



Laboratory Refrigeration Line  
Refrigeration cabinets, freezers and ultra-low temperature freezers



# OUR EXPERIENCE

## in the world of cold

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**Angelantoni Life Science** is a world leader in the market for refrigeration and biomedical equipment for use in laboratory and industrial processes, in particular for applications in healthcare, scientific and industrial research as well as in the main industrial sectors.

For over 85 years **Angelantoni** has been producing a complete range of refrigerators/freezers necessary for the long-term preservation of biological samples used in scientific laboratories, pharmaceutical research, hospitals and any other application for which materials need to be preserved at low temperatures.



Angelantoni's experience in the refrigeration sector, combined with ongoing search for solutions capable of offering its customers quality products, has enabled the company to create the **X-COLD** line and the **NEXUS** line, a new series of products characterised by functions developed and tested for professionals in the biomedical sector.

The wide choice of available volumes along with a cutting-edge controller make the **X-COLD** line one of the best laboratory products available on the market in terms of flexibility and reliability.

An innovative handle and a state-of-the-art electronic controller ensure the **NEXUS** line top performance.



A wide range of **refrigerators** and **freezers** with different capacities for multiple applications:  
Short- and long-term storage of **biological material, drugs** and **vaccines**.

Today's scenario has made the entire global population aware of the importance and efficacy of **vaccines**.

**Vaccine storage** is one of the most delicate and sensitive steps in the vaccination process. Its incorrect storage can undermine entire vaccine cycles, altering and changing their effectiveness. The different type of manufacture entails different storage temperatures.

Therefore, not only ultra-low temperatures, but also refrigeration temperatures become important.

The vaccine is a means to protect global health and keep infections at bay or even eradicate them through the achievement of herd immunity as a result of previous vaccination campaigns.

**Several lifesaving drugs** for different chronic diseases are **unstable** at room temperature and can be often also photosensitive.

It is therefore essential to keep their effectiveness stable and unaltered.

**Angelantoni** offers a **complete range** for laboratory refrigeration to preserve these products.

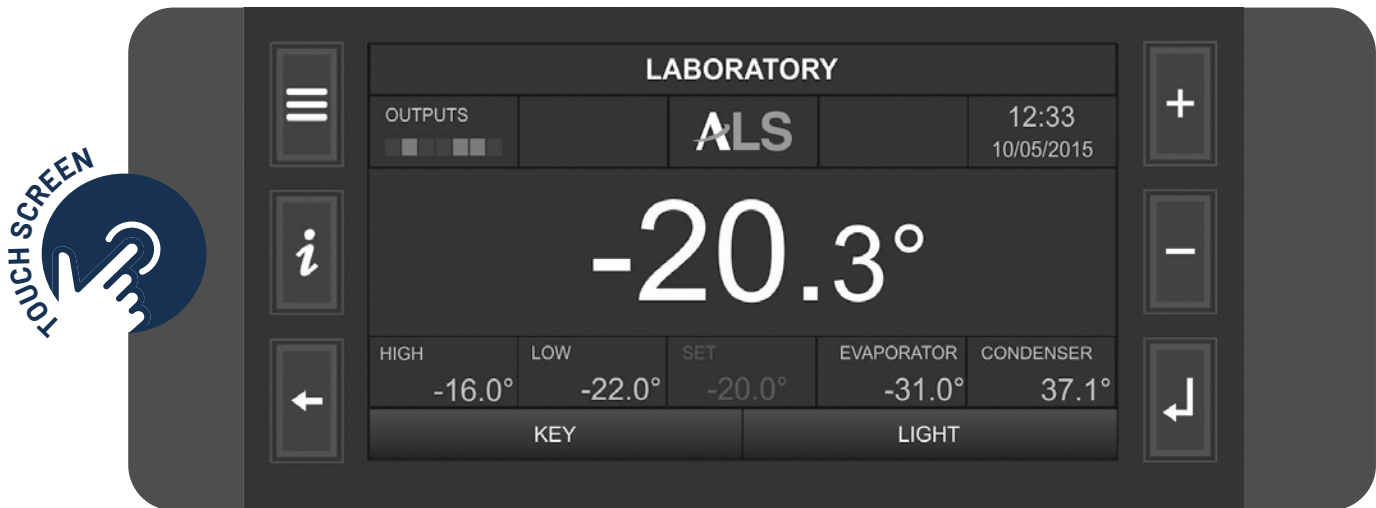
The different configurations, with height-adjustable shelves and drawers, are tantamount to convenience; the electronic controller on board the machine provides maximum safety and reliability.

