

nüve

DF 490/FR 490

Deep Freezers



DIRECT freeze™



Standard Specification



Optional Specifications

DF 490/FR 490

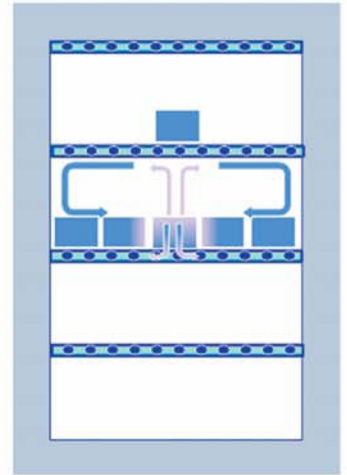
Deep Freezers



DirectFREEZE™: Fast, Contact Freezing

With its cooling coils entirely situated inside the chamber, unlike other brands whose coils are outside the walls of the chamber, 100% of the cooling power is available to freeze the samples and keep them frozen. The placement of the coils throughout the storage volume provides unbeatable homogeneity, so that all samples are maintained under identical conditions, ensuring that evaluations done using these samples can be compared with confidence.

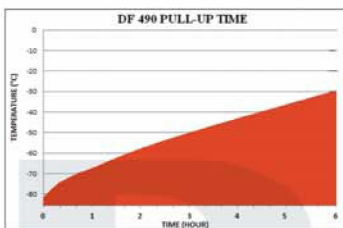
Since sample containers can be placed directly on the shelves containing the cooling coils, heat is removed by conduction that is many times more efficient than relying on conventional convection through the air.



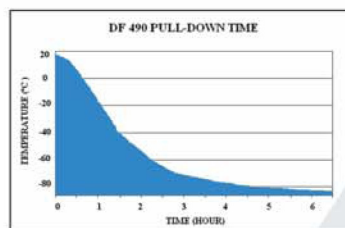
- Freezing through the cooling coils located inside of the shelves
- Faster freezing than conventional freezers that use only convection
- All cooling power is used for the freezing of the samples, not the body
- Excellent temperature stability and homogeneity with direct cooling inside the chamber
- Fast and efficient freezing since the samples are directly in touch with the cooling source
- Optimized recovery time after a door opening



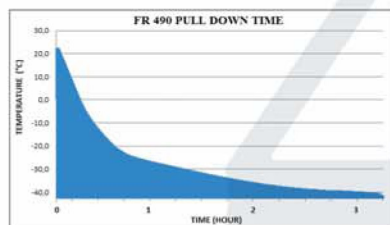
DF 490



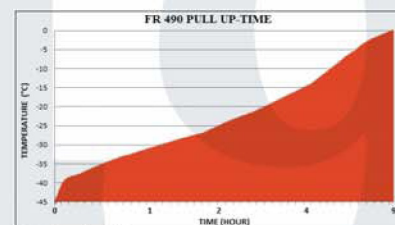
Room Temperature 25 (°C)
No Load



Room Temperature 21 °C
No-Load



Room Temperature 25 (°C)
No Load



Room Temperature 21°C
No Load

FR 490

Optimized Functionality And Rugged Design

A cooling coil is at the top (naturally the warmest part) of every chamber to reduce temperature gradients. Thick shelves, incorporating the coils, block the gaps between inner doors, limiting air exchange and cooling any air that enters before it reaches the samples. Over the long term, snow is created instead of ice because of the maintenance of the cold air in the sealed compartments.

- Four independent compartments with insulated doors for decreasing air entry
- Minimized air exchange on opening reduces ice build-up and protects samples
- Compartment dimensions match commonly used cryoboxes
- Washable air filter for simple maintenance and top performance
- Perfect airtightness with soft gasket
- Heated contact surface of gasket to virtually eliminate icing-up
- Chamber made of stainless steel for long life and shelves made of aluminum for faster heat transfer
- Epoxy polyester powder coated stainless steel outer body
- Foamed-in-place high density polyurethane insulation
- Limited width (79 cm) to go through all lab doorways on its castors



nive

Optimized Functionality and Rugged Design



Reliable And Powerful Control System

The control system of DF 490 and FR 490 is based on microprocessor technology and it is designed to simplify operation and guarantee the safety of stored components. Today, traceability is no longer reserved for industry but is widely established as an important feature for all scientific applications.

NÜVE provides the means in economical freezers.

- Easy to use and safe operation using a microprocessor control system
- Highly visible, large LED display
- Temperature, data tracking and storage on PC via optional RS 232 port and **NüveFREEZE™** software



DIRECT
FREEZE™

Four independent
compartments with
insulated doors for
decreasing air entry



Maximum Safety for High Value Samples

NÜVE knows that the contents of a low temperature freezer are usually worth many times the cost of the freezer itself. That is why we have incorporated numerous features dedicated to security.

