

ALS

SERVING
LIFE SCIENTISTS

Laboratory cabinets and freezers at +4°C, -20°C and -30°C
X-COLD Series



OUR EXPERIENCE

in the freezing industry



➤ For over 85 years, Angelantoni has produced a complete range of refrigerators/freezers for long-term preservation of biological samples used in scientific laboratories, pharmaceutical research, hospitals and any other application requiring material preservation at low temperatures.

Angelantoni's experience in the freezing industry, combined with continuous search for solutions able to offer its customers quality products, has resulted in the creation of **X-COLD**, a new line of products characterized by functions developed and tested for professionals in the biomedical sector.

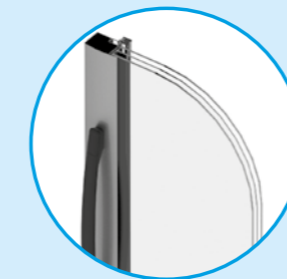
The wide range of machines of different volumes equipped with cutting-edge electronic controllers makes the **X-COLD** line one of the best laboratory products in the market in terms of flexibility and reliability.



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



Battery-powered **WEEKLY CHART RECORDER**



TRIPLE GLASS DOOR to guarantee better thermal insulation



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



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



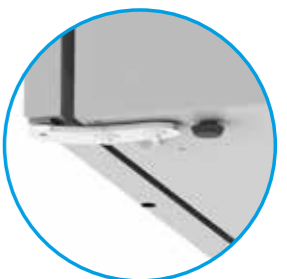
Latest generation **ELECTRONICS** with **CAN-BUS** internal communication protocol



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



PASSING HOLE for inserting cables, probes, or other utilities



BALLS AND FEET for easy movement or parking



X-COLD: Product features



Maximum protection

The internal AISI 304 stainless steel tank, combined with a load-bearing structure in hot-dip galvanized steel coated with PVC film, guarantee maximum protection against corrosion and a long service life.



Optimization of internal spaces

Each model is equipped with height-adjustable shelves (optional drawers), for efficient organization of internal spaces and adequate arrangement of material.



Uniform cooling

The internal compartment is cooled by a ventilation system that guarantees temperature uniformity. Fans stop turning when the door is opened, thus protecting the operator from exposure to low temperatures and reducing heat loss.



Easy and comfortable opening

New ergonomic handle designed for easy grip even with one hand. Standard key lock or Bioguard® system (optional).



External communication

A 19, 23 or 50mm through-hole is provided on request, for inserting cables, probes or other utilities.



Environmentally friendly

We have always considered ourselves as "environmentally friendly" and for this reason all our products use natural gas or gas with very low environmental impact.



X-COLD from 700 to 1500 liters



Easy cleaning

The structure of the internal AISI 304 steel tank is designed to minimize edges; full sealing of joints makes bacterial proliferation impossible, while allowing easy cleaning.



Easy handling

All products are equipped with balls, wheels and rollers to facilitate handling and with adjustable feet for stabilization.



Low noise levels

The structure and cooling system of the X-COLD line are designed to minimize noise. When installed in laboratories, this equipment does not disturb the people who work there.



Stored product visibility

These models are provided with glass door and internal led lighting for perfect product visibility including when the door is closed.



Increased access security

Sample security is increased by BIOGUARD®, an optional system that guarantees complete access control. With this accessory, the door is locked electrically, so that it may only be opened using authorized cards with total access traceability.



Maximum connectivity

A latest-generation electronic controller optimizes both performance and functions and allows the user to adjust and monitor the refrigerator remotely with extreme ease.