Our experience and industry knowledge have enabled us to produce a **professional, highperformance line**. Manufacturing innovative, quality systems that meet and exceed our customers' expectations in terms of performance and technical design specifications is **Angelantoni Life Science's** mission.



# CUTTING EDGE Controller

## ACP7: TOTAL CONTROL AT A GLANCE



The **X-COLD** range is available with two graphic controllers that differ in display size: 2.5 inches (ACP3) or 7 inches (ACP7). The **NEXUS** range is equipped with ACP7 displays.

The cutting-edge **ACP7** controller, developed over the years with the support of the latest technologies, can ensure high performance, maximum safety and ease of use. Control electronics are based on three separate processors: one is dedicated to the control system, one is for the alarm section and one for communicating collected data. Access to parameters is protected by passwords with 3 privilege levels: users, service and administrator.

A **7-inch display** shows all basic data on one screen, allowing real-time evaluation of the operating status. The **ACP7 controller** has innovative functions optimizing consumption and allowing parameters to be continuously monitored thanks to 3 separate microprocessors for ADJUSTMENT, ALARM and CONNECTIVITY.

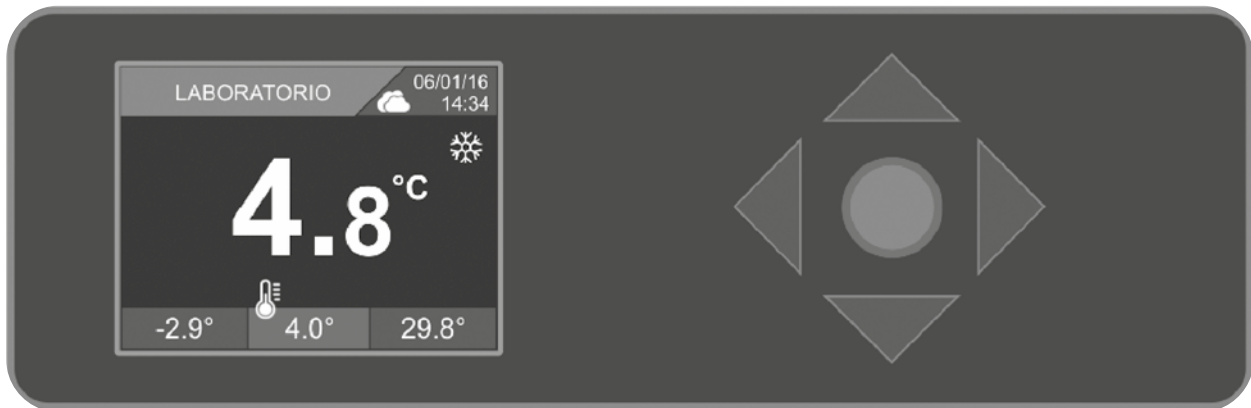
The aim of the **REAL-TIME function** is to display daily temperatures on the screen. This function adds to event listing and to the recording of working temperatures and variables that are sampled every 30 seconds for **10 years**. All values can be stored and event log files can be downloaded to the local PC via an **integrated USB port** in the controller.

The aim of the **ECOMODE function** is to operate the machine in an energy-saving mode. **A PERSONAL PASSWORD** is required to access the controller and to enable the functions that change user parameters.



