

NORHOF LN2 dispensing System #485

Manual Liquid Nitrogen dispensing system

- LN2 flow of 1 liter/minute;
- Pressure-less flowing liquid, without spilling, noise, vibrations, etc.
- LN2-on-demand: just by switching the On/Off button



Norhof #485 LN2 dispensing systems



Norhof manufactures liquid Nitrogen dispensing systems. The liquid Nitrogen is used as cooling medium and is taken from a storage vessel (Dewar) with low pressure (max. 300 mBar) and delivered (pumped) through a fill line to the receiver Dewar.

The #485 is designed to overcome the drawbacks of high pressure vessels. You may compare the Norhof system with a water tap, but instead of giving water, it gently delivers liquid Nitrogen, with a flow of 1 Liter/minute.

Norhof #485 pump, mounted on a 50 Liter Dewar

Working principle

The pressure above the liquid level inside the Dewar is built by heating a small amount of liquid in the bottom of the Dewar.

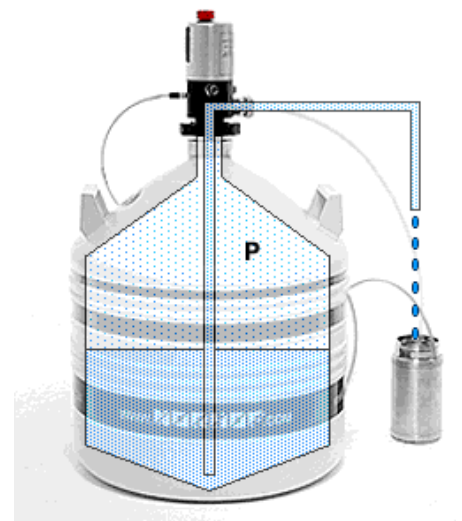
With only up to 300 mBar of overpressure, the liquid will gently rise out of the rise pipe and fall into the fill hose.

Because we evaporate some of the liquid to build pressure, there is no adding of ice inside the Dewar, such as with manual systems which use air from the environment.

In these systems a pressure less storage Dewar is used as a reservoir for LN2. On the Dewar our unique dispensing system is mounted. Inside the housing of the pump a microprocessor is used to control the system.

Thanks to our unique static pump design there is:

- no need for a pressurized supply of LN2;
- no need for a cryogenic solenoid valve;
- no need for additional control instruments.



#485 Technical Specifications

Flow rate	1 liter per minute	
Maximum working pressure	300 mBar	
Reaction time	+/- 30 seconds for cooling down the fill line (with 0,80 meters fill line)	
Power connection	115V / 230V AC input with supplied power supply or 12 Volt DC	
Power consumption	average 5 watt, during pumping 50 watt	
Model	485-100-025	485-100-050
Storage container volume	25 Liter	50 Liter
Outside dimensions (diameter)	400 mm	460 mm
Height dimensions (incl pump)	881 mm	917 mm
Weight (empty)	14 kg	17 kg
Static holding time (days)	104 days	122 days
Standard fill line	0,8 m line length, 9,5 mm OD, 7 mm ID, Teflon FEP tube, with 32 mm OD Armaflex foam insulation	
System includes	Dewar, pump, fill line, phase separator and power supply	
Alarms/warning acoustical/ visual	Dewar empty, Dewar 4 liters left, broken sensor(s), frozen alarm	
Safety	Mechanical overpressure protection valve	
Options	Transport trolley 5 wheels (10 cm height) Stand for pump (when Dewar is refilled)	
Dewar Trolley option	900-400-025	900-400-000
Floor Stand option	900-400-100	900-400-100

#485 recommended options:



*Norhof Dewar Trolley
for safe and easy transport of the LN2 Dewar*



*Norhof Floor Stand
for storing the pump in vertical position during refill of the LN2 Dewar*

#485 advantages:

- 💧 **there is no cryogenic valve or stainless steel hose required;**
that implies no unnecessary heat input
- 💧 **there is no additional control unit required;**
which adds to a clean and elegant setup
- 💧 **no external pressure source required;**
which means no input of moisture to the Dewar
- 💧 **P.E.D. 99/36/EC (Pressure European Directive) for pressurized vessels does not apply for this system;**
The maximum possible pressure is not above 300mBar. Therefore this system is allowed to be used inside the lab, near your working place, without danger.