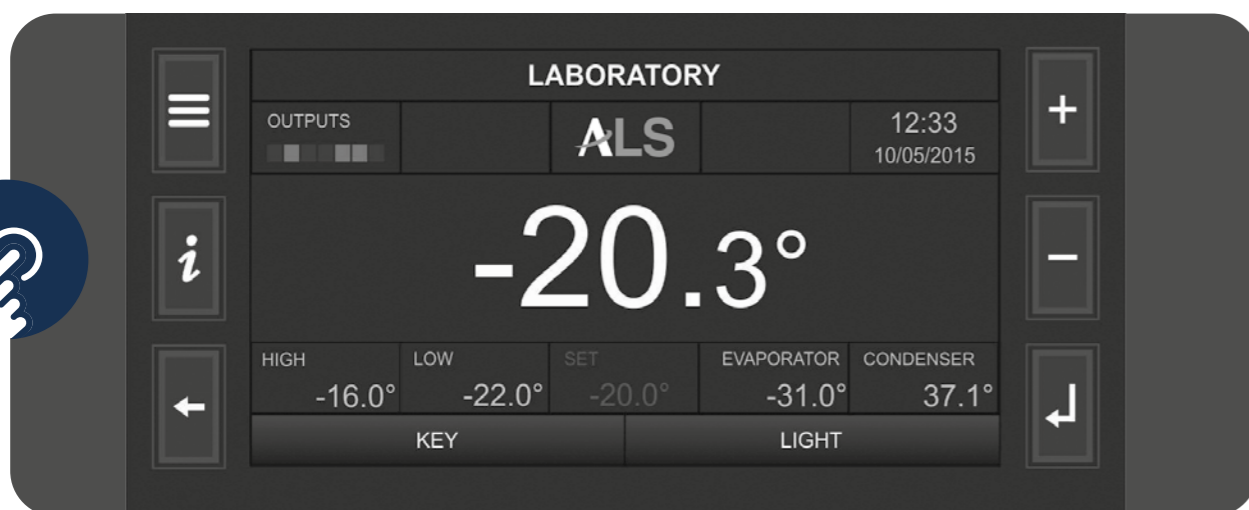


X-COLD from 100 to 500 liters

CUTTING EDGE Controller

ACP7: TOTAL CONTROL AT A GLANCE

TOUCH SCREEN



The **X-COLD** range includes two graphic controllers differing in display size: 2.5 or 7 inches.

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.

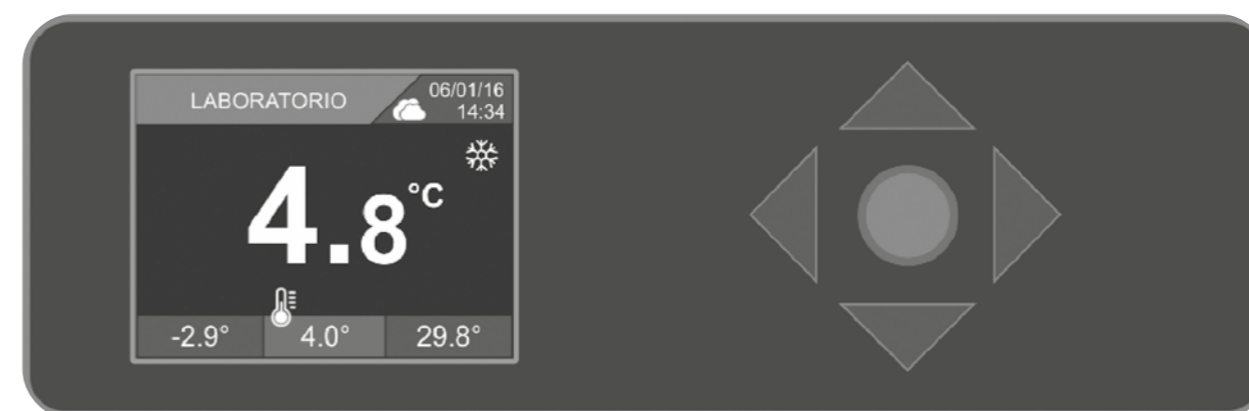
A **7-inch display** shows all basic data on one screen, allowing real-time evaluation of the operating status. The **ACP7 controller** has innovative functions optimizing consumption and allowing parameters to be continuously monitored thanks to 3 separate microprocessors for ADJUSTMENT, ALARM and CONNECTIVITY.