### TECHNICAL SPECIFICATIONS

## ACP3: LEADER IN RELIABILITY, PERFORMANCE AND EASE OF USE



The 2.5" display of the **ACP3** controller is backlit and color-coded, with variable color touch key controls. The display shows the operating temperature, alarm limits and temperature chart.

The command key changes color according to the machine status:

#### Green display:

All operating parameters are correct, no faults worth reporting;

#### Orange display:

The machine is signaling an alert situation, which can normally be resolved by the operator;

#### Red display:

Critical condition, immediate user intervention or technical assistance is required.



The **SMART DIAGNOSTIC** function ensures constant monitoring of key component wear. Once the preset limit wear threshold is reached, an alarm will prompt for replacement, reducing the risk of machine downtime.

The technical chamber temperature is constantly monitored, alerting the user as soon as the safety threshold is reached.

The machine includes a charging circuit for the **BACK-UP BATTERY** featuring periodic test, charge status and replacement alert. In the event of loss of power, the battery can work autonomously for 30 hours.

A reliable **SMART CONTROL SYSTEM** maintains the set temperature even in the event of probe failure.

# X-COLD LINE

LABORATORY REFRIGERATORS AND FREEZERS

**MAXIMUM CONNECTIVITY** with the use of **3G** or **Ethernet** communication modules or **Wi-Fi** and **TELEASSISTANCE**



Access security and traceability with the **BIOGUARD®** system



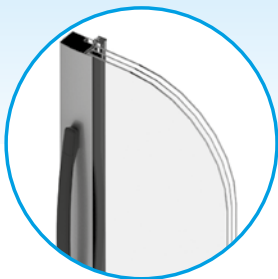
Latest generation **ELECTRONICS** with **CAN-BUS** internal communication protocol



Battery-powered **WEEKLY CHART RECORDER**



Real-time data download via integrated **USB** port and basic software included



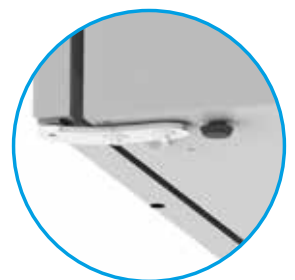
**TRIPLE GLASS DOOR** to guarantee better thermal insulation



**PASSING HOLE** for inserting cables, probes, or other utilities



Height-adjustable **GRID SHELVES** and drawers with telescopic guides



**BALLS AND FEETS** for easy movement or parking



X-COLD 700 TN-GL completed with accessories

### TECHNICAL SPECIFICATIONS

MODELS		100/1				200/1			
		100/1 TN	100/1 TN-GL	100/1 BT	100/1 BT-GL	200/1 TN	200/1 TN-GL	200/1 BT	200/1 BT-GL
<b>DIMENSIONS</b>									
Net internal Dim. (WxDxH)	mm	480X500X450				480X500X815			
Net external Dim. (WxDxH)	mm	600x615x850				600x615x1425			
Litres	l	95				176			
Net weight	Kg	85				100			
<b>TECHNICAL SPECIFICATIONS</b>									
Temperature range	°C	0/+15		-10/-23		0/+15		-10/-23	
Climate class		CLASS SN/ST				CLASS SN/ST			
Supply voltage		208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)			
Noise level	dB	≤50				≤50			
Max. absorbed power	A	1,5		3		2		4	
Thermal dissipation	kcal/h	170		400		215		430	
Refrigerant gas		R 290				R 290			
<b>STRUCTURE</b>									
External finishes		Epoxy powder painting				Epoxy powder painting			
Internal material		AISI 304 Stainless steel				AISI 304 Stainless steel			
Insulation	mm	60 (PU)				60 (PU)			
Shelves	No.	2				2			
Max. load per shelf	Kg	30				30			

