddon Freeze Dry has been developing and manufacturing freeze drying equipment since 1963. With over 40 years experience and more than 100 installations worldwide, our products are highly respected. Cuddon freeze dryers are MAF approved and used in the following industries:

- Dairy
- Nutraceutical
- Food Processing
- Pharmaceutical
- Research
- Disaster Recovery

Quality and Service

All Cuddon Freeze Dry manufacturing is completed under ISO9001 accreditation. This ensures consistency, reliability and quality workmanship. Cuddon Ltd has been ISO 9001certified since 1993. Our dedicated staff pride themselves on providing world-class after sales service via the Internet, telephone or in person where required.

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McARTNEY STREET
PO BOX 64
BLENHEIM
NEW ZEALAND
T: +64 3 578 4299
F: +64 3 578 4294
E: sales@cuddonfreezedry.com
W: www.cuddonfreezedry.com

Document Dryer Specification Summary…

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General

The Cuddon Restoration Freeze Dryer is designed for the drying of documents, books and other artefacts that require removal of moisture. The current range of machines will dry from 108 to 324 boxes. Design specification is 7kg water removal per box.

Box Size

Cardboard library box with dimensions of 320mm x 400mm x 270mm high Supplied by client.

Chamber

Carbon steel, blasted SA 2½ inorganic zinc and high build top coat. Two x viewing ports in door. Double hinged door to provide correct alignment. 180° opening arc.

Ice Condenser

Secondary refrigerant @-40 Celsius pumped from machinery Skid reduces refrigerant charge and operating cost.

Shelves/Trolleys

Trolleys are constructed carbon steel with powder coated finish. Trolleys are temperature controlled to 70°C. All piping and accessories are supplied to give a controlled drying rate.

Vacuum System

A combination of Roots Blower and Single stage vacuum pump give efficient pump down time. The drying pressure is controlled and the pump is stood down when working pressures are achieved.

Refrigeration

Bitzer compressor maintains the vapour condenser temp of –35°C to –40°C. A remote air cooled condenser is installed and heat recovery is a option for preheating defrost water.

Control System

The Cuddon control system comprises a PLC and touch-screen colour HMI that can be interfaced to the clients LAN and assessed remotely for observation and control. Mimic screens display live data including product and process temperatures and system pressures.

	DD108	DD252	DD324
Chamber	Carbon steel: 5200mm L 2340mm W 2510mm H	Carbon steel: 11400mm L 2530mm W 2460mm H	Carbon steel: 14200mm L 2530mm W 2460mm H
Trolleys / Shelving	3 x product trolleys with shelf heating.	7 x product trolleys with shelf heating.	9 x product trolleys with shelf heating.
Shelf Intermediate Distance:		380mm (15”)	
Total Load	108 boxes 7kg moisture per box 756kg ice	252 boxes 7kg moisture per box 1764kg ice	324 boxes 7kg moisture per box 2268kg ice
NominalDrying Time		8 days	
Shelf heating temps		+10°C to +80°C	
Heating	15 kW Electric	28 kW Electric	36 kW Electric
Heating fluid		Ethylene glycol	
Condenser Refrigeration	5kW @-42°C Refrigerant R507	13kW @-42°C Refrigerant R507	16kW @-42°C Refrigerant R507
Secondary Refrigerant Fluid	Non Toxic, Non Combustible, Water Based Brine		
Power Requirement (Nominal)	42kW / 53Amps / 480V / 60Hz	70kW / 100Amps / 480V / 60Hz	115kW / 165Amps / 480V / 60Hz