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.



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:

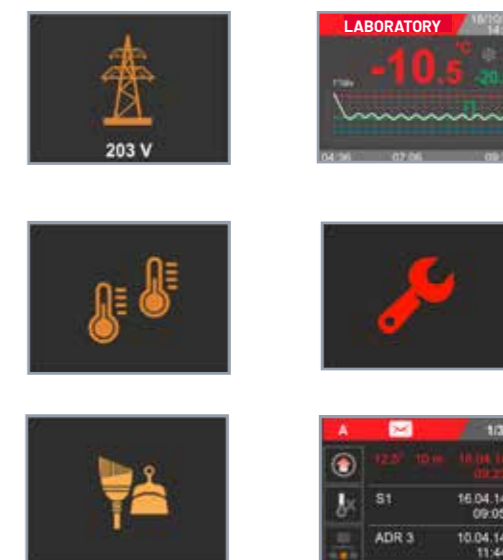
All operating parameters are correct, no faults worth reporting;

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.



INCREASED SECURITY FOR YOUR SAMPLES

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.

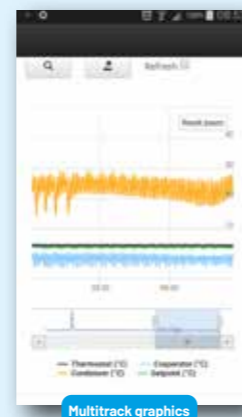
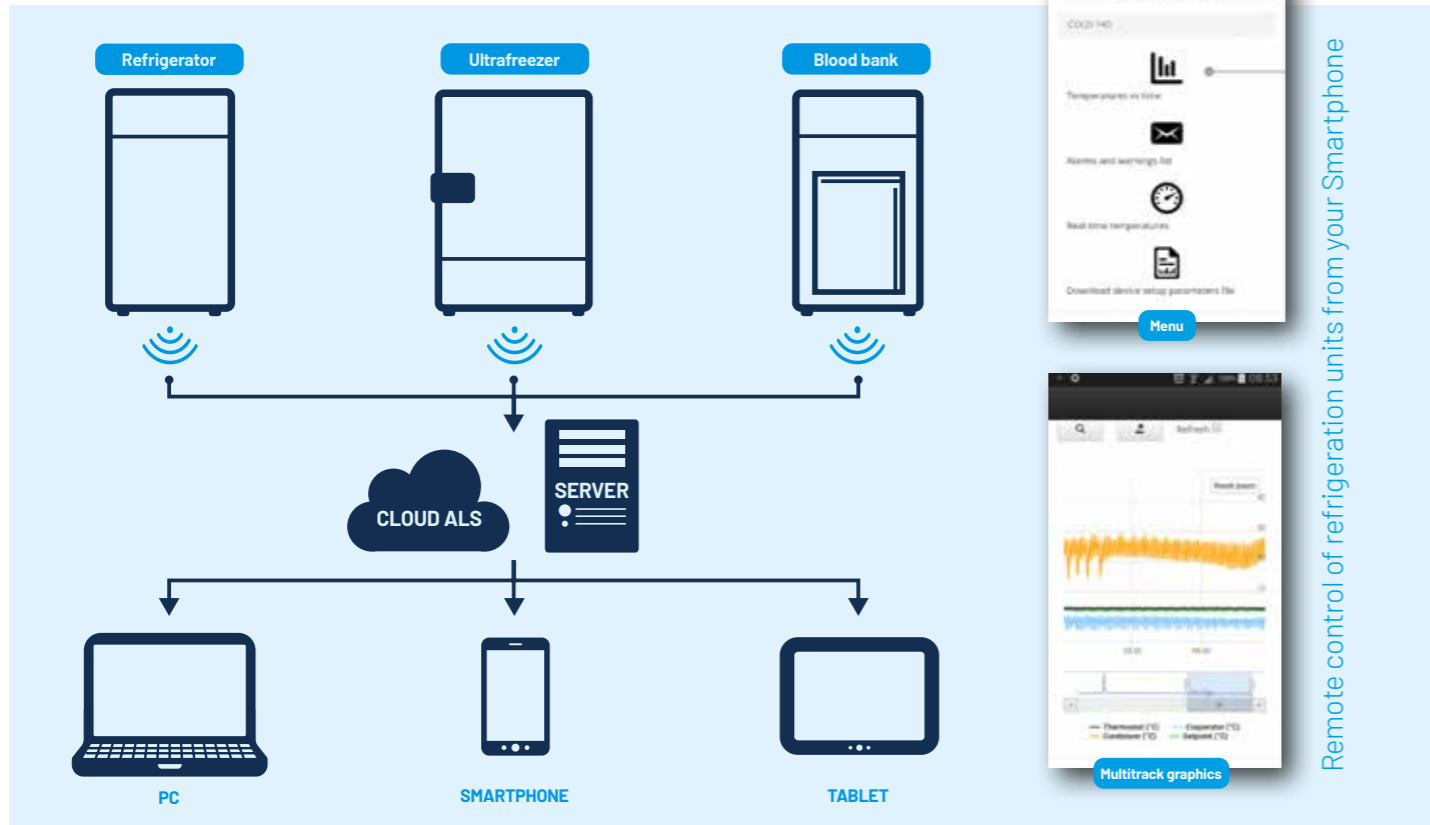
YOUR DEVICE In one click