MODELLI		300/1				500/1			
		300/1 TN	300/1 TN-GL	300/1 BT	300/1 BT-GL	500/1 TN	500/1 TN-GL	500/1 BT	500/1 BT-GL
<b>DIMENSIONS</b>									
Net internal Dim. (WxDxH)	mm	480X500X1385				605X690X1355			
Net external Dim. (WxDxH)	mm	600x615x1995				685x805x1835			
Litres	l	303				528			
Net weight	Kg	115				130			
<b>TECHNICAL SPECIFICATIONS</b>									
Temperature range	°C	0/+15		-10/-23		0/+15		-10/-23	
Climate class		CLASS SN/ST				CLASS SN/ST			
Supply voltage		208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)			
Noise level	dB	≤50				≤50			
Max. absorbed power	A	2		4		3		6	
Thermal dissipation	kcal/h	215		430		400		700	
Refrigerant gas		R 290				R 290			
<b>STRUCTURE</b>									
External finishes		Epoxy powder painting				Epoxy powder painting			
Internal material		AISI 304 Stainless steel				AISI 304 Stainless steel			
Insulation	mm	60 (PU)				60 (PU)			
Shelves	No.	3				3			
Max. load per shelf	Kg	30				30			

TECHNICAL SPECIFICATIONS

MODELS		700/1				900/1			
		700/1 TN	700/1 TN-GL	700/1 BT	700/1 LT	900/1 TN	900/1 TN-GL	900/1 BT	900/1 LT
<b>DIMENSIONS</b>									
Net internal Dim. (WxDxH)	mm	590x675x1500				660x875x1510			
Net external Dim. (WxDxH)	mm	740x815x1998				810x1015x1998			
Litres	l	600				870			
Net weight	Kg	130	145	140	170	160	175	170	170
<b>TECHNICAL SPECIFICATIONS</b>									
Temperature range	°C	0/+15		-10/-23	-10/-30	0/+15		-10/-23	-10/-30
Climate class		CLASS SN/T		CLASS SN		CLASS SN/T		CLASS SN	
Supply voltage		208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)			
Noise level	dB	≤50			≤55	≤50		≤50	≤60
Max. absorbed power	A	1	5,5	6	6	5,5		5,8	6,2
Thermal dissipation	kcal/h	180		210	345	140	140	320	370
Refrigerant gas		R 290			R 452A	R 290			R 452A
<b>STRUCTURE</b>									
External finishes		Epoxy powder painting				Epoxy powder painting			
Internal material		AISI 304 Stainless steel				AISI 304 Stainless steel			
Insulation	mm	75 (PU)				75 (PU)			
Shelves	No.	3				3			
Max. load per shelf	Kg	40				40			



X-COLD 1500/2 TN-GL

MODELS		1500/2		
		1500/2 TN	1500/2 TN-GL	1500/2 BT
<b>DIMENSIONS</b>				
Net internal Dim. (WxDxH)	mm	1330x675x1500		
Net external Dim. (WxDxH)	mm	1480x815x1998		
Litres	l	1400		
Net weight	Kg	210	240	220
<b>TECHNICAL SPECIFICATIONS</b>				
Temperature range	°C	0/+15		-10/-23
Climate class		CLASS SN/T		CLASS SN
Supply voltage		208-252 VAC / 50 (60) Hz / 1 + T (G)		
Noise level	dB	≤50		≤55
Max. absorbed power	A	5		3,8
Thermal dissipation	kcal/h	220	225	345
Refrigerant gas		R 290		
<b>STRUCTURE</b>				
External finishes		Epoxy powder painting		
Internal material		AISI 304 Stainless steel		
Insulation	mm	75 (PU)		
Shelves	No.	6		
Max. load per shelf	Kg	40		