No need to worry what is happening in your absence. A full set of alarms is built in and an optional feature will inform you instantly and wherever you are.

- Password protected control system
- Door handle with key lock
- Key operated mains power switch to protect your samples
- Audible and visual alarm system for:
 - High temperature conditions
 - Power failure
 - Temperature sensor failure
 - Refrigeration failure
 - Open door
 - Clogged air filter
- Alarm system is fed by a permanently recharged battery
- Display of actual temperature even at power failure
- Standard remote and central alarm ports
- Optional battery-operated 7-day chart recorder
- Optional **AlerText™** SMS alarm system for ultimate security
- Optional **NüveWarn™** remote alarm system
- Optional CO₂ back-up system extends protection in case of failure (DF only)



Our racking system design has been optimized to accommodate the maximum number of samples in the available space, optimizing return on your investment and minimizing the floor space required for storage. Our standard series responds to the majority of requirements and our custom manufacturing service ensures that we have an answer to your special needs.

- Racks for most commonly used cryoboxes and storage vials
- Drawers for the storage of different types of samples such as plasma bags, flasks
- Custom made racks and drawers are available

Optimal Solutions for Sample Storage

RACKS WITH DRAWERS			RACKS FOR CRYOBOXES				
Catalogue No	Drawers per Rack / Drawer dimensions*	Drawers per Frizer	Catalogue No	Racks for boxes / Box dimensions	Cryoboxes par Rack	Racks per Freezer	Total of Cryoboxes
A 08 152	2 / 260 x 530 x 143 mm	16	A 08 137	135x135x50 mm	20	16	320
A 08 150	3 / 260 x 530 x 95 mm	24	A 08 151	135x135x75 mm	16	16	256



DF 490/FR 490

Deep Freezers

Technical Specifications

	FR 490	DF 490
Minimum Temperature	- 41°C*	- 86°C**
Freezing System	DirectFREEZE™ cooling coils in shelves inside the chamber	
Chamber Configuration	4 independent compartments with insulated inner doors	
Temperature Homogeneity	± 3°C***	
Temperature Stability	± 0.5°C***	
Temperature Alarm Range	Set point + 5°C to + 25°C	
Remote and Central Alarm Contact	For all alarm conditions	
Alarm Back-up	72-hours with automatically recharged battery	
Insulation	High density injected polyurethane	
Internal Material	Stainless steel	
External Material	Epoxy-polyester powder coated stainless steel	
Chamber Volume, Litres	455 (Up to 32,000 cryotubes in cryoboxes)	
Internal Dimensions (WxDxH) mm	550 x 630 x 1310	
External Dimensions (WxDxH) mm	790 x 940 x 2000	
Power Consumption	740 W	1400 W
Power Supply	230 V, 50 Hz	

*At 30°C ambient

**At 20°C ambient

*** Measured from the samples

Factory Fitted Options

- DF 490B CO₂ Back-up system (Only for DF 490)
DF 490Y Weekly temperature chart recorder 0°C / -100°C
DF 490W **NüveFREEZE™** software and RS 232 port for temperature monitoring
FR 490Y Weekly temperature chart recorder 0°C / - 50°C
FR 490W **NüveFREEZE™** software and RS 232 port for temperature monitoring

Options

- A 08 142 **AlerText™** SMS alarm module
K 13 009 **NüveWarn™** Remote alarm system with 10 m cable
A 08 152 Rack with two drawers
A 08 150 Rack with three drawers
A 08 137 Rack for 135x135x50 mm cryoboxes (Rack capacity : 20 boxes)
A 08 151 Rack for 135x135x75 mm cryoboxes (Rack capacity : 16 boxes)
A 08 153 Cryobox 135x135 mm Height 50 mm
A 08 156 10x10 Divider for up to 12 mm Ø tubes. Divider height: 40 mm
A 08 157 9x9 Divider for up to 13.6 mm Ø tubes. Divider height: 40 mm
A 08 155 Cryobox 135x135 mm Height 75 mm
A 08 158 10x10 Divider for up to 12 mm Ø tubes. Divider height: 65 mm
A 08 159 9x9 Divider for up to 13.6 mm Ø tubes. Divider height: 65 mm
A 08 160 Diagram paper for chart recorder 0°C / -100°C
A 08 134 Diagram paper for chart recorder 0°C / - 50°C
A 08 070 Pen for chart recorder

Note : A 08 142 and K 13 009 can not be used together

When choosing dividers, take into account the diameter of the cap on the cryotube others types of cryoboxes and dividers can be supplied on request contact us for custom storage requirements.



**NÜVE SANAYİ MALZEMELERİ
İMALAT VE TİCARET A.Ş.**

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ISO 9001: 2008
ISO 13485: 2003