CONTROL ANYTIME ANYWHERE

The controller guarantees maximum connectivity and constant monitoring thanks to the **CloudALS** infrastructure or **local storage server** (Proprietary Server), easily accessible from PC, Smartphone and Tablet.

This function allows users to monitor the trend of the refrigerator's storage temperatures in real time and maintenance personnel can promptly access detailed information on the operation of the refrigeration unit and its components.

The possibility of choosing between **3G** coverage or the use of an **Ethernet** or **Wi-Fi** communication module facilitates any type of connection in the user environment. This feature also allows one or more Angelantoni machines (refrigerators, freezers, etc ...) to be remotely controlled, if they are equipped with the latest-generation controller (ACP series) and located in different laboratories.



Remote control of refrigeration units from your Smartphone

REMOTE FUNCTIONS

- Master Management
- Multitrack Real-Time Graphs
- Event notification E-mail
- Real-Time variable consultations



- Configuration Parameter Reading
- Configuration Parameter Writing
- Firmware Update
- Remote assistance



SERVICE

MONITORING FROM A SINGLE LOCATION

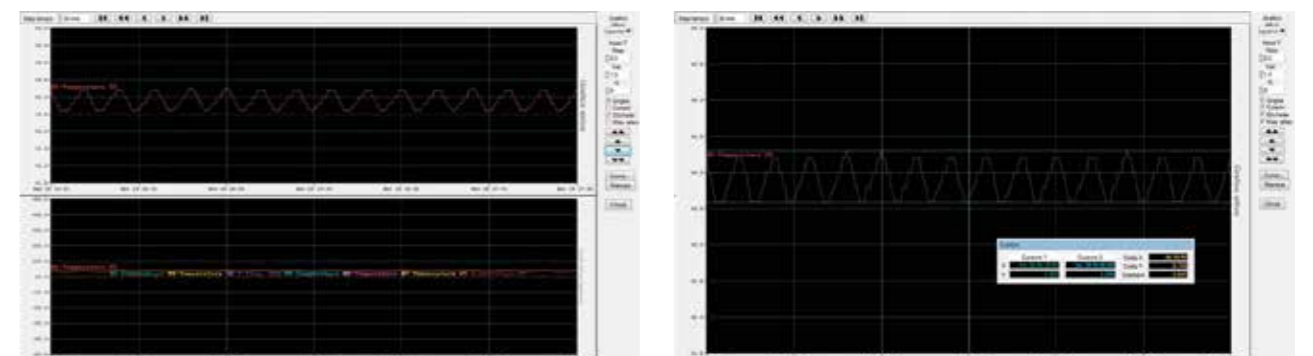


Cryolog is a monitoring system that combines robust technology with ease of use, an ideal system for remote supervision of machines in different rooms. Up to 32 units can be connected simultaneously and the operating parameters of each machine can be displayed.