### TECHNICAL SPECIFICATIONS

MODELS		300/2		700/2	
		300/2 TN-2TS		700/2 TN-2TS	
<b>DIMENSIONS</b>					
Net internal Dim. (WxDxH)	mm	480X500X845	480x500x495	590x660x705	
Net external Dim. (WxDxH)	mm	600x635x1995		740x810x1998	
Litres	l	184	100	300	
Net weight	Kg	120		180	
<b>TECHNICAL SPECIFICATIONS</b>					
		1° COMPARTMENT	2° COMPARTMENT	1° COMPARTMENT	2° COMPARTMENT
Temperature range	°C	0/+15	-10/-23	0/+15	-10/-23
Climate class		CLASS SN/ST		CLASS SN/ST	
Supply voltage		208-252 VAC / 50 (60) Hz / 1 + T (G)		208-252 VAC / 50 (60) Hz / 1 + T (G)	
Noise level	dB	<50		≤50	
Max. absorbed power	A	6		3,3	
Thermal dissipation	kcal/h	700		360	
Refrigerant gas		R 290		R 290	
<b>STRUCTURE</b>					
External finishes		Epoxy powder painting		Epoxy powder painting	
Internal material		AISI 304 Stainless steel		AISI 304 Stainless steel	
Insulation	mm	60 (PU)		75 (PU)	
Shelves	No.	3	2	2	
Max. load per shelf	Kg	30		40	

MODELS		1500/2	
		1500/2 TN-2TS	
<b>DIMENSIONS</b>			
Net internal Dim. (WxDxH)	mm	590x660x1500	
Net external Dim. (WxDxH)	mm	1480x815x1998	
Litres	l	600	
Net weight	Kg	240	
<b>TECHNICAL SPECIFICATIONS</b>			
		1 <sup>ST</sup> COMPARTMENT	2 <sup>ST</sup> COMPARTMENT
Temperature range	°C	0/+15	-10/-23
Climate class		CLASS SN/ST	
Supply voltage		208-252 VAC / 50 (60) Hz / 1 + T (G)	
Noise level	dB	≤50	
Max. absorbed power	A	4,8	
Thermal dissipation	kcal/h	430	
Refrigerant gas		R 290	
<b>STRUCTURE</b>			
External finishes		Epoxy powder painting	
Internal material		AISI 304 Stainless steel	
Insulation	mm	75 (PU)	
Shelves	No.	3	
Max. load per shelf	Kg	40	



X-COLD 700/2 TN-GL

# NEXUS LINE

FREEZERS AND ULTRA-LOW TEMPERATURE FREEZERS FOR PLASMA AND PLASMA-DERIVED PRODUCTS

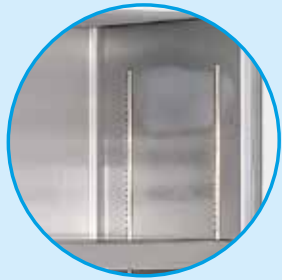
**MAXIMUM CONNECTIVITY** as a result of using **Ethernet** communication modules



Connection through an **ACCESS PORT**



Latest generation **CONTROLLER** with **CAN-BUS** internal protocol



Internal chamber in **AISI 304 STAINLESS STEEL**



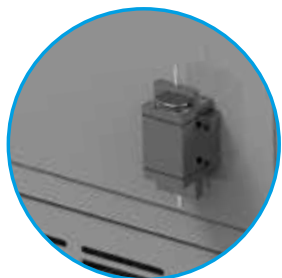
Real-time data download via integrated **USB** port and basic software included



Safety and traceability access with the **BIOGUARD®** system



Easy, user friendly with a new **ERGONOMIC HANDLE** for user comfort



**ENERGY SAVING** compensation valve to minimise **ICE FORMATION**



Easy moving with **PIVOTING CASTORS**



NEXUSSlim 810 V

### MODELS

HORIZONTAL			
-86°C		-40°C	
Model	Code	Model	Code
NEXUS 110 H	14082	NEXUS 110 SH	14149
NEXUS 370 H	14083	NEXUS 370 SH	14150
NEXUS 550 H	14084	NEXUS 550 SH	14151
VERTICAL			
-86°C		-40°C	
Model	Codice	Model	Code
NEXUS 340 V-3*	14086	NEXUS 340 SV-3*	14153
NEXUS 340 V-4*	14088	NEXUS 340 SV-4*	14154
NEXUS 530 V-3*	14087	NEXUS 530 SV-3*	14155
NEXUS 530 V-4*	14089	NEXUS 530 SV-4*	14156
NEXUSSlim 810 V-4*	14092	NEXUSSlim 810 SV-4*	14159
NEXUSSlim 810 V-5*	14093	NEXUSSlim 810 SV-5*	14160