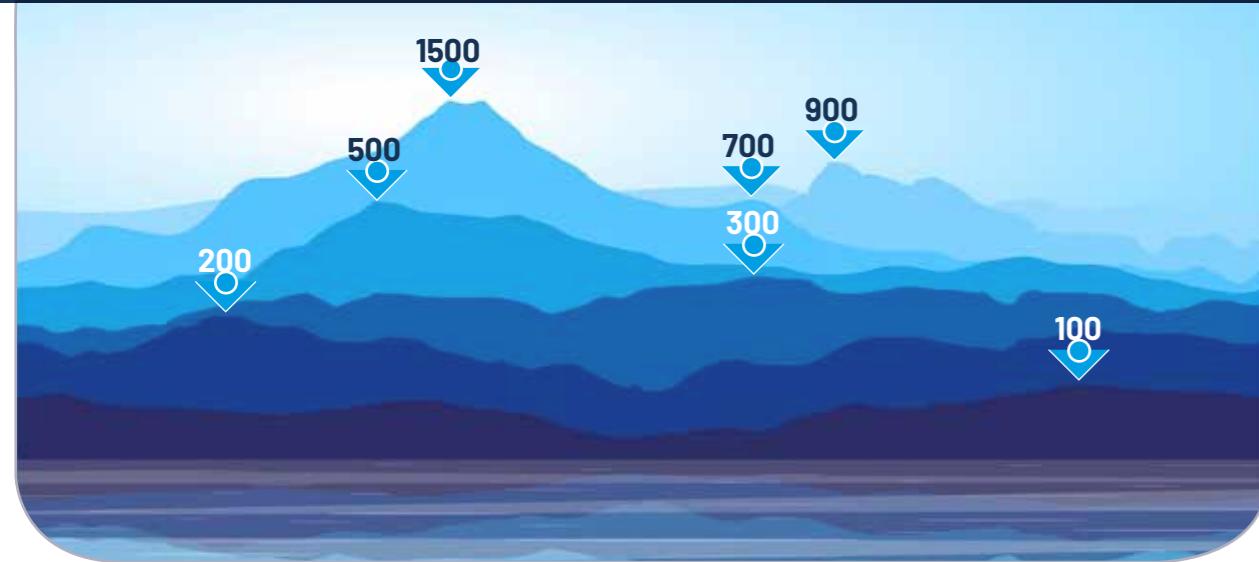
The monitored parameters are:

- Working temperature
- Door status
- Alarms

Monitored parameters are also displayed in graphic form and stored in a destination folder.



A COMPLETE RANGE from 100 to 1500 liters



The **X-COLD** series is a very comprehensive range of refrigerators and freezers meeting all requirements in terms of volumes and control electronics.

The full series includes machines from 100 to 1500 liters with glass or blind doors and with storage temperatures ranging from +4°C to -20°C.

The series is completed by the following models and formats:

- 300 liters **combined**, with one chamber of 200 liters at +4°C and one chamber of 100 liters at -20°C (mod. 300/2 TN / 2TS)
- 700 liters **combined**, with two chambers of 350 liters each, one at +4°C and one at -20°C (mod. 700/2 TN / 2TS)
- 1500 liters **combined**, with two chambers of 700 liters each, one at +4°C and one at -20°C (mod. 1500/2TN / 2TS)
- 700 liters, with a storage temperature of **-30°C** (mod. 700/1 liter)
- 900 liters, with a storage temperature of **-30°C** (mod. 900/1 liter)

Controlled access

The **BIOGUARD®** system allows keyless opening with a personal RFID ID card. Each machine equipped with Bioguard® is supplied with 3 ID cards. The BIOGUARD® lock increases the safety of stored products. In the event of damage to the ID cards or electronic malfunctions, the door can be opened manually with a special emergency key.



Models and technical specifications

MODELS	100/1				200/1				300/1				500/1				300/2				
	100/1TN	100/1TN-GL	100/1BT	100/1BF-GL	200/1TN	200/1TN-GL	200/1BT	200/1BF-GL	300/1TN	300/1TN-GL	300/1BT	300/1BF-GL	500/1TN	500/1TN-GL	500/1BT	500/1BF-GL	300/2 TN/2TS				
DIMENSIONS																					
Internal size (LxWxH)	mm 480X500X450				mm 480X500X815				mm 480X500X1385				mm 605X690X1355				mm 480X500X845		mm 480X500X495		
External size (LxWxH)	mm 600X615X850				mm 600X615X1425				mm 600X615X1995				mm 685X805X1835				mm 600X635X1995				
Liters	l 95				l 176				l 303				l 528		l 500		l 184		l 100		
Weight	Kg 85				Kg 100				Kg 115				Kg 130				Kg 120				
TECHNICAL FEATURES																					
Temperature range	°C	0/+15	0/+15	-10/-23	-10/-23	0/+15	0/+15	-10/-23	-10/-23	0/+15	0/+15	-10/-23	-10/-23	0/+15	0/+15	-10/-23	-10/-23	1° VANO		2° VANO	
Climate class		CLASS SN/ST				CLASS SN/ST				CLASS SN/ST				CLASS SN/ST				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)				208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)		208-252 VAC / 50 (60) Hz / 1 + T (G)	
Noise level	dB	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50		≤ 50	
Max. absorbed current	A	1,5	1,5	3	3	2	2	4	4	2	2	4	4	3	3	6	6	6		6	
Thermal dissipation	kcal/h	170	170	400	400	215	215	430	430	215	215	430	430	400	400	700	700	700		700	
Refrigerant gas		R 290				R 290				R 290				R 290				R 290		R 290	
FRAME																					
External finishes		Epoxy powder coating				Epoxy powder coating				Epoxy powder coating				Epoxy powder coating				Epoxy powder coating		Epoxy powder coating	
Internal material		AISI 304 Stainless steel				AISI 304 Stainless steel				AISI 304 Stainless steel				AISI 304 Stainless steel				AISI 304 Stainless steel		AISI 304 Stainless steel	
Insulation	mm	60 (PU)				60 (PU)				60 (PU)				60 (PU)				60 (PU)		60 (PU)	
Shelves	Nr.	2				2				3				3				3		2	
Max load per shelf	Kg	30				30				30				30				30		30	