\* Number of counter hatches

### TECHNICAL SPECIFICATIONS

MODELS	HORIZONTAL			VERTICAL		
	NEXUS			NEXUS		NEXUSSlim
	110	370	550	340	530	810
<b>DIMENSIONS</b>						
Ext. Dim. (mm) (WxDxH)	730 x 990 x 1100	1780 x 920 x 1140	2320 x 920 x 1140	791 x 1026 x 1978	1040 x 1026 x 1978	1112 x 1114 x 1978
Int. Dim. (mm) (WxDxH)	450 x 560 x 450	1050 x 520 x 670	1590 x 520 x 670	450 x 530 x 1350	700 x 530 x 1350	906 x 601 x 1472
Litres (l)	113	370	550	322	500	801
Weight (kg)	150 (SH) 180 (H)	234 (SH) 260 (H)	275 (SH) 312 (H)	214 (SV) 234 (V)	262 (SV) 300 (V)	312 (SV) 362 (V)
<b>TECHNICAL PERFORMANCE</b>						
Temperature range (°C)	H	V	(-40 ~ -86)			
	SH	SV	(-20 ~ -43)			
Operating temperature (°C)	H	V	- 80			
	SH	SV	- 40			
Noise level (db (A))			< 52			
Maximum absorbed power (A)	H	V	7	7	7	9
	SH	SV	3,5	3,5	3,5	4
Voltage			220 V - 115 V (50 Hz o 60 Hz)			
Refrigerant gas	H	V	MIX (R23+R290+R170) (for -86°C)			
	SH	SV	R452a (for -40°C)			
<b>STRUCTURE</b>						
Exterior			Epoxy powder painting			
Interior			AISI 304 Stainless steel			
Insulation (mm)			140 (PU)			70 (VIP)
Counter hatches (no.)	1	4	4	3 or 4		4 or 5
Shelves (no.)		/		2 or 3 adjustable in height		3 or 4 adjustable in height
Max. shelf capacity (kg)		/		40		50



## NEXUS green: Characteristics of the product



### Environmentally friendly

The use of natural refrigerants (HC) with very low GWP (Global Warming Potential) is the salient feature of this product line.



### Inverter compressors

All the models in the line are equipped with new generation inverter compressors.



### Full protection

The choice of AISI 304 stainless steel for the construction of the internal tank combined with the elaborate and formalised external painting process with epoxy powders, guarantee full protection against corrosion and the durability of the ultra-freezers over time.



### Optimisation of internal space

Each ultra freezer is equipped with a system of height adjustable shelves (optional drawers) for efficient organisation of the internal spaces and suitable positioning of the cryogenic containers and boxes.



### Greater security in terms of access

The safety of samples can be increased with the BIOGUARD® system which guarantees complete access control. This accessory involves an electric door lock that can only be opened with an authorised card, ensuring full traceability of access.



### Maximum connectivity

All the ultra freezers are controlled electronically by a new generation electronic controller that optimises their performance and functionality and allows the user adjust and monitor the ultra freezers even remotely and with the greatest of ease.



Version with rack



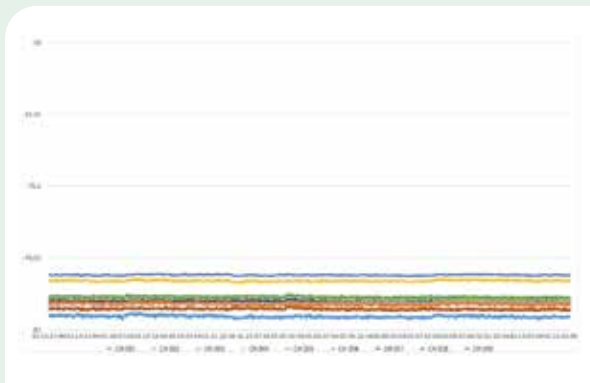
Version with drawers

# INVERTER TECHNOLOGY

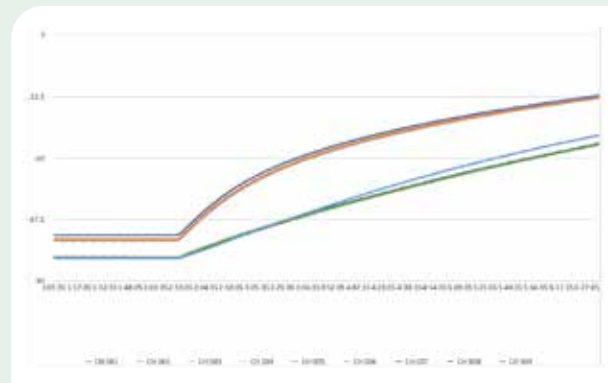
**Inverter technology** is extremely energy-efficient compared to traditional fixed speed systems. This is because the inverter can control and adapt the operating speed in relation to the required temperature. To avoid continuous starting and stopping, the inverter technology keeps the compressor running constantly and modulates its output according to the programmed temperature.

An inverter unit increases its revolutions to obtain the chosen temperature and reduces its revolutions once the temperature is reached, to then keep it constant with a minimum expenditure of energy.

Unlike a fixed speed system, which starts and stops repeatedly, the Inverter system dynamically varies the revolutions of the compressor to obtain the desired temperature, significantly reducing energy consumption.



Stabilisation at -82 °C



Increase

## MAIN ADVANTAGES of INVERTER systems

**Energy savings (up to 30%) compared to fixed speed systems.**

**Greater speed in reaching the set point temperature.**

**Speed adjustment based on demand.**

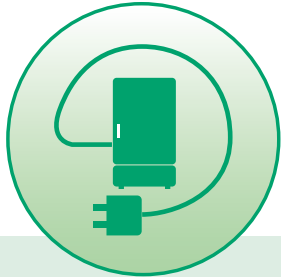
**Extremely quiet operation.**

**Temperature kept constant by adapting the performance of the compressor to the volume of the compartment to be cooled.**

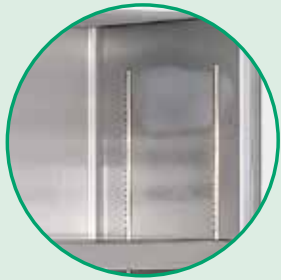
**Superior operating performance, as the temperature fluctuates much less than with a fixed speed system.**

# NEXUS GREEN LINE

FREEZERS AND ULTRA-LOW TEMPERATURE FREEZERS FOR PLASMA AND PLASMA-DERIVED PRODUCTS



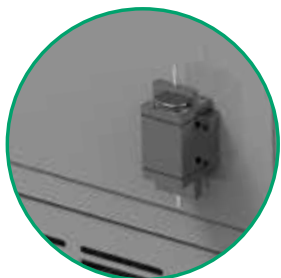
Use of  
**INVERTER  
COMPRESSORS**



Internal tank in  
**AISI 304  
stainless steel**



Access security and  
traceability with the  
**BIOGUARD®** system



**ENERGY SAVING**  
compensation valve that  
**reduces the formation of  
ice** to a minimum

**MAXIMUM CONNECTIVITY** as a result of  
using **Ethernet** communication modules



Use of  
**NATURAL  
REFRIGERANTS**



New generation  
**ELECTRONICS** with data  
download via **USB port**



New **ERGONOMIC  
HANDLE** for ease of  
access



**SWIVEL  
WHEELS**  
for ease of  
handling



### MODELS

VERTICAL	
-80°C	
Model	Code
NEXUS green 340 V-3*	14722
NEXUS green 340 V-4*	14498
NEXUS green 530 V-3*	14273
NEXUS green 530 V-4*	14398
NEXUSSlim green 810 V-4*	14397
NEXUSSlim green 810 V-5*	14724