MODELS	700/1				900/1				1500/2			700/2 T - 1500/2 T									
	700/1TN	700/1TN-GL	700/1BT	700/1LT	900/1TN	900/1TN-GL	900/1BT	900/1LT	1500/2 TN	1500/2TN-GL	1500/2 BT	700/2 TN / 2TS		1500/2 TN / 2TS							
DIMENSIONS																					
Internal size (LxWxH)	mm 590X675X1500				mm 660X875X1510				mm 1330X675X1500			mm 590X650X720		mm 590X650X720		mm 635X675X1500		mm 635X675X1500			
External size (LxWxH)	mm 740X815X1998				mm 810X1010X1998				mm 1480X815X1998			mm 710X800X1998		mm 710X800X1998		mm 1480X815X1998		mm 1480X815X1998			
Liters	l 600				l 870				l 1400			l 300		l 300		l 600		l 600			
Weight	Kg 170				Kg 180				Kg 230			Kg 160		Kg 160		Kg 250		Kg 250			
TECHNICAL FEATURES																					
Temperature range	°C	0/+15	0/+15	-10/-23	-10/-30	0/+15	0/+15	-10/-23	-10/-30	0/+15	0/+15	-10/-23	1° VANO		2° VANO		1° VANO		2° VANO		
Climate class		CLASS SN/T		CLASS SN		CLASS SN/T		CLASS SN		CLASS SN/T		CLASS SN		CLASS SN/T		CLASS SN/T		CLASS SN/T		CLASS SN/T	
Supply voltage		208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)			208-252 VAC / 50 (60) Hz / 1 + T (G)		208-252 VAC / 50 (60) Hz / 1 + T (G)		208-252 VAC / 50 (60) Hz / 1 + T (G)		208-252 VAC / 50 (60) Hz / 1 + T (G)		
Noise level	dB	≤ 50	≤ 50	≤ 50	≤ 50	≤ 43	≤ 43	≤ 45	≤ 50	≤ 50	≤ 50	≤ 55	≤ 60		≤ 60		≤ 60		≤ 60		
Max. absorbed current	A	4	4	5,5	6	5,5	5,5	5,8	6	5	5	3,8	7		8		320		430		
Thermal dissipation	kcal/h	180	180	210	345	215	260	320	430	220	225	345	R 290		R 290		R 290		R 290		
Refrigerant gas		R 290		R452A		R 290		R452A	R 290			R 290		R 290		R 290		R 290		R 290	
FRAME																					
External finishes		Epoxy powder coating				Epoxy powder coating				Epoxy powder coating			Epoxy powder coating		Epoxy powder coating		Epoxy powder coating		Epoxy powder coating		
Internal material		AISI 304 Stainless steel				AISI 304 Stainless steel				AISI 304 Stainless steel			AISI 304 Stainless steel		AISI 304 Stainless steel		AISI 304 Stainless steel		AISI 304 Stainless steel		
Insulation	mm	75 (PU)				75 (PU)				75 (PU)			75 (PU)		75 (PU)		75 (PU)		75 (PU)		
Shelves	Nr.	3				3				6			2		3		2		3		
Max load per shelf	Kg	40				40				40			40		40		40		40		

ACCESSORY AND OPTIONS
Weekly chart recorder
BIOGUARD, door opening with badge for X-COLD 200, 300, 500, 700, 900, 1500 and 1500 2T (requires ACP7 controller)
Additional user badge for BIOGUARD system (in combination with optional BIOGUARD)
Ø19 mm through-hole with closing cap for X-COLD 100, 200, 300, 500 and 300 2T
Ø23 mm through-hole with closing cap
Ø50 mm through-hole with closing cap
Stainless steel sliding and pull-out drawer
Plastic coated grid shelf
Stainless steel perforated shelf
Stainless steel grid shelf
Wheel mounting
External stainless steel cladding
Additional PT 100 class A probe (complete with calibration certificate)
Additional PT 100 class A probe with 4-20mA signal converter (complete with calibration certificate)
Additional PT 100 class A probe calibrated for 3 specific temperatures (complete with calibration certificate)
Integrated safety thermostats to prevent freezing
IQ-OQ qualification protocols (ALS standard)
Packaged in a wooden case/box
Model with 230V / 60Hz supply voltage
Model with 115V / 60Hz supply voltage

CONNECTIVITY ACCESSORY AND OPTIONS
GSM dialer for alarm signaling (SIM card not included)
Wi-Fi module for Cloud monitoring and control (requires Wi-Fi router + PC or Smartphone or Tablet)
Ethernet module for Cloud monitoring and control (network cable, hub / switch + PC are required)
3G-GSM module for SMS alarms (SIM card not included)
Ethernet module for Cryolog monitoring (network cable, hub / switch + PC are required)
RS485 module for Cryolog monitoring (serial cable, Hub / switch + PC are required)
CLOUD license for remote control and monitoring (in combination with Wi-Fi or Ethernet module)
CRYOLOG software for monitoring up to 32 units from a remote PC (in combination with Ethernet or RS485 module)



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°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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