\* Number of counter hatches

### TECHNICAL SPECIFICATIONS

MODELLI	NEXUS				NEXUSSlim green	
	340 V3	340 V4	530 V3	530 V4	810 V4	810 V5
<b>DIMENSIONI</b>						
Int. Dim. (mm) (LxWxH)	450x530x1350		700x530x1350		906x601x1472	
Ext. Dim. (mm) (LxWxH)	791x1026x1978		1040x1028x1978		1112x1014x1978	
Packaging Dim. (mm) (LxWxH)	810x1040x2120		1060x1040x2120		1170x1040x2120	
Volume (lt)	322		500		801	
Weight (kg)	234		300		362	
Weight with packaging (kg)	260		329		392	
<b>TECHNICAL PERFORMANCE</b>						
Temperature range (°C)	-40/-80					
Operating temperature (°C)	-80					
Heat dissipation (Kcal/h)	520					
Time to decrease to setpoint *	3,4		6,6		7	
Time to increase from -80°C to -50°C (h)*	3		1:20			
Noise level (db (A))	<55					
Maximum absorbed power (A)	6					
Power absorption kW	1,2					
Power consumption kWh/day	7		8		9	
Voltage	230 V					
Frequency	50/60 Hz					
High stage cooling gas	R290					
Low stage cooling gas	R170 + R290					
<b>CONDITIONS OF USE</b>						
Temperature °C	10 ~ 32					
Relative humidity %	30 ~ 80					
<b>STRUCTURE</b>						
Exterior	Steel sheet painted with epoxy powders - GREY RAL 9006					
Interior	AISI 304 stainless steel, scotch brite finish					
Insulation (mm)	140				70	
Counter hatches (no.)	3	4	3	4	4	5
Shelves (no.)	3 of which 2 are height adjustable	4 of which 3 are height adjustable	3 of which 2 are height adjustable	4 of which 3 are height adjustable	4 of which 3 are height adjustable	5 of which 4 are height adjustable
Max. shelf capacity (kg)	40					
Shelf dimensions	500x435		500x685		890x530	

\* evaluated with an operating temperature of -80 °C and an ambient temperature of 22 °C, and in accordance with IEC 60068-3-5



COMPANY WITH QUALITY  
MANAGEMENT SYSTEM CERTIFIED  
BY DNV GL  
=ISO 9001=

COMPANY WITH ENVIRONMENTAL  
MANAGEMENT SYSTEM  
CERTIFIED BY DNV GL  
=ISO 14001=

COMPANY WITH QUALITY  
MANAGEMENT SYSTEM CERTIFIED  
BY DNV GL  
=ISO 13485=



AS

AG

STERIL

AIC

**Angelantoni Life Science (ALS)** is a world leader in the supply of refrigeration equipment and in the design of technological solutions in the biomedical sector, constantly engaged in innovation and safety, both biological and environmental.

**AS** brand provides for a wide range of refrigerators cabinets, ultra-low temperature freezers, blood banks refrigerators, freezers to preserve blood components, mortuary prefabricated rooms, stability tests and plant growth chambers, refrigerators and freezers for COVID-19 vaccines.

**AG** brand supplies standardized brine chilling units for pharmaceutical and chemical applications or pharma process, manual or automated solutions allow to reach  $-70^{\circ}\text{C}$  for special walk-in chambers and shelters to storage vaccines or other farmaceutical products.

**STERIL** brand provides for equipment able to meet any product protection need, as well as the product, operator and environment safety requirements, for any level of concentration and for any kind of substance (horizontal and vertical laminar flow cabinets, biohazard and cytostatic safety cabinets, laminar flow pass boxes with UV, sanitized hydrogen peroxide pass boxes, weighing, sampling and dispensing cabinets and isolators designed in accordance with the latest international standards (GMP).

**AIC** brand provides Waster, and an automated treatment system for hospital and contaminated waste.



Angelantoni Plants



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